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Bolton Hall Care Home, Carr Head Lane, Rotherham, S63 8DA

National Grid Reference: **SE 45059 02710**

Extended Phase 1 Habitat Survey

Prepared for:

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Summary

A planning application regarding Bolton Hall Care Home, Carr Head Lane, Rotherham, proposes to demolish the existing building followed by the construction of 28 residential dwellings; redevelopment will also involve the removal of a number of trees. Therefore, the Tyrer Partnership was commissioned by Howard & Seddon Architects, to undertake an Extended Phase 1 Habitat survey of the site, and a detailed inspection and assessment of the building and trees relative to bats, which was conducted during June 2016. If additional surveys are required following the initial site visit the report will outline the details of those further requirements.

Broadly, in its current condition the site comprises a relatively large suburban plot with a large detached two storey structure, hardstanding, and generous areas of improved grassland with broad-leaved and coniferous tree, and shrub.

As a consequence of these broad habitat types, the site and dwelling offers potential for foraging/commuting/roosting bats, foraging/breeding passerines, and sheltering/breeding Hedgehog. The report will recommend procedures to ensure that any potential impact to wildlife species can be avoided or significantly reduced.

Bats: From the external inspection the building has been classified as possessing negligible potential for bats, and as a result dusk emergence and/or dawn surveys will not be recommended.

Birds: The report will recommended that if the trees and/or shrub/scrub is to be removed, it should be undertaken outside of the breeding season of birds (March - August) unless it can be conclusively established, by an ecologist, that nesting birds are absent. All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected under the Wildlife & Countryside Act 1981 (as amended).

Terrestrial mammals: Based on the survey results the report will recommended that if any scrub or other dense vegetation is to be removed, it is done so in a careful manner to check for the presence of hedgehogs; additionally, it is recommended that if hedgehogs are discovered during their most vulnerable time, i.e. during hibernation/breeding then they are to be left in situ, and the habitat retained around them. If they are in danger of being harmed then they should be carefully relocated to a suitable sheltered area away from the work. Moreover, if and when future development transpires then provision of low angle sloping boards of approximately 300 mm wide should be placed within any excavations at the end of each working day to facilitate a means of escape for mammals such as hedgehogs.

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1.0 Introduction & Reason for Survey

1.1 As part of a proposed Planning Application regarding Bolton Hall Care Home, Carr Head Lane, Rotherham, an Extended Phase 1 Habitat survey was undertaken. Proposals for the site involve the demolition of the existing building (Fig. 1) followed by the construction of 28 residential dwellings (Fig. 2); redevelopment will also involve the removal of a number of trees. Ecological surveys, particularly where a specially protected species is or may be present, are generally required as part of the Local Authority's Planning Policies; on behalf of their client, therefore, Howard & Seddon Architects, on behalf of their client, commissioned the survey and report.

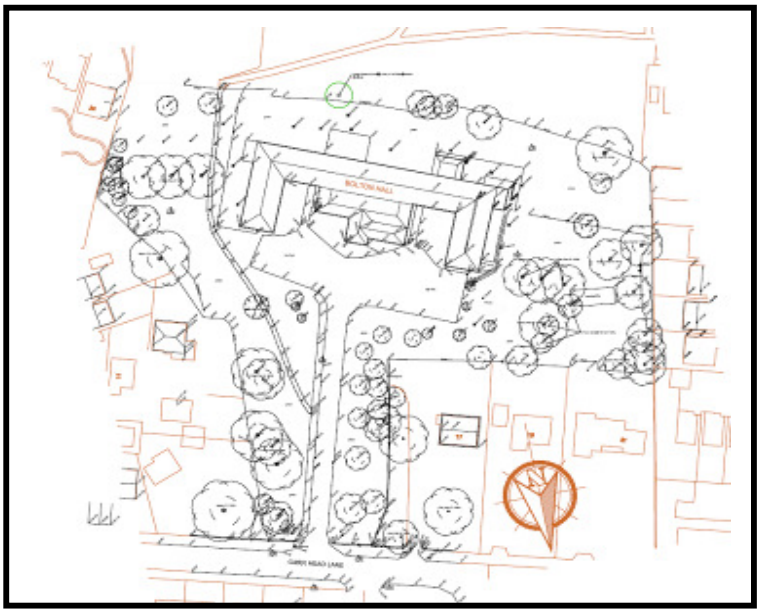

Figure 1: existing site plan

Figure 2: proposed site plan

1.2 The basic objective of the survey was to ascertain the nature of the land and building, and where possible obtain information on any sensitive wildlife habitats or species that may be present and if so if they will be affected by future development of the. To achieve this objective the survey aimed to identify/assess any of the following:

- The presence of species with non-statutory protection
- The presence/potential presence of species protected under the Wildlife and Countryside Act 1981, as amended or the conservation of Habitats and Species Regulations 2010 (as amended)
- Identify any species or habitats that require special consideration during the development.
- To identify and outline scope for provision of biodiversity enhancements and/or compensation for the development site with consideration of the adjoining and extending habitats.

