



Preliminary Ecological Appraisal and Bat Building Assessment

10 Upper Warren Avenue

Caversham

Berkshire

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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 David Hartley to carry out a Preliminary Ecological Appraisal (PEA) and Bat Building Assessment (BBA) at 10 Upper Warren Avenue to help inform the proposed demolition of the residential dwelling at the site and the construction of a new residential dwelling, associated landscaping and access.
- 0.2 This report identifies the potential of the site to support protected habitats and species, and evaluates the constraints that the presence of any protected species may place on the proposed residential development.
- 0.3 The habitats within the site boundary included amenity grassland, hard standing, mixed semi-natural woodland and scattered broadleaved and coniferous trees, bare ground, buildings, continuous scrub, introduced shrub and species-poor hedgerow.
- 0.4 The habitats present on site provide suitable habitat for the following protected species: badgers *Meles meles*, bats, breeding birds, great crested newts *Triturus cristatus* and reptiles.
- 0.5 The results of the BBA concluded that the residential dwelling at the site had low suitability to support roosting bats. Four additional outbuildings comprising garden sheds were considered to have negligible suitability to support roosting bats.
- 0.6 Due to the impacts the proposed development will have on the habitats within the site, further surveys are recommended for bats and reptiles and a precautionary approach is recommended for badgers, breeding birds and great crested newts.
- 0.7 Further surveys recommended for bats comprise a single dusk emergence survey of the residential dwelling undertaken in suitable weather conditions between the 1st May and the 31st August.
- 0.8 Further surveys recommended for reptiles comprise 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).
- 0.9 The precautionary approach to site clearance works recommended for badgers comprises a re-survey of site immediately prior to works commencing to ascertain the presence / absence of sett-building activity.
- 0.10 The precautionary approach to site clearance works recommended for breeding birds comprises time constraints to avoid the bird nesting season (March to September).
- 0.11 The precautionary approach to site clearance works recommended for great crested newt comprises a hand destructive search by a suitably qualified ecologist of habitat features suitable to support refugia for great crested newts. The search should avoid the amphibian hibernation period (November to February).
- 0.12 Biodiversity enhancements should be incorporated into the development including the installation of building integrated bat boxes, bat and bird boxes on suitable trees and provision for invertebrates.

1 INTRODUCTION

- 1.1 Arbeco Ltd. were commissioned by David Hartley to carry out a Preliminary Ecological Appraisal (PEA) and Bat Building Assessment (BBA) at 10 Upper Warren Avenue to help inform the proposed demolition of the residential dwelling at the site and the construction of a new residential dwelling and associated landscaping and access.
- 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 potential of the buildings 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 buildings 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 *Triturus cristatus* and reptiles are afforded protection under the Conservation of Habitats and Species Regulations 2010 and / or the Wildlife & Countryside Act 1981 (as amended). Further information on the legislation is included in Appendix 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 Section 41 of the Natural Environment and Rural Communities Act (2006) 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 suburb of Caversham in the Borough of Reading in the county of Berkshire (Ordnance Survey Grid Reference for the centre of the site: SU 70119 75304). The site is approximately 0.2 ha in area and comprises amenity grassland, hard standing, mixed semi-natural woodland and scattered broadleaved and coniferous trees, bare ground, buildings, continuous scrub, introduced shrub and species-poor hedgerow.
- 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 buildings subject to the bat building assessment are shown in Figure 1.3.
- 1.12 The site is bordered to the north, east and west by detached residential dwellings and gardens. The south of the site is bordered by pavement and Upper Warren Avenue with further detached residential dwellings and gardens to the south.
- 1.13 The habitats in the wider landscape comprise further detached residential dwellings and gardens to the north, east, south and west, the River Thames to the south, broadleaved woodlands (Chazey Wood and Park Wood) and a golf course to the west, and pasture and arable agricultural land to the west.

Development Proposals

- 1.14 The development proposals were not finalised at the time of the survey but currently comprise the demolition of the residential dwelling (building B1) at the site and the subsequent construction of a single replacement dwelling with associated landscaping and access. The full extent of habitat removal required to facilitate the development was not known at the time of writing.

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 for information with regard to designated sites, protected habitats and species within 2 km of the proposed development (red line) boundary.
- 2.2 The MAGIC website and aerial photography of the site (Google, 2017) was also consulted 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, Nick Deykin BSc (Hons) Grad CIEEM, on the 2nd March 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.

Bat Building Assessment

- 2.9 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).

- 2.10 The suitability of the buildings 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.
- 2.11 The suitability of the buildings 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.
- 2.12 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.
- 2.13 A detailed bat building inspection was undertaken on by qualified ecologist Nick Deykin BSc (Hons) Grad CIEEM (bat licence number 2015-13110-CLS) assisted by Chris Agnew FdSc on the 2nd March 2017. An external search around the perimeter of the buildings was conducted and any possible access points i.e. gaps and crevices were noted and surveyed with a high-powered torch, ladder and endoscope as required.
- 2.14 A systematic internal inspection of the buildings 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.
- 2.15 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

- 2.16 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.
- 2.17 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.

- 2.18 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.
- 2.19 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.
- 2.20 The development proposals were not finalised at the time of the survey and full development plans were not available. The full extent of habitat removal required to facilitate the development was therefore not known at the time of the survey or at the time of writing.

