



Preliminary Ecological Appraisal and Bat Building Assessment

Babsham Farm

Babsham Lane

Bognor Regis

West Sussex

PO21 5EL

.....

17th August 2017

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Notice to Interested Parties

To achieve the study objectives stated in this report, we were required to base our conclusions on the best information available during the period of the investigation and within the limits prescribed by our client in the agreement.

No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Thus, we cannot guarantee that the investigations completely defined the degree or extent of e.g. species abundances or habitat management efficacy described in the report.

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EXECUTIVE SUMMARY

- 0.1 Arbeco Ltd. were commissioned by Sloane and Brown Ltd on behalf of their client Recycle Southern Ltd to carry out a preliminary ecological appraisal (PEA) and bat building assessment (BBA) at Babsham Farm, Babsham Lane, Bognor Regis, West Sussex, PO21 5EL to help inform the proposed change of use of land within the site for skip storage.
- 0.2 The habitats within the site boundary included grassland on disturbed ground, bare ground, dense continuous scrub, tall ruderal vegetation, hard standing, building, species-poor intact hedgerow, scattered scrub and scattered broadleaved tree.
- 0.3 The habitats had the potential to support bats (tree with moderate suitability for roosting bats), badgers, breeding birds, great crested newts *Triturus cristatus* and common species of reptiles such as slow worm *Anguis fragilis*, common lizard *Lacerta vivipara* and grass snake *Natrix natrix*;
- 0.4 The results of the BBA concluded that the building on site has **negligible suitability** for bat roosting.
- 0.5 The tree with moderate suitability for bat roosting will be retained, therefore no further surveys for bats are considered necessary.
- 0.6 No evidence of badgers was observed during the site survey, therefore no further surveys for badgers are required.
- 0.7 Further surveys are recommended for reptiles as detailed in Section 6 of this report.
- 0.8 A precautionary approach is recommended for breeding birds and great crested newts. This will include appropriate timings of the works and the use of hand tools.
- 0.9 Biodiversity enhancements should be incorporated into the development and Section 6 of this report provides detail on potential enhancements including an appropriate lighting scheme and creation of deadwood habitat piles and/or compost heaps from the arisings of garden waste.

1 INTRODUCTION

- 1.1 Arbeco Ltd. were commissioned by Sloane and Brown Ltd on behalf of their client Recycle Southern Ltd to carry out a preliminary ecological appraisal (PEA) and bat building assessment (BBA) at Babsham Farm, Babsham Lane, Bognor Regis, West Sussex, PO21 5EL to help inform the proposed change of use of land within the site for skip storage.
- 1.2 The objectives of the PEA were to assess the potential of the site to support protected species and/or species of conservation importance by identifying potential habitat for protected species and/or species of conservation concern and by evaluating the constraints that the presence of any protected species or species of conservation concern may place on the proposed re-development of the site.
- 1.3 The BBA of the site involved carrying out a detailed assessment to assess the likelihood and suitability of the building on site supporting bat species. The assessment comprised of a thorough internal and external inspection of all the built structures on site for the presence of bats and/or any evidence of bats or the likelihood that the building could support bat species.
- 1.4 The PEA and BBA survey also involved assessing the building's potential to support breeding birds and inspecting the building for any evidence of occupation by breeding birds.

Legislation and Policy

- 1.5 Certain habitats and species including nesting birds, bats, great crested newts, are afforded protection under the Conservation of Habitats and Species Regulations 2010 and the Wildlife & Countryside Act 1981 (as amended). Further information on the legislation is included in Appendices A and B.
- 1.6 In general the above legislation makes it an offence to:
 - Deliberately/intentionally or recklessly kill, injure or take a protected species;
 - Intentionally or recklessly damage, destroy or obstruct access to any place that a protected species uses for shelter or protection whether the species is present or not;
 - Intentionally or recklessly disturb a protected species while it is occupying a structure or place that it uses for shelter or protection;
 - Deliberately take or destroy the eggs of species protected by this legislation (such as nesting birds).
- 1.7 Natural Environment and Rural Communities Act (2006) Section 41 of the Act lists the species and habitats of principal importance for the conservation of biodiversity in England and acts as a guide to local authorities in implementing their duties under Section 40, to have regard to the conservation of biodiversity in England.

- 1.8 The Protection of Badgers Act (1992) prohibits reckless and/or intentional cruelty, injury or killing of badgers and the interference with badger setts.
- 1.9 Under The National Planning Policy Framework (NPPF) 2012 protected sites and species are a material consideration in determining planning applications.

Site Description

- 1.10 The site is located in the outskirts of the town of Bognor Regis (Ordnance Survey Grid Reference for the centre of the site: SU 91755 01727). The site is approximately 0.5 ha in area and comprises a barn with associated courtyard.
- 1.11 The location of the site is shown in Figure 1.1 and the extent of the site boundary is shown in Figure 1.2. The building subject to the bat building assessment is shown in Figure 1.3.
- 1.12 The site is bordered to the north-east, north-west and south-east by agricultural land and to the south-east by Babsham Farm Business Park.
- 1.13 The habitats in the wider landscape comprise agricultural fields to the north, east and west and urban habitats within Bognor Regis to the south.

Development Proposals

- 1.14 The development proposals comprise the change of use of land within the site for skip storage. This will involve strimming of the majority of the vegetation on site to enable skips to easily be stored on the site and to enable vehicles to easily manoeuvre around the site.

2 METHODS

Desk Study

- 2.1 The Multi Agency Geographic Information for the Countryside (MAGIC) website provided by the Department for Environment, Food and Rural Affairs (Defra) was consulted to obtain information about any international or European level designated nature conservation sites within 2 km of the site boundary, afforded protection either directly by the Conservation of Habitat and Species Regulations 2010 (as amended) or to the same level of protection through planning policy (the National Planning Policy Framework and Local Development Framework). Information regarding statutory designated sites, such as Sites of Special Scientific Interest (SSSI) within a 2 km radius of the site, were also obtained from MAGIC and from the Arun District Council website.
- 2.2 Aerial photos of the site (Google, 2017) were examined to determine habitats surrounding the site and hence species likely to be present in order to make appropriate recommendations in the wider landscape context.

Field Survey

- 2.3 The survey was conducted in accordance with The Handbook for Phase 1 Habitat Survey (JNCC 2010), and included searches for signs of protected species, as described in the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2013).
- 2.4 A PEA of the site was carried out by a suitably qualified ecologist, Viola Zanetta BSc (Hons) MSc Grad CIEEM, on the 1st August 2017 in order to evaluate any habitat on the site with the potential to support protected species and/or other species of conservation concern that could be relevant in respect of planning policies.
- 2.5 In addition, the habitats within the survey area were assessed for their potential to support legally protected or otherwise notable flora and fauna. Where suitable habitat was identified on site, a search was conducted for signs indicating the presence of protected species such as droppings, burrows, tracks and evidence of feeding. Where species are not specifically evaluated, this indicates that no habitat of potential value for these species was identified during the survey.
- 2.6 Consideration was also given to habitats outside the site, in order to evaluate the ecological context of the site within the wider landscape. Adjacent habitats were also considered with respect to their own ecological value and their potential to enhance the ecological value of habitats within the site.
- 2.7 Searches were made for invasive non-native plant species focussing on those species currently listed in the revised Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).
- 2.8 The plant species nomenclature follows that of Stace (2010). Plant species observed within each habitat type were recorded using the DAFOR system which stands for Dominant, Abundant, Frequent, Occasional or Rare.

