RESTORATION OF NEW TIP AT THE FORMER SPRINGSIDE MILLS, BELMONT

ECOLOGICAL SURVEY AND ASSESSMENT

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A SUMMARY

Introduction and Scope

i. This Ecological Appraisal assesses the ecological, biodiversity and nature conservation status including the future biodiversity potential of land at the 'New Tip' within Springside Mills, Belmont (hereafter referred to as the 'site'). The appraisal was requested in connection with proposals to restore the New Tip involving the import of inert materials, the regrading of the area to a more stable gradient and the reinstatement of a section of the public footpath alongside Longworth Clough.

ii. This appraisal presents the results of a desktop study, extended Phase 1 Habitat Survey and protected species surveys out in 2008 and 2012. The scope of survey undertaken is appropriate to enable the identification of any ecological constraints, the remit of mitigation required and opportunities for biodiversity associated with the proposals.

iii. Reference is also made to the wider, long-term proposals to remediate and redevelop the wider Springside Mills site for a residential development.

Results of Survey and Assessment

Designated Sites

iv. The southern margin of Longworth Clough Site of Special Scientific Interest (SSSI) is located within 20 metres of the New Tip site. No direct or adverse effects on the features of special interest at Longworth Clough SSSI will occur. The SSSI and its special interests will be protected in the short and long-term.

v. It is necessary to marginally encroach into minor (8% of total area) areas of the Three Nooked Shaw Clough Biological Heritage Site (BHS) and the Upper Longworth Clough BHS (0.9% of total area) to facilitate the works. The minor and marginal areas of habitat to be affected by the proposals do not currently contribute to the Priority Habitat status of the BHSs owing to the absence of woodland herbs and high abundance of invasive species (Himalayan Balsam). In the case of the Three Nooked Shaw Clough BHS boundary within the site the habitat comprises hard-standing. This is assumed to be a cartographical anomaly; none of the clough woodland habitats will be affected. Importantly, no significant adverse effects on the features of special interest at the BHSs will occur.

vi. As discussed in **Section 4.2**, in the long-term, the implementation of the restoration proposal will improve the conditions at the statutory and non-statutory designated sites by: -

- Stabilisation of the sloping tipped land to protect the designated sites from future harm;
- Reinstatement of complementary habitat designed to develop into Priority Habitat;
- Providing a secured mechanism for the control of invasive species; and,
- Creating a protective, vegetated buffer between the clough corridor and the wider future development site.

Vegetation and Habitats

vii. None of the habitats within the site is of significant interest in terms of the plant species composition. The New Tip is of artificial origin; none of the habitats present is representative of semi-natural habitat. The NVC communities present are typical of the geographical area and conditions present.

viii. No Priority Habitats/Habitats of Principal Importance will be directly affected by the New Tip restoration. The proposals will secure the opportunity to reinstate habitat to complement the Priority Habitats in the wider Longworth Clough and enhance the existing habitats by habitat creation at the protected woodland in the wider site.

ix. Himalayan Balsam, an invasive species, is prolific across the site and stands of Japanese Knotweed are present at the south-western corner of the New Tip. The restoration proposals provide an opportunity to secure the control of these species, refer to **Section 5.6**.

Protected Species and Animal Life

viii. Low levels of Badger activity (two outlier setts with seasonal use) have been detected over 30 metres from the New Tip site boundary on the margins of the Springside Mills boundary. A strategy for the protection of Badger and their habitats to ensure disturbance is avoided is described in **Section 5.4.**

ix. A stone lined tunnel which emerges from beneath the New Tip has been assessed and, owing to the occurrence of frequent water percolation through the underarch (from the earth bank above), the presence of roosting bats has been discounted. A precautionary assessment in the winter months (hibernation season) is recommended followed by precautionary exclusion of the tunnel prior to removal, as described in **Section 5.5**.

x. The site contains habitats used and suitable for use by a diversity of breeding and feeding birds, including UK BAP Priority Species/Species of Principal Importance such as Dunnock.

Recommendations

xi. The recommendations in **Section 5** address all the mandatory measures and ecological recommendations to be applied to ensure compliance with wildlife legislation, the National Planning Policy Framework (NPPF), local planning policy and best practice.

xiii. The proposals will secure an opportunity to implement beneficial measures such as habitat management and habitat creation that will safeguard habitats for wildlife such as birds and bats with the aim of providing a net gain in biodiversity in accordance with the principles of the NPPF.

xiv. The phased approach to the redevelopment of Springside Mills will secure the following: -

a. An established protective and landscaped buffer between the southern margin of Longworth Clough SSSI and the possible future redevelopment site;

b. Advanced enhancement of woodland to be retained with opportunities for nesting birds to ensure there is no net loss in opportunities for use by nesting birds in the valley/clough.

xv. In conclusion, the minor disturbance of habitats at the New Tip over the short term (the short duration of the works and period of establishment) will be satisfactorily offset by the proposed habitat reinstatement and implementation of opportunities for a net gain for biodiversity. These opportunities/actions are summarised as: -

a. Reinstatement of complementary trees and shrubs to create a natural woodland habitat with the aim of creating Priority Habitat;

b. Installation of bird and bat boxes at an adjacent protected area of woodland;

c. Stabilisation of the slope to prevent any future slumping/collapse of the existing tipped material into the Upper Longworth Clough BHS and Eagley Brook;

d. Securing the long-term management of the reinstated habitats for biodiversity and nature conservation; and,

e. Local eradication of invasive species and commencement of a long-term programme of control to minimise the risk/incidence of spread.

Conclusion

xvi. This ecological appraisal has demonstrated that the material considerations and need to restore the New Tip and stabilise the bank with associated complementary landscape planting and habitat creation outweigh the short-term disturbance of the clough and associated habitats.

xvii. The proposals will be achieved in accordance with ecological considerations, the National Planning Policy Framework and other relevant planning policy.

xviii. It is possible and feasible to implement reasonable actions for the protection and long-term conservation of designated sites, habitats, protected species, other flora and fauna and achieve a net gain for biodiversity.

1.0 INTRODUCTION

Background and Rationale

1.1 ERAP Ltd (Consultant Ecologists) was commissioned by Urbanspringside Limited to carry out the relevant ecological surveys in connection with development proposals at Springside Mills, Belmont in spring 2012.

1.2 This report presents an ecological appraisal of the proposed restoration of the former tip (hereafter referred to as the 'New Tip'). Reference is also made to the wider, long-term proposals to redevelop the Springside Mills for a residential development.

1.3 Springside Mills is located to the north of Belmont Road and comprises a complex of vacant industrial buildings positioned on a sloping valley side leading down to Eagley Brook. The site has been operated as a power station, mill, dyeworks and most recently the buildings were used by tissue paper manufacturer. Ash and paper pulp have been deposited in tips at the site. The grid reference at the centre of the site is SD 692 150.

Description of Proposals and Assumptions

1.4 A brief description of the New Tip restoration proposals is presented below. A list of assumptions made is also provided to inform the ecological assessment. All assumptions have been confirmed by the design team and, where relevant, verified during site inspections.

1.5 The far (north side) of the New Tip has been poorly created. A need has been identified to re-grade the tipped material by changing the contours to create a less steep gradient and to restore the public footpath along Eagley Brook. At the same time the current drainage through the tip will be improved. The proposed final contour levels at the restored tip will provide a platform to facilitate the wider redevelopment proposals at the site (the subject of a future planning application).

1.6 The proposed final contour levels at the restored New Tip are presented on MCK Partnership drawing 12-127 0002 Rev:C. The slopes of the restored tip will be planted with native trees and shrubs and the more levelled plateau will be seeded to a low maintenance wildflower grassland, refer to **Section 5.7.**

1.7 The following actions are confirmed: -

a. Access by vehicles to carry out the works and import inert materials will be along the existing site access road;

b. No buildings will be demolished to facilitate the works;

c. No overhead gantry or other structures will be removed;

d. No trees overhang the site access roads leading to the former tip; no trees will be removed along the access road;

e. No new works will be carried out within the 8 metre buffer zone from the edge of Eagley Brook;

f. No works, including access, will be carried out within the adjacent Longworth Clough Site of Special Scientific Interest (SSSI);

g. Existing vegetation at the New Tip will be removed in one phase;

h. The existing old tunnel through the base of the New Tip will be removed and replaced with appropriate land drains;

i. Before works take place the paper pulp at the base of the New Tip will be removed and stored on the Old Tip and areas of hard-standing in the western area of the site;

j. Re-grading activities will be carried out in an east to west direction;

k. The restoration of the New Tip will reach the 194 metre contour;

l. The restoration is expected to take up to 18 months to complete; and,

m. Advance planting will be possible at the re-contoured eastern slopes of the New Tip before the completion of all the works.

Scope of Survey

1.8 The scope of ecological surveys undertaken in 2008 and 2012 comprised: -

a. Desktop study for known ecological information at the site and the local area;

b. Extended Phase 1 Habitat Survey and assessment;

c. Survey and assessment of all habitats for statutorily protected species and other wildlife including Badger, Great Crested Newt, Water Vole, bird species, reptile species and invertebrates;

d. Licensed bat survey and assessment of the trees and old tunnel within the New Tip application boundary;

e. An assessment of the ecological value of the habitats within the site with the use of the National Vegetation Classification (NVC) and the Ratcliffe criteria (*A Nature Conservation Review 1977*);

f. The identification of any potential ecological constraints on the proposals and the specification of the scope of mitigation and ecological enhancement required in accordance with wildlife legislation, planning policy guidance and other relevant guidance; and,

g. Identification of any further surveys or precautionary actions that may be required prior to the commencement of restoration activities.

2.0 METHOD OF SURVEY

2.1 Desktop Study

Data Search

2.1.1 The following sources of information and ecological records were consulted for information: -

a. MAgiC: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;

b. National Biodiversity Network (NBN Gateway); and,

c. Lancashire Biodiversity Action Plan (BAP)

2.1.2 The Lancashire Environment Record Network (LERN) was contacted and ecological records including citations of non-statutory designated sites within a 2 kilometres radius from the centre of the site were obtained.

2.1.3 South Lancashire Bat Group (SLBG) records within a radius of 2 kilometres from the study area were consulted.

2.1.4 Contact was made with The Wildlife Trust for Lancashire, Manchester and North Merseyside, the Trust manage the Longworth Clough Nature Reserve beyond the northern boundary of the site.

Previous Survey Information

2.1.5 Information collated during previous ecological surveys of the site and surrounds carried out by ERAP Ltd in 2008 were consulted for background information.

2.2 Site and Study Area

2.2.1 For the purpose of this New Tip application the 'site' comprises the red line boundary as annotated on **Figure 2.** This red line boundary covers all habitats to be affected by the New Tip restoration activities (an area of 2.486 hectares).

2.2.2 The study area comprises the wider Springside Mills site and land outside the Mills boundary to put the site into context and to identify areas suitable for habitat compensation and biodiversity enhancement in connection with the New Tip restoration scheme.

2.3 Vegetation and Habitats

Initial Walkover

2.3.1 An initial walkover survey was carried out by Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MIEEM on the 5th March 2012. The aim of the survey was to detect all ponds within the site and study are and any within a radius of 250 metres from the site. Habitat Suitability Index assessments were carried out to inform the Great Crested Newt survey, refer to **Appendix 3.**

New Tip Restoration Site

2.3.2 An Extended Phase 1 Habitat Survey of the site and immediate surrounds was carried out by Victoria Burrows B.Sc. (Hons), M.Sc. CEnv MIEEM and Dr. Ray Gemmell on 9th August 2012. The weather was dry with sunny intervals, calm (Beaufort Scale 0) and 14°C at 8.30am rising to 20°C in the afternoon. The conditions and time of year were favourable for the ecological survey.

2.3.3 An updated survey was carried out on 12th October 2012 by Victoria Burrows and Amy Sharples B.Sc. (Hons) M.Sc. GradIEEM. The weather conditions on this date were dry and calm with a temperature of 10°C. The purpose of this later second visit was to re-examine all areas of habitat which are colonised by dense stands of Himalayan Balsam; by October the plants have begun to die back which facilitated observations.

2.3.4 A vegetation and habitat map was produced for the site and the immediate surrounding area (refer to **Figure 2**). The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC 2010) with minor adjustments to illustrate and examine the habitats with greater precision.

2.3.5 The plant species within the site boundary were determined with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system where D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare, this being a widely used and accepted system employed by ecological surveyors.

2.3.6 All stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and provides a reliable framework for nature conservation and land-use planning.

2.3.7 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the *Wildlife and Countryside Act 1981* and species which are indicators of important and uncommon plant communities. All plant nomenclature follows Stace (1991).

2.3.8 Searches were carried out for the presence of invasive species, including those listed on the revised (April 2010) Schedule 9 of the *Wildlife and Countryside Act 1981*, namely Japanese Knotweed, Himalayan Balsam and Giant Hogweed.

Phase 1 Habitat Survey of the Study Area

2.3.9 To put the site into context with its surrounds a Phase 1 Habitat Survey of the wider study area was carried out in August 2012. This was an updated of a previous survey carried out in November 2008 by ERAP Ltd.

2.3.10 The dominant plant species were recorded and habitats were classified in accordance with the NVC. Target Notes (TN) were made on species and habitats, refer to **Appendix 1** and **Figure 2.**

2.4 Animal Life

Badger

2.4.1 A thorough search for Badger activity was carried out. The survey area covered the site and extended to the accessible land up to a distance of 200 metres from the site boundary. Care was taken to survey all land around the external perimeter of the site, the whole of the

perimeter of the Springside Mills site, outside the boundary palisade fencing was searched. The survey extended along the south side of Longworth Clough for a distance of 200 metres to search for main Badger setts.

2.4.2 There were searches for the following signs of Badger activity: -

- 'D' shaped sett entrances at least 0.25 metre wide and wider than they are high with large spoil mounds
- Discarded bedding at sett entrances (this includes grass and leaves)
- Scratching posts on shrubs and trees close to a sett entrance
- The presence of Badger hairs which are coarse, up to 0.1 metre long with a long black section and a white tip
- Dung pit latrines and footprints
- Trampled pathways through vegetation and beneath fences.