3 RESULTS

Desk Study

Designated sites

- 3.1 Records of designated sites and European sites within 2 km of the site boundary were obtained from Multi Agency Geographic Information for the Countryside (MAGIC) website provided by the Department for Environment, Food and Rural Affairs (Defra).
- 3.2 One statutory designated sites is located within 2 km of the proposed site comprising the Chilterns Area of Outstanding Natural Beauty (AONB) 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
The Chilterns AONB	650 m to north-west	The presence of an important diversity of habitats including chalk grassland and streams, box woodland and extensive areas of beech woodland.

- 3.3 Areas listed on the Priority Habitat Inventory as Deciduous Woodland BAP Priority Habitat are located within 2 km of the site, the closest of which is approximately 100 m north and 250m south of the site respectively. These areas of woodland are connected to the site via tree lined avenues.
- 3.4 Two areas of ancient and semi-natural woodland are located within 2 km of the site. These areas comprise Chazey Wood 1.3 km west-north-west of the site and Page's Shaw 1.9 km north-west of the site. Chazey Wood is connected to the site via tree lined avenues.
- 3.5 No waterbodies were identified within 500 m of site boundary as shown in Figure 3.1.

Phase 1 Habitat Survey

- 3.6 The habitats present on site are shown in Figure 3.2. Target notes of features of ecological value on site are noted in Appendix C and photographs of the site are shown in Appendix D. The habitats present on the site are described below broadly in the order of their extent.
- 3.7 The habitats present on site comprised amenity grassland, hard standing, mixed semi-natural woodland and scattered broadleaved and coniferous trees, bare ground, buildings, continuous scrub, introduced shrub and species-poor hedgerow.

Amenity grassland

- 3.8 The majority of the site comprised amenity grassland beginning to succeed to semi-improved grassland within the rear and front gardens at the north and south of the site respectively (see Photographs 1 and 2 respectively). Amenity grassland was dominated by perennial rye-grass *Lolium perenne* with occasional Yorkshire fog *Holcus lanatus*, annual meadow-grass *Poa annua*, common bent *Agrostis capillaris*, primrose *Primula*

vulgaris, cleavers *Galium aparine*, broad-leaved dock *Rumex obtusifolius*, ground-ivy *Hederacea glechoma*, Lords-and-Ladies *Arum maculatum*, and rare greater wood-rush *Luzula sylvatica*.

Hard standing

- 3.9 Hard standing was present to the north, east, south and west of building B1.

Mixed semi-natural woodland

- 3.10 Mixed semi-natural woodland (i.e. woodland comprising broadleaved and coniferous trees) was present predominantly at the southern site boundary with some also present at the eastern site boundary (see Photograph 3 and 4). The woodland mainly comprised the tree canopies of trees outside of the site boundary. Species recorded included pedunculate oak *Quercus robur*, whitebeam species *Sorbus* sp., goat willow *Salix caprea*, sycamore *Acer pseudoplatanus*, cherry species *Prunus* sp., holly *Ilex aquifolium*, laburnum *Laburnum anagyroides*, Leyland cypress *Cupressus x leylandii*, horse-chestnut *Aesculus hippocastanum*, Norway maple *Acer platanoides* and European lime *Tilia x europaea*. Species recorded within the understorey comprised ivy *Hedera helix*, bramble *Rubus fruticosus* agg., lesser celandine *Ficaria verna* and Lords-and-Ladies.

Bare ground

- 3.11 Bare ground is present at the south-east of the site and in small patches north of building B1. These areas comprise bare, compacted soil.

Buildings

- 3.12 The buildings on site comprise the residential dwelling (building B1) and four timber garden sheds (buildings B2 – B5). The buildings are discussed in more detail in the bat building assessment results below.

Continuous scrub

- 3.13 Continuous scrub was present along the eastern and western site boundaries and at the south of the site (see Photographs 5 and 6). Species recorded included bramble, ivy, and holly.

Introduced shrub

- 3.14 Introduced shrub was present at the south-west of the site. Species recorded included juniper *Juniperus communis*, Leyland cypress, cherry laurel *Prunus laurocerasus*, Rhododendron *Rhododendron ponticum*, and small-leaved cotoneaster *Cotoneaster microphyllus*.

Scattered broadleaved and coniferous trees

- 3.15 Scattered broadleaved and coniferous trees were present along the western site boundary and at the north and south of the site (see Photographs 7 and 8). Species recorded included sycamore, holly, apple species *Malus* sp., snake-bark maple *Acer davidii* and beech *Fagus sylvatica*.

Species-poor hedgerow

- 3.16 A species poor-hedgerow was present along the northern site boundary (see Photograph 9). Species recorded included dominant holly with occasional cherry laurel and rare ivy.

Protected Species

- 3.17 The habitats present on site provide suitable potential to support badgers, bats, breeding birds, great crested newts and reptiles. These species are considered in greater detail below.

Badgers

- 3.18 A large mammal hole approximately 30 cm wide by 20 cm high was recorded dug into a bank just beyond the southern site boundary (see Target Note 1 and Photograph 10). No fresh digging activity was evident and the hole appeared to be disused and only extended into the bank by approximately 1.5 m.
- 3.19 A poorly defined large mammal run was recorded running through vegetation on the top of a bank at the southern site boundary (see Target Note 2 and photograph 11).

Bats

- 3.20 The mixed semi-natural woodland and scattered broadleaved trees provided suitable foraging habitat for bats.
- 3.21 The suitability of the buildings to support bats is detailed in Table 3.2 below.

