Chapel Hill, Longridge

Ecological Appraisal

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Control sheet

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Executive Summary

United Utilities commissioned an extended Phase 1 habitat survey, desk study, amphibian survey, breeding bird survey and bat survey of land at Chapel Hill, Longridge (SD 604 367). The initial surveys were carried out between March-June 2007 and updating surveys were carried out in 2008 and 2010.

The application site comprises a plot of land of approximately 2.75ha to the south of Chapel Hill (B6243), and includes the curtilage of the property at No. 53 Chapel Hill. The southern boundary of the site borders Alston Reservoir No 2. The application site is subject to a full planning application for access, landscaping and the erection of 52 new build residential properties, the conversion of the former barn to one dwelling unit and refurbishment of existing residential dwelling unit (53 Chapel Hill). The developable area totals 1.456ha and the area of habitat creation and public open space totals 1.295ha.

There are no statutory wildlife sites on or within 1.5km of the application site. Alston Reservoirs Biological Heritage Site (County Wildlife Site) is situated immediately to the south of the application site, which is designated on the basis of ornithological and botanical interest. Spade Mill Reservoirs and College Wood Biological Heritage Sites also lie within the search area, but lie over 1km from the proposed application site.

Habitats within the application site are grassland, buildings, semi-mature and mature trees, tall ruderal vegetation and scrub. There are no ponds on the site but two ponds lie within 250m of the application site, both to the north, beyond Chapel Hill (B6243). Amphibian surveys did not reveal the presence of great crested newt and the site is considered to be of ecological value to amphibians within the zone of influence only.

There are two buildings on the site. Building 1 is a two storey pitched roofed unoccupied residential dwelling. Building 2 is a stone built barn with a pitched roof clad with asbestos sheeting. Both buildings show evidence of bat use by a small number of common pipistrelles and the application site is used by foraging bats. The site is considered to be of local value for bats. Nesting bird habitat is present and the site is considered to be of value within the zone of influence only for common species of nesting birds. Habitats within the site are not considered to be important for waders and wildfowl using Alston Reservoirs Biological Heritage Site (BHS). However, the adjacent Alston Reservoirs BHS is of county value on the basis of ornithology.

Potential impacts of the scheme, if unmitigated are as follows:

- Disturbance to the adjacent Alston Reservoirs BHS.
- Loss of habitat: grassland, scrub, tall ruderal, hedgerow, mature trees.
- Creation of new habitats: hedgerows, trees, grassland, buildings and a pond.
- Potential accidental killing or injury of protected species; common amphibians, bats, birds.
- Loss of habitat for protected species.

The mitigation requirements and recommendations for enhancement for the site are presented in the table below. Given that the mitigation and enhancements advice is implemented, there is no material reason on ecological reasons why planning permission should not be granted.

Feature	Legal Status/Planning Status	*Mitigation and Recommendations for Enhancement*
Alston Reservoirs BHS	Biological Heritage Site (County Wildlife Site) protected by planning policy. Designated on the basis of ornithological and botanical interest.	*Construction:* *Stringent control measures will be implemented during construction to ensure direct or indirect impacts to the Alston Reservoirs County Wildlife Site do not occur. The construction site will adopt the good working practices outlined in the Environment Agency Pollution Guidelines (PPG5). In addition, measures to reduce dust deposition will be employed as follows; wheel-washes, dedicated haul route and damping down/bowsers. Machine silencers will be used for machinery in order to reduce noise disturbance. No works will take place after dark.* *Operation:* *The tall stone wall which lies between the application site and the reservoir will be retained and supplemented with a hedgerow. This will form a definite boundary in terms of pedestrians, which will prevent unauthorised entry to the reservoir edge, but will also provide a visual screen.* *A buffer zone along the southern boundary of the development is incorporated in the form of a landscaped area and footpath – the landscaping plan is shown in Appendix G. The buffer zone is to be used for habitat creation - species rich grassland will be created. A system of swales is also under consideration, though the detailed design will be dependant upon the restrictions created by the presence of a water main, and water levels). This buffer zone varies from a minimum of 12m width to 20m width along the southern boundary of the site. A footpath will be located within this area which will deliver a clear visitor access route which acknowledges the ecological importance of the BHS and the potentially damaging impacts of disturbance. This will be implemented through an information board installed along the path.* *The lighting scheme design will take into account the potential for impacts of light spillage upon the Biological Heritage Site and fauna which may use this site, particularly birds and bats. This lighting scheme will be in accordance with the Institute of Lighting Engineers (ILE) 'Bats and Lighting' guidance, which is available on the Bat Conservation Trust website. The lighting scheme will be submitted to the County Ecologist for approval prior to implementation.*
Habitats	Semi-improved neutral grassland, semi-mature and mature trees, hedgerow and tall ruderal vegetation.	*Construction:* *Temporary Protective Fencing and Ground Protection fencing will be installed to protect mature retained trees, as detailed within the Arboricultural Impact Assessment.* *Operation:* *New areas of planting (See Appendix G) will use native species of local provenance. Planting of new hedgerows and trees will exceed those lost. Planting will be used to establish a landscape buffer along the southern edge of*

		the development site. *New wildlife habitats will be created in the form of a new water feature within an area of habitat and open space, which will have a gentle bank gradient, creating a wide drawdown zone, which allows species to flourish within the shallow margins, even if the attenuation function causes water quality to below optimal. It will have a band of vegetation around to create a buffer and perform some filtration function of run-off into the pond. A series of swales is also proposed, although the final design will be dependant upon the restrictions created by the presence of a water main, and water levels.* *A site management and maintenance plan will be designed to maximise the wildlife interest of all habitat and open space areas. This plan will include the management of the water feature. The management plan will be submitted to the County Ecologist for approval prior to implementation.*
Amphibians	The commoner amphibians (common toad, common frog, smooth newt, palmate newt) receive limited protection via The Wildlife and Countryside Act, 1981, as amended. Common toad is a UK BAP species.	*Construction:* *Care will be taken during initial site clearance works, with any amphibians found relocated to suitable habitat in the locality which will not be impacted by the works. If any great crested newts are found, works will stop until further advice has been sought from the scheme ecologist.* *Leaving open excavations overnight will be avoided wherever possible. Where unavoidable, these will have a means of escape e.g. ramped earth at one end, stick/timber plant to allow amphibians and other trapped fauna to exit of their own accord.* *Operation:* *A new water feature is to be created in the eastern part of the site, which will provide potential breeding habitat for the commoner amphibian species.*
Bats	Bats receive full protection under the Wildlife and Countryside Act 1981. They are also protected under the Conservation of Habitats and Species Regulations 2010. The Countryside and Rights of Way Act 2000 amends the Wildlife and	*Construction:* *Bat boxes of a range of designs will be installed on mature retained trees. A minimum of 12 bat boxes will be installed prior to the commencement of on-site works.* *Contractors involved with works to Buildings 1 and 2 will be given a toolbox talk prior to works commencing which will detail the legal protection of bats, main features for identification, including their small size, safety information regarding bites and the risk of Rabies, and the procedure to follow should bats be found during works.* *The timing of any works to roofs of Buildings 1 & 2 will be outside of the period May-October when bats are most likely to be present. If works to the roof are undertaken during the period May-October then slates and tiles will be removed by hand, under the supervision of an ecologist with a Natural England bat handling licence. Contractors*

	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. Noctule, soprano pipistrelle and brown long-eared bats are a grouped plan under the UK BAP.	*should be made aware of the possibility of finding bats, be aware of the legislation protecting them and the course of action should bats be discovered, either during supervised or unsupervised works.* *Access points and roosting spaces for bats will be incorporated into the renovated buildings. Access points will be maintained via the use of 'Morris bat slates' and gaps in mortar and roosting spaces maintained by the use of traditional bitumistic roofing felt. A bat box suitable for installation on buildings (Schwegler 1FF, 1FW or 1FQ) will be installed on B1 and B2.* *Whilst no trees to be removed are considered to have high bat roosting potential, tree felling should be undertaken with due care and attention. If bats are suspected or discovered works should stop and the scheme ecologist should be contacted for advice. Bats should not be handled unless in imminent danger, and only then with gloved hands.* *Operation:* *New tree planting will exceed losses and will be native species. The landscape design should include boundary planting of the site to extend existing woodland habitats to enhance bat foraging and commuting habitat. Landscape design should consider including clumps of trees and shrubs within the site layout to attract foraging bats.* *The lighting scheme design for the site will take into account the potential negative impacts of lighting on roosting, commuting and foraging activity of bats. This will be in accordance with the guidance from the Institute of Lighting Engineers (ILE) available on the Bat Conservation Trust. Light spillage on potential roosting and foraging habitats such as woodland, the reservoir and installed bat boxes will be avoided. The lighting scheme will be submitted to the County Ecologist for approval prior to implementation.*
Ornithology	The Wildlife & Countryside Act 1981 gives general protection to all wild birds from killing, injuring or taking; destroying, damaging or taking nests in use or being built; and taking or destroying eggs. House sparrow, song thrush and are UK BAP species.	*Construction:* *A minimum of 10 bird boxes will be installed on site prior to works commencing. A range of bird boxes of different designs will be installed to cater for different species (open fronted and boxes with access holes of different sizes) on retained mature trees.* *Machine silencers will be used for machinery in order to reduce disturbance to adjacent Alston Reservoir BHS. No works will take place after dark. Wheel washers and bowsers will be utilised to prevent dust deposition.* *The required tree and hedgerow clearance will be undertaken outside of the bird nesting season which runs from March until August. If vegetation is cleared during the nesting season it should be preceded by a pre-clearance nesting bird survey and only continued once declared free of nesting activity by the scheme ecologist.*

		Operation: *Scrub and hedgerow planting within the new development will exceed that lost (see Appendix G). Planting of seed and berry bearing trees and shrubs (e.g. rowan, hawthorn, hazel, blackthorn, birch, alder) within the landscape design will attract feeding and nesting birds. Planting will use native species of local provenance wherever possible.* *The lighting scheme design will take into account the ornithological interest of Alston reservoir and potential negative impacts of light spillage on wildfowl and waders, as described above. The lighting scheme will be in accordance with the guidance from the Institute of Lighting Engineers (ILE) available on the Bat Conservation Trust and the lighting scheme will be submitted to the County Ecologist for approval.*

1. Introduction

1.1 United Utilities commissioned an extended Phase 1 habitat survey, desk study, amphibian survey, breeding bird survey and bat survey of land at Chapel Hill, Longridge (SD 604 367). The initial surveys were carried out between March-June 2007. Further updating surveys were carried out in 2008 and 2010.

1.2 The study site comprises a plot of land of approximately 2.75ha to the south of Chapel Hill (B6243), and includes the curtilage of the property of 53 Chapel Hill. The southern boundary of the site borders Alston Reservoir No 2. The site is subject to a full planning application for access, landscaping and the erection of 52 new build residential properties, the conversion of the former barn to one dwelling unit and refurbishment of existing residential dwelling unit (53 Chapel Hill).

1.3 This report details the results of the ecological surveys, potential development constraints and legal wildlife requirements. It also details potential wildlife enhancement opportunities at the site which are planned to be incorporated into the scheme.

