

Ecological Appraisal

August 2022

**Cotham School,
Bristol**

Prepared by
CSA Environmental

On behalf of
Cotham School

Report No: CSA/7124/01

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

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1.0 INTRODUCTION

- 1.1 This report has been prepared by CSA Environmental on behalf of Cotham School. It sets out the findings of a Site visit, desktop study and bat survey work undertaken in 2024 to inform proposals for new lighting of the school sports pitches.
- 1.2 The scope of this appraisal has been determined with due consideration for best-practice guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017), and to the *Biodiversity: Code of practice for planning and development* (BS 42020:2013) published by the British Standards Institution (2013).
- 1.3 The Site is located around central grid reference ST 583 740 near central Bristol. It comprises a combination of school buildings, hard-surfaces, amenity grassland with scattered trees (see Habitats Plan in Appendix A). The surrounding landscape comprises extensive suburban housing and gardens.
- 1.4 This report aims to:
 - Characterise baseline ecological conditions of the Site and its wider context
 - Identify any ecological constraints to the proposals
 - Set out the results of further survey work completed at the Site
 - Describe any relevant avoidance and mitigation measures which will be implemented
 - Highlight opportunities for ecological enhancement
- 1.5 To achieve these aims, an ecological desk study and field survey were undertaken of the Site, the findings of which are presented herein.
- 1.6 As set out in best practice guidelines (CIEEM, 2017) a PEA is typically only suitable for planning submission where there are no ecological constraints relating to the project. Where ecological constraints are identified, such as the presence of important ecological features, the effects of development on these features should be assessed within a separate EcIA report, which would supersede the PEA. In this case, a hybrid ecological appraisal report is considered to be appropriate given the scale and nature of the proposals as well as the relatively low ecological value of the Site.

2.0 LEGISLATION, PLANNING POLICY & STANDING ADVICE

Legislation

- 2.1 Legislation relating to wildlife and biodiversity of particular relevance to this PEA 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
 - The Environment Act 2021
- 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) (Department for Levelling Up, Housing & Communities, 2023) 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 The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their effects within the planning system.

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 and Defra's Standing Advice (Natural England & Defra, 2014) regarding habitats and 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 production of this report.

3.0 METHODS

Desk Study

- 3.1 An ecological desk study was undertaken in July 2024 comprising a review of online resources and biological records centre data as detailed below.
- 3.2 Given the nature of the proposals, the Multi-Agency Geographic Information for the Countryside (MAGIC) online database was reviewed to identify nature conservation designations within 1km of the Site, due to the limited nature of the proposals. This included:
 - Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites (including proposed, or potential designations)
 - Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR)
 - Ancient Woodland
 - Granted European Protected Species Applications
 - Great Crested Newt Pond Survey results 2017 – 2019
 - Great Crested Newt Class Survey Licence Returns
- 3.3 The Bristol Regional Environmental Records Centre (BRERC) was 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. 1km of its central grid reference. This search area was selected to include the likely zone of influence upon non-statutory designations and protected or notable habitats and species.
- 3.4 Where possible under the terms of the data provider, relevant desk study data are presented in Appendix C.

Field Survey

- 3.5 A UK Habitat Classification ('UKHab') survey was carried out in dry, cloudy weather conditions on 30 May 2024 by Kate Kibble MCIEEM (FISC Level 4) and Lucy Moorhouse ACIEEM (FISC Level 4) Month 2024. The survey focused on habitats surrounding the sports pitches as these are most relevant to the proposals.
- 3.6 UKHab is a unified and comprehensive system for mapping and classifying habitats, designed to provide a simple and robust approach to surveying and monitoring, and replaces Phase 1 Habitat survey methods. The method allows for identification of important habitat types, including habitats of Principal Importance under Section 41 (S41) of the NERC Act (2006) and Habitats Directive Annex I habitats. This method also allows for direct translation of habitats into the Statutory Biodiversity Metric (Defra, 2024) where applicable.

3.7 The following parameters were adopted for the UKHab survey undertaken for this PEA:

- UKHab Professional edition (Butcher *et al.*, 2023, commercial End User Licence Agreement (EULA))
- Minimum Mappable Unit (MMU):
 - 10m²/0.001ha (polygons)
 - 5m (linear)
- Primary Habitats recorded to a minimum of Level 2 (see below) with UKHab codes provided
- Mandatory secondary codes used
- Base-mapping comprising a combination of aerial imagery and topographic information

3.8 Primary Habitats are recorded to a minimum of Level 2. Where the survey is conducted at an appropriate time of year (e.g. May to July for grassland) habitats may be recorded to Level 3, 4 or 5, only if conditions and the experience of the surveyor allow.

