



Preliminary Ecological Appraisal and Bat Building Assessment

Land to the rear of the Inglenook Hotel

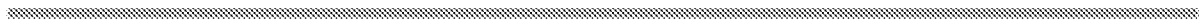
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Nyetimber

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9th April 2018

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Report date:	23/03/2018

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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 ADM Architects to carry out a Preliminary Ecological Appraisal (PEA) and Bat Building Assessment (BBA) at the land behind the Inglenook Hotel, 255 Pagham Road, Nyetimber, Bognor Regis, West Sussex, PO21 3QB to help inform the planning proposal for the construction of nine dwellings on the site.
- 0.2 There are two statutory designated sites for nature conservation within 2km of the site:
 - Bognor Reef Sites of Special Scientific Interest (SSSI)
 - Pagham Harbour designated as a Special Protection Area (SPA), Ramsar, SSSI, Marine Conservation Zone (MCZ) and Local Nature Reserve (LNR).
- 0.3 The habitats within the site boundary comprised improved grassland, dense-continuous scrub, hardstanding, bare ground, a building, an intact species-poor hedgerow, scattered broadleaved and coniferous trees, and ornamental planting.
- 0.4 The habitats had the potential to support badgers *Meles meles*, foraging and commuting bats, hazel dormice *Muscardinus avellanarius*, breeding birds, great crested newts *Triturus cristatus* and reptiles.
- 0.5 The results of the BBA concluded that the shed/stable block had negligible suitability for roosting bats, due to the lack of suitable features to support roosting bats.
- 0.6 No further surveys are considered necessary for the following species due to the lack of suitable habitats or lack of impacts: bats, hazel dormice and great crested newts.
- 0.7 Further surveys are recommended for reptiles, as detailed in Section 6 of this report.
- 0.8 Vegetation clearance should be timed to avoid the breeding bird season. If this is not possible then a check for nesting birds should be undertaken immediately prior to the commencement of works by a suitably experienced ecologist and any nests which are in use or in the process of being built will need to be identified and subsequently left *in situ* until the chicks have fledged.
- 0.9 As no evidence of badgers was observed within the site boundary, no further surveys for badgers are considered necessary. 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, and the works on site have not commenced, then an update survey for badgers should be undertaken by a suitably qualified ecologist.
- 0.10 The proposed development may result in increased recreational disturbance on the Pagham Harbour SPA/Ramsar, SSSI and LNR. This development, in combination with other proposed and approved residential developments within 5 km of the designated site may have a negative impact on the site. It is recommended that Natural England is consulted to ascertain whether a Habitat Regulations Assessment will be required. In addition, Policy ENV DM2 of the Arun Local Plan 2011-2031 outlines the requirement for all residential development likely to have an impact on Pagham Harbour to provide contributions to the access management of the harbour and the creation of, or contribution towards local green space.
- 0.11 Biodiversity enhancements to include bird and bat boxes, a native planting scheme incorporating species-rich hedgerows and deadwood habitat piles should be incorporated into the development. Section 6 provides detail on potential enhancements.

1 INTRODUCTION

- 1.1 Arbeco Ltd. were commissioned by ADM Architects to carry out a Preliminary Ecological Appraisal (PEA) and Bat Building Assessment (BBA) at the land to the rear of the Inglenook Hotel, 255 Pagham Road, Nyetimber, Bognor Regis, West Sussex, PO21 3QB to help inform the proposed construction of nine dwellings with associated landscaping.
- 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 development of the site.
- 1.3 The BBA of the site involved carrying out a detailed assessment to assess the likelihood and potential of the building on site to support 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 and reptiles, are afforded protection under the Conservation of Habitats and Species Regulations 2017 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 *Meles meles* 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 to the rear off the Inglenook Hotel, 255 Pagham Road, Nyetimber, towards the western outskirts of the seaside town of Bognor Regis in West Sussex (Ordnance Survey Grid Reference for the centre of the site: SZ89199 98698). The site is approximately 0.6 ha in area and comprises a horse paddock field with a wooden shed/stable block in the south-east corner, a small raised and overgrown area of dense continuous scrub along the western border and an access track.
- 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 by residential properties with associated gardens, to the west by a field with further residential properties beyond and to the south by a development site, located to the rear of 251 Pagham Road. The land to the rear of Pagham Road had been subject to extensive vegetation clearance and tree felling and was undergoing groundworks in preparation for the construction of 40 residential dwellings at the time of the survey. The site is bordered to the east by the Inglenook Hotel and Restaurant property which includes gardens, a vegetable plot, an orchard, a car parking area and a small number of caravans used as guest accommodation.
- 1.13 Due to the extensive vegetation clearance and tree felling undertaken in the land to the rear of 251 Pagham Road, to the south of the site, and the presence of residential estates to the north, west and south, the site has limited connectivity to habitats in the wider landscape including reedbed, coastal saltmarsh, intertidal mudflat, coastal vegetated shingle, saline lagoon, coastal and floodplain grazing marsh and deciduous woodland. These are all habitats of Principal Importance in England under Section 41 of the NERC Act (2006) located within the Pagham Harbour Site of Special Scientific Interest (SSSI) and Bognor Reef SSSI.

Development Proposals

- 1.14 The development proposals comprise the construction of nine residential properties with associated landscaping. The shed/stable in the south-east corner of the site will need to be demolished, and the areas of scrub with scattered trees within the site boundary will need to be cleared in order to facilitate the development.

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 2017 (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.
- 2.2 Information regarding non-statutory designated sites, such as Local Wildlife Sites (LWS), within a 2 km radius of the site was obtained by the Sussex Biological Records Centre (SxBRC).
- 2.3 Records of protected and notable species and statutory designated sites within 2 km of the proposal site were requested from the local biological records centre, Sussex Biodiversity Record Centre.
- 2.4 Records were screened for relevance and age with only those from the last 10 years and of species that could occur on site considered further.
- 2.5 Aerial photos of the site (Google, 2018) 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

- 2.6 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).
- 2.7 A PEA of the site was carried out by a suitably qualified ecologist, Viola Zanetta BSc (Hons) MSc Grad CIEEM and Jessica Lewis BSc (Hons) MRes on the 6th March 2018 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.
- 2.8 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.
- 2.9 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.

- 2.10 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).
- 2.11 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.

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 roosting bats 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 for 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 6th March 2018 by qualified ecologists, Viola Zanetta BSc (Hons) MSc Grad CIEEM and Jessica Lewis BSc (Hons) MRes. An external search around the perimeter of the stable/ shed building was conducted and any possible access points i.e. gaps and crevices were noted and surveyed with the high powered torch, ladder and endoscope as required.
- 2.17 A systematic internal inspection of the stable/ shed 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 March 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, particularly during day time assessment surveys.
- 2.23 Internal access to one of the four sections of the stable/shed block on site was not available at the time of the survey. However, this section was connected to another section of the block through a large gap in the top part of wooden partition between the sections which allowed to observe the roof. Therefore, this is not considered to be a constraint to the assessment of the suitability of this building to support roosting bats.

3 RESULTS

Designated sites

- 3.1 Two statutory designated sites are located within 2 km of the proposed site including Bognor Reef Sites of Special Scientific Interest (SSSI) and Pagham Harbour designated as a SSSI, Special Protection Area (SPA), Local Nature Reserve (LNR), Marine Conservation Zone (MCZ) and Ramsar site as shown in Table 3.1 below.

Table 3.1 Statutory designated sites within 2 km of site boundary

Name of site	Distance and direction from site	Reason for designation
Bognor Reef SSSI	1.1km south from the site	Bognor Reef SSSI comprises an extensive area of vegetated shingle, a nationally scarce habitat type, and a small area of old sand dune supporting a number of plants and invertebrates including the nationally rare chiding pink <i>Petrorhagia nanteuilii</i> , listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended).
Pagham Harbour SSSI, SPA, LNR, MCZ and Ramsar site	1.35km to the south-west	Pagham Harbour SSSI is an estuarine basin that comprises an extensive central area of saltmarsh and intertidal mud-flats, surrounded by lagoons, shingle, open water, reed swamp and wet permanent grassland. The site supports nationally important communities of plants and invertebrates. Pagham Harbour is an overwintering area for over 120 species of bird. The site was designated as a SPA as it supports populations of European importance of the following species: Little tern <i>Sterna albifrons</i>, ruff <i>Philomachus pugnax</i> and pintail <i>Anas acuta</i>. This site was designated as a Ramsar as it supports internationally important numbers of dark-bellied brent goose <i>Branta bernicla bernicla</i> and black-tailed godwit <i>Limosa limosa islandica</i>. Further to this the following species occur at levels of national importance: little egret <i>Egretta garzetta</i>, whimbrel <i>Numenius phaeopus</i> and common greenshank <i>Tringa nebularia</i>.

- 3.2 There are no non-statutory sites located within 2 km of the site boundary.
- 3.3 Seven habitats of Principal Importance in England under Section 41 of the NERC Act (2006) are located within 2 km of the site boundary including reedbed, coastal saltmarsh, intertidal mudflat, coastal vegetated shingle, saline lagoon, coastal and floodplain

grazing marsh and deciduous woodland. These are all located within the Pagham Harbour SSSI and Bognor Reef SSSI.

