St James Primary School, Clitheroe

Ecological Impact Assessment

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Executive Summary

This report presents the findings of an updated Extended UK Habitat Survey, bat roost assessment and two bat emergence surveys of St James School and surrounding grounds, Clitheroe which was commissioned by Cassidy and Ashton. Current proposals include the redevelopment of the existing educational facility including part-demolition of the existing infant school to provide a standalone nursery facility and the erection of a new infant block to the south west of the nursery alongside additional car parking, soft and hard landscaping and vehicular access works off Greenacre Street.

It is based on previous information collected from a desk study and an Extended UK Habitat Survey and bat assessment carried out in July 2021. Relevant legislation and planning guidance are also taken into account. Key findings and recommendations are summarised in the table below:

Key findings and recommendations

Recommendations
Pollution Control Measures 1.1. Ensure best practice measures are applied to minimise possibility of pollution to Primrose Lodge BHS and Mearley Brook.
Habitats - Broad-leaved woodland, Scattered Mature Trees and Hedgerows 2.1. Avoid losses of woodland, hedgerow and mature trees wherever possible – loss of mature trees cannot be simply mitigated for. 2.2. Compensate for any losses by translocating existing hedgerows, creating new hedgerows and tree planting. 2.3. Safeguard retained woodland, hedgerows and trees with Root Protection Areas. 2.4. Creating wildflower grassland and wood piles.
Bats 3.1. Implementation of Reasonable Avoidance Measures (RAMs) during works. Demolition works will be supervised by a licenced ecologist and will take place during the winter months or the autumn/spring transition periods (November to March inclusive) when bats are unlikely to be present within the building and are least vulnerable to disturbance. 3.2 Installation of a single bat box within the school grounds prior to works commencing. 3.3 Retain hedgerow, scattered trees and woodland habitats wherever possible. 3.4. Compensate for loss of foraging and commuting habitat. 3.3. Design on-site lighting in accordance with the appropriate guidance.
Birds 4..1 Vegetation clearance to be undertaken outside of breeding season (March – August inclusive). If works are carried out during the bird breeding season, a pre-works nesting bird check of suitable habitat will be required.
Amphibians and Small Mammals 5.1. Implementation of Reasonable Avoidance Measures (RAMs) during works.

1. Introduction

1.1 Bowland Ecology Ltd was commissioned by Cassidy and Ashton to undertake an updated ecological assessment of St James Primary School and surrounding grounds (NGR: SD 74130 41305). This is in relation to a number of proposals including the redevelopment of the existing educational facility including part-demolition of the existing infant school to provide a standalone nursery facility and the erection of a new infant block to the southwest of the proposed nursery alongside additional car parking, soft and hard landscaping treatment, and vehicular access works off Greenacre Street.

1.2 The school grounds comprise two buildings with an associated school yard, hard standing areas and woodland at the southern boundary with Mearley Brook intercepting the campus, separating the two school buildings. Habitats surrounding the site are predominantly residential and commercial to the northeast and west, with Primrose Lodge (BHS) adjacent to the southern boundary and Clitheroe Castle Knoll (BHS) further north.

1.3 The assessment follows the Guidelines for Preliminary Ecological Appraisal and the Guidelines for Ecological Report Writing (CIEEM 2017a; 2017b), and is in line with the British Standard BS42020:2013 'Biodiversity – Code of practice for planning and development'. It is based on information from a desk study and an Extended UK Habitat Survey.

1.4 The aim of the assessment is to:

1) identify designated sites and important habitats occurring within the area;

2) identify the presence of or potential for important species, including legally protected species; and

3) assess likely impacts and recommend suitable mitigation and enhancement measures.

1.5 The report includes a description of the methods used, habitats and species identified, and recommendations to protect and enhance biodiversity and address legal requirements.

2. Methodology

Desk Study

2.1 The aim of the desk study was to identify the presence of statutory and non-statutory designated wildlife sites, legally protected species, and Habitats and Species of Principal Importance (HPI & SPI) for the conservation of biodiversity (Section 41 NERC Act 2006) within the search area.

2.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) was reviewed for information on locally, nationally and internationally designated sites of nature conservation importance (statutory sites only) and areas identified as HPI within 1 km of the site boundary.

2.3 Local records of protected sites and species within 1 km of the site were obtained from a data search with Lancashire Environmental Records Network (LERN) in 2021. Records from 2000 onwards are included within this report.

2.4 Ordnance Survey (OS) maps and aerial photographs were reviewed to help identify the presence of water bodies and notable habitats, such as hedgerows and woodland, within 0.25 km of the site, which may provide aquatic or terrestrial habitat for GCN.

2.5 It is recommended[1] that, for developments resulting in permanent or temporary habitat loss at distances over 0.25 km from the nearest pond, careful consideration should be given as to whether a great crested newt survey is appropriate. Although this species may use suitable terrestrial habitat up to 0.5 km from a breeding pond, in this instance a 0.25 km search radius was considered appropriate due to the small scale and localised nature of the works.

Extended UK Habitat Classification Survey (UKHab)

2.6 An assessment was made of all areas of vegetation within the site boundaries, based on the standardised UKHab survey methodology (Butcher et al. 2020a). This involved a walkover survey to identify vegetation types, which were then classified against those the types set out in UKHab classification system (Butcher et al. 2020b). All habitats within and adjacent to the site boundary were mapped and described.

2.7 In addition, evidence of and potential for legally protected and notable species was noted, in particular:

- Potential roosting sites for bats within buildings and trees (identification of suitable cracks and crevices - survey undertaken externally and from ground level only); an assessment of the suitability of bat roosting, foraging and commuting habitat was undertaken based on Collins (2016) (see Appendix A);
- Habitats utilised by other notable and protected species, including amphibians (particularly great crested newt *Triturus cristatus*), water vole (*Arvicola amphibius*), otter (*Lutra lutra*), badger (*Meles meles*), hedgehog (*Erinaceus europaeus*), invertebrates (e.g., butterflies), nesting birds (including any active or disused bird nests) and reptiles; and
- The presence of the most common invasive plant species subject to strict legal control including: Japanese knotweed (*Fallopia japonica*), giant knotweed (*F. sachalinensis*), hybrid knotweed (*F. x bohemica*), giant hogweed (*Heracleum*

[1] see the Natural England 'Method statement template for great crested newt mitigation licence', https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence

mantegazzianum), rhododendron (*Rhododendron ponticum, R. ponticum x R. maximum* and *R. luteum*), and Himalayan balsam (*Impatiens glandulifera*).

2.8 The survey was carried out by Sam Robinson BA (Hons) QCIEEM and Jack Taylor MSc, BSc (Hons) QCIEEM on the 6th April 2023. The weather was dry, overcast (8/8 cloud cover), with a breeze (Beaufort Scale 3) and an approximate temperature of 10°C.

Bat Emergence Survey

2.9 Three dusk bat emergence surveys were undertaken of the western building (B1) on the 18th May, 15th June and 4th July 2023. A 3rd visit was conducted on the 4th July due to access restrictions, see limitations paragraph 2.15. The survey's aim was to determine the presence of roosting bats, including the species and roost type, as well as gather information on the general activity levels and flight lines used by foraging and commuting bats.

2.10 Survey methodology followed the guidelines as described in Collins, 2016. Table 1 below outlines the survey dates, timings and weather conditions. Surveyors positioned themselves to get the best coverage of the garages during the survey and focused in on those areas with the most potential as roosting habitat.

Table 1: Bat emergence survey dates, surveyors, timings and weather conditions

Survey date	Surveyors	Survey timings	Weather Conditions
18/05/23	Mark Breaks BSc (Hons) (Nat Eng Licence No: 2016-26712-CLS-CLS) Lauren Fairfax	Start: 20:55 End 22:40 Sunset: 21:10	Start temp: 11°C End temp: 9°C Wind: F1 (west) Precipitation: None Cloud cover: 7/8
15/06/23	David Fisher (Nat Eng Licence No: 2015-12106-CLS-CLS) Nina Morris Josh Morris	Start: 21:28 End 23:13 Sunset: 21:43	Start temp: 20.7°C End temp: 17.6°C Wind: F1/F2 (SSE) Precipitation: None Cloud cover: 0/8
04/07/23	David Fisher (See above)	Start: 21:27 End 23:12 Sunset: 21:43	Start temp: 13.7°C End temp: 11°C Wind: Calm Precipitation: None Cloud cover: 1/8

2.11 Surveys were aided by the use of Echo Meter Touch and Echo Meter Touch 2 bat detectors. The survey also included the use of thermal imaging and infrared technologies. A Flir AX5 thermal imaging camera, with ThinkPad laptop and Pettersson M500 bat detector was used to record with footage reviewed manually. Research has indicated that the use of night vision aids (NVA) has the potential to significantly increase the detectability of bats during emergence surveys, meaning dusk surveys may be more effective than dawn surveys (Bat Conservation Trust, 2022). As such, statutory bat survey guidelines will see a shift away from the standard use of dawn surveys, in favour of dusk surveys supported by NVAs. Undertaking dusk emergence surveys supplemented by NVAs is therefore considered to be acceptable at this site.