3.9 Alongside the UKHab survey, additional field survey information was collected, comprising:

- Detailed floral species lists recorded for each identified habitat/parcel
- 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 S41 Species of Principal Importance as well as notable, rare, protected or controlled plants and invertebrates)
- Any other survey information relevant to ecological matters

3.10 A detailed Habitats Plan has not been prepared due to the nature of the Site however the extent of the survey area is shown along with an aerial view of the Site within the Bat Survey Plan in Appendix D.

Preliminary Roost Assessment

3.11 A Preliminary Roost Assessment (PRA) was conducted for five buildings surrounding the sports pitches as these would be potentially impacted by the lighting proposals.

3.12 The buildings are numbered B1 to B5 and are mapped on the Bat Survey Plan in Appendix D.

3.13 The survey was completed by Kate Kibble (Natural England class licence reference: 2015-12857-CLS-CLS) and Lucy Moorhouse on 30 May 2024, using high-powered torches, binoculars, ladder and endoscope.

- 3.14 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 roofing materials, external cladding, holes in brickwork, vents and soffits etc.
- 3.15 The internal inspection involved a systematic search for bats or any evidence of their activity, in particular droppings and/or feeding remains within accessible buildings
- 3.16 A description of the structures was made, including construction, condition (in respect of roosting, rather than building or structural integrity).
- 3.17 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.
- 3.18 No trees within the survey area were noted to have bat roosting potential and no further survey work was recommended in respect of these.

Bat Roost Survey

- 3.19 As buildings B1 and B3 at the Site were assessed to have low bat roosting potential, a single dusk emergence survey was conducted on 22 July 2024 by Katie Critchley MCIEEM CECOL (class licence ref: 2015-12858-CLS-CLS) and Georgina Gard.
- 3.20 The survey aims to confirm the presence or likely absence of roosting bats, and where present, 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).
- 3.21 The dusk emergence survey began 15 minutes before British Summer Time (BST) sunset and continued for approximately 1.5 hours following sunset, with due consideration for the BCT good practice guidelines (Collins, 2023). The survey was undertaken in suitable weather conditions (see Table 1).
- 3.22 During the survey, the surveyors watched for any bats leaving or entering parts of the buildings or using key flight lines, equipped with hand-held 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.
- 3.23 Two infrared video camera rigs (Canon XF100, Canon XA10) were used to film any bats entering/emerging from the eastern elevation of buildings B1 and B3. A Batlogger bat detector was affixed to each

camera rig to record bat calls and thereby assist with identifying the species of any bats filmed emerging from/returning to roost in association with the building/tree/structure.

- 3.24 The positions of the surveyors and the infrared camera rigs around the buildings during the survey are illustrated on the Bat Survey Plan in Appendix D.
- 3.25 Following the survey all bat calls were downloaded from the bat detectors and analysed using Bat Explorer software to enable species identification. Camera footage was reviewed using VLC Media Player to cross check any possible bat roosting behaviour, or to review cameras which were focussed on areas of the building not also covered by a surveyor.

Bat Activity Survey

- 3.26 To collect information on general bat activity at the Site, a Wildlife Acoustics Song Meter (SM4) bat detector was deployed within a mature tree adjacent to the east of the sports pitches between 30 May 2024 and 04 June 2024 (see the Bat Survey Plan in Appendix D for location).
- 3.27 The detector was deployed in this location as the tree is positioned within a line of trees and vegetation along Hartfield Lane so may act as a flight line for bats. This was considered to be the most significant habitat for bats in proximity to the sports pitches, so most relevant to the proposals.
- 3.28 The detector was setup to automatically record ultrasonic signals for the period from half an hour before sunset to half an hour after sunrise each night, with each monitoring period spanning five consecutive nights.
- 3.29 Weather conditions were obtained for each night surveyed using historic weather data from the World Weather Online website. The results are summarised in Table 2.
- 3.30 Recordings are triggered when a bat echolocation call is detected and will contain a variable number of call 'pulses'. Each file containing call pulses by a bat/s is designated as a 'bat contact' for each species present. The maximum recording duration is 15 seconds after which time a new recording file, and thus a new bat contact, is generated if echolocation calls are still being detected. This means that periods of prolonged bat activity near a detector is represented as multiple bat contacts, rather than a single one.
- 3.31 Recorded bat calls were analysed using the specialist software AnalookW to identify the species present. Quantitative analysis of bat activity was then undertaken by calculating the average bat contacts per hour on each night monitored, for each species.