2. Methodology

2.1 The surveys were carried out by Jeremy James MSc, BSc (Hons), MIEEM, CEnv, Ellen Milner MRes, MA, BA (Hons), MIEEM, Claire Cornish BA, MSc, MIEEM, CEnv, Sally Eaton MA, BSc (Hons), AIEEM, David Fisher, Gemma Howard, BSc (Hons), AIEEM, James Segar BSc (Hons), MSc and Elodie Russier.

Desk Study

2.2 A desk study was undertaken 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 Biodiversity Action Plan (The Lancashire Biodiversity Action Plan) were also consulted.

2.3 Information on protected species records and local wildlife sites was also sought from the Biological Records holder for the area – Lancashire Ecological Records Network (LERN). The site and a 1.5km buffer zone around the site were subject to the data search.

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

Extended Phase 1 Habitat Survey

2.5 The extended Phase 1 survey was undertaken during April and May 2007 by Claire Cornish and Ellen Milner. The weather was fine and dry during the surveys. The timing of the survey was within the optimum period for the survey of vegetation and allowed for an adequate assessment of habitats

present and their potential to support legally protected species. An update to the Phase 1 survey was undertaken in June 2010 by Ellen Milner.

2.6 The survey followed Phase 1 habitat survey methodology (NCC, 1990) and was extended to assess faunal potential. This involves walking the whole site, mapping and describing different habitats (for example: woodland, grassland, scrub). Evidence of fauna and faunal habitat is also recorded (for example droppings, tracks, or specialist habitat such as ponds for breeding amphibians).

2.7 The extended Phase 1 survey is a modified approach to the Phase 1 survey that follows the approach recommended by the Guidelines for Baseline Ecological Assessment (IEA, 1995).

Amphibian Survey Methodology

2.8 There are no ponds on the site. There are two ponds within 250m of the application which were surveyed for great crested newt (and other amphibians). The locations of the ponds are shown in the Phase 1 Habitat Plan, at Appendix B and photographs are shown in Figure 1.

2.9 The amphibian survey methodology followed the guidance in the Natural England Great Crested Newt Mitigation Guidelines, 2001. To determine presence/likely absence, four survey visits using combination of survey techniques were completed, in suitable weather conditions, between mid-March and mid-June, with at least two visits undertaken during mid-April to mid-May.

2.10 Pond 1 (P1 – SD 603 368) is located 205m to the north of the application site and is in a fenced area on the edge of school playing fields of St Cecilia's High School. This is a densely vegetated pond partly within the ownership of Lancashire County Council. The emergent swamp vegetation is dominated by water horsetail with some yellow iris at the margins. This pond was subject to bottle trapping (25 traps), torchlight survey, netting and egg searching.

2.11 Pond 2 (P2 – SD 604 367) is located approximately midway along the eastern edge of an existing landfill site which lies to the north of the application site. It lies approximately 125m from the application site. This pond is heavily shaded by a large stone retaining wall and overhanging mature trees. There are large amounts of tipped household waste within the pond and Japanese knotweed on the banks. Marginal/emergent vegetation is sparse, with only small patches of floating sweet grass and common duckweed present.

2.12 Pond 2 was hazardous and difficult to access due to extremely steep banks, dumped debris and deep water. It was possible to torchlight survey approximately 60% of the shoreline. Approximately eight bottle traps were employed and egg searching was carried out during each survey visit. There was insufficient vegetation for sweep netting and debris within the pond made this technique impractical.

2.13 Amphibian surveys were carried out on 15th May, 30th May 11th June, and 18th June 2007 by Jeremy James (Natural England Survey Licence Number: 20070558) and Ellen Milner (Natural England Survey Licence Number 20063248). All survey visits were carried out in suitable weather conditions.

2.14 The updated great crested newt survey was carried out between mid March and mid June 2010 by Ellen Milner, James Segar and Gemma Howard. The dates of the surveys were 19th May, 2nd June, 21st June and 24th June.

Bat Visual Inspection Methodology

2.15 Two buildings (B1 & B2) are present on the application site, which form the property at No. 53 Chapel Hill. Both buildings were subject to the bat survey. Photographs of the two buildings are shown in Figure 2 and the locations of the buildings are shown in Appendix B. B1 is an unoccupied residential dwelling and B2 is a former barn which was formerly used for ancillary residential purposes and lies to the east of the residential dwelling.

2.16 When assessing the scope of the bat survey reference was given to Natural England's *Bat Mitigation Guidelines* (Mitchell-Jones 2004) and *Bat Surveys, Good Practice Guidelines* (Bat Conservation Trust 2007). According to the BCT *Good Practice Guidelines* the recommended survey effort for (1) low-moderate value sites is 2-3 surveys during March-September and for (2) moderate to high value bat roosts sites is 2-3 surveys during March-September, at least one visit should comprise a dawn re-entry survey.

2.17 Both buildings were subject to an initial daytime scoping inspection during May 2007 to determine the potential bat roost value of the site and the subsequent survey effort likely to be required. As there were a small number of bat droppings on the external surface of B2 and small numbers of moth wings (possible bat feeding remains) found internally in B2 it was considered that further survey was required.

2.18 Subsequently, all of the buildings were subject to detailed internal and external investigations. The aim of these surveys was to check for bat droppings, bat feeding remains (moth wings, insect cases), bat staining and scratch marks which would indicate a roost site. These inspections were with the aid of a high-powered torch (Clu-light 500,000 candlelight power with red filter), ladders, endoscope and close focus binoculars.

Nocturnal Emergence and Activity Survey Methodology

2.19 To further affirm the assessment of bat use and potential, two evening emergence and activity surveys were conducted for each of the buildings. B1 and B2 were surveyed by a two person team on each occasion. The surveys were carried out on 30th May 2007 and 11th June 2007.

2.20 The weather was fine during each survey visit in 2007. The weather was mild with a light breeze in 2008. The surveys were carried out by Dave Fisher (Natural England Licence No 20082691), Jeremy James, Ellen Milner (20091756) and Sally Eaton.

2.21 The emergence survey involved the two surveyors positioning themselves at either side of each building just before dusk to detect any bat activity including emergence from roosts, foraging and commuting. During the dusk activity and emergence surveys, frequency division (Pettersson D230 and BatBox Duet) bat detectors were used. For any bat activity, the time and the nature of the activity e.g. commuting, foraging, emerging etc. was noted.

2.22 A single update activity and emergence survey was undertaken on 3rd June 2008. The 2008 surveys were undertaken by Jeremy James and Gemma Howard.

2.23 Three further bat emergence and activity surveys were undertaken in 2010, on 20th May 2010, 2nd August 2010 and 9th September 2010. The 2010 surveys were undertaken by Ellen Milner, James Segar, Gemma Howard and Elodie Russier. All surveys were undertaken during suitable weather conditions i.e. above 5^{O}C, without heavy rainfall or high winds. Surveyors used Petersson D230, Batbox Duet and ANABAT SD1 detectors.

2.24 During 2010, an ANABAT SD1 detector was also placed within B2 from the 20th September until 23rd September (four nights).

Breeding Bird Survey Methodology

2.25 The breeding bird survey was carried out by David Fisher – an experienced local ornithologist. The survey areas were as follows:

- Area A – area to the north of the application site. An existing landfill site and associated recycling yard.
- Area B – Western section of planning application area.
- Area C – Eastern area of planning application area.
- Area D – Alston Reservoir No. 2 and surrounding apron/grassland including eastern boundary along access track.
- Area E – Nature reserve/conservation wetland and grassland/marsh to the south of Alston Reservoir No 2.

2.26 Birds were recorded according to standard BTO codes. The dates, times and weather during the surveys was as follows:

- 12th May 2011 – Start time 06.30. Bright, sunny 1^{o}C, Light cold south-easterly wind. Cloud cover 2/8. End time 08.10, 8^{o}C, 1/8 cloud cover.
- 15th May 2011 – Start time 06.30, 7^{o}C, Warm, bright and sunny. 2/8 cloud cover. End time 08.00 calm to very light north-easterly breeze.
- 3rd June 2011 – Start time 07.30, Mild, 14^{o}C, bright and sunny, 1/8 cloud cover. End time 09.30, 18^{o}C, light south-easterly breeze.

3. Results

Desk Study

3.1 No statutory wildlife sites (SSSI's, SPA's, SAC's) lie on or within 1.5km of the application site. Three county wildlife sites (Biological Heritage Sites, BHS) lie within the search area (see Appendix C).

- Alston Reservoirs BHS is adjacent to the southern edge of the application site. The site comprises two neighbouring reservoirs located to the south-east of Longridge. The site is of both ornithological and botanical importance. The reservoirs support a high diversity and good numbers of wintering wildfowl. Wildfowl species include mallard, pochard, tufted duck, goldeneye and goosander. Non-wildfowl species include lapwing, black-headed, lesser black-headed and common gulls. The steeply sloping grass embankments surrounding the reservoirs support species-rich grassland. There has been recent habitat creation within Alston reservoirs site as part of the decommissioning of one of the reservoirs, which has created new wetland and scrape habitats, of particular value to bird species. This site forms a complex of wetland sites, which encompasses Spade Mills BHS and Grimsargh Reservoirs.

- Spade Mill Reservoirs is over 1km to the north-east of the application site. However, its ecological interests are connected to Alston Reservoirs. The site comprises two adjacent reservoirs situated on the eastern side of Longridge. The site is of ornithological interest. In winter, birds occurring at the reservoirs include goldeneye, tufted duck, lapwing, snipe, black-headed, common and lesser black-backed gulls. In summer the reservoirs are valuable for breeding birds when water levels are low. Birds use these two reservoirs in conjunction with the nearby Alston Reservoirs BHS.

- College Wood BHS is classified as ancient semi-natural woodland. This site lies over 1km to the east of the planning application boundary.

3.2 The data search from Lancashire Environmental Record Network retrieved numerous records of flowering plants and birds. There are also numerous records of great crested newts (*Triturus cristatus*), in the 1.5km search area surrounding the site. Appendix C shows the BHS locations and great crested newt records for the search area.

3.3 Bowland Ecology Ltd has completed previous survey work in the area which confirmed great crested newts to be present within ponds to the south of Alston Reservoir No 2. More detail is given within the amphibian results section below.

3.4 There are National Biodiversity Network (www.nbn.org.uk) records for great crested newt (*Triturus cristatus*), common toad (*Bufo bufo*), brown hare (*Lepus europaeus*), red squirrel (*Sciurus vulgaris*), otter (*Lutra lutra*), west European hedgehog (*Erinaceus europaeus*) and common pipistrelle bat (*Pipistrellus pipistrellus*) from the 10km square in which the site lies (SD53). There are also very dated records of adder (*Vipera berus*) and grass snake

(*Natrix natrix*) for the 10km grid square. Of these records the site only includes potential habitat for great crested newts, common toad, hedgehog and bats.

3.5 Lowland meadows are the only UK Biodiversity Action Plan Priority habitats recorded as present (Natural England's 'Nature on the Map'). This habitat was found within the 1.5km search area at Alston Reservoirs. Ancient and semi-natural woodland/ and ancient replanted woodland are present at College Woods BHS, to the south-east of the site.