Bat species

Buildings

2.4.3 The single building (Building E) which lies within the New Tip boundary will be demolished, refer to **Figure 2**. All other buildings lie outside the New Tip boundary and will be demolished as part of the wider redevelopment (and subject of a separate planning application).

2.4.4 An examination was made of the external elevations, roofs and the whole perimeter of the building. Searches were carried out for droppings, urine stains, feeding signs and grease marks. Particular attention was paid to areas where bat droppings may accumulate such as the ground beneath the eaves, the elevation walls and any other surfaces beneath the eaves around the perimeter of the building.

2.4.5 Searches were also made to find potential bat roosting habitat or accesses into internal areas and cavities where roosts may be present.

2.4.6 Where possible, gaps were illuminated with a high-powered torch (refer to equipment list below). Ladders were used to gain better access to specific features above eye level. A video borescope was used to inspect features such as crevices around the building in more detail and to search for bats and droppings.

2.4.7 There is no roof void at Building E, the building is open to the ridge inside. An internal search for bats and evidence of the previous presence of bats such as droppings and prey remains. The building was also searched for evidence of use by Barn Owl.

Trees

2.4.8 All trees within the site were assessed for their suitability for use by roosting bats (i.e. presence of crevices, cracks, woodpecker holes, dense ivy cover and splits in the trunks and branches that could be accessed by bats). The criteria detailed at **Appendix 2** were referred to during the assessment of the bat roost value of the trees.

Old Tunnel

2.4.8 An assessment of the underarch of the stone lined tunnel between the New Tip and Eagley Brook was carried out during the site visits in August and October 2012, refer to **Section 2.3**. Searches for bats were carried out with the assistance of a torch (LED Lenser P14) and and a video borescope.

2.4.9 The assessments of Building E, the old tunnel and trees was carried out by Victoria Burrows (Natural England licence number 20120902 valid until 19th March 2013).

Great Crested Newt

2.4.10 Full, licensed Great Crested Newt surveys were carried out at six ponds within an unobstructed 250 metres of the site. All survey methods are described in **Appendix 3.**

Bird species

2.4.11 Bird species observed and heard during the walkover survey were recorded. All habitats were assessed for their value to support breeding birds.

Reptile species

2.4.12 A reptile survey was carried out in 2008; refer to **Appendix 4**.

Riparian Mammals and Other Fauna

2.4.13 It is acknowledged that the site lies adjacent to Eagley Brook. However, as confirmed in Section 1.0 no new works will be carried out within 8 metres of the watercourse.

2.4.14 For completeness, a Water Vole presence/absence survey was carried out at Eagley Brook and the minor channel between the old tunnel and the brook in August and October 2012. The survey methodology detailed in the *Water Vole Conservation Handbook* (Strachan and Moorhouse 2006) was applied and the brook and associated banks were searched for burrows, latrines, feeding remains, runs, feeding lawns, above ground nests and footprints.

2.4.15 Searches were also carried out for Otter field signs which primarily comprise of holts, spraints, paw prints in soft mud, slides and feeding remains. Care was taken to inspect areas around tree roots and fallen trees as these can often be used by Otter as a holt or 'lying-up' position.

2.4.16 The survey area included the section of brook adjacent to the New Tip site boundary and extended upstream and downstream for a length of 50 metres each side (a total length of 260 metres).

2.4.17 No works will directly affect the water-course the need to carry out surveys for fish and riparian fauna such as White-clawed Crayfish has been scoped out in connection with the New Tip restoration.

2.5 Survey Limitations

2.5.1 Surveys were carried out at suitable times of year for the detection of the target species and habitats.

2.5.2 Although the New Tip is colonised by dense scrub, Bramble, Common Nettle and Himalayan Balsam vegetation all efforts were made to access all areas of the site to ensure an accurate survey was carried out. Access limitations were overcome by visiting the site throughout the year, particularly in autumn when the tall-herb vegetation has begun to die-back.

2.5.3 No significant survey limitations were experienced.

2.6 Evaluation Methodology

2.6.1 The habitats, vegetation and animal life were evaluated with reference to standard nature conservation criteria as described by Ratcliffe (1977) and the Nature Conservancy Council (1989). These are size (extent), diversity, naturalness, rarity, fragility, typicality, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.

2.6.2 Government advice on wildlife, as set out in the *National Planning Policy Framework* (2012) and associated government circulars has been taken into consideration. The UK and Lancashire Biodiversity Action Plans (BAPs) have been taken into account in the evaluation of the site.

3.0 SURVEY RESULTS

3.1 Desktop Study

Site Designations

International Statutory Site Designations

3.1.1 There are no international statutory designated areas (e.g. Special Areas of Conservation (SAC) or Special Protection Areas (SPA) *within* the site or within a radius of at least 10 kilometres from the site.

National Statutory Site Designations

3.1.2 Longworth Clough Site of Special Scientific Interest (SSSI) is located within 20 metres of the site (the southern edge of the SSSI boundary follows Eagley Brook), refer to **Figure 1.** Longworth Clough covers an area of 24.43 hectares and comprises Alder, Birch, Willow and Sessile Oak woodland with springs and flushes which are reported to support Great Horsetail. Drier ridges within the woodland are reported to be colonised by Bracken, Yorkshire Fog, Broad Buckler Fern and Wood Sorrel.

3.1.3 Unit 4 of the SSSI is in closest proximity to the site. A Natural England assessment of the condition of the Longworth Clough SSSI compiled in July 2009 assesses the site as being '*unfavourable - no change*' as a result of presence of occasional and locally abundant Himalayan Balsam.

3.1.4 Longworth Clough is managed as a nature reserve by Lancashire Wildlife Trust.

3.1.5 North of Longworth Clough and approximately 160 metres from the site boundary is Oak Field SSSI, refer to **Figure 1.** Oak Field SSSI covers an area of 20.7 hectares and comprises marginal grazing land with extensive acidic flushes which form the most extensive example of this habitat known in Lancashire. Calcifuge species present in the flushes comprise Bog Asphodel, White Sedge, *Sphagnum* mosses, Jointed Rush, Needle Rush, Bottle Sedge and Purple Moor-grass.

3.1.6 Approximately 660 metres to the south-east of the site is Gale Clough and Shooterslee Wood SSSI, refer to **Figure 1**. This site is semi-natural woodland.

Non-statutory Designations

3.1.7 Land within 2 kilometres of the site contains a number of Biological Heritage Sites (BHSs). A summary of all non-statutory designations as reported by LERN is presented at **Table A,** below. The sites in closest proximity to the site are annotated on **Figures 1 and 2.**

Table A: Non-statutory Designated Sites within 2 kilometres of the Site

Site Name	Reference	Distance to the Site	Notes from Citation
Upper Longworth Clough Biological Heritage Site (BHS)	61NE13	Eastern margin of site abuts. Approximately 0.25 hectares (0.9%) of BHS lies within New Tip red line boundary.	BHS comprises a mosaic of woodland, scrub, species-rich grassland, flushes, swamp, and open water habitats. The citation reports that Himalayan Balsam is abundant in many of the damper areas.
Three Nooked Shaw Brook BHS	61NE17	Approximately 0.63 hectares (8%) of BHS lies within New Tip red line boundary.	Semi-natural woodland situated along valley sides of Shaw Brook. Woodland herbs such as Bluebell, Wood Sorrel, Herb Robert and Broad Buckler Fern are present beneath a canopy of Oak, Ash and Sycamore.
Hampsons Flushes and Scrub	61SE03	280 metres to the south of the site, within the wider Springside Works site.	Species in the flushes include horsetails, Lady Fern, Broad Buckler-fern, Marsh Marigold, Creeping Buttercup, Common Sorrel, Marsh Violet, Large Bittercress, Yellow Pimpernel, Opposite-leaved Golden-saxifrage, Wild Angelica, Bugle, Common Marsh-bedstraw, Marsh Thistle, Sneezewort, Soft Rush, Common Sedge, Floating Sweet-grass, Tufted Hair-grass, Sweet Vernal-grass, Creeping Soft-grass, Reed Canary-grass, Purple Moor-grass and Yellow Iris.
Greenhill Farm Inbye	61NE12	550 metres to the west of the site.	Inbye fields regularly used by a significant population of breeding Snipe.
Winter Hill, Rivington Moor and Daddy Meadows BHS	61NE01	Over 700 metres to the south-west of site.	Extensive area of moorland including wet dwarf shrub heath, dry heath/acid grassland, dry modified bog and flushes.
Hill Top Clough and Grange Brook BHS	61NE07	Over 1.4 kilometres to the west of site.	Broad-leaved clough woodland composed of Sycamore, Alder, Birch with woodland herbs.
Hill Top Wood, Belmont BHS	61NE08	Over 1.6 kilometres to the west of site.	Broad-leaved clough woodland composed of Sycamore, Alder, Birch with woodland herbs.
Lower Whittaker Pastures, Belmont BHS	61NE09	Over 1.4 kilometres to the north-west.	Semi-natural grasslands and flushes and patches of acidic grassland.
Higher Whittaker Grassland BHS	61NE10	Over 1.4 kilometres to the north-west.	Semi-improved neutral grassland with damp flushes.
Stake Moss BHS	61NE14	Over 1.4 kilometres to the north-west.	Extensive area of mossland dominated by Purple Moor-grass. Bog Rosemary present. Pond with White Sedge and breeding Black Darter dragonfly.

Site Name	Reference	Distance to the Site	Notes from Citation
Higher Whittaker Inbye BHS	61NE15	Over 1 kilometre to the north-west.	Inbye land which supports a significant population of breeding Snipe.
Slate Brook Field BHS	61NE18	Over 1 kilometre to the north-west.	Mosaic of semi-natural acid grassland and heath with wetland flushes.
Owshaw Clough BHS	61NE19	Over 1.5 kilometres to the north.	Mosaic of habitats comprising species-rich flushes, natural grassland, acid grassland and woodland with extensive flushes.
Charters Moss South BHS	61NE20	Over 1.5 kilometres to the north.	Plantation of coniferous trees with heathland understorey of Heather and Bilberry.
Hill Top Clough Pasture BHS	61NE23	Over 1.2 kilometres to the west.	Rushy pasture, reservoir and species-rich marshy grassland used by breeding Snipe.
Old Mine Adit, Shaly Dingle Plantation BHS	61SE01	850 metres to the south-west from site	Old mine adit used as a hibernation roost by Brown Long-eared, Whiskered/Brandt's, Daubenton's and Natterer's Bat species.
Longworth Clough Shooterslee Wood Link BHS	61SE02	900 metres to the south-east from site.	Citation to be completed.
Delph Reservoir BHS	71NW17	500 metres to the north of site.	Reservoir used by breeding Tufted Duck, Little Ringed Plover, Oystercatcher, Common Sandpiper, Redshank, Grey Wagtail, Mallard and Canada Geese. Wintering bird site.
Delph Brook Woodland BHS	71NW18	Over 900 metres to the east of site.	Narrow strip of Birch woodland with Bluebell.
Delph Pasture BHS	71NW19	Over 800 metres to the east.	Mosaic of semi-improved acid grassland with damp to marshy flushes, swamp and fen habitat.
Turton Height Trough BHS	71NW20	Over 1.7 kilometres to the north-east.	Flushes with a diversity of wetland and marshy grassland plants.
Turton Heights BHS	71NW24	Over 1.7 kilometres to the north-east.	Blanket bog composed of Purple-Moor grass and Hare'-tail Cotton grass.
Eagley Brook Field BHS	71SW01	800 metres to the east of site.	Species-rich grassland associated with Eagley Brook.

3.1.8 For the purpose of this assessment of the New Tip restoration proposals it is reasonably concluded that only the following BHSs lie within the zone of potential influence of the development, refer to **Figure 2**: -

a. Upper Longworth Clough BHS; and,

b. Three Nooked Shaw Brook BHS.

3.1.9 All other BHSs are located outside a potential zone of influence and are not considered further in this assessment for the restoration of the New Tip.

Habitat Inventory

3.1.10 The Habitat Inventory viewable on Magic confirms that the site has no specific classification.

3.1.11 Habitats in the wider study area and on the south side of Eagley Brook (and adjacent to the site) are listed on the National Inventory of Woodland and Trees (England). On the north (opposite) side of Eagley Brook the woodland in Longworth Clough is listed as Ancient and Semi-natural Woodland.

3.1.12 Oak Field SSSI is identified as Purple Moor-grass and Rush Pasture habitat

Protected and Notable species

3.1.13 A vast number of ecological records were provided by LERN. The data are summarised in **Table B**, below.

***Table B**: Summary of Protected and Notable Species Reported within a 2 kilometres radius*

Species Group	Species	Notes
European protected species (protected under *Conservation of Habitats and Species Regulations 2010*).	Brown Long-eared, Natterer's, Daubenton's and Whiskered Bat species.	Recorded at Old Mine Adit BHS located 850 metres to the south of the site.
	Great Crested Newt	At Cox Green Quarry in Egerton located over 2.5 kilometres to the east of the site.
UK protected species (protected under *Wildlife and Countryside Act 1981*)	Bluebell (Schedule 8, sale only)	Throughout the area.
	Common Frog (Section 9(5) sale only)	Local records at Delph Reservoir and Slate Brook Pond.
	Common Toad (Section 9(5) sale only)	Local records at Delph Reservoir and Slate Brook Pond.
Bird Species of Principal Importance	Linnet, Tree Pipit, Dunnock, Bullfinch, Skylark, Grey Partridge, Grasshopper Warbler, Reed Bunting and Lapwing.	Recorded within 2 kilometres radius from site.
Lancashire Biodiversity Action Plan	Mosses and Liverworts	The following species of moss and liverwort have been detected at Longworth Clough: - *Calypogeia neesiana* Nees' Pouchwort *Riccardia multifida* Delicate Germanderwort *Ptilidium pulcherrimum* Tree Fringewort *Rhizomnium punctatum* Dotted Thyme-moss *Eurhynchium speciosum* Showy Feather-moss *Sphagnum quinquefarium* Five-ranked Bog-moss *Rhizomnium punctatum* Dotted Thyme-moss

3.2 Vegetation and Habitats

General Description

3.2.1 The site (and therefore the red line boundary of the New Tip restoration application) covers an area of approximately 2.486 hectares.