- 3.4 Five waterbodies are located within 500 m of site boundary as shown in Figure 3.1 with the closest of these located approximately 270 m to the south-east of the site. Two of the waterbodies are located to the north of the site beyond residential estates which are considered to act as a barrier to amphibian dispersal. The remaining three waterbodies are located to the south-east of the site beyond Pagham Road and, although this is a minor road, the habitats on site are isolated from these waterbodies by the housing development site to the south, cleared of vegetation and undergoing groundworks at the time of the survey, and further residential properties to the east and south-east.

Desk Study

- 3.5 Records of protected and notable species within 2 km of the proposed site have been obtained from the local biodiversity record centre, Sussex Biodiversity Record Centre (SxBRC) and screened for age and relevance.

Badgers

- 3.6 Records of badgers have not been provided by the Sussex Biological Records Centre (SxBRC) due to the sensitive nature of these records.

Bats

- 3.7 Four species of bat have been recorded within 2 km of the site within the last ten years including common pipistrelle *Pipistrellus pipistrellus* and brown long-eared *Plecotus auratus*. An additional 11 records exist for unidentified bat species or pipistrelle species *Pipistrellus sp.* within the last ten years.
- 3.8 Two records exist for brown long-eared bats within the last ten years. These include a record of a maternity roost in a residential property located approximately 0.7 km to the south-west of the site and a record of an unspecified roost located approximately 0.9 km to the south-west of the site. A single record exists for common pipistrelle within 2 km of the site within the last ten years. This is of a feeding individual recorded approximately 1.5 km east of the site.

Breeding birds

- 3.9 A total of 273 bird species have been recorded within 2 km of the site within the last ten years. The majority of the species are typical of wetland and coastal habitats and are unlikely to occur on the site due to the lack of suitable habitat.
- 3.10 Forty-seven of the 273 bird species recorded are listed on Annex 1 of the Birds directive 2009/147/EC; 41 species are priority species under the Natural Environment and Rural Communities Act (2006) Section 41; and 62 species are listed in the Wildlife and Countryside Act 1981 (as amended) Schedule 1, Part 1.

- 3.11 Six species of bird listed on the IUCN Red List of Threatened Species have been recorded within 2 km of the site in the last ten years. These include; the velvet scoter *Melanitta fusca*, listed as Endangered, the long-tailed duck *Clangula hyemalis*, listed as Vulnerable, and four species listed as Near Threatened; the red kite *Milvus milvus*, curlew *Numenius arquata*, black-tailed godwit *Limosa limosa* and Dartford warbler *Sylvia undata*.
- 3.12 There are records for 59 species listed on the Birds of Conservation Concern for UK as amber and records for 100 species listed on the Birds of Conservation Concern for UK as red.
- 3.13 Eleven of the species recorded within 2 km of the site within the last ten years are invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). These include mandarin duck *Aix galericulata*, Egyptian goose *Alopochen aegyptiacus*, bar-headed goose *Anser indicus*, canada goose *Branta canadensis*, barnacle goose *Branta leucopsis*, Eurasian eagle owl *Bubo bubo*, black swan *Cygnus atratus*, red-crested pochard *Netta rufina*, ruddy duck *Oxyura jamaicensis*, ring-necked parakeet *Psittacula krameria* and ruddy shelduck *Tadorna ferruginea*

Hazel dormice

- 3.14 No records exist for hazel dormice *Muscardinus avellanarius* within 2 km of the site in the last ten years.

Great crested newts

- 3.15 No records exist for great crested newts *Triturus cristatus* have been recorded within 2 km of the site within the last ten years.

Reptiles

- 3.16 Four species of reptile have been recorded within 2 km of the site within the last ten years. These include slow-worms *Anguis fragilis*, grass snakes *Natrix Helvetica helvetica*, adders *Vipera berus* and common lizards *Zootoca vivipara*.
- 3.17 Ten records exist for slow-worms and are all located to the south-east of the site within the area of Aldwick.
- 3.18 A single record for both grass snake and adders was recorded approximately 1.8 km south-west of the site.
- 3.19 Two records exist for common lizards *Zootoca vivipara*. These are both located approximately 1.7 km south west of the site beyond the area of Nyetimber.

Invertebrates

- 3.20 Twelve invertebrate species of conservation concern have been recorded from within 2 km of the site within the last ten years. These include magnificent salt beetle *Bledius (Bledius) spectabilis*; stag beetle *Lucanus cervus*; Roesel's bush-cricket *Metrioptera roeselii*; wasp spider *Argiope bruennichi*; box bug *Gonocerus acuteangulatus*; banded

general fly *Stratiomys potamida*; the hornet mimic hoverfly *Volucella zonaria*; mimic hoverfly *Volucella inanis*; small heath butterfly *Coenonympha pamphilus*; knot grass moth *Acrionicta rumicis*; toadflax brocade moth *Calophasia lunula*; Brussels lace moth *Cleorodes lichenaria*; striped lychnis moth *Cucullia lychnitis*; shaded broad-bar moth *Scotopteryx chenopodiata* and the cinnabar moth *Tyria jacobaeae*.

- 3.21 These include a number of Priority species listed under Section 41 (S41) of the 2006 Natural Environment and Rural Communities (NERC) Act, species listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), Sussex Rare species and species listed on the IUCN Red list of Endangered species.

Plants

- 3.22 Thirty-four plant species of conservation concern have been recorded within 2 km of the site within the last ten years. These include species listed as Near Threatened, Vulnerable and Critical on the IUCN Red list of Endangered species, Priority species under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006), species listed as UK BAP Priority species, and Nationally Scarce and Sussex Rare species.
- 3.23 Three of the species recorded are listed under Section 8 of the Wildlife and Countryside Act 1981 (as amended). These include; Jersey Cudweed *Gnaphalium luteoalbum*, bluebell *Hyacinthoides non-scripta*, and the childing pink *Petrorhagia nanteuillii*.

Other species

- 3.1 Records exist for western European Hedgehog *Erinaceus europaeus*, harvest mouse *Micromys minutus* and brown hare *Lepus europeus* within 2 km of the site within the last ten years. These are all Priority species under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006).
- 3.24 Fourteen records exist for the Western European hedgehog within 2 km of the site within the last ten years.
- 3.25 A single record exists for the harvest mouse. Three individuals were observed in Slipe Field, approximately 1.7 km south west from the site.
- 3.26 Ten records exist for brown hare, the closest of which is located 1.8 km to the north-east of the site.

Phase 1 Habitat Survey

- 3.27 The habitats present on site are shown in Figure 3.2. The habitats present on site comprise improved grassland, dense-continuous scrub, hardstanding, bare ground, building, intact species-poor hedgerow, scattered broadleaved and coniferous trees, and ornamental planting.
- 3.28 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.

Improved grassland

- 3.29 Improved grassland covered the majority of the site (Photograph 1 in Appendix D). This grassland showed historical use as a horse paddock and it had been recently mown and the grassland was very short at the time of the survey. Species included dominant Yorkshire-fog *Holcus lanatus* with occasional common thistle *Cirsium vulgare* and rare nettle *Urtica dioica* along the site boundaries.

Dense continuous scrub

- 3.30 Two areas of dense scrub were located within the site boundary (Photograph 2 in Appendix D). The largest one was located in the west part of the site on a raised section of ground and was dominated by bramble *Rubus fruticosus* agg with abundant nettle. The smallest one was located to the rear of the shed/stable block and comprised bramble.

Hardstanding

- 3.31 The hardstanding on site comprised an area of concrete to the north of the shed/stable block and the driveway leading from the access by the Inglenook Hotel to the shed/stable block (Photograph 3 in Appendix D). The driveway comprised of gravel laid on bare ground.

Bare ground

- 3.32 Two areas of bare ground were located in the south of the site (Photograph 4 in Appendix D). This included an area of bare ground with a mixed waste/debris and soil pile (Photograph 5 in Appendix D, Target note 4 in Appendix C and in Figure 3.2).

Building

- 3.33 A timber-framed shed/stable block was located in the south of the site. This building is further described in the Bat Building Assessment section below.

Intact species-poor hedgerows

- 3.34 Intact species poor hedgerows were located along the access track (Photographs 3, 6 and 7 in Appendix D). These included dominant Leyland cypress *Cupressus x leylandii* with occasional common box *Buxus sempervirens* and spotted laurel *Aucuba japonica*.

Scattered broadleaved and coniferous trees

- 3.35 A single Leyland cypress was located along the northern site boundary. Early-mature elder *Sambucus nigra* trees were located within the areas of dense-continuous scrub on site (Photograph 8 in Appendix D).

Ornamental planting

- 3.36 Ornamental planting was recorded along the access track including a single specimen of wall cotoneaster *Cotoneaster horizontalis* (Target note 1 in Appendix C and in Figure 3.2, Photograph 9 in Appendix D) and a single specimen of montbretia *Crocasmia x*

crocosmiiflora (Target note 2 in Appendix C and in Figure 3.2, Photograph 10 in Appendix D). These are both invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to plant or otherwise cause to grow in the wild these species.

Protected Species

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

Badgers

- 3.38 The dense continuous scrub on a raised area is suboptimal for badger sett-building due to its thick vegetation cover. The improved grassland on site is suitable for badger foraging and suboptimal for sett-building as it is flat. However, no direct evidence of badgers, such as setts, incidental foraging signs or latrines was observed within the site boundary.