Limitations

2.12 The habitat survey focused on the most prominent and important species within the time available, rather than aiming to identify all species that might present within site. Ecological surveys are also limited by factors that affect the presence of plants and animals, such as the

time of year, migration patterns and behaviour. Therefore, the survey of the study area has not produced a complete list of plants and animals.

2.13 Desk study data should not be treated as a comprehensive list of species present within a search area. Habitat inventories shown on MAGIC vary in terms of their completeness, precision and reliability. Many species are under-recorded and low numbers of records can indicate a lack of survey effort in some areas, rather than confirm the absence of a species.

2.14 The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats. The Extended UK Habitat Survey checked, in particular, for the presence of Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, rhododendron and Himalayan balsam. There may be other invasive plant species present on the site which were not recorded, but it is considered that the survey was sufficient to identify any significant constraints posed by invasive plants.

2.15 Surveyor 1's position could not be reached during the second dusk survey due to a locked gate. Therefore, a further visit was conducted of this elevation on the 4th July 2023. This is not considered a constraint to the report.

3. Results

Desk Study

3.1 There are no statutory designated wildlife sites within the buffer, with two non-statutory Biological Heritage sites (BHS) within 1 km of the site:

Non-statutory designated sites

Site Name	Designation	Distance from site boundary	Key features
Primrose Lodge (BHS)	Biological Heritage Site	adjacent to the school ground's southern boundary	The site comprises the lodge for the former Primrose Print Works created by the damming of Mearley Brook and adjacent semi-natural broadleaved woodland with an extensive area of wet woodland, a UK Priority Habitat. The site supports the largest known colony of Green Figwort (*Scrophularia umbrosa***)** a nationally scarce species in the Ribble Valley.
Clitheroe Castle Knoll (BHS)	Biological Heritage Site	0.26 km north of the school grounds	The site consists of several rock outcrops and steep sloping areas of limestone grassland, scrub and developing woodland below Clitheroe Castle.

3.2 More than 40 areas of deciduous woodland occur within 1 km of the site. The closest are located approximately 100 m north and south within Clitheroe Castle Knoll (BHS) and Primrose Lodge (BHS) which qualify as HPI. Habitat connectivity from the site to the deciduous woodlands include roadside habitats (verges and hedgerows) and garden boundaries to Clitheroe Castle Knoll (BHS). Plantation woodland within the school ground directly connects to woodland within the Primrose Lodge (BHS) to the south.

3.3 A previous suite of bat emergence/dawn surveys at the Site was undertaken in 2021 (Bowland Ecology Ltd, 2021) for a former planning application relating to the school. The surveys found one common pipistrelle (*Pipistrellus pipistrellus*) bat and one soprano pipistrelle (*Pipistrellus pygmaeus*) bat on both surveys emerging from two separate roost locations within B1. Overall bat activity was considered to be moderate.

3.4 Based on a review of aerial photographs and OS maps there are no ponds within 0.25 km of the school grounds or within the site. Mearley brook intersects the site, running between the school buildings and becoming a part of Primrose Lodge (BHS) to the south.

Habitats

3.5 The location of habitats recorded during the Extended UK Habitat Survey is mapped in Appendix C. The Target Notes (TNs) describing each habitat and key interest features for wildlife are set out in Appendix D. Each habitat type is described below. Plant species nomenclature follows Stace (2010). The condition and subsequent descriptions of the habitats have not changed since the previous survey.

Modified Grassland

3.6 Amenity grassland comprising the school playground occupies half the western portion of the site. The grassland is managed regularly (mown), resulting in a short sward height. Species present at TN1 include perennial rye grass (*Lolium perenne*), meadow grass species (*Poa* sp.) and red fescue (*Festuca rubra*) along with herbs including red clover (*Trifolium pratense*), daisy (*Bellis perennis*) and dandelion (*Taraxacum*). The grassland is generally flat although there is a mound towards the south. Modified grassland is also present at the front of B1 (TN5) with a similar species composition.

Other Neutral Grassland

3.7 There is a small un-mown central area of other neutral grassland at TN5 with greater species diversity and a taller sward height than surrounding modified grassland. Species include Yorkshire fog (*Holcus lanatus*), rose *(Rosa* sp.), daisy, dandelion, creeping buttercup (*Ranunculus repens*), fescue grass (*Festuca* sp.), ornamental herb species, cleavers (*Galium aparine*), and oxeye daisy (*Leucanthemum vulgare*).

Other Woodland

3.8 Mature trees surround the southern boundary of the amenity grassland and hard standing playground forming a woodland strip (TN 3). Canopy species include lime (*Tilia* sp.), alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*), beech (*Fagus sylvatica*), hazel (*Corylus avellana*), willow (*Salix* sp.), sycamore (*Acer Pseudoplatanus*), poplar (*Populus* sp.), rowan (*Sorbus aucuparia*), field maple (*Acer campestre*) and silver birch (*Betula pendula*) with an understory of holly (*Ilex aquifolium*), hawthorn (*Crataegus monogyna*) and hazel. The ground flora is predominantly amenity grassland with scattered perennial plants at the perimeter including wood avens (*Geum urbanum*), broadleaved willowherb (*Epilobium montanum*)**,** creeping buttercup, herb Robert (*Geranium robertianum)**,*** lesser celandine (*Ficaria verna*), common nettle (*Urtica dioica*), ivy (*Hedera*), common hogweed (*Heracleum sphondylium*) and holly. There are some areas of leaf litter and patches of bare ground.

Species-Poor Hedgerows

3.9 A short (approximately 10 m in length) hedgerow is present at the edge of the amenity grassland playground at TN 2. The hedge is approximately 3 m tall and 2 m wide with a species composition of field maple and privet (*Ligustrum* sp.).

3.10 A small (approximately 10 m in length) beech hedgerow is present at the southern edge of the amenity grassland at TN 5.

Scattered Trees and Scrub

3.11 Scattered mature trees including rowan, silver birch and whitebeam (*Sorbus aria*) are present within the amenity grassland at TN 5 with immature trees and scattered scrub, species identified as being the same as those listed in TN's 3 & 4, present at TN 7.

Introduced Shrubs

3.12 A small area of ornamental planting is present to the north of the woodland strip (TN 4). Species present include ornamental non-native shrubs along with privet, rose and holly.

3.13 Small sections of introduced shrubs are planted at the edge of the amenity grassland (TN 5) which include rose and grey poplar (*Populus alba*) with further introduced shrubs bordering the hard standing playground at TN 7.

Mearley Brook

3.14 Mearley Brook (TN 6), approximately 4 m wide, dissects the school site in the centre and is out of the direct footprint of works. The brook is a canalised watercourse, roughly flowing north to south, with vertical stone embankments. The watercourse has an absence of emergent vegetation with ivy growth on the stone walls.

Other habitats

3.15 A hard standing playground is present to the rear of B2 (TN 7).

Species

Bats

3.16 The search of MAGIC revealed no records of active or inactive Natural England bat mitigation licences within 1 km of the site.

3.17 The data search (2021) returned 162 records of bat activity within 1 km of the site for pipistrelle (*Pipistrellus* sp.) and an unidentified bat species. The closest record is for a pipistrelle maternity roost, located approximately 250 m southwest of the site, dated 2018. The record is for the count of 144 adult bats.

3.18 One building (B1) on site was previously confirmed as supporting roosting bats (Bowland Ecology 2021). The woodland and scattered trees/scrub provide both foraging and commuting habitat for bats and connect the site to habitats in the wider area, predominately the riparian woodland to the south (Primrose Lodge BHS). The Mearley brook running central to the school campus also acts as a feeding and commuting corridor.

3.19 The site comprises two buildings (B1 & B2). The site layout and building locations are shown in Appendix C with bat foraging and roost locations (surveys in 2021). Photographs of the buildings are provided in Appendix D.