3.2.2 The site comprises the New Tip, the Old Tip and strip of hard-standing between the two areas, refer to **Figure 2.**

3.2.3 The New Tip is located between the buildings at the former Springside Mills and Eagley Brook and comprises a hollowed landform surrounded by steeply sloping banks colonised by scrub.

3.2.4 The Old Tip is located at the western end and comprises a mounded and sloping area of paper pulp which begun to colonise with tall-herb vegetation and self-seeded scrub.

3.2.5 The northern, southern and western margins of site meet existing hard-standing associated with Springside Mills**.** Land to the south-east and north-west comprises scrub leading to semi-natural woodland on steeply sloping ground, refer to **Figure 2**.

3.2.6 The eastern edge of the site encroaches into the Longworth Clough corridor (owing to the need to stabilise the banks and the footpath), this area is colonised by a mosaic of scrub, tall-herb vegetation and Himalayan Balsam, refer to **Target Note D,** below.

3.2.7 As annotated on **Figure 2** vegetation types within the site comprise: -

a. Bulrush swamp vegetation with Soft Rush;

b. Self-seeded Ash, Willow, Sycamore and Birch scrub;

c. Stands of invasive species namely Himalayan Balsam and Japanese Knotweed;

d. Tall-herb vegetation;

e. Hard-standing with ruderal herbs; and,

f. Marginal verges of rabbit grazed neutral grassland.

TARGET NOTE A: Vegetation in the Base of the New Tip Hollow

3.2.8 A width of 2 to 3 metres of the plastic liner of the New Tip is visible around all the margins of the hollow at the base of the tip. Remnant pumping equipment and an old metal walkway is present in the centre of the hollow.

3.2.9 A full plant species list for this hollow is appended at **Table 1.**

Tall-herb vegetation

3.2.10 The lower lying ground at the base of the New Tip is colonised by tall-herb vegetation comprising dense stands of Great Willowherb (*Epilobium hirsutum*), Common Nettle (*Urtica dioica*) and Himalayan Balsam (*Impatiens glandulifera*). The vegetation is representative of the OV26 Great Willowherb community of the NVC.

Bulrush Swamp

3.2.11 A small (20 metres by 8 metres) area of Bulrush (*Typha latifolia*) and Soft Rush (*Juncus effusus*) is present towards the eastern end of the hollow. This vegetation is representative of the S12 Bulrush swamp community of the NVC.

3.2.12 Small, shallow (0.05 to 0.10 metres deep) and ephemeral pools of water are present amongst the vegetation but no aquatic plant species were detected.

Scattered shrubs

3.2.13 Young, self-seeded Alder (*Alnus glutinosa*), Goat Willow (*Salix caprea*) and Grey Willow (*Salix cinerea*) are scattered throughout the tall-herb vegetation, refer to **Figure 2.**

TARGET NOTE B: Scrub Vegetation around the Banks of the New Tip

3.2.14 As illustrated on **Figure 2** the New Tip hollow is surrounded by steeply sloping banks. The banks are formed from tipped material comprising ash, brick rubble, paper pulp material and sub-soil. The banks fall to the east to meet the boundary palisade fence in the east.

3.2.15 The banks are colonised by maturing self-seeded scrub composed of abundant Goat Willow and Grey Willow with frequent and constant Silver Birch (*Betula pendula*), Alder and Sycamore (*Acer pseudoplatanus*). None of the trees or shrubs is mature or semi-mature but the absence of management has resulted in a dense cover. No defined shrub layer has formed yet.

3.2.16 Light penetration to the herb layer is low, owing the density of the shrubs, and bare ground accounts for approximately 60% of the area. Constant and abundant plant species in the herb layer comprise Common Nettle, Broad Bucker Fern (*Dryopteris dilatata*) and Bramble (*Rubus fruticosus* agg.).

3.2.17 Other plants in the herb layer comprise occasional Hogweed (*Heracleum sphondylium*), Foxglove (*Digitalis purpurea*) and rare Hart's Tongue Fern (*Phyllitis scolopendrium*). A full plant species list is appended at **Table 2.** The scrub vegetation has not been established for sufficient time to represent a specific NVC community.

TARGET NOTE C: Land beyond (east of) the Boundary Security Fence that lies within the New Tip Red Line Boundary and within the Upper Longworth Clough BHS.

3.2.18 Steeply sloping ground at the eastern edge of the New Tip meets level ground near the boundary palisade fence. The dense scrub is continuous and species constant in the canopy comprise Silver Birch and Alder with locally frequent Downy Birch.

3.2.19 There is no defined shrub layer.

3.2.20 Again, light penetration to the herb layer is low, owing to the density of the shrubs, and bare ground accounts for approximately 60% of the area. Constant and abundant plant species in the herb layer comprise Common Nettle, Broad Bucker Fern (*Dryopteris dilatata*) and Bramble (*Rubus fruticosus*). Himalayan Balsam is constant throughout and becomes dominant towards the east where the ground is less steeply sloping and less shaded. Opposite-leaved Golden Saxifrage (*Chrysosplenium oppositifolium*) was also detected in this area owing to the water-logged conditions at the foot of the slope (this species is typically associated with wet ground).

3.2.21 As demonstrated in the plant species list in **Table 3,** appended, the area of scrub adjacent to the New Tip is of lower quality than the surrounding ancient and semi-natural woodland habitats elsewhere in the clough. The disturbance to the ground has limited colonisation by acid woodland herbs such as Wavy Hair-grass, Wood Sorrel, Bilberry, Bluebell and Lady Fern which are present further along the clough. The ground disturbance and proximity to the New Tip have also permitted extensive colonisation by stands of Himalayan Balsam.

TARGET NOTE D: Land beyond (east of) the Boundary Security Fence that lies within the New Tip Red Line Boundary and within the Upper Longworth Clough BHS.

3.2.22 Because of the need to stabilise the slope and restore the public footpath at the eastern end of the New Tip the works will unavoidably extend beyond the existing palisade security fence towards Eagley Brook. No new works will be carried out within 8 metres of Eagley Brook or within Longworth Clough SSSI. However, and unavoidably, the works will encroach marginally into the land designated as the Upper Longworth Clough BHS, refer to **Figure 2.**

3.2.23 Immediately outside the palisade boundary fence is a strip of bare ground between 2 and 6 metres in width. Vegetation has failed to establish owing to regular disturbance by walkers and episodes of bank collapse and erosion.

3.2.24 To the east of the footpath the vegetation consists of a mixture of tall-herb vegetation (Himalayan Balsam), dense Blackthorn (*Prunus spinosa*) and Hawthorn (*Crataegus monogyna*) scrub and scattered trees such as Silver Birch, Alder (*Alnus glutinosa*) and Sycamore. Remnants indicate the former route of a public footpath prior to the bank collapses, such as timber hand rails, concrete flag steps and footpath signs.

3.2.25 Again, as demonstrated in the plant species list at **Table 4,** appended, the area of scrub adjacent to the New Tip is of lower quality than that of the surrounding ancient and semi-natural woodland habitats elsewhere in the clough. The disturbance to the ground has limited colonisation by acidic woodland herbs such as Wavy Hair-grass, Wood Sorrel, Bilberry, Bluebell and Lady Fern which are present further along the clough. Instead the herb layer is colonised by Creeping Buttercup (*Ranunculus repens*), Red Campion (*Silene dioica*), Hogweed, Bramble and Soft Rush. The ground disturbance and proximity to the New Tip have also permitted extensive colonisation by stands of Himalayan Balsam.

3.2.26 A detailed inspection of the area within the red line boundary confirms that the land to be affected by the works contains none of the acid woodland flora present elsewhere in the clough, nor does it contain (or lie adjacent to) any flush vegetation composed of Marsh Violet, Ragged Robin, Lemon-scented Fern, Common Sedge and Wild Angelica.

3.2.27 Two mature Ash trees are present on the southern bank of Eagley Brook. The Ash trees are outside the area to be affected by the works and protection of the trees is feasible, refer to **Section 5.2.**

TARGET NOTE E: Vegetation on the Old Tip.

3.2.28 The Old Tip comprises a mounded area of compacted paper pulp which slopes downhill towards the dam at the eastern edge of Pond 4. This area of the site lies within the boundary of the Three Nooked Shaw Clough BHS, refer to **Figure 2.** However, as described in **Section 3.4,** the habitats at the Old Tip do not complement the ancient and semi-natural woodland habitats in the wider clough; the habitats at the Old Tip have been significantly modified as a result of the tipping and settling out of paper pulp, as described below.

3.2.29 Areas of recent disturbance and compacted ground are either devoid of vegetation or support a sparse cover of pioneer species such as Teasel (*Dipsacus fullonum*) and Creeping Bent (*Agrostis stolonifera*).

3.2.30 The main tipped area supports a dense mosaic of tall-herb vegetation composed of Himalayan Balsam, Common Nettle, Bramble, Great Willowherb and Creeping Thistle. This vegetation has affinities with an establishing OV26 Great Willowherb tall-herb community of the NVC. A full plant species list is appended at **Table 5.**

3.2.31 The margins of the Old Tip may have been less frequently disturbed when the tip was in use. These areas have been colonised by self-seeded Goat Willow and Silver Birch scrub.

3.2.32 Further west, towards the dam is an area of shallow water over the paper pulp sludge. Marginal stands of Bulrush, Soft Rush and self-seeded Goat Willow saplings are present to form the S12 Bulrush swamp community of the NVC.

Invasive Species

3.2.33 Stands of Japanese Knotweed (*Fallopia japonica*) are present at New Tip; refer to **Figure 2.**

3.2.34 As illustrated on **Figure 2,** Himalayan Balsam is an abundant plant across the whole of the bed of the New Tip, the Old Tip and into the Eagley Brook corridor.

3.2.35 Both these species are listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) it is an offence to spread or cause the spread of these species in the wild. Further guidance is described in **Section 5.6.**

3.3 Animal Life

Badger

3.3.1 No Badger activity including setts and feeding signs was detected within the New Tip site boundary.

3.3.2 Two outlier sett entrances were detected just inside the Springside Mills boundary fence to the north of the Old Tip, refer to **Figure 2** and **Photos 1 and 2**. The holes were first detected in June 2012 but no evidence of Badger was detected. A follow up survey in August 2012 did not detect any evidence of Badger. Examination of the holes in October 2012 detected Badger hairs at the entrance to both setts. No extensive pathways, latrines or other sett entrances were located. Gaps beneath the palisade fence at the northern Springside Mills site boundary indicate Badger leave and enter the site from the north.

***Photo 1**: Outlier Badger sett outside New Tip site boundary*

3.3.3 It is concluded that the two setts are outlier setts in seasonal use. The sett entrances are located on higher ground more than 30 metres from the northern edge of the New Tip site boundary. The tunnels extend northwards, away from the Old Tip.

3.3.4 A comprehensive search of the woodland habitats both within the palisade fencing around the Springside Mills site and land outside the boundary fence up to a distance of 200 metres did not detect any other signs of Badger but a main sett must be present within the wider Longworth Clough area.

Bat species

Building E

3.3.5 Building E is a single storey building composed from corrugated metal sheeting with a corrugated metal roof (refer to **Photo 2**). The doorway is open to create draughty, exposed conditions. No evidence of use of Building E by roosting bats was detected; the building is assessed to have negligible suitability for use by roosting bats owing to the absence of suitable cracks, crevices and roosting opportunities.

***Photo 2**: West elevation of Building E*

Old Tunnel

3.3.6 Inspection of the underarch of the stone lined tunnel which emerges from beneath the New Tip and directs water to Eagley Brook in August and October 2012 did not detect any roosting bats.

3.3.7 Some tunnels, particularly in favourable habitat such as is present at Longworth Clough, can regularly be used by roosting bats. However, owing to the frequent occurrence of water percolation through the underarch (from the earth bank above) in August and October 2012, the presence of roosting bats in the summer months has been discounted. However, if the water ingress stops before or within the hibernation season the stone lined tunnel may be used by hibernating bats. A pre-work inspection to assess the status and condition of the tunnel in December 2012 (bat hibernation season) is recommended. This inspection will assess the extent of water ingress at the time and inform the need to apply a precautionary exclusion of the tunnel prior to removal, as described in **Section 5.5**. (If hibernating bats are detected in winter 2012/2013 the appropriate Natural England licences will be applied for prior to removal of the tunnel).

Trees

3.3.8 No trees meet the Category 1* or 1 criteria described at **Appendix 2.** All trees within the site and to be affected by the restoration works are currently classed as Category 3 (low/negligible value for use by rosoting bats) in accordance with the table at **Appendix 2.**

Bat foraging opportunities

3.3.9 The trees and shrubs along the site margins are suitable for use by foraging bats, particularly Pipistrelle species. Foraging Common Pipistrelle and *Myostis* species were detected along the southern and western margins of the New Tip during nocturnal bat activity surveys carried out to inform the redevelopment application. Roosting Brown Long-eared Bat and Common Pipistrelle has been confirmed within the buildings at the wider Springside Mills; the results and implications will be reported in connection with the redevelopment application (**Note:** No buildings will be directly affected by the New Tip restoration proposals).

Great Crested Newt and other Amphibians

3.3.10 The results of the full Great Crested Newt survey are presented at **Appendix 3.** No Great Crested Newts were detected in the six surveyed ponds

3.3.11 A small population size class (1-10) of Smooth Newt was detected and a medium population size class (11 to 100) of Palmate Newt was detected at ponds within 250 metres from the site, refer to **Appendix 3**.

3.3.12 Breeding Common Frog and Common Toad were detected within ponds within 250 metres from the site, refer to **Appendix 3**.

Bird species

3.3.13 Birds detected in the site in August 2012 are listed in **Table C**, below: -

Table C: Bird species detected at site in August 2012

Species	Conservation Status
Blackbird	-
Blue Tit	-
Chaffinch	-
Dunnock	Species of Principal Importance
Great Tit	-
Magpie	-
Robin	-
Wood Pigeon	-
Wren	-

3.3.14 The trees and shrubs are suitable for use by nesting passerine (perching) birds.

3.3.15 Barn Owl activity is associated with the buildings within the wider Springside Mills site. No evidence of Barn Owl was detected at Building E. None of the habitats at the New Tip is favourable for the attraction of hunting Barn Owl.