Preliminary Ground Level Tree Assessment

- 2.9 The tree on site was subject to a visual inspection from the ground following the methodology outlined by the Bat Conservation Trust's Bat Surveys for Professional Ecologists Good Practice Guidelines (Collins, 2016). The tree was assessed for the presence of features known to be used by roosting bats such as natural holes, woodpecker holes, cracks/splits in major limbs, loose bark, hollows/cavities and dense epicormic growth. The tree was categorised for its value to roosting bats using the Bat Conservation Trust's system of categorisation (see Table 2.1 below).

Table 2.1: Suitability of trees for bats (Collins, 2016)

Suitability	Description
Negligible	Negligible habitat features likely to be used by roosting bats
Low	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen only with very limited roosting potential
Moderate	A tree with one or more suitable 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)
High	A tree with one or more suitable roost sites that are obviously suitable for use by larger number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat

- 2.10 Further survey requirements for the tree was assessed; i.e. whether any suitable crevices or holes in those suitable trees needed specialist climbing equipment or, alternatively, could be checked by using a tall ladder.

2.11

Bat Building Assessment

- 2.12 The methods used in the bat building inspection were based on those recommended in English Nature's Bat Mitigation Guidelines (Mitchell-Jones 2004), the Joint Nature Conservation Committee's Bat Worker's Manual (Mitchell-Jones and McLeish 2004) and the Bat Conservation Trust's Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).
- 2.13 The suitability of the building for bat roosts was assessed by examining structural features. Structural features that may influence the suitability of a building to support roosting bats include the presence of a roof void, the presence of access points into the building (including gaps beneath barge boards, soffits and fascias, gaps under lead flashing, gaps within masonry and under loose tiles, gaps between mortise and tenon joints), the complexity and size of any roof void and daytime light levels in the roof void.
- 2.14 The suitability of the building to support roosting bats was also assessed by examining the surrounding habitat. Important habitat features surrounding the structure which may influence roost potential include whether the structure is in a semi-rural or parkland location, its proximity to a significant linear habitat features such as a watercourse, mature hedgerow, wooded lane or an area of woodland.

- 2.15 Taking account of these architectural and habitat features, the buildings were then assigned a level of roost suitability based the criteria given in the Bat Conservation Trust's Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) and professional judgement. The primary objective of this exercise was to identify the need for further detailed bat surveys later in the year, or alternatively to obtain sufficient information that would dismiss the need for further assessment.
- 2.16 A detailed bat building inspection was undertaken on 1st August by qualified ecologist Viola Zanetta BSc (Hons) MSC Grad CIEEM. An external search around the perimeter of the building was conducted and any possible access points i.e. gaps and crevices were noted.
- 2.17 A systematic internal inspection of the building was conducted using a high-powered torch to illuminate all areas thought to be suitable for roosting bats. All surfaces were also surveyed for signs of bat presence.
- 2.18 Features of potential value to bats were surveyed not only for the presence of bats but also for signs that could indicate use by bats, such as:
- Bat droppings;
 - Staining of access points used by bats to enter the structure; and
 - Feeding remains such as moth and butterfly (Lepidoptera) wings.

Survey Constraints

- 2.19 Due to seasonal behaviour of animals and the seasonal growth patterns of plants, ecological surveys may be limited by the time of year in which they are undertaken. This survey was undertaken in August and, as such, it may not provide a complete list of the plants and animals that may be present, or which may seasonally utilise the site.
- 2.20 However, the information gathered for this ecological survey has facilitated an evaluation of the habitats on site and the likely use of the site by legally protected and notable species. This survey has also given appropriate baseline data for the determination of the requirement for further surveys and/or mitigation and enhancement works.
- 2.21 Bats are difficult to locate in large structures, with so many potential roosting areas, particularly in inaccessible areas such as large buildings, finding the exact roosting site can be difficult, especially male/single bat roosting sites.
- 2.22 Bats can have seasonal use of buildings and being so mobile may arrive and start using a site after it has been surveyed, or roost somewhere else during the period it was surveyed. For this reason bats may potentially be present but remain undetected,

3 RESULTS

Designated sites

- 3.1 One statutory designated site, Bersted Brooks Local Nature Reserve (LNR), is located within 2 km of the site boundary as detailed in Table 3.1 below. The site falls within the Impact Risk Zone of three Sites of Special Scientific Interest (SSSI): Pagham Harbour, Bognor Reef and Felpam.

Table 3.1 Statutory designated sites within 2 km of site boundary

Name of site	Distance and direction from site	Reason for designation
Bersted Brooks LNR	1 km to the east	Bersted Brooks comprises meadows, ponds, reed beds and riverine woodland. Records of water vole <i>Arvicola amphibious</i> exist for the site.

- 3.2 Two waterbodies are located within 500 m of site boundary as shown in Figure 3.1. Both waterbodies are located to the south of the site beyond the A259 road which is considered to act as a barrier for the dispersal of amphibians.

Phase 1 Habitat Survey

- 3.3 The habitats present on site are shown in Figure 3.2. The habitats present on site comprise grassland on disturbed ground, bare ground, dense continuous scrub, tall ruderal vegetation, hard standing, building, species-poor intact hedgerow, scattered scrub and scattered broadleaved tree. Potential habitats/species/features of interest are shown in the Target Notes in Figure 3.2 and Appendix C. Photographs of the site are shown in Appendix D.

Grassland on disturbed ground

- 3.4 The majority of the vegetation on site comprises grassland on previously disturbed ground (Photograph 1 in Appendix D). The sward was 40 cm high and was dominated by tall fescue *Festuca arundinacea* with occurrences of rough meadow-grass *Poa trivialis*, cock's foot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus*.
- 3.5 Other species included locally dominant mugwort *Artemisia vulgaris*, scented mayweed *Matricaria chamomilla* with abundant broadleaved dock *Rumex obtusifolius*, frequent large bindweed *Calystegia sylvatica*, ragwort *Senecio sp*, yarrow *Achillea millefolium*, ribwort plantain *Plantago lanceolata* and rare dwarf mallow *Malva neglecta*, pot marigold *Calendula officinalis*, common evening primrose *Oenothera biennis*, oxeye daisy *Leucanthemum vulgare*, bittersweet *Solanum dulcamara*, white clover *Trifolium repens*, red pimpernel *Anagallis arvensis* and hogweed *Heracleum sphondylium*.
- 3.6 A stand of approximately ten plants of montbretia *Crocasmia x crocosmifolia* was identified on site (Target note 3 in Appendix C and Figure 3.2, Photograph 2 in Appendix D). This plant is an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 which makes it an offence to plant or otherwise allow this species to grow in the wild.

Bare ground

- 3.1 The courtyard comprised an area of bare ground partly covered by gravel (Photograph 3 in Appendix D).