Bats

- 3.39 The scattered broadleaved trees within the site boundary were considered to have negligible suitability to support roosting bats due to their size and age and lack of potential roosting features. The scattered coniferous trees and Leyland cypress trees forming the hedgerows along the site boundary were also considered to have negligible suitability to support roosting bats due to their dense branches and foliage which do not allow access to any suitable features which may be present on the trunk.
- 3.40 The intact species-poor hedgerows on site have low suitability for foraging bats as, although they could be used by low number of commuting bats, they are not connected to other suitable habitat for commuting.

Breeding birds

- 3.41 The dense continuous scrub, scattered broadleaved and coniferous trees and the species-poor intact hedgerow within the site boundary are suitable to support nesting birds. Several house sparrows *Passer domesticus* were observed on site during the Preliminary Ecological Appraisal survey and a bird nest was recorded in one of the elder trees within the dense-continuous scrub habitat in the west of the site (Target note 5 in appendix C and in Figure 3.2, Photograph 11 in Appendix D). It was not possible to determine whether this nest was in use or if it was a remnant from the previous bird breeding season.
- 3.42 The improved grassland is not considered suitable to support ground nesting birds due to the very short height of the sward and lack of suitable cover within this habitat.
- 3.43 A single swallow *Hirunda rustica* nest was recorded in the easternmost section of the wooden-framed stable/shed block (Target note 8 in Appendix C and in Figure 3.2,

Photograph 12 in Appendix D). This was covered in dense cobwebs and was therefore considered to be disused.

Hazel dormice

- 3.44 Although the areas of dense continuous scrub with scattered trees comprises plants of value to hazel dormice such as bramble, these areas are not further connected to suitable habitat for hazel dormice.

Great crested newts

- 3.45 The areas of dense continuous scrub on site provides suitable terrestrial habitat for great crested newts. The improved grassland on site is considered suboptimal habitat for great crested newts due to the very short lawn and the lack of vegetation cover.

Reptiles

- 3.46 The areas of dense continuous scrub on site provides suitable habitat for reptiles and the improved grassland is suitable for basking reptiles.
- 3.47 A number of log piles were recorded throughout the site (Target note 3 in Appendix C and in Figure 3.2, Photograph 13 in Appendix D). These were recent piles which originated from clearance of the adjacent development site (i.e. Land to the rear of 251 Pagham Road) and they were due to be removed by hand by the end of March 2018 to fuel wood burners in the Inglenook Hotel property.

Other species

- 3.48 A number of mole *Talpa europaea* hills were observed within the improved grassland habitat (Target note 6 in Appendix C and in Figure 3.2, Photograph 14 in Appendix D).
- 3.49 An extensive network of rabbit *Oryctolagus cuniculus* warrens was identified along the western boundary of the site, within the dense continuous scrub habitat (Target note 7 in Appendix C and Figure 3.2, Photograph 15 in Appendix D). Additional signs of rabbit including droppings and digging were observed within the unimproved grassland.
- 3.50 The area of improved grassland on site which is suitable for Brent goose foraging due to its short sward, open nature and location within 5 km of the coast (Stroud et al., 2016).

Bat Building Assessment

Building Description

- 3.51 The building consisted of a timber-framed shed/stable block with four compartments, divided by wooden cladding, each with its own stable-style wooden door and with a pitched roof clad with metal corrugated sheets. The southern aspect of the building was clad with roofing felt. The stable block stood on a poured concrete floor which extended beyond the building to the north, creating an external flooring to the front.
- 3.52 Photographs of the building subject to survey are provided in Appendix D of this report and Figure 3.3 shows the result of the Bat Building Assessment.

External Results

- 3.53 The lead flashing along the corrugated metal roof was raised and damaged at the western end and there was a gap at the apex on the eastern end. There were numerous gaps underneath the corrugated metal sheets where the roof material joined the wooden walls.
- 3.54 The rear of the building backed directly up to the fence line and was inaccessible due to elder and bramble. However, gaps were visible where the roofing felt had peeled off in areas along the back wall and at each end where it was nailed to the corners.
- 3.55 No signs of bats such as bat droppings, staining of access points used by bats to enter the structure and feeding remains were recorded externally.

Internal Results

- 3.56 All the compartments of the shed/stable block were open to the apex. There were lifted and damaged sections of roofing in all sections and substantial light ingress throughout. The roof was not lined and internally the walls and ceiling were covered in a thick layer of cobwebs. There were gaps between the dividing walls between sections and the building was open at the eaves. The lack of roof void and lining material means that temperatures within the building are likely to fluctuate considerably in line with external temperatures and therefore offer little insulation or protection for roosting bats.
- 3.57 No bat droppings or other signs of roosting bats were identified during the internal inspection.

Suitability to support roosting bats

- 3.58 Although the timber-framed shed/stable block presented a number of access/egress points which would allow bats to enter/exit the building, the building was considered to have negligible suitability to support bats due to the lack of suitable roosting features.

4 EVALUATION

Habitats

- 4.1 The habitats present on site comprise improved grassland, dense-continuous scrub, hardstanding, bare ground, building, intact species-poor hedgerows, scattered broadleaved and coniferous trees, and ornamental planting.
- 4.2 Under current design proposals, the areas of dense continuous scrub with scattered broadleaved trees within the site boundary will need to be cleared to facilitate the development and the area to the west, which is currently raised, will also require re-profiling. The building in the south-east corner of the site will be demolished. The footprints of the proposed dwellings and driveway encroach areas of bare ground and improved grassland which will be permanently lost whilst the remaining areas will form part of the proposed property gardens.
- 4.3 The habitats impacted are all locally common and comprise locally common species, therefore the proposed works will not affect any designated habitats or habitats of Principal Importance listed on Section 41 of the NERC Act.
- 4.4 The proposed development design includes planting of hedgerows and trees along the site boundaries and along the boundaries of the proposed properties' gardens.

Plants

- 4.5 Two invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), wall cotoneaster and montbretia, were recorded along the site access track. This act makes it an offence to plant or otherwise cause to grow in the wild these species
- 4.6 No works are proposed for the access track to the site, which will be used for access by site machinery and vehicles. The two specimens of invasive species recorded on site were located at the side of the track, therefore it is highly unlikely that machinery and vehicles using the track will disturb these specimens or otherwise cause dispersal of these species in the wild.

Protected sites

- 4.7 Two statutory designated sites are located within 2 km of the proposed site including Bognor Reef Sites of Special Scientific Interest (SSSI) and Pagham Harbour SSSI, Special Protection Area (SPA), Local Nature Reserve (LNR), Marine Conservation Zone (MCZ) and Ramsar site.
- 4.8 A Habitat Regulations Assessment (HRA) of the Arun Local Plan 2011-2031 has been undertaken by Urban Edge Environmental. This concluded that in the absence of appropriate mitigation, residential development, such as the development under consideration, in combination with other local residential developments will result in increased recreational disturbance which is likely to have a significant negative effect

on the Pagham Harbour Special Protection Area (SPA) and Ramsar site (Urban Edge Environmental Consulting, 2017).

- 4.9 The proposed development will result in the permanent loss of an area of improved grassland on site which is suitable for Brent goose foraging due to its short sward, open nature and location within 5 km of the coast (Stroud et al., 2016). However, this area is relatively small (i.e. less than 0.6 ha) and the Habitat Regulations Assessment (HRA) of the Arun Local Plan 2011-2031 has not identified the site, or any of the areas adjacent to the site, as areas known to be used by Brent goose in Pagham Harbour. Therefore, it is considered that the proposed development is unlikely to result in a significant loss of supporting habitat for Brent goose which would threaten the integrity of the Pagham Harbour SPA/Ramsar.
- 4.10 The proposed development site does not support any of the habitats listed within the Bognor Reef Sites of Special Scientific Interest (SSSI) therefore it is considered that the proposed development will have no direct impact on this statutory designated site under consideration.

Species

Badgers

- 4.11 Badgers receive full protection under the Protection of Badgers Act 1992.
- 4.12 The dense continuous scrub on a raised area is suboptimal for badger sett-building due to its thick vegetation cover. The improved grassland on site is suitable for badger foraging and suboptimal for sett-building as it is flat.
- 4.13 The footprint of the proposed dwellings and driveway encroaches the area of dense continuous scrub and areas of improved grassland which will be permanently lost whilst the remaining areas will form part of the proposed property gardens. However, due to no evidence of badgers being recorded during the survey, and the availability of higher quality habitats in the wider environment with suitability to support badgers, the proposed development is highly unlikely to negatively impact badgers which may be present in the local area.

Bats

- 4.14 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).
- 4.15 The Bat Building Assessment carried out concluded that the building on site had negligible suitability to support roosting bats due to the lack of suitable features to support roosting bats.
- 4.16 The scattered broadleaved trees within the site boundary were considered to have negligible suitability to support roosting bats due to their size and age and lack of potential roosting features. The scattered coniferous trees and Leyland cypress trees forming the hedgerows along the site boundary were also considered to have negligible

suitability to support roosting bats due to their dense branches and foliage which do not allow access to any suitable features which may be present on the trunk.