Breeding birds

- 3.22 The mixed semi-natural woodland and scattered broadleaved and coniferous trees, continuous scrub and species-poor hedgerow had the potential to support nesting birds. No bird nests were recorded in these habitats during the survey.

Great crested newts

- 3.23 The mixed semi-natural woodland and continuous scrub provided suitable terrestrial habitat for great crested newt.

- 3.24 Two piles of cut vegetation were present at the north of the site (see Target Note 3 and Photograph 12). These habitat features had the potential to provide refugia for amphibians.
- 3.25 The northern most part of the amenity grassland was unmanaged and was succeeding to semi-improved grassland. This area was comprised of several large grass tussocks which had the potential to provide refugia for amphibians (see Target Note 4 and Photograph 13).

Reptiles

- 3.26 The mixed semi-natural woodland and continuous scrub provided suitable habitat for common species of reptile, i.e. grass snake *Natrix natrix*, common lizard *Zootoca vivipara*, adder *Vipera berus*, and slow worm *Anguis fragilis*.
- 3.27 The piles of cut and rotting vegetation were present at the north of the site and the area of grassland with tussocks at the north of the site also had the potential to provide refugia for reptiles. Large roots of trees within the woodland and scattered trees within the site also had the potential to provide refugia for reptiles.

Species of Conservation Concern

- 3.28 Two plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded on site. These species included single specimens of small-leaved cotoneaster and rhododendron located at the south of the site (see Target Note 5 and Photographs 14 and 15).

Bat Building Assessment

- 3.29 The results of the bat building assessment are shown in Table 3.1 below and Figure 3.3. Photographs of the buildings are shown in Appendix D.

Table 3.2 Bat building assessment results

Building Number/Reference	Building Description	Suitable Bat Roost Features	Direct evidence of Roosting Bats	Suitability to Support Roosting Bats
B1	Building B1 comprised a single-storey residential dwelling of brick cavity-wall construction. The roof was pitched and gable-ended and was clad with machine made clay tiles. The eaves of the buildings were sealed throughout with timber soffits and fascia boards. See Photographs 16 – 19. The building had one large continuous roof void. The roof was lined with bitumen felt throughout. Part of the roof void floor was missing at the western end of the building due to water leak damage. See Photographs 20 – 21.	Gaps under ridge tiles (feature 1, Photograph 22) and roof tiles (feature 2, Photograph 23) were recorded at the western end of the building (see Figure 3.3).	None recorded	Low suitability due to a low number of suitable bat roost features and connectivity to suitable foraging habitats for bats.
B2	Small timber garden shed	None recorded	None recorded	Negligible suitability due to a lack of suitable bat roost features.
B3	Small timber garden shed	None recorded	None recorded	Negligible suitability due to a lack of suitable bat roost features.
B4	Small timber garden shed	None recorded	None recorded	Negligible suitability due to a lack of suitable bat roost features.
B5	Small timber garden shed	None recorded	None recorded	Negligible suitability due to a lack of suitable bat roost features.

4 EVALUATION

Habitats

- 4.1 The habitats present on site comprise locally common species.

Protected sites

- 4.2 The Chilterns AONB lies 650 m to the north-west. The site is connected to the AONB via tree lines avenues to the west but as the site does not lie within the AONB it is considered that the proposed development will not have any impacts on this area. The development will comprise a similar sized replacement residential dwelling on the site and is therefore not considered to cause increased visitor pressure on the site.

Species

Badgers

- 4.3 Badgers receive full protection under the Protection of Badgers Act 1992.
- 4.4 No direct evidence of badger presence was recorded during the survey. The disused large mammal hole within the bank at the south of the site was not considered to constitute direct evidence of badger occupation as its entrance was too small and it did not extend deep enough into the bank. The large mammal run at the south of the site was also not considered to constitute direct evidence of badger occupation as it could have been created by domestic cats.
- 4.5 Earth banks at the south and east of the site were considered suitable for badger sett-building activity. Suitable foraging habitat was also present on site within the amenity grassland, woodland and continuous scrub. The site was considered to moderately well connected to other habitats in the vicinity suitable for supporting badgers via gardens.
- 4.6 The proposed development therefore has the potential to have a negative impact on the favourable conservation status of local badger populations.

Bats

- 4.7 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).
- 4.8 Building B1 was considered to have low suitability to support roosting bats. The demolition of this building represents a loss of suitable bat roosting habitat in a local context and therefore has the potential to have a negative impact on the favourable conservation status of local bat populations.
- 4.9 The mixed semi-natural woodland and scattered broadleaved trees provide suitable foraging habitat for bats. These habitats also provide connectivity via similar habitats adjacent to the site to higher quality foraging habitat for bats in the wider landscape comprising broadleaved woodland to the west.

Breeding birds

- 4.10 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.
- 4.11 The mixed semi-natural woodland and scattered broadleaved and coniferous trees, continuous scrub and species-poor hedgerow had the potential to support nesting birds. In the absence of mitigation the site clearance works have the potential to disturb, injure or kill nesting birds and will result in a loss of nesting opportunities on site.

Great crested newt

- 4.12 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).
- 4.13 No aquatic habitat suitable to support great crested newt was recorded within the site boundary and no waterbodies were recorded within 500 m of the site.
- 4.14 However, the mixed semi-natural woodland and continuous scrub provided suitable terrestrial habitat for great crested newt. Habitat features such as piles of cut vegetation and grassland tussocks also provided suitable potential refugia for amphibians.
- 4.15 In the absence of mitigation, site clearance works therefore have the potential to disturb, injure or kill great crested newts using these terrestrial habitats. This would have a negative impact on the favourable conservation status of local great crested newt populations.