If the habitat was found to be suitable for the aforementioned species or signs of use were found then more detailed surveys would be recommended. If bats or Great crested newts were subsequently found during those detailed surveys and may be affected by the development proposals then a European Protected Species Licence would be required to proceed with the development.

NB: Where more detailed surveys for protected species are recommended, following a daytime survey, then the Local Planning Authority, on the advice of their ecological advisor, may not determine an application until such time that all relevant information is gathered, i.e. until all additional survey work has been completed. The advice that is provided by the ecological advisor is also in accordance with the obligations placed upon Local Authorities by way of its duties under the Conservation of Habitats & Species Regulations 2010 (as amended). Therefore it would be prudent to make enquiries to the relevant departmental Planning Officer or their ecological advisor before submitting a Planning Application, which includes a report that recommends more detailed surveys.

Approximate site boundaries and contiguous landscape

2.0 UK Biodiversity Plans

2.1 The United Kingdom Biodiversity Action Plan lists priority species/habitats. Based upon the site visit there is the potential for seven UK priority species to be present, all of which are listed in Table 1. However, the presence of these species was not ascertained by observational methods but by an assessment of the habitats present and their presence is not conclusive. During the site visit none of the identified habitats would qualify as UK priority habitats.

Table 1

Bird	Mammal	Herptile (Reptile & Amphibian)
Hedge accentor (*Prunella modularis*)	West European Hedgehog (*Erinaceous europaeus*)	Common toad (*Bufo bufo*)
Common starling (*Sturnus vulgaris*)	Brown Long-eared bat (*Plecotus auritus*)	
Song thrush (*Turdus philomelos*)	Soprano pipistrelle (*Pipistrellus pygmaeus*)	

3.0 UK & Local Biodiversity Action Plan

3.1 LBAP's are simply a way of encouraging people to work together and deliver a programme of continuing action for biodiversity at a local level. They set out practical steps that aim to:

- Help protect biodiversity
- Enhance and improve biodiversity where possible, and
- Promote biodiversity at a local level

3.2 Sites of Local Biological Interest

3.3 Whilst there is no legal protection for Sites of Local Biological Interest per se the presence of a protected species within them would attract the usual protection afforded to it/them. The Rotherham Biodiversity Action Plan (RBAP) lists key local species/habitats considered to be rare or declining in the area. Some may be of national concern, while others may only be locally rare. Some are statutorily protected, although the great majority are not.

3.4 Based on information gathered from the site visit there are two species listed within the RBAP for which the nature of the site may be suitable, i.e. Pipistrelle bat and Song thrush.

4.0 Site specific Protected Species

4.1 Up to ten bat species have been recorded in South Yorkshire, most of which use built structures, notably occupied residential properties for roosting. The most frequently encountered species is the Pipistrelle bat; its abundant status in South Yorkshire is reflected throughout the UK. All British bats and their roosts are afforded protection under the 1981 Wildlife & Countryside Act (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2010 (as amended). When dealing with cases where a European Protected Species (all UK bats) may be affected, a planning authority is a competent authority within the meaning of the Regulation 7 of the 2010 Regulations and therefore has a statutory duty to have due regard to the provisions of the Regulations in the exercise of its functions.

4.2 All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected under the Wildlife & Countryside Act 1981 (as amended). Birds listed on Schedule 1 e.g. barn owls are afforded a greater level of protection. Where nesting birds are present then work should be timed outside of the nesting season (March – August) so as to avoid disturbance.

