





Former Friends School, Saffron Walden

Ecological Impact Assessment

Prepared by CSA Environmental

on behalf of Chase New Homes

Report No: CSA/4017/04

August 2021

This report may contain sensitive ecological information. It is the responsibility of the Local Authority to determine if this should be made publicly available.

Report	Date	Revision	Prepared	Approved	Comments
Reference			by	by	
CSA/4017/04	06/08/2021	-	MJB	JW	
CSA/4017/04	15/02/2022	A	СН	JW	Updated to reflect increase of housing units
CSA/4017/04	14/06/2022	В	СН	JW	Updated to reflect consultee comments









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EXECUTIVE SUMMARY

Residential development is proposed at Former Friends School, Saffron Walden, for which detailed planning permission is sought.

CSA Environmental was instructed by Chase New Homes to undertake an Ecological Impact Assessment (EcIA) of the proposed development. To inform this assessment, a desktop study followed by a suite of targeted species and habitat surveys were undertaken.

No designated sites or areas of ancient woodland have been identified within the Site or within the immediate surroundings which would be affected by the proposed scheme.

The Site is dominated buildings and areas of hardstanding with negligible ecological interest, along with some areas of amenity grassland. Areas of greater ecological interest include the established mature trees, which proposals seek to retain the majority of alongside development.

Roosting bats have been confirmed within two buildings on-site, with a mitigation approach set-out in respect of works to demolish or convert these buildings. In addition, opportunities for ecological enhancement will be adopted within the scheme including integrated bird and bat boxes.

Subject to implementation of the proposed mitigation and enhancement measures, the development proposals are not anticipated to result is any adverse effects in respect of important ecological features. The scheme is considered to accord with relevant nature conservation and local planning policy.

1.0 INTRODUCTION

- 1.1 This report has been prepared by CSA Environmental on behalf of Chase New Homes. It sets out the findings of an Ecological Impact Assessment (EcIA) of proposed development at Former Friends School, Saffron Walden (hereafter 'the Site'). Residential development is proposed at the Site, for which detailed planning permission is sought.
- 1.2 The scope of this assessment has been determined with consideration of best-practice guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) and the Biodiversity: Code of practice for planning and development published by the British Standards Institute (BS 42020:2013).
- 1.3 The Site occupies an area of c. 3.2ha and comprises existing school buildings with associated hard standing and gardens including amenity grassland, ornamental planning, numerous trees and a pond (see Habitats Plan in Appendix A). The Site is located around central grid reference TL 5396 3766, in the south of Saffron Walden, approximately 22km south of Cambridge. The surrounding landscape is dominated by existing residential development. Immediately adjacent to the eastern Site boundary are the former school playing fields which have seen a recent lapse in their longstanding intensive management regime of frequent mowing.
- 1.4 An initial desk study, extended Phase 1 Habitat survey and Preliminary Roost Assessment were undertaken for the Site in October 2018 as part of a Preliminary Ecological Appraisal for the wider Site, the findings of which are presented herein. In addition, the following further survey work was undertaken between July and September 2020 and June 2022:
 - Bat surveys Buildings (July-September 2020)
 - Bat survey Trees (June 2022)

1.5 This EcIA aims to:

- Establish baseline ecological conditions at the Site.
- Determine the importance of ecological features which could be affected by the proposed scheme.
- Identify any likely significant impacts or effects of the proposed development on important ecological features, in the absence of mitigation, including cumulative impacts.
- Set out any measures necessary to effectively avoid or mitigate likely significant effects, and identify residual impacts.
- Identify any compensation measures required to offset residual impacts.
- Set out potential ecological enhancement measures that may be secured by the proposed scheme.

- Confirm how proposed mitigation, compensation and enhancement measures could be secured.
- Provide sufficient information to determine whether the project accords with relevant nature conservation policies and legislation, and where appropriate, to allow conditions or obligations to be imposed by the relevant authority.
- 1.6 An EcIA can be used for the appraisal of projects of any scale. This is a best practice evaluation process, recommended by CIEEM (2018). It is intended that the evaluation of findings presented here-in will aid the Uttlesford District Council in their review of the planning application.

2.0 LEGISLATION, PLANNING POLICY & STANDING ADVICE

Legislation

- 2.1 Legislation relating to wildlife and biodiversity of particular relevance to this EcIA includes:
 - The Conservation of Habitats and Species Regulations 2017 (as amended)
 - The Wildlife and Countryside Act 1981 (as amended)
 - The Natural Environment and Rural Communities (NERC) Act 2006
 - The Protection of Badgers Act 1992
- 2.2 This above legislation has been addressed, as appropriate, in the production of this report. Further information on the above legislation is provided in Appendix B.

National Planning Policy

- 2.3 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021) sets out the government planning policies for England and how they should be applied. Chapter 15: Conserving and Enhancing the Natural Environment, is of particular relevance to this report as it relates to ecology and biodiversity. Further details are provided in Appendix B.
- 2.4 Accompanying the NPPF, central government guidance on the implementation of planning policies is set out within online Planning Policy Guidance (PPG). The Natural Environment PPG addresses biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services. Further guidance in respect of statutory obligations for biodiversity conservation within the planning system is provided by Government Circular 06/2005.

Local Planning Policy

2.5 A number of local planning policies relate to ecology, biodiversity and/or nature conservation. These are summarised in Table 1 of Appendix B. These policies have been addressed, as appropriate, in the production of this report.

Standing Advice

2.6 Natural England Standing Advice regarding protected species aims to support local authorities and forms a material consideration in determining applications in the same way as any individual response received from Natural England following consultation. Standing advice has therefore been given due consideration, alongside other detailed guidance documents, in the scoping of ecological surveys and production of this report.

3.0 METHODS

Desk Study

- 3.1 The Multi-Agency Geographic Information for the Countryside (MAGIC) online database was reviewed in October 2020 to identify the following ecological features (based on the Site's likely 'zone of influence' in respect of such features):
 - Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites within 10km of the Site (including possible/proposed sites)
 - Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Local Nature Reserves (LNR) within 3km of the Site
 - Other relevant data e.g. Ancient Woodland Inventory within 1km of the Site
- 3.2 Essex Field Club (EFC) and Essex Wildlife Trust (EWT) were contacted for details of any non-statutory nature conservation designations and records of protected/notable habitats and species. This information was requested for an area encompassing the Site and adjacent land within c. 2km of its central grid reference. This search area was selected to include the likely zone of influence of effects upon non-statutory designations and protected or notable habitats and species.
- 3.3 Further online resources were reviewed for information which may aid the identification of important ecological features. The Woodland Trust's online Ancient Tree Inventory was reviewed for known ancient or veteran trees within the Site and adjacent land. Interactive online mapping provided by the charity 'Buglife' was used to determine whether the Site falls within an Important Invertebrate Area.
 - In accordance with Natural England's Great Crested Newt Mitigation Guidelines (2001), a desktop search was undertaken to identify ponds within 500m of the Site which may have potential to support breeding great crested newts *Triturus cristatus*, using Ordnance Survey (OS) mapping, the MAGIC database and aerial photography.
- 3.4 Where possible under the terms of the data provider, relevant desk study data are presented in Appendix C.

Field Surveys

Extended Phase 1 Habitat Survey

3.5 An extended Phase 1 Habitat survey was carried out in fine and dry weather conditions on 18 and 25 October 2018 by Tom Clemence ACIEEM and Emma Robson GradCIEEM, encompassing the Site and immediately adjacent habitats that could be viewed. The survey area included the wider Site as part of the previous hybrid application.

- 3.6 Phase 1 Habitat survey is a method of classification and mapping wildlife habitats in Great Britain. It was originally intended to provide "...relatively rapidly, a record of the semi-natural vegetation and wildlife habitat over large areas of countryside." The Phase 1 Habitat Survey method has been widely 'extended' beyond its original purpose to allow the capture of information at an intermediate level between Phase 1 and Phase 2 Habitat surveys. Here, the standard survey method has been 'extended' in this report to include the following:
 - More detailed floral species lists for each identified habitat
 - Descriptions of habitat structure, the evidence of management and a broad assessment of habitat condition
 - Mapping of additional habitat types (e.g. hardstanding)
 - Identification of Habitats of Principal Importance in respect of Section
 41 (\$41) of the NERC Act 2006
 - Identification of Habitats Directive Annex I habitat types
 - Evidence of, or potential for, European Protected Species (EPS) (including bats, great crested newt, dormouse and otter)
 - Evidence of, or potential for, other protected species (including birds, reptiles, water vole, badger and certain invertebrates)
 - Evidence of, or potential for, other notable species (including \$41 Species of Principal Importance as well as notable, rare, protected or controlled plants and invertebrates)
- 3.7 Results of the extended Phase 1 Habitat survey are presented on the Habitats Plan in Appendix A.

Further Survey Work

- 3.8 The following detailed field survey work was carried out between October 2018 and June 2022, with full methods and results provided in the Appendix E:
 - Preliminary Roost Assessment Structures October 2018, updated in September 2020
 - Preliminary Roost Assessment Trees June 2022
 - Bat emergence/re-entry surveys July-September 2020

Limitations

- 3.9 The Phase 1 habitat survey was undertaken towards the end of the 'optimum' survey period for flora and habitats. Given the habitats present which comprise amenity/ornamental habitats, this is not considered a significant constraint to the survey work undertaken.
- 3.10 Any limitations to specific Phase 2 surveys are addressed in the relevant appendix.

Evaluation and Assessment

- 3.11 Ecological features are identified, evaluated and assessed in accordance with the CIEEM Guidelines for Ecological Impact Assessment (2018), with detailed methods provided in Appendix E.
- 3.12 It is an established principle (CIEEM, 2018) that EcIA is an iterative process. Specialist advice on the avoidance and mitigation of the potential negative effects of the proposed development has been input from an early design stage.

4.0 BASELINE ECOLOGICAL CONDITIONS

Nature Conservation Designations

<u>Statutory</u>

4.1 There are no statutory designations covering any part of the Site and furthermore, no international or national/local statutory designations were identified within 10km and 3km of the Site, respectively.

Non-Statutory

- 4.2 A total of eight non-statutory designations were identified within 2km of the Site. These non-statutory designations are described in Table 1 below. All of the designations are well removed from the Site and therefore no adverse effects as a result of the development are anticipated.
- 4.3 As LWSs are designated according to criteria applied in a county context, these sites are considered to be ecologically important at the County level.