Reptile species

3.3.16 The results of the reptile survey are presented at **Appendix 4**; no reptile species were detected.

Other Wildlife

3.3.17 Speckled Wood, Small Tortoiseshell, Small White, Meadow Brown and Comma butterflies, all common species, were detected at the site.

3.3.18 Cinnabar Moth caterpillars were observed feeding on stands of Common Ragwort, the Cinnabar Moth is a UK Biodiversity Action Plan (BAP) Priority Species.

3.4 Habitats in the Wider Area

Access Roads

3.4.1 All access roads between the main gate and the New Tip restoration site are covered with hard-standing. The roads are devoid of vegetation although occasional plants of Himalayan Balsam are growing in cracks in the asphalt.

Three Nooked Shaw Clough BHS

3.4.2 The boundary of the Three Nooked Shaw Clough BHS encompasses the Old Tip (described at Target Note E) and a wider area of semi-natural oak, ash and birch woodland.

3.4.3 The ancient and semi-natural woodland habitat lies *outside the New Tip restoration boundary* and comprises even aged woodland with a canopy of Silver Birch, Pedunculate Oak and Rowan. The shrub layer is open with local areas of Rhododendron. The herb layer is composed from Broad Bucker-fern, Wood Sorrel, Wavy Hair-grass (*Deschampsia flexuosa*) and *Polytrichum* mosses. The New Tip restoration works (and the wider development proposals) will have no direct or indirect adverse effect on this woodland and the habitat will be protected throughout.

3.4.4 It is concluded that the site boundary of the Three Nooked Shaw Clough BHS is obsolete and may have been drawn before the construction of the buildings and formation of the Old Tip at

the western end of the Springside Mills site. The restoration of the New Tip and use of the Old Tip for the storage of the paper pulp material is a first phase in the restoration and redevelopment of the wider Springside Mills site and the reinstatement of complementary habitats for the longevity of the woodlands and BHSs.

Woodland to the South-east (Target Note F)

3.4.5 South-east of the New Tip red line boundary and outside the area to be affected by the works is a levelled area of woodland that has colonised tipped ash substrate; this area is known as the 'Ancient Tip'. Refer to **Target Note F** on **Figure 2.**

3.4.6 The New Tip restoration works (and the wider development proposals) will have no direct or indirect adverse effect on this woodland and the habitat will be protected throughout. However, the area has been surveyed and described for the purposes of this New Tip restoration application as it has been identified as a favourable area for habitat enhancement.

3.4.7 As described in **Section 5.7** it is recommended that bird and bat boxes are installed throughout the woodland to mitigate for the short-term loss of opportunities for nesting birds during the New Tip restoration works and to contribute to a long-term net gain for biodiversity.

3.4.8 The woodland trees are even-aged. The canopy comprises Silver Birch, Downy Birch (*Betula pubescens*), Rowan (*Sorbus aucuparia*) and Pedunculate Oak (*Quercus robur*). The shrub layer is sparse and open and limited to occasional Holly (*Ilex aquifolium*) bushes.

3.4.9 The herb layer is typical of woodland of acidic soils and is complementary to the habitats further along Longworth Clough. Constant and abundant herb layer species comprise Broad Buckler Fern, Creeping Soft-grass (*Holcus mollis*) and Bramble with frequent Bilberry (*Vaccinium myrtillus*), Wavy Hair-grass and local Wood Sorrel (*Oxalis acetosella*) and Foxglove. Cushions of *Polytrichum* mosses are locally abundant. The moss *Thuidium tamariscinum* was also identified. A full plant species list is appended at **Table 6.**

3.4.10 Invasive species such as Himalayan Balsam are currently absent from this part of the study area.

3.4.11 The woodland community is an intermediate between the W10 Pedunculate Oak-Bracken-Bramble and the W16 Oak-Birch-Wavy Hair-grass woodland and is an example of Lowland Mixed Deciduous Woodland Priority Habitat.

4.0 EVALUATION AND ASSESSMENT OF ECOLOGICAL CONSIDERATIONS AND OPPORTUNITIES

4.1 Brief Description of Proposals and Assessment Approach

4.1.1 A brief description of the proposals is presented at **Section 1.0** of this report.

4.1.2 The objective of this first phase of the restoration of Springside Mills is to prepare and stabilise the site so that the Upper Longworth Clough BHS, Three Nooked Shaw Clough BHS, the Eagley Brook corridor and Longworth Clough SSSI are protected during the wider redevelopment.

4.1.3 The results of the ecological surveys are evaluated below. An assessment of the effects of the development proposals is provided. Where necessary, measures to mitigate any ecological effects are described in **Section 5**.

4.1.4 The recommendations in **Section 5** aim to ensure that the development is implemented in accordance with all wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF), local planning policy and best practice.

4.1.5 Where possible, opportunities to enhance the ecological interest and habitat connectivity and seek biodiversity gain through appropriate landscape planting and habitat creation have been identified and recommended in **Section 5** (in accordance with the principles of the NPPF and associated documents).

4.2 Designated Sites

Statutory Designated Sites

4.2.1 Development at the site will have no direct adverse effect on statutory designated sites.

4.2.2 As described in **Sections 5.1 and 5.2** the Longworth Clough SSSI in proximity to the site will be appropriately protected throughout the short-term (the duration of the works) and long-term. None of the features of special interest at the SSSI, as described at **Section 3.1,** will be adversely affected.

4.2.3 The restoration of the New Tip aims to improve conditions at Longworth Clough SSSI in the long-term, as summarised in paragraph 4.2.8, below.

Non-statutory Sites

4.2.4 Works will not encroach into any of the ancient and semi-natural woodland habitats within the Three Nooked Shaw Clough BHS.

4.2.5 Although the New Tip site boundary encroaches into an area of 0.68 hectares (8%) of the Three Nooked Shaw Clough BHS boundary the habitats within the 'overlap' comprise the Old Tip (Target Note E) and are not complementary to the ancient and semi-natural woodland in the wider clough/BHS. It is suggested that this is a mapping error or the boundary of the BHS is a remnant drawn before the building at the western end of Springside Mills and the associated access road was constructed. None of the habitats within the eastern tip of the Three Nooked Shaw Clough BHS meets the criteria for BHS site selection as defined in the *Biological Heritage Sites. Guidelines for Site Selection* publication (LCC 1998). No adverse effects on the Three Nooked Shaw Clough BHS or the recognised features of special interest will occur.

4.2.6 It is recognised that the restoration proposals will encroach marginally into the land within the Upper Longworth Clough BHS. An area of approximately 0.25 hectares will be affected this represents only 0.9% (total area = 27.2ha) of the total area of land designated as a BHS. The survey has confirmed that the minor area of the BHS to be affected by the works does not contain any of the acid woodland flora present elsewhere at the clough. The area of clough to be affected does not satisfy the criteria for BHS site selection as defined in the *Biological Heritage Sites. Guidelines for Site Selection* publication (LCC 1998).

4.2.7 In summary, no long-term adverse effects on the SSSI and BHSs will occur as a result of the proposals.

4.2.8 It is concluded that implementation of the restoration proposal will improve the conditions at the statutory and non-statutory designated sites in the long-term in the following ways (refer to **Sections 5.7** and **5.8**):-

a. Stabilisation of the sloping tipped land beyond the southern banks of Eagley Brook to stop and, importantly, prevent paper pulp and other materials, including suspended

solids, from entering the water course and being deposited in the downstream sections of designated sites in the future;

b. Reinstatement of complementary habitat designed to develop into Priority Habitat (refer to **Section 5.7**);

c. Reinstatement of complementary vegetation to maintain habitat connectivity along the clough corridor;

d. Reinstatement of a safe and clearly demarcated footpath to facilitate users of the area and minimise the creation of informal paths through more valuable habitats;

e. Creation of a formal, vegetated protective buffer between the clough corridor and the wider development site to act as an additional protective measure in consideration of the future, wider redevelopment proposals;

f. Creation of a natural bank and removal of short-term engineering solutions that have been installed in the past such as concrete flagged steps; and,

g. Local eradication of invasive species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* namely Japanese Knotweed and Himalayan Balsam and commitment to a long-term programme of control to minimise the risk/incidence of spread, refer to **Section 5.6**.

4.3 Vegetation and Habitats

4.3.1 None of the habitats within the site is of significant interest in terms of the plant species composition. The New Tip and the Old Tip are of artificial origin; none of the habitats present is representative of semi-natural habitat. The NVC communities present are typical of the geographical area and the artificial conditions present.

4.3.2 None of the habitats present is representative of UK BAP Priority Habitat/Habitat of Principal Importance. It is accepted that the woodland in the wider Longworth Clough is representative of the Lowland Mixed Deciduous Woodland Priority Habitat. However, as described in section 3.2 of this report the habitats within the Upper Longworth Clough BHS that will be marginally affected by the proposals do not currently contribute to the Priority Habitat status owing to the absence of woodland herbs and high abundance of invasive species (Himalayan Balsam). The restoration and long-term landscaping proposals provide an opportunity to address this ecological problem which threatens the existing woodland biodiversity and naturalness, and introduce species that are complementary to the wider woodlands which will ultimately attain Priority Habitat status.

4.3.3 Similarly Lowland Mixed Deciduous Woodland Priority Habitat in the three Nooked Shaw Clough BHS and the woodland to the south-east (Target Note F) will not be directly, adversely affected by the restoration proposals.

4.3.4 Invasive species are prolific throughout the site. The proposals provide an opportunity to secure the control of these species, refer to **Section 5.6**.

4.3.5 None of the habitats to be significantly affected by the proposals is listed in the Lancashire BAP.

4.3.6 The proximity of the New Tip restoration to Eagley Brook water course and the associated wildlife corridor is accepted. Appropriate actions for the protection of the water course will be implemented, refer to **Section 5.2.** Similarly, the integrity and function of the wildlife

corridor along Longworth Clough will not be fragmented as a result of the proposals and in the long-term the habitat connectivity will be increased.

4.4 Animal Life

4.4.1 No protected have been detected within the boundary of the New Tip application to date.

4.4.2 The presence of limited Badger activity within 50 metres of the site is recognised. However, owing to the distance between the working area and the presence of the outlier setts on higher ground (i.e. the tunnels extend away and not into the proposed working area) it is concluded that the disturbance of Badger and therefore an offence under *The Protection of Badger Act 1992* will be avoided. Best practice measures for the protection of Badger are described in **Section 5.4.**

4.4.3 Use of the stone lined tunnel by roosting bats has been discounted owing to the current condition of the tunnel. However, precautionary actions in the hibernation season are necessary prior to removal of the stone lined tunnel. Further guidance is described in **Section 5.5.**

4.4.4 The site contains habitats used and suitable for use by a diversity of breeding and feeding birds, including UK BAP Priority Species/Species of Principal Importance such as Dunnock. This does not preclude development of the site provided the recommendations for the protection and long-term conservation of birds described at **Sections 5.3, 5.7 and 5.8** are implemented.

4.4.5 Common Toad, a UK BAP Priority Species/Species of Principal Importance has been detected at the site but not in large numbers, refer to **Appendix 3**. No Common Toad breeding habitats will be directly affected; no specific actions for the protection of Common Toad are required. However, the proposals provide an opportunity to secure the enhancement of terrestrial habitats for use by sheltering and hibernating toads and other amphibians, as described in **Section 5.7.**

4.5 Summary of Assessment and Consideration of Relevant Planning Policy

4.5.1 No features of significant ecological interest or significant ecological constraints on development have been detected at the site.

4.5.2 Ecological guidance has been issued to the design team throughout the preparation of this planning application.

4.5.3 The design and implementation of the development proposals have taken into account the following: -

a. Proximity to the Longworth Clough SSSI and the need to protect all habitats and ensure the landscaping proposals are complementary to the wider clough habitats;

b. Proximity to and minor encroachment into the Upper Longworth Clough BHS the need to protect habitats in the wider clough and ensure the landscaping proposals are complementary to the wider clough habitats;

c. Proximity to Eagley Brook water course and need to ensure the protection of the water quality and wildlife corridor integrity and function;

d. Proximity of the proposals to outlier Badger sett activity;

e. Use of the habitats at the site by nesting birds;

f. The presence of invasive species listed on Schedule 9 of the *Wildlife and Countryside Act 1981*; and,

g. Significant opportunities created by the proposals to secure the enhancement of the ecological value of the site by appropriate and complementary landscaping, long-term management and habitat creation and achieve a net gain in biodiversity.

4.5.4 The recommendations and specifications in **Section 5.0** address all the mandatory measures and ecological recommendations to be applied to ensure compliance with wildlife legislation, the National Planning Policy Framework (NPPF) and associated Government Circulars and best practice.

4.5.5 In consideration of the saved local planning policies as presented in the Blackburn with Darwen Borough Local Plan (April 2002) the following statements are made: -

a. Mitigation, including avoidance of protected species (namely Badger) and precautionary actions for the protection of bats, will be implemented in conjunction with the proposals. Policy LNC9 and the Supplementary Planning Guidance (SPG) Nature Conservation 2: Species Protection will be complied with;

b. The Longworth Clough SSSI will not be affected and will be protected throughout all works to ensure compliance with Policy LNC5;

c. Although the works will marginally affect the Upper Longworth Clough BHS the effect is not significant in terms of both the minor size of habitat and the quality of the habitat to be affected. It is concluded that the long-term benefits described in **Section 4.2** above are a material consideration that outweigh the minor effect;

d. In consideration of Policy LNC8, the site does not contain any of the habitats or ecological features listed; and,

e. Policy LNC10 requires the protection of water courses. Eagley Brook will be protected throughout all works, as described in **Section 5.2.**

4.5.6 It is concluded that the proposals will be achieved in good accord with all relevant planning policy.

4.5.7 To ensure compliance with planning policy and best practice it is advised that the recommendations made below should be the subject of suitably worded planning conditions.

5.0 RECOMMENDATIONS, SPECIFICATIONS AND ECOLOGICAL ENHANCEMENT

5.1 Protection of Designated Sites and Existing Vegetation

Habitats Outside the Red Line Boundary

5.1.1 All habitats outside the red line boundary will be protected for the duration of the works. The working area will be demarcated with temporary protective fencing.