Guidance for Local Authorities: Extract from Office of the Deputy Prime Minster: Circular 06/2005

"*It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision."*

5.0 Survey Methodology

Desk study

5.1 Prior to the site visit a desktop study was conducted using online resources to obtain information pertaining to any sites afforded statutory (e.g. SSSI) and non-statutory (e.g. LWS) designations within 2km of the site boundary. To do so, the Multi Agency Geographic Information for the Countryside (MAGIC – provided by Defra) was accessed to gather such information; this particular interactive mapping service was also used to locate any locally granted European Protected Species Mitigation Licenses (EPSML) to further inform conclusions concerning such species in the context of the study site and its proposed development; a data search to include all species and designated sites within a 1km radius of the Bolton Hall Care Home Carr site was also requested from the Rotherham and Barnsley Biodiversity Records Centres to provide further and otherwise unobtainable information concerning species and their local distributions.

Satellite imagery was reviewed using sources such as Google Earth (© 2016) and the USGS Earth Explorer to determine the nature of the adjoining and extending habitats; such information aids in the understanding of how the site might interact with its surroundings ecologically and its value in that context, and thus how the development may impact at a wider scale for more complete recommendations.

Field Survey

5.2 The survey was conducted on the 15th June 2016 by Mr J I Thomson who is an experienced ecologist and holder of a Class 2 Natural England Bat Licence (CLS-14226); GradCIEEM; Ecology and Conservation Management (FdSc, Distinction) and Rural Resource Management (BSc, First Class with Highest Honours), and Ms K Swift MSc Conservation management; and holder of a Class 2 Natural England Bat Licence (CLS-22801). The building was inspected for potential places that may be of value to bats and if evidence of use was present; loft space(s) were not investigated as access was not possible; the roof and exterior walls were inspected with the aid of a high powered torch and binoculars for places that are frequently used by bats as roosts or ingress points providing access into roost chambers.

5.3 A 'walkover' of the site was conducted which included a search for typical signs of badger activity which includes digging, occupied setts, 'runs' leading to and from a sett or the existence of latrines or 'snuffle' holes where badgers have foraged in the ground. At the same time, identification of any actual fauna species and any physical evidence signifying the presence of fauna species would also be documented. This information will subsequently provide a baseline, which will then be used to establish if more detailed surveys and recommendations are required.

5.4 A map and field search was undertaken in relation to the presence of ponds or waterways that may support Great crested newts and/or water vole, and the land assessed in relation to flora. The information gathered would then be used to establish if more detailed surveys are required.

5.5 Trees located within the development area were inspected at a time when tree foliage is present, which is not the optimum time to identify bat roost potential in trees as foliage can impede the surveyors view. They were assessed from ground level using binoculars for features that are frequently utilised by bats as roosts or the presence of ingress points such as natural/woodpecker holes splits of fissures that may provide access into further cavities within the tree/s.

Criteria for roost assessment are based upon the following determinant which is based upon the Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' (2016):

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Suitability	Description 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 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[a] 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[b]). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.[c]	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[a] 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 larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions[a] 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.

[a] For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.
[b] Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.
[c] This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

5.6 A number of factors are used for the bat survey methodology, which include:-

Knowledge of bat species relevant to the site location
Nature of the immediate and surrounding habitat in relation to foraging opportunities
Presence/absence of roost potential
Value of roost potential – if present

Following the survey the results, conclusions and recommendations are based upon surveyor experience and knowledge of bat ecology.

6.0 Constraints

6.1 Seasonal variation in animal behaviour and plant growth can limit ecological surveys in terms of the time they are undertaken; the survey was undertaken during June and thus provided a relatively complete impression of the sites biodiversity – particularly in terms of flora.

6.1 The survey was conducted during the breeding season of bats, which is the optimum time to undertake such surveys. However, loft spaces were not accessible as they required a specific tool for unlocking which was not available; this did not, however, prevent a full assessment of the building or the site in relation to roosting and foraging potential for bats, and robust conclusions could be made.

6.2 Trees were assessed at a time when they are in full leaf; however, foliage did not completely constrain the surveyors view for all surveyed trees.

6.3 In context with the above it is considered that there were no significant survey constraints that would prevent the gathering of information on which to base conclusions and recommendations.

7.0 Results

Desk Study

The study site within the central district of Bolton Upon Dearne, approximately 9.78km north east of Rotherham town centre (SE 45059 02710). Due to nature and extent of Bolton Upon Dearne, the study site initially interfaces with a typical suburban landscape, which transitions, relatively quickly, to an open rural matrix. Consequently, the immediate landscape features an array of semi-natural habitats for suburban and rural dwelling fauna, which possess ecological connectivity both within and between each broad land type. Present habitats amid the suburban matrix comprise, tree lined roads, residential gardens with concomitant vegetation, open amenity areas such as that bordering the study sites southern boundary, and freshwater conduits with riparian woodland and grassland (e.g. River Dearne). The previously identified habitats can be considered as being of value for some of the species for which the survey was undertaken, subject to them being present in the locality.

