Ecological Phase 1 Survey Report

Silver Hill Gardens on land at Connemara, Lightfoot Green Lane

October 2011

Control sheet

Project No & Title: **BOW0017/353 Silver Hill Gardens on land at Connemara, Lightfoot Green Lane.**

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1. Introduction

1.1 Bowland Ecology Ltd was commissioned to undertake an ecological appraisal of land proposed for development at Silver Hill Gardens on land at Connemara, Lightfoot Green Lane, Preston, Lancashire (NGR: SD519 337). Planning permission is being sought for construction of residential dwellings on the site, following demolition of the existing buildings. The site currently comprises a number of paddocks grazed by horses, a stable yard and residential dwelling with associated gardens. The habitats present include buildings, improved and semi-improved grassland, amenity grassland, bare ground with ephemerals, hard standing, introduced shrubs, scattered trees, scrub, tall ruderals and hedgerows.

1.2 The purpose of the survey was to: 1) identify and map all habitats occurring within the survey area, 2) identify the presence of (or potential for) wildlife interests with particular reference to the need for further surveys and legal requirements, and 3) provide an ecological assessment and recommendations pertaining to the proposed development.

1.3 The ecological survey methodology followed that of an extended Phase 1 habitat survey. It also included a desk study to search for designated wildlife sites and protected species records. The aim of the survey and desk study was to make an assessment of wildlife interests at the site with particular reference to legal requirements and potential development constraints.

1.4 A bat and barn owl survey was also undertaken of the buildings to be demolished. The aim of the bat and barn owl survey was to identify any present or past use of the buildings by bats and barn owls, including an assessment of the potential of the buildings to support a bat roost. The survey comprises detailed internal and external inspections of the buildings to search for bat and barn owl field signs. A bat emergence and activity survey was also undertaken to confirm the presence of a roost and if present, the type of roost, the species and number of bats using the roost. Information from the survey is used to identify any developmental constraints and mitigation requirements.

1.5 This report includes a description of survey methods; a summary description of habitats and fauna; provides recommendations for further survey; and outlines recommendations to provide protection and enhancements for biodiversity and protected species.

1.6 The locations of target notes (1-16) as listed in Appendix A are shown on the Extended Phase 1 Habitat Plan (Appendix B). This report should be read in conjunction with the Phase 1 plan.

1.7 Consultation, by means of a targeted desk study, has been undertaken with the Lancashire Environmental Recovery Network along with Nature on the Map and National Biodiversity Network to identify the key ecological issues relating to the site.

2. Methodology

Desk Study

2.1 A targeted desk study was undertaken of the site and a 1.5km buffer zone involving an online search of the Multi Agency Geographical Information Centre (www.magic.gov.uk), Natural England's Nature on the Map (www.natureonthemap.org.uk) and the National Biodiversity Network (www.nbn.org.uk). The UK and Local (Lancashire) Biodiversity Action Plans were also consulted.

2.2 Information regarding protected species and wildlife sites was also sought from the record holder for the area, in this case Lancashire Environmental Recovery Network.

2.3 The aim of the desk study was to identify the presence of statutory wildlife sites, non-statutory sites and any legally protected and notable species records for the area.

Extended Phase 1 Survey

2.4 The survey followed the Phase 1 habitat survey methodology (JNCC, 1993) and assessed all features of ecological significance within the survey area: All features of ecological significance were target noted and the location of target notes are shown in Appendix B.

2.5 The survey was extended such that evidence of fauna and faunal habitat was also recorded. The extended Phase 1 survey is a modified version of the Phase 1 survey and follows the approach recommended by the Guidelines for Baseline Ecological Assessment (IEA, 1995). This involves walking the whole site, mapping and describing the habitats present (e.g. woodland, grassland, scrub) and recording evidence of fauna and faunal habitat (e.g. droppings, tracks or specialist habitat such as ditches for water voles or ponds for breeding amphibians). A colour coded map of the habitats on site is produced, with corresponding target notes of ecologically interesting features (Appendix A).

2.6 The ecological survey was carried out on 21st September 2011 by Alice Helyar BSc (Hons), MSc, PhD, MIEEM. The weather was warm with 100% cloud cover, a light breeze and intermittent light showers. The timing of the survey was within the optimum period for completing such a survey, the conditions were suitable and the whole of the site was accessible. As a result, a comprehensive and valid assessment of the habitats present and their potential to support legally protected species was undertaken.

Bat Survey

2.7 An internal inspection of the house and stables was undertaken in which all accessible areas were searched for field signs such as bats, bat droppings, urine stains, bat feeding remains (moth wings, insect cases), bat staining, distinctive smell of bats, scratch marks and smoothing of surfaces which would indicate a roost site. An assessment of the potential of the building was also made during the survey i.e. searching for suitable roosting crevices. High power torches (Cluson Clu-lite 500,000 candlepower), close focus binoculars and ladders were used to aid the survey.

2.8 An external search of the buildings was also undertaken, again checking for field signs of bats. Particular attention was paid to windowsills, windowpanes and ledges.

2.9 The daytime internal and external inspections survey was undertaken on 6th October 2011 by James Segar BSc (Hons), MSc, AIEEM and Laura Bennett BSc (Hons), MSc. The weather during the survey was a light drizzle, with 100% cloud cover, a day time temperature of 12˚C and a fresh south-westerly breeze.