Vegetation Description from Field Survey

3.6 The site consists of a single plot of land which is an area of grassland south of Chapel Hill ((B6243). The plot lies immediately north of Alston Reservoir No. 2 (BHS). Habitats within the application site are grassland, buildings, semi-mature and mature trees, tall ruderal vegetation and scrub. The Phase 1 target notes are given at Appendix A and the corresponding plan is given at Appendix B.

Semi-improved Grassland

3.7 The main habitat at the site comprises two fields of sheep grazed semi-improved neutral grassland. The western field (Target Note 1) is an undulating area of grassland with some patches dominated by compact rush. Species within the grassland include sweet vernal, cock's-foot, common knapweed, meadow vetchling, ribwort plantain, meadow buttercup, red fescue, Yorkshire fog, field woodrush, common mouse-ear, creeping thistle, meadow buttercup, bush vetch and common bent grass. There are patches of soft and hard rush, particularly to the west of the field where it is lower lying. There are patches of common nettle and creeping thistle around the margins. In the area around the building the grassland supports more ruderal species including broad leaved dock, Yorkshire fog, cock's-foot, daisy, bush vetch, creeping buttercup and creeping thistle.

3.8 The eastern field (Target Note 3) is similar but also supported common sorrel and a small amount of pignut.

3.9 A small area of coarse grassland was present south of Chapel Hill (Target Note 5). This area was species poor and consisted of meadow foxtail, hogweed, bramble and cleavers. This area is a mix of open areas and scrub. The sward is short and there are some areas of cattle poaching and patches of creeping thistle.

Plantation Woodland

3.10 The plantation (TN2) is along a slope between No. 53 Chapel Hill and semi-improved pasture. This belt of trees is dominated by sycamore with a field layer of common nettle, cock's-foot, cow parsley, cleavers, rough meadow-grass and lesser celandine. There are also smaller numbers of ash, holly and hawthorn. There are small areas of ruderal vegetation beneath the canopy, although the ground is fairly bare. There is some bluebell, herb Robert and welsh poppy. The trees in this area are semi-mature and in good condition i.e. no splits of cracks. Some of the trees have small areas of flaking bark.

Scrub and Hedgerow

3.11 A short stretch of arborescent hedge dominated by hawthorn with ash and hazel occurs along the southern edge of Chapel Hill (B6243) (Target Note 4).

There is also some sycamore and around the base is bramble, hogweed, ivy and cow parsley. This feature is fenced from the adjacent road.

Individual Trees

3.12 A roadside tree line comprising Norway maple, hawthorn, privet, Prunus sp., ash, elder, holly and hazel lies at TN6. None of the trees are mature. There is a fence associated with the tree line. At the base of the tree line is rank grassland and tall ruderal vegetation with common nettle, cleavers, cow parsley and hedge woundwort. Some dog's mercury was also noted.

3.13 Mature trees are present at TN7 alongside an old track leading to Alston Reservoir No 2. These are sycamore and the track is now overgrown with grasses and tall ruderals including common nettle, cow parsley, dandelion, false oat grass and cleavers. There is also limited dog rose scrub.

3.14 Individual trees of willow, sycamore, and hawthorn along with bramble scrub lie within a walled compound at TN9.

3.15 Semi-mature trees and dense scrub are also present at TN10, with elder, poplar, oak and bramble noted within this unmanaged area.

Tall Ruderal Vegetation

3.16 TN8 is a fenced area which has become tall and unmanaged, supporting tall ruderal vegetation and scrub. Species noted were cleavers, rosebay willowherb, common nettle, meadow foxtail, hogweed, creeping thistle, common male fern, tufted hair grass, creeping buttercup. The scrub species include bramble, hawthorn, elder, hawthorn and oak saplings. There is a wooded section to the north of this area which supports beech, sycamore, holly, oak and rowan. There is a hawthorn hedge which delineates this area from the adjacent garden. The ground flora comprises false oat grass, creeping buttercup, herb Robert, common male fern and hart's tongue fern.

Buildings

3.17 The buildings are described below within the bat survey results section.

Amphibian Survey Results

3.18 Pond 1 is densely vegetated with water horsetail and had little open water. Additional aquatic and marginal plant species included marsh bedstraw, water starwort, floating sweet grass and common duckweed. Pond invertebrates included case bearing caddis larvae, pea mussel, pond snail (*Lymnaea glabra*) and ramshorn snail. Surrounding vegetation included coarse grassland and scrub (hawthorn and bramble). The pond supports a large population of stickleback which predate upon great crested newt eggs and larvae. Smooth newt/palmate newt eggs were found folded into floating sweet grass in the edge of the pond (near the former dipping platform). Common frog was also present. The pond is clearly suboptimal for great crested newt breeding.

3.19 Pond 2 is a heavily shaded pond with little emergent vegetation of note. Small patches of floating sweet grass were present on the edge of the pond and some lesser duckweed was present on the pond surface. Small numbers of smooth newt were observed during the survey and small numbers of smooth newt eggs were found folded into floating sweet grass leaves. No more than one or two individual smooth newts were observed during each survey event. Common frog was also present at this pond.

Figure 1 – Pond 1 (left) showing dense water horsetail and yellow flag iris and Pond 2 (right) showing tipped waste.

3.20 The survey did not confirm the presence of great crested newt in the two ponds within 250m of the site. Records of great crested newts to the south of the site are available from previous surveys conducted by United Utilities and Bowland Ecology Ltd (2006 and 2009). There are numerous ponds with existing great crested newt records from a pond complex to the south of Alston Reservoir No 1 and a single record of great crested newt from one of the newly created scrapes to the south of Alston Reservoir No 2. The closest of the existing records is approximately 530m to the south of the application site.

3.21 Given the large number of stickleback and dense vegetation at Pond 1 and dense shading and lack of emergent vegetation at Pond 2 it is considered that great crested newt is absent from the site. The site lies beyond Chapel Hill from the site, which is a busy road with traditional kerbs and gully pots.

Bat Visual Inspection and Emergence Survey Results

3.22 The two buildings subject to the bat survey are referred to as B1 and B2 (see Figure 2).

Figure 2 - B1 (left) residential dwelling and B2 (right) former barn.

3.23 Building 1 is an unoccupied residential dwelling. The external walls of the building are rendered and the building has a pitched slated roof. A careful

internal investigation was carried out. The house is extended into the roof apex and there are no significant roof voids. The narrow edges of the roof are converted into lined storage areas which are accessed from the attic rooms. All windows and doors were sealed with steel plates. The under felted, slated roof has ridge tiles and is in a reasonably good state of repair. The condition of the building was noticed to have declined by the 2010 survey, and evidence of vandalism was present.

3.24 Building 2 is a stone built former barn with timber beams supporting the roof. It was most recently used for ancillary residential purposes. The pitched roof is clad with asbestos sheeting. Some of the beams are in a poor state of repair and have split in places. The ridge line of the roof has an approximate north-west orientation. There is debris and discarded materials within the barn which was generally dusty with frequent cobwebs on the walls.

3.25 Table 1 is a summary of the results of the internal and external examinations of the building.

Table 1 - Summary of the internal and external examinations for bat use

	External	Internal
	2007	
Building 1	No field signs of bats.	No field signs of bats.
Building 2	Two droppings (pipistrelle indet.) on exterior entrance.	Small number of butterfly wings (predominantly small tortoiseshell) scattered throughout the barn indicating occasional feeding.
	2008	
Building 1	No field signs of bats.	No field signs of bats.
Building 2	One dropping (pipistrelle indet.) on exterior entrance door.	Small number of old butterfly wings scattered throughout the barn indicating occasional feeding.
2010	**2010**	
Building 1	No field signs of bats.	No field signs of bats.
Building 2	Two droppings on the southern wall below the apex of the roof.	Small number of old butterfly wings scattered throughout the barn indicating occasional feeding.

3.26 No bats were seen emerging from the buildings during any of the surveys in 2007 or 2008. In the 2010 survey, two common pipistrelles were observed to emerge from Building 1 during the second survey. No emergences were observed in either the first or the third survey for this building. A possible emergence from Building 2 was recorded during the first 2010 visit. No bats emerged from Building 2 in the second survey but two pipistrelles emerged from B2, with the two bats later re-entering the building.

3.27 With regard to the ANABAT static detector which was placed in the barn building (Building 2) for four nights during September 2010, the results were as follows (See Appendix D for registrations):

- 20.09.2010 – two bat registrations at 19.02 and 19.21 both pipistrelles. The peak echolocation frequency was between 49 and 50Khz and therefore it is not possible to accurately determine whether these were common or soprano pipistrelles.
- 21.09.2010 – Approximately 15 registrations, starting at 19.26, all pipistrelle, but echolocating at a peak frequency of 50KHz.

- 22.09.2010 – no bat registrations.
- 23.09.2010 – no bat registrations.

3.28 In terms of bat activity, this was considered to be at a low to moderate level during all surveys and was strongly focussed towards features such as the tree line at TN 7, the roadside band of vegetation at TN6 and the strip of planting woodland/line of mature trees at TN2. It is likely that bats are drawn to the good foraging grounds associated with Alston reservoirs. Bat droppings were found at St Lawrence's Church to the east of the site which might provide a nearby roost site. In addition, there are numerous residential dwellings and other buildings (schools) in the locality which offer additional roosting potential. Table 2 is a summary of the bat emergence and activity survey at the site.

3.29 Overall, it is considered that both Buildings 1 and 2 support small, transitional summer roosts. Building 2 also provides shelter for occasional feeding by bats. It appears that bats are light sampling within the barn before emerging. The bat roosts probably support a relatively low number (<10 individuals) of *Pipistrelle* sp. bats.

3.30 Although the buildings support small, transitional summer roosts, because they are unoccupied, and therefore unheated, they are likely to be less desirable for breeding [pipistrelles] than the surrounding occupied/heated buildings.

Table 2 - Summary of bat activity survey results

Building	Visit 1	Visit 2	Visit 3
B1 & B2 (2007)	First bat arrived at 21.39 foraging to the south of the barn (B2). Main feeding activity occurred from 21.45 with up to 20 45Khz pipistrelle arriving from the west before departing eastwards towards Chapel Brow.	Foraging activity commenced from 21.52 with several 45Khz pipistrelles foraging around the garden. Foraging ceased at 22.40. All of the bats departed from the site and headed to the east.	N/A
B1 & B2 (2008)	First bat arrived at 21.37 foraging to the south of the barn. Main feeding activity occurred from 21.45 with up to 5 45Khz pipistrelle arriving from the west before departing eastwards and south towards Chapel Brow and Alston Reservoirs respectively. Bats were observed commuting along hedgerows along road from west. A single possible myotid was recorded flying over the site at approximately 22.00 towards Alston Reservoirs.	N/A	N/A
B1 & B2 (2010)	The first bat was recorded at 21.45, flying over the site travelling from the west. Semi-continuous *Pipistrelle* sp. feeding activity was recorded to the south of the buildings between 21.54 to 22.25. There was a possible emergence from B2 at 21.59. A noctule pass was recorded at 22.46.	The first bats recorded were two *Pipistrelle* sp. emerging from the top of the southern wall of B1, from a missing roof tile at the south western roof edge. The bats emerged at 21.23 and 21.27. Semi continuous feeding was recorded, around the buildings and to the south and west, between 21.35 and 22.28. Both *Pipistrelle* sp. and *Myotid* sp. were recorded.	The first bats recorded were two common pipistrelle bats, emerging from B2. The bats emerged from the top of the south wall, close to the roof apex at 19.52 and 20.03. Semi continuous feeding was recorded between 20.10 and 20.53. At 21.09 and 21.10 two common pipistrelle bats re-entered the roost at the same point of emergence earlier in the survey. Noctule passes were recorded at 20.33 and 20.52

Breeding Bird Survey Results

3.31 The full breeding bird survey results are given in Table 3 below and within Appendix E.

3.32 Within the proposed application site (Areas B and C), the breeding bird habitats are essentially restricted to the trees and scrub. The site provides breeding and foraging habitat for most common species of birds normally associated with gardens and woodland edge. Blackbird, blue tit, chaffinch, coal tit, dunnock, goldfinch, great tit, house sparrow, magpie, mistle thrush, pied wagtail, robin, song thrush, swallow, woodpigeon and wren were noted. No ground nesting species were noted, nor was this area observed to support waders and wildfowl using the adjacent Alston Reservoir. The proposed application areas supported the lowest total number of species in the survey area.