The desktop study found no results for EPSML's within a 3km radius of the study site; the closest record was for bats at 5km south-east of the Bolton Hall Care Home and associated grounds. The site is not situated within relative proximity to any designated sites; the closest is Denaby Ings (SSSI) at 4.9km south-east.

Lastly, there are several woodland patches distributed within a 1km radius of the site that are listed within the National Inventory of Woodland and Trees (England), as well as within the Priority Habitat Inventory for Deciduous Woodland (England).

The results of the Rotherham & Barnsley Biological data searches are awaited

Field Survey

Bats

As established, the loft spaces were not accessed; however, due to the amount of loft hatches present (approx. 1 every 5m) it is assumed that the loft space is highly subdivided by firewalls, which is a common feature of care homes and other broadly similar structures (e.g. hospitals). As such, the building is not considered suitable for loft dwelling bats, particularly in terms of a breeding colony. Species such as the Brown long-eared (*Plecotus auritus*) favour large, unrestricted, dark and undisturbed lofts/upper floors that allow free flight.

The breeding roosts of Pipistrelle bats are proportionally higher in occupied residential dwellings were the warm, dry conditions favour the requirements of a maternity colony but structures such as the barn are also used, especially for hibernation or by male bats which do not need the same conditions as a maternity colony.

Bolton Care Home is currently unoccupied and redundant from its former use; it is a relatively modern brick built structure with a tiled roof. Taking into consideration its age it is likely that underfelt or equivalent insulating material is present beneath the roof tiles; the presence of such materials beneath the primary roof cover (e.g. slate or tiles) can provide opportunity for crevice dwelling species, whereby they often roost between the two materials, provided external access exists. Despite the habitat meeting the needs of crevice dwelling species commonly found in suburban and urban landscapes, typically the Pipistrelle bat, no evidence to suggest recent or historic use by this species was present on external elevations.

During the external inspection a very limited ingress point for bats was located at the rear comer soffit board. (Photograph 1 & 1a) Other typical places often favoured by crevice dwelling bats would include hanging tiles, timber cladding; however such elements do not feature at the former Bolton Care Home. Furthermore all roof and ridge tiles are close fitting, which as a result will negate bat access.

All trees within the study site boundary were assessed from ground level with the aid of close focusing binoculars for features which would/might be of value to roosting bats. The inspection aimed to identify typical places that are used by bats i.e.

- Woodpecker/natural holes
- Crevices
- Splits
- Loose bark
- Deep fissures
-

However, all were found to be devoid of bat roost potential though this does not in any way diminish their value in terms of foraging/commuting habitat for bats.

Terrestrial Mammals

As with many urban gardens and larger areas of green infrastructure, it is probable that Hedgehogs would utilise the site for purposes relative to foraging. Moreover, the presence shrub/scrub could provide viable habitat for breeding, hibernating and general shelter.

Breeding birds

During the survey no physical evidence suggesting the presence of breeding birds was located, most notably historic nests or behaviour associated with active nests. The presence of trees and shrub/scrub, however, would make for suitable nesting habitat for common woodland/garden species such as Blackbird and Hedge accentor.

Common amphibians

The land within the site does not feature habitat suitable for breeding common frog and toad. However, the general semi-natural state of the land would make for adequate terrestrial habitat for common amphibian species should they be present in the locality.

PHASE 1 HABITAT SURVEY:

Habitats Present:

A2.1	Dense scrub
A2.2	Scattered scrub
A3.1	Scattered trees – broad-leaved
A3.2	Scattered trees – coniferous
B.4	Improved grassland
J3.6	Buildings
J5	Hardstanding

Each species recorded was given an abundance value according to the standard DAFOR scale, where:

D	=	*Dominant
A	=	*Abundant
F	=	*Frequent
O	=	Occasional
R	=	Rare

*These values can be prefixed by the letter L (locally), to provide more subtle biogeographical data.

Habitat Descriptions:

All species nomenclature follows Stace, C. (1996) – definitive English names

(Refer to Map 1, Appendix 1 for the location of all described habitats)

Dense scrub

Areas of dense scrub are confined to site boundaries and are formed by Bramble (*Rubus fruticosus*).