2.10 Natural England's Bat Mitigation Guidelines (2004) state that a significant bat roost can normally be determined on a single visit at any time of the year, provided that the entire structure is accessible and that signs of bats have not been removed by others. The timing of this survey was therefore considered to be suitable and all areas of the house were accessible for inspection, the roof void of the brick built stables was inaccessible for detailed inspection due to the absence of a loft access hatch.

Barn Owl Survey

2.11 The buildings were inspected internally and externally for evidence of past and present usage by barns owls (*Tyto alba*) and assessed for suitability as a nesting site for this species. Field signs for barn owls include;

- Droppings - white vertical streaks on roof beams and large white splashes on floors.
- Pellets - Barn owls generally swallow their prey whole and regurgitate the indigestible parts (bones, fur etc.) as pellets. The colour and condition of pellets can give an indication as to when a site was last used by barn owls.
- Feathers - Barn owl nestlings begin their initial moult at 11 months. Adult barn owls tend to shed their primary and secondary wing feathers before and after breeding.
- Nest debris - barn owls do not build nests but nesting areas may contain nestling fluff and pellet debris.
- Potential entrance points - the minimum entrance hole size required for barn owls to gain access to a building is 7cm x 7cm.
- Suitable nesting platforms - Barn owls need a level area to lay eggs usually over 3 metres in length and over 3 metres off the ground. Typical nesting places include tops of walls, between bales and on attic floors.

2.12 A high powered torch (500,000 candle power Cluson Clu-lite) and binoculars were used to aid the survey.

2.13 The buildings were also inspected for evidence of other species of nesting birds.

Dusk Emergence and Activity Survey

2.14 A dusk emergence and activity survey was undertaken with the aid of heterodyne detectors (Bat Box Duet). Species identification is aided by the use of detectors and the experience of the surveyors. The surveyors positioned themselves to get the best coverage of the site, and used the results of the daytime building inspection to focus in on the areas of the site with most potential as roosting habitat.

2.15 The emergence and activity survey was undertaken by James Segar BSc (Hons), MSc, AIEEM and Laura Bennett BSc (Hons), MSc. The survey was undertaken at dusk on the 6th October 2011. The survey was conducted between 18:15 and 19:35; sunset was at approximately 18:35. The weather during the survey comprised a light drizzle, with 100% cloud cover, a temperature of 10˚C and fresh south-westerly breeze. The surveyors concentrated the survey effort on the house, where it was identified to have the greatest potential for bats. A remote Anabat detecting device was positioned within the roof void of the stables for the duration of the survey to monitor bat activity.

3. Results

Statutory and Non-Statutory Wildlife Sites

3.1 There are no statutory or non-statutory wildlife sites within 1.5km of the proposed area.

Protected Species and Habitats Records

3.2 The National Biodiversity Network holds records for the following BAP species for Grid Square SD64 and therefore these species could potentially be present if suitable habitats are found on site;

- Amphibians; great crested newt.
- Birds; common cuckoo, grass hopper warbler, Eurasian curlew, Eurasian tree sparrow, grey partridge, hawfinch, house sparrow, lesser redpoll, northern lapwing, reed bunting, spotted fly catcher, wood warbler and yellowhammer.
- Bony fish; European eel.
- Terrestrial invertebrates; butterflies; grayling, white letter hairstreak, small heath, wall.
- Flowering plants; corn buttercup, lesser butterfly orchid, shepherd's needle and small flowered catchfly.
- Terrestrial mammals; brown hare, otter and European hedgehog.

3.3 Natural England's 'Nature on the Map' found no UKBAP habitats within the proposed development area or 1.5 km of the proposed development area.

3.4 Consultation with Lancashire Environmental Recovery Network highlighted the following notable species records for the site and the 1.5km buffer zone;

- Birds; willow warbler, coal tit, greater spotted woodpecker. Swift, starling, dunnock, tree creeper, shelduck, nuthatch, mistle thrush, chiffchaff, black cap and house martin.
- Amphibians; great crested newt, common toad, common frog, smooth newt and slow worm.
- Terrestrial mammals; Daubenton's bat and European hedgehog.
- Invertebrates; ruddy darter.
- Flora; moonwort, English bluebell, ivy leaved crowfoot, *Riccia fluitans*, bog bean, large bittercress and deadly nightshade.

Extended Phase 1 Survey

3.5 Target notes summarising key interest features for wildlife recorded during the Extended Phase 1 survey are included as Appendix A. The Phase 1 habitat plan for the study site is presented as Appendix B which includes dominant species codes for the habitats present and the locations of the target notes.

3.6 The proposed development site is situated to the north of Preston, Lancashire. The site is immediately bordered by a railway line to the east, the M55 motorway to the north, sports clubs (rugby) to the west and a road, golf course and woodland to the south. Further away, the site is surrounded by agricultural pasture, residential developments, a quarry and scattered small woodlands. The site comprises improved grassland, species poor semi-improved neutral grassland, amenity grassland, hard standing, bare ground, tall ruderals, introduced shrubs, scattered trees, scrub and hedgerows.

Habitat descriptions from field survey

Improved grassland

3.7 The majority of the land across the site (Target Note (TN) 6, 7, 10 and 16) comprises species poor improved grassland. The fields have been subject to intensive grazing pressure by horses, producing a largely short sward, with occasional areas of long rank sward. The grassland is comprised of commonly occurring species including; common mouse ear, white clover, dandelion, annual meadow grass, rough meadow grass, Yorkshire fog, perennial rye grass, red fescue, cock's foot, common ragwort, creeping thistle, spear thistle, red clover, false oat grass, broad leaved dock, the moss *Rhytidiadelphus squarrosus,* ivy, Timothy and creeping buttercup.

