Preliminary Ecological Appraisal Report

Mitton Road, Whalley

Prepared on behalf of
Prospect GB

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CONTENTS

APPENDICES

QUALITY MANAGEMENT

Quality Management Approved prior to Issue			
Report Ref:	SE0909-01_PEA_G01a_BP		
Site Address:	Mitton Road, Whalley, Lancaster BB7 9JS		
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Issue Date:	8th December 2020	**Revision No:**	
Prepared by:	**Bethany Phythian BSc (Hons), GradCIEEM, Ecologist**	**Signature:**	
Approved by:	**Amy Stanley** BSc (Hons), PG Dip, ACIEEM, Senior Ecologist	**Signature:**	

This report is based on survey data gathered in August - October 2020 at this site at Mitton Road, Whalley, Lancaster BB7 9JS.

1.0 SUMMARY

1.1 Biora was commissioned in August 2020, by Prospect GB to undertake a Preliminary Ecological Appraisal (PEA) survey of the land at Mitton Road, Whalley. Survey was commissioned to identify any ecological constraints at this site to accompany a planning application for residential re-development at this site.

Site Characteristics and Surroundings	
Statutory designated sites within 2 km	0
Non-statutory designated wildlife sites within 2 km	14
Non-statutory designated wildlife sites within application boundary	0
Protected habitats within application boundary	Broadleaved woodland, hedgerow
Buildings within application boundary	34
Waterbodies within application boundary	0
Waterbodies within 500 m of application boundary	2

Protected Species Recorded		
	By desk study (within 2 km)	By field survey
Great crested newt	Yes	No, limited foraging habitat
Bats	Yes	No, but suitable habitat
Otter	Yes	No
Water Vole	No	No
Badger	Yes	No, limited foraging habitat
Reptiles	No	No, limited foraging habitat
Breeding birds	Yes	No, but suitable habitat

Species	Local	County-wide	Regional	National	International
Breeding Birds	**Moderate**				
Badger	**Low**				
Bats	**Moderate**				
Reptiles	**Low**				
GCN					
Otter					
Water Vole					

KEY: Blue fill represents scale at which value/potential value of species is relevant. Unshaded boxes represent negligible value impacts.

1.2 Biodiversity assessment baseline score using DEFRA 2.0: 3.60 area units, 4.40 hedgerow units, 0 river units. Post-development calculations will be produced in a separate report, when the relevant discussion have taken place with the Local Planning Authority which will include the details of the baseline calculations.

1.3 Recommendations:

R1	The Local Wildlife Site to the north of the site should be protected from development by providing an ecological buffer zone.
R2	Any Himalayan Balsam within the survey areas should be removed by hand (or other approved methodology) at the earliest opportunity to prevent further spread. An Invasive Species Management Plan should be produced to detail how the species will be contained and/or eliminated prior to and during construction.
R3	The broadleaved woodland habitat, scrub, hedgerows and mature trees on site should be retained and enhanced for their value to wildlife and importance as commuting routes in the local area. These features will provide important features for wildlife in a changing landscape. Enhancement of these areas can be achieved by introducing a range of native trees and shrubs in areas of low plant diversity. Planting schemes for the landscape design should aim to provide a layered structure by selecting plants that grow to different heights and provide a dense shrub layer. This structure offers greater value for nesting birds by providing food, cover and nesting sites. Native thorny and/or berry-producing species are particularly useful. If these areas are to be removed then habitats of increased biodiversity value should be provided (however, this cannot be done effectively with removal of mature tree habitats).
R4	No lights should be shone on the mature trees on-site or adjacent to the site during or after development. If any of these trees on-site require removal or disturbance, then they must first be inspected by a suitably experienced bat ecologist for the presence of roosting bats. Bats will undoubtedly be foraging around the site and consideration should be given to the lighting plan to minimise the disruption of foraging bats and avoiding illumination of any bat roosts.
R5	All buildings on site were assessed as having Moderate and Low bat roosting potential. As these buildings are proposed to be removed, then they should be subjected to internal inspections when it is safe to do so. They also require surveys to establish presence/absence of roosting bats in these structures. Buildings with Moderate BRP should be subject to at least two bat surveys (one bat survey for Low potential buildings) to confirm

	the presence/absence of roosting bats in these structures. If bats emerge or re-enter during these surveys, then additional surveys will be required to characterise the roost. Buildings assessed as having Negligible bat roosting potential can be dismissed from further survey.
R6	All vegetation clearance and building demolition should be timetabled out with the core British bird breeding season (ie March-September inclusive). Where this is not possible, all vegetation to be cleared must be checked for active nests by a suitably experienced ecologist before undertaking the works.
R7	A Reasonable Avoidance Methodology (RAMs) for badgers, which may be using this site for commuting, should be employed to ensure they are safeguarded from harm in the event that they are present on site within the development footprint when site clearance/ construction activities are taking place.
R8	A Reasonable Avoidance Methodology (RAMs) for reptiles should be employed to ensure that the development results in no negative impacts to any reptiles that might use this site. The RAMs statement will detail how individual reptiles will be safeguarded from harm in the unlikely event that they are present on site within the development footprint when site clearance/ construction activities are taking place.
R9	Post-development Biodiversity Net Gain scorings need to be calculated when plans have been finalised and discussions have taken place with the Local Planning Authority.

1.4 For further information on this survey report, please contact **Amy Stanley, Biora Ltd** a.stanley@bioragroup.com

2.0 INTRODUCTION

2.1 Background and Scope of Survey

2.1.1 Biora was commissioned in August 2020, by Prospect GB to undertake a Preliminary Ecological Appraisal (PEA) and external Preliminary Roost Assessment (PRA) of the buildings at the land at Mitton Road, Whalley. Survey was commissioned to identify any ecological constraints at this site to accompany a planning application for residential re-development at this site.

2.2 Proposed Development Works and Expected Zone of Influence

2.2.1 The proposed re-development of the site includes the demolition of all buildings present and erection of 50 new residential units.

2.3 Aims of the Survey

2.3.1 Preliminary Ecological Appraisal survey and report at this site aimed to:

- Determine the potential of the site to support protected habitats or species;
- Assess the current ecological value of the site;
- Assess the likely impacts of development on protected habitats and species; and
- Advise on the requirement for further survey, mitigation, compensation, or licensing should the proposed re-development be considered likely to result in adverse impacts on biodiversity or fail compliance with current ecological legislation and/or planning policies.

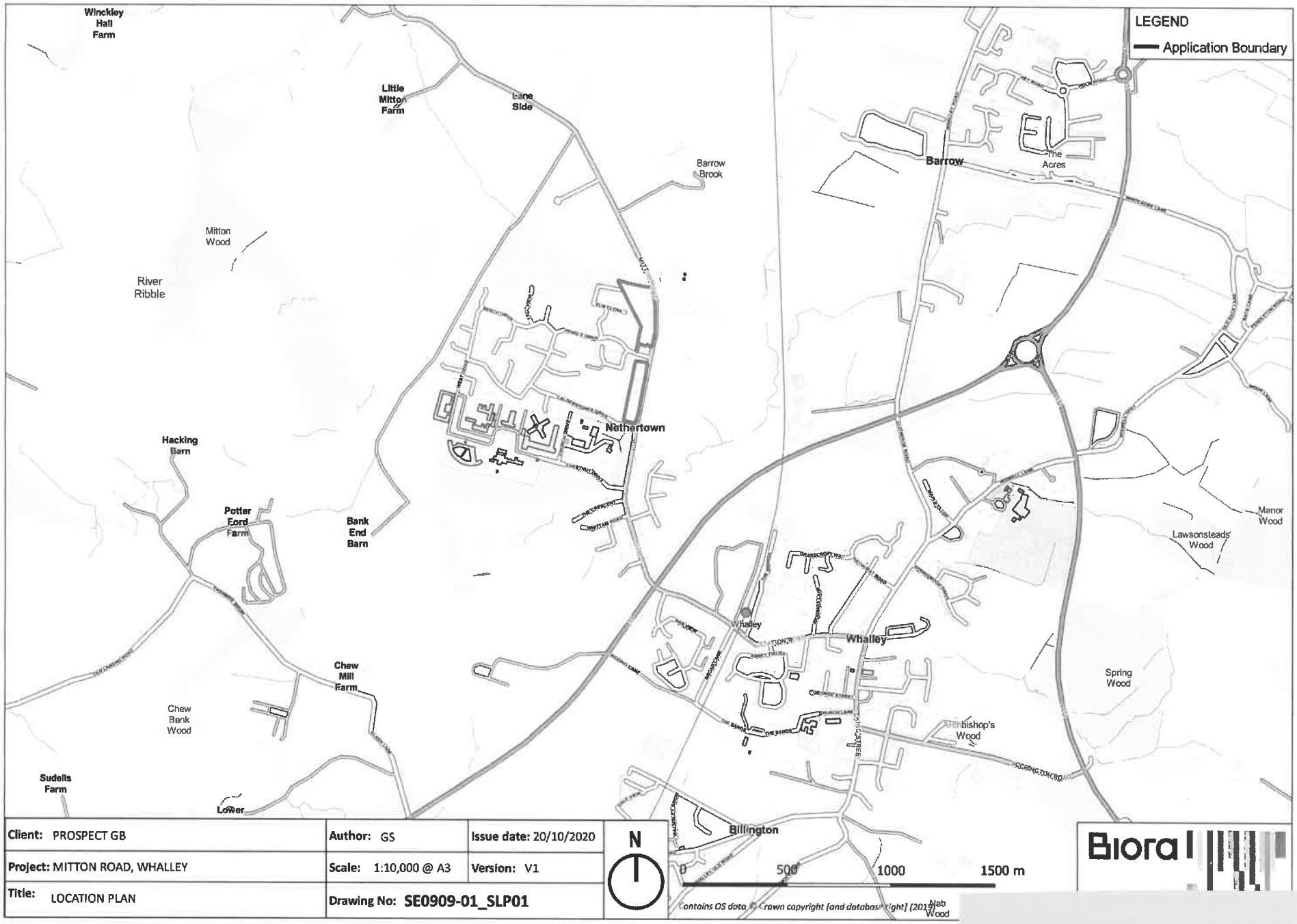
2.4 Site Description and Context

2.4.1 Measuring approximately 0.72 ha and situated in Clitheroe, the application site, herby referred to as 'the site', comprises two detached buildings and several blocks of residential terrace buildings, with associated domestic gardens, hardstanding driveways and car parking, and an amenity grass field. The site is bound by Mitton road to the east, and Pendle Drive cuts through the centre of the red-line boundary.