Scattered scrub

Scattered scrub is present on the site, much of which originates from planting and comprises species such as Hawthorn (*Crataegus monogyna*), Holly (*Ilex aquifolium*), Cypress spp. (*Cupressus spp.*), Elder (*Sambucus nigra*).

Scattered trees – broad-leaved & coniferous

Scattered trees are a defining feature of the grounds of Bolton Hall Care Home; most notably in the form of mature and good Oak specimens, specifically Turkey oak (*Quercus cerris*) and Lucombe oak (*Quercus x hispanica*). Other identified species include Common ash (*Fraxinus excelsior*), Cherry spp. (*Prunus spp.*), Horse chestnut (*Aesculus hippocastanum*), Sycamore (*Acer pseudoplatanus*), Common whitebeam (*Sorbus aria*), and English yew (*Taxus baccata*).

Improved grassland

Much of the sites surface area is covered by improved grassland, which historically has been subjected to frequent management by way of regular mowing; however, this habitat has not recently received such management, and has been allowed grow resulting in a taller unimpeded sward. Species are typical of an improved grassland community; the presence of Perennial ryegrass (*Lolium perenne*) and its relative abundance being the characteristic.

Grass	**Abundance**
Perennial ryegrass	A
Cock's-foot	A
Common bent	F
Yorkshire fog	F
False oat-grass	O

Wild Flower	**Abundance**
Creeping buttercup	A
Ribwort plantain	A
White clover	A
Dandelion	A
Common daisy	A
Common nettle	F
Cleavers	F
Broad-leaved dock	O
Meadow buttercup	O
Creeping thistle	O
Mugwort	O
Creeping cinquefoil	O

Foxglove	R
Germander speedwell	R
Lesser stitchwort	R
White campion	R

Buildings & Hardstanding

The large detached care home building is accompanied by areas of hardstanding, which from parking and access leading from Carr Head Lane.

The survey has revealed that the site does not support any rare or listed biodiversity plant species, nor was any invasive species identified on the site.

9.0 Conclusions & Implications

9.1 From the survey results it can be concluded that although the surrounding habitat is productive and Brown long-eared bats it appears that access for bats into the lofts is absent and that the loft spaces may not be suitable for this species but the assertion of the latter conclusion will need to be verified.

9.2 No external evidence of use by crevice dwelling species such as *Pipistrellus* was found during the daytime inspection; however evidence of use by singular bats is often not present; very limited bat access at a soffit board was located but not sufficiently high enough to instigate recommendations for dusk surveys. The habitat immediate to the building is more than capable of meeting their foraging requirements.

9.3 The overall nature of the site is considered suitable for the foraging/feeding and commuting requirements of bats, particularly due the variability created by its semi-natural features – notably tree and shrub. Furthermore, installation of lighting as part of future development, that exceeds current levels, may have a negative impact upon foraging/commuting bats if increased light spillage occurs.

9.4 There are no apparent implications in relation to Schedule 1 specially protected bird species. However, the presence of other more common bird species has been deemed possible as the site offers ample breeding opportunity for some passerine species, specifically where tree and shrub/scrub is present. Thus, development or significant modification of the site resulting in loss of shrub/scrub and trees is likely to result in the loss or diminution of a valuable resource for breeding, foraging and roosting birds.

9.5 Shrub/scrub and hedgerow are considered to offer potential for sheltering and breeding hedgehog. Therefore, if there is to be any clearing of the aforementioned habitats this may have direct impact upon this species should they be present.

9.6 Much of the sites vegetation comprises commonly found flora species; however, the site plays host to a number of mature Oak specimens, which are considered locally important and will support a range of fauna species – notably in terms of foraging. As outlined in this and previous sections, the general semi-natural composition of the site will be beneficial to many of the species discussed in this report.

10.0 Recommendations & Implications

It is recommended that purely as a precaution the roof tiles above the soffit shown in Photograph 1 should be removed in a careful and controlled manner under the supervision of a bat licensed ecologist who will check for evidence of bat use. At the time of this inspection access to the loft spaces should also be provided to ensure that a complete survey has been undertaken

10.1 If in the event of bat/s or evidence of bat use being located then the area will be re-instated to its former condition and dusk or/and dawn surveys undertaken. The surveys will then aim to establish species and how bats are using the building, which will need to be conducted during the active season of bats i.e. between May – August as bats, particularly Pipistrelle bats often alternate between roosts and do not necessarily use one roost over their active season. Two dusk surveys are generally accepted as being a reasonable level of survey effort where low to moderate potential has been identified but need to be spaced between those months (see below for extract from Bat Conservation Bat Surveys: Good Practice Guidelines).