Amenity grassland

3.8 The garden (TN3) and strips of grassland on both sides of the driveways comprise amenity grassland that is intensively managed. These are species poor and have limited ecological value; species present include ribwort plantain, daisy, selfheal, the moss *Rhytidiadelphus squarrosus,* annual meadow grass, perennial rye grass, red fescue, dandelion, common mouse ear and white clover.

Species poor semi-improved neutral grassland

3.9 Species poor semi-improved neutral grassland is present at TN11 and 12. It is less intensively grazed, has a sward of varying height at the time of the survey and has greater species diversity than the improved grassland, however, there is evidence of improvement. Species present include; creeping buttercup, meadow buttercup, creeping thistle, spear thistle, broad leaved dock, tufted hair grass, rough meadow grass, bent grass species, common sorrel, common nettle, Timothy, perennial rye grass, dandelion, Yorkshire fog, cock's foot, false oat grass, red clover, white clover, self heal, common ragwort, broadleaved willowherb, scentless mayweed, smooth sow thistle, cleavers, ground elder and the following mosses *Rhytidiadelphus squarrosus, Pleurozium schreberi* and *Hylocomium splendens*. The grassland at TN12 has some species present indicating damp conditions and marshy grassland, such as soft rush and compact rush.

Scrub

3.10 Areas of scattered scrub are present in small stands around the perimeter of the site, particularly around the northern boundary and extending on to the railway embankment to the east of the site. More continuous scrub is present along the eastern boundary of the rugby football pitch. The dominant species is bramble.

Tall ruderals

3.11 Tall ruderal habitat is present at the northern end of the site, particularly in the fields indicated by target notes 11 and 12. The tall ruderal habitat is dominated by rosebay willowherb, common ragwort and false oat grass which indicate disturbed ground and poor substrate. Other species present include hogweed, common nettle, creeping thistle, spear thistle, tufted vetch, cock's foot, tufted hair grass and smooth sow thistle. This habitat extends on to the railway embankment to the east of the site.

3.12 Continuous bracken is present along the railway embankment to the east of the site; this extends into the site along the boundary feature.

Hedgerow

3.13 A species poor hedgerow, which is dominated by privet is present along both sides of the southern driveway, leading to the house. A dense *Leylandii cyperus* hedgerow is present along the southern boundary adjacent to the main road.

Scattered trees and lines of trees/outgrown hedgerow

3.14 Semi-mature and mature trees are scattered across the site. These are dominated by silver birch, lime and willow, with occasional hawthorn, sycamore (TN5), horse chestnut and cherry. A row of mature trees forms the boundary to the west of the site (TN4) and these comprise sycamore, *Leylandii cyperus,* oak, elder, lime, hornbeam, Scot's pine, blackthorn and hawthorn. One horse chestnut tree at the northern end of this boundary has lost limbs and a dead sycamore tree is present at the lorry parking area.

Other habitats

3.15 Bare ground and hard standing are found along the driveways, around the buildings, lorry parking area at the western end of the northern drive and in the horse ménage. The northern driveway and lorry parking area have been colonised by ephemerals and short perennials, although these are sparse. These habitats are not ecologically significant and have very limited ecological potential.

3.16 Buildings are found at TN9 (stables) and TN15 (the main house). These are described in the bat inspection survey results; section 3.26-3.40.

Faunal description from field survey

3.17 A range of habitats are present within the site boundary including; grassland, tall ruderals, scattered trees, hedgerow, scrub, and bare ground. These habitats provide a number of opportunities for fauna inhabiting the site.

Small Mammals

3.18 The scrub, tall ruderals and grassland habitats provide opportunities for small mammals such as mice, field voles and shrews. The lines of trees forming the hedgerows also provide habitat for mammals, particularly the hedgerow along the western boundary (TN4). Rabbits are also using the base of this hedgerow. No badger setts were observed to be present at the time of survey.

Birds

3.19 There is potential for breeding birds within the hedgerows, scattered trees and scrub habitats present on site at TN1, 4 and 11. A number of birds were observed to be using the *Leylandii cypress* hedgerow (TN1) including; blue tit, great tit, blackbird, chaffinch and robin. Wood pigeon were observed using the mature hedgerow along the western boundary (TN4) of the development site during the survey.

3.20 Swallows are nesting within the rendered stable block building (TN9). A nest was present and young were still using the nest at the time of the survey, although it appeared that they were in the process of fledging the nest. No evidence of other nesting birds, including barn owl, was found during the survey.

Amphibians

3.21 A small area of standing water was present at the time of the survey (TN8). It is apparent that this pool dries up on an annual basis. It is small, has poor water quality, minor impacts by water fowl, and it is surrounded by moderate terrestrial habitat.

3.22 The assessment of the pond for amphibians included using a modified version of The Habitat Suitability Index (HSI) (after Oldham et al, 2000). The HSI for great crested newts involves assessing ten factors that affect great crested newts. Each of these factors is given a score between 0 and 1, these scores are placed in to a formula to calculate the geometric mean, this gives a score between 0 and 1. 0 indicates that the habitat is unsuitable for great crested newts and 1 represents optimal habitat. The HSI score for pond 1 is 0.45, which is **below average** pond suitability. The pond is in effect isolated from other water bodies, it regularly dries out, is small, has poor water quality and surrounded by moderate terrestrial habitat. The water body is therefore considered to be of low risk for great crested newts.