3.33 The scrub and woodland that has developed in area 'A', to the north of the application site, provides breeding and foraging habitat for most common species of birds normally associated with gardens and woodland edge, including willow warbler and garden warbler. The latter species appeared to be holding territory but was only observed on a single visit and it was concluded that this individual was just passing through on migration (peak passage in mid-May).

3.34 Similarly, a whitethroat was singing in scrub along the east boundary of Alston Reservoir No. 2 on 15th May but was not heard the following visit; it was likely to be a passage bird only at this location.

3.35 Alston Reservoir No.2 (Area D) is a County Wildlife Site designated on the basis of ornithological interest. During the survey no breeding birds associated with the water's edge/stone apron were noted, although a pair of great crested grebes were present during two visits and are likely to be nesting in the area. The reservoir provides safe roosting for lesser black-backed gulls and aerial feeding for swifts and hirundines.

3.36 The nature conservation area (Area E) was the area of most ornithological interest during the surveys with several lapwing territories (4 – 5 pairs) and a probable breeding little ringed plover (1 pair).

Table 3 - Summary of breeding bird survey results (species likely to be breeding are shown in bold).

SPECIES:	Area to north of Chapel Hill	Application Site		Alston Reservoir No 2.	Area to south of Alston Reservoir No 2.
	Area A	Area B	Area C	Area D	Area E
Blackbird					
Black-headed gull					
Blue tit					
Canada goose					
Carrion crow					
Chaffinch					
Coal tit					
Collared dove					
Common sandpiper					
Coot					

Dunnock					
Garden warbler					
Goldfinch					
Great crested grebe					
Great tit					
Greenfinch					
House martin					
House sparrow					
Kestrel					
Lapwing					
Lesser black-backed gull					
Linnet					
Little ringed plover					
Magpie					
Mallard					
Mistle thrush					
Mute swan					
Oystercatcher					
Pied wagtail					
Redshank					
Reed bunting					
Robin					
Sand martin					
Song thrush					
Starling					
Swallow					
Swift					
Whitethroat					
Willow warbler					
Woodpigeon					
Wren					
No. species in each area:	17	12	6	13	16
Likely breeding species:	**26**				
Total species for survey area:	41				

4. Evaluation

4.1 The evaluation does not consider habitats below parish level value (e.g. stands of tall ruderal vegetation). No statutory wildlife sites will be affected by the development, as none lie on or within 1.5km of the site. The evaluation is based on a geographical scale of reference: National, Regional, County, District, Local, within zone of influence only (site value only). This is the approach advocated by the Institute for Ecology and Environmental Management.

Non-statutory Wildlife Sites (BHS)

4.2 Alston Reservoirs BHS borders the southern boundary of the site and this BHS is considered to be of **county level value** due to its ornithological and botanical interest. Recent decommissioning of one of the reservoirs by United Utilities included the creation of additional wetland habitats, such as scrapes which are to the west of Reservoir No 1 and the south of Reservoir No 2. This area has become an important area for birds, and for great crested newts.

4.3 Spade Mills BHS is also of **county level value** although this lies further from the site, though is likely to be used by wildlife as a complex with Alston Reservoirs BHS and Grimsargh Reservoirs.

4.4 College Wood BHS, whilst considered to be of **county level value** is given no further consideration due to the distance from the site, and lack of connecting habitat.

Vegetation

4.5 The grassland to the south of Chapel Hill is of the most interest. Pignut (*Conopodium majus*) is present in small amounts in the grassland. Whilst none of the grassland is particularly species rich they represent areas of **local** habitat interest.

4.6 The woodland and plantation are not particularly species rich or good examples of their habitat type. However, they do represent areas of semi-natural habitat with structural diversity (in comparison to grassland) which is of **local** wildlife interest.

4.7 Neither of the off-site ponds support diverse or good examples of emergent vegetation. The school pond (Pond 1) suffers from a lack of management and the pond on the edge of the landfill (Pond 2) suffers from fly tipping and dense shading. However, they provide additional habitat diversity which is of **local** wildlife value.

Amphibians

4.8 With regard to amphibians the detailed surveys have shown that great crested newt is not present and only small numbers of common amphibians such as smooth newt and common frog are present. Whilst the site does provide some sub-optimal terrestrial habitat for amphibians, it lies beyond Chapel Hill from the site, which is a busy road with traditional kerbs and gully pots (i.e. a barrier to dispersal). The value of the site for amphibians is considered to be **within the zone of influence only.**

Bats

4.9 Buildings 1 and 2 were found to support small, transitional summer roosts for common pipistrelle bats. Building 2 also provided an occasional sheltered feeding site for pipistrelle sp and possibly for light sampling/pre-emergence flight. Moderate numbers of pipistrelle bats were recorded foraging amongst gardens and along hedgerows within and close to the development sites and some of the linear features are considered to be locally valuable commuting corridors for the bat population.

4.10 According to the Bat Mitigation Guidelines (2004) feeding sites of common species are considered to be of low conservation significance (Page 39, Figure 4). Small numbers of common species such as pipistrelle bats are also considered to be of low conservation significance, according to this guidance.

4.11 Due to the presence of sheltered feeding areas, bat foraging and commuting habitat it is considered that the site is of **local** level value for bats.

Ornithology

4.12 The site supports areas of scrub and mature trees which support common species of nesting bird. Of the species recorded within the planning application boundary, house sparrow and song thrush are listed on the BTO/RSPB red list of birds of high conservation concern, and mistle thrush and swallow are listed on the amber list of birds of medium conservation concern. The site itself is considered to be of importance **at the local level.**

4.13 However, the site lies adjacent to habitats which are designated on the basis of their ornithological value, which provide significant habitat for wildfowl and waders which use the extensive habitats at Alston Reservoir and Spade Mill Reservoirs BHS. Little ringed plover, which were recorded as probably breeding to the south of Alston Reservoir No. 2 are included on Schedule 1 of the Wildlife and Countryside Act, 1981 which gives them an enhanced level of protection, which includes disturbance whilst breeding. Overall the habitats to the south of the application site are considered to be of **county** value for birds. Habitats within the application site are not considered to be important for waders and wildfowl using Alston Reservoirs Biological Heritage Site.

5. Impact Assessment

Proposed Scheme Details

5.1 The proposed scheme is for full planning permission for access, landscaping and the erection of 52 new build residential properties, the conversion of the former barn to one dwelling unit and refurbishment of existing residential dwelling unit (53 Chapel Hill). The proposed scheme is shown in Appendix F and comprises the following;

- A residential development comprising 1.456ha.
- Public open space and habitat creation of 1.295ha.
- Retention of mature trees wherever possible, including the mature tree line which runs north-south through the centre of the site (Target Note 7) and the tree line to the south of the existing buildings (Target Note 2).
- Creation of a new water feature in the southern part of the site, surrounded by an area of habitat creation (publicly accessible).
- Creation of a footpath network.

Potential Impacts on Statutory and Non-statutory Wildlife Sites

5.2 There will be no impact on statutory wildlife sites as a result of the development as no statutory wildlife sites lie on or within 1.5km of the site. Impacts beyond this distance are considered very unlikely.

5.3 Alston Reservoirs BHS which borders the southern boundary of the site is considered likely to be impacted by the proposals, if unmitigated. This could potentially be impacted by during the construction phase by noise, lighting, vibrations and dust. The most sensitive receptor to these impacts is considered to be the ornithological interest of the site, which is one of the designating features. The severity of the impact would be affected by the time of year and the duration of works.

5.4 During the operational phase the BHS could be impacted by increased visitor pressure, particularly given that new footpaths are proposed. This increased visitor pressure could cause increased disturbance, particularly due to noise and dogs. In addition, noise from the adjacent residential development could impact upon the ornithological value of the site. Another potential operational impact is light spillage from the proposed development onto the adjacent reservoir. This could potentially affect the ornithological interest at the site and other fauna using the site such as bats.

5.5 In terms of the potential response to disturbance, birds commonly move away from human activities such as recreation and this response can have adverse impacts on feeding success, range use, reproduction, survival and abundance. Two measures of disturbance are often used: the alert distance (AD) is the distance between the source of disturbance and the animal at the point where the animal changes it's behaviour in response to the approaching disturbance source, and the Flight Initiation Distance (FID) which is the point at which the animal flushes or otherwise moves away from the disturbance source. Different species vary in their responses to disturbance and some may become habituated whilst others will continue to be affected.

5.6 Spade Mills BHS is less likely to be impacted by the proposed scheme due to the distance from the site. However, due to the connections between this BHS and Alston Reservoirs BHS (and also to Grimsargh Reservoirs) there is the possibility that it may experience 'knock on effects'. For example, if birds are displaced from Alston Reservoirs BHS, they may use Spade Mills BHS as an alternative, therefore increasing the use of this site by certain species.

5.7 College Wood BHS lies distant from the site, separated by roads and built up areas and is therefore unlikely to be affected by the proposals.

Potential Impacts on Vegetation

5.8 The main loss of habitat as a result of the development will be semi-improved neutral grassland. There will also be the loss of small areas of scrub, tall ruderal vegetation and young and semi-mature trees. The main loss of habitat will be grazed semi-improved neutral grassland. This is considered to be a minor adverse impact.

5.9 Mature trees will be retained wherever possible. However, there will be some tree losses, discussed in more detail in the Arboricultural Impact Assessment. To summarise, five trees and two sections of hedgerow require removal to facilitate development, and two trees and a section of hedgerow are recommended for removal for non-development reasons by the aboriculturalist. The following losses will occur (tree number references are from the arboricultural assessment);

<u>Losses to facilitate development;</u>

- T1 – Sycamore, semi-mature, located within the field at TN5.
- T3 - Ash, early mature, located within the boundary at TN4.
- T11 - Sycamore, semi-mature, located within the mature tree line at TN7.
- T12 – Sycamore, early mature, located within the mature tree line at TN7.
- T45 – Ash, early mature located within the roadside boundary at TN6.
- H2 – Hawthorn, ash, hazel and sycamore hedgerow – TN4
- H3 – Hawthorn, ash, holly, elder, wych elm, TN6.