2.4.2 The site is centred on OS grid reference **SD 72639 37342**.

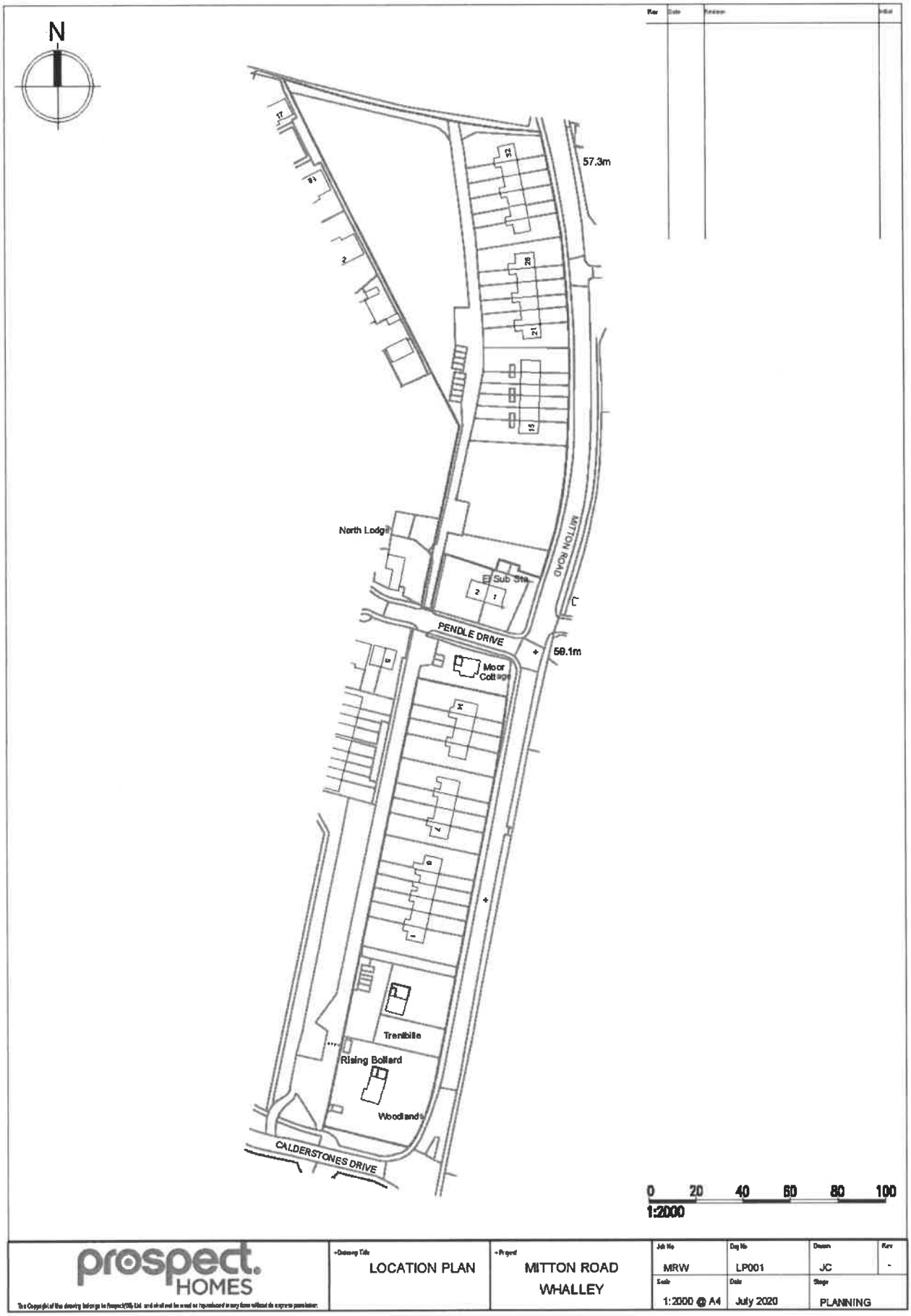
2.4.3 The location of the site within the wider landscape is presented in ***Plan 1***; the application boundary is presented as a red line at ***Plan 2***.

Plan 1: Site Location (not to scale)



Client: PROSPECT GB	**Author:** GS	**Issue date:** 20/10/2020
Project: MITTON ROAD, WHALLEY	**Scale:** 1:10,000 @ A3	**Version:** V1
Title: LOCATION PLAN	**Drawing No:** **SE0909-01_SLP01**	

Plan 2: Site Red Line Boundary (not to scale)



3.0 SURVEY AND EVALUATION METHODOLOGIES

3.1 Pre-survey data search

3.1.1 Prior to field survey, and in accordance with the British Standard for Biodiversity[1], desk study was carried out to identify any nearby sites of national or local nature conservation designation, and a request for details of any legally protected or notable[2] species local to the site made to Lancashire Environment Record Network (LERN).

3.1.2 The Multi-agency Geographic Information for the Countryside (MAGIC) website was interrogated in August 2020 to identify any statutory designated nature conservation sites within 2 km of the application boundary. Details of all protected or notable species recorded within 2 km of the application site over the past decade were also acquired from LERN.

3.1.3 Desk study also included an examination of OS base maps and on-line satellite imagery to identify any potential great crested newt *Triturus cristatus* breeding sites, i.e. standing or slow-flowing water, within a search area that encompassed the site and all land within 500 m of its boundary. Additionally, any potentially significant barriers to newt dispersal that exist between these potential breeding locations and the site were noted.

3.2 Field survey

3.2.1 PEA was conducted on 7th August 2020 by Amy Stanley (Lead ecologist) and Bethany Phythian (Ecologist) and employed Extended Phase 1 Habitat Survey methodology. Survey involved a walkover of all accessible land within and adjacent to the site. Broad habitat-compartments were mapped and the potential of each to support protected and notable species assessed. Target notes and photographs were taken of any points of ecological interest, including the presence of invasive or injurious species.

3.2.2 Phase 1 Habitat Survey followed guidance outlined in the *Handbook for Phase 1 Habitat Survey* (JNCC 2010). Every parcel of land within and immediately adjacent to the application boundary was classified, described, and mapped in accordance with a list of ninety specified habitat types using standard colour codes to allow rapid visual assessment of the extent and distribution of different habitat types.

3.2.3 This basic survey methodology was extended to provide further details in relation to notable or protected species present within the survey area, or in relation to habitats present that have the potential to support them. The potential of terrestrial, aquatic, and manmade habitats to support protected or notable species was assessed and any field evidence that confirmed or suggested their presence recorded. Field survey followed standard recognised methodologies outlined in current best practice guidance, details of which are given in section 3.5 of this report.

3.2.4 Details of field survey date(s), time, personnel, weather conditions and equipment used are presented in ***Table 1*** below.

Table 1: Survey Dates, Surveyors, Weather Conditions

Date & Time of Survey	Personnel	Weather Conditions	Survey Equipment
Date: 07/08/2020 *Start time:* 11.00	Amy Stanley, Bethany Phythian	*Air temperature:* 19°C, *Wind speed:* 20 km/h, *Wind direction:* WNW, *Cloud cover:* 0% cloud, *Precipitation:* 0	Binoculars Digital camera Garmin GPS unit

3.3 Survey personnel

3.3.1 **Amy Stanley** ***BSc PG Dip, ACIEEM*** is a Senior Ecologist at Biora with over seven years' experience of leading ecological surveys. Amy is a class 1 licence holder for Bats and Great Crested Newts. Amy provides technical support to clients and training to other ecologists. Amy is an Associate Member of the Institute of Ecology and Environmental Management and a member of Cheshire Bat Group.

3.3.2 **Bethany Phythian** ***BSc GradCIEEM*** is an Ecologist at Biora and is experienced in conducting habitat and protected species surveys. She has over four years' experience of surveying for Preliminary Ecological Appraisal, bats, great crested newts, breeding birds and reptiles, and over a years' experience of project management and co-ordinating ecological surveys. Beth also has experience of putting together Natural England GCN district level and bat licences. She is a graduate member of the Chartered Institute of Ecology and Environmental Management and a member of South Lancashire Bat Group.

[1] BS:42020 (2013) Biodiversity. Code of practice for planning and development.

[2] Subject of a Species Action Plan under UK or Local Biodiversity Action Plan, or a species listed in Section 41 of the NERC Act (2006) as one of *"principal importance for the conservation of biodiversity"*.

3.4 Survey limitations

3.4.1 Due to the survey taking place during a pandemic of Covid19, internal access to the building's interiors/roof voids was not possible as some buildings are tenanted. Internal inspections will be arranged for a later date. Survey was carried out during optimal season for phase 1 survey, and all external areas were able to be accessed by surveyors. No further constraints were noted.

3.5 Evaluation and Field Survey Methodologies

3.5.1 Evaluation of the suitability of habitats to support protected or notable species was based on professional judgement and standard recognised methodologies outlined in current best practice guidance (see below). Within **Section 4.3**, each species/species group is ultimately assigned a 'value score' based on the applications sites' habitats and their likelihood to provide suitable value to said species, when also considering the site's location at the landscape scale. These value scores range from **NEGLIGIBLE** to **HIGH**. A score of negligible indicates that there is near certain likelihood that this species is not using the site, and therefore species assigned this score are scoped out of further assessment. Any species assigned low value and above are submitted to further assessment at **Section 5.3**, where the proposed development works and 'zone of influence' is cross-referenced with the likelihood and/or extent of each species presence to determine impact assessment, and subsequent need for further, more detailed survey, mitigation, and licensing. Notable habitats, species and other ecological features of note are also discussed here where relevant.

3.5.2 The Chartered Institute of Ecology and Environmental Management (CIEEM) Ecological Impact Assessment (EcIA) guidelines (2016) recommend that the value or potential value of an ecological resource or feature should be determined within a defined geographical context. Therefore, when assigning a value score, this is also referred to at a specific scale, which gives a further indication of the sites potential importance for the given species group. Where too little information on a given species is provided from initial survey, the highest potential value and geographical context is assumed, and further survey effort subsequently recommended. CIEEM recommend that the following frame of reference be used (or adapted to meet local circumstances):

- International and European;
- National;
- Regional;
- County (or Metropolitan); or
- Local.

3.5.3 **Great Crested Newt:** Survey followed best-practice methodologies set out by Froglife and Natural England. An assessment was made of terrestrial habitat within and immediately adjacent to the application site to provide shelter, dispersal, and foraging opportunities for GCN and other amphibians. During terrestrial habitat assessment, any suitable refugia that could be lifted were also examined for amphibians.

3.5.4 Waterbodies located within or near (accessible) to the survey boundary were assessed for their suitability to support GCN, using selected indices of the Habitat Suitability Index (HSI) developed by Oldham et al. (2000). An HSI is a numerical index, between 0 and 1. 0 indicates unsuitable habitat, 1 represents optimal habitat. The HSI for the great crested newt incorporates ten suitability indices, all of which are factors thought to affect great crested newts. HSI is not a substitute for GCN presence/absence survey but can assist in determining the requirement for further survey effort.

3.5.5 **Bats:** The potential for buildings and trees to support roosting bats, and the potential value of the site for foraging and commuting, was categorised as **NEGLIGIBLE**, **LOW**, **MODERATE**, or **HIGH** based on the presence of suitable habitat features outlined in The Bat Conservation Trust (BCT) *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (2016).

3.5.6 **Otter:** The suitability of land within the survey area to support Otter *Lutra lutra* was based on the presence of habitat features along or around any watercourses or waterbodies that could provide a place of shelter for this species. Factors that could affect the potential foraging value of these water features to otter, e.g. water quality and the likely presence of fish, and the connectivity of watercourses to the wider environment were also used to determine the potential for otter using land within the survey area.

3.5.7 **Water Vole:** Assessment of the suitability of watercourses and waterbodies within the survey area to support water vole *Arvicola amphibius* was based on guidance presented in third edition of *The Water Vole Conservation Handbook* (Strachan *et al.* 2011). Assessment of habitat suitability was guided by the presence of habitat conditions considered to influence the presence of water vole, i.e. water depth and flow, bankside cover, suitable food plants, bank gradient and suitable burrowing substrate, the presence of predators and/or competitors, e.g. brown rat, and the connectivity of the site to the wider environment.

3.5.8 **Badger:** If badger *Meles meles* is or has been present within a survey area then signs of activity, e.g. setts, paths, latrines, foraging, etc., are usually evident. In addition to these field signs, an assessment of the suitability of the habitats within the

survey area to support badger was made based on topography, substrate, land use and the quality of available foraging habitat.

3.5.9 **Reptiles:** The presence of habitat features outlined in the *Herpetofauna Workers' Manual* (JNCC 2003) as those favoured by reptiles, i.e. dry, species-rich undisturbed open ground with a mix of sparse and dense vegetation, sunny banks, gullies and hollows and south-facing banks with mammal burrows suitable for hibernation, was used to assess the suitability of land within the survey area to support this species group. The habitat conditions of the surrounding landscape, including the presence of both potential habitat corridors that might provide connectivity with the site and potential barriers to dispersal, e.g. busy roads, were also considered in the overall assessment.

3.5.10 **Breeding Birds:** The habitats within the survey area were assessed for their potential to support breeding birds based on surveyor experience and species breeding habitat requirements described in *A Field Guide to Monitoring Nests* (Ferguson-Lees *et al.* 2011).