Daytime Building Inspection

3.20 The survey in 2023 confirms that the condition and subsequent descriptions of the buildings have not materially changed since the previous survey in 2021.

3.21 B1 is situated to the west of the site and is an irregular T-shaped, single storey school building. The walls are constructed of brick with small areas of external concrete render and wooden cladding. There are several areas of extensions to the main school building as evidenced by several different roof structures and compositions. The majority of the roof is pitched with gable ends at the south-eastern and north-western elevations. The main hall section of the school towards the north-west is much taller than the rest of the school and has a pitched roof with gable ends at the north-east and south-west elevations. A small extension joins onto the main hall on the south-west elevation, this has a mono pitch roof which is constructed of corrugated metal. There is a small single storey-flat roof extension at the front of the building (north-eastern elevation) which houses the entrance. The fascia boards and soffit boards are a combination of plastic and wood construction.

3.22 The south-east elevation comprises a gable end and single storey flat roof extension which faces towards Mearley Brook. There are three identified gaps suitable for roosting bats: 1) a gap at the southern corner where the roof edge meets the wall plate and the soffit, measuring 10 cm by 10 cm and of an undetermined depth which may lead into the roof space; 2) a gap at the peak of the gable end beneath the end ridge tile with undetermined

dimensions that may lead into the roof space or into the ridge tile void; and 3) an identical gap to gap 1) on the opposite eastern corner of the building.

3.23 The south-western elevation is at the rear of the school and faces towards the playground, a combination of hard standing, amenity grassland and broadleaved woodland. There is a permanent awning structure which extends outwards from approximately half of the building on the eastern side. The roof tiles and ridge tiles on this elevation appear to be well sealed. There are three visible gaps suitable for roosting bats: 1) a small gap measuring approximately 5 cm by 8 cm at the corner of the tall main hall windows where the soffit meets the wall plate and adjacent to an exterior light; 2) a long gap between the soffit and wall plate which is approximately 2 cm by 3 cm and extends along the edge of the main hall building at the roof valley; and 3) gap beneath the white fascia along the entire gable end of the main school hall building.

3.24 The north-eastern elevation is at the front of the school and faces a small area of amenity grassland, scattered trees and shrubs which are situated in front of Greenacre Street. This elevation is well sealed for bats apart from a single small gap beneath the gable end peak ridge tile of the northern extension area. The gap measures approximately 5 cm square with possible interior access to the loft. The north-western elevation faces the alley and is well sealed with negligible potential for roosting bats.

3.25 B1's internal loft space was accessed via three loft hatches throughout the school with only the eastern end able to be physically entered. The loft space consists of one continuous space which is sectioned by breeze block walls which have small crawl-space entryways between. The roof is lined with breathable roofing membrane and has wooden rafters, purlins and vertical struts. The vertical struts are partially boarded between with plywood. The space is well-insulated on the floor and is rarely used, seemingly only for access to any wiring or pipework which are present in the loft. Light ingress is visible at the southwestern end of the loft space (roughly where the two pipistrelle roosts were located in 2021). No signs of bats were identified. Several undisturbed cobwebs were noted, and a single mouse dropping was discovered. B1 is considered to have **low potential** to support roosting bats.

3.26 Building 2 is situated to the east of the site and is constructed of stone walls with a slate tiled roof. The roof structure is complex and includes gable roof sections, hipped roof sections, flat roofed sections, along with window dormer sections. Negligible bat roosting features were identified; the building is in good condition and well-sealed and will not be impacted by works.

Emergence Surveys

3.27 A summary of the bat emergence surveys is provided in Table 2 below. The Bat Activity Plan in Appendix C presents the foraging locations and commuting routes used by bats during the survey, as well as the location of surveyors and IR Cameras.

Table 2: Bat survey results

18/05/2023	*Surveyor 1*	*Surveyor 2*	*Surveyor 3*
Time of first bat	21:36 (MB)	21:44 (IR Camera)	22:36 (LF)
No. of emergent bats	0	0	0
Approx. No. of bat passes	10 (5 X CP, 4 X SP, 1 X N)	-	2 (1 X CP, 1 X SP)
No. of bats foraging	0	-	4 X CP
Species observed	CP, SP, N	-	CP, SP

15/06/2023	*Surveyor 1*[2]	*Surveyor 2*	*Surveyor 3*
Time of first bat	22:14 (DF)	22:14 (JM)	22:14 (NM)
No. of emergent bats	0	0	0
Approx. No. of bat passes	7 (2 X Pip sp., 2 X CP, 2 X MY, 1 X N)	9 (3 X SP, 4 X CP, 2 X N)	11 (5 X SP, 4 X CP, 2 X N)
No. of bats foraging	4 (2 X SP, 1 X My, 1 X Pip.sp)	2 X CP	2 X CP
No. of bats social calling	2 X SP	1 X SP	0
Species observed	Pip Sp, CP, SP, MY, N	SP, CP, N	CP, SP, N
04/07/2023	*Surveyor 1*	*Surveyor 2*	*Surveyor 3*
Time of first bat	22:34 (DF)	-	-
No. of emergent bats	0	-	-
Approx. No. of bat passes	4 (2 X CP, 2 X N)	-	-
No. of bats foraging	6 (4 X CP, 2 X SP)	-	-
No. of bats social calling	0	-	-
Species observed	CP, SP	-	-
Key CP: Common pipistrelle, SP: Soprano pipistrelle, MY: *Myotis* sp., N: Noctule, Pip sp: Unknown pipistrelle			

3.28 To summarise, no bats were observed emerging from the building during any of the surveys with activity levels considered to be low, with slightly higher levels during the second survey. Species observed were common pipistrelle, soprano pipistrelle, *Myotis* sp. and noctule commuting and foraging around the building and along the site boundaries. Soprano pipistrelles were also noted social calling during the second survey indicating a possible roost nearby, likely within the mature trees situated within the woodland to the south.

Badgers

3.29 No evidence of European badger (*Meles meles*) in the form of latrines, footprints or setts was recorded during the survey. The scrub, hedgerows and grassland habitats provide suitable foraging habitat for badger with woodland providing potential sett creation habitat. However, the site is surrounded by a walled boundary (except to the southeast where there is a small perimeter of metal fencing) which presents a barrier to badger dispersal into the grounds if they were to be present within Primrose Lodge (BHS). Furthermore, the grounds are subjected to high levels of disturbance which renders the area less suitable. Badger are therefore not considered further within this report.

European Otter

3.30 The data search returned four records for European otter (*Lutra lutra)*, dated 2018 & 2019, located within Pendleton Brook, 0.55 km south of the school grounds. Connecting habitat between the school grounds and the record comprises the crossing of Primrose Road into Primrose Lodge (BHS), which is considered optimal habitat for otter foraging and commuting along Mearley Brook. However, woodland within the site is considered unsuitable for holt creation and lay up areas due to the disturbed nature of the grounds and the walled boundary. Otter are therefore not considered further within this report.

Small mammals

3.31 The data search returned nine records for European hedgehog (*Erinaceus europaeus*), an SPI, within the search area. A hedgehog was observed crossing the Mearley Brook bridge during one of the bat surveys in 2021. Areas of woodland, hedgerow, scrub, scattered trees, introduced shrub and unmanaged grassland present within the school grounds are

[2] *Access restrictions resulted Surveyor 1's location being different for this survey (See Appendix C Bat Activity Plan)*

considered suitable for use by European hedgehog, alongside other non-SPI mammals including wood mouse (*Apodemus sylvaticus*), field vole (*Microtus agrestis*) and common shrew (*Sorex araneus*).

3.32 The data search also returned one record for European hare (*Lepus europaeus*), an SPI, located 0.9 km east of the school grounds. Connecting habitat between the grounds and the record is poor, comprising of roads and residential gardens. Hares prefer habitats of a rural, open nature comprising fields of arable crops, therefore due to a lack of suitable foraging habitats on site, they are not considered further within this report.

Birds

3.33 The data search returned records of the following notable bird species within, 1 km, that could be present within the school grounds: Black headed gull (*Chroicocephalus ridibundus*), dunnock (*Prunella modularis*), grey wagtail (*Motacilla cinerea*), house sparrow (*Passer domesticus*), lesser redpoll (*Acanthis cabaret*), spotted flycatcher (*Muscicapa striata*) and tree sparrow (*Passer montanus*).

3.34 Woodland, hedgerow, scattered trees, scrub and introduced shrub provide suitable nesting and foraging habitat for a range of tree and scrub nesting birds.