Pond ref	**Pond 1**
SI1 - Location	1
SI2 - Pond area	0.2
SI3 - Pond drying	0.1
SI4 - Water quality	0.33
SI4 - Shade	1
SI6 - Fowl	0.67
SI7 - Fish	1
SI8 - Ponds	0.2
SI9 - Terr'l habitat	0.67
SI10 - Macrophytes	0.6
HSI	**0.45**

3.23 There are no additional ponds within 250m of the proposed development site and features such as the M55 motorway immediately adjacent to the north of the site, and the west coast mainline railway to the east, present major barriers to movement of amphibians. As a result, it is considered that the site is unsuitable for use by breeding amphibians Therefore amphibians are not considered further.

Invertebrates

3.24 Standing dead wood is present along the northern driveway (TN13) with evidence of use by woodpeckers. Standing dead wood is a valuable habitat for invertebrates and birds.

Reptiles

3.25 The habitats on site are considered sub-optimal for common reptile species, as they are heavily grazed / managed (e.g. TN6, 7, 10 and 16). There are also no records for reptiles in the area, therefore these are not considered further.

Bats

3.26 Four mature and dead trees have flaking bark and cavities which have potential for roosting bats. These trees include the horse chestnut tree and sycamore trees in the field at TN12, the dead tree at TN13 and a silver birch at

TN14. Following detailed inspection the silver birch (TN14) has no evidence of roosting bats. The remaining trees are considered to be of moderate risk for roosting bats as summarised in table 1 below.

Table 1 summarises tree risk potential

Tree	Grid Reference	Species	Features	Potential Risk
A	SD 518 337	Horse Chestnut (*Aesculus hippocastanum)*	Thick flaking bark	Moderate
B	SD 518 336	Sycamore (*Acer pseudoplatanus)*	Flaking bark	Moderate
C	SD 519 336	Standing dead wood pole	Holes	Moderate
D	SD 519 336	Silver birch (*Betula pendulum*)	Natural hole/cavity	Low

3.27 The development proposal includes the demolition of the house and horse stables. The house is a red brick structure which is two storeys high and has a pitched tiled roof, with timber soffits, fascias and barge boards. Gaps are present between the boards around the roof structure, allowing potential access by crevice roosting bats.

3.28 The stables comprise five structures which are used to house horses. One stable building is a single storey, rendered brick built structure, with a pitched, tiled roof. This building has features that could be used by roosting bats and was therefore subject to a detailed survey. The remaining four stable buildings are temporary structures constructed of timber or timber with corrugated iron. These buildings are considered very low risk for roosting bats, due to the construction materials which cause the temperature within these buildings fluctuates widely with environmental changes.

3.29 The house and rendered stable block were identified as having potential for bat roosts and therefore subject to a more detailed survey.

3.30 The habitats surrounding the buildings at Connemara are dominated by improved grassland fields, with scattered trees, lines of trees, hedgerows and fences leading to hedgerows and railway lines, which provide valuable foraging and commuting corridors for bats using the site.

Exterior Inspection

3.31 Externally the house is a two storey brick built building with a pitched tiled roof with ridge tiles. The mortar work is in good condition with few gaps and crevices present. The roof tiles are on timber rafters, with roof felt. The roof tiles and ridge tiles are generally well fitting with a small number of tiles being damaged, allowing potential access for bats between tiles and the timber batons of the roof structure. The soffits, fascia and barge boards are timber; small gaps are present where these boards meet the wall and where the soffits meet the fascia boards. A wasp nest is present behind one of these gaps, indicating access into the roof void.

3.32 Externally the stable block is a single storey brick built and rendered structure, with a pitched tiled roof. The roof has tiles on felt and timber rafters; gaps between the tiles are present, particularly at the lower edge of the roof. Some limited gaps are present between the ridge tiles. A piece of corrugated iron is located over a skylight in the roof of the northern elevation. Timber soffit and fascia boards are present; these are well fitting with small gaps between the walls and boards. Dense cob webbing is present in these gaps, indicating no or limited activity by bats. The rendering is in good condition with no opportunities for bats. There are no barge boards present.

3.33 Timber framed windows and doors are present on the southern elevation of the stables, with timber frames windows in the north, east and western elevations. Three doors are split doors and open at all times, exposing the interior to external environmental conditions (fluctuating temperatures and damp conditions), the windows have glass and a metal grill inside. One window has a gap where the pane has slipped, potentially allowing access to the building by bats.

Internal Inspection

3.34 Internally the house has an enclosed roof void, which is well insulated. The tiles are on timber batons, rafters and felt lining. Some of the roof lining is torn allowing potential access by bats into the roof void (plate 1). The walls are exposed brick work, with mortar work in good condition (plate 2). There are no other obvious access points within the internal roof void. No evidence of bat usage (bat droppings, staining or scratching) of the roof void was found.

Plate 1 and Plate 2

3.35 Internally the stable block has an enclosed roof void, with tiles on batons and rafters with felt lining. The building is divided into five single storey rooms (plate 3). The roof void is enclosed, with small gaps along the northern edge where the ceiling meets the slope the roof (plate 4); inspection of the roof void was not possible due to an absence of loft access hatches. The exposed brick and mortar work was in good condition with limited opportunities for roosting bats. Access into the stables is possible through the open doorways and window panes. No evidence of bats was found during the internal inspection.

Plate 3 and Plate 4

3.36 Following the internal and external inspection of the stable building, it was considered unsuitable for use by roosting bats and therefore the emergence and activity survey effort was concentrated on the house, which was considered more suitable. An Anabat detector was positioned within the stables for the duration of the survey to monitor any potential bat activity.