- 3.32 Bat activity can show considerable inter-night variability and is dependent on a number of variables, including temperature, wind, and seasonality, amongst others.

Limitations

- 3.33 There were no specific limitations to the desk study or field survey, which was conducted at an optimum time of year and in good conditions.
- 3.34 There were no accessible internal roof spaces within buildings B1, B3, B4 or B5. B2 was able to be accessed internally though the roof space was very cluttered with pipework and could only be partially inspected for evidence of bats. Approximately two thirds of the space could not be accessed.
- 3.35 During the roost survey there was a short period of very light rain. The infra-red cameras were also packed up c. 20 minutes before the end of the survey to protect the equipment as additional rain was coming in, although the surveyors remained on-site with bat detectors until the scheduled end time.

4.0 BASELINE ECOLOGICAL CONDITIONS

Desktop Study

Nature Conservation Designations

Statutory

- 4.1 There are no statutory designations covering any part of the Site nor within 1km.

Non-Statutory

- 4.2 There is one Bristol Wildlife Network Site within 1km of the Site, comprising of the railway corridor c. 360m north of the Site. Railways can be valuable for linking wildlife habitat and providing corridors for dispersal, though this is not well connected with the Site due to intervening housing and roads.

Habitats and Flora

- 4.3 Habitats recorded on-site are illustrated in Appendix A with detailed species lists provided in Appendix E. Relevant UKHab codes are provided within parentheses for each habitat type recorded e.g. Other Neutral Grassland (g3c).

Irreplaceable Habitats

- 4.4 There is no ancient woodland, as shown on the ancient woodland inventory, covering any part of the Site or immediately adjacent land. There also no trees on or adjacent to the Site listed on the Ancient Tree Inventory.

Notable Flora Records

- 4.5 Multiple records of flowering plant and fern species were provided by BRERC for the search area, including species associated with grassland and urban habitats. These include ivy broomrape *Orobanche hederaceae*, three-cornered garlic *Allium triquetrum* and non-native species such as montbretia *Crocodymia pottsii x aurea* (invasive, Schedule 9 of the Wildlife and Countryside Act, 1981) and buddleia *Buddleja davidii*. The rare four-leaved allseed *Polycarpon tetraphyllum* has been recorded within the 1km grid-square containing the Site (no further information is available though this species can be found growing in cracks in the pavement and similar habitats).

Fauna

- 4.6 BRERC provided over 18,000 species records for the 1km search area. Those recorded within the same 1km grid square and with potential to occur on-site include hedgehog *Erinaceus europaeus*, bird species such as house sparrow *Passer domesticus*, greenfinch *Chloris chloris* and song thrush *Turdus philomelos* as well as invertebrates (Scarlet Tiger moth *Callimorpha dominula* and Old Lady moth *Mormo maura*). There are a

small number of common frog *Rana temporaria* and common toad *Bufo bufo* records in the vicinity which may make use of on-site habitats, though there are no aquatic opportunities within the survey area itself. There are also several records of the rare Leisler's bat *Nyctalus leisleri* for the Cotham area. This species is uncommon nationally though Bristol is a stronghold.

- 4.7 Roost records of a single Leisler's bat and 19 unidentified bats exist for the 1km grid-square containing the Site. These are sensitive records so no detailed information is available.

Field Survey

Habitats

- 4.8 The habitat survey focussed on land near the sports pitches where lighting is proposed. The dominant habitat is 'developed land-sealed surface' (u1b) comprising several modern school buildings (secondary code 813), paved surfaces and artificial sports pitches (secondary code 821). Surrounding this, regularly mown modified grassland (g4, secondary codes 814) is present with scattered immature birch *Betula* sp. and Acer trees (secondary code 32). Semi-mature to mature trees are present along the eastern and southern boundaries of the Site which include beech *Fagus sylvatica*, horse chestnut *Aesculus hippocastanum*, pine *Pinus* sp. lime *Tilia* sp. and maples *Acer* sp. A line of London plane *Platanus × hispanica* trees mark the northern boundary of the survey area with Cotham Lawn Road, along with some hazel *Corylus avellana* and hawthorn *Crataegus* sp. scrub and ornamental shrubs (secondary code 847). Additional ornamental shrub including lavender *Lavendula* sp. and *Hypericum* are present around the school buildings.