- 4.17 The intact species-poor hedgerows on site have low suitability for foraging bats as, although they could be used by low number of commuting bats, they are not connected to other suitable habitat for commuting.
- 4.18 Under current design proposals the intact species-poor hedgerows on site will be retained. New hedgerows and trees will be planted along the site boundaries and along the boundaries of the proposed properties' gardens which will have the potential to increase the suitability of the site for foraging, roosting and commuting bats provided that a sensitive lighting scheme is implemented to prevent any disturbance of bats.
- 4.19 Therefore, it is considered that the proposed development will not negatively affect the favourable conservation status of the local bat populations and may provide bats with additional foraging, roosting and commuting opportunities within the site.

Breeding birds

- 4.20 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.
- 4.21 The dense continuous scrub, scattered broadleaved and coniferous trees and the species-poor intact hedgerow within the site boundary are suitable to support nesting birds. The improved grassland on site was considered unsuitable to support ground nesting birds.
- 4.22 A disused swallow nest was recorded in the stable/shed block in the south-east corner of the site and a bird nest was recorded in one of the elder trees within the dense-continuous scrub habitat in the west of the site. It was not possible to determine whether the nest on this tree was in use or if it was a remnant from the previous bird breeding season.
- 4.23 Under current design proposals, the stable/shed block will be demolished and the areas of dense continuous scrub with scattered broadleaved trees within the site boundary will be cleared to facilitate the development. Therefore, in the absence of mitigation, the proposed works have the potential to impact breeding birds which may be nesting within the building to be demolished or the dense continuous scrub with scattered broadleaved trees.
- 4.24 The proposed development design includes planting of hedgerows and trees along the site boundaries and along the boundaries of the proposed properties' gardens which will compensate for the loss of suitable habitat for breeding birds.

Hazel dormice

- 4.25 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).

- 4.26 There are no records for hazel dormice within 2 km of the site within the last ten years and the suitable habitat on site (i.e. dense continuous scrub with scattered trees) is small in area and not further connected to suitable areas of habitat.
- 4.27 Therefore, it is considered that the proposed development is highly unlikely to negatively impact hazel dormice or affect the favourable conservation status of this species.

Great crested newt

- 4.28 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).
- 4.29 The areas of dense continuous scrub on site provides suitable terrestrial habitat for great crested newts. The improved grassland on site is considered suboptimal habitat for great crested newts due to the very short lawn and the lack of vegetation cover. Furthermore, no records exist for great crested newts within 2 km of the site within the last ten years and significant barriers to dispersal exist between waterbodies within 500m of the site boundary and the suitable terrestrial habitats on site.
- 4.30 Five waterbodies are located within 500 m of site boundary as shown in Figure 3.1 with the closest of these located approximately 270 m to the south-east of the site. Two of the waterbodies are located to the north of the site beyond residential estates which are considered to act as a barrier to amphibian dispersal. The remaining three waterbodies are located to the south-east of the site beyond Pagham Road and, although this is a minor road, the habitats on site are isolated from these waterbodies by the housing development site to the south, cleared of vegetation and undergoing groundworks at the time of the survey, and further residential properties to the east and south-east.
- 4.31 Therefore, it is considered that the proposed development is highly unlikely to negatively impact great crested newts or affect the favourable conservation status of this species.

Reptiles

- 4.32 All species of reptile in the UK receive full protection under the Wildlife and Countryside Act 1981 (as amended), meaning they are protected against injuring or killing.
- 4.33 Records exists for four species of reptile within 2 km of the site within the last ten years including slow-worms, grass snakes, adders and common lizards and the areas of dense continuous scrub on site provides suitable habitat for reptiles and the improved grassland is suitable for basking reptiles.
- 4.34 Under current design proposals, the areas of dense continuous scrub with scattered broadleaved trees within the site boundary will need to be cleared to facilitate the development and the area to the west, which is currently raised, will also require re-profiling. The footprints of the proposed dwellings and driveway encroach areas of bare ground and improved grassland which will be permanently lost whilst the remaining areas will form part of the proposed property gardens. This will result in the permanent loss of suitable habitat for reptiles and has the potential to kill, injure and disturb reptiles

should they be present on site. In the absence of mitigation, this would have a negative effect on the local reptile population.

5 CONCLUSIONS

- 5.1 The proposed development site is considered to have low ecological value within a local context as it comprises locally common habitats and locally common plant species.
- 5.2 The biodiversity value of the total site area is largely attributed to the following factors:
- The presence of two statutory designated sites within 2 km of the proposed development site;
 - The limited connectivity of the site to areas of higher quality for wildlife; and
 - The potential of the habitats on site to support protected species including badgers, commuting and foraging bats, breeding birds and reptiles.
- 5.3 The development proposal comprises the construction of nine residential properties on site, access tracks and associated gardens/ landscaping.
- 5.4 In the absence of mitigation, the proposed development has the potential have an in combination significant negative effect on the Pagham Harbour Ramsar site, SPA, SSSI and LNR through increased recreational disturbance. Therefore, recommendations are included in Section 6 of this report to ensure that appropriate mitigation measures are implemented.
- 5.5 The areas of dense continuous scrub with scattered broadleaved trees within the site boundary will need to be cleared to facilitate the development and the area to the west, which is currently raised, will also require re-profiling. The building in the south-east corner of the site will be demolished. The footprints of the proposed dwellings and driveway encroach areas of bare ground and improved grassland which will be permanently lost whilst the remaining areas will form part of the proposed property gardens.
- 5.6 The habitats impacted are considered suitable to support badgers, commuting and foraging bats, breeding birds and reptiles. Therefore, recommendations are provided 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

Designated sites

- 6.1 A Habitat Regulations Assessment (HRA) of the Arun Local Plan 2011-2031 has been undertaken by Urban Edge Environmental Consulting. This concluded that in the absence of appropriate mitigation, increased recreational disturbance from residential development, such as the development under consideration, is likely to have an in combination significant negative effect on the Pagham Harbour Special Protection Area (SPA) and Ramsar site (Urban Edge Environmental Consulting, 2017). Increased recreational disturbance is also likely to negatively affect the Pagham Harbour SSSI and LNR.
- 6.2 It is recommended that Natural England are consulted to determine whether a Habitat Regulation Assessment is required for the proposed development with regards to the Pagham Harbour SPA/Ramsar.
- 6.3 In addition, Policy ENV DM2 of the Arun Local Plan 2011-2031 outlines the requirement for all residential development likely to have an impact on Pagham Harbour to provide contributions to the access management of the harbour and the creation of, or contributions towards the provision of such green space to serve the area. These should be capable of accommodating the predicted increases in demand for local walking, including dog walking. Good pedestrian links should be provided between housing areas and new and existing green space in order to discourage car use.

Badgers

- 6.4 As no evidence of badgers was observed within the site boundary, the proposed development is unlikely to impact badgers. Therefore, no further surveys for badgers are considered necessary. 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, and the works on site have not commenced, then an updated survey for badger should be undertaken by a suitably qualified ecologist.
- 6.5 It is recommended that any trenches created during works are not left open overnight and that the site is fenced off during the development to prevent potential access by badgers.

Bats

- 6.6 The intact species-poor hedgerows on site have low suitability for foraging bats and the proposed landscaping scheme includes boundary hedgerows and trees which will increase the suitability of the site to support foraging, commuting and roosting bats. Therefore, 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. Timers and/or motion sensor lights should be used where possible to avoid unnecessary lighting during the night. The lighting scheme should avoid the lighting of any habitat features including the trees and hedgerows planted as part of the landscaping scheme. The lamps used should emit minimal ultra-violet light. This can be

achieved by avoiding lights with high UV content: (e.g. metal halide or mercury light sources) and by using UV filters or glass housings on lamps which filter out some of the UV content (Lewanzik 2017). Further to this, warm-white (i.e. long wavelength) should be used over blue-white (i.e. short wavelength) lights as the latter have a significant negative impact on bats (Stone, 2013).

Breeding birds

- 6.7 Any vegetation removal, tree felling and building demolition should avoid the sensitive bird nesting season, from the 1st of March to 31st August. If this is not possible then immediately prior to the commencement of works, an on-site check for nesting birds should be undertaken by a suitably experienced ecologist and any nests which are in use or in the process of being built will need to be identified and subsequently left *in situ* until the chicks have fledged. In the event that nests are left *in situ* during the construction works, a 5 m buffer zone should be set up around the nest using a suitable fencing material such as Heras fencing in order to protect the nest and reduce disturbance until the chicks have fledged.

Reptiles

- 6.8 Further surveys are 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). The surveys are conducted using artificial refugia made from roofing felt measuring approximately 50cm x 50cm. These refugia are placed in areas of suitable reptile habitat such as areas of dense continuous scrub and improved grassland.
- 6.9 Should reptiles be recorded, a full reptile mitigation strategy will be required to ensure the development does not impact the local reptile populations.

Biodiversity Enhancements

- 6.10 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.
- Bird and bat boxes including bird boxes designed for swallows should be installed on the proposed buildings.
 - The use of a variety of locally sourced native species is recommended for the proposed landscaping scheme which comprises the planting of boundary hedgerows and trees for the site and the proposed property gardens. The hedgerows should be species-rich and should comprise yew *Taxus baccata*, holly *Ilex aquifolium*, hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, blackthorn *Prunus spinosa*, wild privet *Ligustrum vulgare* and elder *Sambucus nigra*. guelder rose *Viburnum opulus* and spindle tree *Euonymus europaeus*. To benefit birds and a wide range of

wildlife, a large proportion of the trees planted should be native berry bearing species such as elder, wild cherry *Prunus avium*, rowan *Sorbus aucuparia* and crab apple *Malus sylvestris*.