Table 1. Non-statutory designations within search radii

Site Name & Designation	Distance & Direction from Survey Area	Special Interests or Qualifying Features		
Non-Statutory Designations within 2km				
Audley End Park Wall Protected Roadside Verge	c. 0.7km west	Section of road verge supports a large population of Lesser Calamint Clinopodium nepeta and Wild Clary Salvia verbenaca, both Essex Red Data List species.		
Roos Hill Protected Roadside Verges	c. 0.8km south	Road verge designated in recognition of their chalk grassland flora.		
Audley Park Pastures LWS	c. 1.1km north- west	Combination of dry grassland, wet pasture, sedge beds and swamp adjacent to The Slade stream.		
River Cam Wet Woods LWS	c. 1.4km west	This site consists of two main blocks of tall swamp, sedgebed and willow plantation either side of the River Cam adjacent to Audley Park.		
Saffron Walden Golf Course LWS	c. 1.5km north- west	Supports an important chalk grassland flora.		
Spring Wood LWS	c. 1.5km north- west	Large ancient wood under estate woodland management.		
Ashdon Road Verges	c. 1.5km north- east	Group of verges which includes the Saffron Walden – Ashdon Road Protected Roadside Verge (West Section) UTT45 designated for their chalk grassland flora.		

		Ancient woodland site replanted with
Brakey Lee Wood	c. 1.7km south-	Poplars with only isolated standards of
LWS	west	ash Fraxinus excelsior and pedunculate
		oak Quercus robur.

Habitats and Flora

Ancient Woodland

4.4 There is no ancient woodland covering any part of the Site or immediately adjacent land. No trees on or adjacent to Site are listed on the Ancient Tree Inventory.

Notable Flora Records

4.5 EWT and EFC provided 26 records of 11 notable plant species from within the search area. The majority of records returned were for non-native invasive species, located off-site. None of the species returned from EWT or EFC were recorded on Site during the Phase 1 habitat survey.

Habitats

- 4.6 The following habitats were recorded on-site and classified in line with current Phase 1 Habitat species guidance (JNCC, 1990), as illustrated in Appendix A.
- 4.7 Cotoneaster horizontalis and curly waterweed Lagarosiphon major are invasive non-native species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), and were recorded on Site at the time of survey (see below).

Buildings

- 4.8 A number of mixed age buildings are present within the Site. These are of a range of construction methods and are understood to have been built between 1879 and 2012. A full list and overview of the buildings within the Site is provided within Appendix E (Table E.1).
- 4.9 The buildings on-site provide no floral interest and are of negligible ecological importance in this respect. However, see ecological importance in respect of bats below.

Hardstanding

4.10 Areas of hardstanding are present on the Site in association with the onsite buildings. These areas include access roads/tracks, car parking facilities, pavements and paths. None support features of ecological interest.

Amenity Grassland

4.11 Amenity grassland is present within the formal 'garden' areas associated with the on-site school buildings. The grassland has been subject to a longstanding, and ongoing, management regime of frequent short

mowing. Species recorded are typical of this habitat type and include red fescue Festuca rubra, perennial rye-grass Lolium perenne and cock's-foot Dactylis glomerata. A limited number of herbs were recorded frequently within the sward.

4.12 Ecological features within this habitat fall short of any wildlife site selection criteria or NERC Section 41 priority habitats. Species composition is dominated by coarse grasses with limited diversity or structure. As such this habitat falls below the threshold of determining ecological importance.

Trees

- 4.13 Numerous individual trees are present throughout the Site, these include mature specimens of common lime *Tilia* x europaea, beech *Fagus* sylvatica and silver birch *Betula* pendula.
- 4.14 A central mature lime tree avenue exists to the south of the main school building and extends beyond the Sites southern boundary, occupying a total length of c. 0.3km.
- 4.15 A number of the trees within the Site are covered under Tree Preservation Orders, as identified within the Tree Survey by Keen Consultants in June 2018.
- 4.16 Given their age and value to wildlife, trees identified above are of ecological importance, significant at the **Local** level.

Ornamental planting

- 4.17 Small areas of ornamental planting are present throughout the Site. None of the areas cover a substantial area such to provide important habitat features for wildlife. The majority of species recorded were shrubs, these include firethorn *Pyracantha* sp., bay *Laurus nobilis*, hebe Hebe sp. and box-leaved honeysuckle *Lonicera pileata*.
- 4.18 Cotoneaster horizontalis (listed under Schedule 9 of the Wildlife and Countryside Act 1981 [as amended]) was recorded within an ornamental planting bay to the south of the school building.
- 4.19 Given the limited extent of this habitat and dominance by non-native species, this habitat falls below the threshold for significant ecological importance.

Pond

4.20 A c. 10m² ornamental pond is present within the Site. The pond is lined with an artificial liner and has steep sides being surrounded by a formal area of gravelled open space. Water lily Nymphaeaceae sp. and curly waterweed Lagarosiphon major (listed under Schedule 9 of the Wildlife and Countryside Act 1981 [as amended]) were recorded within the pond, with a stand of lesser reed mace Typha angustifolia also present.

Fauna

<u>Bats</u>

Local Context

- 4.21 A total of 363 bat records were identified within the search area, the majority of which were for common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*. A record for Barbastelle Barbastella barbastellus was also returned. However, the resolution of the grid reference supplied with the record is inadequate to provide a meaningful location or distance from the Site.
- 4.22 The local landscape comprising suburban habitats provides suboptimal foraging and commuting habitats for bats. Nevertheless, roosting opportunities are likely widely available within the various buildings.

Foraging/Navigation

4.23 The vast majority of the site, comprising buildings, hardstanding and amenity grassland provide suboptimal foraging/navigational opportunities for bats. The on-site tree belts provide superior opportunities, albeit limited by poor connectivity to other suitable habitats in the wider landscape.

Roosts

- 4.24 All trees likely to be removed during the proposed development works were surveyed for potential roost features (PRFs). Of the 27 trees surveyed, three were assessed to be of 'Low' bat roost potential containing a single PRF, with very limited roost potential. All remaining trees surveyed were found to be of 'Negligible' bat roost potential.
- 4.25 Buildings B1 and B16 have been identified as supporting confirmed bat roosts.
- 4.26 During the initial PRA of buildings, a brown long-eared bat was recorded within loft space 3 of B1 and scattered brown long-eared bat droppings were recorded within all accessible loft spaces associated with this building. No brown long-eared bats were recorded emerging from or returning to roost within this building during the further survey work. However, two common pipistrelles were observed returning to roost under the eaves of the building (southern elevation) during the survey on 06 July 2020. Two common pipistrelle bats were also observed to emerge from B1 on 01 July 2020 on the western end of the building.
- 4.27 Two common pipistrelle bats were seen to emerge from B16 on 4th August 2020 at 21:10, followed by a return to roost 18 minutes later followed by an immediate emergence from a similar location.
- 4.28 No emerging bats or evidence of roosting was recorded in association with all other on-site buildings. Roosting bats are therefore taken as likely

absent from these buildings. Full results are provided within Appendix E of this report.

Importance

4.29 Based on the survey findings, the presence of small roosts of common species, the Site is of **Local** importance in respect roosting bats. In addition, bats benefit from various legal protections and are therefore also considered in this respect.

<u>Badger</u>

- 4.30 EWT and EFC have provided seven records of badger *Meles meles* from within the search area, dating from 1996 to 2016. The closest record is c. 0.4km from the Site.
- 4.31 No evidence of badger was recorded within the Site during the initial Phase 1 habitat survey carried out in 2018, with very limited opportunities for feeding badger within the Site.
- 4.32 A dedicated badger survey was carried out of the Site on October 2020.

 No evidence of badger setts or badger foraging activity was recorded.

 Badgers are taken as likely absent from the Site.

Dormouse

- 4.33 No records of dormouse *Muscardinus avellanarius* were identified within the search area.
- 4.34 The Site is set within a residential sub-urban context with no tangible connectivity to suitable dormouse habitat. The Site in isolation does not comprise habitats which could support a relict dormouse population. Therefore, with these factors taken in combination, dormice are taken as likely absent from the Site.

Riparian Mammals

- 4.35 No records of water vole Arvicola amphibius were identified within the search area. A total of six records of otter Lutra lutra were identified within the search area, the majority of which were associated with Sir Joshua's Bridge on the River Cam, c. 2km south-west of the Site.
- 4.36 No watercourses or other suitable habitats are present within the Site or within the adjoining landscape. Therefore, both otter and water vole are taken as likely absent from the Site.

Other Mammals

- 4.37 No records were returned for brown hare Lepus europaeus or harvest mouse Micromys minutus from within the search area.
- 4.38 A total of 30 records of hedgehog *Erinaceus europaeus* were identified within the search area. The closest is located on-site within the north-

- eastern corner of the Site, dating from 2017. Two other records are from gardens adjacent to the Site.
- 4.39 The Site does not provide suitable habitat opportunities for brown hare or harvest mouse, such that both species are taken as likely absent.
- 4.40 No field evidence of hedgehog was recorded during the surveys carried out by CSA between 2018 and 2020. However, hedgehog has previously been confirmed as present within the Site and the local area. Hedgehogs are listed under Section 41 of the NERC Act (2006) as a species of principle importance in regard to their conservation.

<u>Birds</u>

4.41 A total of 401 records of 71 bird species were identified within the search area, dating from 2007 to 2017. Those of potential relevance to the Site include green woodpecker *Picus viridis*, house martin *Delichon urbicum*, swallow *Hirundo rustica*, starling *Sturnus vulgaris* and song thrush *Turdus philomelos*. The majority of the Site provides limited interest for nesting and foraging birds.

Reptiles

4.42 A total of seven records of two reptile species were identified within the search area including grass snake *Natrix natrix* (syn. *N. helvetica*) and slow worm *Anguis fragilis*. The closest record is of grass snake, c. 0.3km south-east of the Site, on the edge of Saffron Walden. No suitable reptile habitat is present at the Site and therefore reptiles are taken as likely absent from the Site.

<u>Amphibians</u>

- 4.43 A total of nine records of three amphibian species were identified within the search area, including common frog Rana temporaria common toad Bufo bufo and great crested newt (GCN) Triturus cristatus. The closest records are for common frog, c. 0.3km north. The closest and most recent record for GCN is from Bridge End Gardens, c. 1.1km northwest of the Site, dating from 2001.
- 4.44 The vast majority of terrestrial habitat within the Site provides negligible opportunities for amphibians, being short grassland, buildings and hardstanding.
- 4.45 Despite spending much of their annual lifecycle within the terrestrial environment, great crested newts are dependent upon the presence of suitable aquatic breeding habitat in order for a population to persist. A single ornamental pond is present on-site (see Habitats Plan, Appendix A). No further ponds appear to be present within a dispersible range of the Site, based on OS mapping and aerial imagery.
- 4.46 The on-site pond was subject to an HSI assessment in 2020 (Oldham et al., 2000) and scored a below average suitability to support GCN (0.52),

being ornamental, small and located away from any other ponds/populations of amphibians. GCN are very unlikely to make use of such a pond in this context. However, as a precaution, late-season torch light surveys were undertaken by Tom Clemence ACIEEM (2016-25544-CLS-CLS) on 29 June, 01 July, 06 July and 14 July 2020. No amphibians, including great crested newts, or evidence of their presence, was recorded. As such GCN and any other important amphibian populations of reasonably concluded to be other amphibian species are likely absent from the Site.