Species

Flora

- 4.9 A broomrape (species unconfirmed, possibly ivy broomrape) was recorded beneath an ivy-covered Acer tree along the eastern boundary of the school. Other than this, opportunities for notable flora at the Site are limited given its use and regular management.

Fauna

- 4.10 No notable species were incidentally recorded during the Site visit. No evidence of species such as badger *Meles meles* were noted and there is considered to be limited potential to support other notable species on account of the habitat types present and their management.
- 4.11 It is likely that the survey area is used by hedgehog, which are well recorded locally, as well as common and widespread bat and bird species. The grassland, shrubs and trees are expected to support a range of invertebrate species also, but the habitat types present do not

suggest the potential for a notable assemblage to occur. Detailed bat survey work completed at the Site is described below.

Preliminary Roost Assessment

- 4.12 A description of each building surveyed and potential bat roosting features or access points is provided in Appendix A, along with relevant photographs.
- 4.13 In summary, buildings B2, B4 and B5 were of modern design with negligible bat roosting potential. Buildings B1 and B3 were seen to support features which might support bat roosting, such as gaps behind wooden cladding and in brickwork. Further detail is given in Appendix A. With reference to the nature of the buildings, their location and context, low bat roosting suitability was assigned to these structures, with recommendation for a further roost survey (see below).

Bat Roost Survey

- 4.14 No bats were seen to emerge from the buildings surveyed, either by the surveyors or on the recorded camera footage.
- 4.15 General bat activity included some distant foraging by noctule bat *Nyctalus noctula* although there were also several recordings of a *Nyctalus* species bat which are potentially attributable to Leisler's bat (on account of call parameters such as frequency, inter-pulse interval and rhythm). Bat activity closer to the buildings was dominated by common pipistrelle bat *Pipistrellus pipistrellus* although this comprised some brief passes as well as a small amount of foraging activity in the vicinity of B3.
- 4.16 It was notable that the survey area was heavily lit by several floodlights installed on the face of all buildings. This is likely to affect the suitability of the buildings for bat roosting.
- 4.17 Table 1 below provides a summary of survey timings and weather conditions experienced.

Table 1. Bat roost survey timings and weather conditions

Survey Date	Sunset Time	Start Time	End Time	Temp. (°C)		Cloud Cover (oktas)		Wind (Beaufort Scale)		Precipitation
				Start	End	Start	End	Start	End	
22/07/24	21:12	20:57	22:42 *	19	17	7	8	1	2	Intermittent-light rain

* (camera recording ended at 22:23)

Bat Activity Survey

- 4.18 A total of 269 bat calls were recorded during the five nights of static monitoring. Three to four species were detected, including common

pipistrelle, soprano pipistrelle *Pipistrellus pygmaeus*, noctule and unconfirmed noctule/Leisler's bat.

- 4.19 Common pipistrelle activity accounted for 79% of all recorded bat activity (214 contacts) with 8% (22 contacts) and 9% (24) of activity recorded from noctule and *Nyctalus* bats, respectively. Only six contacts from a soprano pipistrelle were recorded with only one or two passes per night. The first common pipistrelle bats were detected from c. 25 minutes after sunset with the last bats recorded c. 20 minutes before sunrise suggesting the presence of a nearby roost. This pattern of activity was not consistent for all nights monitored. It is not repeated for noctule/*Nyctalus* bats although bats were recorded c. 15 minutes before sunrise on 04 June 2024. Activity recorded by all species is indicative of foraging behaviour, with bouts of sustained activity recorded intermittently for noctule/*Nyctalus* and regularly for common pipistrelle. In most cases, only one individual was recorded at any one time.
- 4.20 It should be noted the echolocation calls of noctule/*Nyctalus* bats are wide and far-reaching, so activity recorded by the detector may have been picked up from some distance away.
- 4.21 The overall level of activity is considered to be very low, particularly for non-pipistrelle species although the monitoring period only represents a small snapshot in time.
- 4.22 Table 2 provides a summary of prevailing weather conditions during the five nights of monitoring, which were suitable for bat activity.