5.1.2 No operations will be carried out outside the demarcated working area/red line boundary. This will ensure the protection of the high quality woodland habitats to the south-east of the New Tip, Longworth Clough SSSI/BHS, Pond 4 and the Three Nooked Shaw Clough BHS.

5.1.3 Contractors compounds/cabins and car parking areas must be positioned on areas of existing hard-standing; no vegetation clearance outside the red line boundary/working area must be carried out.

Tree Protection

5.1.4 The two mature Ash trees on the banks of Eagley Brook, as annotated on **Figure 2,** will be retained and protected for the duration of the works. Temporary protective demarcation bunting will be installed.

Habitats Along the Access Road

5.1.5 As confirmed previously (**Section 1.0**) all machinery will access the site via the existing hard-standing access roads. The majority of roads are wide enough for the passage of two side by side vehicles. Where the track narrows waiting/passing places will be demarcated.

5.1.6 If any trees or shrubs overhang the site it will be necessary to remove the branches in accordance with appropriate arboricultural practice and in accordance with the appropriate timing specified in **Section 5.3**. Overhanging branches must not be permitted to be 'snagged off' by passing machinery.

5.2 Protection of Eagley Brook Water Course

Protective Buffer

5.2.1 A minimum 8 metre wide protective buffer will be demarcated from the top of the bank/edge of the water on the south side of Eagley Brook; no new operations with the exception of the footpath reinstatement will be carried out inside the 8 metre buffer.

Pollution and Sedimentation Prevention

5.2.2 Owing to the proximity of the restoration site to Eagley Brook the implementation of best practice measures that will be discussed and agreed with the Environment Agency is essential. In particular, the following Pollution Prevention Guidance (PPG) will be adhered to: -

a. PPG1: General Guide to the Prevention of Pollution
b. PPG5: Works in, Near or Liable to Affect Watercourses
c. PPG6: Working at Demolition and Construction Sites
d. PPG7: Refuelling Facilities.

5.2.3 Appropriate actions such as the installation of silt traps and other preventative measures will be implemented. A *Method Statement for the Clearing Out and Infilling of the New Tip Area* has been prepared by Urbanspringside Limited in accordance with ecological guidance.

5.3 Protection of Breeding Birds

5.3.1 All wild birds are protected under the *Wildlife and Countryside Act 1981* while they are breeding. It is mandatory that the trees, shrubs, Bramble scrub or other suitable breeding bird habitat which are to be removed as part of the proposals are only removed outside the bird breeding season. The bird breeding season typically extends from March to August inclusive.

5.3.2 If any vegetation is scheduled for removal in the bird breeding season it is advised that advice from an ecologist is sought. It may be necessary to carry out a walkover survey to demonstrate satisfactorily that no breeding birds, active nests, eggs or fledglings are present in the area to be cleared.

5.3.3 If breeding birds are detected the ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. This may involve cordoning off an area of the site until the young birds have fledged.

5.4 Badger

5.4.1 The two detected outlier Badger setts are positioned on higher ground over 30 metres from the northern edge of the New Tip site boundary, refer to **Figure 2.**

5.4.2 Confinement of the works within the New Tip site boundary will ensure the disturbance of Badger is satisfactorily avoided. It is concluded that as the setts are located within ground at a higher level than the proposed earth works and both tunnels extend northwards, away from the working area, the risk of disturbance to Badger is negligible.

5.4.3 Badger movements or access to fresh water and feeding habitats will not be severed or fragmented as all field signs indicate that Badger leave and enter the site via gaps beneath the palisade fence along the northern site margin.

5.4.4 However, in accordance with best practice the actions described below will be implemented prior to and during the works.

Pre-construction Updated Badger Survey

5.4.4 Prior to the commencement of works an updated Badger survey of the working area will be carried out to ensure no new sett entrances have been created within or close to the working area.

5.4.5 The survey must be carried out by an appropriately experienced Ecologist. If new setts are detected further guidance will be provided. It may be necessary to apply for a Natural England licence to temporarily/permanently close a sett for the duration of the works.

Best Practice during Works

5.4.6 As Badger activity has been detected it is essential that the following best practice is applied during the works: -

a. No trenches must be left open overnight. Trenches or holes must be covered with a board or fitted with a means of escape (such as a sloping plank of wood). This will ensure that any inquisitive Badger do not become trapped;

b. Any pipes must be stored with caps on (to prevent Badger entry);

c. No fires must be lit at the site; and,

d. Any chemicals or harmful materials must be stored so that they cannot be accessed by inquisitive Badger.

5.4.7 In the long-term, following the restoration of the New Tip and the proposed landscaping the habitats available for use by Badger for foraging and sett creation will be enhanced.

5.5 Bat species

Old Tunnel

Pre-work inspection in the winter months

5.5.1 Prior to the commencement of works an inspection of the status and condition of the stone lined tunnel close to Eagley Brook will be carried out by appropriately licensed and experienced surveyors. Inspections in summer 2012 confirmed that water ingress through the underarch of the tunnel limited the opportunities for use by roosting bats and use was discounted. If the situation remains similar in winter the tunnel is considered to be unsuitable for use by hibernating bats.

5.5.2 The following actions are recommended as a precaution only.

5.5.3 The inspection will be carried out in December 2012 or January 2013 which is an optimal time of year for the detection of hibernating bats. The inspection will involve the use of torches, inspection mirrors and a video borescope.

Precautionary Actions

5.5.4 If the water percolation through the underarch of the tunnel persists which makes conditions unfavourable it is still recommended that the following precautionary actions are implemented: -

a. Based on the current programme of works the removal of the tunnel is scheduled for mid to late March 2013 onwards;

b. A precautionary exclusion method will be applied at the tunnel;

c. The precautionary exclusion method essentially involves fitting a sheet cover over the tunnel exit. The sheet will begin in the lifted position and an emergence survey for bats will be carried out. After emergence time (1.5 hours after sunset of 15 minutes after the last bat has emerged) the sheet will be lowered and secured. The sheet will then be lifted the following night (30 minutes before sunset) and an emergence survey will be carried out. The sheet will then be lowered and secured at the base.

d. After two consecutive nights of suitable weather for bat activity (>8^{o}C with no rain and no more than a slight breeze) it can be stated that there is no risk of bats being present in the tunnel.

e. It is important that the exclusion is carried out during periods of suitable weather as it important to be confident that if bats are present then they will have left the roost in the evening.

f. The barrier will be of plastic tarpaulin sheeting (or other material) fixed to the tunnel entrance and exit so that it can be rolled up and lowered down to the level of the water. It would be fixed around the edges such that there are no gaps when the sheeting is rolled down. There will be a metal pipe attached to the bottom of the sheeting to prevent it lifting.

g. The exclusion apparatus must remain in position during the works to prevent bats from entering the working area (until the tunnel is removed);

h. This method was successfully applied by ERAP Ltd in Accrington. A photograph of the exclusion apparatus in position is presented below.

***Photo 3**: Photograph to illustrate proposed tunnel exclusion apparatus*

Suitability for use by Hibernating Bats

5.5.5 **Important note:** If hibernating bats are detected an appropriate mitigation strategy will be prepared and submitted with the application. Once planning permission is granted a Natural England licence may be required to proceed with the proposals.

5.6 Invasive Species

5.6.1 Japanese Knotweed and Himalayan Balsam are present at the site. It is an offence under Schedule 9 of the *Wildlife and Countryside Act 1981* to cause the spread of these species in the wild.

5.6.2 An appropriate 'Invasive Species Management Plan', in accordance with Environment Agency guidelines, will be prepared and implemented.

5.6.3 No vegetation, soil or other materials from the New Tip will be deposited off site unless deposited at an appropriately licensed facility.

5.6.4 The 'Long-term Landscape and Habitat Management Plan', refer to **Section 5.8,** will include actions to be implemented for the long-term control of invasive species at the site.

5.7 Landscaping and Enhancement for Biodiversity

5.7.1 This section describes the landscaping proposals at the restored New Tip. The main principles are described here. Full details such as planting schedules and methods will be provided at a later date and can form the subject of planning conditions. The preliminary '*Mitigation Planting Proposals Plan*' has been prepared by The Appleton Group for this application (drawing 1823_11). This plan has been used as the base for **Figure 4** *'Plan to outline ecological protection and enhancement'*.

Physical Structure

5.7.2 The proposed contours of the restored New Tip are illustrated on MCK Partnership drawing 12-127 0002 Rev:C. The sloping land with an eastern aspect will be created to a suitable gradient to permit the safe use of machinery and successful establishment of tree planting, refer to specification below. At least two berms will be created to assist with slope stabilisation.

5.7.3 Further west the new contours will be more widely spaced to create a more gentle gradient. This area will be seeded to grassland, refer to specification below. In the long-term additional material will be placed over this grassed area in connection with the wider re-development proposals.

Soil Conditions

5.7.4 It is understood that the substrate used at the upper layer of the restored tip will be a clayey soil of a neutral pH. This material is suitable for tree planting and grassland seeding.

5.7.5 Where necessary, and in accordance with the specification of the landscape architect, tree trenches/pits will be infilled with topsoil or other soil to promote the early and successful establishment of the landscaping.

Tree Planting/Woodland Creation

5.7.6 The objective of the tree planting is to create woodland habitats that are complementary to the wider Longworth Clough *and* works towards the creation of Priority Habitat.

5.7.7 The Supplementary Planning Guidance '*Nature Conservation 1: Landscaping and Wildlife Habitat Creation*' prepared by Blackburn with Darwen BC has been referred to. Within the document reference is made to the Forestry Commission's '*Creating New Native Woodland*' Bulletin 1132.

5.7.8 The aim is to create a woodland representative of the W10 Oak-Bracken Bramble woodland of the NVC. The woody species components of this woodland are listed in **Table D**: -

Table D: *Woody species components of W10 woodland*

Major Components	
Betula pendula	Silver Birch (t)
Quercus robur	Pedunculate Oak (t)
Crataegus monogyna	Hawthorn (s)
Corylus avellana	Hazel (s)
Minor Components	
Fraxinus excelsior	Ash (t)
Populus tremula	Aspen (t)
Prunus avium	Wild Cherry (t)
Ilex aquifolium	Holly (s)
Sorbus aucuparia	Rowan (t)
Prunus spinosa	Blackthorn (s)

Viburnum opulus	Guelder Rose (s)

5.7.9 The tree species (t) will form the bulk of the planting. The shrubs (s) will be concentrated on the margins to create woodland edge habitats. All plants will be of local provenance.

5.7.10 The principles of the aftercare and long-term management are described in **Section 5.8.**

Grassland Seeding

5.7.11 The objective of the grassland seeding on the more level ground at the restored New Tip will be to stabilise the surface soils and to provide a habitat for wildlife such as invertebrates in the short term (additional material will be placed over the grassland in connection with the proposals for the wider redevelopment scheme).

5.7.12 In accordance with the neutral soil conditions, the aim of attracting invertebrates and the need for a low maintenance regime the WFG13 Clay Neutral Soils mix supplied by British Seed Houses is appropriate.

Bird and Bat Box Installation

5.7.13 As discussed in **Section 3.4** the Oak-Birch woodland to the south-east of the New Tip site has been identified as a favourable area for habitat compensation and enhancement for nesting birds and roosting bats. Prior to the commencement of works it is recommended that the bird and bat boxes specified on **Table E** are installed on suitable trees within the woodland, refer to **Figure 4**. Boxes will be installed at a height of 4 metres and will not face prevailing weather conditions.

Table E: *Specification of Bird and Bat Boxes*

Box Type	Number	Target Species	Photograph
Schwegler 1B with 26mm diameter hole	10	Blue Tit, Coal Tit, Nuthatch and Tree Sparrow	
Schwegler 2H Robin Box	5	Robin, Spotted Flycatcher and Wren	

Box Type	Number	Target Species	Photograph
Treecreeper 2N Nest Box	2	Treecreeper	
Schwegler 2FN Bat Box	5	Woodland bat species	

Creation of Dead Wood Habitat Piles

5.7.14 A selection of the removed Goat Willow shrubs within the New Tip will be cut into lengths of 1 metre and stacked within the woodland to the south-east and stored for use at the restored tip to create dead wood habitat piles.

5.7.15 The piles will create habitat suitable for colonisation by small mammals including Hedgehog (a UK BAP Priority Species), sheltering and hibernating amphibians such as Common Toad (a UK BAP Priority Species), invertebrates and fungi.

5.8 Long-term Landscape and Habitat Management Plan

5.8.1 To secure the successful establishment and aftercare of the landscaping planting and on-going habitat creation, there will be a Long-term Landscape and Habitat Management Plan commitment.

5.8.2 The scope of the Plan will comprise: -

a. Aftercare of all planting including the removal and replacement of dead and diseased plants;

b. Cutting regime at the wildflower grassland,

c. Inspection and cleaning out of the bird and bat boxes,

d. Creation of new dead wood habitat piles as material becomes available;

e. Introduction of native woodland herbs as the woodland habitats become established;

f. Selective thinning after 5, 10 and 15 years to encourage the growth of oak and birch and to create rides and glades throughout the woodland to encourage creation of areas that receive 'dappled sunshine' and habitats for invertebrates and attraction of foraging bats and birds;

g. Continued control of invasive species.

5.8.3 The creation of a Management Plan provides an opportunity to work with the Lancashire Wildlife Trust, which manages the adjacent Longworth Clough, to apply complementary management practices at the site to those applied elsewhere in the Clough and to manage the invasive species along both sides of the clough.

6.0 CONCLUSION

6.1 This ecological appraisal has demonstrated that the material considerations and need to restore the New Tip and stabilise the bank with associated complementary landscape planting and habitat creation outweigh the short-term disturbance of the Clough and associated habitats.

6.2 The proposals will be achieved in accordance with ecological considerations, the National Planning Policy Framework and other relevant planning policy.

6.3 It is possible to implement reasonable actions for the protection and long-term conservation of designated sites, habitats, flora and fauna and achieve a net gain for biodiversity by enhancement and incorporation of beneficial biodiversity in the design of the proposal.