Dense continuous scrub

- 3.2 Areas of dense continuous scrub were present along the north-western, north-eastern and south-eastern boundaries. These were dominated by bramble *Rubus fruticosus* agg. with occasional nettle *Urtica dioica* (Photograph 4 in Appendix D).

Tall ruderal vegetation

- 3.3 Areas of tall ruderal vegetation were present along the north-western, north-eastern and south-eastern boundaries (Photograph 5 in Appendix D). Species included dominant nettle with occasional lesser burdock *Arctium minus*, creeping thistle *Cirsium arvense*. Rosebay willowherb *Chamaerium angustifolium* was locally dominant.

Hard standing

- 3.4 A small area of concrete hardstanding was located in the western corner of the site.

Building

- 3.7 An open metal barn was present on site. This building is discussed in more detail in the bat building assessment section below.

Species-poor intact hedgerow

- 3.5 A species-poor intact hedgerow comprising hawthorn *Crataegus monogyna* was located along the south-eastern boundary of the site (Photograph 6 in Appendix D).

Scattered scrub

- 3.6 Scattered plants of elder *Sambucus nigra* were recorded along the south-eastern boundary.

Scattered broadleaved tree

- 3.7 A mature oak tree was located along the south-eastern boundary (Target note 3 in Appendix C and Figure 3.2, Photograph 7 in Appendix D).

Protected Species

- 3.8 The habitats present on site provide suitable potential to support a range of protected species including bats, breeding birds, great crested newts and reptiles. These species are considered in greater detail below.

Badgers

- 3.9 The habitats on site have low suitability for badger sett building and negligible suitability for foraging as the grassland on disturbed ground presents a tall sward. No evidence of badgers including sett building activity, foraging signs, stray hairs or latrines was observed within the site boundary.

Bats

- 3.10 The building on site was assessed as having negligible suitability for roosting bats as detailed in the bat building assessment below.
- 3.11 The mature oak tree along the eastern boundary (Target Note 9 in Appendix C and Figure 3.2) was assessed as having moderate suitability for roosting bats as it was of a sufficient age and size to support roosting bats and presented large amounts of ivy covering the stem.
- 3.12 The grassland on disturbed ground and tall ruderal vegetation on site provide foraging opportunities for bats. Further foraging opportunities are provided by two waterbodies located approximately 245 m and 400 m to the south of the site.

Breeding birds

- 3.13 The building, species-poor intact hedgerows, dense continuous scrub, scattered broadleaved tree and shrubs on site have the potential to support breeding birds, although no evidence of nesting birds was recorded.

Hazel dormice

- 3.14 The species poor hedgerow and areas of dense continuous scrub on site were unlikely to support hazel dormice as they were of low quality and were not connected to any areas of woodland in the wider landscape.

Great crested newts

- 3.15 The site presents suitable terrestrial habitat to support great crested newts including grassland on disturbed ground and dense continuous scrub. However, these habitats are not connected to any waterbodies within 500 m of the site boundary.

Reptiles

- 3.16 The site was assessed as having moderate suitability to support common species of reptiles such as slow worm *Anguis fragilis* and common lizard *Lacerta vivipara* due to the presence of grassland on disturbed ground and dense continuous scrub. Several piles of debris and brash piles which could act as refugia for reptiles were recorded within the site boundary (Target notes 1, 4, 6, 7 and 8 in Appendix C and Figure 3.2, Photographs 8, 10 and 11 in Appendix D).

- 3.17 A compost heap located in the western corner of the site could be suitable for grass snake *Natrix natrix* egg-laying should they be present in the surrounding area. (Target note 2 in Appendix C and Figure 3.2, Photograph 9 in Appendix D).

Bat Building Assessment

- 3.18 The building on site comprise an open metal barn with a pitched gable ended metal roof. The south-western and north-eastern elevations are partly closed by metal and wooden sheets. Photographs of the elevations are provided in Appendix D.
- 3.19 The barn is open and drafty and no features suitable for roosting bats or any evidence of bats was recorded during the survey.
- 3.20 The building was therefore assessed as having negligible suitability for roosting bats.

4 EVALUATION

Habitats

- 4.1 The habitats present on site comprise grassland on disturbed ground, bare ground, dense continuous scrub, tall ruderal vegetation, hard standing, species-poor intact hedgerow, scattered scrub and scattered broadleaved tree. These habitats are locally common and support locally common plant species.
- 4.2 A stand of approximately ten plants of montbretia, an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981, was identified on site. The presence of an invasive species reduces the ecological value of the site.
- 4.3 Under current design proposals the mature oak tree and species-poor intact hedgerow along the south-eastern boundary will be retained. However, the majority vegetation on site will be subject to strimming to enable skips to easily be stored on the site and to enable vehicles to easily manoeuvre around the site. In the absence of mitigation, this has the potential to cause the spread of the invasive plant identified on site.

Protected sites

- 4.4 One statutory designated site, Bersted Brooks Local Nature Reserve (LNR), is located within 2 km of the site boundary as
- 4.5 The proposed development site is not known to support any of the species or habitats present in the Bersted Brooks LNR. Consequently, it can be concluded that the proposal will result in no direct loss or damage to habitats or species within this designated site.
- 4.6 The proposed development site falls within the SSSI impact risk zone; however the nature and small scale of the proposed development does not trigger the need for consultation with Natural England and the change of land use of the site for skip storage is not considered to pose any potential detrimental impact to the habitats and species of the Pagham Harbour, Bognor Reef and Felpam SSSIs.

Species

Badgers

- 4.7 Badgers receive full protection under the Protection of Badgers Act 1992.
- 4.8 The habitats on site have low suitability for badger sett building and negligible suitability for foraging.
- 4.9 No evidence of badgers including sett building activity, foraging signs, stray hairs or latrines was observed within the site boundary. Therefore, the proposed development is unlikely to impact badgers.

Bats

- 4.10 All species of bat present in the UK receive full protection under The Conservation of Habitats and Species Regulations 2010, and the Wildlife and Countryside Act 1981 (as amended).
- 4.11 The building on site was assessed as having negligible suitability for roosting bats and the mature assessed as having moderate suitability for roosting bats will be retained.
- 4.12 The grassland on disturbed ground and tall ruderal vegetation on site provide foraging opportunities for bats. The majority of the vegetation on site will be subject to strimming to enable skips to easily be stored on the site and to enable vehicles to easily manoeuvre around the site. This will have a negligible impact on foraging bats.

Breeding birds

- 4.13 Breeding birds are protected by the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to intentionally kill, injure or take the birds or their eggs, or to intentionally destroy or disturb a nest, when it is in use or being built.
- 4.14 The building, species-poor intact hedgerows, dense continuous scrub, scattered broadleaved tree and shrubs on site have the potential to support breeding birds, although no evidence of nesting birds was recorded.
- 4.15 The building and scattered broadleaved tree will be retained. However, the development proposals comprise the strimming of the majority of the vegetation on site including dense continuous scrub and scattered shrubs. Therefore, in the absence of mitigation, the proposed works have the potential to impact breeding birds.