Table 2. Overnight weather conditions during remote monitoring period

Dates Sampled	Temp. (°C)		Cloud Cover (%)		Wind (km/h)		Precipitation
	Min	Max	Min	Max	Min	Max	
30/05/24	9	11	26	38	6	9	Dry
31/05/24	8	12	1	18	9	13	Dry
01/06/24	9	12	8	25	7	8	Dry
02/06/24	11	15	36	90	3	8	Dry
03/06/24	10	13	27	100	6	13	Dry

5.0 DISCUSSION AND RECOMMENDATIONS

- 5.1 The Site has been found to support habitats of relatively low ecological value. A small number of bat species have been found to use the Site for possible commuting and foraging purposes, with likely presence of the rarer Leisler's bat. No roosting behaviour has been confirmed within school buildings or trees facing onto the sports pitches and there is considered to be no constraint to the proposals in this respect.

Proposals

- 5.2 The proposed lighting scheme involves installation of 22 7m tall lighting columns in eight groups around the exterior of the sports pitches, and one group centrally.
- 5.3 With reference to the Sport Flood Lighting Calculation Plan (BR0134 Rev P1, July 2025), light will be concentrated onto the pitches themselves though there is anticipated to be light spill of between 25 -50 lux onto the adjacent buildings (currently already lit) and a short length of the eastern tree-line. The proposed lighting scheme includes LED bulbs with a bright white colour (5000K).
- 5.4 Subject to planning, the pitches would be utilised until 10pm with lighting likely to be required until 10:30pm at the latest, Monday -Friday. It is expected that lighting would be required during autumn, winter and spring periods when there is insufficient natural light in the evenings. Lighting would only be utilised when the pitches are in use. Existing restrictions on use of the pitches beyond 5pm at weekends or bank holidays is not expected to change.

Impact Assessment

- 5.5 No constraint from roosting bats at the Site was identified and low-level bat activity has been recorded along the eastern tree-line, some of which may not be directly associated with on-site habitats (because of the far-reaching nature of *Nyctalus* calls).
- 5.6 Artificial light spill is known to have adverse impacts on bats and their prey, with some species exhibiting higher sensitivity to light than others. For the species recorded at the Site, studies have shown that pipistrelle, noctule and Leisler's bat are relatively light tolerant and may congregate around white light sources as it attracts their prey. However, this can make them more vulnerable to predation and reduce the diversity of prey consumed (ILP, 2023).
- 5.7 The suburban setting of the Site is relevant to this assessment as there is already significant artificial light spill locally. There is existing security lighting on the school buildings and street lighting along surrounding roads, including Hartfield Avenue which was found to be used by bats.

- 5.8 With regards to Biodiversity Net Gain (BNG) and the mandatory requirement for 10% gain to be delivered for new developments, the proposals are considered to fall below the *de minimis* threshold for BNG (as per The Biodiversity Gain Requirements (Exemptions) Regulations 2024 (UK SI, 2024 No. 47). Whilst exact details of the lighting columns are to be confirmed, this is expected to entail minimal loss of hard-standing and less than 25m² of modified grassland habitat. There is no impact on priority habitat types or linear habitats. As such, the proposals represent negligible impact to biodiversity and BNG does not apply. New planting is nevertheless proposed which would increase the biodiversity value of the Site (see below).

Summary

- 5.9 With consideration of the context of the Site, the presence of more light-tolerant bat species and the proposed timings of lighting use, it is anticipated that the proposals would not have a significant impact on bats or other important ecological features at greater than Site level.
- 5.10 Opportunities to provide ecological enhancements at the Site have been considered in line with local and national planning policy. New native hedge planting is proposed along the boundary with Hartfield Avenue, and bordering properties 13-23a Cotham Park to the Site's green infrastructure and improve the diversity of invertebrate prey for bats currently using these habitats. Further details are to be confirmed but provision would include a mix of suitable species such as blackthorn *Prunus spinosa*, hawthorn *Crataegus monogyna*, holly *Ilex aquifolium*, Cotoneaster sp., yew *Taxus baccata*, beech *Fagus sylvatica* or hornbeam *Carpinus betulus*. New planting of evergreen trees within the same area will strengthen the existing vegetation and provide screening, once established. Species will include robust species of known wildlife interest with visual interest and suitability for an understorey position.

6.0 REFERENCES

British Standards Institution, 2013. *BS 42020:2013 Biodiversity — Code of practice for planning and development*. London: BSI.