7.0 REFERENCES

Anon. (2007) *The Population Status of Birds in the UK: Birds of conservation concern: 2002-2007.*

Blackburn with Darwen Borough Council (April 2002) *Blackburn with Darwen Borough Local Plan.*

Blackburn with Darwen Borough Council. *Supplementary Planning Guidance Nature Conservation 1: Landscaping and Wildlife Habitat Creation.*

Blackburn with Darwen Borough Council. *Supplementary Planning Guidance Nature Conservation 2: Species Protection.*

Department for Communities and Local Government (March 2012). *National Planning Policy Framework.* London

English Nature (2002). *Badgers and development.* English Nature, Peterborough.

Forestry Commission (2005). *Woodland management for bats.* Forestry Commission. West Yorkshire.

Hundt, L. (2012) *Bat Surveys: Good Practice Guidelines, 2nd Edition* Bat Conservation Trust

Joint Nature Conservancy Council (2010). *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*. NCC, Peterborough.

Lancashire County Council. (February 1998). *Biological Heritage Sites. Guidelines for Site Selection.* LCC.

Land, K. (2004). *What features should be included in new urban residential developments to maximise the opportunity for a diversity of breeding birds?.* Ecology and Environmental Management – In Practice No. 43.

Maddock, A. (ed.) 2008. *UK Biodiversity Action Plan; Priority Habitat Descriptions.* BRIG

Marchant, J.H. (1983) *Common Birds Census instructions.* BTO, Tring.

Ratcliffe, D. A. (ed.) (1977). *A Nature Conservation Review.* Cambridge University Press, Cambridge.

Rodwell, J. S. (ed.) (1991). *British Plant Communities. Volume 1. Woodlands and Scrub*. Cambridge University Press.

Rodwell, J. S. (ed.) (1992) *British Plant Communities. Volume 3. Grasslands and Montane Communities.* Cambridge University Press.

Stace, C. A. (1991). *New Flora of the British Isles*. Cambridge University Press, Cambridge.

Strachan, R. and Moorhouse (2006) *The Water Vole Conservation Handbook, Second Edition.* English Nature, the Environment Agency and the Wildlife Conservation Research Unit. Oxford.

The UK Biodiversity Steering Group Report. Volume 2. Action Plans. H.M.S.O. (1995), London.

Wildlife and Countryside Act (1981). H.M.S.O., London.

8.0 APPENDICES

APPENDIX 1: TABLES AND FIGURES

TABLE 1: Plant species Composition, Frequency and Abundance for the base of the hollowed New Tip (**Target Note A**).

Scientific Name	Common Name	DAFOR[1]	% Cover
Woody species			
Alnus glutinosa	Alder	O	<1%
Salix caprea	Goat Willow	LF	2%
Salix cinerea	Grey Willow	VLA	3%
Herb and grass species			
Deschampsia cespitosa	Tufted Hair-grass	O	<1%
Epilobium hirsutum	Great Willowherb	VA/LD*	35%
Epilobium montanum	Broad-leaved Willowherb	LF	1%
Impatiens glandulifera	Himalayan Balsam	A/LD*	25%
Juncus effusus	Soft Rush	LF	5%
Phalaris arundinacea	Reed Canary-grass	LF	5%
Typha latifolia	Bulrush	LVA	2%
Urtica dioica	Common Nettle	F/LA	5%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

TABLE 2: Plant Species Composition, Frequency and Abundance for the scrub on the sloping bunds around the New Tip (**Target Note B**).

Scientific Name	Common Name	DAFOR[1]	% Cover
Woody species			
Acer pseudoplatanus	Sycamore	LF	1%
Alnus glutinosa	Alder	LF*	10%
Betula pendula	Silver Birch	F*	10%
Fraxinus excelsior	Ash	O	<1%
Fraxinus excelsior	Ash (sapling)	VLF	<1%
Quercus robur	Pedunculate Oak	VLF	1%
Ribes sp.	Currant	VLF	<1%
Salix caprea	Goat Willow	VA*	30%
Salix cinerea	Grey Willow	VA*	40%
Sorbus aucuparia	Rowan	VLF	<1%
Herbs and grasses			
Alchemilla mollis	Garden Lady's Mantle	VLF	<1%
Cardamine flexuosa	Wavy Bitter-cress	VLF	<1%
Chamerion angustifolium	Rosebay Willowherb	LF	2%
Cirsium arvense	Creeping Thistle	VLF	<1%
Dactylis glomerata	Cock's-foot	VLF	<1%
Digitalis purpurea	Foxglove	VLF	<1%
Dryopteris dilatata	Broad Buckler Fern	LF*	5%
Dryopteris filix-mas	Male Fern	VLF	<1%
Epilobium montanum	Broad-leaved Willowherb	VLF	1%
Geranium robertianum	Herb-Robert	VLF	<1%
Heracleum sphondylium	Hogweed	O	<1%
Holcus mollis	Creeping Soft-grass	LF	1%
Impatiens glandulifera	Himalayan Balsam	LF	10%
Myosotis arvensis	Field Forget-me-not	O	<1%
Petasites hybridus	Butterbur	VLF	<1%
Phyllitis scolopendrium	Hart's-tongue Fern	O	<1%
Prunella vulgaris	Selfheal	VLF	<1%
Ranunculus repens	Creeping Buttercup	VLF	2%
Rubus fruticosus	Bramble	F*	10%
Scrophularia nodosa	Common Figwort	VLF	<1%
Senecio jacobaea	Common Ragwort	O	<1%
Silene dioica	Red Campion	VLF	1%
Urtica dioica	Common Nettle	F/LA*	20%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

TABLE 3: Plant Species Composition, Frequency and Abundance for the woodland/scrub at the south-eastern corner of the New Tip red line boundary that lies within the Upper Longworth Clough BHS (**Target Note C**).

Scientific Name	Common Name	DAFOR[1]	% Cover
Woody species			
Acer pseudoplatanus	Sycamore	LF	1%
Alnus glutinosa	Alder	LF*	10%
Betula pendula	Silver Birch	F*	50%
Betula pubescens	Downy Birch	LF	5%
Fraxinus excelsior	Ash	O	<1%
Quercus robur	Pedunculate Oak	VLF	5%
Salix caprea	Goat Willow	LA	10%
Salix cinerea	Grey Willow	LF	10%
Sorbus aucuparia	Rowan	VLF	<1%
Herbs and grasses			
Cardamine flexuosa	Wavy Bitter-cress	VLF	<1%
Chamerion angustifolium	Rosebay Willowherb	LF	2%
Chrysosplenium oppositifolium	Opposite-leaved Golden Saxifrage	VLA	1%
Cirsium arvense	Creeping Thistle	VLF	<1%
Dactylis glomerata	Cock's-foot	VLF	<1%
Digitalis purpurea	Foxglove	VLF	<1%
Dryopteris dilatata	Broad Buckler Fern	LF*	5%
Epilobium montanum	Broad-leaved Willowherb	VLF	1%
Geranium robertianum	Herb-Robert	VLF	<1%
Holcus mollis	Creeping Soft-grass	LF	1%
Impatiens glandulifera	Himalayan Balsam	VLA/A*	50%
Ranunculus repens	Creeping Buttercup	VLF	2%
Rubus fruticosus	Bramble	F*	10%
Senecio jacobaea	Common Ragwort	O	<1%
Urtica dioica	Common Nettle	F/LA*	20%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

TABLE 4: Plant Species Composition, Frequency and Abundance for the section of Upper Longworth Clough BHS outside the palisade fence to be affected by the works (**Target Note D**).

Scientific Name	Common Name	DAFOR[1]	% Cover
Woody species			
Acer pseudoplatanus	Sycamore	LA/F*	25%
Alnus glutinosa	Alder	LF/A*	25%
Betula pendula	Silver Birch	LF	10%
Crataegus monogyna	Hawthorn	VLF	2%
Fraxinus excelsior	Ash	LF	5%
Prunus spinosa	Blackthorn	LVA	5%
Salix cinerea	Grey Willow	VLA	5%
Sorbus aucuparia	Rowan	VLF	1%
Herbs and grasses			
Alchemilla mollis	Garden Lady's Mantle	VLF	<1%
Bellis perennis	Daisy	O	<1%
Carex remota	Remote Sedge	R	<1%
Cirsium arvense	Creeping Thistle	O	<1%
Deschampsia cespitosa	Tufted Hair-grass	VLF	<1%
Dryopteris dilatata	Broad Buckler Fern	VLF	<1%
Dryopteris filix-mas	Male Fern	O	<1%
Geranium robertianum	Herb-Robert	VLF	<1%
Heracleum sphondylium	Hogweed	O	<1%
Holcus lanatus	Yorkshire Fog	F	1%
Impatiens glandulifera	Himalayan Balsam	LA/VA*	65%
Iris pseudacorus	Yellow Iris	VLF	<1%
Myosotis arvensis	Field Forget-me-not	VL	<1%
Prunella vulgaris	Selfheal	VLF	<1%
Ranunculus repens	Creeping Buttercup	VLF	<1%
Rubus fruticosus	Bramble	LF	1%
Scrophularia nodosa	Common Figwort	O	<1%
Senecio jacobaea	Common Ragwort	OLF	<1%
Silene dioica	Red Campion	VLA	<1%
Urtica dioica	Common Nettle	LA*	10%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

TABLE 5: Plant Species Composition, Frequency and Abundance for the vegetation on the Old Tip (**Target Note E**).

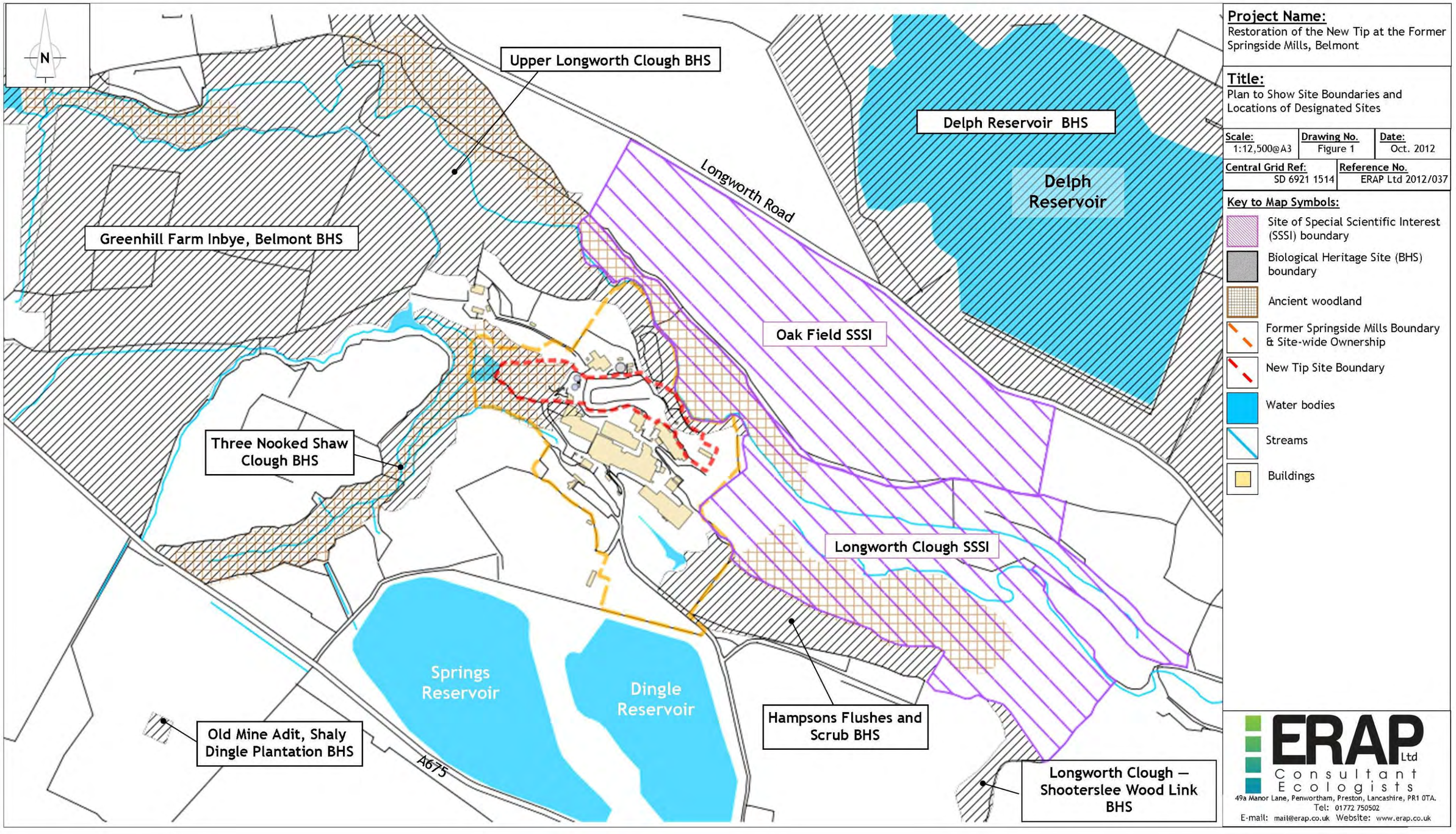
Scientific Name	Common Name	DAFOR[1]	% Cover
Woody species			
Betula pendula	Silver Birch	LF	5%
Buddleia davidii	Butterfly bush	LF	2%
Fraxinus excelsior	Ash	O	<1%
Salix caprea	Goat Willow	LF	10%
Sambucus nigra	Elder	R	<1%
Herbs and grasses			
Agrostis stolonifera	Creeping Bent	LA	5%
Alchemilla mollis	Garden Lady's Mantle	VL	<1%
Calystegia sepium	Hedge Bindweed	VL	<1%
Cardamine flexuosa	Wavy Bittercress	VLF	<1%
Carex pedula	Pendulous Sedge	R	<1%
Chamerion angustifolium	Rosebay Willowherb	LVA	5%
Cirsium arvense	Creeping Thistle	F*	5%
Cirsium vulgare	Spear Thistle	O	<1%
Deschampsia cespitosa	Tufted Hair-grass	LF	1%
Dipsacus fullonum	Teasel	VLF	<1%
Epilobium hirsutum	Great Willowherb	LA/F*	5%
Fragaria sp.	Strawberry species	VLF	<1%
Holcus lanatus	Yorkshire-fog	F*	2%
Impatiens glandulifera	Himalayan Balsam	VA/LD*	60%
Juncus effusus	Soft Rush	LA	1%
Phalaris arundinacea	Reed Canary-grass	VLA	<1%
Oenothera biennis	Evening Primrose	O	<1%
Ranunculus repens	Creeping Buttercup	LF	2%
Rubus fruticosus	Bramble	F*	10%
Rumex obtusifolius	Broad-leaved Dock	O	<1%
Senecio jacobaea	Common Ragwort	O	<1%
Scrophularia nodosa	Common Figwort	VL	<1%
Tussilago farfara	Colt's-foot	VLF	<1%
Typha latifolia	Bulrush	LA	1%
Urtica dioica	Common Nettle	A*	10%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

TABLE 6: Plant Species Composition, Frequency and Abundance for Oak-Birch woodland to the south-east of the New Tip site (**Target Note F**).