Hazel dormice

- 4.16 Hazel dormice and their habitat are fully protected by both the Wildlife and Countryside Act 1981 and the Habitats Regulations. The dormouse is a European Protected Species and a priority species under the UK Biodiversity Action Plan, and has been adopted as a species of Principal Importance in England under Section 41 of the NERC Act (2006).
- 4.17 The species poor hedgerow and areas of dense continuous scrub on site were unlikely to support hazel dormice as they were of low quality and were not connected to any areas of woodland in the wider landscape. Therefore, it is highly unlikely that the proposed development will impact hazel dormice.

Great crested newt

- 4.18 Great crested newts are fully protected by both the Wildlife and Countryside Act 1981 and the Habitats Regulations, the species is a European Protected Species and a priority species under the UK Biodiversity Action Plan, and has been adopted as a species of Principal Importance in England under Section 41 of the NERC Act (2006).
- 4.19 The site presents suitable terrestrial habitat to support great crested newts including grassland on disturbed ground and dense continuous scrub. However, these habitats are not connected to any waterbodies within 500 m of the site boundary.

- 4.20 Under current design proposals the grassland on disturbed ground and dense continuous scrub will be subject to strimming. In the absence of mitigation, this will entail a low risk of harming individual great crested newts due to the isolation of the site from waterbodies.

Reptiles

- 4.21 Common species of reptile including common lizard, grass snake, slow worm and adder are protected under the Wildlife and Countryside Act 1981 (as amended) meaning they are protected against killing or injuring.
- 4.22 The site was assessed as having moderate suitability to support common species of reptiles such as slow worm and common lizard due to the presence of grassland on disturbed ground and dense continuous scrub. Several piles of debris and brash piles which could act as refugia for reptiles were recorded within the site boundary. A compost heap located in the western corner of the site could be suitable for grass snake egg-laying should they be present in the surrounding area.
- 4.23 The majority vegetation on site will be subject to strimming to enable skips to easily be stored on the site and to enable vehicles to easily manoeuvre around the site. This will result in the permanent loss of the habitats on site and may have a major impact on the local reptile population in the absence of mitigation.

5 CONCLUSIONS

- 5.1 The proposed development site is considered to have low ecological value within a local context as it comprises habitats locally common and support locally common plant species.
- 5.2 The biodiversity value of the total site area is largely attributed to the following factors:
- the potential of habitats on site to support protected species including bats, badgers, breeding birds, great crested newts and reptiles;
 - the presence of the Schedule 9 invasive species montbretia; and
 - the presence of a statutory designated sites within 2 km of the site boundary.
- 5.3 The proposed development works will comprise stumping of the large majority of the vegetation on site to enable skips to easily be stored on the site and to enable vehicles to easily manoeuvre around the site. This will result in the permanent loss of areas of grassland on disturbed land, tall ruderals and dense continuous scrub which may have a major impact on the local reptile population in the absence of mitigation.
- 5.4 Recommendations are outlined in Section 6 of this report to ensure that any potential impacts to protected species are adequately addressed during the planning stage, development and post-development stage.

6 RECOMMENDATIONS

Badgers

- 6.1 No evidence of badgers was observed during the site survey and it is considered that further surveys for badgers are not required at this stage.
- 6.2 However, as badgers are a mobile species and sett building can commence at any time, if more than 12 months elapse from the date of PEA survey, undertaken on 1st August 2017, and the works on site have not commenced, then an updated survey for badger should be undertaken by a suitably qualified ecologist

Breeding birds

- 6.3 The strimming of dense continuous scrub and scattered shrubs should be undertaken during the period October to February (inclusive) to avoid the bird-nesting season. If this is not possible then an on-site check for nesting birds should be undertaken by a suitably experienced ecologist within 24 hours of works commencing.

Reptiles

- 6.4 The site was assessed as having moderate suitability to support common species of reptiles such as slow worm and common lizard due to the presence of grassland on disturbed ground, tall ruderals and dense continuous scrub and suitable refugia for reptiles.
- 6.5 Further surveys are therefore recommended for reptiles comprising a suite of seven reptile presence / absence surveys undertaken in suitable weather conditions and times of day between the 1st March and the 31st October (optimally surveys should be undertaken in April, May and September).
- 6.6 Should reptiles be recorded, a full reptile mitigation strategy will be required to ensure the development does not detrimentally impact the favourable conservation status of local reptile populations.
- 6.7 Grass snakes can use compost heaps between June and July to lay eggs that usually hatch after two months. Therefore, it is recommended that the compost heap on site is not dismantled during the period May to October (inclusive) to prevent any damage to grass snake eggs or juveniles that may be present.

Great crested newts

- 6.8 No aquatic habitat was recorded within the site and no waterbodies with connectivity to site were recorded within 500 m of the site. However, as terrestrial habitat with potential to support amphibians was recorded within the site a precautionary approach to vegetation removal is recommended. This can only be undertaken once the recommended reptile surveys have been carried out and in accordance to the reptile mitigation strategy, should one be required following on the reptile survey results.
- 6.9 Where vegetation is removed no ground cutting works are to be undertaken between November and March to avoid the amphibian hibernation period.

- 6.10 Vegetation clearance works are to be undertaken using hand tools including brush cutters, chainsaws and all vegetation is to be taken out of the working area and disposed of offsite or used in hibernacula creation on site.
- 6.11 Work should start in the south-western part of the site, progressively moving towards the north-eastern part of the site. This method of site clearance will encourage any amphibians that may be present to move away from the development area towards other areas of suitable habitat in the adjacent landscape comprising of agricultural land.
- 6.12 Where any piles of debris, cut vegetation, logs, rubble, compost heaps etc. are encountered, these should be left in situ during the hibernation period November to March and if these need to be disassembled this should be undertaken by hand by a suitably qualified ecologist between March and October. Any reptiles or amphibians found will be recovered and moved to a safe area away from the development area by a suitably qualified ecologist.
- 6.13 In the unlikely event that a great crested newt is found, then all work should cease immediately and the advice of a suitably qualified ecologist, Arbeco Ltd or Natural England should be sought.

Plant species

- 6.14 A stand of approximately ten plants of montbretia, an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981, was identified on site. This act makes it an offence to plant or otherwise allow this species to grow in the wild.
- 6.15 It is recommended that any plants of montbretia are controlled prior to commencement of works by uprooting any corm or cormlets and repeating such operations on any regrowth. The most effective time to remove montbretia is before full flowering occurs in summer.
- 6.16 As montbretia can regenerate from corms and small fragments of rhizome, all plant material should be handled and disposed of in a way which does not result in the potential for further spread.

Biodiversity Enhancements

- 6.17 Under the National Planning Policy Guidance document, it is a requirement for the planning system to minimise impacts on and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. In order to conserve and enhance the natural environment the following provisions could be included.
- It is recommended that any external lighting on the site is kept to a reasonable minimum and should include downward facing lights so as not to disrupt foraging and commuting bats.
 - Deadwood habitat piles could be included within appropriate locations or compost heaps could be created where possible from the arisings of garden waste. This will provide additional habitats for a range of species including reptiles, amphibians, invertebrates and small mammals.