3.35 There is no potential within the site for ground nesting birds due to regular maintenance and disturbance of grassland from pupils. The buildings present on site are not considered to offer high quality nesting opportunities due to the absence of suitable nesting locations.

Amphibians

3.36 The data search returned one record for common toad (*Bufo bufo*), an SPI, within the search area, located 0.28 km south of the school grounds within Primrose Lodge BHS. The record is dated 2018.

3.37 There are no ponds within the site and the review of aerial photos and OS maps identified no ponds within 0.25 km. Woodland, hedgerow, scattered trees, scrub and introduced shrub provide suitable refuge and foraging habitat for a range of common amphibian species.

Invertebrates

3.38 The data search returned three records for notable invertebrate species within the search area: ringlet (*Aphantopus hyperantus*) butterfly, cinnabar (*Tyria jacobaeae*) moth and latticed heath (*Chiasmia clathrate*) moth. The records are located approximately 0.42 km north within Clitheroe Castle Knoll (BHS) and are dated 2019 & 2020. The presence of the foodplant of both the ringlet butterfly and the lattice heath moth (meadow grass and red clover) within the school grounds makes the presence of these species on site likely.

3.39 Woodland, hedgerow, scattered trees, scrub, introduced shrub and unmanaged grassland present on site are considered suitable to support a range of common invertebrate species.

4. Evaluation and Assessment of Constraints

4.1 An assessment of potential impacts on (constraints) designated sites, habitats, species and is presented below. This is based on the information available on the proposed works. (see below) and the professional judgement of the ecologists that prepared this report. It considers legal requirements (see Appendix F) and relevant national and local planning policies. If the proposals are changed significantly, the assessment will need to be reviewed.

Work Proposals

4.2 Works include the redevelopment of the existing educational facility including part-demolition of the existing infant school (B1) to provide a standalone nursery facility and the erection of a new infant block to the southwest of the proposed nursery alongside additional car parking, soft and hard landscaping and vehicular access works off Greenacre Street (see Appendix B for the development plan). It is anticipated that the majority of the site will be retained with the removal of a number of scattered mature trees, small section of plantation woodland (one large tree), three small hedgerows, amenity grassland, small area of semi-improved grassland and introduced and scattered scrub to accommodate the development.

Biological Heritage Sites

4.3 Due to the close proximity of Primrose Lodge BHS to the site, site clearance and construction works have the potential to indirectly impact the BHS in the absence of mitigation through pollution (fuel spillages incidents, runoff and dust) of Mearley brook located within the school grounds which forms part of the BHS. Other impacts could include compaction of tree roots (British Standard: BS:5837:2012) of adjacent plantation woodland which connects to the designated site.

Habitats

4.4 The woodland, scattered mature trees and hedgerows provide high ecological and botanical value within the school grounds, with the woodland plantation connecting to more semi-natural woodland (HPI) within Primrose Lodge BHS to the south. Therefore, clearance of scattered mature trees, three hedgerows and a small area of plantation woodland to accommodate site access, a building and a carpark will result in the reduction in ecological connectivity, along with a reduction in resources affecting the viability of plant/animal populations. Furthermore, works in proximity to trees to be retained have the potential to impact RPA's, compromising the health and stability of the tree. As such, the loss of these habitats is considered to represent a negative ecological impact.

4.5 The small area of semi-improved neutral grassland is unmanaged and more species rich than surrounding mown amenity areas and provides an important resource for invertebrates, therefore its loss is considered to be a small negative ecological impact.

4.6 Scattered scrub, introduced shrub and amenity grassland will be lost to accommodate the works. These habitats provide limited ecological and botanical value, however, they do provide some structure in the landscape and habitats for a variety of fauna (further described below).

Species

Bats

4.7 No trees within the school grounds had features to offer possible bat roosting habitat. No evidence of roosting bats was found during the building inspection, however B1 was a previous confirmed roost (2021) with features identified on the exterior of the building providing suitable entry points/roosting potential for individual, or small numbers of crevice dwelling bats. Features include; gaps behind fascia boards/soffits and under raised/loose roof slates and ridge tiles with access possible into the internal space.

4.8 No bats were observed emerging from the building or from any previous confirmed roost locations during the emergence surveys with overall bat activity ranging from low to moderate. Due to the results of previous and current surveys, it is considered that the building does not currently support bat roosts of high conservation status and there is no evidence to suggest the building supports a maternity roost as surveys were completed in the peak season. However, it is likely that the confirmed roosts from 2021 (soprano and common pipistrelle) are infrequently still in use. Therefore, works or disturbance to the building poses a risk of injury/killing/disturbance to bats which may result in an offence (see Appendix F).

4.9 The survey also concluded that, the building has remained unchanged since the original surveys, therefore, it is considered that undertaking further bat surveys would be unlikely to yield further, additional information. The assessment of the potential impacts to bats would not alter; therefore, it is considered that undertaking further surveys would substantiate a disproportionate level of survey.

4.10 Overall, the building is still considered to support small day, night and/or transitional/occasional roosts for small numbers of common and soprano pipistrelle. These roosts are categorised as roosts of **low conservation significance**, according to the Bat Mitigation Guidelines (Mitchell-Jones, 2004).

4.11 The woodland areas may provide foraging habitat for those species showing preference for more 'closed' habitats, including brown long-eared and Natterer's bats (*Myotis nattereri*). The edges of the woodlands, hedgerows and scattered trees/scrub may provide foraging habitat for bat species known to favour 'edge' habitats. Such species include common pipistrelle and whiskered bats (*Myotis mystacinus*), which are flexible in their foraging habitat. Mearley Brook may provide suitable foraging habitats for a variety of species including soprano pipistrelle, Nathusius' pipistrelle (*P. nathusii*), Natterer's bat (*Myotis nattereri*), Daubenton's bat (*M. daubentonii*) and Brandt's bat (*M. brandti*), all of which show a preference to feed in 'open water' and 'edge' habitats.

4.12 Any new lighting associated with the completed development has the potential to impact foraging and commuting bats utilising adjacent habitats, particularly if directed onto woodland to the south. An increase in artificial illumination poses a barrier to bat movement and reduces foraging opportunities by depleting invertebrates from unlit areas, thereby reducing food abundance for light-sensitive bats such as brown long-eared bats and *Myotis* species. Unmitigated, potential disturbance to bats could occur through increased lighting of the site at night, particularly if light spillage occurs onto roosting features or linear features used for commuting and foraging.

Small mammals

4.13 European hedgehog (SPI) and other small mammals are likely present on site. Potential impacts to this species during site clearance and construction may include the disturbance/harm of individuals, the loss of foraging and refuge habitats and entrapment within excavations.

Birds

4.14 Any removal or temporary disturbance to woodland, hedgerow, scattered trees, scrub and introduced shrub has the potential to impact nesting birds if undertaken within the nesting bird season (March to August inclusive) and/or without due care and attention. This would constitute an offence (see Appendix F).

Amphibians

4.15 Impacts to woodland, hedgerow, scrub and introduced shrub has the potential to impact common amphibians, that may be sheltering in these habitats, if works are undertaken without due care and attention. Clearance of this habitat may also result in the loss of refuge habitat for the species.

4.16 It is considered that the risks of encountering GCN are negligible as there are no records for GCN within 2 km of the school and no ponds are present within 0.5 km of the school. However, encountering individual GCN within suitable terrestrial habitats (woodland, hedgerow, scrub and introduced shrub) cannot be entirely ruled out.

Invertebrates

4.17 Impacts to woodland, hedgerow, scattered trees and grassland present on site has the potential to impact invertebrates.

5. Mitigation and Opportunities

5.1 The recommendations set out below aim to ensure that the proposed development take account of important ecological features, legal requirements (see Appendix F), and relevant national and local planning policies. The National Planning Policy Framework (2021) specifically states that development should seek to minimise impacts, incorporate improvements, and provide net gains for biodiversity. If the proposals are changed significantly, the recommendations will need to be reviewed.