Scientific Name	Common Name	DAFOR[1]	% Cover
Woody species			
Betula pendula	Silver Birch	A*	60%
Betula pubescens	Downy Birch	F*	20%
Sorbus aucuparia	Rowan	LF*	5%
Quercus robur	Pedunculate Oak	LF*	10%
Ilex aquifolium	Holly	O	1%
Herbs and grasses			
Chrysosplenium oppositifolium	Opposite-leaved Golden Saxifrage	VLA	1%
Deschampsia cespitosa	Tufted Hair-grass	LF	5%
Deschampsia flexuosa	Wavy Hair-grass	LF	5%
Digitalis purpurea	Foxglove	O	<1%
Dryopteris dilatata	Broad Buckler Fern	A*	30%
Holcus mollis	Creeping Soft-grass	LA*	10%
Juncus effusus	Soft Rush	VLA	<1%
Oxalis acetosella	Wood Sorrel	VLF	<1%
Polytrichum sp.	Polytrichum species	LA*	5%
Rubus fruticosus	Bramble	A*	20%
Thuidium tamariscinum	Moss species	VLA	1%
Vaccinium myrtillus	Bilberry	LF/VLA	5%

[1]**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species



Project Name:
Restoration of the New Tip at the Former Springside Mills, Belmont

Title:
Plan to Show Site Boundaries and Locations of Designated Sites

Scale:	Drawing No.	Date:
1:12,500@A3	Figure 1	Oct. 2012

Central Grid Ref:	Reference No.
SD 6921 1514	ERAP Ltd 2012/037

Key to Map Symbols:

- Site of Special Scientific Interest (SSSI) boundary
- Biological Heritage Site (BHS) boundary
- Ancient woodland
- Former Springside Mills Boundary & Site-wide Ownership
- New Tip Site Boundary
- Water bodies
- Streams
- Buildings

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Project Name:
Restoration of the New Tip at the Former Springside Mills, Belmont

Title:
Phase 1 Habitat and Vegetation Map

Scale:	Drawing No.	Date:
1:2,500@A3	Figure 2	Oct. 2012

Central Grid Ref:	Reference No.
SD 6921 1514	ERAP Ltd 2012/037

Key to Map Symbols:

- Broadleaf woodland
- Broadleaf trees
- Dense continuous scrub
- Scattered shrubs
- Neutral grassland
- Swamp vegetation
- Tall-herb vegetation (with abundant Himalayan Balsam)
- Japanese Knotweed
- Himalayan Balsam
- Paper pulp sludge and shallow water
- Water body
- Gradient Indication
- Buildings
- Hard standing
- Walls
- Fences
- Site of Special Scientific Interest (SSSI) boundary
- Biological Heritage Site (BHS) boundary
- New Tip Site Boundary
- Springside Mills Boundary

Scale Bar

0m 100m

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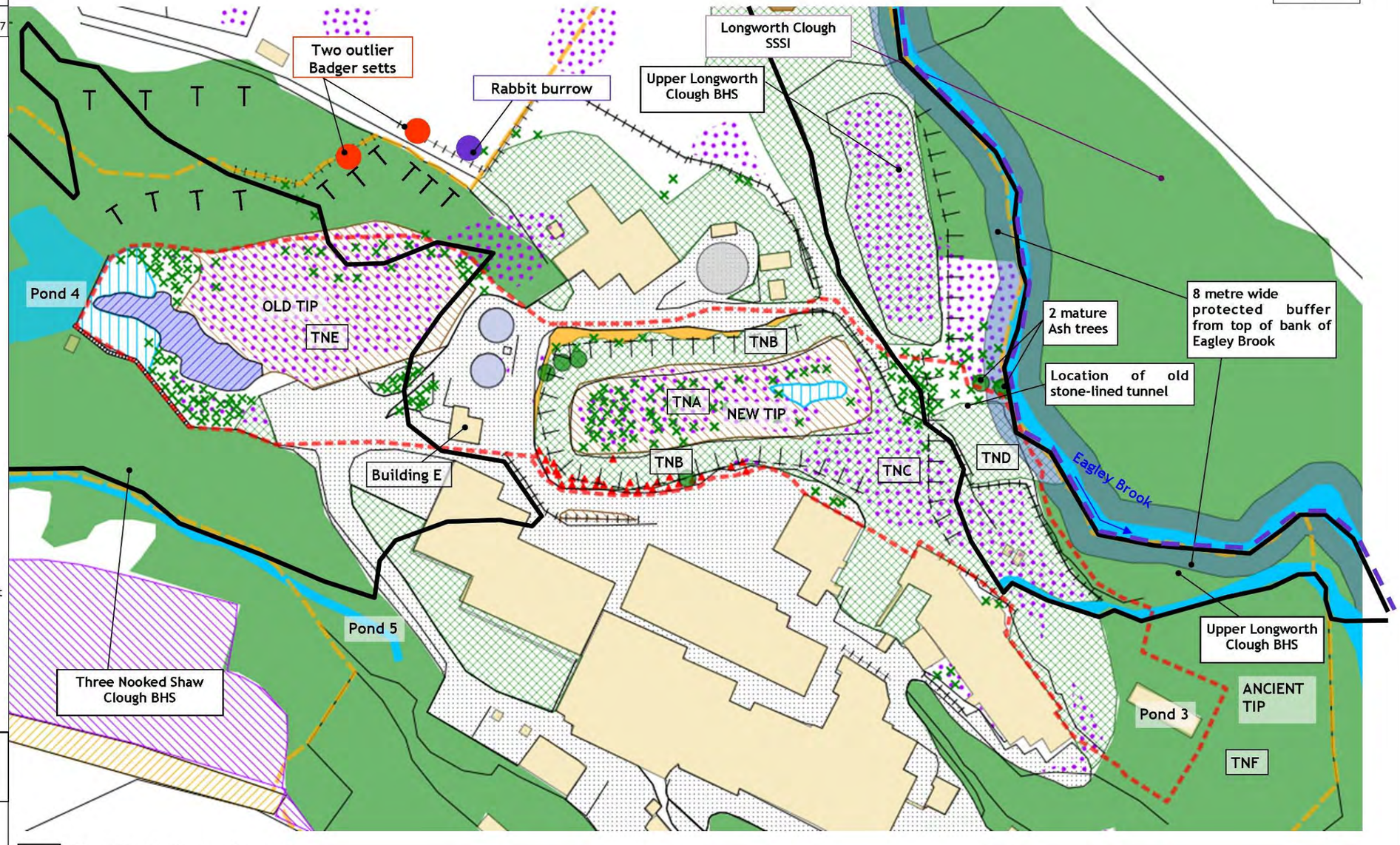
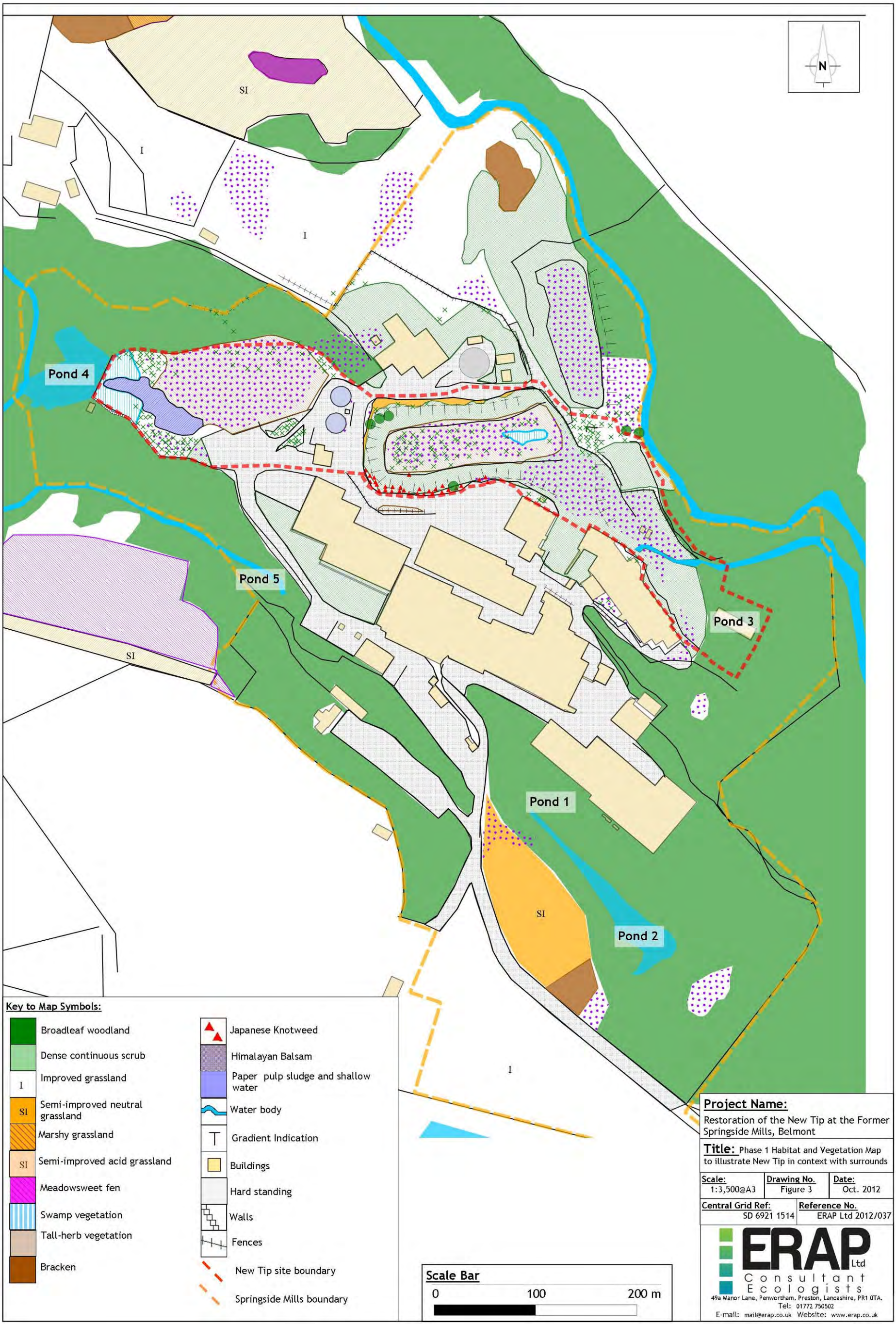


TNB Target Note (refer to main report)


N
SI
I
I
Pond 4
Pond 5
SI
Pond 3
Pond 1
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I
Key to Map Symbols:
Broadleaf woodland
Dense continuous scrub
Improved grassland
Semi-improved neutral grassland
Marshy grassland
Semi-improved acid grassland
Meadowsweet fen
Swamp vegetation
Tall-herb vegetation
Bracken
Japanese Knotweed
Himalayan Balsam
Paper pulp sludge and shallow water
Water body
Gradient Indication
Buildings
Hard standing
Walls
Fences
New Tip site boundary
Springside Mills boundary
Scale Bar
0
100
200 m
Project Name:
Restoration of the New Tip at the Former Springside Mills, Belmont
Title: Phase 1 Habitat and Vegetation Map to illustrate New Tip in context with surrounds
Scale: 1:3,500@A3
Drawing No. Figure 3
Date: Oct. 2012
Central Grid Ref: SD 6921 1514
Reference No. ERAP Ltd 2012/037
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Outlier Badger Setts

Pre-work updated Badger survey to be carried out. Existing outlier setts to remain undisturbed throughout all works, refer to **Section 5.4.**