REFERENCES

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

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Stace, C (2010) *New Flora of the British Isles* 3rd Edition, Cambridge University Press, Cambridge.

FIGURES

Figure 1.1 Location of site

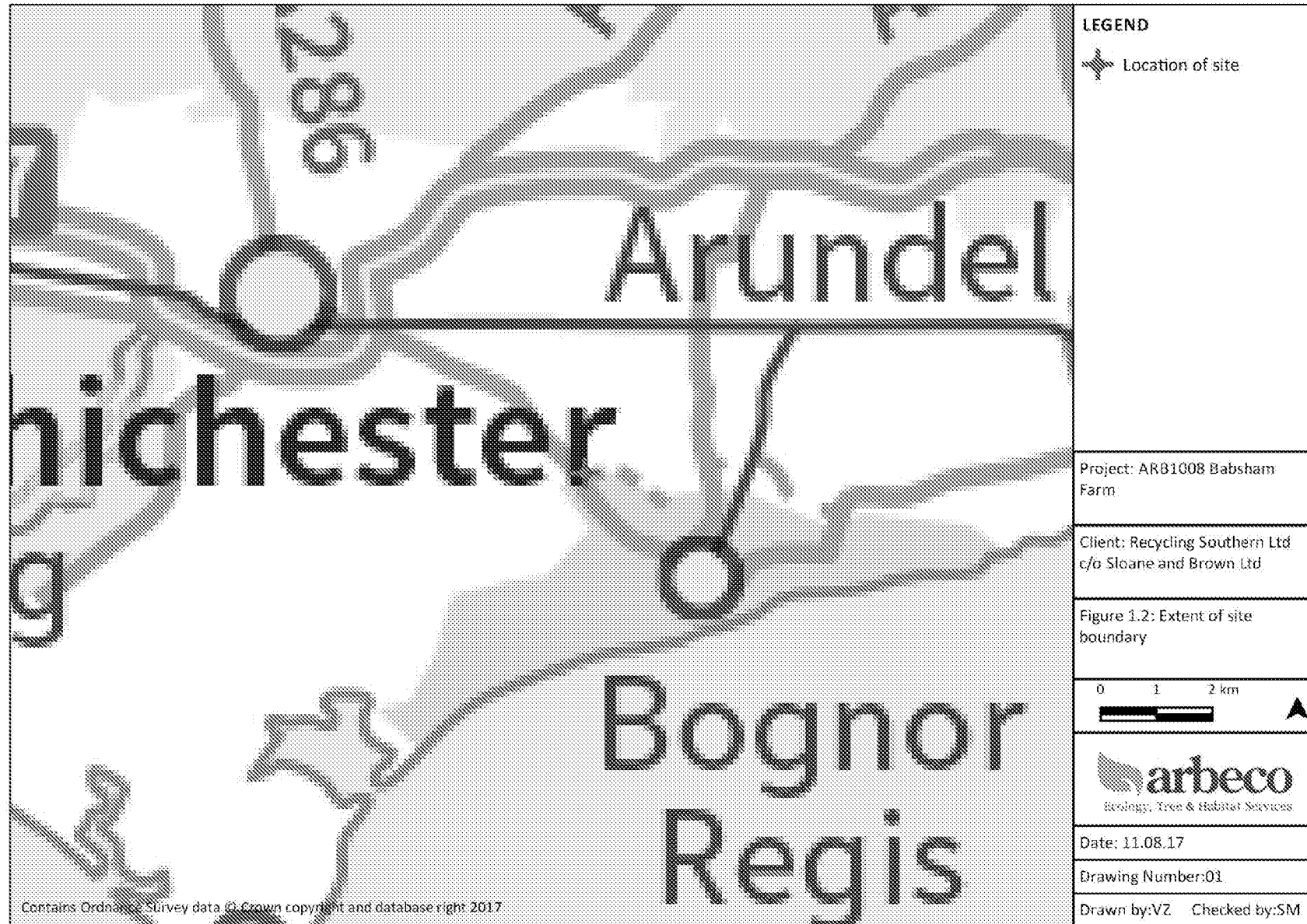
Figure 1.2 Extent of site boundary

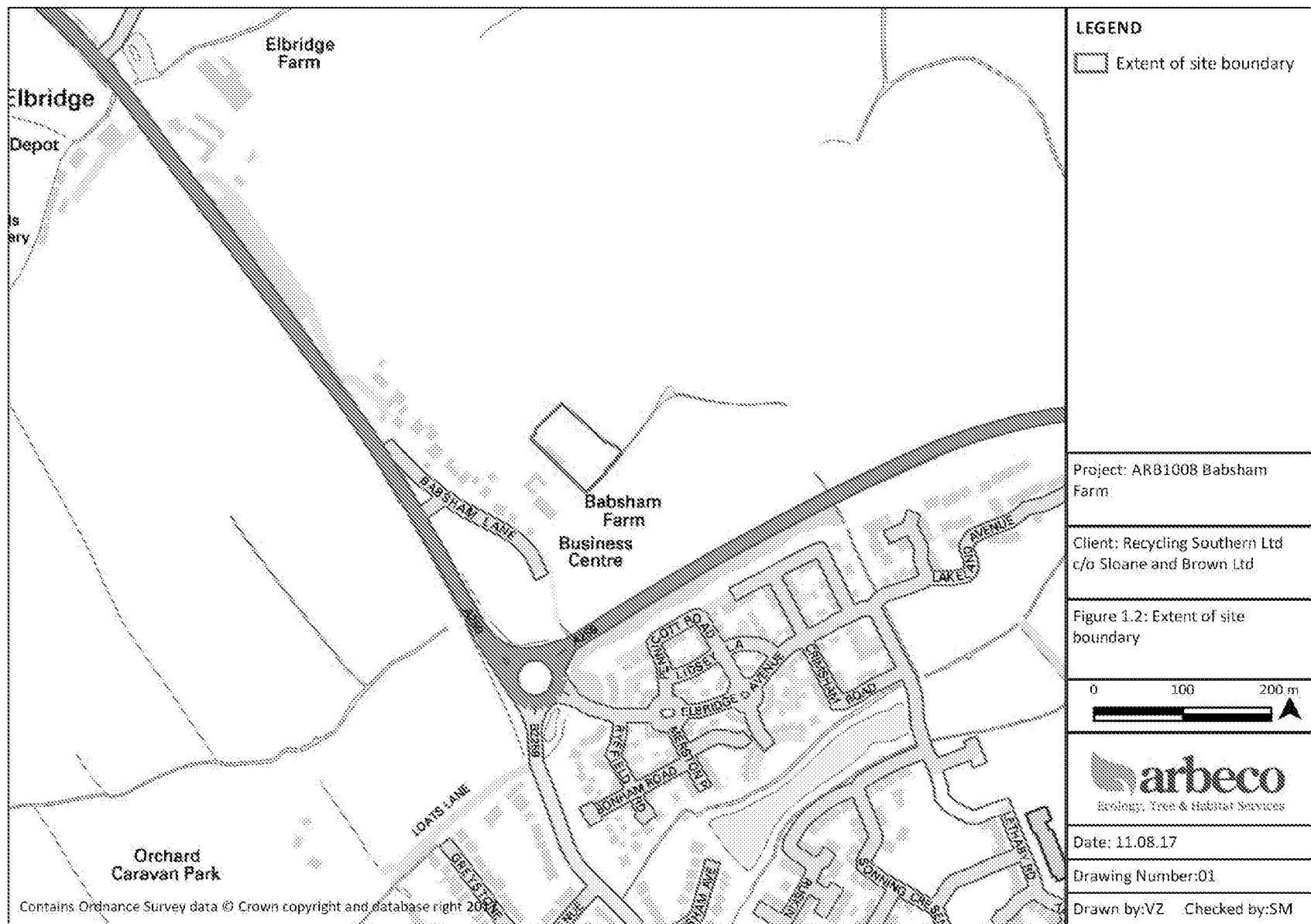
Figure 1.3 Building subject to survey

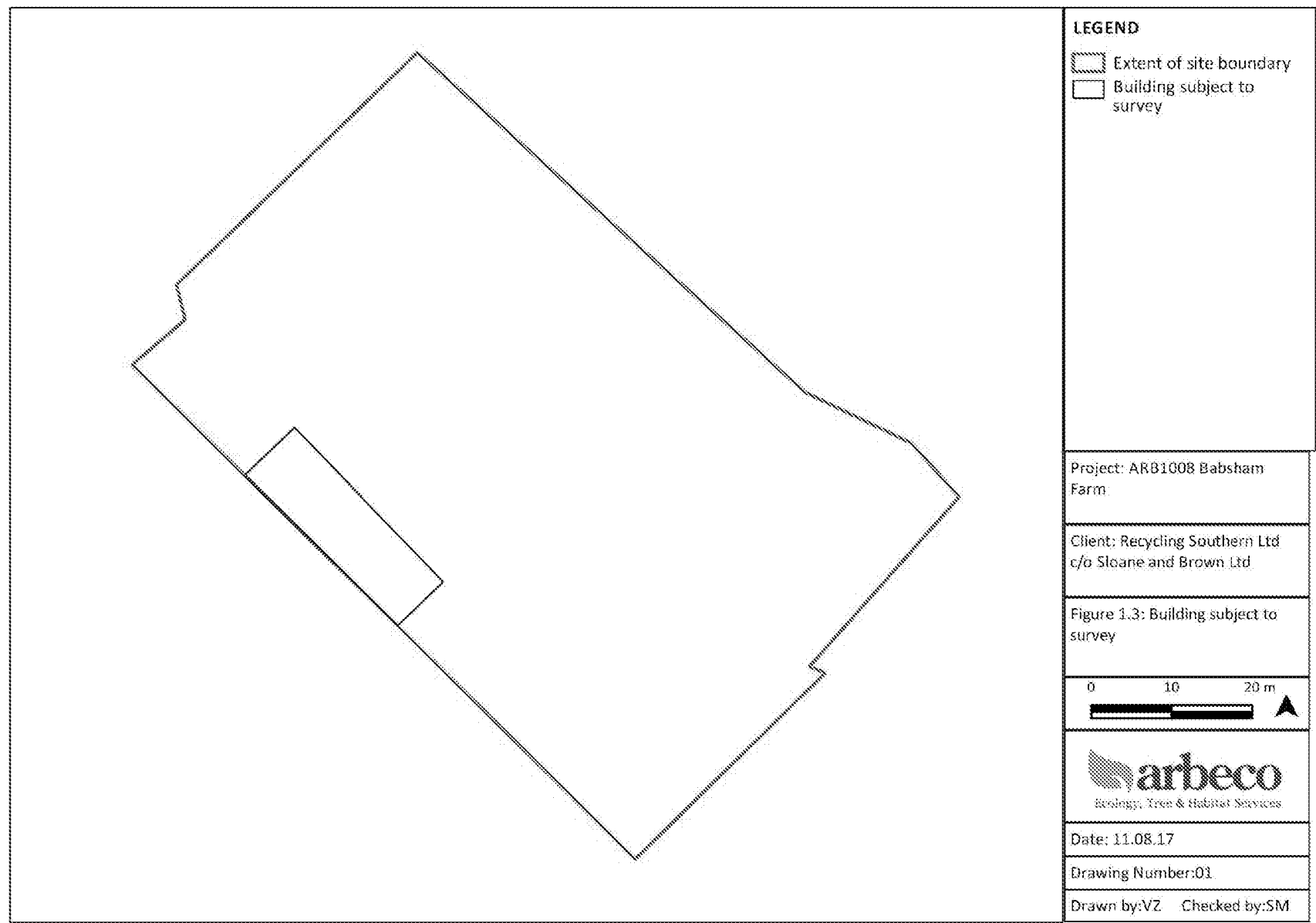
Figure 3.1 Waterbodies within 500 m of site boundary