Plants

- 4.16 Small-leaved cotoneaster and rhododendron were recorded at the south of the site. These are both plants that are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) which make it an offence to plant or allow the spread these species in the wild.

Reptiles

- 4.17 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.
- 4.18 The mixed semi-natural woodland and continuous scrub provided suitable habitat for these species of reptile. Habitat features such as piles of cut vegetation and grassland tussocks also provided suitable potential refugia for these species of reptile.
- 4.19 In the absence of mitigation, site clearance works have the potential to disturb, injure or kill reptiles using these habitats. This would have a negative impact on the favourable conservation status of local reptile populations should they be present on site.

5 CONCLUSIONS

- 5.1 The proposed development site is considered to have low ecological value within a local context as it is dominated by amenity grassland, hard standing, bare ground and buildings.
- 5.2 The biodiversity value of the total site area is largely attributed to the following factors:
- The presence of habitats with the potential to support badgers, bats, breeding birds, great crested newt and reptiles.
 - The majority of the site comprising amenity grassland, hard standing, bare ground and buildings.
 - The presence of mixed woodland, a building with low suitability to support bat roosts, suitable reptile refugia and suitable habitat connectivity to woodland in the wider landscape.
- 5.3 The development proposals were not finalised at the time of the survey but currently comprise the demolition of the residential dwelling (building B1) at the site and the subsequent construction of a single replacement dwelling with associated landscaping and access.
- 5.4 The facilitation of the proposed development will therefore comprise some loss of the habitats considered to support protected species through site clearance and construction works.
- 5.5 Section 6 of this report provides recommendations that will ensure an offence is not committed during the proposed development.

6 RECOMMENDATIONS

- 6.1 Due to the presence of habitats on site that have the potential to support a range of protected species recommendations to further consider these species in line with the legislation protecting them are given below.

Badgers

- 6.2 No badger setts were recorded on or directly adjacent to the site. However, suitable sett-building habitat was recorded at the site.
- 6.3 It is therefore recommended that a re-survey of site is undertaken by a suitably qualified ecologist immediately prior to works commencing to ascertain the presence / absence of sett-building activity. Should a badger sett be recorded, a full badger mitigation strategy will be required to ensure the development does not detrimentally impact the favourable conservation status of local badger populations.

Bats

- 6.4 Building B1 was considered to have low suitability for roosting bats. It is therefore recommended that a minimum of one dusk emergence and / or dawn re-entry survey is undertaken to ascertain whether bats are currently roosting within this building in line with the Bat Conservation Trust's Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016). This type of survey can be undertaken between May and August.
- 6.5 This survey will allow an assessment of the current level of usage of the building by roosting bats. If bats are recorded roosting in the building during the survey, the works to the building will need to proceed under a European Protected Species Mitigation (EPSM) licence obtained from Natural England. Natural England require a minimum of three dusk emergence and / or dawn re-entry surveys to support a licence application. Therefore, prior to applying for a licence two further surveys would need to be undertaken between May and September. Full planning permission must be granted before a licence can be applied for.
- 6.6 The full extent of any vegetation clearance to facilitate the development is not known at the time of writing as the development proposals have not yet been finalised. However, should the clearance works require the felling of any mature broadleaved trees within or adjacent to the site boundary, a full bat tree assessment should be undertaken by a suitably qualified ecologist. This assessment will ensure that any trees supporting roosting bats and / or are identified and any impacts to these trees are adequately mitigated for.

Breeding birds

- 6.7 Any vegetation clearance or building demolition should be undertaken during the period October to February (inclusive) to avoid the bird-nesting season. If this is not possible then prior to the commencement of works, an on-site check for nesting birds should be

undertaken by a suitably experienced ecologist and any active nests will need to be identified and subsequently left *in situ* until the chicks have fledged.

Great Crested Newts

- 6.8 No aquatic habitat was recorded within the site and no waterbodies were recorded within 500 m of the site. However, terrestrial habitat with potential to support amphibians was recorded within the site.
- 6.9 A precautionary approach to vegetation removal is recommended, to include the removal of any mixed semi-natural woodland, continuous scrub, piles of cut vegetation and grassland tussocks is undertaken to include dismantling / removing features by hand that may be used as a refuge, under the supervision of an ecologist. It is also recommended that the amenity grassland is kept at a short sward height to discourage great crested newts from entering the development boundary.

Reptiles

- 6.10 The mixed semi-natural woodland and continuous scrub provided suitable habitat for these species of reptile. Habitat features such as piles of cut vegetation and grassland tussocks also provided suitable potential refugia for these species of reptile.
- 6.11 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).
- 6.12 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.

Plants

- 6.13 It is recommended that the small-leaved cotoneaster and rhododendron is removed from the site before development works commence. They are Schedule 9 invasive species which makes it an offence to plant or allow the spread beyond the landowner's boundary. Eradication is therefore the recommended course of action as it will prevent an offence being committed.

Biodiversity Enhancements

- 6.1 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 could be installed on proposed buildings and/or mature native trees on site.