<u>Losses due to arboricultural reasons;</u>

- T25 – Sycamore, young, located along the southern boundary wall.
- T26 - Sycamore, young, located along the southern boundary wall.
- H1 – Remnant hawthorn hedgerow, located within the field TN5.

5.10 The line of mature trees running north south through the centre of the southern parcel will be retained, with the exception of two trees (T11 and T12) as discussed above, required to allow the construction of an access road.

5.11 Habitats will also be created as part of the development which will attract wildlife. Planting will use native species (local provenance wherever possible). The landscaping plan at Appendix G shows the proposed habitat creation measures.

5.12 In addition to planting to mitigate for the tree and hedge losses, which exceed those lost, an area of habitat and public open space is planned for the eastern

part of the site. No development is to occur in this area. Here new trees will be planted and species rich grassland will be created using native species of local provenance.

5.13 A water feature will also be created within this area. This will have an attenuation function, and whilst it is acknowledged that such pond types are not optimal for wildlife, careful design will incorporate features to maximise the biodiversity value. This will include maximising the length of bank i.e. edge habitat and creating a varied bank profile, with shallower areas facilitating areas of wetland habitat to develop by creating a wide drawdown zone. This is key to creating wildlife rich drainage ponds, as diverse communities can flourish in the shallows, even with poor water quality. Marginal aquatic planting will use native species and avoid problematic species such as great reedmace.

5.14 An area of greenspace to either side of a planned footpath along the southern boundary of the southern parcel (along the edge of the reservoir). Tree and scrub planting in this area is restricted due to presence of a water main and therefore this area will be used to create species rich grassland. Swales may be created, though this is dependant on further detailed hydrological assessments).

Potential Impacts on Amphibians

5.15 Both ponds (P1 and P2) are off site and therefore there will be no loss of aquatic habitat at the site. There could therefore be the loss of terrestrial habitats for a small number of common amphibians e.g. smooth newt and common frog which is a negative impact of the scheme. However, this is considered to be a very low impact, given the low number of amphibians within the ponds and due to the presence of Chapel Hill which is a busy road with traditional kerbs and gully pots (i.e. a barrier to dispersal). The four widespread species of amphibian, the smooth and palmate newts, the common frog and common toad, are protected only by Section 9(5) of the Wildlife and Countryside Act 1981. This section prohibits sale, barter, exchange, transporting for sale and advertising to sell or to buy.

5.16 A new water feature will be created in the southern parcel as discussed above, which will provide new breeding opportunities for amphibians. Features required for amphibian ponds will be incorporated into this feature. The creation of this water feature is a positive impact of the scheme.

5.17 Great crested newts are known to be present to the south of Alston Reservoir No 1 and a single record of great crested newt from one of the newly created scrapes to the south of Reservoir No 2. The closest of the existing records is approximately 530m to the south of the application site and therefore, impacts to this amphibian population are considered extremely unlikely.

Potential Impacts on Bats

5.18 The two buildings (B1 and B2) on the site are to be retained and converted into residential dwellings. These buildings have been shown to be used as transitional summer roosts small numbers of common bat species, one of the buildings (B2) is also used as an occasional sheltered feeding site.

5.19 The change of use of the two buildings is likely to lead to the loss of these roost sites and feeding site if unmitigated, as conversion will lead to roofing works on both buildings and the loss of open space within the barn at B2. The

loss of transitional summer roosts and feeding sites of common bat species is considered to be a low scale of impact according to the Bat Mitigation Guidelines (Table 6.1, Page 37). There is a small possibility of killing and injury to bats, if they are present within the buildings at the time of works if undertaken without due care and attention.

5.20 There is however, the possibility of incorporating bat friendly building design into the converted buildings, which would allow roosting crevices and access points to be maintained. It is likely that once in use (i.e. occupied and heated) the buildings are likely to be of increased value to the local bat population.

5.21 None of the trees requiring removal are considered to have potential as bat roosting habitat. All are semi-mature or early mature and do not exhibit features which are typically used by roosting bats.

5.22 Habitats currently present at the site will be changed into a residential landscape. It is likely that the gardens of residential properties will provide feeding opportunities, as will the new water feature in the southern parcel.

5.23 In terms of commuting habitats there are a number of linear features which may be used as foraging and commuting routes. These include the edge of the reservoir along the southern edge of the site, a tree line running north south (TN7). These features will be retained. A line of vegetation along the northern edge of the site (TN6) was also used as a commuting route. Whilst this does require removal, it will be replaced with a hedgerow and associated trees further into the site. Therefore no long term impacts are envisaged in terms of loss of features.

5.24 A potential impact of the scheme is light spillage onto the reservoir, which could impact upon bat foraging and commuting.

Potential Impacts on Ornithology

5.25 The impacts with regard to the ornithological value of Alston Reservoirs BHS is discussed above and includes disturbance impacts during both the construction and operational phases. This is considered to be the major ecological impact of the scheme, though it is acknowledged that existing residential properties do border the reservoir in other areas.

5.26 Breeding bird habitat in the form of trees and scrub will be lost due to the development. This will be a negative impact but will be temporary, as new breeding bird habitat will be created as part of the development and also within the gardens of residential properties. The landscaping plan indicates that the amount of potential breeding bird habitat will be increased post development.

5.27 If carried out at an inappropriate time of year, the removal of habitat has the potential to kill or injure breeding birds which would be illegal given the protection afforded breeding birds under The Wildlife and Countryside Act, 1981, as amended.

5.28 With regard to the presence of little ringed plover which were potentially breeding in the habitat creation area to the south of Alston Reservoir No 2, this lies some distance from the application site and therefore impacts are considered extremely unlikely. This species is listed on Schedule 1 of the Wildlife and Countryside Act, 1981 as amended which means it is legally protected from disturbance whilst breeding.

6. Mitigation

6.1 When considering development of the site reference has to be given to: (a) compliance with legislation and planning policy in relation to wildlife and (b) opportunities for wildlife enhancement through good design. Table 3 details the mitigation requirements and enhancement recommendations for the site).

6.2 National (PPS9), Regional (Regional Spatial Strategy), County (Structure Plan, supplementary planning guidance) and local planning policies requires consideration of ecological aspects in making planning decisions. As well as avoiding and reducing impacts, national planning policy seeks to maximise opportunities for building-in beneficial biodiversity features as part of good design.

6.3 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*'.

6.4 The mitigation requirements are tabulated below (Table 4) which detail mitigation against each identified ecological receptor.

6.5 Ecological surveys have a limited shelf life and as such, if a significant delay elapses before on-site works begin e.g. more than two years, repetition of the protected species surveys is likely to be required, with a subsequent amendment of the impact assessment and mitigation, if the situation has changed.

6.6 The mitigation requirements and recommendations for enhancement for the site are presented in the table below. Given that the mitigation and enhancements advice is implemented, there is no material reason on ecological reasons why planning permission should not be granted.

Table 4 - Consideration of legal and planning policy requirements and opportunities for enhancement for wildlife in relation to potential development proposals at the site.

Feature	Legal Status/Planning Status	Mitigation and Recommendations for Enhancement
Alston Reservoirs BHS	Biological Heritage Site (County Wildlife Site) protected by planning policy. Designated on the basis of ornithological and botanical interest.	*Construction:* Stringent control measures will be implemented during construction to ensure direct or indirect impacts to the Alston Reservoirs County Wildlife Site do not occur. The construction site will adopt the good working practices outlined in the Environment Agency Pollution Guidelines (PPG5). In addition, measures to reduce dust deposition will be employed as follows; wheel-washes, dedicated haul route and damping down/bowsers. Machine silencers will be used for machinery in order to reduce noise disturbance. No works will take place after dark. *Operation:* The tall stone wall which lies between the application site and the reservoir will be retained and supplemented with a hedgerow. This will form a definite boundary in terms of pedestrians, which will prevent unauthorised entry to the reservoir edge, but will also provide a visual screen. A buffer zone along the southern boundary of the development is incorporated in the form of a landscaped area and footpath – the landscaping plan is shown in Appendix G. The buffer zone is to be used for habitat creation - species rich grassland will be created. A system of swales is also under consideration, though the detailed design will be dependant upon the restrictions created by the presence of a water main, and water levels). This buffer zone varies from a minimum of 12m width to 20m width along the southern boundary of the site. A footpath will be located within this area which will deliver a clear visitor access route which acknowledges the ecological importance of the BHS and the potentially damaging impacts of disturbance. This will be implemented through an information board installed along the path. The lighting scheme design will take into account the potential for impacts of light spillage upon the Biological Heritage Site and fauna which may use this site, particularly birds and bats. This lighting scheme will be in accordance with the Institute of Lighting Engineers (ILE) 'Bats and Lighting' guidance, which is available on the Bat Conservation Trust website. The lighting scheme will be submitted to the County Ecologist for approval prior to implementation.
Habitats	Semi-improved neutral grassland, semi-mature and mature trees, hedgerow and tall ruderal	*Construction:* Temporary Protective Fencing and Ground Protection fencing will be installed to protect mature retained trees, as detailed within the Arboricultural Impact Assessment.

	vegetation.	*Operation:* New areas of planting (See Appendix G) will use native species of local provenance. Planting of new hedgerows and trees will exceed those lost. Planting will be used to establish a landscape buffer along the southern edge of the development site. New wildlife habitats will be created in the form of a new water feature within an area of habitat and open space, which will have a gentle bank gradient, creating a wide drawdown zone, which allows species to flourish within the shallow margins, even if the attenuation function causes water quality to below optimal. It will have a band of vegetation around to create a buffer and perform some filtration function of run-off into the pond. A series of swales is also proposed, although the final design will be dependant upon the restrictions created by the presence of a water main, and water levels. A site management and maintenance plan will be designed to maximise the wildlife interest of all habitat and open space areas. This plan will include the management of the water feature. The management plan will be submitted to the County Ecologist for approval prior to implementation.
Amphibians	The commoner amphibians (common toad, common frog, smooth newt, palmate newt) receive limited protection via The Wildlife and Countryside Act, 1981, as amended. Common toad is a UK BAP species.	*Construction:* Care will be taken during initial site clearance works, with any amphibians found relocated to suitable habitat in the locality which will not be impacted by the works. If any great crested newts are found, works will stop until further advice has been sought from the scheme ecologist. Leaving open excavations overnight will be avoided wherever possible. Where unavoidable, these will have a means of escape e.g. ramped earth at one end, stick/timber plant to allow amphibians and other trapped fauna to exit of their own accord. *Operation:* A new water feature is to be created in the eastern part of the site, which will provide potential breeding habitat for the commoner amphibian species.
Bats	Bats receive full protection under the Wildlife and Countryside Act 1981. They are also protected under the Conservation of Habitats and Species Regulations 2010.	*Construction:* Bat boxes of a range of designs will be installed on mature retained trees. A minimum of 12 bat boxes will be installed prior to the commencement of on-site works. Contractors involved with works to Buildings 1 and 2 will be given a toolbox talk prior to works commencing which will detail the legal protection of bats, main features for identification, including their small size, safety information regarding bites and the risk of Rabies, and the procedure to follow should bats be found during works.