Dusk Emergence and Bat Activity Survey

3.37 The dusk emergence survey and bat activity survey of the house was carried out on the 6th October, as described in paragraph 2.15. One bat surveyor was positioned at the north west corner of the house and the second was located at the south east corner of the house. The results of the emergence and activity survey are described below

3.38 During the survey on 6th October 2011, the surveyor located at the north west corner of the house did not record any bat activity and no bats were observed to emerge from the house.

3.39 The surveyor located at the south east corner of the house also recorded no bat activity. No bats were observed emerging from the building by the surveyor at this position.

3.40 The Anabat detector positioned in the stables did not record any bat activity during the survey.

4. Conclusions and Recommendations

4.1 This section is a summary of ecological interest within the survey area and the recommendations and mitigation measures that should be considered should the development affect them.

Scheme Proposal

4.2 The scheme development involves construction of houses on amenity and agricultural land. The development will impact upon improved pasture, semi-improved species poor grassland, hard standing, scrub, tall ruderals, scattered trees, hedgerows and bare ground. It will also involve the demolition of existing buildings.

Habitats

4.3 The grassland across the site were species poor and intensively managed. The majority of the grassland was improved. It is considered that there is unlikely to be a significant ecological impact with the loss of this grassland habitat.

4.4 It is recommended that the scattered trees across the site should be retained where practicable; these provide foraging habitat for invertebrates, birds and bats, as well as being landscape features in their own right.

4.5 It is recommended that the standing dead wood feature (TN13) is retained and if it cannot be retained in situ, it should be moved (strapped to a live tree) to a location in the western boundary with other mature trees, thus maintaining its value to invertebrates and birds.

4.6 The outgrown hedgerow/line of trees along the western boundary of the site comprises mature trees which provide potential breeding habitat for birds; it will also provide a range of species with suitable habitat including mammals and invertebrates. The loss of this feature could have a negative impact upon those species that it supports.

4.7 It is strongly recommended that the removal of this hedgerow/line of trees along the western boundary is avoided. If it must be removed then on conclusion of works these should be replanted. Species that should be used for re-planting this hedgerow should include hawthorn, blackthorn, hazel, ash, bird cherry and sessile oak. Specimens should be sourced locally, they should be planted at an appropriate time of year (Oct – Feb, when there is no ground frost) and protected from grazing by rabbits and deer.

4.8 Likewise, whilst the *Leylandii cyperus* hedgerow is species poor in terms of its botanical diversity, it provides a number of bird species with nesting habitat. It is recommended that this hedgerow is replaced with a hedgerow of native berry producing species, of local provenance, such as hawthorn, blackthorn, rowan, guelder rose, dog rose, elder and hazel.

4.9 Removal of the hedgerows should follow the procedure outlined in sections 4.10 and 4.11 below.

Birds

4.10 It is recommended that any works affecting potential bird nesting habitat, particularly the stable block, in which the swallows were observed to be nesting, and the hedgerows, scrub and scattered trees, should take place

outside the breeding bird season which runs from late February until September, in order to prevent any impacts upon breeding birds.

4.11 Demolition of the stable block and any vegetation clearance work that has not have been undertaken outside the bird breeding season will be subject to a pre-clearance bird survey carried out by a suitably experienced ecologist. No building demolition or vegetation clearance will be carried out within 5m of an identified nest until the young have fledged and are no longer returning to the nest site. Building demolition and clearance of vegetation will only occur once a scheme ecologist has declared the nest to be no longer in use.

4.12 Mitigation for the loss of breeding bird habitat should include the erection of nest boxes within the new development on proposed new buildings as well as the planting of native species of trees and shrubs.

4.13 As swallows return to the same breeding site each year, it is recommended that some provision is made for these birds within the new development. This should take the form of;

- Access points could be either into the main roof eaves from the gable ends of new buildings, allowing access to a small nesting platform.
- Nesting sites or nests; examples of which can be found in Appendix 3.

Bats

4.14 Due to the moderate risk for roosting bats in the horse chestnut and dead sycamore trees and standing dead wood at TN13, it is recommended that the method statement outlined below is followed (Bat Conservation Trust, 2000): when felling these trees, if such action is required:

- Fell trees in autumn to avoid periods when bats are particularly vulnerable - during hibernation or when non-flying young are present.
- When preparing to cut a tree look for evidence of bat occupancy - obvious holes, cavities and splits; dark staining on a tree below a hole; staining around a hole; maze of tiny scratch marks around the hole; noise coming from a hole; on close inspection the hole may contain droppings.
- Bats may be anywhere inside a hole, try to cut as far above a hole as possible.
- If there is doubt about the presence of a possible roost, do not cut and seek ecological advice.
- Bats may be inside cracks held open by weight of branch, which will close when branch taken off. Search such splits for bats before removing large limbs.
- Where possible ring bark and leave up to 15 metres standing dead wood (trunk), with due regard to Health and Safety issues.

If bats are found:

- If the roost is still intact and bats are not injured, seek ecological advice immediately.
- If help is not available allow bats to fly out of harms way.

- If the timber is felled, the roost is not exposed and the bats are not injured, temporarily seal and isolate roost and seek ecological advice immediately and contact Natural England.
- If help not readily available, position the roost off the ground, re-open it and allow bats to relocate of their own accord.
- If a roost has been exposed, and bats have been injured, collect bats into a secure box or bag (using a glove) and seek ecological advice immediately. Do not handle bats without gloves.
- In all cases where bats are found to occupy a tree, inform the supervising ecologist and Natural England immediately.