Primrose Lodge (BHS), Mearley Brook and Broadleaved Woodland

5.2 Appropriate pollution control and prevention measures will be applied throughout the works to ensure Primrose Lodge (BHS), Mearley Brook and broadleaved woodland are not negatively affected during the works through run-off and dust created during the demolition and construction period. Relevant guidance published on the NetRegs website[3] should adhered to during the works. This should be included, along with a detailed working methodology, within a Construction Environment Management Plan (CEMP). Examples of suitable mitigation that can be adopted during site clearance and construction include;

- Maintaining high standards of housekeeping;
- Enforcing speed limits on site and dampening down working areas in dry periods to prevent dust;
- Using covered wagons and skips;
- Keeping roads clean with the use of road sweepers; and
- Vehicle refuelling in designated compounds/area at least 10 m from Mearley Brook;
- Any fuel will be stored in double bunded containers at least 10 m from Mearley Brook;
- Drip trays or plant nappies to be used when refuelling and left under stationary machinery;
- Oil spill kits to be kept within the school grounds and within all vehicles; and
- All materials such as excavated topsoil must be stored in a bunded area away from the brook and protected from potential rainfall and runoff and replaced upon the completion of works.

5.3 In line with BS 5837:2012 (Trees in Relation to Design, Demolition and Construction), Root Protection Areas (RPA) will be set up along the boundary of the woodland adjacent to Primrose Lodge BHS to ensure no trees are directly impacted by the scheme. RPA's will be created with vertical barriers or appropriate ground protection to create exclusion zones prior to commencement of works.

Habitats

5.4 The loss of plantation woodland, trees and hedgerow within the site, particularly mature trees and plantation woodland adjacent to Primrose Lodge BHS shall be avoided/minimised where possible. If this is not possible, compensation for the works must be implemented as follows;

[3] http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list

- It is advised that RPA's of retaining trees/hedgerow/woodland are marked off prior to works, and no works will be undertaken within the designated RPA;
- Trees to be felled will be compensated for at a 2:1 ratio to those lost. Species used for planting will be native, appropriate to the locality and sourced locally. Planting will be undertaken at an appropriate time of year (autumn or early spring when there is no ground frost) and specimens protected from grazing by rabbits and deer; and
- Hedgerow options include temporary removal and reinstatement or replanting of removed sections with suitable native species saplings of local provenance. Suitable species are given in Appendix G. In addition, further lengths of native species hedgerow could be established elsewhere, particularly along the eastern and western boundaries to extend the woody habitat to the south.

5.5 Landscaping proposals for the Site should consider introducing wildflower areas to compensate for the loss of grassland (including the planting of meadow grass and red clover) and compensation for the loss of woodland, trees and hedgerows as recommended above (Paragraphs 5.4) will ensure the continuation of foraging opportunities for invertebrates within the area. In addition, the creation of wood piles from felled trees, as detailed in paragraph 5.10, will create suitable habitat for a variety of saproxylic invertebrates.

Bats

5.6 The potential impacts on roosting bats are considered to be low, due to; 1) the temporary nature of works in close proximity to the roost site; 2) no bats emerged from the building during recent surveys with only individual bats using the two roosts in 2021 on an occasional basis; and 3) high availability of alternative roosting habitat within the surrounding area (BHS). Therefore, it is considered that a Reasonable Avoidance Measures (RAMs) approach is appropriate. The following RAMs will be adhered to throughout the demolition and construction works:

- Demolition works will take place during the winter months or the autumn/spring transition periods (November to March inclusive) when bats are highly unlikely to be present in B1 or are least less vulnerable to disturbance;
- Before any works proceed all contractors will be made aware of the possible presence of bats and the signs to look for and procedure if bats are found or discovered (see Appendix E);
- **Prior to the commencement of works**, a single Roost Maternity Bat Box (See Figure 1 below) with multiple internal crevices will be installed on a mature tree under the supervision of an experienced ecologist, along the perimeter of the school grounds. The bat box will be used to receive any bats found during the works and be retained for long term enhancement of bat roosting habitat within the surrounding area;
- The partial demolition of B1 is to be undertaken with precaution and contractors will have an ecological watching brief with demolition works supervised by a licenced ecologist. If works alter/modify the common pipistrelle bat roost from 2021 (soprano pipistrelle roost is located further away from the demolition area), then the roost feature will be placed back to its original state;
- If bats are encountered within the working area, all works must cease immediately and the ecologist on site notified;
- If a bat is found or suspected when the ecologist is not on site all works should cease and the ecologist called immediately, leaving the bat in situ;
- If the bat is in immediate danger it should only be picked up with **gloved hands** and placed in a secure container with air holes in a dark, quiet place until the ecologist arrives at site;

- **Breathable Roof Membranes (BRM's) should not be used on the retained roofing areas of B1 as the building supports bat roosts, BRM's contain long synthetic fibres in which bats become entangled resulting in mortality;** and
- If changes to the proposed works and/or proposed work schedule occur, the ecologist must be contacted immediately.

Figure 1. Roost maternity bat box

5.7 The re-planting of trees and hedgerow (described in paragraph 5.4 above) will provide a continuation of bat foraging and commuting opportunities within the area.

5.8 Any new lighting schemes will be designed so that they are 'bat friendly' to avoid impacts to foraging and commuting bats. Lighting schemes should be designed in accordance with the appropriate guidance to minimise impacts on foraging bats (BCT/IPL, 2018). Examples of low impact lighting schemes include, but are not limited to:

- The use of low-pressure sodium lamps or high-pressure sodium instead of mercury or metal halide lamps; and
- Lighting should be directed to where it is needed, and light spillage avoided in particular along the site boundaries (broadleaved woodland to the south).

Small Mammals

5.9 Contractors will be made aware of the potential presence of mammals, including hedgehog on site. Removal of woodland, trees, hedgerow, scrub and introduced shrub should be undertaken with care to avoid disturbance to sheltering/hibernating mammals. Any debris from works will not be left on site and any holes or trial pits associated with works will be covered overnight or fitted with egress boards to prevent animals becoming trapped. Any small mammals found within the works area during construction should be carefully relocated to sheltered location with plenty of vegetation cover, in an area off site which will remain undisturbed.

5.10 In addition to the above, the following mitigation, in respect of European hedgehog will also be undertaken;

- Provision of artificial or natural hedgehog boxes located in quiet undisturbed areas with ground covering vegetation, preferably against a boundary. For example, three or four logs may be arranged to leave an appropriate sized hole for a hedgehog to nest in (big enough for the hedgehog and its nest) and covered with masses of twigs and leaves;
- The creation of 'hedgehog highways' by leaving holes in any boundary fencing to allow the movement of hedgehogs throughout the site; and
- Retaining wood piles from felled trees to attract invertebrates and fungi, providing a good local food source for hedgehogs and possible nesting sites (materials from site works could be used for this purpose).

Birds

5.11 It is recommended that the loss of bird nesting habitat (woodland, scattered trees, scrub, hedgerows and introduced shrub) is kept to a minimum. Where this is not possible, compensation for the loss of woodland, trees and hedgerows as recommended above (Paragraphs 5.4), will ensure the continuation of foraging and nesting opportunities for birds within the area.

5.12 Any clearance works (woodland, scattered trees, scrub, hedgerows and introduced shrub) will be undertaken outside of nesting bird season (March – September). If this is not possible, a pre-commencement nesting bird check must be completed by a suitably experienced ecologist. If nesting birds are identified, no work must take place until all young have fledged. **Clearance will only be allowed to proceed** once a scheme ecologist has declared nests to be no longer in use.

Amphibians

5.13 From results showing no GCN within 2 km and no ponds within 0.5 km of the site, it is considered unlikely that GCN are present within the working area. However, the presence of amphibians cannot be entirely ruled out and it is recommended that contractors are made aware of the potential presence of amphibians, especially common toad (SPI). It is considered that Reasonable Avoidance Measures (RAMS) are appropriate to mitigate for the low risk to GCN and therefore reduce to a negligible level:

- Hand search for amphibians, prior to any woodland and hedgerow removal by a suitably qualified ecologist;
- Any brash/log/rubble piles should be dismantled by hand and be taken out of the working area for use to create habitat piles in suitable locations outside of the proposed works location;
- Any excavations should be backfilled, covered over, or a means of escape provided (e.g. plank) at the end of each day in order to prevent amphibians becoming stranded within trenches;
- All works, stockpiling of materials or storage of machinery must be contained within sub-optimal habitat (hard standing); and
- In the event that any GCN are encountered during the works, all works must cease immediately and the ecologist contacted for further advice. Any GCN should be moved by a suitably qualified ecologist to a suitable location outside the works location.