- Deadwood habitat piles could be included within appropriate locations or compost heaps could be created where possible from the arisings of garden waste and tree works. This will provide additional habitats for a range of species including reptiles, amphibians, invertebrates and small mammals.
- Should any fencing be installed on site it is recommended that gaps are incorporated in any boundary fencing to allow dispersal of species such as the European hedgehog *Erinaceus europaeus*, reptiles and amphibians into the wider landscape.

REFERENCES

ARG UK (2010) ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom.

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal (CIEEM <http://www.cieem.net/>).

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

Stroud, D.A., Bainbridge, I.P., Maddock, A., Anthony, S., Baker, H., Buxton, N., Chambers, D., Enlander, I., Hearn, R.D., Jennings, K.R, Mavor, R., Whitehead, S. & Wilson, J.D. - on behalf of the UK SPA & Ramsar Scientific Working Group (eds.) (2016): The status of UK SPAs in the 2000s: the Third Network Review. JNCC, Peterborough.

Lewanzik, D. (2017). *Artificial light affects bats across climatic zones and feeding guilds* (Doctoral dissertation, Freie Universität Berlin)

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

Mitchell-Jones A.J. and McLeish A.P. (2004) *The Bat Workers Manual* 3rd Edition. Joint Nature Conservation Committee.

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

Stone E.L. (2013) Bats and lighting: Overview of current evidence and mitigation guidance

Urban Edge Environmental Consulting (2017) Habitats Regulations Assessment for the Arun Local Plan – 3 reports HRA Stage 1, Stage 2 and Stage 3 found here <https://www.arun.gov.uk/local-plan-primary-evidence> (accessed on 22nd March 2018).