Buglife, no date. *Important Invertebrate Areas*. [online] Available at: <https://www.buglife.org.uk/our-work/important-invertebrate-areas/> [Accessed September 2024].

Butcher, B., Carey, P., Edmonds, R., Norton, L., and Treweek, J., 2023. *UK Habitat Classification Version 2.0* [pdf] UKHab Ltd. Available at <http://www.ukhab.org/> [Accessed July 2024].

Chartered Institute of Ecology and Environmental Management, 2016. *Guidelines for Assessing and Using Biodiversity Data*. Winchester: CIEEM.

Chartered Institute of Ecology and Environmental Management, 2017. *Guidelines for Ecological Report Writing*. Winchester: CIEEM.

Chartered Institute of Ecology and Environmental Management, 2017. *Guidelines for Preliminary Ecological Appraisal*. 2nd ed. Winchester: CIEEM.

Chartered Institute of Ecology and Environmental Management, 2018. *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Version 1.1. Winchester: CIEEM.

Collins, J., ed., 2023. *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 4th ed. London: The Bat Conservation Trust.

Defra, 2011. *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*. London: Defra.

Defra, 2024. *The Statutory Biodiversity Metric User Guide*. London: Defra.

Department for Levelling Up, Housing & Communities, 2023. *National Planning Policy Framework (NPPF)*. London: Department for Levelling Up, Housing & Communities.

English Nature, 2001. *Great Crested Newt Mitigation Guidelines*. Peterborough: EN.

JNCC and Defra (on behalf of the Four Countries' Biodiversity Group), 2024. *UK Biodiversity Framework 2024*. [pdf] Peterborough: JNCC.

Available at: <https://jncc.gov.uk/our-work/uk-biodiversity-framework/> [Accessed September 2024].

Institution of Lighting Professionals, 2023. *Bats and Artificial Lighting at Night*. Guidance Note 08/23. Rugby: ILP.

Multi-Agency Geographic Information for the Countryside (MAGIC), 2013. *Interactive Map*. [online] Available at: <http://www.magic.gov.uk/MagicMap.aspx> [Accessed July 2024].

Natural England and Department for Environment, Food & Rural Affairs, 2014. *Protected species and development: advice for local planning authorities*. [online, last updated October 2023] Available at: <https://www.gov.uk/protected-species-and-sites-how-to-review-planning-proposals> [Accessed August 2024].

Stace, C. A., 2019. *New Flora of the British Isles*. 4th ed. Suffolk: C & M Floristics.

The Woodland Trust, no date. *Ancient Tree Inventory*. [online] Available at: <https://ati.woodlandtrust.org.uk/> [Accessed July 2024].

Appendix A

Site Photographs



Photograph 1. Amenity grassland to north-east of pitches



Photograph 2. Northern pitch with young planted trees.



Photograph 3. Scattered planted trees with tree line and shrubs along boundary with Cotham Lawn Road



Photograph 4. Semi-mature to mature trees along eastern boundary.



Photograph 5. Southern sports pitch.



Photograph 6. Southern part of survey area within building B4

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. The **Environment Act 2021** received Royal Assent in November 2021. Through an amendment to the Town and Country Planning Act 1990 the Environment Act introduced a mandatory requirement for all planning permissions to be conditional upon the submission of a Biodiversity Gain Plan for approval by the Local Planning Authority. The Plan will need to demonstrate a net gain of at least 10% in the biodiversity value of the development site.
- 1.4. Section 40(1) of the **Natural Environment and Rural Communities (NERC) Act 2006** (as amended) 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 and enhancing 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.
- 1.5. The **National Planning Policy Framework (2023)** (NPPF) sets out 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 180, 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.

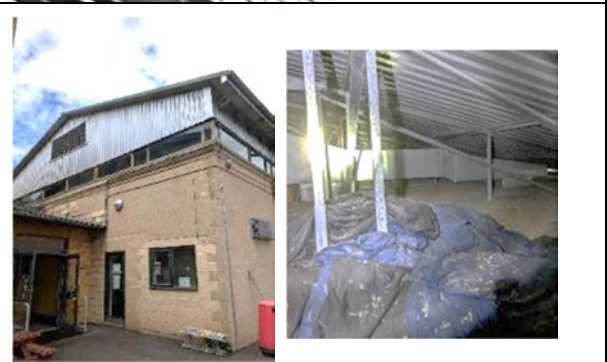
- 1.6. Paragraph 186 sets out the principles that local planning authorities should apply when determining planning applications:
- If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.
 - 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 improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.
- 1.7. 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 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.
- 1.8. 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.
- 1.9. Local planning policies of relevance to ecology, biodiversity and/or nature conservation have been set out in Table 1 below.