<u>Invertebrates</u>

4.47 A total of 445 records of 291 invertebrate species were identified within the search area, all of which are located c. 0.3km beyond the Site boundary. The amenity grassland, building and hardstanding habitats which dominate the Site are of limited interest for invertebrates.

Summary of Ecological Features

4.48 Table 2 below summarises all important ecological features identified within the respective zones of influence, together with the geographic context of their importance:

Table 2. Summary of important ecological features and their geographic context

Ecological Feature	Geographic Context of Importance and/or Protection Status
Non-statutory designated sites (Special Roadside Verges and LWS)	County
Trees	Local
Bats	Local, protected
Breeding birds	Local, protected

5.0 ASSESSMENT OF EFFECTS

The Proposed Development

- 5.1 Detailed planning permission is sought for residential development at the Site. The following impact assessment is based on the 'Proposed Site Plan' (ref: 21 0037-200 B).
- 5.2 The construction phase of the proposed development will comprise the following:
 - Demolition of buildings B2-B7, part of B8, B10, B11-B13, B15, B16, B17 and B21)
 - Felling of up to 27 trees (<5 mature trees) to facilitate clearance, demolition and construction
 - Conversion of main school building complex (B1, B9, B17, B18, B19, B20) and the Croydon building (B14) to flats
 - Construction of new dwellings (houses and flats), total c. 96 dwellings including conversions
 - Construction of associated gardens, parking spaces, access infrastructure, a play area (Multi-use Games Area)
 - The establishment of Public Open Space (POS)
- 5.3 The operational phase of the proposed development will comprise the following:
 - Occupation of new residential dwellings (houses and flats)
 - Increase in human activity, including use of vehicles and presence of domestic pets
 - Increased artificial lighting and anthropogenic noise

Ecological Mitigation Approach

- 5.4 It is an established principle (CIEEM, 2018) that, wherever possible, potential negative effects should be avoided through 'Mitigation by Design', as this gives greater certainty over deliverability, demonstrates a well-designed scheme and ensures the correct application of the 'Mitigation Hierarchy' (as advocated by BS42020:2013, Defra 2019 and CIEEM, CIRIA & IEMA 2016). Such mitigation by design has been included within the above-described Proposed Development scheme, influencing the final scheme design.
- 5.5 In addition to mitigation by design, the following overarching ecological mitigation measures are proposed, and referenced where applicable through this section.
- 5.6 In accordance with BS42020:2013, a **Construction Environmental Management Plan (CEMP)** is proposed to be secured by planning condition and prepared at the detailed design stage. In addition to the construction phase impact avoidance and mitigation measures

identified in the following sections, the CEMP will detail standard environmental control measures, including though not limited to the following:

- Implementation of strict protection measures for the root protection areas of retained trees and hedgerows, in accordance with BS5837:2012
- Standard best practice construction phase pollution prevention and control measures.
- Sensitive working methods and timing to avoid direct impacts to nesting birds (generally vegetation removal outside nesting season of March through August).
- All working measures needed to comply with the terms of EPS derogation licencing specific to the works activity
- Updated ecological surveys, where necessary, to identify shifts in the baseline ecological condition (such as to support EPS derogation licence applications) in order that revised impact avoidance and mitigation measures can be adopted as required
- 5.7 In accordance with BS42020:2013, a <u>Landscape and Ecology Management Plan (LEMP)</u> will also be secured by planning condition and prepared at the detailed design stage. The LEMP will set out measures for the establishment and long-term management of newly created and retained habitats to maximise benefits for biodiversity.
- 5.8 A Biodiversity Enhancements Strategy (BES) Plan will also be secured by a planning condition and prepared at the detailed design stage. The BES Plan will mark suitable locations for the placement of enhancement measures including bird and bat boxes, hedgehog holes and log piles.

Potential Impacts and Ecological Effects

Non-statutory Designations

5.9 Given the distance of the LWS and Protected Roadside Verges identified during the data search from the Site, and scale of proposed development, no direct or indirect significant adverse effects are anticipated.

<u>Trees</u>

Predicted Effects

5.10 Trees within the Site are of Local importance. In the absence of mitigation retained trees will be vulnerable to damage during the construction phase from passing construction traffic, incorrect storage of materials and ground compaction. Any such impacts will result in adverse impacts, significant at the **Local** level.

Mitigation Measures

5.11 Suitable protective fencing will be erected around all retained trees in accordance with BS 5837:2012. These will be protected for the duration of the development phase.

Bats

Predicted Effects

- 5.12 No roosts have been identified in trees to be removed to accommodate the proposed development. All trees with potential to support roosting bats are to be retained and therefore there does remain the risk that if subsequent tree removal or surgery works are necessary at the detailed design stage then potential legal infringements could occur.
- 5.13 A total of three bat roosts have been confirmed to be present within buildings B1 and B16. Building B16 will be demolished under scheme proposals, with building B1 subject to conversion works albeit with some adjacent/connected buildings being demolished. As such there is a risk of impacts to bats roosting in these buildings, and therefore infringements under the relevant legal protections.
- 5.14 It is therefore proposed that an appropriate 'derogation' licence be sought from Natural England to allow demolition of buildings B10 and B16, and conversion of building B1. This licence could only be applied for once Reserved Matters consent is granted and all relevant conditions are discharged.
- 5.15 The above licence would be subject to condition imposed by Natural England but are anticipated to include the following:
 - Methods statement to control method and timing of demolition, including erection of alternative roosting features (e.g. boxes installed on retained mature trees within the site) to move any bats found during works
 - Supervision of roost feature removal
 - Erection of new, permanent roosting feature as compensation for the loss of roosts, including new features integrated into new dwellings and potentially within retained buildings
 - Short-term monitoring to ensure mitigation is correctly undertaken with licence return report submitted to Natural England
 - Long-term monitoring following mitigation for loss of a low conservation importance roost is not likely to be required by Natural England
- 5.16 Based on the implementation of the above, conversion and demolition of buildings could be lawfully undertaken to facilitate the proposed development.

- 5.17 In addition, as a term of any licence issued by Natural England no breathable roofing membranes can be used within new or converted structures where bats are anticipated to roost. Furthermore, given the presence of bats, it is recommended all new buildings at the Site are subject to this similar control. It is understood that, subject to appropriate ventilation, which is required for breathable membranes given their likely failure rates, type 1F roofing felt is fully building regulations compliant and does not present a significant design constraint.
- 5.18 In addition to the above a sensitive external lighting scheme is recommended to be secured by way of condition to minimise adverse effects upon foraging and navigating bats, as well as other nocturnal wildlife. This will include the following:
 - Avoid illumination of woodland and existing tree belts
 - Avoid and minimise illumination of existing hedgerows
 - Where lighting is required within the Site, this will be kept to a minimum. Lighting principles provided within Bats and Artificial Lighting in the UK Guidance Note 08/18.
 - A soft landscaping buffer may be required to soften any illumination of the woodland and tree belt edges. This could be delivered through structural planting.

<u>Birds</u>

Predicted Effects

- 5.19 The majority of the Site provides limited interest for nesting and foraging birds. However, the boundary hedgerow, tree belts and woodland habitats are considered to provide locally important habitat.
- 5.20 In the absence of mitigation loss or disturbance of this habitat during the construction and operational phases could result in an adverse effect.
- 5.21 In addition, given the protection afforded to nesting birds, the removal of suitable nesting habitat, such as hedgerow and trees, during the nesting season (March–August inclusive) has the potential to result in an offence being caused under the Wildlife and Countryside Act 1981 (as amended).

Mitigation Measures

- 5.22 The majority of nesting habitat, mature trees, within the Site is to be retained alongside development.
- 5.23 To avoid committing an offence under the Wildlife and Countryside Act 1981 (as amended), removal of any potential nesting habitat will take place outside of the bird nesting period (i.e. outside of March to August inclusive). Where this is not possible, confirmation must be given by a suitably qualified ecologist that nesting birds are absent from the

habitats to be cleared. These mitigation measures are a legal requirement, and would therefore be secured as such.

Residual Effects

5.24 Based on the implementation of mitigation measures detailed no residual effects are anticipated.

<u>Summary of Effects</u>

5.25 Table 3 below summarises the assessment of effects, including any mitigation and subsequent residual effects.

Table 3. Summary of effects

Important Ecological Feature	Likely Significant Effect and/or Legal Implication (before mitigation)	Avoidance & Mitigation Measures	Mechanism by which Mitigation is Secured	Residual Effects (after mitigation)
Non- statutory designated sites (Special Roadside Verges and LWS)	Non-anticipated	N/A	N/A	N/A
Trees	Local; Removal of small number of mature trees	Compensatory tree planting; Protection in accordance with BS 5837:2012.	Appropriately worded planning condition and detailed design measures	No significant effect
Bats	Local; loss of roosts	Mitigation works during construction; Roost compensation; New habitat creation, management of POS, sensitive lighting strategy, buffer landscape planting where required.	Licence secured through Natural England; LEMP and Lighting Strategy secured through Planning Condition	No significant effect
Birds	Local; Damage and disturbance of nesting habitat during construction phase & potential offence against the WCA (1981) for damage or	Sensitive timing of works/nest checks by ecologist. Extensive tree planting and other habitat creation	Ecological Mitigation and Enhancement Plan and CEMP secured through Planning Condition. Detailed	No significant effect

Important Ecological Feature	Likely Significant Effect and/or Legal Implication (before mitigation)	Avoidance & Mitigation Measures	Mechanism by which Mitigation is Secured	Residual Effects (after mitigation)
	destruction of nests and eggs.		Design measures	

Cumulative Effects

5.26 Due to the scale and nature of the proposed development, a detailed assessment of potential cumulative effects has not been undertaken.