Enhancement Measures

5.14 As designs for the site develop, an ecologist can provide site specific advice on ways to enhance the wildlife value of the final development and contribute towards a net gain in

biodiversity. Simple examples of enhancement measures which could be considered and designed into the proposals include (but are not limited to):

- Installation of additional wildlife boxes (bird and bat) on suitable trees close to or within the school grounds;
- Bat friendly features can also be incorporated into new building designs. Incorporation of roosting opportunities within the proposed development should be achievable and can be designed to meet with planning requirements and building regulations. It is recommended that one of the following is incorporated into the buildings with south or west aspects:
    - Access gaps between soffits and walls (15-20mm);
    - Access points to the roof void via bat tiles incorporated into the roof structure or bat tubes built into gaps in the masonry or into wall surfaces (tubes such as the Schwegler 2FR Bat Tube would be suitable).
    - Access points over the top of cavity walls by specifically constructed gaps;
    - External bat bricks installed at a height of 3 m (or close to the roof line), in the south or west facing elevation (Schwegler 1FR Bat Tube would be suitable).
- The creation of habitat for invertebrates by excavating small trenches, filling with suitable materials (e.g. rubble and woody debris) and covering with freely draining soils and nectar rich plants to form a low mound.
- Additional planting of scrub, hedgerows and trees carried out around the margins of the site, that is in excess of mitigation requirements, will improve the diversity of habitats. New planting should comprise native species of local provenance. Planting of such additional native trees/hedgerows will enhance ecological connectivity within the wider landscape and benefit many species of wildlife including bats, birds and amphibians.

Re-survey of the Site

5.15 If no works are undertaken on site within 18 months of this survey or if any changes to the proposals are made, a further ecological survey may be necessary (because of the mobility of animals and the potential for colonisation of the site).

References

Bowland Ecology (2021) St James School Preliminary Ecological Appraisal. Clitheroe.

British Standards Institution (2013) BS 42020:2013 Biodiversity: Code of practice for planning and development. British Standards Institution, London.

CIEEM (2017a) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2017b) Guidelines for Preliminary Ecological Appraisal 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.

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

Institute of Lighting Professionals (2018) Bats and artificial lighting in the UK. The Bat Conservation Trust, London.

National Planning Policy Framework (2021) Ministry of Housing, Communities and Local Government, London.

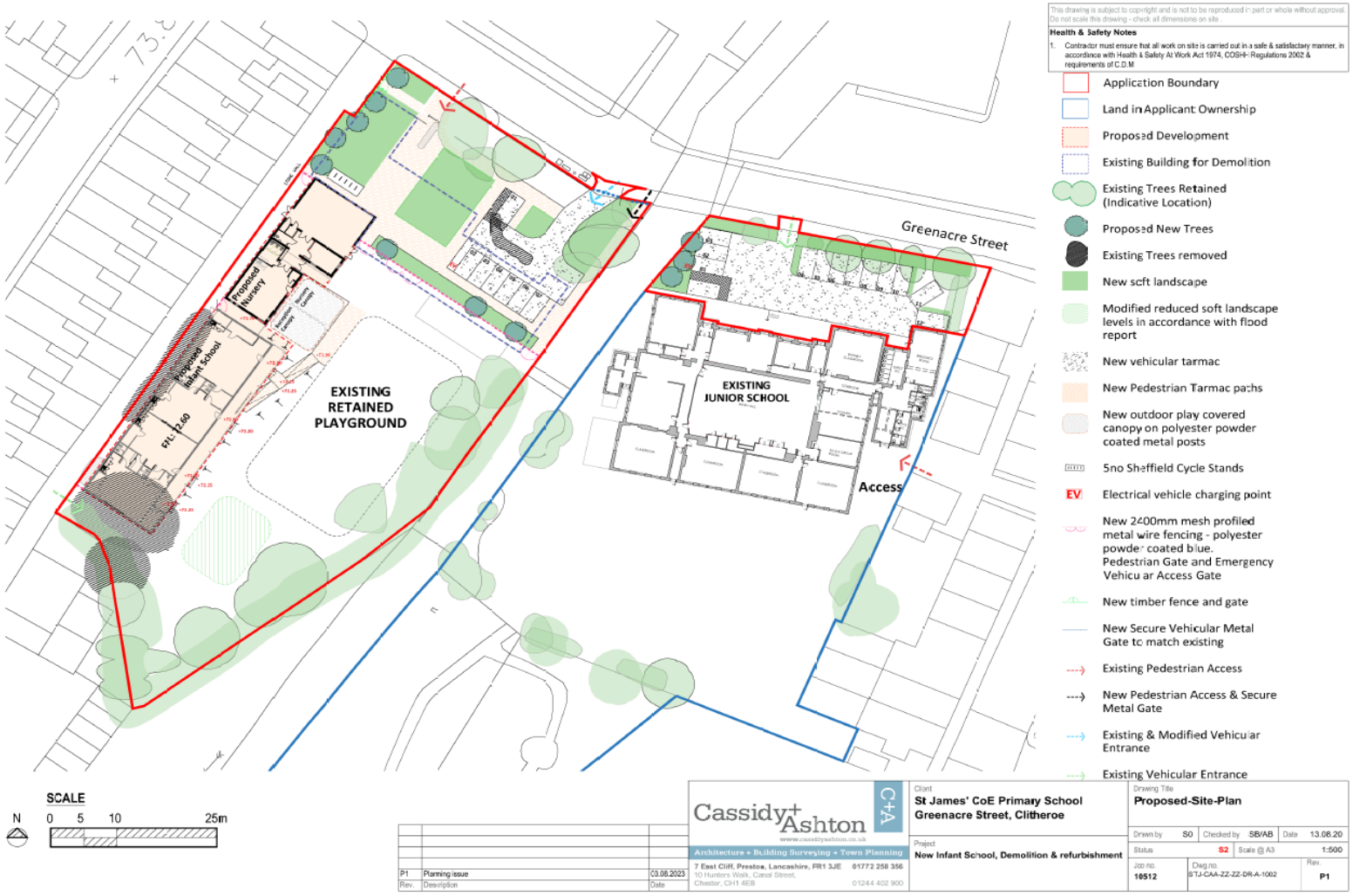
Stace, C. (2010) New Flora of the British Isles. Third Edition. Cambridge University Press, Cambridge.

Appendix A – Bat Roost Potential and Habitat Suitability Categories

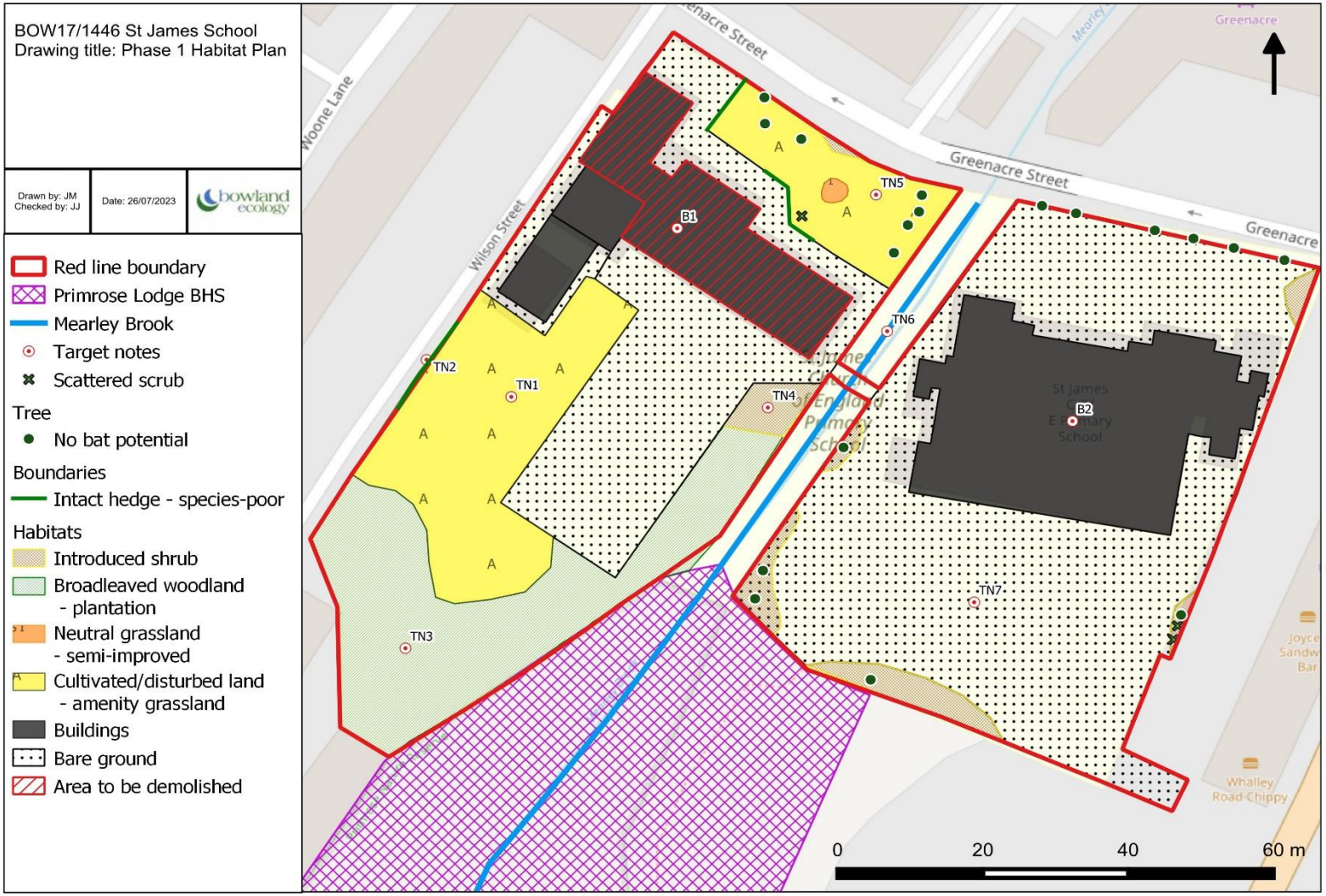
Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape (Collins, 2016).