	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. Noctule, soprano pipistrelle and brown long-eared bats are a grouped plan under the UK BAP.	The timing of any works to roofs of Buildings 1 & 2 will be outside of the period May-October when bats are most likely to be present. If works to the roof are undertaken during the period May-October then slates and tiles will be removed by hand, under the supervision of an ecologist with a Natural England bat handling licence. Contractors should be made aware of the possibility of finding bats, be aware of the legislation protecting them and the course of action should bats be discovered, either during supervised or unsupervised works. Access points and roosting spaces for bats will be incorporated into the renovated buildings. Access points will be maintained via the use of 'Morris bat slates' and gaps in mortar and roosting spaces maintained by the use of traditional bitumistic roofing felt. A bat box suitable for installation on buildings (Schwegler 1FF, 1FW or 1FQ) will be installed on B1 and B2. Whilst no trees to be removed are considered to have high bat roosting potential, tree felling should be undertaken with due care and attention. If bats are suspected or discovered works should stop and the scheme ecologist should be contacted for advice. Bats should not be handled unless in imminent danger, and only then with gloved hands. *Operation:* New tree planting will exceed losses and will be native species. The landscape design should include boundary planting of the site to extend existing woodland habitats to enhance bat foraging and commuting habitat. Landscape design should consider including clumps of trees and shrubs within the site layout to attract foraging bats. The lighting scheme design for the site will take into account the potential negative impacts of lighting on roosting, commuting and foraging activity of bats. This will be in accordance with the guidance from the Institute of Lighting Engineers (ILE) available on the Bat Conservation Trust. Light spillage on potential roosting and foraging habitats such as woodland, the reservoir and installed bat boxes will be avoided. The lighting scheme will be submitted to the County Ecologist for approval prior to implementation.
Ornithology	The Wildlife & Countryside Act 1981 gives general protection to all wild birds from killing, injuring or taking; destroying, damaging or taking nests in use or being built; and taking or destroying eggs.	*Construction:* A minimum of 10 bird boxes will be installed on site prior to works commencing. A range of bird boxes of different designs will be installed to cater for different species (open fronted and boxes with access holes of different sizes) on retained mature trees. Machine silencers will be used for machinery in order to reduce disturbance to adjacent Alston Reservoir BHS. No works will take place after dark. Wheel washers and bowsers will be utilised to prevent dust deposition. The required tree and hedgerow clearance will be undertaken outside of the bird nesting season which runs from

	House sparrow, song thrush and are UK BAP species.	March until August. If vegetation is cleared during the nesting season it should be preceded by a pre-clearance nesting bird survey and only continued once declared free of nesting activity by the scheme ecologist. *Operation:* Scrub and hedgerow planting within the new development will exceed that lost (see Appendix G). Planting of seed and berry bearing trees and shrubs (e.g. rowan, hawthorn, hazel, blackthorn, birch, alder) within the landscape design will attract feeding and nesting birds. Planting will use native species of local provenance wherever possible. The lighting scheme design will take into account the ornithological interest of Alston reservoir and potential negative impacts of light spillage on wildfowl and waders, as described above. The lighting scheme will be in accordance with the guidance from the Institute of Lighting Engineers (ILE) available on the Bat Conservation Trust and the lighting scheme will be submitted to the County Ecologist for approval.

References

Bat Conservation Trust (2007). *Bat Surveys, Good Practice Guide*. BCT

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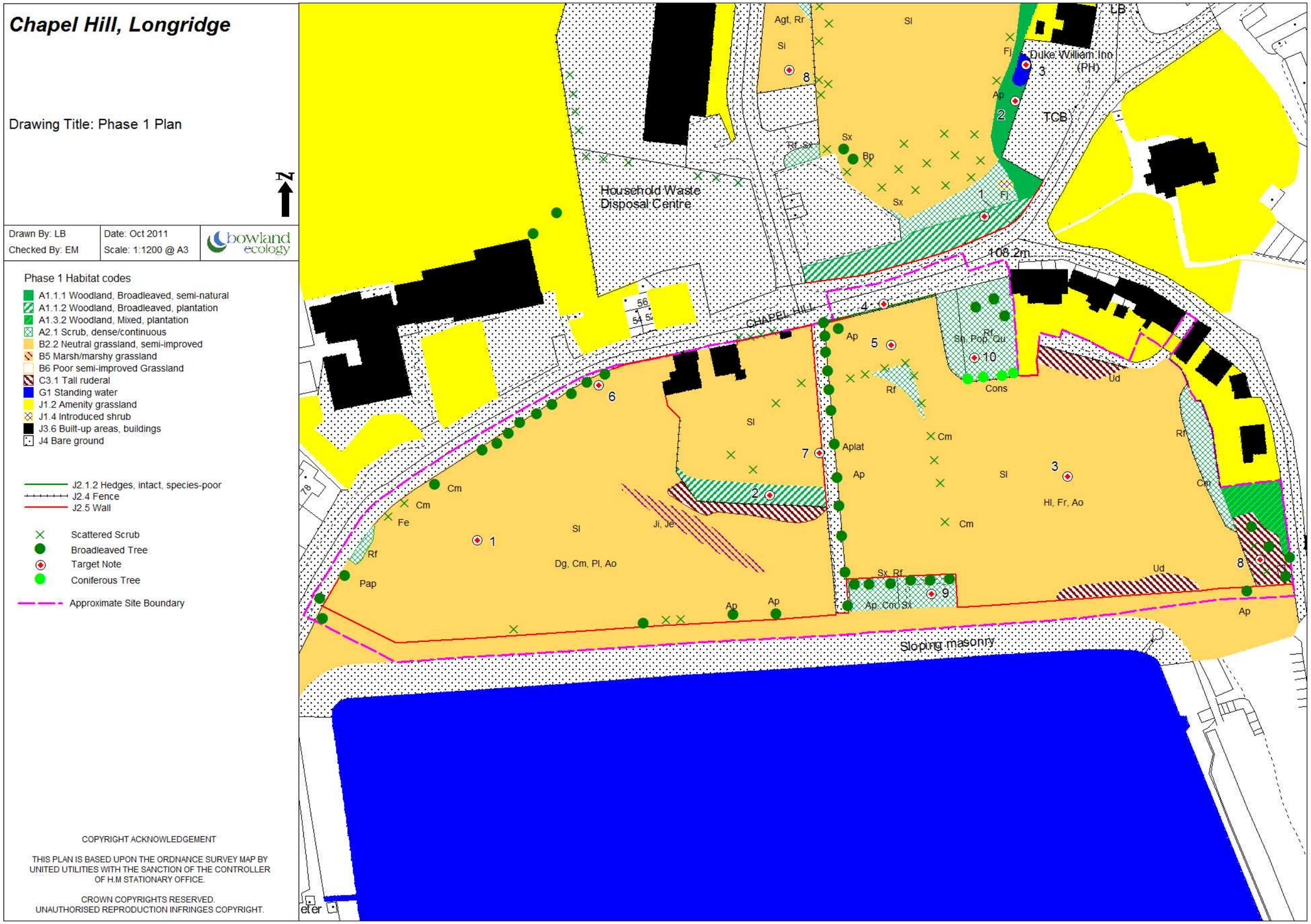
Appendix A - Phase 1 Target Notes

No.	Description
1	Undulating semi-improved sheep-grazed pasture with some areas dominated by *Juncus conglomerata*. Species within the grassland include *Anthoxanthum odoratum, Dactylis glomerata, Centaurea nigra, Lathyrus pratensis, Plantago lanceolata, Ranunculus acris, Festuca sp., Vicia sepium, Luzula sp., Yorkshire fog, Agrostis capillaris, Cerastium fontanum* and occasional *Cirsium vulgaris*. There are patches of *Juncus effusus* and *J.inflexus*, particularly to the west of the field where it is lower lying. There are patches of *Urtica dioica* and *Cirsium arvense* around the margins. In the area around the building the grassland supports more ruderal species including *Rumex obtusifolius*, *Holcus lanatus*, *Dactylis glomerata*, *Bellis perennis*, *Vicia sepium*, *Ranunculus repens* and *Cirsium arvense*.
2	Broad-leaved plantation along slope between farm and semi-improved pasture. Dominated by *Acer pseudoplatanus* with a field layer of *Urtica dioica, Dactylis glomerata, Anthriscus sylvestris, Galium aparine, Poa trivialis* and *Ranunculus ficaria.* There are also smaller numbers of *Fraxinus excelsior, Ilex aquilinum* and *Crataegus monogyna*. There are small areas of ruderal vegetation beneath the canopy, although the ground is fairly bare. There is some *Hyacinthoides non-scripta*, *Geranium robertianum* and *Meconopsis cambrica*. The trees in this area are semi-mature and in good condition i.e. no splits of cracks. Some of the trees have small areas of flaking bark.
3	Semi-improved field with *Alopecurus pratensis, Holcus lanatus, Festuca rubra/ovina., Poa trivialis, Anthoxanthum odoratum* and lesser amounts of *Vicia sepium., Cirsium arvense, Trifolium repens, Cerastium fontanum, Luzula sp., Heracleum sphondylium, Rumex acetosa* and *Anthriscus sylvestris.* There are some large patches of *Juncus effusus* in the damper areas. This grassland is sheep grazed.
4	Arborescent hedge dominated by *Crataegus monogyna* with *Fraxinus excelsior* and *Corylus avellana.* There is also some sycamore and around the base is *Rubus fruticosus* agg. *Heracleum sphondylium, Hedera helix* and *Anthriscus sylvestris*. This feature is fenced from the adjacent road.
5	Coarse sheep grazed grassland of *Alopecurus pratensis, Heracleum sphondylium, Rubus fruticosus, Galium aparine*. A mix of open areas and scrub – providing potential breeding bird habitat. The sward is short and there are some areas of cattle poaching and patches of *Cirsium arvense*.
6	A roadside tree line comprising *Crataegus monogyna, Fraxinus excelsior, Sambucus nigra, Ligustrum* sp, *Ilex aquilinum*, *Corylus avenella* and *Acer platanoides.* None of the trees are mature. There is a fence associated with the tree line. At the base of the tree line is rank grassland and tall ruderal vegetation with *Urtica dioica, Galium aparine, Anthriscus sylvestris and Stachys sylvestris.* Some *Mercurialis perennis* was also noted.
7	An old track leading south to Alston Reservoir no 2. This is lined by mature *Acer pseudoplatanus* trees. The track is now overgrown with grasses and tall ruderals including *Urtica dioica, Anthriscus sylvestris, Taraxacum officinale* agg., *Arrhenatherum elatius* and *Galium aparine.* There is also limited *Rosa canina* scrub.
8	A fenced area which has become tall and unmanaged, supporting tall ruderal vegetation and scrub. Species noted were *Galium aparine, Chamerion angustifolium, Urtica dioica, Alopecurus pratensis, Heracleum sphondylium, Cirsium arvense, Dryopteris filix- mas, Deschampsia ceaspitosa* and *Ranunculus repens.* The scrub species include *Rubus fruticosus* agg., *Crataegus monogyna*, *Sambucus nigra* and *Quercus* saplings. There is a wooded section to the north of this area which supports *Fagus sylvatica*, *Acer pseudoplatanus*, *Ilex aquilinum*, *Quercus* sp. and *Sorbus aucuparia*. There is a *Crataegus monogyna* hedgerow which delineates this area from the adjacent garden. The ground flora comprises *Arrhenatherum elatius*, *Ranunculus repens*, *Geranium robertianum*, *Dryopteris filix-mas* and *Asplenium scolopendrium*.
9	Semi-mature trees and scrub within a stone walled compound. This comprises *Acer pseudoplatanus*, *Crataegus monogyna* and *Salix* sp. with *Rubus fruticosus* scrub.