Enhancement

- 5.27 The Proposed Site Plan includes landscape planting enhancements which will make positive contributions to on-site biodiversity. New habitat creation will provide opportunities for species confirmed to be present on-site at baseline, such as nesting birds. In addition to these enhancements which are embedded into development proposals, a range of additional ecological enhancement measures will be delivered as part of the proposed development, as identified below:
 - <u>Inclusion of plant species of known wildlife value</u> within the landscaping scheme, including night-scented varieties to benefit bats and nectar rich species.
 - <u>Wildflower grassland creation:</u> underlying soils within the Site are calcareous. This presents an opportunity to create valuable new areas of wildflower grassland throughout the areas of POS within the Site.
 - <u>Flowering lawns:</u> a proportion of areas of amenity grassland which are yet to be detailed within the outline section of this application will make use of native flowering lawn seed mixes. This will allow a species rich sward to develop under a routine amenity grassland management regime. Opportunities would also be available to relax management within these areas during the summer months, allowing a slightly longer sward to develop, further benefiting wildlife.
 - <u>Provision of new bat roosting opportunities</u>: At least 8 no. bat boxes and/or bat tiles (only where type 1F roofing felt is used) will be incorporated within new builds. These will be purpose-built, durable and long-lasting varieties such as those available from Schwegler or Habibat.
 - <u>Provision of new bird nesting opportunities</u>: At least 8 no. bird nesting boxes (e.g. Habibat Bird Boxes and Swift bricks) will be incorporated within the fabric of the new builds.
 - <u>Scattered tree planting</u>: New native trees will be planted throughout the Site, in particular within areas of POS.
 - <u>Provision of hedgehog gaps</u>: Hedgehogs movement into newly created habitat within residential gardens will be facilitated through

- the provision of hedgehog-friendly gravel boards or holes between boundary fences and walls. These will provide a minimum 5 x 5 inch gap, to allow hedgehog to pass between residential plots across the development. The number and location of hedgehog gaps will be determined by an ecologist and provided within an appropriate Ecology mitigation and enhancement plan.
- <u>Creation of log piles:</u> Timber generated from tree clearance works at the Site will be used to make at least three log piles for wildlife benefit (including sheltering small mammals, amphibians, and reptiles). These will be sited within boundary vegetation where they will be least disturbed. New material can be added as required following any future management works.

Monitoring

- 5.28 Several monitoring visits will be required by suitably qualified ecologists to help ensure the fulfilment of the above measures and provide on-theground advice to the appointed contractors. The key purpose and timings of these visits will be as follows:
 - One visit at commencement or early in the construction phase to brief contractors and agree placement and orientation of bird and bat boxes.
 - One visit later in construction phase to ensure bat and bird boxes, hedgehog holes and log piles have been correctly provided, alongside provision of habitat creation.
- 5.29 Monitoring may also be stipulated under a licence issued from Natural England, which would be carried out alongside the above.

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Appendix A

Habitats Plan & Photographs

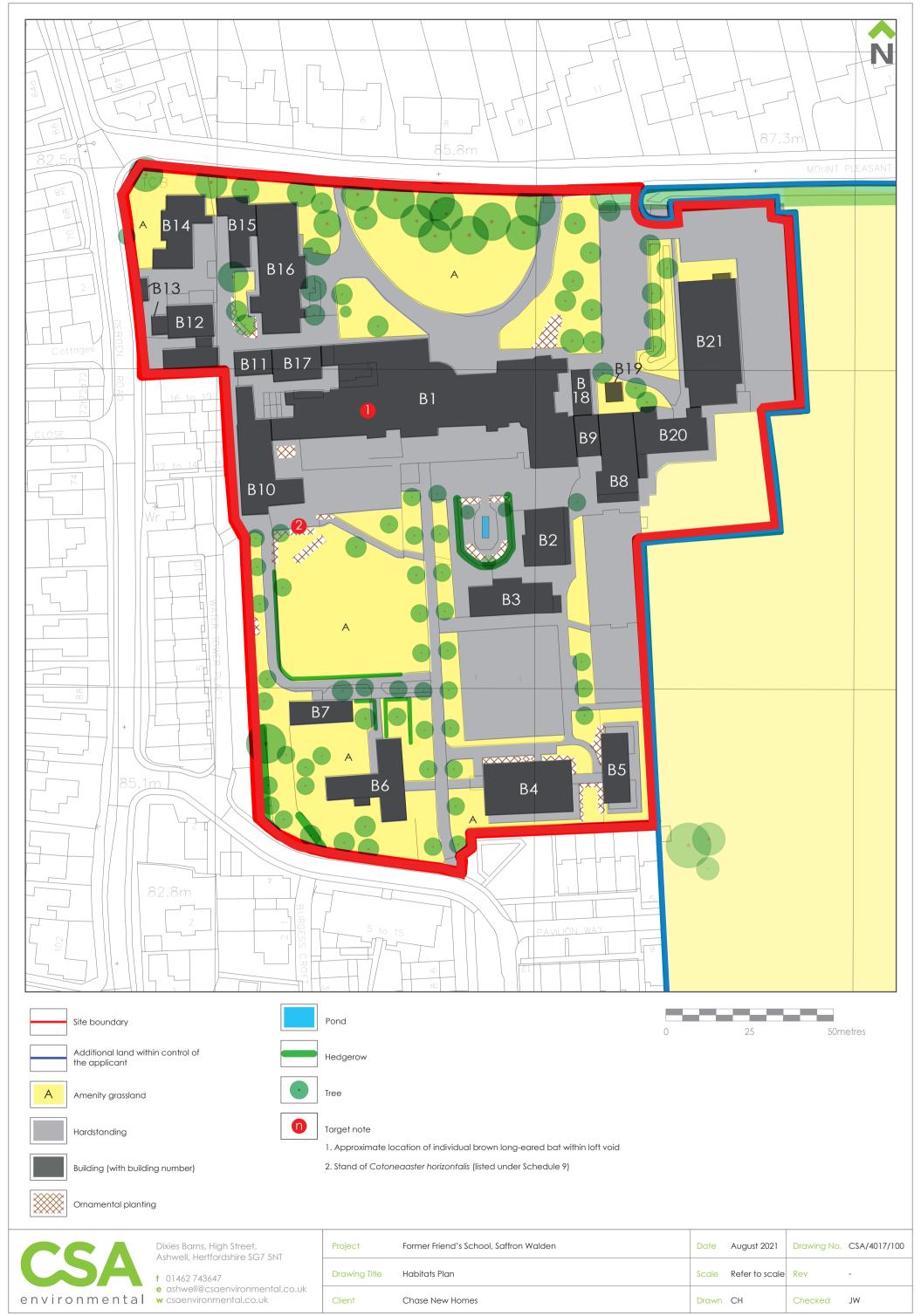




Photo 1. Northern elevation of B1.



Photo 2. Hardstanding and trees to north of B1.



Photo 3. Lime-tree Avenue view north to B1 (southern elevation)



Photo 4. South-western elevation of B21 (Sports Hall).



Photograph 5. On-site ornamental pond (during torching surveys)



Photograph 6. Brown long-eared bat roosting within Building B1 (September 2020)

Appendix B

Legislation and Planning Policy

- 1.1. The Conservation of Habitats and Species Regulations 2017 (as amended) make prescriptions for the designation and protection of Sites of Community Importance ('European sites', i.e. Special Areas of Conservation and Special Protection Areas) and European Protected Species (EPS). The latter include all native bats, great crested newts, dormice, otters and certain reptiles, listed under Annex II of the Regulations. Following the UK's departure from the European Union, the provisions of the Regulations have been retained through enactment of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which came into force on 31 December 2020.
- 1.2. The Wildlife and Countryside Act 1981 (as amended, principally by the Countryside and Rights of Way Act 2000) forms the basis for protection of statutory designated sites of national importance (e.g. Sites of Special Scientific Interest; SSSIs) and native species that are rare and vulnerable in a national context. Additionally, badgers are protected under the Protection of Badgers Act 1992.
- 1.3. Section 40(1) of the Natural Environment and Rural Communities (NERC) Act 2006 states that each public authority, "must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity." This legislation makes it clear that planning authorities should consider impacts to biodiversity when determining planning applications, with particular regard to the Section 41 (S41) lists of 56 habitats and 943 species of principal importance. The UK Biodiversity Action Plan (BAP) has been superseded by the Biodiversity 2020 Strategy, however Local BAPs continue to influence biodiversity management and conservation effort, including through the spatial planning system, at the local scale.
- 1.4. The National Planning Policy Framework (2019) (NPPF) sets out the government planning policies for England and how they should be applied. With regards to ecology and biodiversity, Chapter 15: Conserving and Enhancing the Natural Environment, paragraph 174, states that the planning system and planning policies should minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
- 1.5. Paragraph 180 sets out the principles that local planning authorities should apply when determining planning applications:
 - If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts).
 - Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the

- development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest.
- Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.
- Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
- 1.6. Accompanying the NPPF, central government guidance on the implementation of planning policies is set out within online Planning Policy Guidance (PPG). That relating to the protection and enhancement of the Natural Environment was most recently updated in July 2019. The Natural Environment PPG addresses principles across a broad spectrum of topics targeting biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services, and the use of local ecological networks to support the national Nature Recovery Network. In particular the PPG promotes the delivery of measurable Biodiversity Net Gain through the creation and enhancement of habitats alongside development.
- 1.7. The Government Circular 06/2005, which is referred to within the NPPF, defines statutory nature conservation sites and protected species as a material consideration in the planning process.
- 1.8. Local planning policies of relevance to ecology, biodiversity and/or nature conservation have been set out in Table 1 below.

Table B.1. Summary of regional and local planning policy relating to ecology

Policy	Summary		
Uttlesford Local Pla	Uttlesford Local Plan Adopted January 2005		
Policy GEN7 – Nature Conservation	"Development that would have a harmful effect on wildlife or geological features will not be permitted unless the need for the development outweighs the importance of the feature to nature conservation. Where the site includes protected species or habitats suitable for protected species, a nature conservation survey will be required. Measures to mitigate and/or compensate for the potential impacts of development, secured by planning obligation or condition, will be required. The enhancement of biodiversity through the creation of appropriate new habitats will be sought."		
Policy ENV7 - The Protection of the Natural Environment - Designated Sites	"Development proposals that adversely affect areas of nationally important nature conservation concern, such as Sites of Special Scientific Interest and National Nature Reserves, will not be permitted unless the need for the development outweighs the particular importance of the nature conservation value of site or reserve.		