FIGURES

Figure 1.1 Location of site

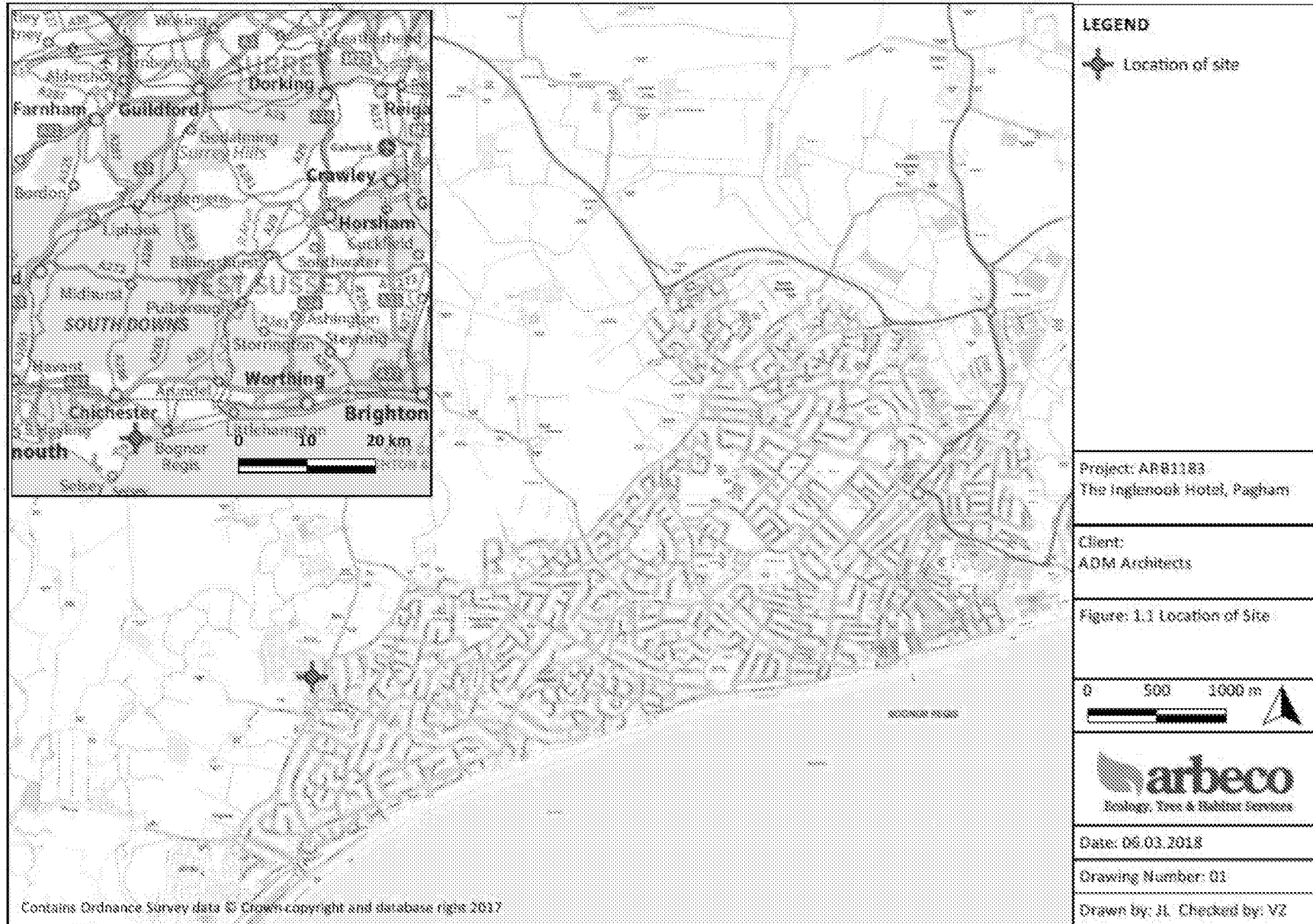
Figure 1.2 Extent of site boundary

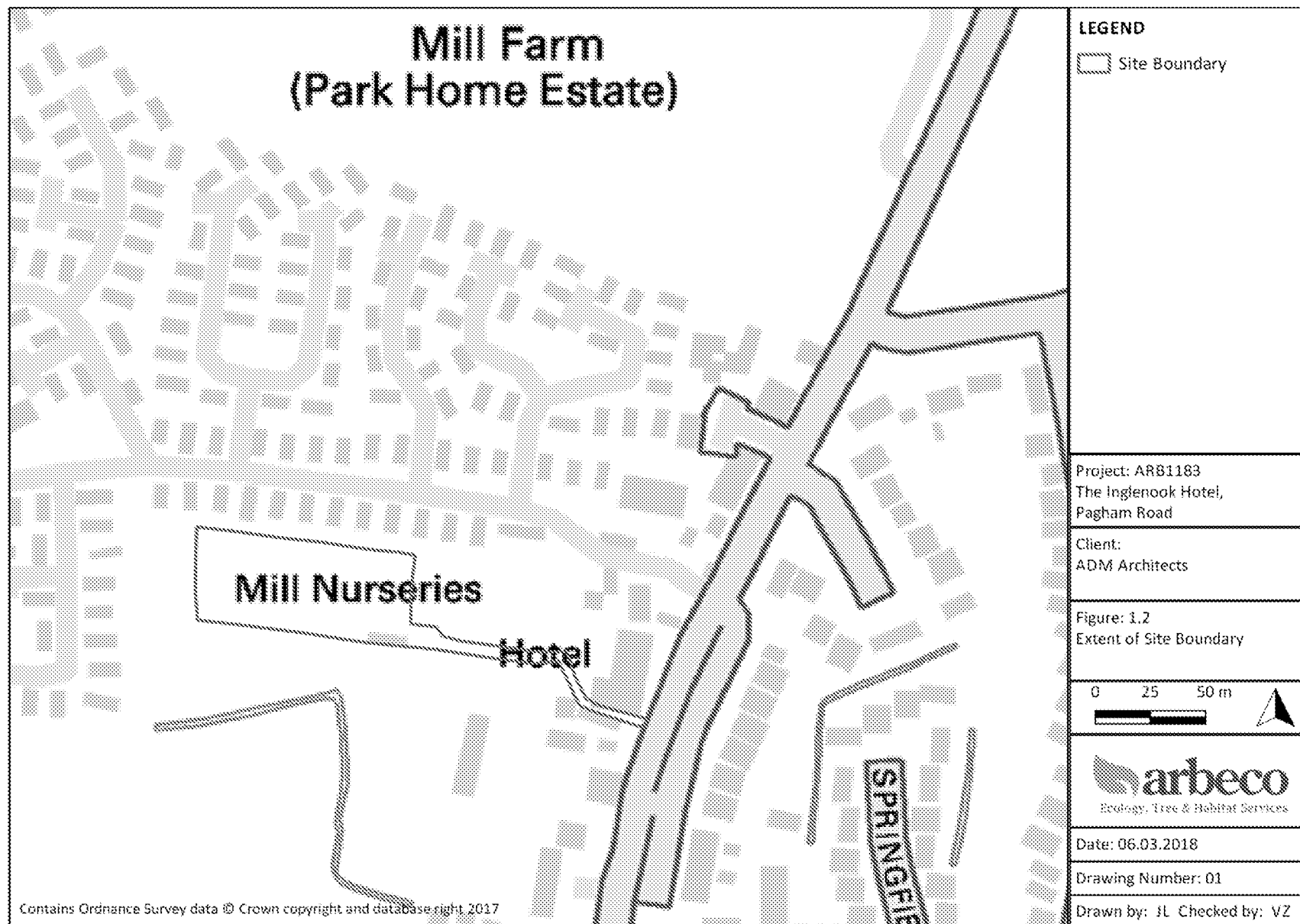
Figure 1.3 Building subject to survey

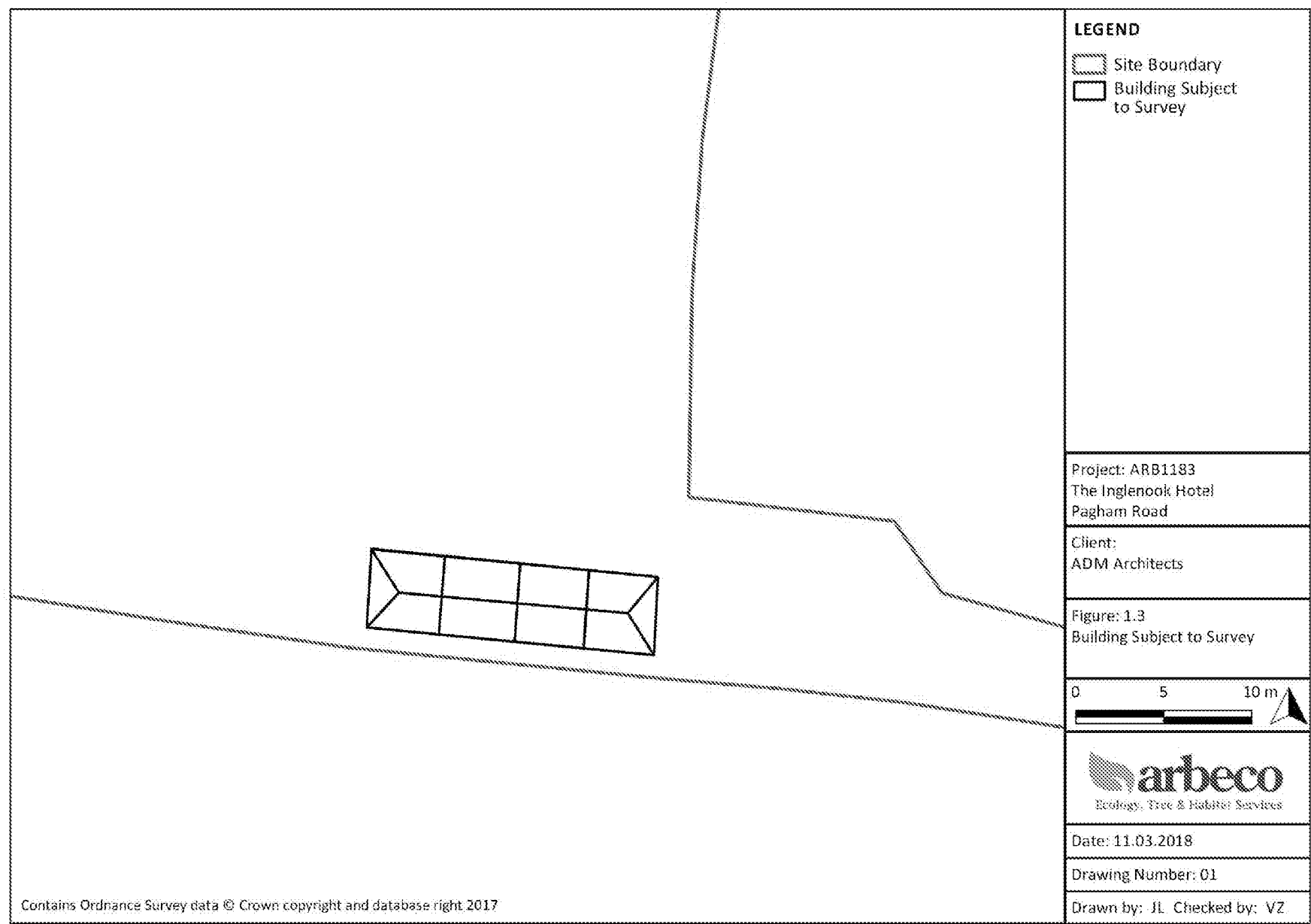
Figure 3.1 Waterbodies within 500 m of the site boundary