4.0 SURVEY RESULTS AND EVALUATION

4.1 Desk study

4.1.1 Designated sites

4.1.1.1 The MAGIC website returned results of no sites which are statutorily designated for nature conservation within 2 km of the application site.

4.1.1.2 The results of the data request listed non-statutory designated areas within 2 km distance from the site, which are detailed in ***Table 2*** below.

Table 2: Non-statutory designated sites within 2 km of application site

Site Name	Designation	Location
Calderstones Hospital Woodland/Railway Line	Area (ha): 4.25. Description: The site comprises of an area of Alder-Willow carr woodland with adjoining swamp and grassland to the west and a section of dismantled railway to the east.	**Immediately Adjacent, N** SD722376
Chew Bank Wood	Area (ha): 3.24. Description: The site comprises woodland which is ancient semi-natural in character.	**SW** SD711363
Mitton Wood	Area (ha): 20.69. Description: The site comprises a large, semi natural woodland situated approximately 1.5 km south of Great Mitton at the confluence of the river Calder with the river Ribble. It is listed in the Lancashire Inventory of Ancient Woodland (Provisional), (English Nature, 1994).	**W** SD713377
Cat Scar Wood	Area (ha): 1.56. Description: The site comprises semi-natural woodland which is identified within Natural England's Inventory of Ancient Woodland.	**NW** SD710385
Holden's Breast Wood	Area (ha): 1.75. Description: The site comprises a small wood situated on sloping ground above the confluence of the river Ribble and the river Hodder at Great Mitton. It is listed in the Lancashire Inventory of Ancient Woodland (Provisional), (English Nature, 1994), and has until recently supported a heronry.	**NW** SD713386
Mitton Hall Wood	Area (ha): 3.02. Description: The site comprises woodland which is ancient semi-natural in character.	**NW** SD714382
Calder Bank, Broken Brow	Area (ha): 0.58. Description: The site comprises a steep banking situated along the north side of the River Calder, approximately 0.5km east of Whalley. It is notable for the occurrence of Rough Horsetail (Equisetum hyemale), a species listed as vulnerable in the Provisional Lancashire Red Data List of Vascular Plants. This is currently the only known location for Rough Horsetail in Vice County 59.	**SE** SD738359
Sir John's Wood and Lords Park Wood	Area (ha): 10.38. Description: The site comprises semi-natural woodland which is identified within Natural England's Inventory of Ancient Woodland.	**SE** SD742356
Spring Wood	Area (ha): 15.96. Description: The site comprises semi-natural woodland which is identified within Natural England's Inventory of Ancient Woodland.	**SE** SD741363
Small Field	Area (ha): 0.71. Description: The site comprises a small field of semi-natural neutral grassland adjoining the east bank of the River Ribble.	**N** SD721389
Barrow Brook Field	Area (ha): 1.31. Description: The site is located approximately 500 metres to the west of Barrow near Whalley and comprises a triangular field south of Barrow Brook and alongside the railway. It supports damp, species-rich, semi-natural, neutral grassland referable to the MG4 Alopecurus pratensis-Sanguisorba officinalis grassland of the National Vegetation Classification.	**NE** SD731380
Hard Hill Common	Area (ha): 27.17. Description: The site lies between Whalley and Mitton. The site's southern boundary is defined by Barrow Brook, with the Blackburn to Skipton railway line creating something of an artificial boundary to the east. The site was formerly common land and much wetter; however, shortly after the Second World War it was used to demonstrate drainage for agricultural improvement.	**N** SD727383
River Hodder From Confluence with River Ribble Upstream to Cross of Greet Bridge/	Area (ha): 94.9. Description: The site comprises almost the entire length of the River Hodder, from the Cross of Greet Bridge in the north downstream to its confluence with the River Ribble in the south. The river passes through farmland and a number of small settlements.	SD710381 to SD702589

Bowland Fells SSSI Boundary		
River Ribble from London Road Bridge Preston, in West, to County Boundary, in East	Area (ha): 298.11. Description: The site comprises the River Ribble and associated semi-natural habitats from the county boundary at Paythorne (SD856836) downstream to London Road Bridge, Walton-le-Dale, Preston (SD553287). Collectively, the river and its associated habitats support a rich assemblage of plants and animals. Throughout the length of the River Ribble the General Quality Assessment is Very Good and Good (A and B) with a localised section with the Fairy Good (C) classification.	SD553287 to SD856836

4.1.2 Protected and notable species

4.1.2.1 The ecological data interrogation from LERN returned records of several protected species which are within 2 km of the site, over the last decade. These are detailed in ***Table 3*** below. This table does not include the extensive list of birds found in the local area; this list can be made available on request.

Table 3: Results of Ecological Data Request for Protected Species

Common Name	Scientific Name	Group	Records	Distance (closest)	Designations
Great Crested Newt	*Triturus cristatus*	Amphibian	54	700m SE	LBAP, WCA5, S41, HabRegs2, UKBAP
Curlew	*Numenius arquata*	Bird	15	990m E	LBAP, BRd [RSPB], S41, UKBAP
House Sparrow	*Passer domesticus*	Bird	3	550m N	LBAP, BRd [RSPB], S41, UKBAP
Lapwing	*Vanellus vanellus*	Bird	1	915m NE	LBAP, BRd [RSPB], S41, UKBAP
Brown Long-eared Bat	*Plecotus auritus*	Terrestrial Mammal	1	100m NE	LBAP, WCA5, S41, HabRegs2, UKBAP
Common Pipistrelle	*Pipistrellus pipistrellus*	Terrestrial Mammal	2	100m NE	WCA5, S41, HabRegs2
Noctule Bat	*Nyctalus noctula*	Terrestrial Mammal	1	100m NE	LBAP, WCA5, S41, HabRegs2, UKBAP
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Terrestrial Mammal	2	100m NE	LBAP, WCA5, S41, HabRegs2, UKBAP
Unidentified Myotis sp.	*Myotis sp.*	Terrestrial Mammal	1	100m NE	LBAP, WCA5, S41, HabRegs2, UKBAP
Eurasian Badger	*Meles meles*	Terrestrial Mammal	2	330m SE	BAct
European Otter	*Lutra lutra*	Terrestrial Mammal	2	835m S	LBAP, WCA5, S41, HabRegs2, UKBAP

4.1.3 Standing water inside 500 m search area

4.1.3.1 There are a total of two waterbodies in the 500m search area. One waterbody is 130m to the southeast of the site, with the busy Mitton Road present as a barrier to the site. One waterbody is over 250m away from the site, with several barriers present to dispersal.

4.1.4 Relevant historical ecological surveys in local area

4.1.4.1 No recent relevant ecological surveys were reported on land either within or immediately adjacent to this site.

4.2 Field survey: Phase 1 Habitat Survey

4.2.1 Site Context and Connectivity

4.2.1.1 The site sits within a suburban location, with open fields and a cemetery to the east of the site, beyond Mitton Road. The site is set within an area of residential buildings and a hospital located to the southwest. Pockets of woodland and a public park present to the west, and a small corridor of woodland to the north which leads to a larger area of woodland to the northwest.

4.2.2 Habitat Compartments

4.2.2.1 Details of the broad habitats recorded within the survey area, including any recognised conservation value at the local or national scale are provided in ***Table 4***. Photographs of habitats described are provided in ***APPENDIX 2***. The extent and distribution of these habitats within the survey area and adjacent land are presented in the ***Extended Phase 1 Habitat Plan*** at ***Figure 3*** and ***Figure 4*** at the end of this report.

4.2.2.2 Target notes from the survey were identified as follows: TN01 – Himalayan Balsam invasive species, noted adjacent to the Local Wildlife Site. TN02 – Mature Ash with Low Bat roosting Potential (small hollow noted to the NE of the tree, 3m up). TN03 – Group of Mature trees with Low to Moderate Bat Roosting Potential.

Table 4: Habitat compartments

Habitat Parcels	Description
A1.3.1 - Mixed woodland - Semi-natural	Group of trees located in an area to the eastern boundary. Species present were: Ash *Fraxinus excelsior*, sloe *Prunus spinosa*, sycamore *Acer pseudoplatanus*, horse chestnut *Aesculus hippocastanum*, bramble *Rubus fruticosus*.
A2.1 - Scrub - Dense/continuous	Large areas of Himalayan balsam along the edges of the amenity grassland patch, which grades into scrub. Bramble, Ivy *Hedera helix*, Holly *Ilex aquifolium*, Hedge bindweed *Calystegia sepium*, Vetch *Vicia sp.*, Rose *Rosa sp.*, Herb Robert *Geranium robertianum*, Ribwort plantain *Plantago lanceolata*, Rosebay willowherb *Chamerion angustifolium*, Horsetail *Equisetum arvense*, goosegrass *Galium aparine*, hogweed *Heracleum sphondylium*, sorrel *Rumex acetosa*. This habitat turns to thicker scrub to the southern area, with species grey willow *Salix cinerea*, ash, cherry laurel *Prunus laurocerasus*, creeping thistle *Cirsium arvense*, dogwood *Cornus sanguinea*, sycamore. This habitat was also present to the southern area of Land Parcel B, and was predominantly bramble scrub with occasional species snowberry *Symphoricarpos albus* and goosegrass.
A3.3 - Parkland and scattered trees - Mixed	A group of mature trees scattered to the southern boundary of Land Parcel A, within the dense scrub habitat. Species included: Oak, Sycamore and Lime, with Low to Moderate BRP.
C3.1 – Tall ruderal	Dominated by nettle, species present were: Pendulous sedge *Carex pendula*, hedge bindweed, hawthorn *Crataegus monogyna*, great willowherb *Epilobium hirsutum*, Yorkshire fog *Holcus lanatus*, silverweed *Potentilla anserina*.
J1.2 – Amenity grassland	Closely mown species poor amenity grassland, mainly Perennial Rye grass *Lolium perenne* and Yorkshire Fog, with some occasional buttercup *Ranunculus sp.*, dandelion *Taraxacum agg,*, and daisy *Bellis perennis*.
J2.1.2 - Intact hedge - species-poor	Hedgerows bounded a large majority of the gardens of each building. Species were mainly Privet *Ligustrum ovalifolium*, sycamore, bramble with occasional cherry laurel, rose, bramble, hawthorn, sloe, dogrose, or ash. Most of the hedgerows contained a fence within or immediately adjacent.
J3.6 - Building	All buildings were assessed for their potential for bat roosting; descriptions provided at section **4.3.3.** 34 buildings were located on the site; two large detached buildings, six blocks of terrace houses, and associated garages. Some detached garages were also present, however many were assessed as having negligible potential for roosting bats so were left out of further assessment. Garages with higher than 'negligible' potential are described in the section.
J4 – Bare ground	Hardstanding surfaces were present along the road to the west of the houses, and within car parking areas, driveway and patio areas.

4.3 Field Survey: Species and Species Groups

4.3.1 Plants

4.3.1.1 Himalayan balsam was noted within the scrub habitat on site, along the north western boundary (TN01). This is an invasive, non-native species and listed under Schedule 9 of the Wildlife and Countryside Act (WCA) 1981, it is also an offence to plant or otherwise cause to grow these species in the wild. The location of this species on-site is provided at ***TN01***.

4.3.1.2 No other flora recorded during survey, except for mature trees, was of conservation concern or listed under any Schedule of the WCA 1981 for their value.

4.3.2 Great Crested Newt

4.3.2.1 Desk study returned 54 records of GCN within the search area over the last ten years, within the 2km desktop survey area. The closest records to the site were approximately 700m away from the site, and beyond a busy A-road.