Suitability	Description of Roosting Habitat	Commuting & Foraging Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats	Negligible habitat features on site likely to be used by commuting or foraging bats.
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 conditions and/or suitable surrounding habitats to be used on a regular basis or by a larger number of bats (i.e. unlikely to be suitable maternity or hibernation). A tree of sufficient size and age to contain potential roosting features but with none seen from the ground, or feature seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
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.	Continuous habitat connected to the wider landscape that could be used by bats for commuting, such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging, such as trees, scrub, grassland or water.
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.	Continuous high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats, such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close and connected to known roosts.

Appendix B – Plan of Proposed Development



Appendix C – UK Habitat Plan and Bat Activity Plan




BOW17/1446 St James School
Drawing title: Bat Activity Plan
Drawn by: JM
Checked by: JJ
Date: 26/07/2023
bowland ecology
Red line boundary
Surveyor location
IR Camera
Part of building to be demolished
Mearley Brook
Bat commuting
Bat Roost (2021)
Surveyor 1 was positioned here for the 2nd survey due to access restrictions
Soprano pipistrelles, Myotis and common pipistrelles were noted forgaing along the mature tree line
Surveyor 3
Common pipistrelle transtional roost (2021)
Soprano pipistrelle transtional roost (2021)
Surveyor 1
Surveyor 2
Myotis were noted foraging along Mearley Brook with noctules using the waterbody as a commuting corridor
Soprano pipistrelles were observed social calling around the grassland area and woodland edge
0
5
10
15 m

Appendix D – Habitat Survey Target Notes

See the UK Habitat Plan for location of each Target Note.

Ref	Description	Photograph
B1	B1 is situated to the west of the site and is an Irregular T-shaped, single storey school building. The walls are constructed of brick with small areas of external concrete render and wooden cladding. There are several areas of extensions to the main school building as evidenced by several different roof structures and compositions. The majority of the roof is pitched with gable ends at the south-eastern and north-western elevations. The main hall section of the school towards the north-west is much taller than the rest of the school and has a pitched roof with gable ends at the north-east and south-west elevations. A small extension joins onto the main hall on the south-west elevation, this has a mono pitch roof which is constructed of corrugated metal. There is a small single storey-flat roof extension at the front of the building (north-eastern elevation) which houses the entrance. The fascia boards and soffit boards are a combination of plastic and wood construction. The south-east elevation comprises a gable end and single storey flat roof extension which faces towards Mearley Brook. There are three identified gaps suitable for roosting bats: 1) a gap at the southern corner where the roof edge meets the wall plate and the soffit, measuring 10 cm by 10 cm and of an undetermined depth which may lead into the roof space; 2) a gap at the peak of the gable end beneath the end ridge tile with undetermined dimensions that may lead into the roof space or into the ridge tile void; and 3) an identical gap to gap 1) on the opposite eastern corner of the building. The south-western elevation is at the rear of the school and faces towards the	   

	playground, a combination of hard standing, amenity grassland and broadleaved woodland. There is a permanent awning structure which extends outwards from approximately half of the building on the eastern side. The roof tiles and ridge tiles on this elevation appear to be well sealed. There are three visible gaps suitable for roosting bats: 1) a small gap measuring approximately 5 cm by 8 cm at the corner of the tall main hall windows where the soffit meets the wall plate and adjacent to an exterior light; 2) a long gap between the soffit and wall plate which is approximately 2 cm by 3 cm and extends along the edge of the main hall building at the roof valley; and 3) gap beneath the white fascia along the entire gable end of the main school hall building. The north-eastern elevation is at the front of the school and faces a small area of amenity grassland, scattered trees and shrubs which are situated in front of Greenacre street. This elevation is well sealed for bats apart from a single small gap beneath the gable end peak ridge tile of the northern extension area. The gap measures approximately 5 cm square with possible interior access to the loft. The north-western elevation faces the alley and is well sealed with negligible potential for roosting bats. B1's internal loft space was accessed via three loft hatches throughout the school with only the eastern end able to be physically entered. The loft space consists of one continuous space which is sectioned by breeze block walls which have small crawl-space entryways between. The roof is lined with breathable roofing membrane and has wooden rafters, purlins and vertical struts. The vertical struts are partially boarded between with plywood. The space is well-insulated on the floor and is rarely used, seemingly only for access	 

	to any wiring or pipework which are present in the loft. Light ingress is visible at the south western end of the loft space (roughly where the two pipistrelle roosts were located in 2021). No signs of bats were identified. Several undisturbed cobwebs were noted, and a single mouse dropping was discovered. B1 is considered to have low potential to support roosting bats.	
B2	Building 2 is situated to the east of the site and is constructed of stone walls with a slate tiled roof. The roof structure is complex and includes gable roof sections, hipped roof sections, flat roofed sections, along with window dormer sections. Negligible bat roosting features were identified - the building is in good condition and well-sealed.	
T1	Amenity grassland comprising the school playground occupies half the northeast and southwest areas of the western half of the site. The grass is managed resulting in a short sward height. Species present include perennial rye grass meadow grass species and red fescue along with herbs including red clover, daisy and dandelion. The grassland is generally flat although there is a mound towards the south	
T2	A short (approximately 10 m in length) hedgerow is present at the edge of the amenity grassland playground. The hedge is approximately 3 m tall and 2 m wide with a species composition of field maple and privet.	

T3	Mature trees surround the southern boundary of the amenity grassland and hard standing playground forming a woodland strip. Canopy species include lime, alder, ash, beech, hazel, willow, sycamore, poplar, rowan, field maple and silver birch with an understory of holly, hawthorn and hazel. The ground flora is predominantly amenity grassland with scattered perennial plants at the perimeter including wood avens, broadleaved willowherb, creeping buttercup, herb Robert, lesser celandine, common nettle, ivy, common hogweed and holly. There are some areas of leaf litter and patches of bare ground.	
T4	A small area of ornamental planting is present to the north of the woodland strip. Species present include ornamental non-native shrubs along with privet, rose and holly.	
T5	Amenity grassland at the front of the school which is surrounded by short sections of managed hedges (beech and ornamental species) along with scattered mature trees including rowan, silver birch and white beam. There is a small un-mown central area with greater species diversity and taller sward including Yorkshire fog, rose, daisy, dandelion, creeping buttercup, fescue grass, ornamental herb species, cleavers, and oxeye daisy. There are small sections of introduced shrubs planted at the grassland edge which include some rose, grey poplar, forget-me-not, dandelion, willowherb.	

T6	Mearley Brook approximately 6 m wide, intercepts the school campus and is out of the footprint of works. The brook is a channelised watercourse, roughly flowing north to south, with vertical stone embankments. The watercourse has an absence of emergent vegetation with ivy growth on the stone walls.	
T7	Playground is present at the rear of Building 2. This area comprises hard standing with scattered borders of introduced ornamental shrubs, scattered scrub and immature trees with the species identified as being the same as those listed in TN3, 4 and 5.	