Policy	Summary	
	Development proposals likely to affect local areas of nature conservation significance, such as County Wildlife sites, ancient woodlands, wildlife habitats, sites of ecological interest and Regionally Important Geological/ Geomorphological Sites, will not be permitted unless the need for the development outweighs the local significance of the site to the biodiversity of the District. Where development is permitted the authority will consider the use of conditions or planning obligations to ensure the protection and enhancement of the site's conservation interest."	
Policy ENV8 – Other Landscape Elements of Importance for Nature Conservation	"Development that may adversely affect these landscore elements: • Hedgerows • Linear tree belts • Larger semi natural or ancient • woodlands • Semi-natural grasslands • Green lanes and special verges • Orchards • Plantations • Ponds • reservoirs • River corridors • Linear wetland features • Networks or patterns of other locally important habitations will only be permitted if the following criteria apply: a) The need for the development outweighs the need	
	retain the elements for their importance to wild fauna and flora; b) Mitigation measures are provided that would compensate for the harm and reinstate the nature conservation value of the locality. Appropriate management of these elements will be encouraged through the use of conditions and planning obligations."	

Appendix C

Desk Study Information

10/19/2018

Site Check Report Report generated on Fri Oct 19 2018 **You selected the location:** Centroid Grid Ref: TL54063755

The following features have been found in your search area:

Local Nature Reserves (England)No Features found

National Nature Reserves (England) No Features found

Sites of Special Scientific Interest (England)

No Features found

10/19/2018

Site Check Report Report generated on Fri Oct 19 2018 You selected the location: Centroid Grid Ref: TL54063755 The following features have been found in your search area:

Ramsar Sites (England) No Features found

Proposed Ramsar Sites (England) No Features found

Special Areas of Conservation (England)

No Features found

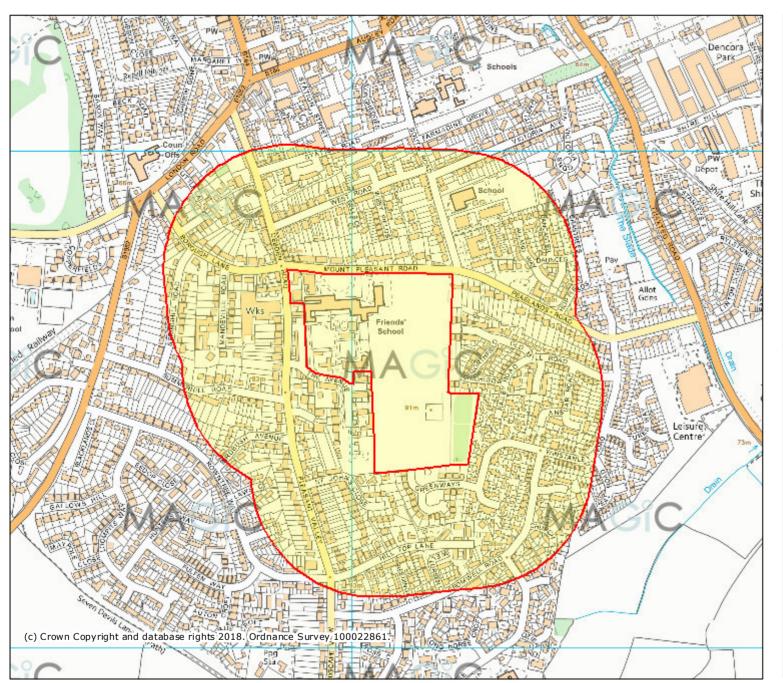
Possible Special Areas of Conservation (England) No Features found

Special Protection Areas (England) No Features found

Potential Special Protection Areas (England) No Features found



4017_250m Pond search



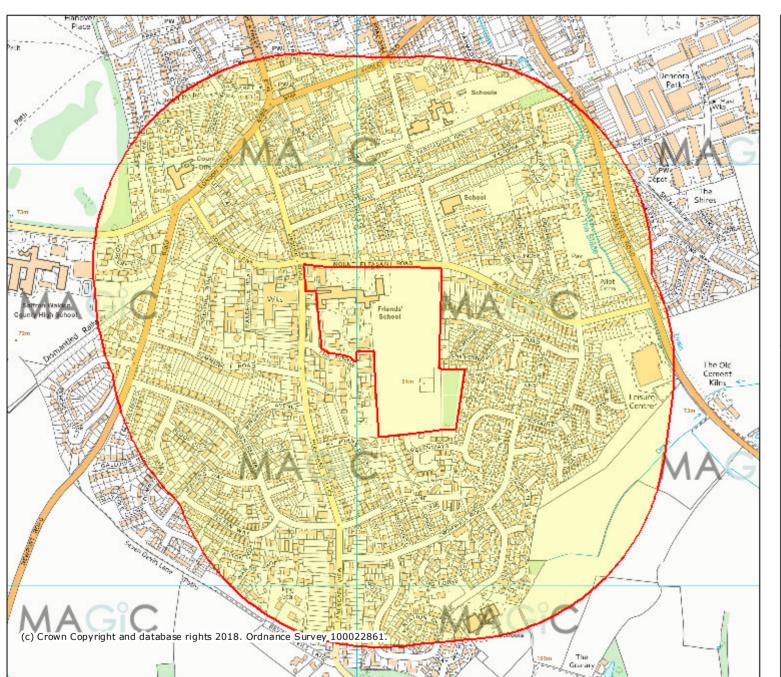


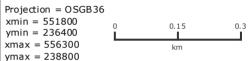
Map produced by MAGIC on 24 October, 2018.

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4017_500m Pond check



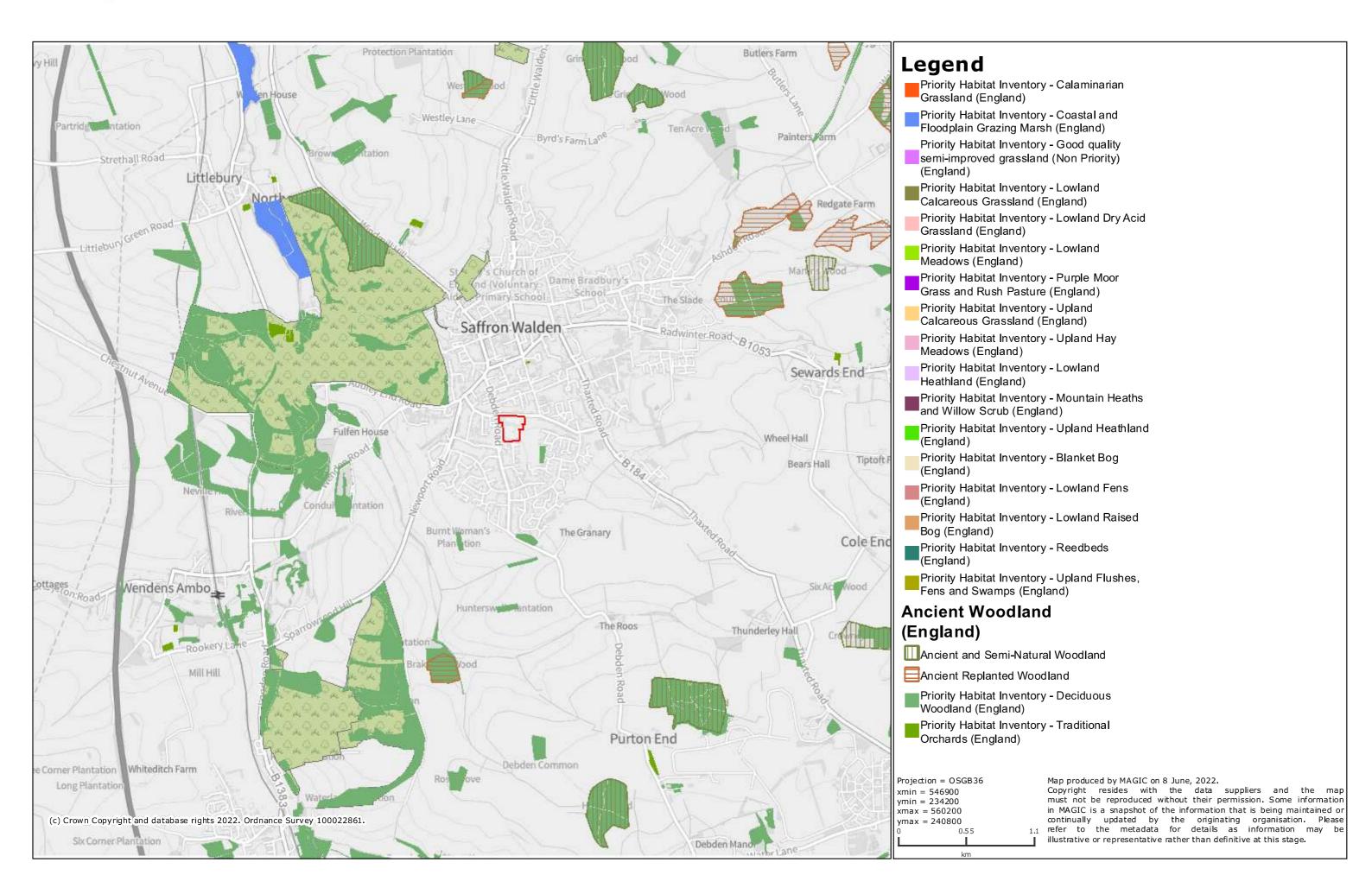


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Priority Habitat



Appendix D

Evaluation & Assessment Methods

1.1. Ecological features are evaluated and assessed in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) 2018 Guidelines for Ecological Impact Assessment (EcIA). For clarity, the evaluation and assessment process adopted within this EcIA is set out below.

Establishing Potentially Important Ecological Features

1.2. Ecological features are assessed where they are considered to be important, and where they may be impacted by a proposed development. A feature may be considered important for a variety of reasons, such as quality, extent, rarity and/or statutory protection. Table 1 below sets out a non-exhaustive list of ecological features that are typically considered, along with key examples:

Table 1. Potentially important ecological features (adapted from CIEEM 2018)

Potentially Important Ecological Features	Typical examples
Statutory designated sites under international conventions or European Legislation	Wetlands of International Importance (Ramsar sites), Special Areas of Conservation (SAC), Special Protection Areas (SPA)
Statutory designated sites under national legislation	Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR, Local Nature Reserves (LNR)
Non-statutory, locally designated wildlife sites	Local Wildlife Sites (LWS), County Wildlife Sites (CWSs), Sites of Importance for Nature Conservation (SINCs)
National biodiversity lists	Habitats or Species of Principal Importance for the Conservation of Biodiversity (Section 41, NERC Act 2006), Ancient Woodland Inventory
Local biodiversity lists	Local Biodiversity Action Plan (BAP) priority species or habitats
Red Listed / Rare Species	Species of conservation concern, Red Data Book (RDB) species, Birds of Conservation Concern, nationally rare and nationally scarce species
Legally Protected Species	E.g. species listed under Sch.5 of the W&C Act 1981, or Sch.2 of the Hag. Regs. 2017
Legally Controlled Species	E.g. species listed under Sch.9 of the W&C Act 1981

1.3. It should also be noted that the social, community, economic or multifunctional importance attributed to ecological features are not assessed as they fall outwith the scope of this assessment.