4.3.2.2 Desk study identified a total of two waterbodies in the 500m search area – WB01 and WB02. Waterbody WB01 is 130m away to the southeast of the site, with Mitton Road present as a barrier to the site. Mitton Road may not prevent potential GCN from travelling across this road and into the site, so this waterbody was subject to further HSI assessment. Waterbody WB01 has a HSI score of 'Poor' suitability for GCN (see ***Appendix 2*** for HSI results and notes), which means the habitat is not likely to hold GCN, however this cannot be dismissed entirely. Waterbody WB02 is over 250m away from the site with several barriers present to dispersal, so was not subject to further assessment.

4.3.2.3 The majority of habitat on-site is low quality, residential and hardstanding, which does not represent good foraging habitat for GCN. The site does provide some areas of quality habitat, with hedgerows, woodland and scrub, however these areas were all found to be species poor, and overall representing a poor structure for GCN foraging. The habitats in the wider area are of higher quality, with semi-improved grassland, areas of woodland, ditches and hedgerows.

4.3.2.4 The records of GCN presence from 700m away from the site, and the presence of busy surrounding roads make it unlikely that GCN are within 250m of the site, or using the site for foraging and dispersal. Overall, the value of the site for this species is **negligible,** therefore this species is **scoped out of further assessment.**

4.3.3 Bats

4.3.3.1 The ecological data request returned records of several bat species in the area over the last 10 years, including Common pipistrelle, Soprano pipistrelle, unidentified Myotis species, Noctule, and Brown Long-eared bat species.

4.3.3.2 The site supported mature trees; however, upon closer inspection, many of these were not suitable for bat roosting. There were a small number of mature trees scattered within the woodland habitat on site, and along the site boundaries. A group of mature trees, of oak, sycamore and lime sp. were identified as having **Low - Moderate** Bat roosting potential, due to their size, age and the presence of knot holes and crevices (TN03).

4.3.3.3 The buildings and terrace blocks located within the site were all assessed from the exterior for bat roosting potential. Bat roosting assessments of each of the buildings are as follows:

B01 (Woodlands)
Detached three-storey house with a multi-pitched roof. The roof is constructed on interlocking concrete tiles and is in overall good condition; moss is present in places. Wooden barge boards have deteriorated in places presenting opportunities for bats to roost and access into the loft space. There is an outbuilding with a slate roof with missing tiles. This building also has an outbuilding which has **moderate** potential.
Moderate

B02(Trentbille)
Detached brick-built house. The roof is constructed of interlocking concrete tiles with wooden barge boards. The roof is in good condition, the barge boards have deteriorated in places presenting opportunities for bats to roost and access into the loft space. The house has a porch area constructed of wooden slatted boards.
Moderate

Block 1 (House no. 1-6)
Block of terraced houses that are brick built. The majority of houses are vacant. The roofs are constructed of interlocking concrete tiles with wooden barge boards. The roofs are in good condition, the barge boards have deteriorated in places presenting opportunities for bats to roost and access into the loft space. Attached to the house is a small outbuilding/storage area.
Low

Block 2 (House no. 7-10)
Block of terraced houses that are brick built. The majority of houses are vacant. The roofs are constructed of interlocking concrete tiles with wooden barge boards. The roofs are in good condition, the barge boards have deteriorated in places presenting opportunities for bats to roost and access into the loft space. Attached to the house is a small outbuilding/storage area.
Low

Block 3 (House no. 11-14)
Block of terraced houses that are brick built. The majority of houses are vacant. The roofs are constructed of interlocking concrete tiles with wooden barge boards. The roofs are in good condition, the barge boards have

deteriorated in places presenting opportunities for bats to roost and access into the loft space. Attached to the house is a small outbuilding/storage area.
Low

Block 4 (House no. 15-20)
Block of terraced houses that are brick built. The roofs are constructed of slate tiles bordered with wooden barge boards. The majority of houses are vacant. The roofs are in acceptable condition but several raised tiles were noted. The barge boards have deteriorated in places; this has produced potential access points into the loft space and roosting opportunities. There are detached outbuildings made of a similar construction, belonging to each property.
Moderate

Block 5 (House no. 21-26)
Block of terraced houses that are brick built. The majority of houses are vacant. The roofs are constructed of interlocking concrete tiles with wooden barge boards. The roofs are in good condition, the barge boards have deteriorated in places presenting opportunities for bats to roost and access into the loft space. Attached to the house is a small outbuilding/storage area.
Low

Block 6 (House no. 27-32)
Block of terraced houses that are brick built. The majority of houses are vacant. The roofs are constructed of interlocking concrete tiles with wooden barge boards. The roofs are in good condition, the barge boards have deteriorated in places presenting opportunities for bats to roost and access into the loft space. Attached to the house is a small outbuilding/storage area.
Low

4.3.3.4 The habitats within the application boundary generally provide low value for foraging and commuting bats, and the wider landscape demonstrated higher quality bat habitat, due to the scrub and semi-natural habitats present. Overall, the site was assessed as having **moderate** value for bats, at the **local** scale.

4.3.4 Otter

4.3.4.1 Desktop survey returned several records of Otter within the search area over the past 10 years from over 800m away from the site, to the south.

4.3.4.2 Field Survey identified no evidence of Otter using any part of the site, and no suitable habitat present to support this species. For this reason, the value of the site for Otter is currently considered to be **negligible** therefore this species is **scoped out of further assessment.**

4.3.5 Water Vole

4.3.5.1 The ecological data request returned no records of water voles nearby to the site within the last 10 years.

4.3.5.2 Field survey identified no evidence of water vole activity and no habitat with the potential to support this species within the site or immediately adjacent to the site. For this reason, the value of the site for this species is currently considered to be **negligible** therefore this species is **scoped out of further assessment.**

4.3.6 Badger

4.3.6.1 Desk study returned records of badgers within the search area over the last 10 years, within the 2km search area from the survey boundary.

4.3.6.2 Field survey identified no evidence of Badgers (tracks, latrines, hairs, prints etc) on-site, and low-quality foraging habitat, with a limited variety of fruit bearing trees within the site and within the hedgerows present which would provide a food source for badgers. The site is relatively cut off from nearby habitat for badgers, with steel fences to the north and west, and Mitton Road bounding the site to the east.

4.2.6.3 Badgers may still be using the site to commute to other nearby habitats and may forage on the site for earthworms, especially in the winter months when fruit is scarce. There were no signs of this on-site during the survey, however. The points above, and the absence of badger activity and suitable habitat on-site would suggest that there is **low value** for this species at the **local scale.**

4.3.7 Reptiles

4.3.7.1 Desktop survey returned no records of reptile species within the search area over the past 10 years.

4.3.7.2 As many of the areas on-site have been left in disuse, there were some wood piles present on site, which may be used as a refuge for some reptiles and amphibians. The site holds some habitats which have value to reptiles, such as the woodland, hedgerows, and tall ruderal vegetation. However, in context these features are not in abundance and are not particularly species rich, and do not contribute towards a heterogenous landscape mosaic suitable for reptiles.

4.3.7.3 Further out from the site boundary, more varied habitats are present which provide features suitable for reptiles; scrub; woodland with dead wood; ponds. While the site does present some features that contribute to the habitat mosaic of the local area, the surrounding habitat is of higher suitability to this species. Overall, the site be considered to have **low value** to reptiles at the **local level.**

4.3.8 Breeding birds

4.3.8.1 The ecological data request returned numerous records of an extensive list of birds within the 2km search area from the site over the last ten years, including red-list species Curlew, House Sparrow, and Lapwing

4.3.8.2 The trees within the application boundaries represent habitat for nesting birds, particularly the woodland, tall ruderal vegetation and the hedgerows within the site. Even though the habitats on site are species poor, many of the hedgerows have been left of management and have become outgrown, which has provided habitat for many species of birds. However, the site presents no further habitat which supports birds, and is lacking in varying heights of grassland, scrub, species-rich hedgerow, or variety of vegetation.

4.3.8.3 The surrounding landscape presents high-quality habitat for birds, from the scrub and mature trees present directly adjacent at the north to the number of biological heritage sites within 2km of the site. From the information above, the site is assessed as having **moderate** value for nesting birds at the **local** level of scale.

4.3.9 Other notable species recorded by survey

4.3.9.1 **No other notable species were recorded by survey.**

Table 6: Value summary table of protected/notable species

Species	Local	County-wide	Regional	National	International
Breeding Birds	Moderate				
Badger	Low				
Bats	Moderate				
Reptiles	Low				
GCN					
Otter					
Water Vole					

KEY: Blue fill represents scale at which value/potential value of species is relevant. Unshaded boxes represent negligible value impacts.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Designated and Non-designated Sites

5.1.1 There are several local wildlife sites within 2km. There is one site which is located directly north of the application boundary. This proximity of the proposed development could, potentially, cause negative effects on the wildlife site, unless a buffer is provided during development.

5.2 Habitats

5.2.1 The woodland, mature trees, scrub and hedgerows on site provide value from shelter and food for insects, birds and bats. Mature trees in general represent amenity value as well as ecological value, and mature trees identified on this site are irreplaceable if lost, so every effort should be made to retain and accommodate them.

5.2.2 The other habitats on-site consisted of species-poor amenity grassland and ornamental shrubs, which had relatively low ecological significance. Himalayan balsam *Impatiens glandulifera* was found principally around the edges of the amenity grassland field on site. This is non-native invasive species listed under Schedule 9 of the Wildlife and Countryside Act (WCA9) and should be removed at the earliest opportunity to prevent spread to nearby sites such as the adjacent local wildlife site.

5.3 Bats

5.3.1 All British bats are European Protected Species (EPS) and are fully protected under Schedule 2 of The Conservation of Habitats and Species Regulations 2010 (as amended) and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation, it is an offence *to intentionally capture, kill, disturb, or injure a bat; to damage or destroy a breeding or resting place (whether in use or not); to obstruct access to their resting or sheltering places; or to possess, sell, control or transport live or dead bats, or parts of a bat.*

5.3.2 All species of British bat are also the subject of a UK-wide Biodiversity Action Plan (BAP), any many species are also listed under Section 41 of the 2006 Natural Environment and Rural Communities (NERC) Act.

5.3.3 Bat species in the local area are likely to use this site for foraging and commuting, despite their being a relatively small area of suitable habitat. The site was assessed as having moderate suitability for bats, due to the mature trees, hedgerows, and woodland plantation. The suitable habitat is presented by the mature trees, which could provide foraging and roosting opportunities, and therefore should be retained where possible. If any of the mature trees on-site are to be removed then they must at first be checked by a suitably qualified ecologist and further assessment of the impact of loss of foraging habitat should be assessed.

5.3.4 All buildings on site were assessed as having Moderate, Low and Negligible bat roosting potential. As these buildings are proposed to be removed, then they should be subjected to surveys to establish presence/absence of roosting bats in these structures.

5.3.5 The details of any proposed lighting throughout the site should be given careful consideration to avoid negative impacts on foraging and commuting bats. The proposed landscape would benefit bats where there is enhancement by native planting of shrubs and highly-scented herbs which will attract invertebrates.

5.4 Breeding birds

5.4.1 All wild British bird species and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence under the Act to intentionally or recklessly destroy any active bird nest or to remove its contents. Any development activity within the survey area, including the clearance of vegetation or the demolition of buildings, conducted within the core breeding season (March-August inclusive) has the potential to damage or destroy bird nests and so breach legislation. Any site clearance activity should, therefore, be timetabled outwith this period. Where this is not possible, development works should be preceded by a sufficiently licensed professional ecologist who can confirm the presence/absence of breeding birds on site immediately before works begin.

5.4.2 The surrounding landscape presents high-quality habitat for birds, from the scrub and mature trees present directly adjacent at the north and east, to the number of local wildlife sites within 2km of the site. The site is considered to have low - moderate value for nesting birds at the local level of scale. Further survey may be necessary in order to identify the value of the site for rare and important species of breeding birds.