Appendix E – Information Sheets for Contractors

BATS

Information, legal responsibilities and best practice for the construction industry

bowland ecology

Legal Protection

All UK Bat species are protected by European and UK law, in practical terms this means it is an offence to:

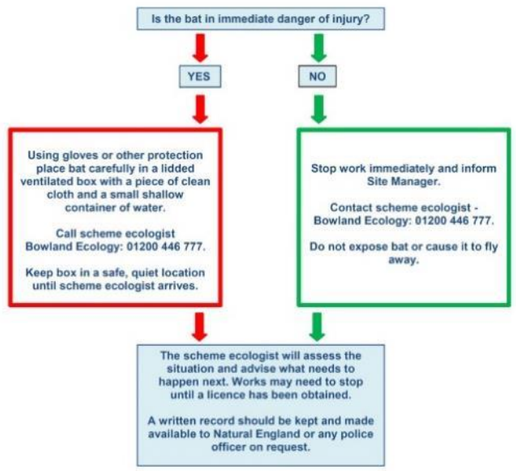
- Deliberately capture, injure or kill a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place (even if bats are not occupying the roost at the time);
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place;
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.

Penalties on conviction: the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

Defences include:

1. Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release.
2. Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Found a bat during unsupervised works?



Field signs of bat presence:

- Live or dead bats: the smallest UK bat species, the pipistrelle is only 3.5-4.5cm long.
- Droppings: bat droppings look like mouse droppings but will crumble between your fingers (they are dry and made entirely of insects).
- Feeding remains: piles of butterfly/moth wings are often left below bat feeding perches.

Schematic from www.bats.org.uk

Bats can roost in the following places:

- The top of gable end or dividing wall;
- The top of chimney breasts;
- Ridge and hip beams and other roof beams;
- Mortise and tension joints;
- All beams/ceilings/pipework (free hanging bats);
- The junction of roof timbers, especially where ridge and hip beams meet;
- Behind purlins;
- Between tiles and the roof lining;
- Under flat felt roofs;
- Under barge boards;
- In cavity walls;
- In cracks in stone or concrete;
- Behind peeling paint/wall coverings;
- Gaps behind window and door frames;
- Between window panes and timber boarding.
- In trees (cracks/holes/ivy cladding).

Why wear gloves?

There is a small risk that some bats carry a rabies virus – European Bat Lyssavirus. The purpose of wearing gloves is to reduce the chance of being bitten, as the virus is transmitted via bat saliva. Thick leather gloves are appropriate for removing a bat from imminent danger but these should be clean.

In the event that you are bitten, wash the wound, gently but thoroughly, with soap and water. Speak to a health professional immediately, advising them that you have been bitten by a bat.

References:
Bat Conservation Trust. August 2016. Why wear gloves when handling bats?
BCT Bat Surveys for Professional Ecologists, Good Practice Guidelines, 3rd Edition, 2016

version 1 August 2017

Appendix F – Legal Information

This report provides guidance of potential offences as part of the impact assessment. This report does not provide detailed legal advice and for full details of potential offences against protected species the relevant acts should be consulted in their original forms i.e. The Wildlife and Countryside Act, 1981, as amended, The Countryside and Rights of Way Act 2000, The Natural Environment and Rural Communities Act, 2006 and The Conservation of Habitats and Species Regulations 2017.

Species	Legislation	Offences	Notes on licensing procedures and further advice
Species that are protected by European and national legislation			
Bats *European protected species*	Conservation of Habitats and Species Regulations 2017 Reg 41	Deliberately[1] capture, injure or kill a bat; Deliberate disturbance[2] of bats; Damage or destroy a breeding site or resting place used by a bat. The protection of bat roosts is considered to apply regardless of whether bats are present.	An NE licence in respect of development is required in England. https://www.gov.uk/bats-protection-surveys-and-licences *European Protected Species: Mitigation Licensing- How to get a licence* (NE 2010) *Bat Mitigation Guidelines* (English Nature 2004) *Bat Workers Manual* (JNCC 2004) *BS8596:2015 Surveying for bats in trees and woodland* (BSI, 2015)
	Wildlife and Countryside Act 1981 (as amended)[4] S.9	Intentionally or recklessly[3] obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.
Birds	Conservation of Habitats and Species (Amendment) Regulations 2012	N/A	Authorities are required to take steps to ensure the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat. This includes activities in relation to town and country planning functions.
	Wildlife and Countryside Act 1981 (as amended)[4] S.1	Intentionally kill, injure or take any wild bird; Intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; Intentionally take or destroy the nest or eggs of any wild bird. **Schedule 1 species** Special penalties are liable for these offences involving birds on Schedule 1 (e.g. most birds of prey, kingfisher, barn owl, black redstart, little ringed plover). Intentionally or recklessly[3] disturb a Schedule 1 species while it is building a nest or is in, on or near a	No licences are available to disturb any birds in regard to development. Licences are available in certain circumstances to damage or destroy nests, but these only apply to the list of licensable activities in the Act and do not cover development. General licences are available in respect of 'pest species' but only for certain very specific purposes e.g. public health, public safety, air safety. https://www.gov.uk/wild-birds-protection-surveys-and-licences https://www.gov.uk/prevent-wild-birds-damaging-your-land-farm-or-business

Species	Legislation	Offences	Notes on licensing procedures and further advice
		nest containing eggs or young; intentionally or recklessly disturb dependent young of such a species.	
Other species			
Rabbits, foxes and other wild mammals **For BAP species and Species of Principal Importance, see below**	Wild Mammals (Protection) Act 1996	Intentionally inflict unnecessary suffering to any wild mammal.	Natural England provides guidance in relation to rabbits (Technical Information note TIN003, Rabbits- management options for preventing damage, July 2007) and foxes (which are also protected under the Wildlife and Countryside Act 1981 from live baits and decoys, see Species Information notes SIN003 (2011), *Urban foxes* and SIN004 (2011) *The red fox in rural areas* as well as other wild mammals. Lawful and humane pest control of these species is permitted.

[1] Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing [2] Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong. Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided. Thus deliberate disturbance that does not result in either (a) or (b) above would be classed as a lower level of disturbance. [3] The term 'reckless' is defined by the case of Regina versus Caldwell 1982. The prosecution has to show that a person deliberately took an unacceptable risk, or failed to notice or consider an obvious risk. [4] The Wildlife and Countryside Act (1981) has been updated by various amendments, including the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006. A full list of amendments can be found at https://jncc.gov.uk/our-work/wildlife-countryside-act/

Site Designation	Legislation	Protection	Guidance
Local Sites	There is no statutory designation for Local Sites	Local Sites are given protection through policies in the Local Development Plan.	Development proposals that would potentially affect a Local Site would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged. Further guidance can be found in the National Planning Policy Framework and the accompanying joint Circular (ODPM Circular 6/2005 & Defra Circular 01/2005), which is still valid.

Habitats & Species	Legislation	Guidance
Species and Habitats of Principal Importance for the Conservation of Biodiversity	Natural Environment & Rural Communities Act 2006 S.40 (which superseded S.74 of the Countryside & Rights of Way Act 2000).	S.40 of the NERC Act 2006 sets out the duty for public authorities to conserve biodiversity in England. Habitats and species of principal importance for the conservation of biodiversity in England (identified by the Secretary of State in consultation with NE) are referred to in S.41 of the NERC Act: http://webarchive.nationalarchives.gov.uk/20140605090108/http:/www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx The list of habitats and species was updated in 2007 to ensure that it remained focussed on the correct priorities: https://jncc.gov.uk/our-work/uk-bap/ The criteria for selection included international threat, responsibility and importance, rate of decline/risk, importance of habitats for key species, and other important factors. Ecological impact assessments should include an assessment of the likely impacts to these habitats and species.
Hedgerows	The Hedgerow Regulations 1997	Under the regulations, it is against the law to remove or destroy hedgerows that are classified as "important" under the regulations without permission from the local planning authority. The regulations apply if a hedgerow is in or runs alongside agricultural land, common land including town or village greens, land used for forestry or for the breeding or keeping of horses etc, a local nature reserve or Site of Special Scientific Interest. A hedgerow can be classified as 'Important' due to its wildlife and landscape value or due to its heritage value. In general, permission will be required before removing hedges that are at least 20 metres in length, over 30 years old and contain certain species/diversity of plant. The local planning authority will assess the importance of the hedgerow using criteria set out in the regulations. See https://www.gov.uk/guidance/countryside-hedgerows-regulation-and-management for further guidance and information.