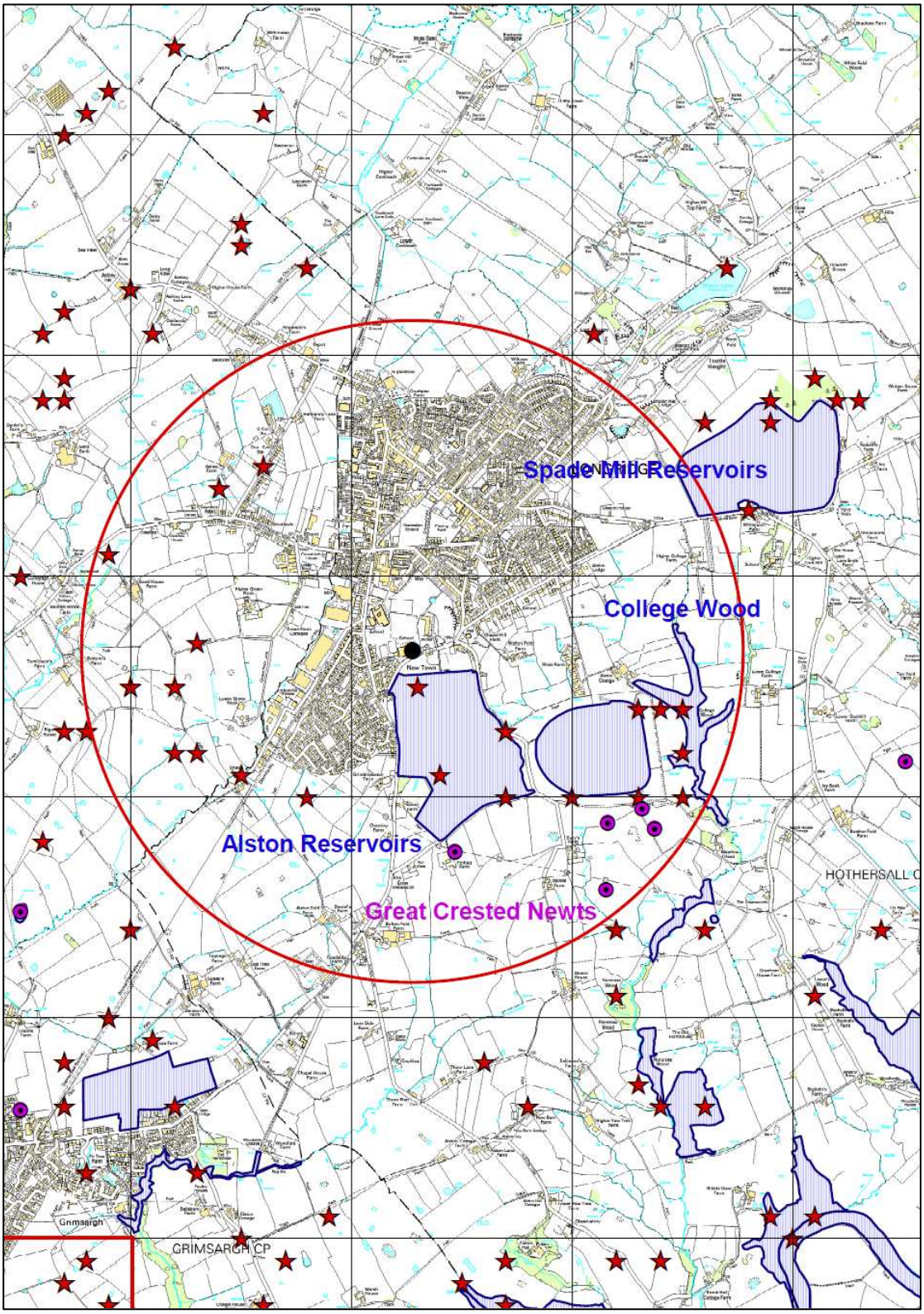
10	An area of dense scrub and mature trees including *Rubus fruticosus* agg., *Sambucus nigra*, *Populus* sp. and *Quercus* sp.

Appendix B - Phase 1 Habitat Plan

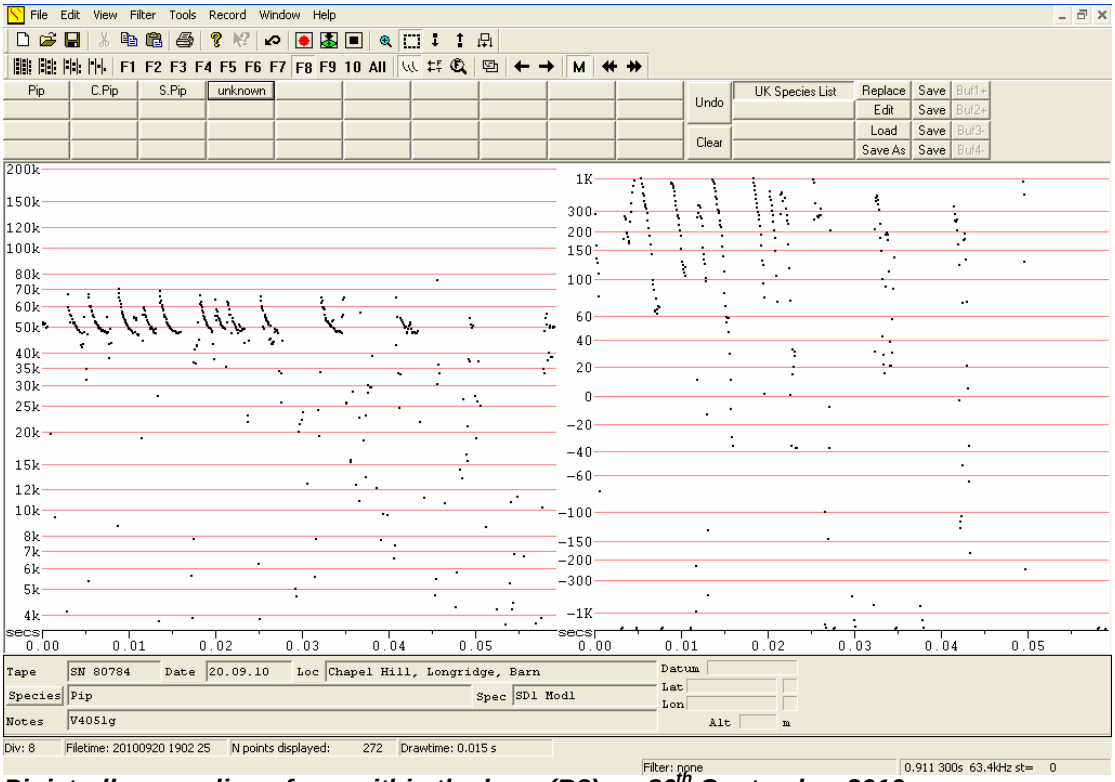


Appendix C – Desk Study Plan

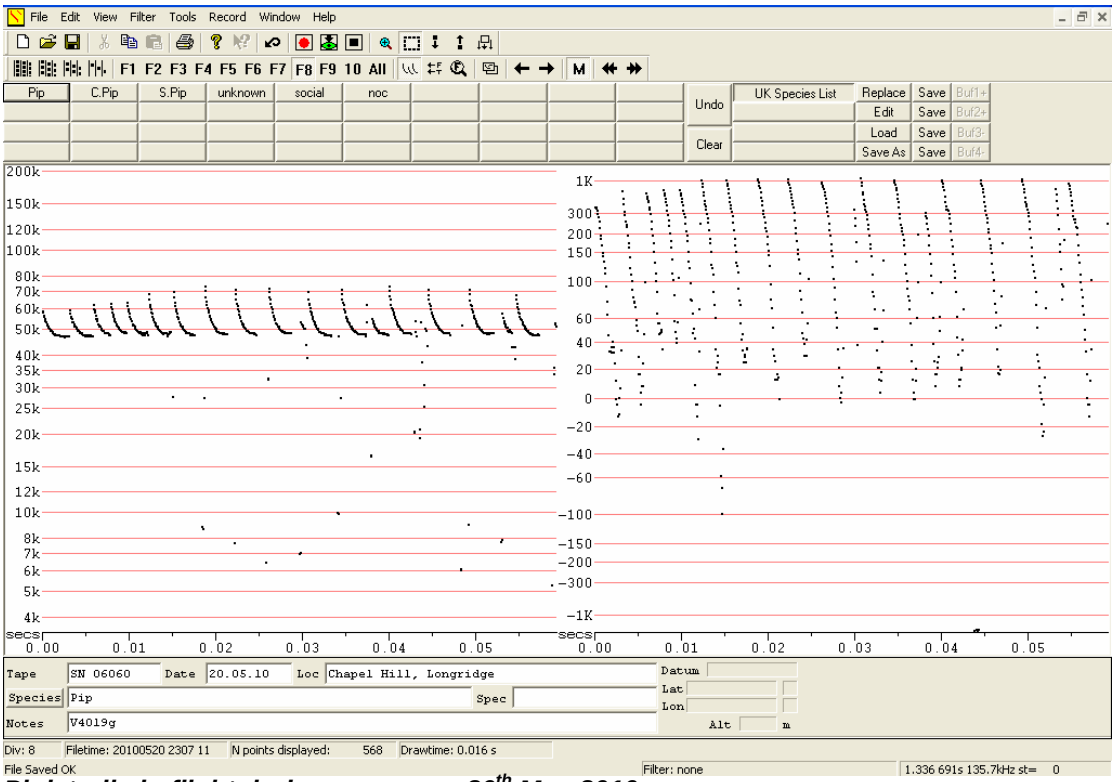
Summary of desk study data from LCC. The application site is marked by a black circle at the centre of the figure. Three BHS sites shown (Alston Reservoirs, Spade Mill Reservoirs, College Woods). Records for great crested newts are purple dots. The red stars do not relate to protected or notable species records.