5.4.3 Trees of varying maturity and structure represent potential nest sites for breeding birds and some of the buildings present features that could be used for nesting. If any of this habitat is removed or buildings demolished during the core British bird breeding season of March to August inclusive, such activities have a high chance of destroying active nests, which would constitute an offence under the Wildlife & Countryside Act. Any vegetation clearance should be timed out with the

core bird breeding season period (March – August inclusive) to avoid breaching legislation. Where such works cannot realistically be carried out during this period, any vegetation and all building structures to be affected must be checked by a suitably experienced ecologist for the presence of birds' nests immediately before the habitat is removed. The proposed development should at least offer the same opportunities for nesting as are currently present on site.

5.5 Badger

5.5.1 It is an offence under the Badger Act 1992 to intentionally or recklessly destroy, damage, disturb or interfere with a badger sett that is in use. Preliminary appraisal identified the presence of this species in the local area from the regularly-used paths within the foraging habitat in the northern and eastern areas, beyond the site boundary. There were no setts identified during the survey, however due to the thick bramble present in the eastern area adjacent to the site (off-site) some areas were not able to be accessed by surveyors, so a sett may have been missed here.

5.5.2 Impacts to any setts can be avoided by creating a protection zone that radiates 30 m around the area that may hold the sett, however no setts were identified during survey. Badgers may be commuting across the site, therefore it would be necessary to employ a Reasonable Avoidance Methodology (RAMs) for badgers to ensure they are safeguarded from harm in the event that they are present on site within the development footprint when site clearance/ construction activities are taking place.

5.6 Reptiles

5.6.1 The four widespread species of reptile in the UK (i.e common lizard, slow-worm, grass snake and adder) are all protected under the terms of the Wildlife and Countryside Act 1981 (as amended), however they are not fully protected under European law. This level of protection prohibits the intentional killing and injuring and trade of these reptiles. Where a survey identifies potential habitat for reptiles at a development site, a reptile survey may be needed prior to submission of a planning application and mitigation may be required by Natural England for any loss of reptile habitat as a result of a site's re-development. Desktop survey results found records of reptiles in the local area, and extensive habitat which would be suitable for reptiles in the local area. The site itself provided limited habitat for reptiles.

5.6.2 It is recommended that a Reasonable Avoidance Methodology (RAMs) for reptiles is employed to ensure that the development results in no negative impacts to any reptiles that might use this site. The RAMs statement will detail how individual reptiles will be safeguarded from harm in the unlikely event that they are present on site within the development footprint when site clearance/ construction activities are taking place.

5.7 Recommendations

R1 The local wildlife site to the north of the site should be protected from development by providing an ecological buffer zone.

R2 Any Himalayan Balsam within the survey areas should be removed by hand (or other approved methodology) at the earliest opportunity to prevent further spread. An Invasive Species Management Plan should be produced to detail how the species will be contained and/or eliminated prior to and during construction.

R3 The broadleaved woodland habitat, scrub, hedgerows and mature trees on site should be retained and enhanced for their value to wildlife and importance as commuting routes in the local area. These features will provide important features for wildlife in a changing landscape. Enhancement of these areas can be achieved by introducing a range of native trees and shrubs in areas of low plant diversity. Planting schemes for the landscape design should aim to provide a layered structure by selecting plants that grow to different heights and provide a dense shrub layer. This structure offers greater value for nesting birds by providing food, cover and nesting sites. Native thorny and/or berry-producing species are particularly useful. If these areas are to be removed then habitats of increased biodiversity value should be provided (however, this cannot be done effectively with removal of mature tree habitats).

R4 No lights should be shone on the mature trees on-site or adjacent to the site during or after development. If any of these trees on-site require removal or disturbance, then they must first be inspected by a suitably experienced bat ecologist for the presence of roosting bats. Bats will undoubtedly be foraging around the site and consideration should be given to the lighting plan to minimise the disruption of foraging bats and avoiding illumination of any bat roosts.

R5 All buildings on site were assessed as having Moderate and Low bat roosting potential. As these buildings are proposed to be removed, then they should be subjected to internal inspections when it is safe to do so. They also require surveys to establish presence/absence of roosting bats in these structures. Buildings with Moderate BRP should be subject to at least two bat surveys (one bat survey for Low potential buildings) to confirm the presence/absence of roosting bats in these structures. If bats emerge or re-enter during these surveys, then additional surveys will be required to characterise the roost. Buildings assessed as having Negligible bat roosting potential can be dismissed from further survey.

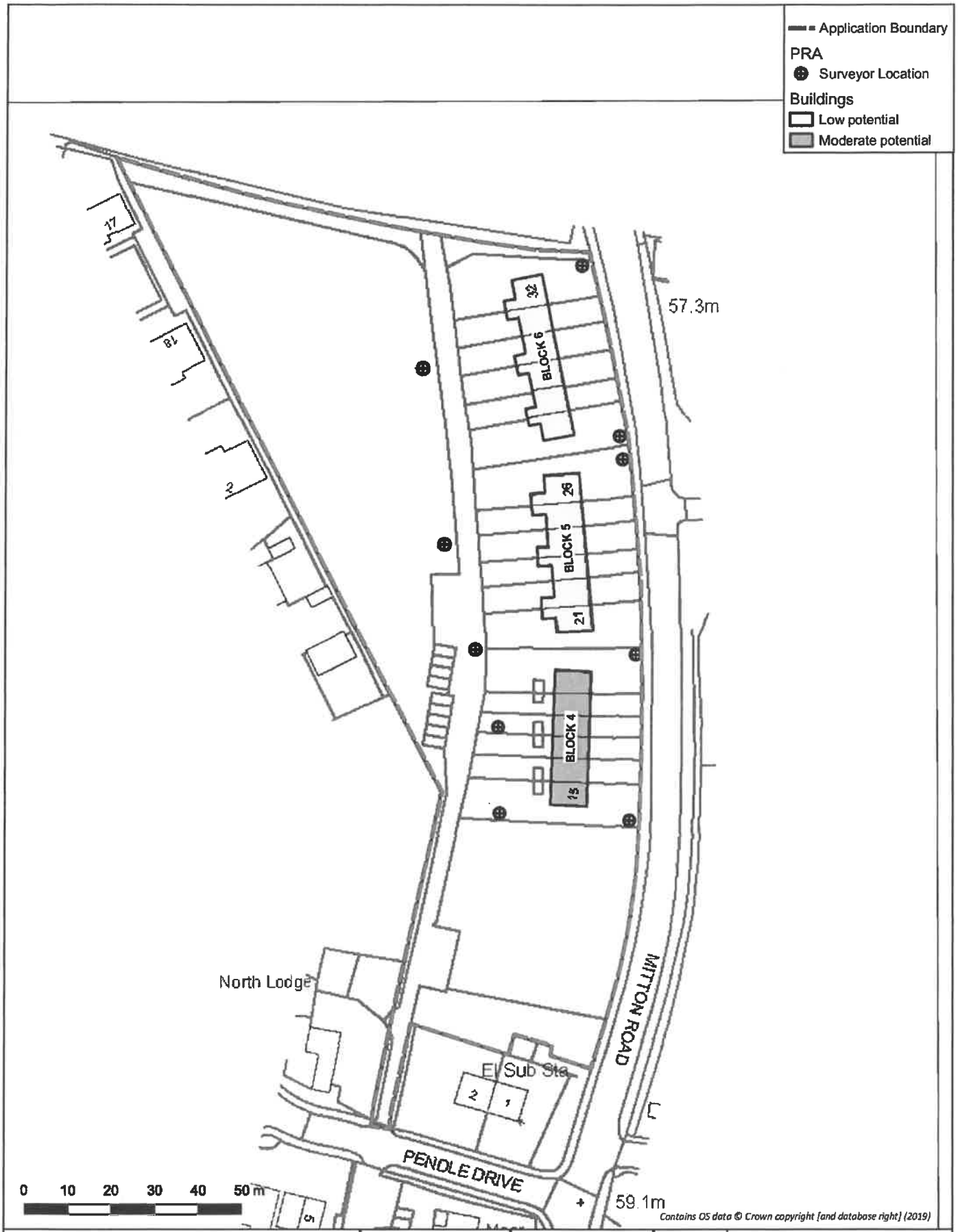
R6 All vegetation clearance and building demolition should be timetabled out with the core British bird breeding season (i.e March-September inclusive). Where this is not possible, all vegetation to be cleared must be checked for active nests by a suitably experienced ecologist before undertaking the works. The proposed development should provide the same opportunities for nesting as are currently present at this site.

R7 A Reasonable Avoidance Methodology (RAMs) for badgers, that may be using this site for commuting, should be employed to ensure they are safeguarded from harm in the event that they are present on site within the development footprint when site clearance/ construction activities are taking place.

R8 A Reasonable Avoidance Methodology (RAMs) for reptiles should be employed to ensure that the development results in no negative impacts to any reptiles that might use this site. The RAMs statement will detail how individual reptiles will be safeguarded from harm in the unlikely event that they are present on site within the development footprint when site clearance/ construction activities are taking place.

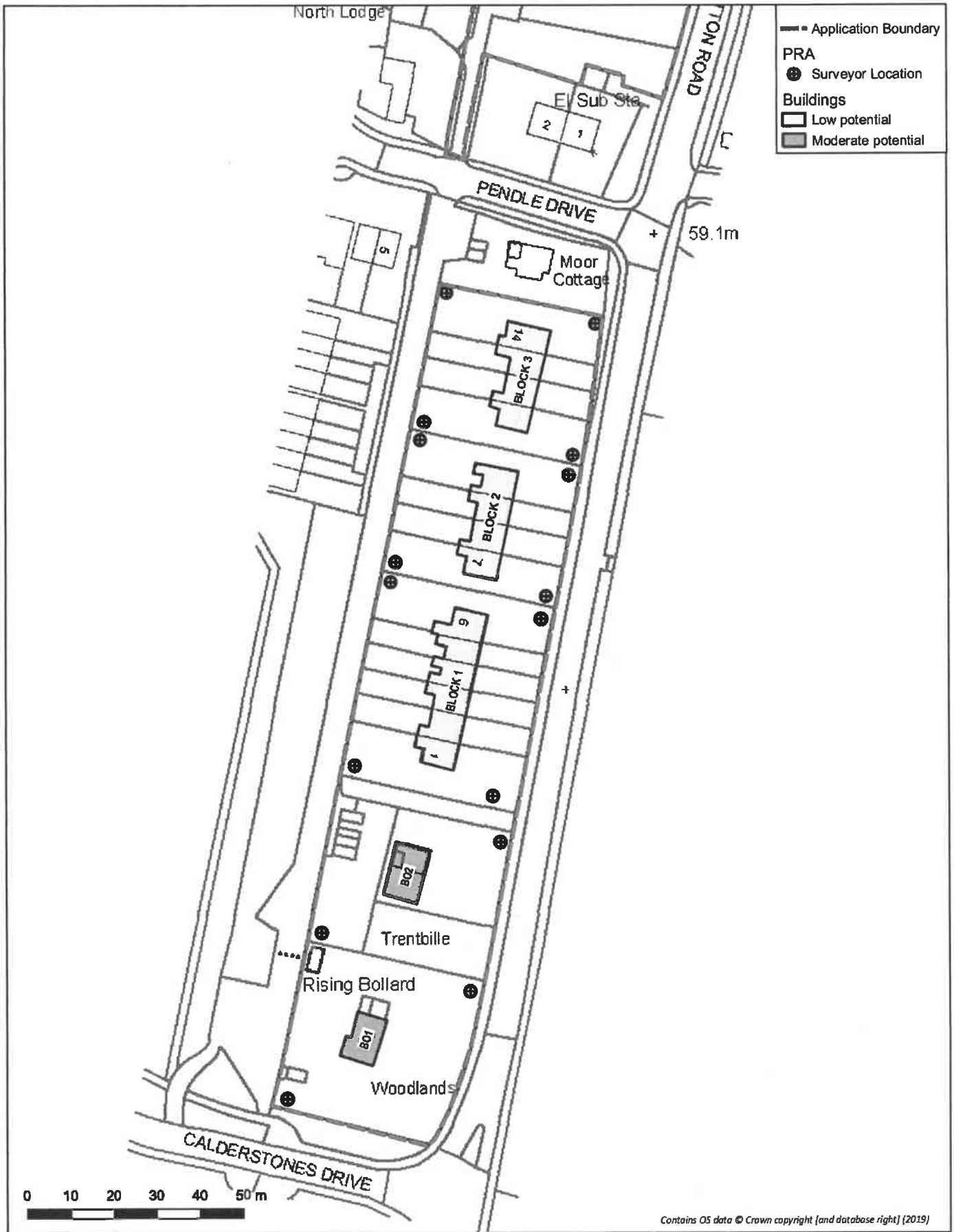
R9 Post-development Biodiversity Net Gain scorings need to be calculated when plans have been finalised and discussions have taken place with the Local Planning Authority.