Establishing Likely Zone of Influence

1.4. The 'zone of influence' for a project is the area over which ecological features may be subject to significant effects as a result of the project and associated activities. The project's zone of influence varies across different ecological features, which have different vulnerabilities and sensitivities. For the purposes of this assessment, the following zones were considered:

- International statutory nature conservation designations up to 10km from the Site
- National and local statutory nature conservation designations up to 3km from the Site
- Non-statutory locally designated wildlife sites up to 1km from the Site
- 1.5. These arbitrary distances are considered sufficient for identifying the nature conservation designations which could be subject to significant effects. However, it is acknowledged that in certain circumstances effects beyond these distances are possible and should be considered as far as is reasonably practicable to do so.
- 1.6. For other ecological features, such as habitats and species, the appropriate zone of influence is described and justified as appropriate within the report, depending on their respective sensitivity to an environmental change.
- 1.7. The results of professionally accredited or published scientific studies have been used and referenced, where available, to establish the spatial and temporal limits of the biophysical changes likely to be caused by specific activities, and to justify decisions about the zone of influence.

Geographic Context and Significance Criteria

- 1.8. The importance of ecological features, as well as the significance of any likely impacts and their effects, are considered here within a defined geographic context:
 - International
 - National
 - Regional
 - County
 - Local
 - 1.9. The size, conservation status and the quality of features are all relevant in determining their importance and assigning this to the geographic scale. Where the importance of a feature is considered to fall below the Local scale, they are scoped out of detailed assessment.
 - 1.10. Impacts and their effects are taken to be significant where they support or undermine biodiversity conservation objectives, with the scale of significance defined according to the above geographic context. Where an impact or effect is unlikely to be perceptible at a Local scale, this is taken to be not significant.

Characterising Ecological Impacts and their Effects

- 1.11. Where likely significant ecological impacts and effects are identified in connection with the proposed project, these are considered and described with reference to the following characteristics (where this is helpful in accurately portraying the ecological effect and determining the scale of significance):
 - Positive or negative (i.e. does the anticipated change accord with nature conservation policies and objectives?)
 - Extent (i.e. the spatial area over which the impact or effect may occur)
 - Magnitude (i.e. the quantified size, amount, intensity or volume)
 - Duration (i.e. the timeframe over which the impact or effect may occur, in both human and ecological terms)
 - Frequency and timing (i.e. the number of times an activity occurs, where this is likely to influence the effect)
 - Reversibility (i.e. is spontaneous recovery possible or may the effect be counteracted by mitigation?)

Appendix E

Bats

1.0 Legislation

- 1.1 All British bat species are legally protected under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended). These Regulations make it an offence to:
 - Deliberately capture, injure, or kill a bat
 - Deliberately disturb bats, impairing their ability to survive, breed, reproduce or rear/nurture their young, or which significantly affects the local distribution or abundance of the species
 - Damage or destroy a breeding site or resting place used by bats
- 1.2 All bats and their roosts in the UK were previously fully protected under the Wildlife & Countryside Act 1981 (as amended). Amendments to the Act have removed most provisions as they relate to bats, however it remains an offence to:
 - Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection
 - Intentionally or recklessly obstruct access to any structure or place used for shelter or protection
- 1.3 It is important to note that bat roosts are protected throughout the year, regardless of whether or not bats are present at the time. Under the Regulations, the offence of damaging or destroying a breeding site or resting place is subject to 'strict liability', i.e. an offence is commented irrespective of whether the causal act was deliberate or otherwise.
- 1.4 Where development is proposed that would result in an offence under the Regulations, a European Protected Species (EPS) statutory derogation licence (often termed 'EPS Mitigation Licence') will need to be secured from Natural England to permit an act that would otherwise be unlawful. Such a licence can only be granted following receipt of planning permission with all relevant conditions discharged, and where it has been demonstrated that specific statutory derogation tests have been met.

2.0 Methods

2.1 The following survey methods, design, data analysis and interpretation have been undertaken with due consideration of the Bat Conservation Trust (BCT) guidelines 3rd Edition (Collins, 2016).

Preliminary Roost Assessment (PRA)

Structures

2.2 A detailed external and internal inspection of all buildings on-site was completed on October 2018 and updated in September 2020, using high-powered torches, binoculars, ladder and endoscope as appropriate. The survey was carried out by Tom Clemance MCIEEM (Bat

- Class Survey Licence WML-CL18, Registration Number 2017_28795-CLS-CLS) and Emma Robson ACIEEM.
- 2.3 External inspection focused on identifying potential bat access points to the interior of each structure and any external features that could potentially be used by crevice-dwelling species. Particular attention was given to window sills, window panes, weatherboarding, and pitch/ridge tiles; as evidence is typically found in these locations.
- 2.4 The internal inspection involved a systematic search for bats or any evidence of their activity, in particular droppings and/or feeding remains within the building and loft spaces of the building.
- 2.5 A description of the structures was made, including construction, condition (in respect of roosting, rather than building or structural integrity) and age (where known).
- 2.6 The aim of this inspection is to record direct (i.e. actual roosting bats) or indirect evidence of roosting bats (e.g. droppings), as well as the nature and number of features with 'potential' to support roosting bats. This includes consideration of structures to support bats whilst in hibernation.

Trees

- 2.7 All trees likely to be affected by development were inspected from ground level, using binoculars and high-powered torches as appropriate. Particular attention was given to woodpecker holes, limb splits, lifting bark and mature ivy stems. The survey was completed on 10 June 2022 by Carly Howes ACIEEM (Bat Class Survey Licence WML-CL17, Registration Number 2021_55125-CLS-CLS) and Katie Hepburn.
- 2.8 A description of each tree was made, including the species, height, diameter at breast height and condition.
- 2.9 The aim of this inspection was to record direct (i.e. actual roosting bats) or indirect evidence of roosting bats (e.g. droppings), as well as the nature and number of features with 'potential' to support roosting bats. This includes consideration of trees to support bats whilst in hibernation.
 - Assessing 'Potential' of Buildings/Trees to Support Roosting Bats
- 2.10 All structures and trees to be affected by the development were assigned to one of four categories in respect of their 'potential' to support roosting bats, or the confirmation of any bat roosts identified. 'Potential' in this context is taken to be the broad suitability of features to support roosting bats, based upon the nature, condition or structure of such features, in the absence of confirmed evidence of roosting.
- 2.11 Assigning the following categories is intended to determine the effort of any further targeted survey or inspections which are necessary to prove

- presence or likely absence of roosting bats, rather than to assign importance to such features.
- 2.12 The following categories are assigned to structures and/or trees herein, Either:
 - Confirmed Roost where one or more bat roosts are identified during PRA inspections, either through direct sightings of bats, and/or indirect evidence such as bat droppings. Or;
 - High A structure or tree with one or more potential roost sites that
 are obviously suitable for use by larger numbers of bats on a more
 regular basis and potentially for longer periods of time due to their
 size, shelter, protection, conditions and surrounding habitat.
 - Moderate A structure or tree with one or more potential roost sites
 that could be used by bats due to their size, shelter, protection,
 conditions and surrounding habitat but unlikely to support a roost of
 high conservation status (with respect to roost type only, assessments
 at this stage are made irrespective of species conservation status).
 - Low A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate condition and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
 - Trees of sufficient size and age to contain PRFs but none seen from the ground or features seen only with very limited roost potential.
 - **Negligible** Negligible habitat features on site likely to be used by roosting bats.
- 2.13 The potential of a tree or structure to support roosting bats is often influenced by its age and construction, thermal stability, lighting and levels of human activity. Furthermore, the proximity to foraging habitat-particularly woodland, parkland and wetland- as well as the presence of navigational routes (e.g. hedgerows, treelines and watercourses) influence both the potential for bats to roost, as well as the species which may roost. Professional judgement is therefore applied, based upon known factors which effect the potential of features to support roosting bats, insofar as determining the need or scope of further surveys or inspections.

Limitations

2.14 Internal inspections to some parts of the interior of the buildings was not undertaken due to the presence of asbestos and/or other health and safety risks as indicated within Table E.1 below. Where full internal inspections were not undertaken, such buildings were subject to further dusk emergence/dawn re-entry surveys. As such, lack of internal inspection of these buildings is not considered a significant constraint.

2.15 There were no limitations to the inspection of trees.

Roost Surveys

- 2.16 Three dusk emergence/dawn re-entry surveys were undertaken of B1, B2 and B15, two dusk emergence/dawn re-entry surveys were undertaken of B10, B12, B14, B16 and B17, and a single dusk emergence/dawn reentry survey was undertaken of B3 and B9. These surveys were undertaken to confirm the presence/likely absence of roosting bats in association with the on-site buildings. In addition, the surveys aim to determine the character of any identified roosts, namely species present, number of roost bats and roost type (i.e. day, night feeding, maternity and transitory).
- 2.17 The dusk emergence/pre-dawn re-entry surveys were undertaken for approximately 1.5 hours following British Summer Time (BST) sunset and 1.5 hours prior to BST sunrise respectively, with due consideration for the BCT good practice guidelines. The surveys were carried out by Carly Howes, Alex Cole, Tom Clemence, Jamie Woollam, Sara Miller, Jill Williams, Ken Coyne and Stuart Elson, in suitable weather conditions (see Table E.2).
- 2.18 During the survey, the surveyors watched for any bats entering parts of the buildings or using key flight lines, equipped with a hand-held Batbox Duet, Wildlife Acoustics EM3 bat or Batlogger M detectors to assist in determining species of bat and any associated behaviour. A note was made of all bat passes, along with the time, species and any information regarding behaviour, including direction of flight, and activity e.g. foraging/commuting.
- 2.19 The positions of the surveyors around the buildings during the survey are illustrated on the Bat Results Plan CSA/4017/106 below.
- 2.20 Following the survey all bat calls were downloaded from the EM3 detectors and analysed using AnalookW v.4.1t and/or BatExplorer to enable species identification, where possible, and quantitative analysis of the data.