4.15 Bat boxes will be provided to compensate for the loss of any confirmed tree roosts or loss of tree with roosting potential.

4.16 No evidence of bats was found within the buildings on the site. Although there is no known bat roost present within the building, a procedure should be in place should bats be found or suspected at anytime during construction activities. If bats are found or suspected, as a legal requirement, work in that area should cease immediately until further advice has been sought from Natural England and/or the scheme ecologist. The scheme ecologist, Natural England or their agents in the Lancashire area will be able to locate a licensed bat worker to remove any bats present which might be harmed during the works. If bats are exposed during the works and are vulnerable to harm, gloves or a container should be used to move them to a dark and quiet area, until a bat worker has been contacted.

Enhancement

4.17 A key element of Planning Policy Statement 9 is the emphasis upon enhancements. Paragraph 14 states that 'Development proposals provide many opportunities for building in beneficial biodiversity or geological features as part of good design. When considering proposals, local planning authorities should maximise such opportunities in and around developments, using planning obligations where appropriate'.

4.18 Measures to enhance the biodiversity of the site include:

a) Seeking the advice of a professionally/suitably qualified ecologist throughout the progress of the development in order to maximise ecological and biodiversity gains at each stage.
b) Incorporate a pond into the site design to enhance the potential of the site for amphibians.
c) Opportunities for roosting bats should be provided within the proposed residential buildings. Incorporation of roosting opportunities within the proposed development should be achievable, and can be designed to meet with planning requirements and building regulations. It is recommended that one of the following is incorporated into proposed buildings with a south or east aspect, particularly those located around the perimeter of the site;
    - Access gaps between soffits and walls (15-20mm) on the south facing elevation;
    - Access points to the roof void via bat tiles and bat tubes built into gaps in the masonry or into wall surfaces or purpose built

entrances. (Tubes such as the Schwegler 2FR Bat Tube would be suitable, as shown at the following web site; (http://www.alanaecology.com/acatalog/Schwegler_Boxes_for_Buildings.html))
- Access points over top of cavity walls by specifically constructed gaps;
- External bat bricks installed at a height of 3m (or close to the roof line), in the south or west facing elevation of (Schwegler 1FR Bat Tube would be suitable (http://www.alanaecology.com/acatalog/Schwegler_Boxes_for_Buildings.html))

d) The integration of bat roosting habitat will not cause disturbance to users of the development, nor create aesthetic problems. Bats will not nibble or gnaw at wood, wires or insulation. Bat droppings do not smell strongly, there are no known health risks associated with them. The droppings are dry and do not putrify, but crumble away to dust, or are washed away by rain.
e) Any plantings within the new development would provide foraging habitat for bats, and therefore have the potential to increase the value of the site. Nectar rich plants that attract insects would be recommended as they would enhance foraging opportunities for bats in the local area.

References

IEA. 1995. *Guidelines for Baseline Ecological Assessment*. Chapman and Hall.
Joint Nature Conservation Committee (1993). *Handbook for Phase 1 Habitat Survey: A technique for environmental audit.* JNCC
www.ukbap.org.uk
Bat Conservation Trust (2004) *Best Practice Guidelines for Bat Surveys*. BCT
English Nature (2004). *Bat Mitigation Guidelines*. Natural England

Legal Information

Bats

All **bats** in the UK are listed on Schedule 5 of the Wildlife and Countryside Act (WCA) (1981, as amended), updated by the Countryside and Rights of Way Act (2000). It is therefore subject to provision 9 of the WCA which makes it an offence to;

- Intentionally kill, injure or take any wild bat,
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by any wild bat
- Intentionally or recklessly disturb any wild bat while it is occupying a structure or place which it uses for that purpose.
- Possess or control any live or dead specimen or anything derived from a UK bat species.

The Countryside and Rights of Way Act 2000 amends the Wildlife and Countryside Act to also make it an offence to intentionally or recklessly damage, destroy or obstruct a place that bats use for shelter or protection. The term 'reckless' is defined by the case of Regina v Caldwell 1982. The prosecution has to show that a person either deliberately took an unacceptable risk, or failed to notice or consider an obvious risk.

The Conservation of Habitats and Species Regulations 2010 which make provision implementing Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna (the Habitats Directive). These give additional protection to bats, which are listed on Schedule 2 of the Regulations. Under Regulation 39 a person commits an offence if he;

- Deliberately captures, injures or kills any wild animal of a European protected species.
- Deliberately disturbs wild animals of any such species in such a way as to be likely significantly to affect the ability of any significant group of animals of that species to:
  i) to survive, to breed or to reproduce or to rear or nuture their young or
  ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate or the local distribution or abundance of that species

A bat roost has been interpreted by Natural England to mean any structure or place which is used for shelter or protection whether or not bats are present at the time.

Breeding Birds

Breeding birds are protected by Section 1 of the Wildlife and Countryside Act (1981, as amended). All birds, their nests and eggs are protected by law and it is thus an offence, with certain exceptions, to intentionally;

- Kill, injure or take any wild bird,
- Take, damage or destroy the nest of any wild bird while it is in use or being built,
- Take or destroy the egg of any wild bird.

Birds listed on Schedule 1 of the Wildlife and Countryside Act (1981, as amended) are subject to increased protection through a penalty system. For species listed on this Schedule it is also an offence to intentionally or recklessly;

- Disturb any Schedule 1 bird while it is building a nest or is in or near a nest containing eggs or young,
- Disturb dependent young of any Schedule 1 bird.