FIGURE 1: Bat Roosting Potential of Buildings On-site – Land Parcel A



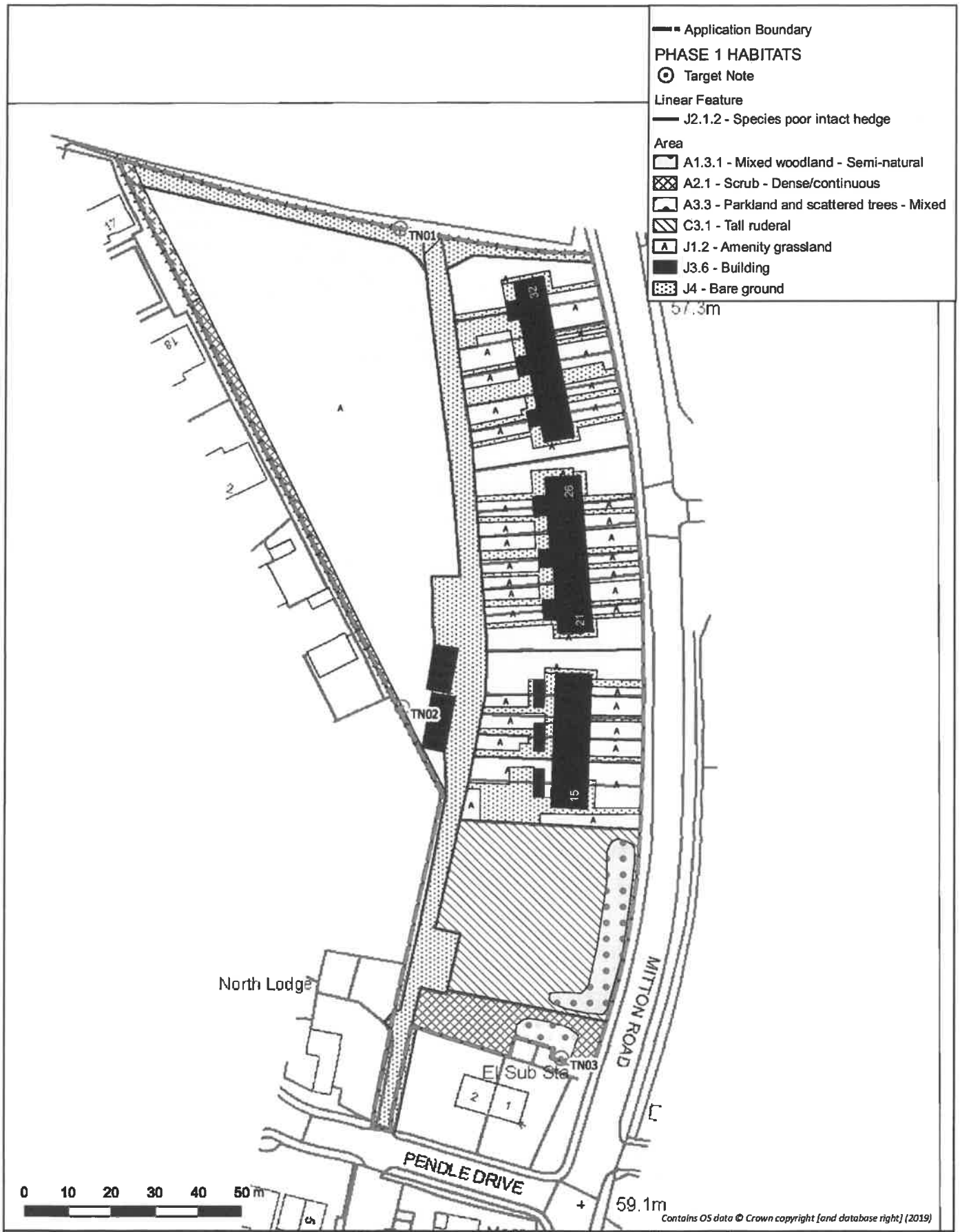
Client: PROSPECT GB	**Author:** GS	**Issue date:** 21.08.2020	N
Project: MITTON ROAD, WHALLEY.	**Scale:** 1:750 @ A3	**Version:** V1	
Title: PRELIMINARY BAT ROOST ASSESSMENT (PRA) LAND PARCEL A	**Drawing No:** SE0909-01_PRA SITE A		

FIGURE 2: Bat Roosting Potential of Buildings On-site – Land Parcel B



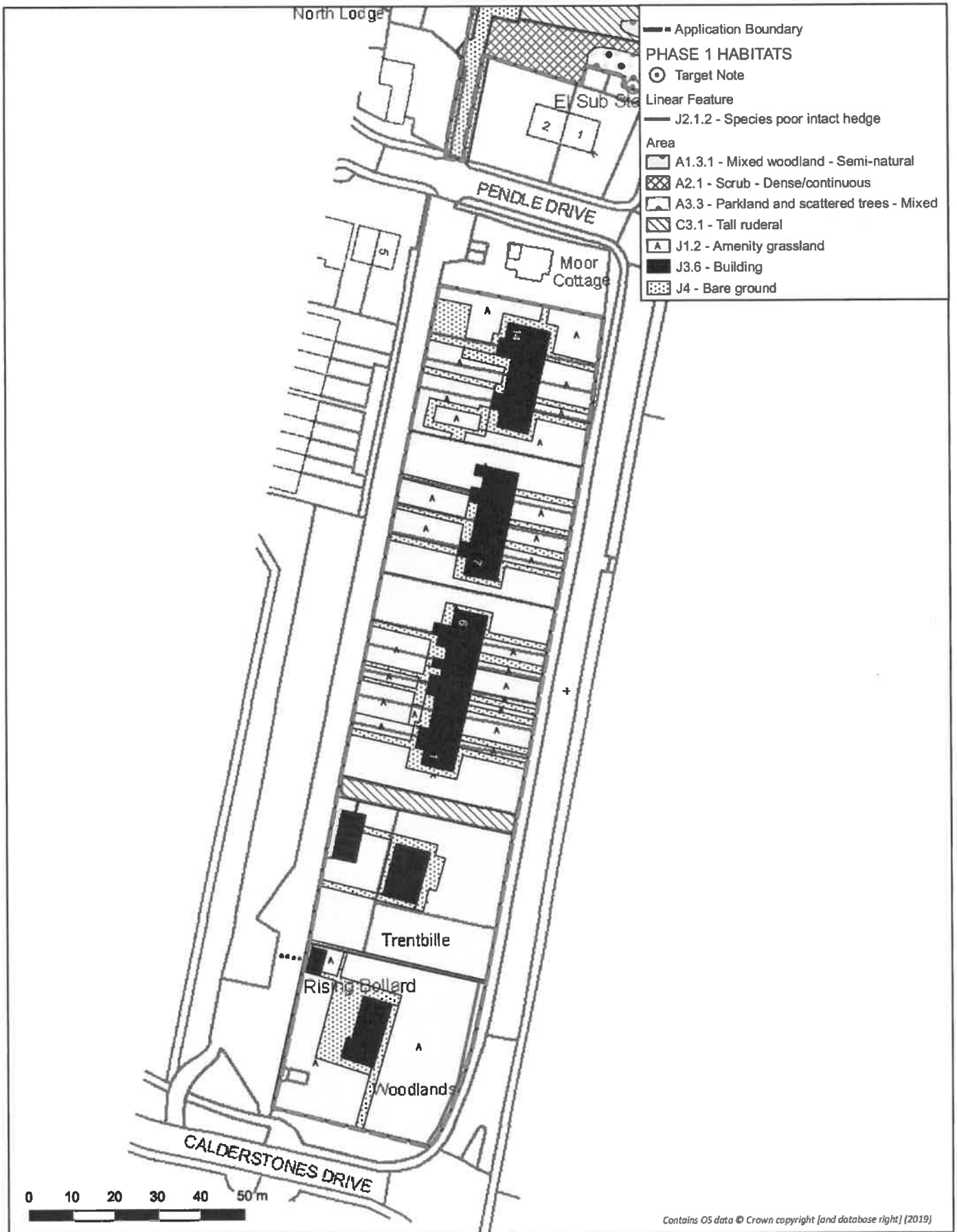
Client: PROSPECT GB	**Author:** GS	**Issue date:** 21.08.2020	N
Project: MITTON ROAD, WHALLEY.	**Scale:** 1:750 @ A3	**Version:** V1	
Title: PRELIMINARY BAT ROOST ASSESSMENT (PRA) LAND PARCEL B	**Drawing No:** SE0909-01_PRA SIT		

FIGURE 3: Extended Phase One Habitat Plan 1 – Land Parcel A



Client: PROSPECT GB	**Author:** GS	**Issue date:** 21.08.2020	N
Project: MITTON ROAD, WHALLEY.	**Scale:** 1:750 @ A3	**Version:** V1	
Title: PRELIMINARY ECOLOGICAL ASSESSMENT (PEA) LAND PARCEL A	**Drawing No:** SE0909-01_PEA SITE A		

FIGURE 4: Extended Phase One Habitat Plan 1 – Land Parcel B



Client: PROSPECT GB	**Author:** GS	**Issue date:** 21.08.2020	N Biora
Project: MITTON ROAD, WHALLEY.	**Scale:** 1:750 @ A3	**Version:** V1	
Title: PRELIMINARY ECOLOGICAL ASSESSMENT (PEA) LAND PARCEL B	**Drawing No:** SE0909-01_PEA SI		

APPENDICES

APPENDIX 1: Photographs

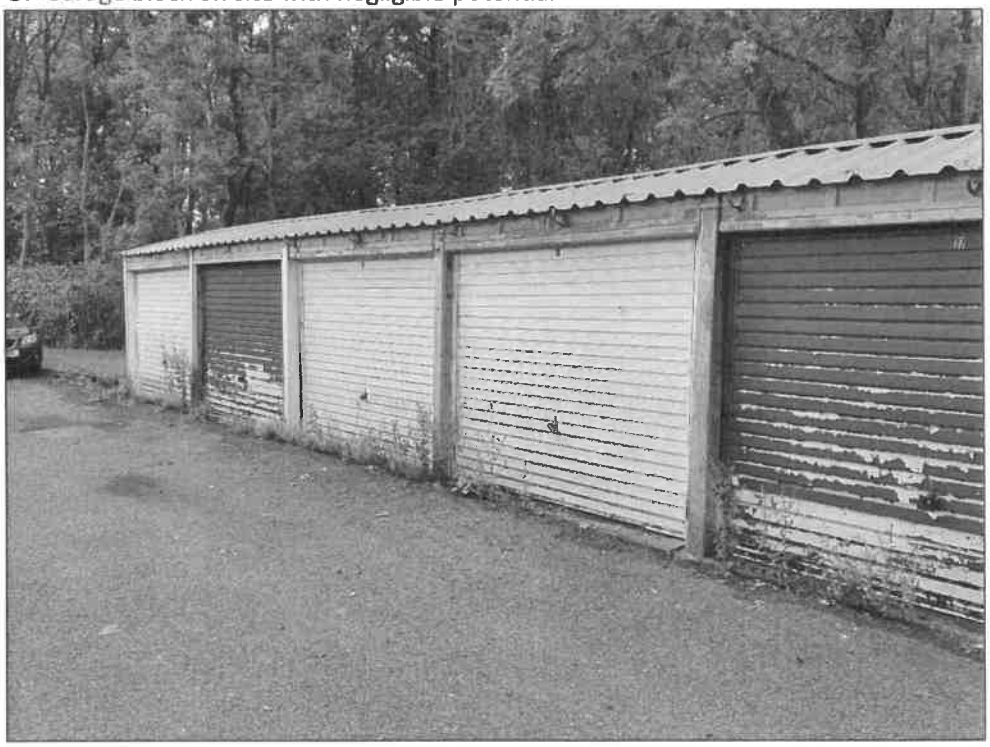
P1: Amenity Grassland with large area of Himalayan Balsam present