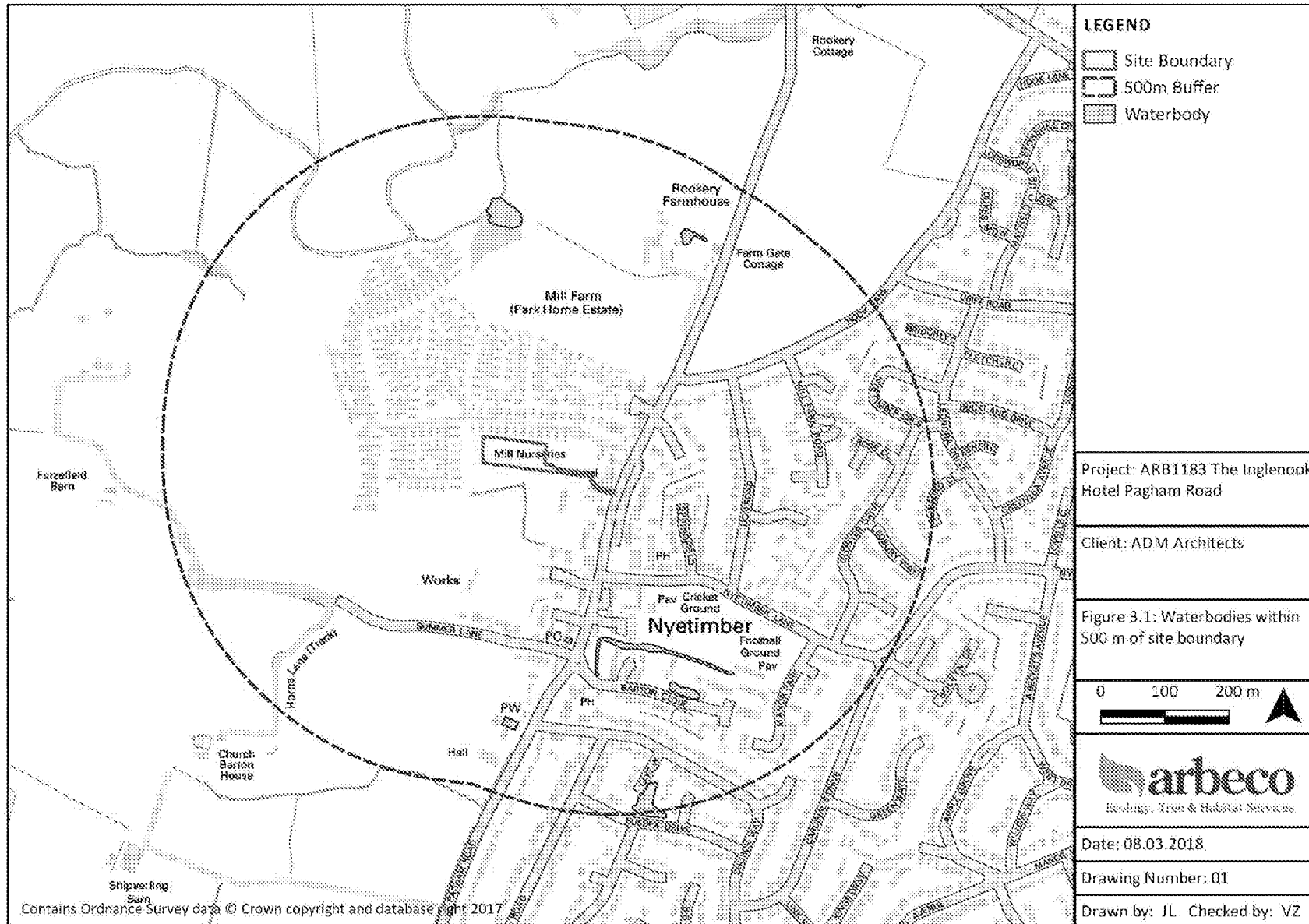
Figure 3.2 Phase 1 habitat survey

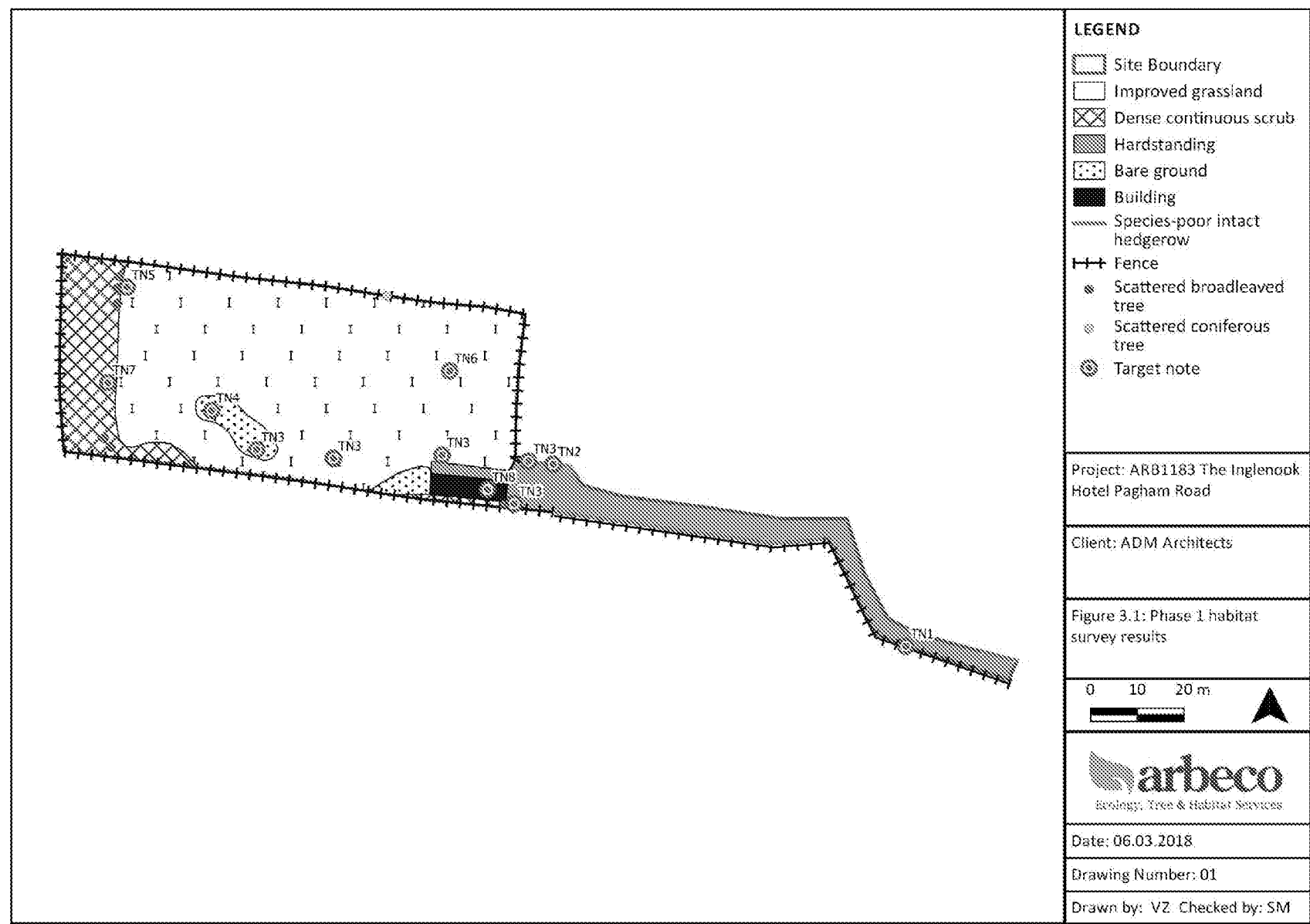
Figure 3.3 Bat building assessment results













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 2017

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 sett 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 2017, as amended (Habitats Regulations 2017, 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 2017 (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.

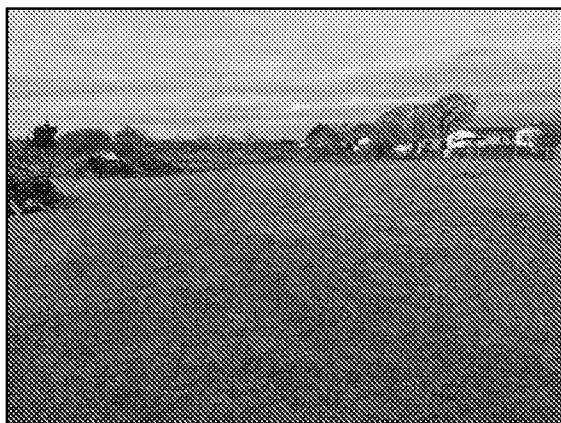
The reader should refer to the original legislation for the definitive interpretation.

APPENDIX C: Target Notes

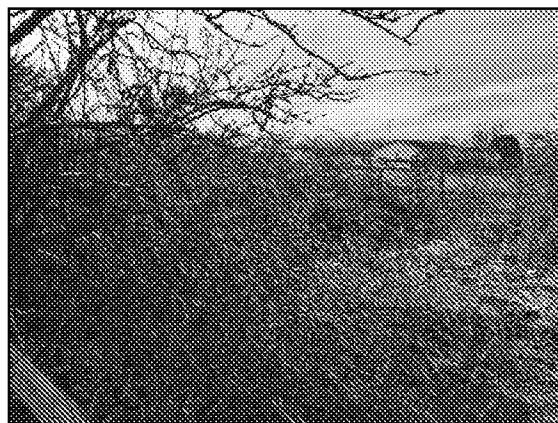
Target notes of important ecological features noted during the field survey and mapped in Figure 3.2.

Target Note	Description
1	Specimen of wall cotoneaster <i>Cotoneaster horizontalis</i> , an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)
2	Specimen of montbretia <i>Crocasmia x crocosmiiflora</i> C, an invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)
3	Recent log piles which originated from clearance of the adjacent development site (i.e. Land to the rear of 251 Pagham Road) and due to be removed by hand by the end of March 2018 to fuel wood burners in the Inglenook Hotel property.
4	Mixed waste/debris and soil pile
5	Bird nest
6	Mole <i>Talpa europaea</i> hills
7	Rabbit <i>Oryctolagus cuniculus</i> warren
8	Disused swallow <i>Hirundo rustica</i> nest

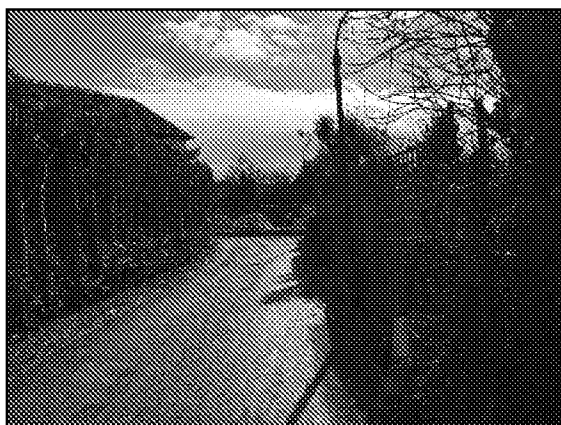
APPENDIX D: Site photographs



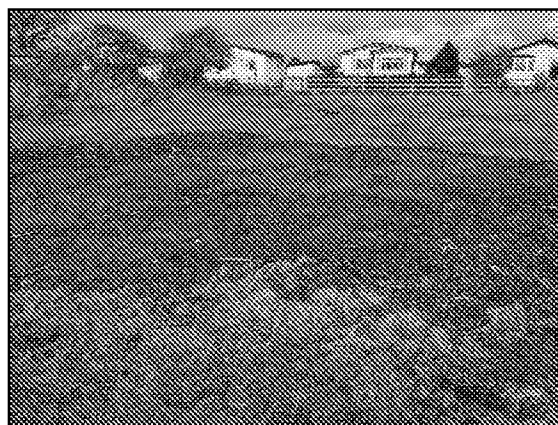
Photograph 1: Improved grassland, looking towards the western boundary. Nyetimber estate visible on the right.



Photograph 2: Dense continuous scrub in the west of the site.



Photograph 3: Access track with intact species poor-hedgerow, looking east.



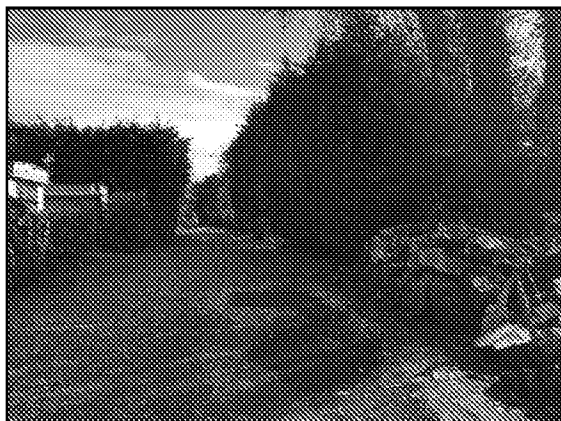
Photograph 4: Area of bare ground in the west of the site, looking north-west.



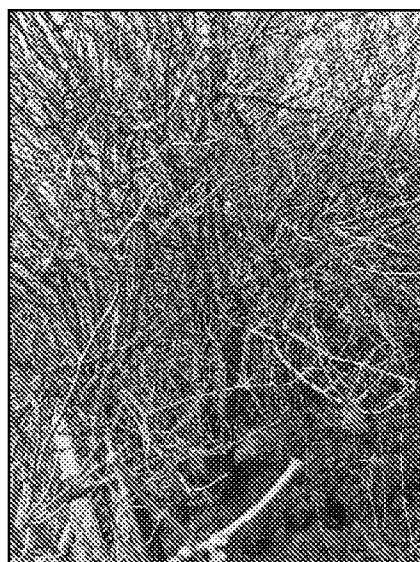
Photograph 5: Debris and soil pile within area of bare ground in the south-west of the site (Target note 4 in Figure 3.2).



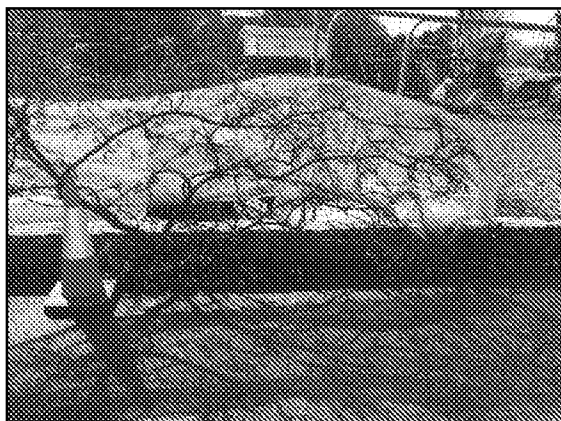
Photograph 6: Intact species-poor hedgerow with spotted laurel along access track.