Appendix A Extended Phase 1 Target Notes

Target Note	Description	Photograph
1	A tall *Leylandii cyperus* hedgerow that is species poor, dominated solely by one species. It was observed to support a range of small passerine birds during the survey, including blue tit, great tit, chaffinch, blackbird and robin and has high potential for nesting birds during the breeding season.	
2	An area of ornamental garden with introduced shrubs. It is species poor and has much bare ground, which provides suitable foraging habitat for birds such as blackbird and song thrush. It is however, heavily disturbed by pedestrians and dogs. Along the driveway are two privet (*Lingustrum ovalifolium*) hedgerows, which are species poor. The base of the hedgerow is more diverse with species such as ivy (*Hedera helix*), Yorkshire fog (*Holcus lanatus*), wood avens (*Geum urbanum*), creeping buttercup (*Ranunculus repens*), yarrow (*Achillea millefolium*), common mouse ear (*Cerastium fontanum*), horsetail (*Equisetum* sp.), broadleaved willowherb (*Epilobium montanum*), primrose (*Primula vulgaris*), dandelion (*Taraxacum* agg.), common nettle (*Urtica dioica*) and broadleaved dock (*Rumex obtusifolius*).	 
3	An area of amenity grassland with scattered immature trees and one mature sycamore tree. The grassland is relatively species rich for amenity grassland, however, the species are commonly occurring, including; ribwort plantain (*Plantago lanceolata*), daisy (*Bellis perennis*), self heal (*Prunella vulgaris*), *Rhytidiadelphus squarrosus,* annual meadow grass (*Poa annua*), perennial rye grass (*Lolium perenne*), dandelion, red fescue (*Festuca rubra*), common mouse ear, white clover (*Trifolium repens*) and bittercress (*Cardamine*	

	sp.).	
4	Line of trees/outgrown hedgerow. Comprises oak (*Quercus robur*), sycamore (*Acer pseudoplantanus*), elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), lime (*Tilia x europaea*), hornbeam (*Carpinus betulus*) and Scot's pine (*Pinus sylvestris*). Some mature trees are ivy clad and have crevices in the main trunk, providing potential habitat for roosting bats. There is evidence of rabbit activity beneath this feature. It also provides potential breeding habitat for nesting birds as well as habitat for small mammals including shrews, mice and voles.	 
5	Semi-mature sycamore tree within the garden. Whilst it has no features that could be used by roosting bats, it will provide habitat for invertebrates and therefore foraging habitat for bats.	
6	Improved grassland that extends around the south of the main house. The grassland is intensively managed and is species poor. The species present include white clover, common mouse ear, dandelion, Yorkshire fog, rough meadow grass (*Poa trivialis*), creeping buttercup, perennial rye grass, spear thistle (*Cirsium vulgare*), common sorrel (*Rumex acetosa*), cock's foot (*Dactylis glomerata*), red clover (*T. pratense*), false oat grass (*Arrhenatherum elatius*), common nettle and common ragwort (*Senecio jacobaea*). A small area of damp ground is present in the south east corner of the field where one species of sedge (*Carex* sp.) is present, with small numbers of soft rush (*Juncus effusus*).	

	A timber palisade fence is present along the eastern and southern boundaries, adjacent to the road and railway line. A number of mammal runs are present in the grassland, indicating activity by rabbits, fox or badger. No evidence of the latter two was found during the survey.	
7	An area of improved pasture. The field has been subject to intensive grazing pressure by horses, producing a sward that is closely cropped with small rank areas of taller grasses. Continuous bracken and scattered scrub are present along the eastern boundary. Post and rail fencing divide the fields on the site. The grassland is comprised of commonly occurring species including; red clover, white clover, Yorkshire fog, annual meadow grass, red fescue, common mouse ear, creeping buttercup, spear thistle, perennial rye grass, broad leaved dock, common ragwort and common sorrel. This area has potential for providing foraging habitat for birds, such as starlings and blackbirds, as well as providing habitat for small mammals, particularly in the scrub and bracken along the eastern boundary.	
8	A damp depression that was flooded at the time of the survey. It appears to dry out every year. It is small, has poor water quality, minor impacts by water fowl, and it is surrounded by moderate terrestrial habitat. A Habitat Suitability Index score for the pond, using 10 features of the pond to assess suitability for great crested newts, where 0 is unsuitable and 1 is optimal habitat, found that the score for the pond was 0.47, which indicates that the pond is poor for great crested newts.	

9	Horse stables constructed from timber, timber and corrugated iron and rendered brick. The rendered building has potential for roosting bats beneath the slates and between the ridge tiles. No evidence of roosting bats was found during a detailed inspection. The timber sheds were not considered suitable for use by roosting bats due to the construction material which exposes bats to fluctuations in external conditions. Swallows are nesting within the rendered building. The young were still using the nest, but appeared to be in the process of fledging the nest.	   