P2: Biological Heritage Site to the north of the site, Calderstones Hospital Woodland/Railway Line. Himalayan Balsam noted along boundary (TN01)

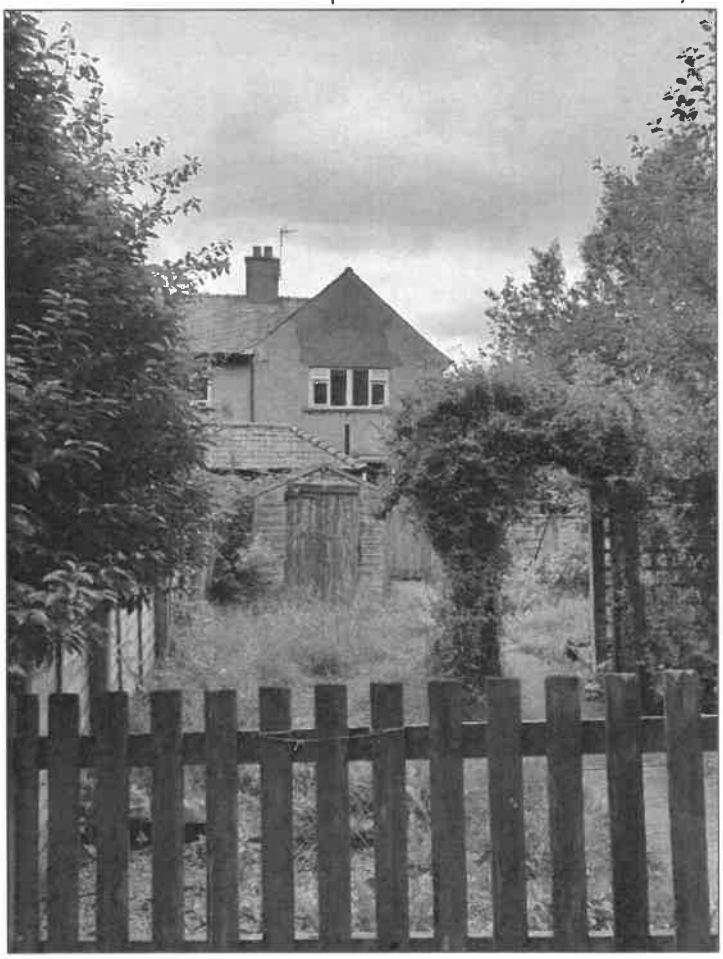
P3: Tall ruderal habitat grading into woodland

P4: Example of 'Low' bat roosting potential terrace housing blocks on site

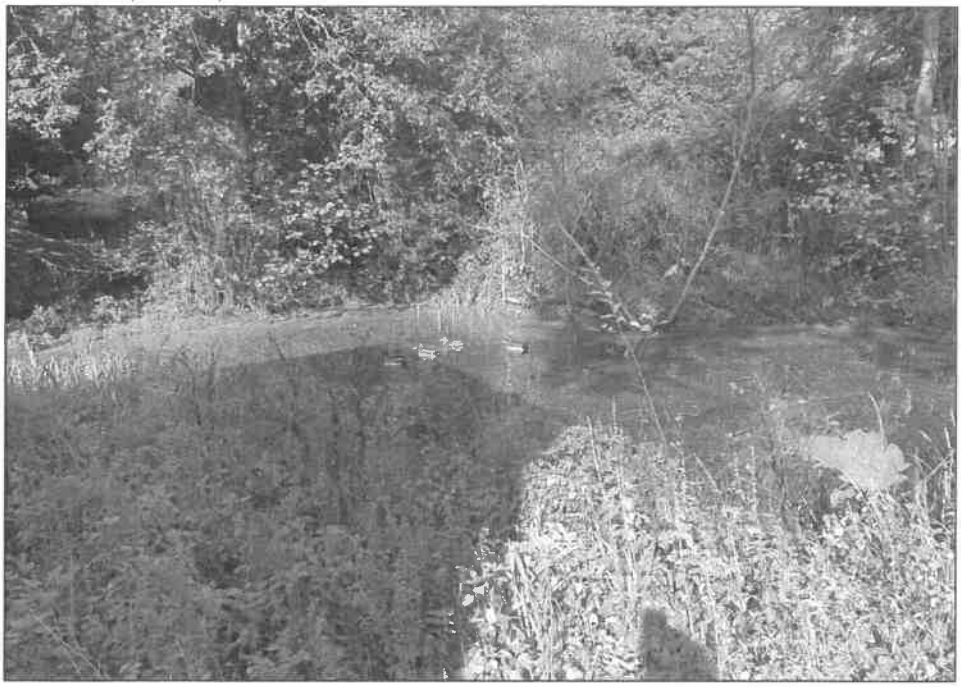
P5: Garage block on site with negligible potential



P6: Slate roofed 'Moderate' potential terrace blocks on site, with outgrown garden



P7: WB01 (off-site)



APPENDIX 2: HSI Assessment of WB01

Index	WB01
S1 Location	0.50
S2 Pond area	0.40
S3 Pond drying	0.90
S4 Water quality	0.33
S5 Shade	1.00
S6 Fowl	0.67
S7 Fish	0.67
S8 Ponds	0.10
S9 Terrestrial habitat	0.33
S10 Macrophytes	0.80
Total SI	0.0007039470
HSI Score	**0.484**
Suitability	**Poor**

Notes

- Grid reference: SD72683701.
- Location is 'marginal'
- Area approx. 200m^2
- Assumed to never dry, as pond looked relatively deep
- Low invertebrate diversity and few submerged plants.
- 30% shade around shoreline by adjacent trees
- Mallard ducks present
- Likely to have fish
- No other ponds present within 1km (that are not separated from the site by significant barrier)
- Residential estate and improved pasture. Poor structure
- 50% macrophyte cover

APPENDIX 3: UK Legal Protection and Planning Guidance

A1 National Planning Policy Framework (NPPF)

The NPPF came into force in March 2012. It sets out the Government's planning policies for England and how these are expected to be applied. It gives guidance to local planning authorities on the content of their local plans but is also a material consideration in determining planning applications. **The NPPF states that the planning system should provide a net gain for biodiversity wherever possible.** The NPPF replaces much of the previous planning policy guidance, including PPS9: Biodiversity and Geological Conservation. However, the Government Circular 06/05: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System (which accompanied PPS9) remains valid.

A2 Biodiversity Action Plans

UK Biodiversity Action Plans: The **UK Biodiversity Action Plan (UKBAP)** was established in response to the **Convention on Biological Diversity 1992**, signed by 150 members at the Rio Earth Summit, which aimed to promote sustainable development amongst all signatories. Specific action plans have been prepared for highly protected species. As well as a national Biodiversity Action Plan, local Biodiversity Action Plans identify species of note at local level throughout the UK.

A3 Priority Habitats and Species

Under the terms of the Natural Environment and Rural Communities Act 2006, all public bodies are required to have regard to the conservation of biodiversity when carrying out their activities. This means that efforts must be made to consider priority and protected species and habitats in particular. There would be a presumption in the land-use planning process against any development that would result in loss to an area of priority habitat or harm to the population of any priority species.

A4 Vegetation

The Wildlife and Countryside Act 1981 (as amended) lists plants which are statutorily protected. In relation to development these plants are rare and are not often encountered. The bluebell is scheduled, with commercial bulb-picking from the wild being prohibited. There is also a category of plants which it is an offence to introduce to the wild. This category includes Japanese knotweed, which is often found on brownfield sites. Care is needed to avoid spreading the species around the site during earthworks, and to ensure that any removal of infested soils off-site is to a licensed tip. Giant hogweed and Himalayan balsam are also listed in this category of invasive alien plant species. In addition, the Ragwort Control Act came into force on 20 February 2004 and enables the Secretary of State to make a Code of practice to prevent the spread of common ragwort.

A5 Hedgerows

As a priority habitat for conservation concern, hedgerows also receive further protection under the Hedgerow Regulations 1997. Under the Hedgerows Regulations 1997 it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. Local planning authority permission is normally required before removing hedges that are at least 20 metres (66 feet) in length, more than 30 years old and contain certain plant species. The authority will assess the importance of the hedgerow using criteria set out in the regulations. The local planning authority is also the enforcement body for offences created by the Regulations. If a hedgerow is removed without permission, there may be an unlimited fine and the hedgerow may have to be replaced.

A6 Great crested newt

A European Protected Species (EPS) and fully protected under the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended). Under the legislation it is an offence to:

- *Intentionally or deliberately capture, kill or injure great crested newts (GCNs).*
- *Intentionally or recklessly disturb them in a place used for shelter or protection.*
- *Damage or destroy a breeding site or resting place.*
- *Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection.*
- *Possess a great crested newt, or any part of it, unless acquired legally.*
- *Sell, barter, exchange or transport or offer for sale great crested newts or parts of them.*

Where Great crested newts (GCNs) are present at a proposed development site it is usually possible to continue with the project, re-locating the animals in advance of development, but only upon receipt of a site-specific licence from Natural England. The licence application process can be complex and can only be conducted by a suitably qualified GCN-specialist ecologist. Each licence application must be supported by:

- Full optimal-season great crested newt survey results and analysis;
- A suitable mitigation strategy that ensures that the favourable conservation status of the GCN population will be maintained (this usually involves the provision by the developer of additional land with ponds as compensation for loss of habitat and breeding sites). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural England; and
- A method statement explaining how GCNs will be accommodated legally if found during the development process.

A7 Bats

All species of bats are European Protected Species and their breeding and nesting sites (roosts) are given a high degree of legal protection under the terms of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. In addition, all bats are the subject of a UK-wide Biodiversity Action Plan (BAP). This combined legislation offers bats, their roost sites and resting places strict protection from intentional or reckless disturbance (see wording of GCN legislation above). It should be noted that, under the legislation, a bat roost is defined as any structure or place which is used by bats to shelter, breed or perch whilst feeding. As bats tend to reuse the same roosts, the roost is legally protected, whether the bats are present at the time or not.

Where bats are present at a proposed development site it is usually possible to continue with the proposed project, but only upon receipt of a site-specific licence from Natural England. The licence application process can be complex and can only be conducted by a suitably qualified bat-specialist ecologist. Each licence application must be supported by:

- Full optimal-season bat survey results and analysis;
- A suitable mitigation strategy that ensures that the favourable conservation status of the bat population will be maintained (this usually involves the provision by the developer of replacement permanent bat roosts, additional bat boxes and both bat-friendly planting and lighting within the development site). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural England; and
- A method statement explaining how bats will be accommodated legally if found during the development process.

A8 Otter

Otters are a European Protected Species (EPS) and fully protected under the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended). Otters and their resting places are fully protected, it is an offence to deliberately, capture, injure or kill them or to damage, destroy or obstruct their breeding or resting places. It is also an offence to disturb otters in their breeding or resting places.