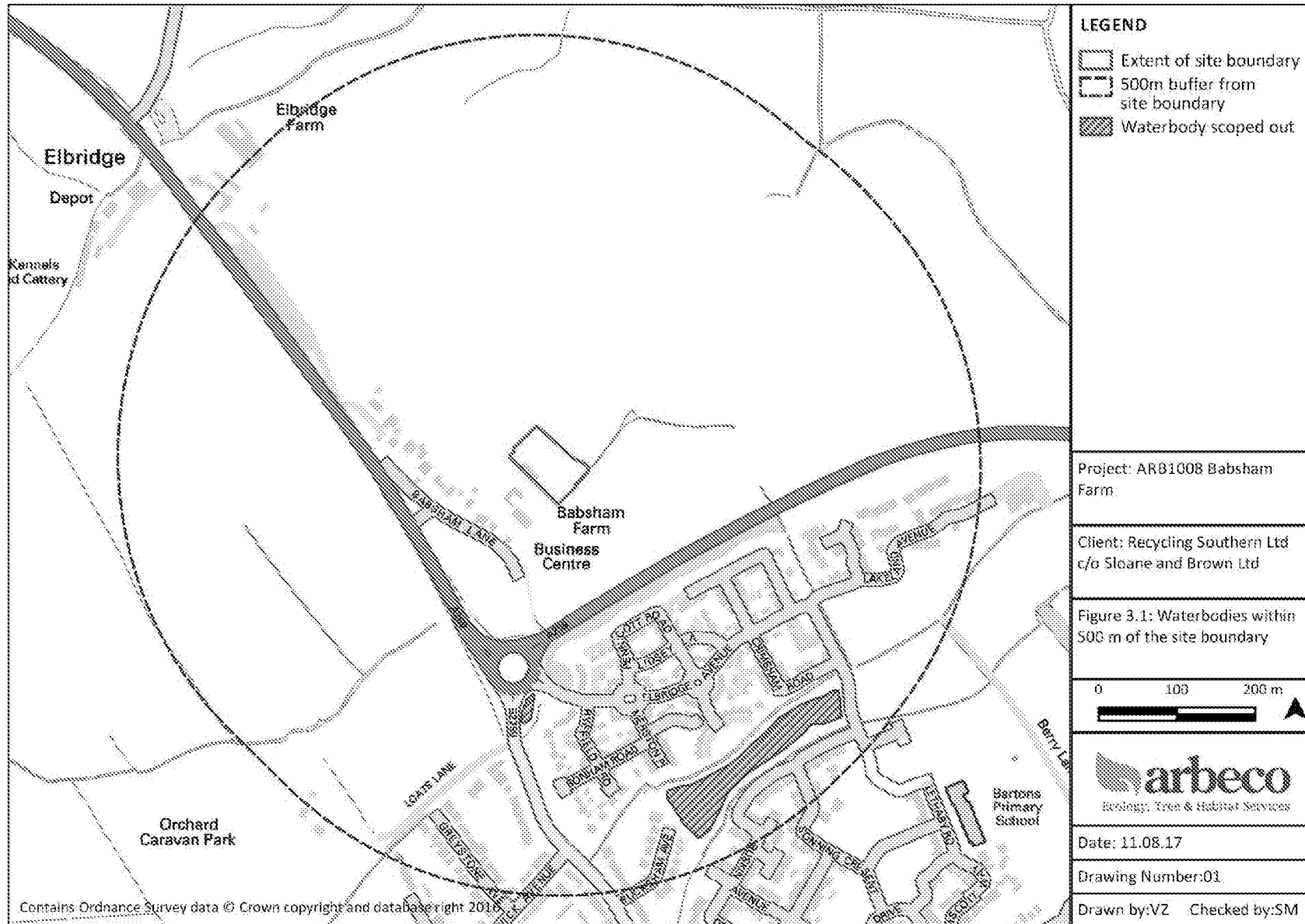
Figure 3.2 Phase 1 habitat survey

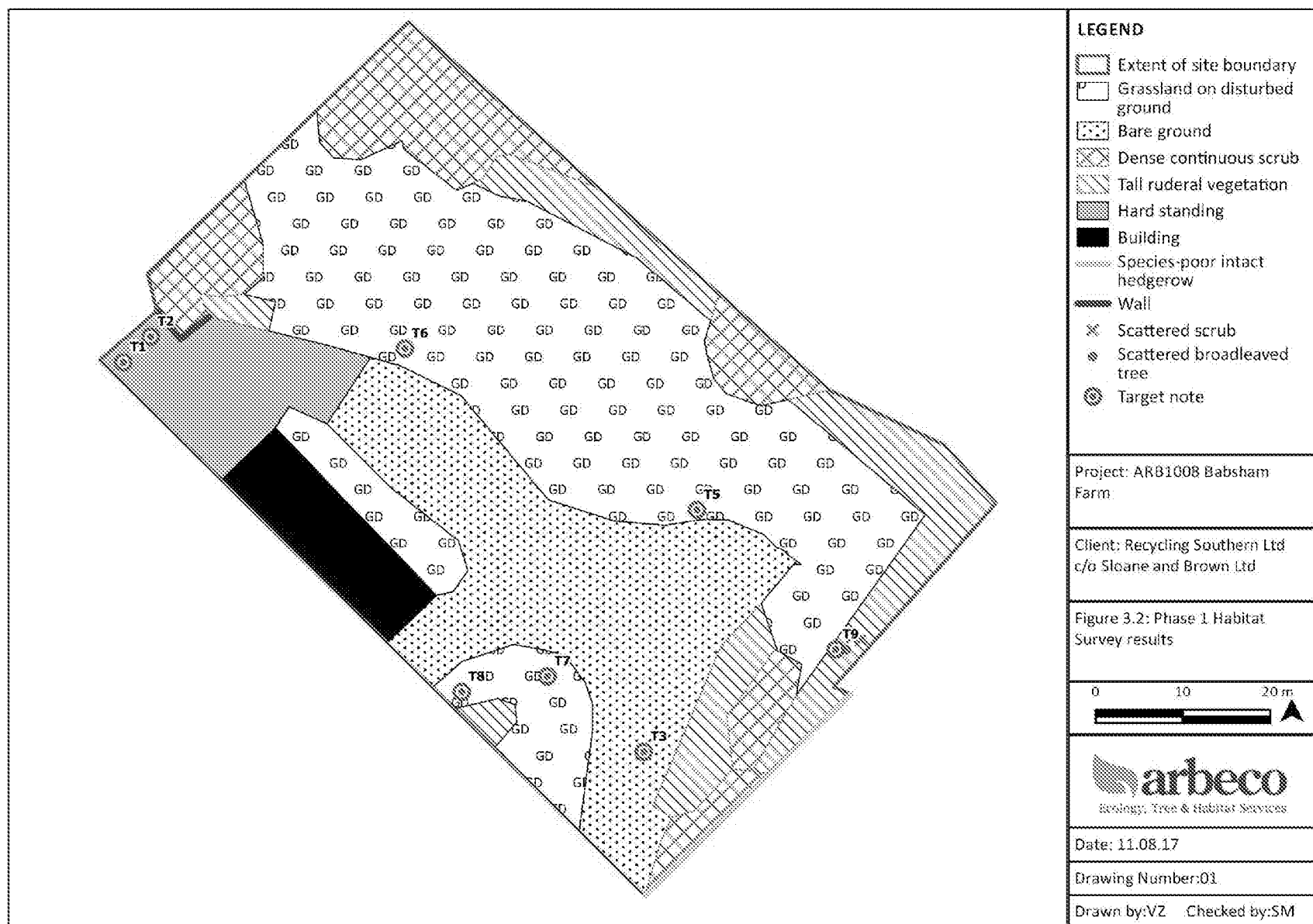
Figure 3.3 Bat building assessment results











APPENDIX A Wildlife Legislation

The Wildlife and Countryside Act 1981 (as amended)

Schedule 1

Applies to all wild birds where it is an offence:

- to take, damage or destroy a nest whilst it is being built or in use
- to kill, injure or take any wild bird (subject to certain exceptions)
- to take or destroy the egg of any wild bird.

It is also an offence to disturb any wild bird listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended)

- while it is nest building
- at a nest containing eggs or young
- to disturb the dependant young of any such bird.

Schedule 5

For animals fully protected under Schedule 5 which includes, the hazel dormouse, great crested newt, all bats, water voles, otters, smooth snake, sand lizard and natterjack toad. It is an offence:

- to intentionally kill or injure or take these species
- to intentionally or recklessly damage or destroy or obstruct access to any structure or place which a species uses for shelter or protection, at any time even if the animal is not present.
- to intentionally or recklessly disturb whilst it is occupying a place which it uses for shelter or protection.

Adder, grass snake, common lizard and slow worm are protected from being killed or injured and the white-clawed crayfish is protected from being taken.

Schedule 8

Specific species of plants listed in Schedule 8 are protected. It is an offence: to intentionally pick, uproot or destroy a wild plant listed in Schedule 8.

Schedule 9

Invasive non-native species are listed under Schedule 9. It is an offence:

- to plant or otherwise cause to grow in the wild.
- If soils are contaminated by invasive non native plant species it becomes classified as
- 'controlled waste' under the Environmental Protection Act 1990 (England, Wales & Scotland),
- and must be disposed of accordingly.