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

Policy	Summary
Bristol Development Framework Core Strategy. Adopted June 2011	
Policy BCS9 Green Infrastructure	The integrity and connectivity of the strategic green infrastructure network will be maintained, protected and enhanced. Opportunities to extend the coverage and connectivity of the existing strategic green infrastructure network should be taken. Individual green assets should be retained wherever possible and integrated into new development. Loss of green infrastructure will only be acceptable where it is allowed for as part of an adopted Development Plan Document or is necessary, on balance, to achieve the policy aims of the Core Strategy. Appropriate mitigation of the lost green infrastructure assets will be required. Development should incorporate new and/or enhanced green infrastructure of an appropriate type, standard and size. Where on-site provision of green infrastructure is not possible, contributions will be sought to make appropriate provision for green infrastructure off site. <i>Biological and Geological Conservation</i> Internationally important nature conservation sites are subject to statutory protection. National and local sites of biological and geological conservation importance will be protected having regard to the hierarchy of designations and the potential for appropriate mitigation. The extent to which a development would contribute to the achievement of wider objectives of the Core Strategy will be carefully considered when assessing their impact on biological and geological conservation. Where development would have an impact on the Bristol Wildlife Network it should ensure that the integrity of the network is maintained or strengthened.

Appendix C

Preliminary Roost Inspection Results

Ref	Building Description	Description of bat access/roosting features	Roost Suitability	Photographs
B1	Library. No internal roofspace. Single-storey brick building with multi-pitch roof and skylights. Metal corrugated sheeting for roof material with metal drainpipes. Wooden bargeboards. Some bird netting and metal mesh at eaves to prevent wildlife access	Gaps present between wooden barge boards and wall on eastern gable provide a possible crevice for bats Possible gap into roof space at south side of large window on east gable and at top of brickwork on northern corner. North end of east wall has a gap in the wooden cladding for pipework. Gaps in metal mesh along eaves of east facing wall. No evidence of bats found externally.	Low	 Top left: View of eastern elevation. Top right: Example of wire mesh inserted in eaves, with occasional gaps Bottom: Example of gap behind barge boards at top of wall
B2	Dance hall. Modern block and sheet metal construction. Pitched metal roof covering with metal soffits. Bird netting present. Metal walls to roof space.	Internal: space is dark but there is light ingress through mesh at the eaves. Roof space approx. 6ft high at apex, sloping to eaves. Floor is boarded though full access restricted by ducting and pipework. Evidence of pigeon nesting (likely past, prior to exclusion measures). No evidence of bats found. External: building in good condition. A few gaps noted in bird netting and one gap in corrugated metal cladding above a window however the materials are likely to make it difficult for a bat to utilise this space. No evidence found	Negligible	 External and internal view

B3	Performing arts building. Two-storey brick structure. Single-skin metal roof with skylights. Wooden boards on underside of roof overhang and wall cladding. Vaulted ceilings, no accessible internal roofspace	Crevice-type features present behind wooden cladding at top of walls. Metal mesh present at eaves towards south end of building but not complete coverage.	Low	  	External view and gaps behind wooden boarding
B4	Sports hall. Rendered brick/block building with wooden cladding on upper storey. Pitched metal roof with metal beams and lintels. No internal roofspace.	Possible gap above metal lintel (?) at top of building.	Negligible		
B5	Modern design. Brick lower storey with metal/composite cladding on upper walls and roof. Skylights on roof. Pitched and flat roof sections.	None seen.	Negligible	 	

Appendix D

Bat Survey Plan

CSA/7124/100



-  Survey Area (approx)
-  Building Reference
-  Location of static bat detector
-  Bat surveyor route/coverage
-  Location of infra-red camera with approximate field of view



0 25 50 m



Contains Google Earth Satellite Imagery © Google 2024.

Project	Cotham School	Date	September 2024	Drawing No.	CSA/7124/100
Drawing Title	Bat Survey Plan	Scale	Refer to scale	Rev	-
Client	Cotham School	Drawn	KK	Checked	KC



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