Photograph 7: Intact species-poor hedgerow comprising Leyland cypress, along access track.



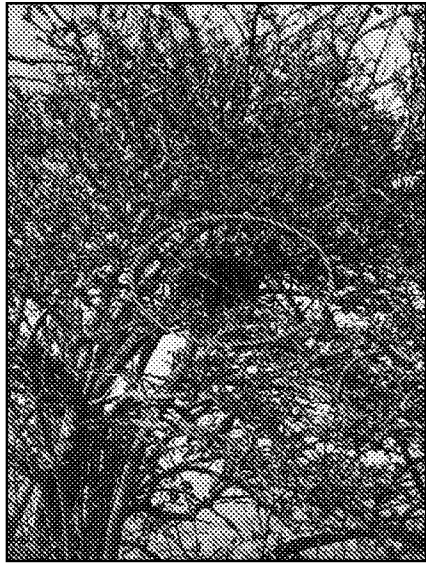
Photograph 8: Scattered broadleaved trees within the area of dense continuous scrub in the west of the site.



Photograph 9: Specimen of wall cotoneaster along the access track (Target note 1 in Figure 3.2)



Photograph 10: Ornamental planting with specimen of montbretia (Target note 2 in Figure 3.2).



Photograph 11: Bird nest on elder tree (Target note 5 in Figure 3.2).



Photograph 12: Disused swallow nest in building surveyed. (Target note 8 in Figure 3.2).



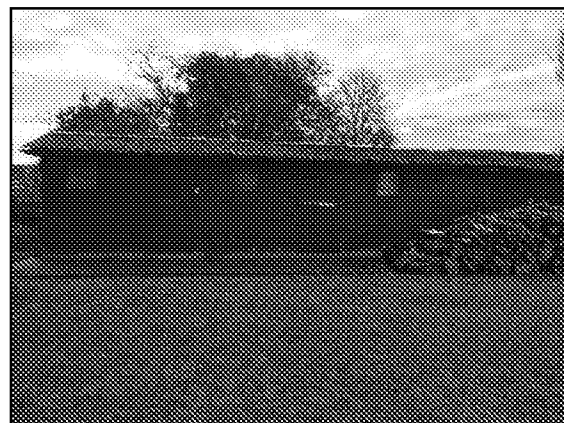
Photograph 13: Recent log pile from off-site vegetation clearance (Target note 3 in Figure 3.2).



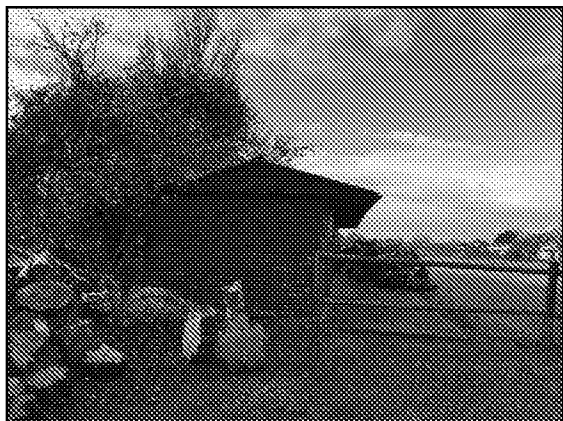
Photograph 14: Mole hills within improved grassland (Target note 6 in Figure 3.2).



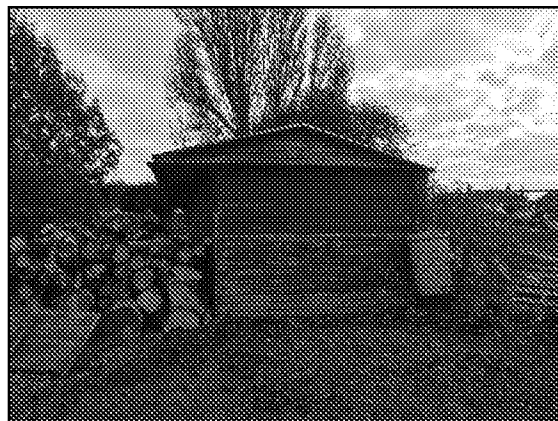
Photograph 15: Rabbit warren within dense continuous scrub (Target note 7 in Figure 3.2).



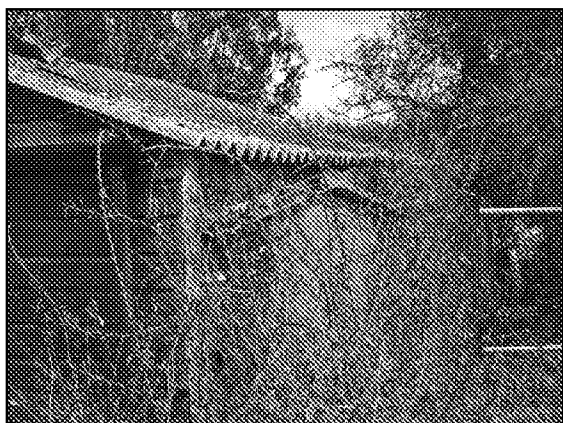
Photograph 16: Building subject to survey, northern elevation.



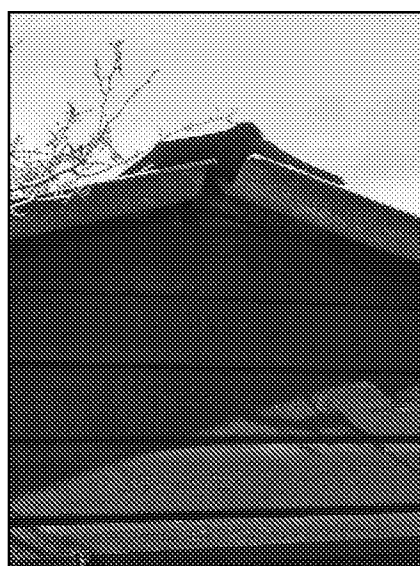
Photograph 17: Building subject to survey, eastern elevation.



Photograph 18: Building subject to survey, northern elevation.



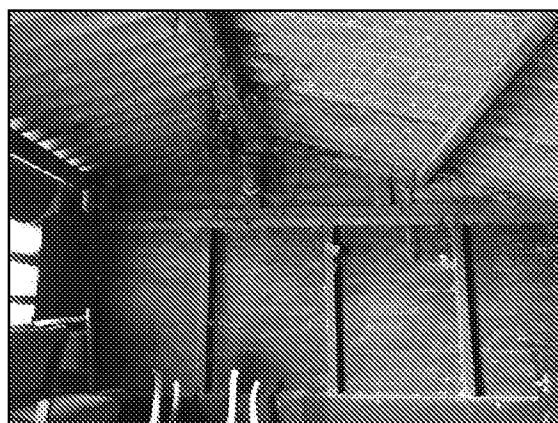
Photograph 19: Building subject to survey, southern elevation.



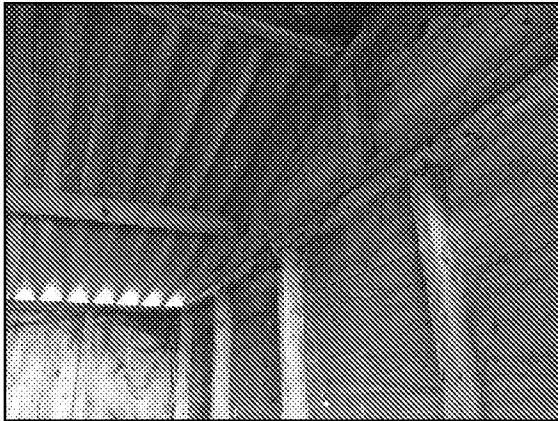
Photograph 20: Lifted lead flashing and gap at apex of eastern elevation.



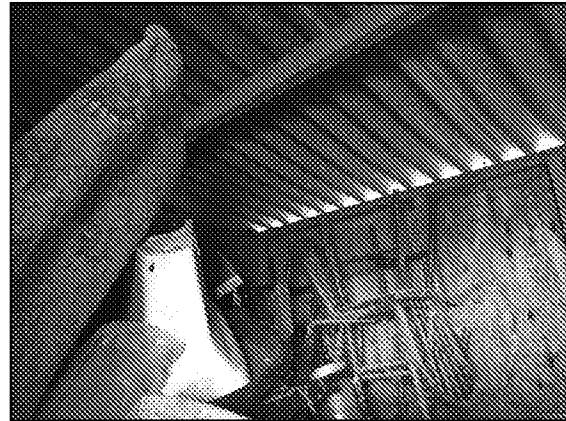
Photograph 21: Lifted lead flashing on western elevation.



Photograph 22: Easternmost compartment of the building.



Photograph 23: Easternmost compartment of the building, showing light ingress and gaps at eaves.



Photograph 24: Interior of the accessible middle compartment of the building.



Photograph 24: Westernmost compartment of the building, showing light ingress and gaps at eaves.