- The landscaping scheme should create ecological links by in-fill planting using native species planting. This could include the creation of native species-rich hedgerows to provide additional opportunities for foraging and nesting species. Species could include dogwood *Cornus sanguinea*, guelder rose *Viburnum opulus*, wild privet *Ligustrum vulgare*, hawthorn *Crataegus monogyna* and elder *Sambucus nigra*.
- Any trees removed to facilitate development could be replaced with native berry bearing species such as rowan *Sorbus aucuparia* and hawthorn to provide additional foraging and nesting opportunities.
- 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 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.

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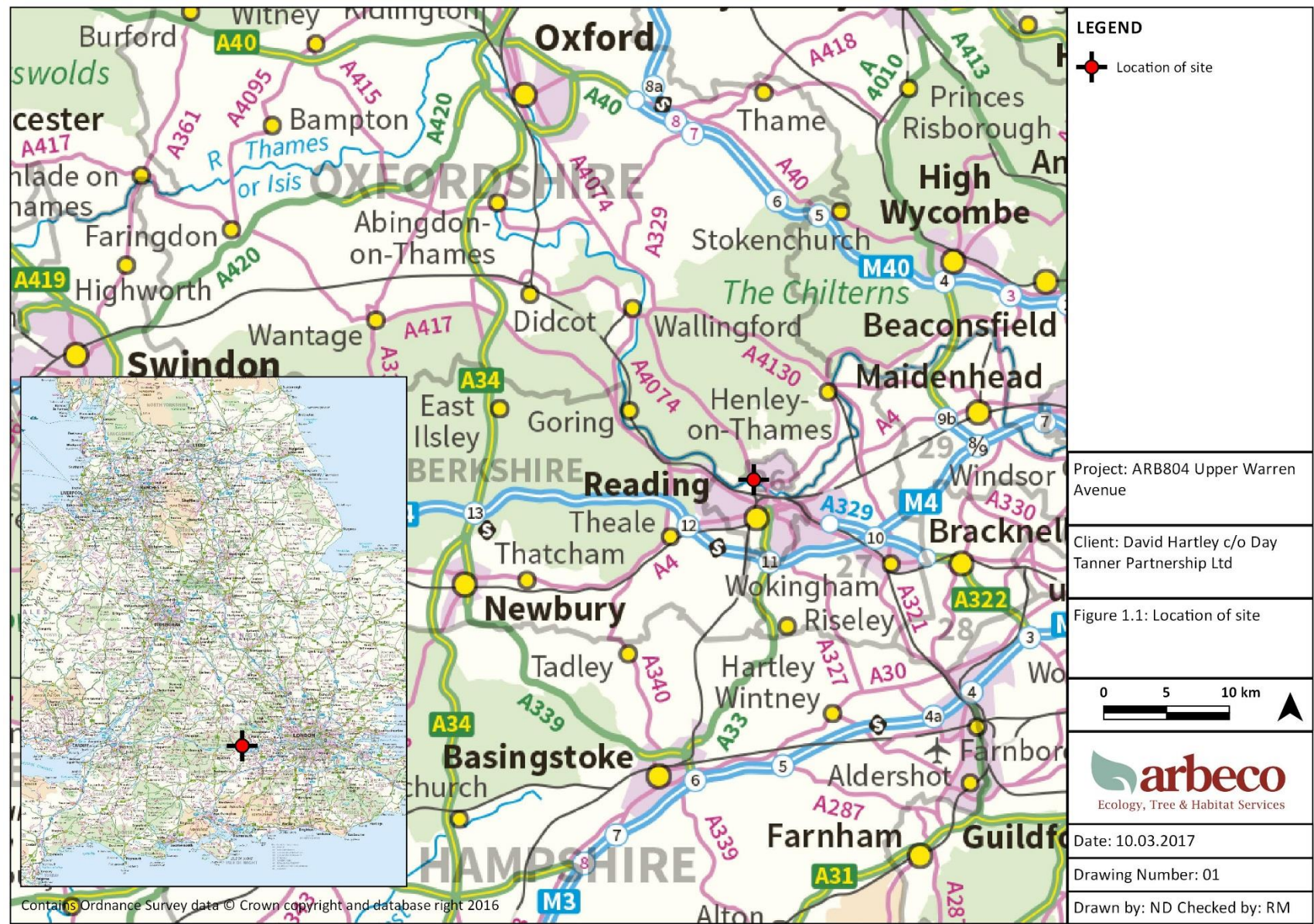
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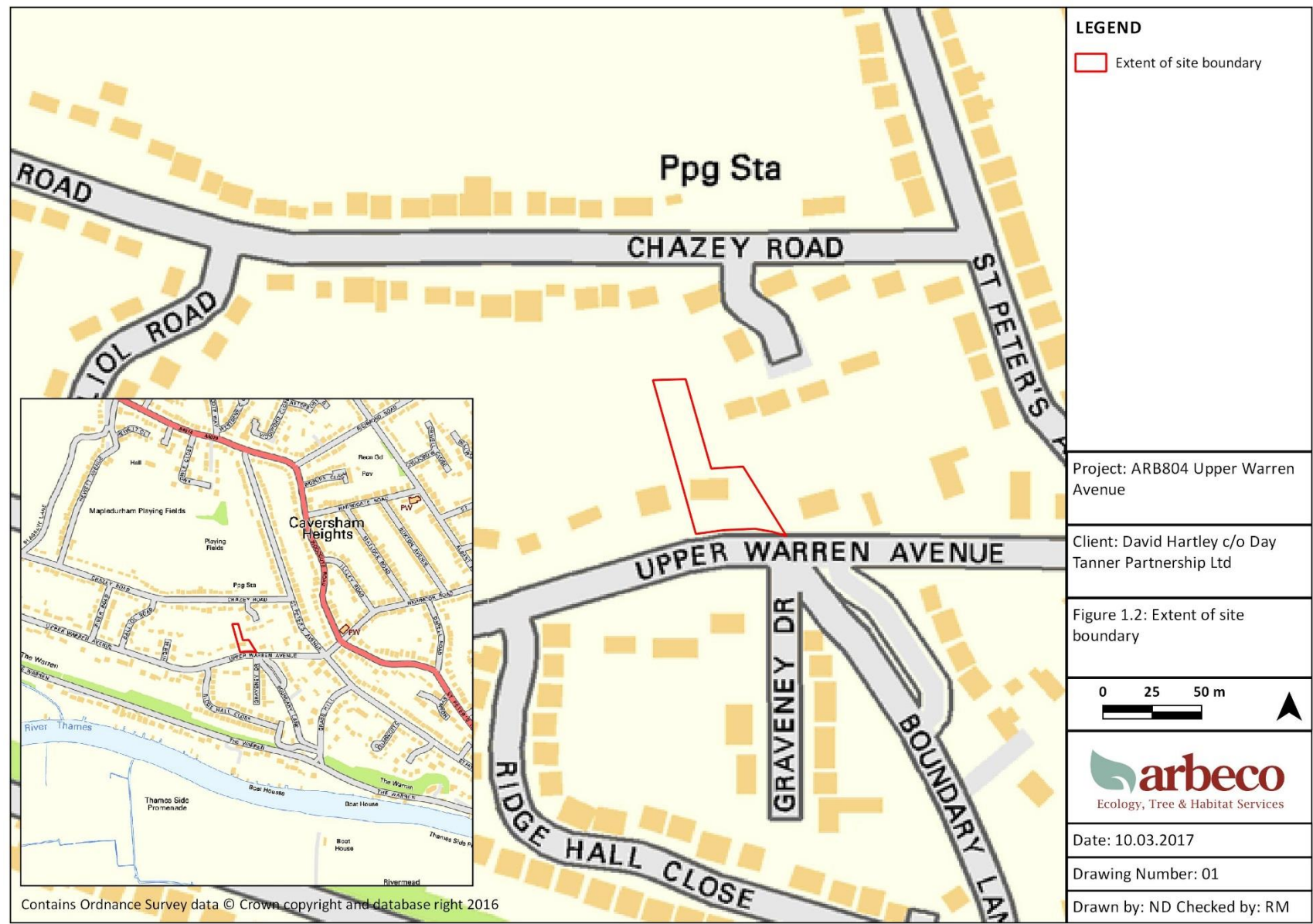
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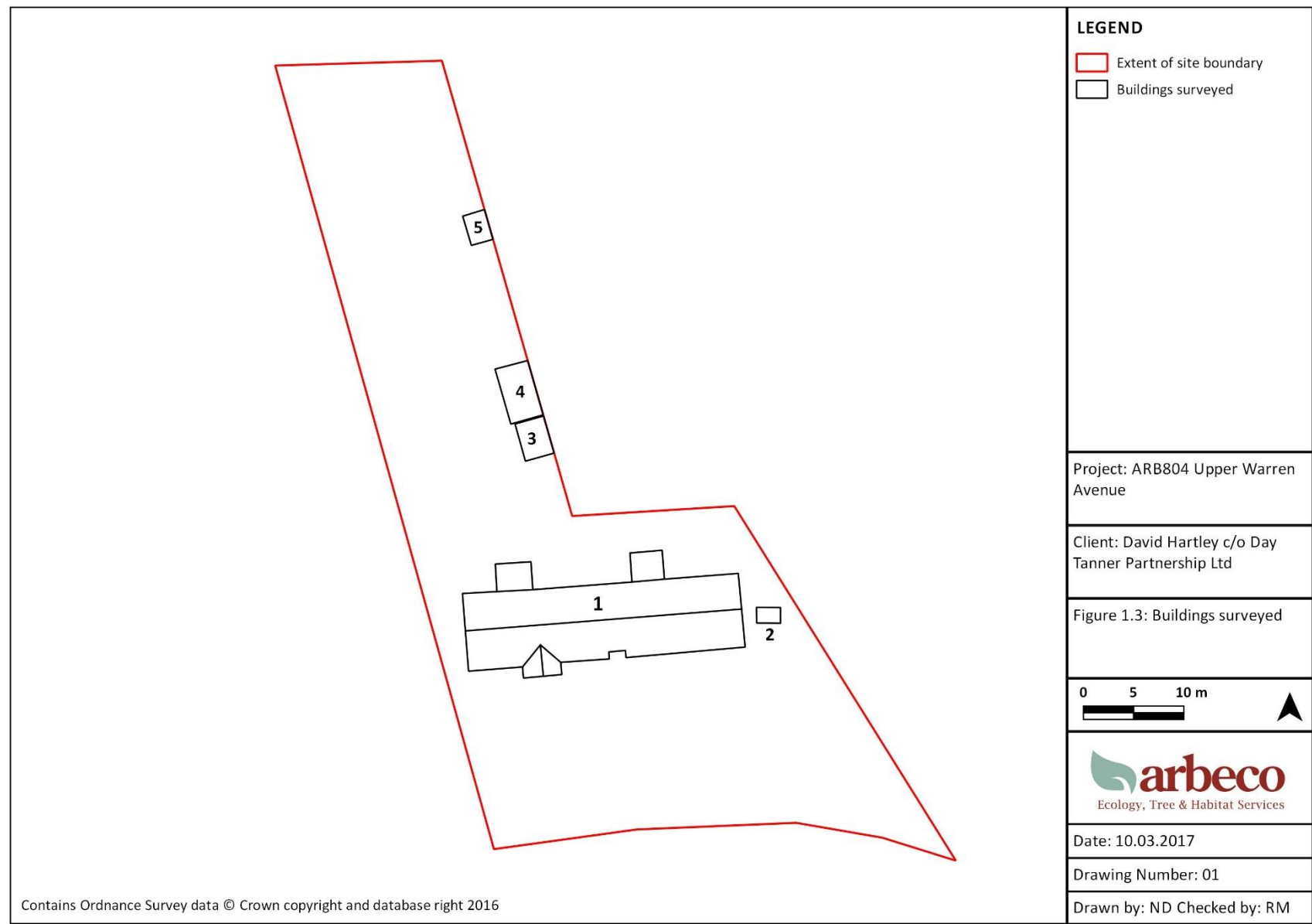