		
10	Improved grassland with scattered silver birch (*Betula pendula*) trees. The trees are semi-mature and have limited potential features in which bats could roost.	 
11	Species poor semi-improved grassland surrounded by tall ruderals and scattered scrub. Willow (*Salix* sp.) and elder trees are present along the western boundary adjacent to the rugby pitch, and silver birch are scattered along the eastern boundary. Areas of tall ruderals are present in the centre of the field. Hogweed (*Heracleum sphondylium*), broadleaved dock, common nettle, rosebay willowherb (*Epilobium angustifolium*), creeping thistle (*Cirsium arvense*), spear thistle, common sorrel, common ragwort, tufted hair grass (*Deschampsia cespitosa*) and tufted vetch (*Vicia cracca*) are frequent in the tall ruderal habitat. This field is adjacent to the M55 motorway and is therefore heavily	

	disturbed. However, the grassland, tall ruderals and scrub provides limited potential habitat for breeding birds, small and medium sized mammals. No evidence of badger activity was found during the survey. A resting site or couch used by deer (e.g. roe deer) or fox is present at the northern end of the field.	
12	Semi-improved grassland with an area of marshy grassland and scrub in the north western corner. Areas of the field have been selectively grazed, indicating a poor quality pasture. Species present in the grassland include; soft rush, compact rush (*Juncus conglomeratus*), creeping buttercup, spear thistle, creeping thistle, broadleaved dock, common sorrel, tufted hair grass, rough meadow grass, bent grass sp (*Agrostis* sp.), Timothy (Phleum pratense), perennial rye grass, dandelion, meadow buttercup, Yorkshire fog, cock's foot, false oat grass, red clover, white clover, self heal, *Rhytidiadelphus squarrosus, Pleurozium schreberi, Hylocomium splendens,* common ragwort, scentless mayweed (*Tripleurospermum inodorum*), cleavers (*Galium aparine*), smooth sow thistle (*Sonchus oleraceus*), broadleaved willowherb and common nettle. A dead sycamore tree with large chunks of flaking bark is present in the south western corner of this field. It is of moderate risk for roosting bats due to the presence of the flaking bark.	  

13	Standing dead wood with evidence of use by woodpeckers. Standing dead wood is a valuable habitat for invertebrates and birds. This feature should be retained and if it cannot be retained in situ, it should be moved (strapped to a live tree) to a location in the western boundary with other mature trees.	
14	A mature silver birch tree with a cavity running up the length of the trunk. It could provide potential roosting opportunities for bats; however, after close inspection no evidence of use by bats was identified.	
15	The main house, located at the southern end of the site. It is a two storey brick built structure with a pitched, tiled roof. It has two, single storey flat roofed extensions, which include the garage and swimming pool. The mortar work is in good condition. The soffit, fascias and barge boards are timber and have some gaps present between the wall and boards and between the boards themselves. A wasp nest is present in the roof void, behind a fascia board in the western elevation.	 

16	Improved grassland with scattered mature lime, silver birch and Scot's pine trees. The grassland is intensively managed and is species poor.	

Appendix B Extended Phase 1 Habitat Plan

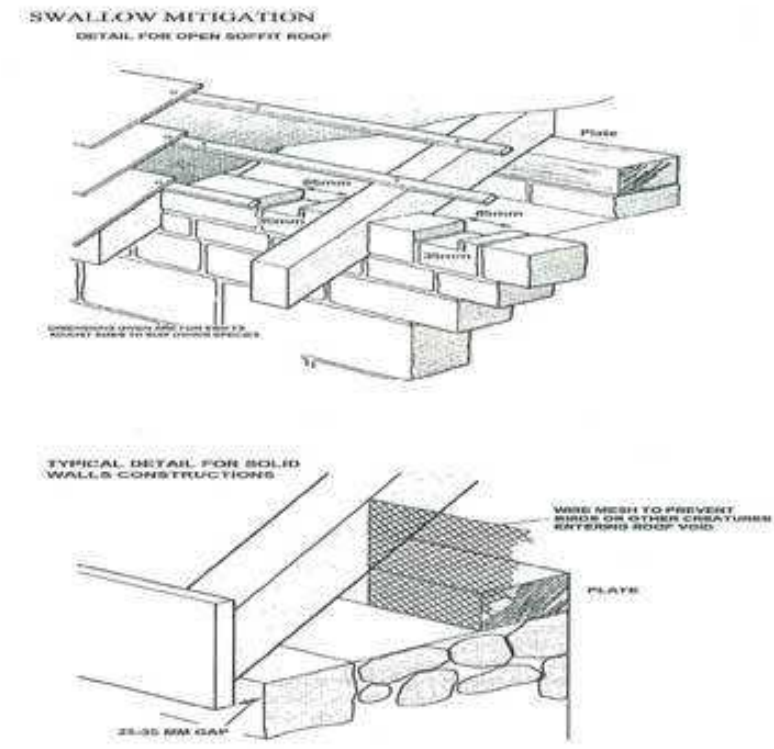
Appendix C – Swallow Mitigation

Swallows prefer outbuildings which provide dark ledges and corners for nesting. These are warm in cold weather and cool during warmer weather. Swallows can enter a building through a small access point and need very little light (brightly lit nest sites are most at risk from predators).

A gap should be provided - minimum 50 mm high and 70 mm wide, under the garage or building eaves or by leaving an open window. The potential roosting site can be enhanced by either adding a nest platform high in the building, in the shape of a letter H, on which the swallows can build a nest. Alternatively a ready made swallow nest can be fixed to a wooden backing plate. This may be made from papier mache, or a sawdust and cement cup, or purchased. These are available from suppliers such as the RSPB (example product code R0767) or Alana Ecology http://www.alanaecology.com/acatalog/Schwegler_No_10_Swallow_Box.html .

Nests should be placed at least 1m apart.

A gap can be left in an open soffit as shown below.


SWALLOW MITIGATION
DETAIL FOR OPEN SOFFIT ROOF
Plate

TYPICAL DETAIL FOR SOLID WALLS CONSTRUCTIONS
WIRE MESH TO PREVENT BIRDS OR OTHER CREATURES ENTERING ROOF VOID
PLATE
25-35 MM GAP