Limitations

2.21 There were no limitations to the surveys.

3.0 Results

Preliminary Roost Assessment (PRA)

Structures

Table E.1. Preliminary Roost Assessment Results

Building Ref.	Building Description	External features/ evidence	Internal features/ evidence	Bat roost potential
B1 (Main School building)	Built in 1702 with numerous extensions added over the years this buildings comprises a combination of construction methods. Brick built throughout there are two, three and four storey sections. Roof structures vary throughout the building, comprising a combination of pitched designs, with flat clay tiles. Restricted sections of tile hanging are present on numerous aspects throughout the building. Loft spaces are present throughout, the majority of which are lined with timber sarking and several are unlined.	No evidence of roosting bat was recorded. The following features were recorded which could be utilised by roosting bats: numerous lifted and missing flat roofing tiles, lifted areas of lead flashing on the roof. Traditional wooden sash windows were also recorded though these appeared to be well fitted at the time of survey.	Single brown long-eared bat confirmed roosting within loft space 3 (TN 1, Habitats Plan, Appendix A). In addition, scattered bat droppings, characteristic in shape and size of brown long-eared bat, were recorded throughout loft spaces 1, 2, 3, 4, 5 and 6. No access was possible to loft spaces 8 and 9 due to access restrictions. No additional roosting bats were recorded.	Confirmed roost
B2 (Physics building)	Single-storey building of masonry construction with hip and valley pitched roof covered in flat clay tiles. Separate loft space.	Numerous slipped and missing roofing tiles (mostly on the eastern aspect).	No loft inspection was carried out on the grounds of risk posed by asbestos to health and safety.	High
B3 (Chemistry building)	Single storey building of retendered masonry construction with shallow pitched roof, covered in bitumen based felt.	Small gaps between rendered walls and plastic bargeboard on eastern apex. No droppings or evidence of bat noted.	False ceiling to shallow pitched roof. Combination of metal and wooden frame of modern construction. Roof comprises plywood boards with outer bitumen based felt applied directly over. No features or evidence.	Low

Building Ref.	Building Description	External features/ evidence	Internal features/ evidence	Bat roost potential
B4 (Built 2012/ Walden Prep School)	Two storey building of masonry construction with multi-pitched roof covered in flat fabricated tiles.	Built in 2012 the building is in commensura te condition with well- fitting external features. No features suitable for bats or evidence of bats noted.	Loft spaces are limited to the eave spaces. Insulation installed between timber roofing purlins and then lined with sheet plastic limited the scope of inspection but also provided negligible opportunities for ingress or egress from the main loft space. No evidence or features noted.	Negligible
B5 (Built 2012)	Single storey building of masonry construction with pitched roof covered in flat fabricated tiles.	Built in 2012 the building is commensura te in condition with well- fitting external features. No features suitable for bats or evidence of bats noted.	Loft spaces are limited to the eave spaces. Insulation installed between timber roofing purlins and then lined with sheet plastic limited the scope of inspection but also provided negligible opportunities for ingress or egress from the main loft space. No evidence or features noted.	Negligible
B6 (Leicester Building)	Two storey building of masonry construction with T shaped Dutch gable roof covered in flat fabricated roofing tiles. Likely of late 20th century construction.	Well fitted roofing tiles recorded throughout. Restricted section of well fitted tile (slate-like) hangings with no gaps recorded. Well-fitting timber bargeboards. No features suitable for bats or evidence of bats noted.	Loft spaces throughout the building of fink timber construction, lined with bitumen based felt. No egress/ ingress points noted and minimal detritus throughout, indicating thorough sealing. No evidence of bat recorded.	Negligible

Building Ref.	Building Description	External footures/	Internal	Bat roost
		features/ evidence	features/ evidence	potential
B7 (Language Building)	Two storey building of masonry construction with pitched roof covered in flat, closely fitting, clay tiles.	Well fitted roofing tiles recorded. One lifted tile noted on the southern elevation. Well-fitting timber bargeboards. No features suitable for bats or evidence of bats noted.	No loft inspection was carried. Loft spaces inaccessible on ground of health and safety.	Negligible
B8 (Drama Building)	Building with a single storey flat roofed section with sky lantern (bitumenbase felt lined) and a twostorey pitched section. Brick built (tiled).	Occasional missing tile. Well-fitted facia / soffit features and timber bargeboards. Repair work evident on northern elevation.	Loft spaces are limited to the eave spaces of timber construction. Tightly fitted timber sarking with no egress/ingress points noted and minimal detritus throughout, indicating thorough sealing. No evidence of bat recorded.	Low
B9 (Gallery)	Single storey building of masonry construction with pitched roof covered in flat clay tiles with timber barge board.	Missing sections of mortar in tiling at gable southern end.	No loft space present. Internals are well lit by windows and in good state of repair.	Low
B10 (Essex Building)	Two storey building of masonry construction with L shaped pitched roof covered in flat clay tiles.	Gap noted in timber barge board on eastern elevation. Roofing tiles in place with no gaps noted.	Loft space present throughout with timber rafters, ridge board and no additional supporting timbers creating an uncluttered environment. Loft lined with bitumen based felt. No egress/ingress points or evidence of bat recorded.	Moderate
B11 (Workshop)	Single storey building of masonry construction with	None.	No loft space present.	Negligible

Building Ref.	Building Description	External features/ evidence	Internal features/ evidence	Bat roost potential
	a shallow pitched, single skin corrugated cement bonded sheet roof and several skylight sections.		Internals well-lit by skylights	
B12 (C.D.T Building)	Built in three single storey sections of differing construction types. One section is of masonry construction with a pitched roof covered in flat clay tiles. A restricted section of inaccessible loft space is present within this part of the building. The second section is of masonry construction with a flat roof and parapet walls. The third section connects parts 1 and 2 and has a flat lead sheet roof. The sides of this section of building are clad in timber weather boarding.	Air vent on the eastern gable end of the pitched roof providing potential access point for bats. Several gaps in masonry. Weather boarding is close fitting and is not assessed to provide a roosting feature. No evidence of bat recorded.	The only separate roof void within the building was within the section with a pitched roof. This roof void was inaccessible with no loft hatch or other access point recorded.	Moderate
B13	Single skinned timber framed shed with single skinned pitched roof covered in bitumen based felt.	Tongue and groove cladding closely fitting. No evidence noted.	No separate loft space. Timber sarking on roof. Space well-lit by natural light through windows.	Negligible
B14 (Croydon House Building)	Two storey building of masonry construction with hipped roof covered in slate tiles. The building has been extended with a contemporary two storey, masonry constructed section with a flat roof.	Mortar and roof tiles are mostly intact throughout. However several missing roofing tiles and crack in the masonry were noted within the original part of the building. No evidence of bat recorded.	The loft space within the original part of the building is unlined with slates nailed directly onto the timber purlins. This facilitated the inspection and has resulted in a relatively draughty loft space. Though slates are well fitting several points of ingress/egress were noted, including from the missing tile noted on the external. No suitable internal features	Moderate (original part of building only)

Building Ref.	Building Description	External features/ evidence	Internal features/ evidence	Bat roost potential
			associated with the flat roof extension. No evidence of bat recorded.	
B15 (Music Block)	Single storey building of masonry construction with flat roof, roof lanterns throughout and timber weather boarding along the roof line.	The timber weather boarding has become raised in places leaving numerous gaps which could be exploited by roosting bats.	No features or evidence recorded.	High
B16 (Assembly Hall)	Single storey building of masonry construction with pitched roof covered in interlocking pan tiles. Flat roofed section on northern elevation.	Gap in tiles and hole in soffit on eastern elevation	No loft inspection was carried out on the grounds of risk posed by asbestos to health and safety.	Moderate
B17 (Laundry Building)	Single storey building of masonry construction with a mock Tudor timber frame and render in parts and Dutch gable roof covered in flat clay tiles.	Numerous lifted and missing roof tiles and slatted air vents in the gable ends provide potential features which could be used by roosting bats. No evidence of bat recorded.	No access was possible to the loft space of the building due to no loft hatch being present. Therefore a loft inspection was not carried out.	Moderate
B18 (LSU)	Single storey building of masonry construction with accommodation built into the pitched roof, covered in interlocking pan tiles. Overhanging eves with timber sarking and dormer windows also present.	Roofing tiles are closely fitting. No features of evidence of bats recorded.	No loft present. Internal accommodatio n well-lit natural light from skylights.	Negligible

Trees

3.1 A total of 27 trees are proposed for removal and were included in the assessment. Full results of the survey are provided in Table E.2 below. (See Tree Protection Plan 1642-KC-XX-YTREE-TPP01 RevA - Keen Consultants,

for tree locations.) All tree reference numbers are consistent with those in the Tree Protection Plan.

Table E.2: Summary of trees with bat roosting potential

Tree Reference	Species	Description	Bat roost potential
38a	Rowan	A semi-mature tree with a small number of knot holes, evidence of broken limbs and peeling bark in places. Wood rot is present where historical limb removal has taken place with a single hole facing upwards leading to rain entering.	Negligible
38b	Rowan	A semi-mature rowan tree with damage on the northern aspect of the main trunk c. 1.25m from the ground. Additional historical branch removal evident.	Negligible
45	Malus	A semi-mature tree with no PRF's identified.	Negligible
46	Ash	A single mature ash tree mature with evidence of large limb removal. Several knot holes present on the western aspect which do not form PRF's. Historical limb removal on the northern aspect has a rot hole with rot extending into the trunk. Exposure and limited extension of the hole up the truck concludes no PRF's.	Negligible
54	Leyland cypress	A multi-stemmed early mature cypress tree with c.50% ivy coverage on main trunk. No PRF's identified.	Negligible
80	Cherry	Early mature cherry with a trunk heavily covered in ivy. Numerous broken limbs. No visible PRF's.	Negligible
82a	Manna ash	Semi-mature ash tree with crown spreading to the west due to growth of adjacent beech tree. A broken limb associated with previous branch removal. Two knot holes on the eastern aspect do not form PRF's.	Negligible
82b	Manna ash	Semi-mature tree with some thinly peeled bark which does not form any PRF's.	Negligible
83	Beech	A mature twin-stemmed beech tree. A single knot hole of the south-eastern aspect, c. 20cm long with no hollow forming. Two knot holes on the northwestern aspect and a single broken limb on the eastern aspect. No PRFs noted.	Negligible
84a	Foxglove tree	Early mature tree with evidence of historical branch removal and two knot holes which do not form PRF's. Small amounts of dead wood is present throughout.	Negligible
84b	Foxglove tree	Early mature tree with two knot holes on branches and peeling bark on the main trunk, not forming PRF's. Small amounts of deadwood present throughout.	Negligible
85	Cherry	A semi-mature multi-stemmed cherry tree with evidence of historical limb removal. No PRF's identified.	Negligible
86	Labumum	Multi-stemmed semi-mature tree with some ivy on the stem and no PRF's identified.	Negligible