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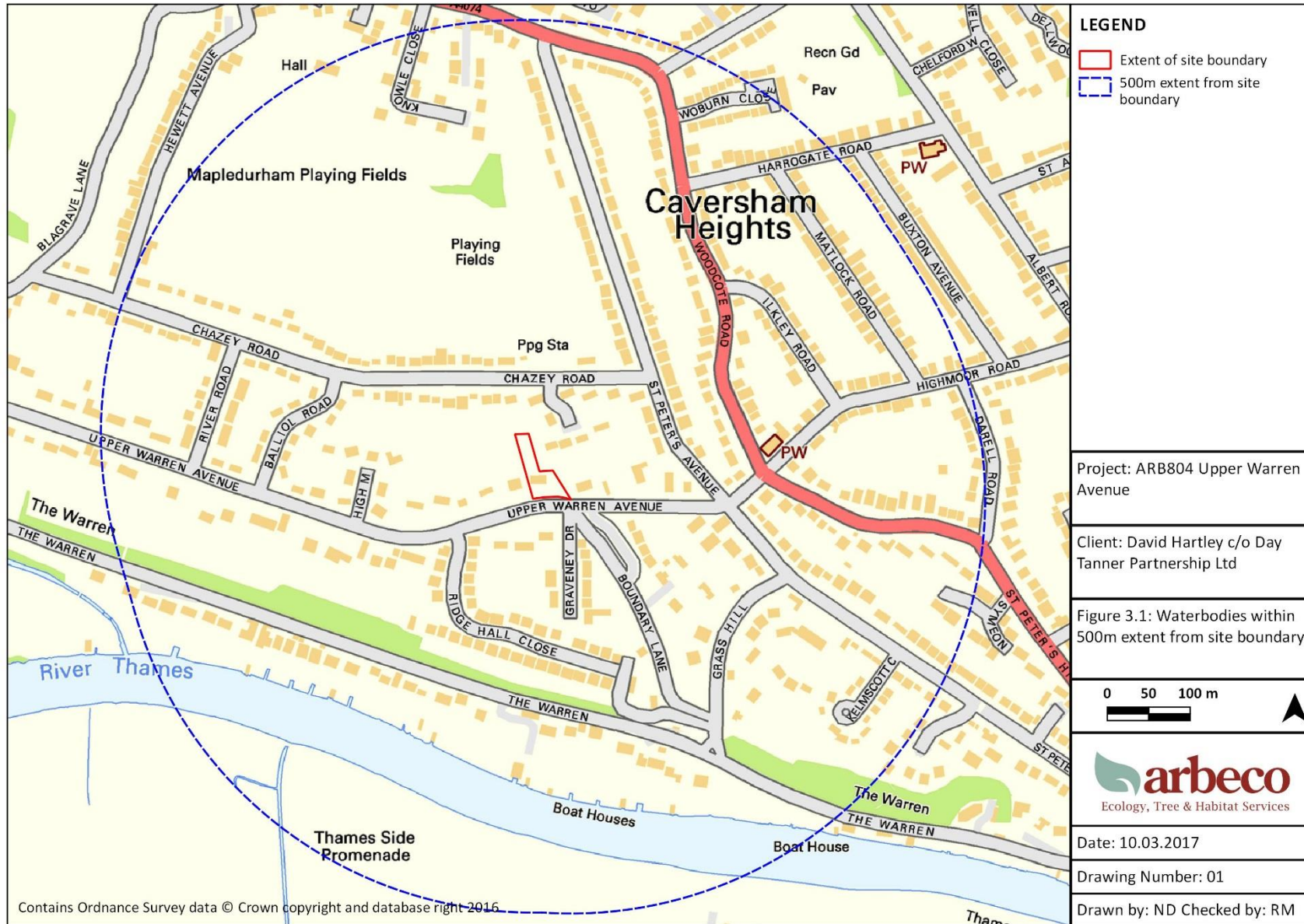
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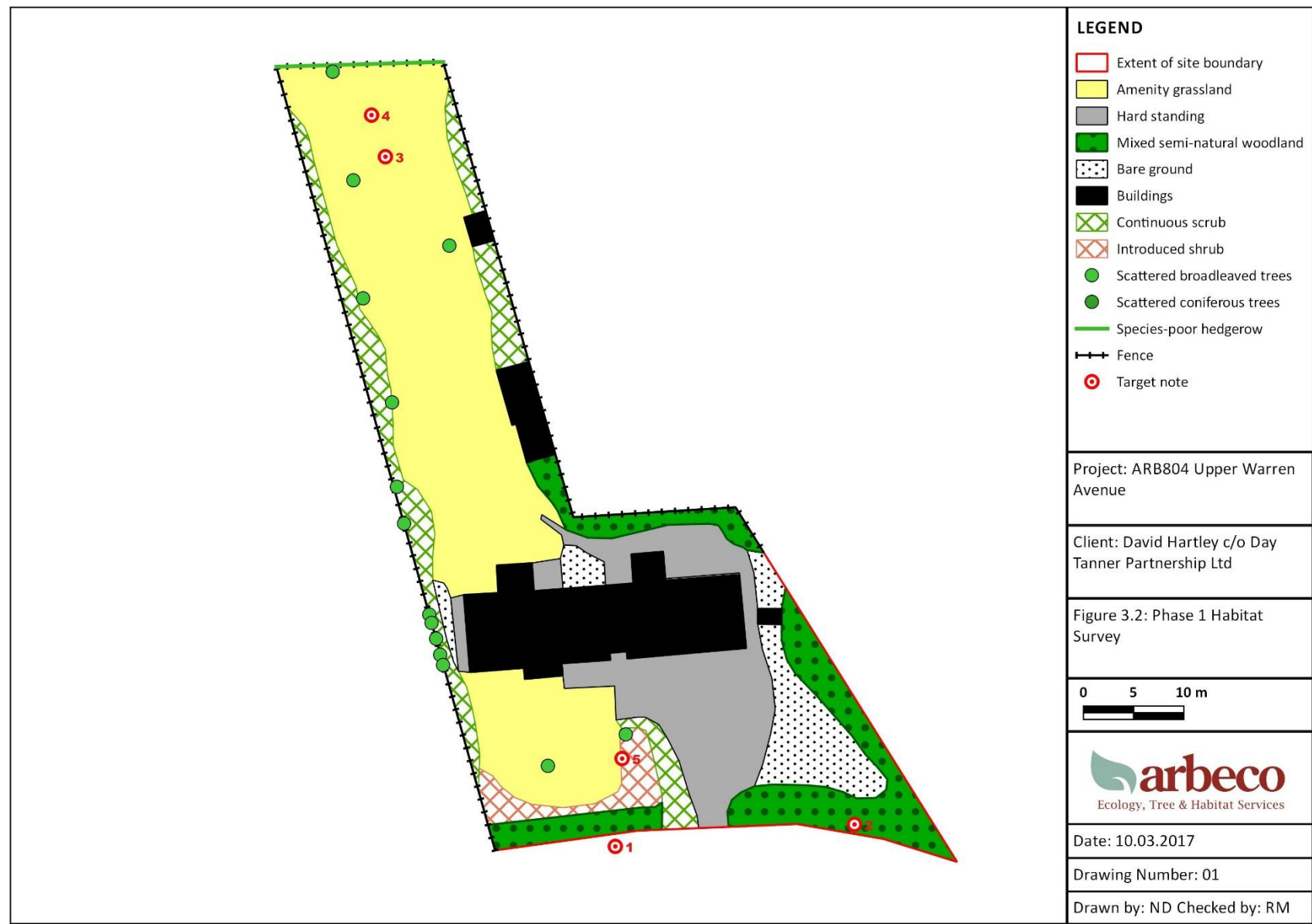
- Figure 1.1 Location of site
- Figure 1.2 Extent of site boundary
- Figure 1.3 Buildings subject to survey
- Figure 3.1 Waterbodies within 500 m of site boundary
- Figure 3.2 Phase 1 habitat survey
- Figure 3.3 Bat building assessment results