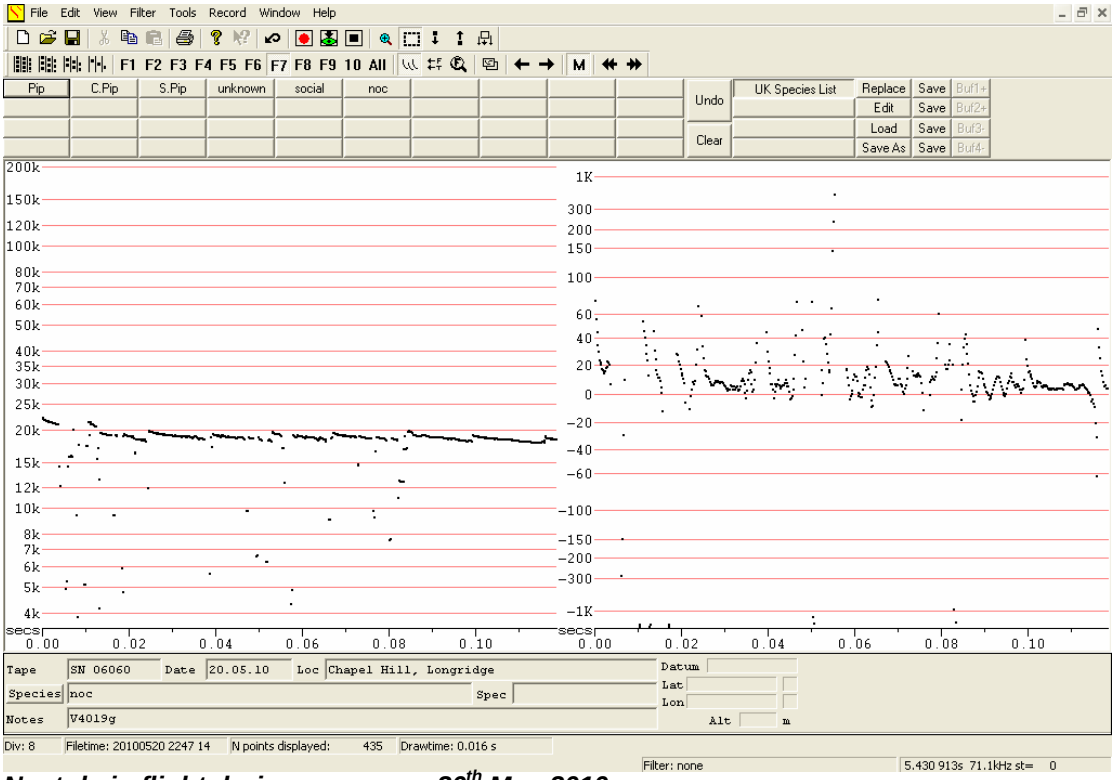
Appendix D – ANABAT registrations



Pipistrelle recordings from within the barn (B2) on 20th September 2010

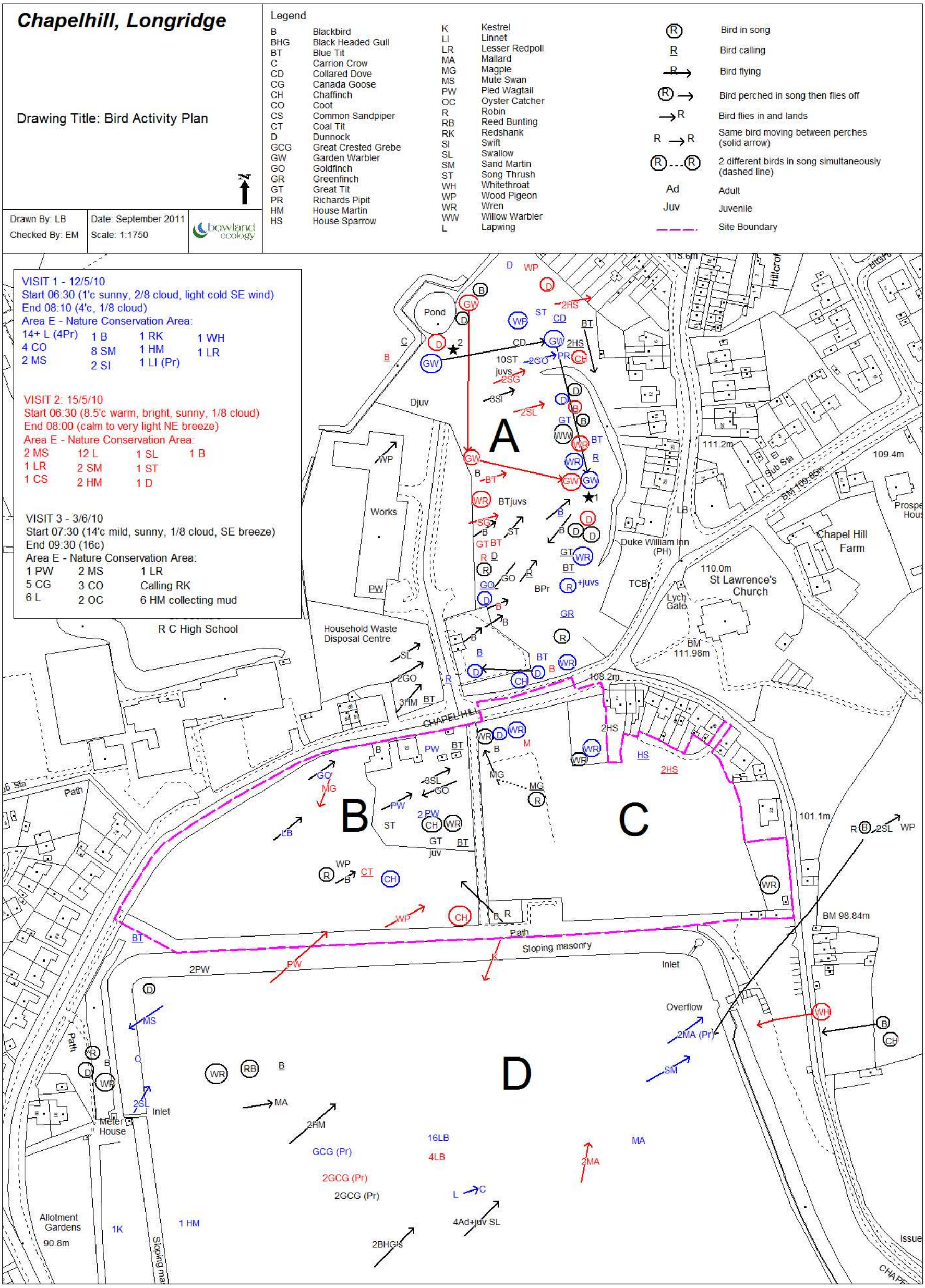


Pipistrelle in flight during survey on 20th May 2010

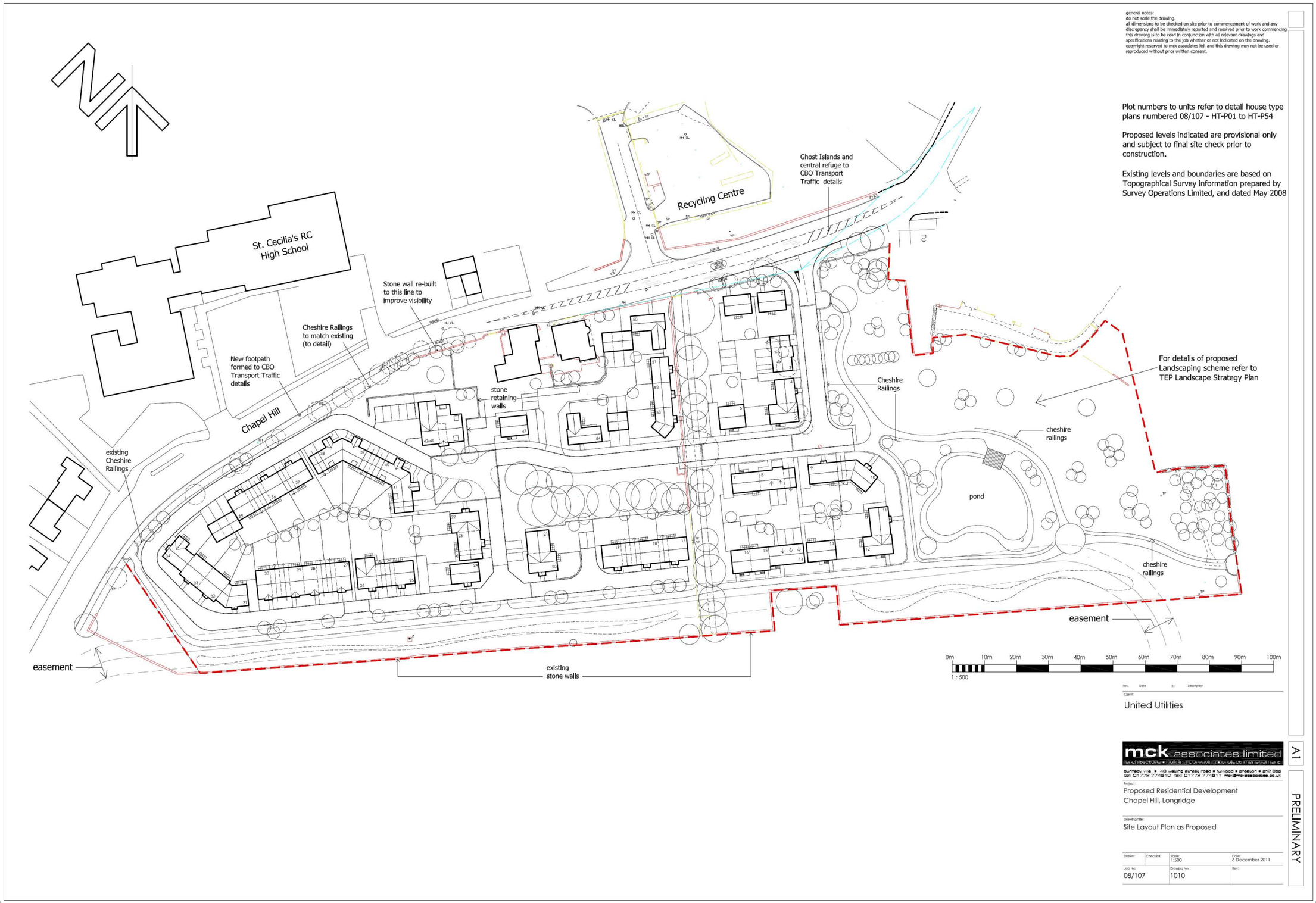


Noctule in flight during survey on 20th May 2010

Appendix E – Breeding Bird Plan



Appendix F– Proposed Masterplan



Appendix G – Proposed Landscape Plan

KEY

Key views

Existing Features

- Existing trees
- Existing stone wall retained/rebuilt
- Existing stone wall retained reduced to 1m high
- Existing parkland fencing with curved top (ie. Cheshire railing)
- Existing waterbody

Proposed Features

- Footpath network
- Formal entrance points
- Dipping platform
- Informal seating
- 1.8m Brick screen wall
- 1.8m Stone screen wall
- 1.8m closeboard fence
- 1.5m Closeboard fence
- 1.0m Retaining stone wall
- 900mm Stone wall
- Parkland fencing with curved top (ie. Cheshire railing)
- Proposed waterbody
- Water attenuation pond/swale (dependent on levels & water main)
- Marginal aquatic planting
- Tree planting
- Ornamental planting
- Amenity grassland
- Species rich meadow grassland
- Bulb planting
- Hedgerow planting

Rev	Description	Drawn	Approved	Date
B	Amendments to suit layout changes	RJC	NH	13.12.11
A	Species rich grassland increased to north east of POS & around pond	RJC	NH	24.10.11

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Project: Chapel Hill, Longridge

Title: Landscape Strategy Plan

Drwg No: D3100.001B

Scale: 1:500 @ A1 | Date: 11/10/11

Drawn: LG | Checked: NH | Approved: RJC