	T	T	
88	Purple plum	An early-mature purple plum tree. A single rotted knot hole c. 15cm wide and c. 10cm tall faces upwards allowing entry of rain and does not extend down the tree trunk. Very low bat roost potential.	Low
93a	Snake bark maple	Semi-mature tree with minimal flaking bark which does not form a PRF.	Negligible
93b	Snake bark maple	Semi-mature snake bark maple with no PRF's identified.	Negligible
94	Holly	Semi-mature holly tree with no PRF's identified.	Negligible
95a	Mulberry	An early-mature tree with some deadwood present throughout and evidence of historical small limbed branch removal. No potential roosting features identified.	Negligible
95b	Crab apple	An early-mature crab apple with three rotting knot holes that provide unsuitable conditions for bats. Historical removal of limbs evident throughout. Some areas of flaking bark could provide PRFs, however given the size and exposure, they are deemed unlikely to support roosting bats.	Low
95c	Cherry	A small number of knot holes along the tree trunk which do not form PRF's.	Negligible
95d	Pear	Evidence of small broken limbs and a few knot holes which are unsuitable for bats and do not form PRF's.	Negligible
101	Purple maple	No preliminary roost features.	Negligible
103	Cotoneaster	A single small hole, c.2cm wide and 3cm tall at the base of a historically removed limb with wood on the outer edges showing signs of rot. In addition, a small number of blunt knot holes and removed limbs are present.	Low
104	Yew	A mature yew with some evidence of historical limb removal. Some bark at trunk is fissured. No PRF's identified.	Negligible
108	Rowan	A semi-mature rowan tree with some ivy on the main trunk. Flaking bark and a wound is present on a branch on the northern aspect. A broken limb is noted on the eastern aspect. No PRFs identified.	Negligible
109	Crab apple	Evidence of historical limb removal with very small sections of flaking bark. No PRFs identified.	Negligible
113	Field maple	A small amount of deadwood and historically removed limbs and knot holes, none of which form PRF's.	Negligible

Roost Surveys

3.2 Buildings B1 and B16 have been identified as supporting confirmed bat roosts. Two common pipistrelle bats were seen to emerge from the western end of B1 on 01/07/20 at 21:49 and 21:53. Two common pipistrelles were seen emerging from under the eaves on the southern elevation of B1 on 06/07/20 at 22:08-22:10. Two common pipistrelle bats

- were also observed to emerge from the eastern elevation of B16 on 04/08/2020 at 21:10 and 21:28.
- 3.3 No bats were observed emerging from or returning to roost in association with buildings B2, B3, B8, B9, B10, B12, B14, B15, B16, B17, and B21. Roosting bats are therefore taken as likely absent from these buildings.
- 3.4 Activity during the surveys was limited to occasional passes from common species. Occasional calls from common pipistrelle bats were most frequently recorded, with bouts of continuous foraging activity by this species. Individual calls from soprano pipistrelle *Pipistrellus pygmaeus*, Nathusisus pipistrelle *Pipistrellus nathusii*, *Myotis sp.*, brown long-eared *Plecotus auritus* bat and passing noctule *Nyctaus noctula* bats were also recorded.
- 3.5 Full bat survey results are provided within Table E.3 and Bat Results Plan CSA/4017/106 below.

Table E.3. Bat roost presence/absence survey timings and weather conditions

Survey	Sunset Start				Temp.		Cloud Cover (oktas)		ufort e)	Precipitation	
Date	Time	Time	Time	Start	End	Start	End	Start	End	Trecipitation	
29/06/20	21:22	21:07	22:52	16	17	8	8	5	2	None	
01/07/20	21:21	21:06	22:51	18	17	6	8	2	1	None	
06/07/20	21:18	21:03	22:48	17	13	0	0	1	1	None	
14/07/20	21:13	20:58	22:43	17	15	6	7	0	1	None	
22/07/20	21:03	20:48	22:33	21	19	8	8	0	1	None	
04/08/20	20:43	20:28	22:13	19	18	7	8	3	2	None	
12/08/20	20:28	20:13	21:58	27	26	7	6	1	0	None	
19/08/20	20:13	19:58	21:43	19	19	8	8	2	1	Light, intermittent	
01/09/20	19:45	19:30	21:15	17	14	5	6	1	1	None	
08/09/20	19:29	19:14	20:59	22	21	1	2	0	1	None	

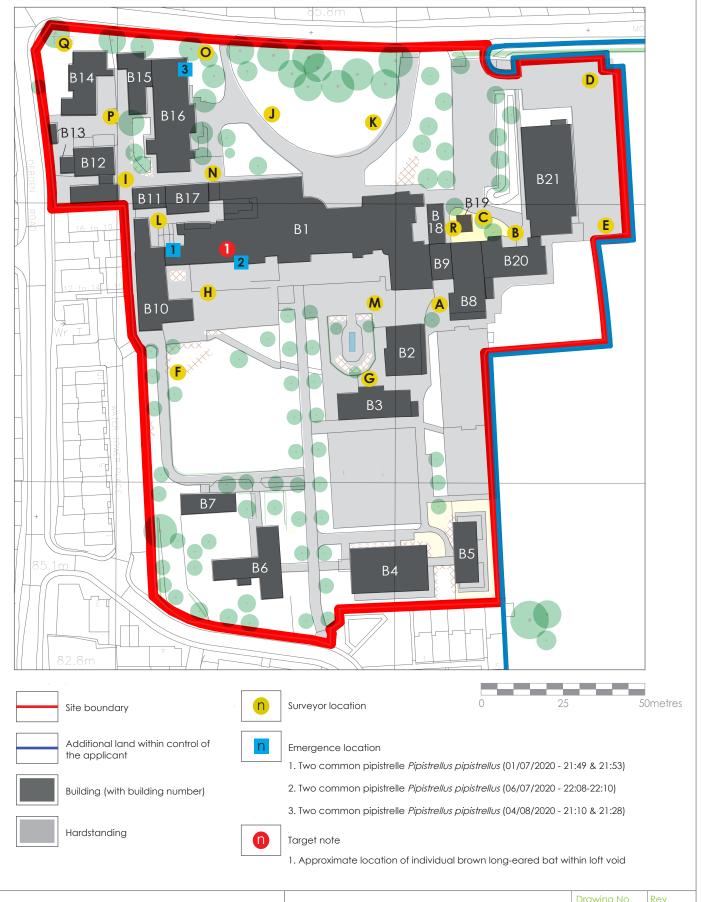
Table E.2. Bat Survey Results

Survey Date	Surveyor	Detector Type	Surveyor Location	Building Surveyed	Results Summary				
	СН	Batlogger	В	B21					
	AC	Batlogger	Α	B8/9	- No emergences.				
29/06/2020	SM	EM3	С	В8	- Low numbers of foraging common pipistrelles (c. pips).				
	TC	Batlogger	D	B21	- Occasional c. pips heard not seen (HNS).				
	JW	EM3	Е	B21					
	TC	Batlogger	F	B10					
	SM	EM3	G	B2 & B3	- 2x emergence of c. pip from building B1 at 21:49 & 21:53 (seen by surveyor in location J). Bats emerged				
01/07/2020	Jwi	Batbox Duet	Н	B10	from the western end of B1, close to B10 Continuous c. pip foraging activity was seen/heard throughout the survey.				
	KC	EM3	Α	B2 & B3	- Brown long-eared bat (BLE) recorded at 22:19 by surveyor at location J.				
	SE	EM3	L	B10					
	TC	Batlogger	L	B17 (south)					
	SE	Batscanner	J	В1	- 2x emergence of c. pip from building B1 at between 22:08-22:10 (seen by surveyor in location H). Bats				
06/07/2020	KC	EM3	М	В1	emerged from the southern elevation of B1, under the eaves Moderate levels of c. pip commuting/foraging activity was seen/heard throughout the survey.				
	Jwi	Batbox Duet	K	В1	- Nathusius pipistrelles (N. pips) recorded at 21:45, 21:59 and 22:00 by sureyor in Icoation K.				
	SM	Bat Scanner	Н	B1					
	СН	Batlogger	Α	B2					
14/07/2020	SE	DUSM4 Ash2	L	B10	- No emergences.				
14/0//2020	Jwi	Batbox Duet	Н	B10	- Moderate levels of foraging and commuting c. pips.				
	SM	Batbox Duet	G	B2					
	СН	Batlogger	L	B17 (south)	- No emergences.				
	SM	EM3	Н	B1	- Low numbers of foraging and commuting c. pips.				
22/07/2020	KC	EM3	М	B1	- Soprano pipistrelles (S. pips) seen/heard foraging.				
	Jwi	EM3	K	B1	- Noctule and N. pip also heard briefly commuting across the site.				
	SE	EM3	J	В1	- Myotis sp. recorded briefly foraging.				
	СН	Batlogger	N	B16 & B17 (north)					
	TC	Batlogger	Q	B14	- 2x emergence of c. pip from building B16 at 21:10 & 21:28 (seen by surveyor in location O). Bats				
04/08/2020	SE	EM3	I	B12	emerged from the eastern elevation of the building Very low numbers of c. pip activity recorded throughout the survey, with only occasional passes by				
	Jwi	EM3	Р	B15	commuting bats recorded.				
	SM	Batbox Duet	0	B16					

Table E.2. Bat Survey Results contd.

Survey Date	Surveyor	Detector Type	Surveyor Location	Building Surveyed	Results Summary				
	СН	Batlogger	В	B21					
	SE	Batlogger	Α	B2	- No emergences.				
12/08/2020	TC	Batlogger	С	B21	ow numbers of commuting c. pips. Noc recorded by two surveyors of a single bat commuting over the site. Myotis sp. HNS at 21:20.				
	Jwi	Batlogger	G	B2					
	SM	EM3	Е	B21					
	СН	Batlogger	L	B17 (south)					
	KC	Batlogger	М	B1					
19/08/2020	TC	Batlogger	0	B16	- No emergences Low numbers of foraging and commuting c. pips.				
1770072020	Jwi	EM3	K	B1	Noc recorded by five surveyors of a bat commuting over the site.				
	SE	EM3	J	B1					
	SM	EM3	Н	B1					
	KC	EM3	Q	B14 & B15					
	SM	EM3	Ν	B17 (north)	- No emergences.				
01/09/2020	TC	Batlogger	0	B15 & B16	- Low numbers of foraging and commuting c. pips.				
	Jwi	Batlogger	Р	B15	- Noc recorded twice commuting over the site by two surveyors.				
	SE	Batlogger	I	B12					
	СН	Batlogger	В	B21					
	KC	Batlogger	Е	B21	- No emergences.				
08/09/2020	SE	EM3	R	B8	- High numbers of foraging and commuting c. pips recorded throughout survey.				
	Jwi	EM3	Α	B8	- Noc seen ommuting over the site by one surveyor (location E).				
	SM	EM3	С	В8					





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