Bat Conservation Trust

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey[a] (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.[b]	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.[b]

10.2 It should be noted that where bat/s or their roost/place of rest/shelter will be affected by the proposed works, then to allow work at the site to legally commence, an application for European Protected Species Mitigation Licence (EPSML) will be required. Notwithstanding the granting of a licence works that would affect a roost cannot take place if a maternity colony is in occupation. It should also be noted that before an EPSML can be applied for all Planning issues including Consent and any pre-commencement Planning Conditions relative to bats should be resolved.

10.3 Natural England provides information and guidance about EPSML and the following extract is included in that guidance:-

If you intend to apply for a licence for development you are advised to seek the guidance of a consultant ecologist. Natural England's view is that:-

- A licence is needed if the consultant ecologist, on the basis of survey information and specialist knowledge of the species concerned, considers that on balance the proposed activity is reasonably likely to result in an offence under the Conservation of Habitats & Species Regulations 2010 (as amended)

- If the consultant ecologist, on the basis of survey information and specialist knowledge of the species concerned, considers that on balance the proposed activity is reasonably unlikely to result in an offence being committed then no licence is required.

However, in these circumstances Natural England would urge that reasonable precautions be taken to minimise the effect on European protected species should they be found during the course of the activity. If European protected species are found, cease the work until you have assessed whether you can proceed without committing an offence.

- A licence should be applied for if offences are unavoidable and the work should not be re-started until a licence is obtained.

- The application should be completed by the developer and a consultant ecologist. The ecologist will need to be able to demonstrate to the satisfaction of Natural England that they have the relevant skills and knowledge of the species concerned.

10.4 As potential for foraging/commuting bats has been identified at the site, in particular at boundaries/peripheral areas, any future development of the site should ensure that light spillage does not occur on the features previously described as being of value to foraging bats.

If inappropriate and ill designed lighting is implemented then there is likely to be an adverse impact upon bats; see extract below from Bat Conservation Lighting Guidelines.

In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats. There are two aspects to this. One is the attraction that light from certain types of lamps has to a range of insects; the other is the presence of lit conditions.

Lighting can be particularly harmful if used along river corridors, near woodland edges and near hedgerows used by bats. In mainland Europe, in areas where there are foraging or 'commuting' bats, stretches of road are left unlit or lighting is designed in such a way as to avoid isolation of bat colonies.

Type of lamp (light source)

The impact on bats can be minimised by the use of 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 so as 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 3 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 track ways in areas important for foraging bats should contain stretches left unlit to avoid isolation of bat colonies. These unlit stretches should be 10 m in length either side of commuting route.

10.5 It is recommended that if the trees and shrub are to be removed, it should be undertaken outside of the breeding season of birds (March - August) unless it can be conclusively established, by an ecologist, that nesting birds are absent. All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected under the Wildlife & Countryside Act 1981 (as amended).

10.6 As the habitat has been identified as offering possible foraging potential and shelter for hedgehogs, it is recommended that if any shrub/scrub or other dense vegetation is to be removed, it is done so in a careful manner to check for the presence of hedgehogs; additionally it is recommended that if hedgehogs are discovered during their most vulnerable time, i.e. during hibernation/breeding then they are to be left in situ, and the habitat retained around them. If they are in danger of being harmed then they should be carefully relocated to a suitable sheltered area away from the work.

10.7 If and when future development transpires then provision of low angle sloping boards of approximately 300 mm wide should be placed within any excavations at the end of each working day to facilitate a means of escape for mammals such as hedgehogs.

10.8 If landscaping is proposed within the scheme then native species that will be of beneficial to wildlife should be selected and formed to promote wildlife corridors to the extending landscape; retention of exiting trees is recommended – notably mature Oak specimens.

APPENDIX I – Phase 1 Habitat Map

Habitat Key

- Survey boundary
- Dense scrub
- Scattered scrub
- Scattered trees – broadleaved
- Scattered trees – coniferous
- Improved grassland
- Buildings
- Hardstanding

APPENDIX II –
Site Photographs

General semi-natural condition of the site; pictures show areas of improved grass, dense scrub and mature Oak trees

Photograph 1

General view of the building & location of soffit gap

General tight nature of soffits

Photograph 1a Minor gap at soffit board

APPENDIX III – Data search (Awaiting Results)