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 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 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	Photograph Reference
1	Disused large mammal hole	10
2	Large mammal run	11
3	Two piles of cut vegetation potentially providing reptile / amphibian refugia	12
4	Area of tussocky grass potentially providing reptile / amphibian refugia	13
5	Location of small-leaved cotoneaster and Rhododendron	14 / 15

APPENDIX D: Site photographs



Photograph 1: Amenity grassland, north of site



Photograph 2: Amenity grassland, south of site



Photograph 3: Mixed semi-natural woodland, south of site



Photograph 4: Mixed semi-natural woodland, south of site



Photograph 5: Continuous scrub, west of site



Photograph 6: Continuous scrub, south of site



Photograph 7: Scattered broadleaved tree, apple species



Photograph 8: Scattered broadleaved tree, beech



Photograph 9: Species-poor hedgerow



Photograph 10: Disused large mammal hole



Photograph 11: Large mammal run in vegetation



Photograph 12: Pile of cut vegetation providing reptile / amphibian refugia



Photograph 13: Area of grassland tussocks



Photograph 14: Small-leaved cotoneaster



Photograph 15: Rhododendron



Photograph 16: Eastern half of southern elevation



Photograph 17: Western half of southern elevation



Photograph 18: Northern elevation



Photograph 19: Northern elevation



Photograph 20: Roof void



Photograph 21: Roof void



Photograph 22: Gap under ridge tile



Photograph 23: Gaps under roof tiles