Where otters are present at a proposed development site it is usually possible to continue with the proposed project, but only upon receipt of a site-specific licence from Natural England. The licence application process can be complex and can only be conducted by a suitably qualified otter-specialist ecologist. Each licence application must be supported by:

- Full optimal-season otter survey results and analysis;
- A suitable mitigation strategy that ensures that the favourable conservation status of the otter population will be maintained (this usually involves the provision by the developer of replacement waterbodies and holts within the development site). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural England; and
- A method statement explaining how otters will be accommodated legally if found during the development process.

A9 Badger

All badgers are protected from harm under the Protection of Badgers Act (1992). Under this act it is an offence:

- To kill, injure or take a badger, or to attempt to do so;
- To use badger tongs in the course of killing or taking, or attempting to kill or take, any badger;
- To kill or take a badger with a firearm which does not fall within the specifications laid down in the Act;
- To dig for a badger;
- To cruelly ill-treat a badger;
- To possess or control a live badger;
- To sell or offer for sale a live badger;
- To mark, or attach any ring, tag or marking device to a badger;
- To possess or control any dead badger, any part of one, or anything derived from one;
- To interfere with a badger sett by (a) damaging a sett or any part of one; (b) destroying a sett; (c) obstructing access to or any entrance of a sett; (d) causing a dog to enter a sett; or (e) disturbing a badger when it is occupying a sett.

Where badgers are present at a proposed development site, it is usually possible to continue with the proposed project, but only upon receipt of a site-specific licence from Natural England. A licence is always required to shut down a badger sett or for works within 30m of a badger sett. The licence application process can be complex and can only be conducted by a suitably qualified badger-specialist ecologist. Each licence application must be supported by:

- Full optimal-season badger survey results and analysis;

- A suitable mitigation strategy that ensures that the favourable conservation status of the badger population will be maintained (this usually involves the provision by the developer of replacement artificial setts, planting of suitable fruit-bearing shrubs, erection of badger gates and underpasses within the development site). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural England; and
- A method statement explaining how badgers will be accommodated legally if found during the development process.

A10 Water vole

From 6th April 2008, water voles and their resting places gained full protection under the Wildlife and Countryside Act (1981). It is an offence to deliberately, capture, injure or kill them or to damage, destroy or obstruct their breeding or resting places. It continues to be an offence to disturb them in their breeding or resting places.

Where water voles are present at a proposed development site it is usually possible to continue with the project, re-locating the animals in advance of development, but only upon receipt of a site-specific licence from Natural England. The licence application process can be complex and can only be conducted by a suitably qualified water vole-specialist ecologist. Each licence application must be supported by:

- Full optimal-season water vole survey results and analysis;
- A suitable mitigation strategy that ensures that the favourable conservation status of the water vole population will be maintained (this usually involves the provision by the developer of additional land with ponds as compensation for loss of habitat and breeding sites). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural England; and
- A method statement explaining how water voles will be accommodated legally if found during the development process.

A11 Reptiles

The four widespread species of reptile in the UK (ie common lizard, slow-worm, grass snake and adder) are all protected under the terms of the Wildlife and Countryside Act 1981 (as amended), however they are not fully protected under European law. This level of protection prohibits the intentional killing and injuring and trade of these reptiles. Where a survey identifies potential habitat for reptiles at a development site, a reptile survey may be needed prior to submission of a planning application and mitigation may be required by Natural England for any loss of reptile habitat as a result of a site's re-development

A12 Breeding birds

All wild birds, their nests and their eggs are protected by the Wildlife & Countryside Act 1981 (as amended). It is an offence (with certain exceptions), to intentionally or recklessly kill, injure or take any wild bird (this includes chicks); to take, damage or destroy any wild bird's nest while it is use or being built; and to take or destroy the egg of any wild bird. The definition of a wild bird is 'any bird of a kind which is resident in or a visitor to Great Britain in a wild state'.

Species named in Schedule 1 of the Act are given special protection and it is an offence to disturb these species at the nest of while they are caring for dependant young. The RSPB and the UK's leading bird conservation organisations work together to regularly review the status of birds within the UK. A total of 246 species are assessed against a set of objective criteria to place each on one of three lists - green, amber and red – indicating an increasing level of conservation concern. These lists provide a tool for guiding conservation actions for birds in the UK and for setting priorities for action on individual species. The last review of these lists was completed in May 2009.

For certain species, eg Feral Pigeon, general licences are available for an authorised person to lawfully carry out the actions outlined above providing that it is in the overriding interest of public health or air safety and that all other attempts to prevent the problem caused by the species have failed.

The Barn Owl has seen significant declines in recent history primarily due to habitat loss and the destruction, removal or renovation of traditional nesting sites. It is currently included in the amber-list of species of medium conservation concern, having been classified as a Species of European Conservation Concern (SPEC). In Great Britain it is listed on Schedule 1 of the Wildlife & Countryside Act (1981) as amended. It is an offence to disturb any wild bird included in Schedule 1 while it is building a nest or is at, on or near a nest containing eggs or young; or disturbs dependent young of such a bird. Note that if any of the above resulted from a person being reckless, even if they had no intention of committing the offence, their action would still be considered an offence. A person is not guilty of an offence if it can be shown that the act was 'the incidental result of a lawful operation and could not have been reasonably avoided'; only a court can decide what is 'reasonable' in any set of circumstances.

APPENDIX 4: Definition of designation abbreviations

BAct	Protection of Badgers Act 1992
HabRegs2	Conservation (Habs and Sp) Regulations 2010 - Schedule 2
HabRegs4	Conservation (Habs and Sp) Regulations 2010 - Schedule 4
HabRegs5	Conservation (Habs and Sp) Regulations 2010 - Schedule 5
S41	NERC S41
UKBAP	UK BAP Priority Species
WCA1	Wildlife and Countryside Act - Schedule 1
WCA5	Wildlife and Countryside Act - Schedule 5
WCA8	Wildlife and Countryside Act - Schedule 8
WCA9	Wildlife and Countryside Act Schedule 9
BAm [RSPB]	Birds of Conservation Concern [RSPB] - Amber
BRd [RSPB]	Birds of Conservation Concern [RSPB] - Red
IR	Internationally Rare
IUCN CE	IUCN Global Red List - Critically Endangered
IUCN En	IUCN Global Red List - Endangered
IUCN Ex	IUCN Global Red List - Extinct
IUCN ExW	IUCN Global Red List - Extinct in the wild
IUCN LC	IUCN Global Red List - Least Concern
IUCN NT	IUCN Global Red List - Near Threatened
IUCN Vul	IUCN Global Red List - Vulnerable
NR	Nationally Rare
NR Marine	Nationally Rare - Marine Species
NS	Nationally Scarce
NS Marine	Nationally Scarce Marine
INNS	Invasive Non-Native Species
LBAP	Local Biodiversity Action Plan Species
LRaSc	Locally Rare and Scare

APPENDIX 5: Native plant species suitable for bat foraging

Planting to enhance a site for bats should aim to provide a habitat rich in insects, and with the potential for alternative roosting sites. The following are examples of plant species, which can be used where appropriate, to enhance a landscape for bats.

Night-scented flowers

As bats usually feed at dusk and dawn it is advantageous to use night-scented flowers which will attract moths and other night-flying insects.

Re-seeding

Where re-seeding is to take place the choice of a 'conservation mix' of grass seed would be preferential. The management of grassland areas as hay meadows, without use of herbicides/fertilisers and allowing the grass to go to seed prior to cutting is beneficial in allowing larval stages of the insects to develop.

English Name	Latin Name
Trees and Shrubs (of local provenance where possible)	
Oak	*Quercus robur*
Ash	*Fraxinus excelsior*
Silver Birch	*Betula pendula*
Field Maple	*Acer campestre*
Hawthorn	*Crataegus monogyna*
Alder	*Alnus glutinosa*
Goat Willow	*Salix caprea*
Guelder Rose	*Viburnum opulus*
Hazel	*Coryllus avellana*
Blackthorn	*Prunus spinosa*
Elder	*Sambucus nigra*
Night-scented flowers	
Nottingham Catchfly	*Silene nutans*
Night -flowering Catchfly	*S. noctiflora*
Bladder Campion	*S. vulgaris*
Night-scented Stock	*Matthiola bicornis*
Dame's-violet	*Hesperis matronalis*
Common Evening-primrose	*Oenothera biennis*
Soapwort	*Saponaria officinalis*
Scented herbs	
Chives	*Allium schoenoprasum*
Sage	*Salvia officinalis*
Marjoram	*Origanum vulgare*
Borage	*Borago officinalis*
Mint	*Mentha* sp.
Climbers	
Honeysuckle (native)	*Lonicera periclymenum*
Traveller's-joys	*Clematis vitalba*
Dog-rose	*Rosa canina*
Sweet-briar	*R. rubiginosa*
Field-rose	*R. arvensis*
Ivy	*Hedera helix*
Bramble	*Rubus fruticosus* agg

APPENDIX 6: Specification for bird nest boxes (examples)

WoodStone® Seville 32mm Nest Box

Ark Wildlife

For House Sparrow
Height: 31 cm
Width: 20.5 cm
Depth: 20 cm
Entrance hole: 32 mm

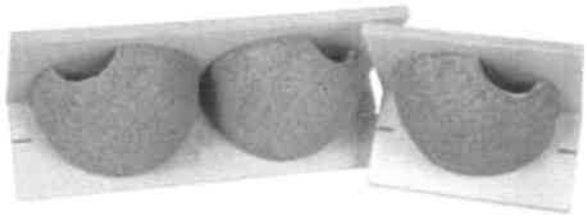
Approximate unit cost: £22.00

Attach to building; guaranteed for 10 years

Also available in brown (code 90730)

For House Martin

Approximate cost for single unit: £13.00
Approximate cost for double unit: £20.00



WoodStone® Starling Nest Box

For Starling
Height: 38.5 cm
Width: 22 cm
Depth: 21.5 cm
Entrance hole: 45 mm

Approximate unit cost: £30.00

Attach to building; guaranteed for 10 years

APPENDIX 7: BCT Guidance on Sympathetic Lighting Designs for Bats

Guidance has been recently updated, provided by the Bat Conservation Trust (2018) in the following document: [https://cdn.bats.org.uk/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?mtime=20181113114229]. General guidance for sympathetic lighting is also given below.

GENERAL

Type of lamp (light source)
The impact on bats can be minimised using low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics.

Luminaire and light spill accessories
Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned to form a barrier.

Lighting column
The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting this can take the form of low level lighting that is as directional as possible and below three lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.

Predicting where the light cone and light spill will occur
There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process.

Light levels
The light should be as low as guidelines permit. If lighting is not needed, don't light.

Timing of lighting
The times during which the lighting is on should be limited to provide some dark periods. Roads or trackways in areas important for foraging bats should contain stretches left unlit to avoid isolation of bat colonies. These unlit stretches should be 10 metres in length either side of commuting route.

SECURITY LIGHTING

Power
It is rarely necessary to use a lamp of greater than 2000 lumens (150 W) in security lights. The use of a higher power is not as effective for the intended function and will be more disturbing for bats.

Movement sensors
Many security lights are fitted with movement sensors which, if well installed and aimed, will reduce the amount of time a light is on each night. This is more easily achieved in a system where the light unit and the movement sensor can be separately aimed.

Timers
If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.

Aim of light
The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any bats' roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.

Alternatives
It may be a better solution for security lighting on domestic properties to use a porch light.

APPENDIX 8: BCT Guidelines for Assessing Bat Roosting Potential

POTENTIAL	ROOSTING HABITATS	COMMUTING AND 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 foraging and commuting bats.
LOW	A structure with one or more potential roost sites that could be used by individual bats opportunistically. These potential roost sites do not, however, provide enough space, shelter, protection, appropriate conditions[1] and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as gappy hedgerow or unvegetated stream, but is isolated, i.e. not very well connected to the surrounding landscape by other habitats. 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 (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	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 large 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 to and connected to known roosts.

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On-line resources:

- British Trust for Ornithology (BTO) website www.bto.org.uk
- UK BAP www.ukbap.org.uk