The Conservation of Habitat and Species Regulations 2010

Schedule 2 applies to all European Protected Species (EPS) which included all bat species, great crested newts, dormice, otters, sand lizards, smooth snake and natterjack toad. The protection afforded is overlapping but separate from the Wildlife and Countryside Act 1981 (as amended)

The Protection of Badgers Act 1992

Under this Act it is an offence to intentionally or recklessly interfere with a badger set by:

- a) damaging a sett or any part of one

- b) destroying a sett
- c) obstructing access to any entrance of a sett
- d) disturbing a badger when occupying a sett

Where interference with a badger sett cannot be avoided during development, a licence from Natural England should be applied for.

APPENDIX B: Legislation relating to bats

Bats and the places they use for shelter or protection i.e. roosts, receive European protection under The Conservation of Habitats and Species Regulations 2010, as amended (Habitats Regulations 2010, as amended). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2010 (as amended), states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2010 (as amended) for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* (rather than deliberately) kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, *or obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

Several bat species are considered to be Species of Principal Importance for Nature Conservation in England.

The reader should refer to the original legislation for the definitive interpretation.

APPENDIX C: Target Notes

Target notes of important ecological features noted during the field survey and mapped in Figure 3.2.

Target Note	Description
1	Brash pile suitable to act as refugia for reptiles
2	Compost heap suitable for grass snake <i>Natrix natrix</i> egg laying
3	Stand of montbretia <i>Crocasmia x crocosmifolia</i>
4	Pile of debris suitable to act as refugia for reptiles
5	Soil mounds
6	Pile of debris suitable to act as refugia for reptiles
7	Pile of debris suitable to act as refugia for reptiles
8	Pile of debris suitable to act as refugia for reptiles
9	Tree with moderate suitability for roosting bats

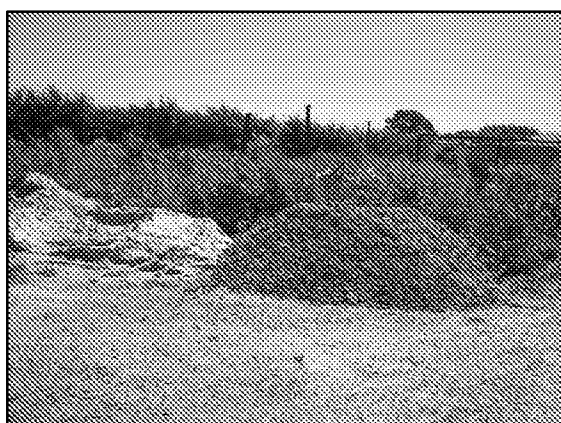
APPENDIX D: Site photographs



Photograph 1: Grassland on previously disturbed ground



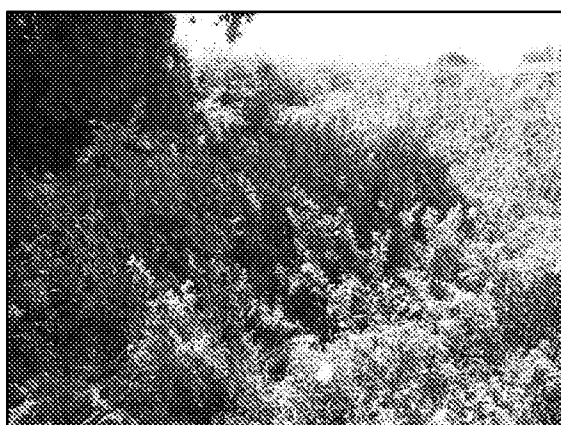
Photograph 2: Stand of montbretia *Crocosmia x crocosmifolia* (Target note 2 in Figure 3.2)



Photograph 3: Bare ground with gravel and soil mounds (Target note 5 in Figure 3.2)



Photograph 4: Dense continuous scrub along the north-western boundary.



Photograph 5: Tall ruderal vegetation



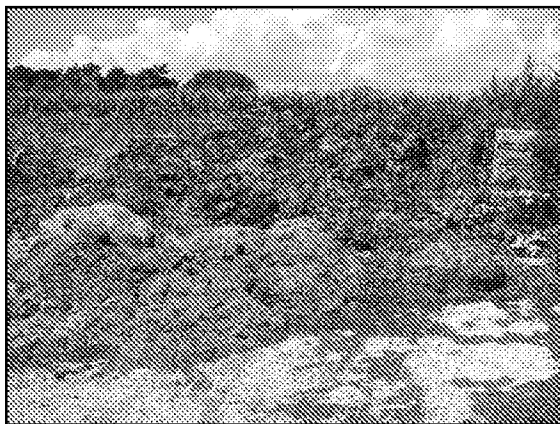
Photograph 6: Species-poor intact hedgerow along the south-western boundary.



Photograph 7: Scattered broadleaved tree with moderate suitability for bat roosting (Target note 9 in Figure 3.2).



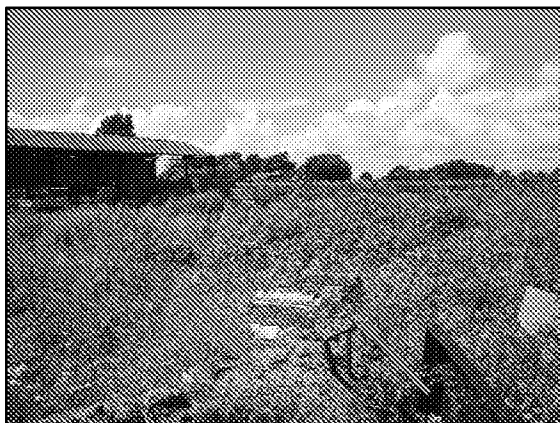
Photograph 8: Brush pile suitable to act as reptile refugia roosting (Target note 1 in Figure 3.2).



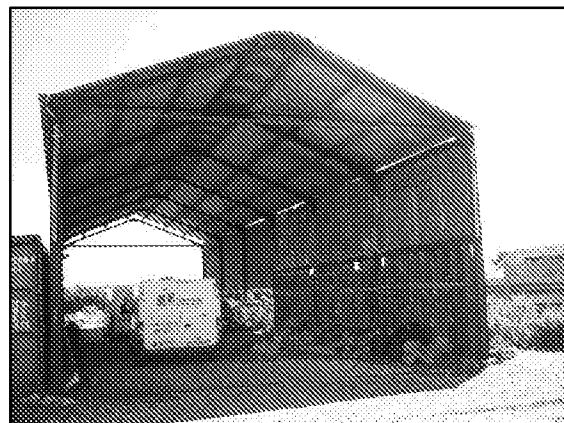
Photograph 9: Compost heap suitable for grass snake egg-laying roosting (Target note 2 in Figure 3.2).



Photograph 10: Pile of debris suitable to act as refugia for reptiles (Target note 6 in Figure 3.2).



Photograph 11: Piles of debris suitable to act as refugia for reptiles (Target note 5 in Figure 3.2).



Photograph 12: Open metal barn, south-western elevation