Old stone-lined tunnel

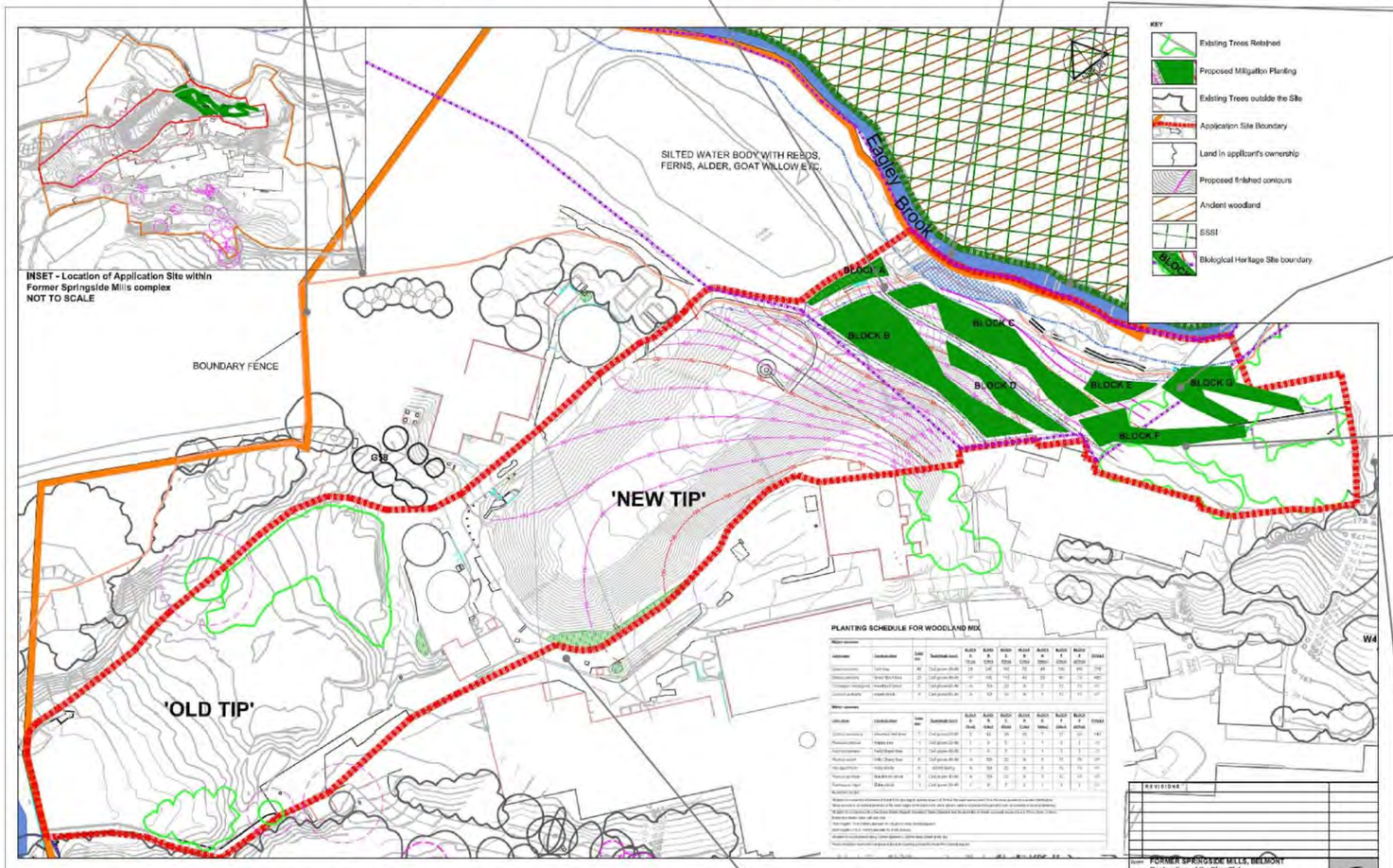
Pre-work inspection and assessment of tunnel in winter months followed by precautionary exclusion of tunnel to protect bats, refer to **Section 5.5.**

Protection of Eagley Brook corridor

Minimum 8 metre wide buffer to be protected between the southern bank of Eagley Brook and any working areas. Works in proximity to Eagley Brook will be carried out in accordance with the appropriate Pollution Prevention Guidelines (PPG), refer to **Section 5.2.**

Protection of Longworth Clough SSSI and habitats outside the Working Area

Temporary demarcation bunting installed to separate working area from Longworth Clough Site of Special Scientific Interest (SSSI) and surrounding woodland, refer to **Section 5.1.**



FORMER SPRINGSIDE MILLS, BELMONT - Restoration of the 'New Tip'
Mitigation Planting Proposals Plan

Landscaping and Habitat Creation

The more level plateau at the top of the restored New Tip will be seeded with a low maintenance wildflower mix such as the WFG13 Clay Neutral Soils mix supplied by British Seed Houses. This mix contains food plants for a diversity of breeding and feeding invertebrates.

The restored slope will be planted with native tree species of local provenance to create a woodland representative of the W10 Oak-Bracken Bramble woodland of the NVC. The objective of the tree planting is to create woodland habitats that are complementary to the wider Longworth Clough *and* works towards the creation of Priority Habitat.

Appropriate species comprise Pedunculate Oak, Silver Birch, Rowan, Hawthorn, Wild Cherry, Guelder Rose, Blackthorn, Holly and Hazel, refer to **Section 5.7.**

Long-term Landscape and Habitat Management Plan

To secure the successful establishment and aftercare of the landscaping planting and on-going habitat creation a Long-term Landscape and Habitat Management Plan will be committed to, refer to **Section 5.8.**

The scope of the Plan will comprise: -

a. Aftercare of all planting including the removal and replacement of dead and diseased plants;

b. Cutting regime at the wildflower grassland,

c. Inspection and cleaning out of the bird and bat boxes,

d. Creation of new dead wood habitat piles as material becomes available;

e. Introduction of native woodland herbs as the woodland habitats become established;

f. Selective thinning after 5, 10 and 15 years to encourage the growth of oak and birch and to create rides and glades throughout the woodland to encourage creation of areas that receive 'dappled sunshine' and habitats for invertebrates and attraction of foraging bats and birds;

g. Continued control of invasive species.

Invasive Species Management Plan

An appropriate 'Invasive Species Management Plan', in accordance with Environment Agency guidelines, will be prepared and implemented for the control of Japanese Knotweed and Himalayan Balsam, refer to **Section 5.6.**

Protection of nesting birds

Vegetation clearance in the working area to be carried out outside the bird breeding season, refer to **Section 5.3.**

Site Access and Contractor's Compound

Site compound and contractor's car park to be on hard-standing areas only, refer to **Section 5.1.**

Site access via existing asphalt access roads. Trees and shrubs alongside access roads to be protected from damage by passing machinery.

Ecological Enhancement and Habitat Creation in Adjacent Woodland

Dead wood habitat piles to be created in areas of retained woodland suitable for colonisation by small mammals including Hedgehog (a UK BAP Priority Species), sheltering and hibernating amphibians such as Common Toad (a UK BAP Priority Species), invertebrates and fungi.

Five bat boxes and seventeen bird boxes of three designs suitable for specific woodland birds will be installed at the adjacent woodland, to be protected in the long-term, prior to the commencement of works at the New Tip, refer to **Section 5.7**

Plan extracted from Drawing 1823_11 prepared by The Appleton Group

Project Name:
Restoration of the New Tip at the Former Springside Mills, Belmont

Title: Outline of ecological protection and enhancement

Scale:	Drawing No.	Date:
NTS	Figure 4	Oct. 2012

Central Grid Ref:	Reference No.
SD 6921 1514	ERAP Ltd 2012/037

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APPENDIX 2: BAT TREE ASSESSMENT CRITERIA

Criteria for Assessment of Trees in accordance with Category 1 to 3 as defined in Table 8.4 of the Bat Conservation Trust Bat surveys-good practice guidelines 2nd Edition (Hundt, L. 2012).

CATEGORY	DESCRIPTION	CRITERIA
Known or Confirmed	Confirmed roost	Confirmed roost Evidence found that indicates tree/tree features are being used by bats. Droppings found at the base of the tree, below a cavity. Bats heard 'chattering' inside a feature on a warm day or at dusk Bat(s) observed flying from or to a feature.
1*	Very high value	Trees with multiple, highly suitable features capable or supporting larger roosts. Features of particular significance, suitable for high priority roosts such as maternity roosts, used by large numbers of bats, offering conditions that are uncommon or rare in the local area. Features such as large cavities, extensive branch or trunk splits, also including multiple features in the same tree that offer a diversity of opportunities. Features may also include dense ivy.
1	High value	Trees with definite bat potential supporting fewer suitable features than category 1* trees or with potential for use by single bats. Features which provide a more secure form of roost for small groups of bats and individuals, but may still be quite common types of feature, such as small cavities, minor splits or sparse ivy cover.
2	Moderate value	Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats. A tree which on close inspection the potential roost positions are in some way not ideal. They could be upward facing or holes very low down or cluttered by adjacent branches.
3	Low/Negligible value	Trees that have no features which could be used by bats for roosting (Usually young trees).

APPENDIX 3: GREAT CRESTED NEWT AND AMPHIBIAN SURVEY 2012 (separate document)

APPENDIX 4: RESULTS OF REPTILE SURVEY 2008 (separate document)

SPRINGSIDE MILLS, OFF BELMONT ROAD, BELMONT

APPENDIX 3:
GREAT CRESTED NEWT AND AMPHIBIAN SURVEY 2012

September 2012

[ERAP Ltd ref: 2012_037]

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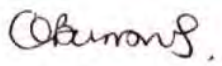
Report Author	Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MIEEM
Signed	
Date	2nd September 2012
Checked by	Amy Sharples B.Sc. (Hons) M.Sc. GradIEEM
Signed	
Date	24th October 2012
Report Issued to:	Urbanspringside Limited
Copy Number	v1

A. SUMMARY

Introduction and Scope

i. ERAP Ltd (Consultant Ecologists) carried out a full, licensed Great Crested Newt survey of six ponds within a 500 metres radius from Springside Mills, Belmont between May and June 2012.

ii. The surveys were carried out by appropriately experienced and licensed surveyors and in accordance with the standard guidance presented in the *Great Crested Newt Mitigation Guidelines* (English Nature 2001).

iii. The scope of survey undertaken is appropriate to detect the presence of Great Crested Newt and, if present, determine population size. The scope included the survey for other amphibian species (Common Toad, Common Frog, Smooth Newt and Palmate Newt).

iv. No survey limitations occurred.

Results of Survey and Assessment

v. No Great Crested Newts were detected.

vi. A small population size class (1-10) of Smooth Newt was detected at Ponds 1, 2, 4 and 5.

vii. A medium population size class (11 to 100) of Palmate Newt was detected at Pond 3 and 4 and a small population size class at Ponds 1, 2 and 5.

viii. Breeding Common Frog (as confirmed by the presence of spawn and tadpoles) was detected at Ponds 1, 2, 4 and 5.

ix. Breeding Common Toad (as confirmed by the presence of spawn and tadpoles) was detected at Pond 4.

Fish

x. Fish (including Stickleback) were detected at Ponds 1, 2, 4, 5 and 7.

Conclusion

xi. Appropriate survey effort has been applied to detect Great Crested Newt. Great Crested Newt was not detected. It is reasonable to conclude that Great Crested Newt and their habitats will not be affected by the proposals.

xii. The ponds within the site (Ponds 1 to 5) are used by four species of amphibian. The detected population sizes are not substantive. The maximum number of Palmate Newt detected on one survey effort was 16 newts.

xiii. Breeding Common Toad (a Species of Principal Importance/Priority Species) was detected at Pond 4.

1.0 INTRODUCTION

Background and Rationale

1.1 In connection with the New Tip restoration proposals and future re-development proposals at Springside Mills, Belmont, ERAP Ltd (Consultant Ecologists) recommended the completion of a Great Crested Newt survey.

1.2 The site contains five ponds and one pond is located within a 500 metre radius of the site boundary, refer to **Section 2.1** and **Figure 1.** All ponds were surveyed for the presence of amphibians.

Legislation and Conservation Status

Great Crested Newt

1.3 The Great Crested Newt (GCN) is listed on Appendix II of the Bern Convention and on Annexes II and IV of the EU Natural Habitats Directive. In England and Wales the Great Crested Newt is protected under Schedule 2 of the *Conservation of Habitats and Species Regulations 2010* (as amended) and under Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended).

1.4 It is an offence, with certain exceptions, to:

- Intentionally or deliberately capture, kill, or injure GCN;
- Intentionally or recklessly damage, destroy, and disturb GCN in a place used for shelter or protection, or obstruct access to such areas;
- Damage or destroy a GCN breeding site or resting place;
- Possess a GCN, or any part of it, unless acquired lawfully; and
- Sell, barter, exchange, transport, or offer for sale GCN or parts of them.

1.5 The legislation covers all newt life stages such that eggs, tadpoles and adult newts are all equally protected. Actions that are prohibited can be made lawful by a licence issued by the appropriate Statutory Nature Conservation Organisation.

1.6 The GCN is a Priority Species under the UK Biodiversity Action Plan and has been adopted as a Species of Principal Importance in England under section 41 of the NERC Act 2006 (section 42 in Wales).

Other Amphibian Species

1.7 Other amphibian species associated with inland habitats comprise Smooth Newt, Palmate Newt, Common Frog and Common Toad.

1.8 The Common Toad is a Priority Species/Species of Principal Importance in England.

Objectives

1.9 The objectives of the amphibian survey were to: -

a. Apply recognised survey methods to detect amphibians at the ponds in the breeding season;

b. If present, determine the population size class of each species of amphibian and determine whether breeding has occurred; and,

c. Present the results in a stand-alone appendix to be used to inform ecological guidance to be provided during the preparation of the site proposals.

2.0 METHOD OF SURVEY

2.1 Survey Area

2.1.1 In determining the geographical limit/extent of Great Crested Newt surveys Natural England's current guidance states that a proportionate and risk-based approach should be applied.

2.1.2 In accordance with the application of this proportionate and risk based approach, current Natural England guidance is that all ponds within an unobstructed 500 metres of a site should be surveyed/assessed for their potential to support Great Crested Newts.

2.1.3 The ponds listed in **Table A** are present within an unobstructed 500 metres radius from the site boundary*: -

***Table A:** Ponds within an unobstructed 500 metres radius from the site boundary**

Pond Number	Grid Reference	Notes
Pond 1	SD 6928 1498	Surveyed with bottle traps, torch light and egg search
Pond 2	SD 6933 1493	Surveyed with bottle traps, torch light and egg search
Pond 3	SD 6939 1504	Surveyed with bottle traps, torch light and egg search
Pond 4	SD 6901 1526	Surveyed by torchlight, egg search and netting
Pond 5	SD 6909 1519	Surveyed with bottle traps, torch light and egg search
Pond 6	SD 6886 1510	Excluded from survey; closer examination confirmed this is not a pond but an on-line confluence of Three Nooked Shaw Brook.
Pond 7	SD 6886 1534	Surveyed by torchlight, egg search and netting

Note: * For the purpose of the GCN survey the site is the boundary as annotated on **Figure 1.**

2.2 Habitat Suitability Index (HSI)

2.2.1 All ponds were assessed using the Habitat Suitability Index (HSI) (Oldham *et al* 2000). All ponds were visited on the 5th March 2012 by Victoria Burrows B.Sc. (Hons) M.Sc. CEnv MIEEM, a registered Natural England Great Crested Newt Class Licence holder.

2.2.2 The ponds were examined with reference to the ten HSI scoring criteria, which are: SI_1:Geographical location; SI_2:Pond area; SI_3:Pond drying; SI_4:Water quality (as indicated by the diversity of aquatic plants and invertebrates); SI_5:Shade, SI_6:Waterfowl, SI_7:Fish; SI_8:Abundance of other ponds within 1km radius; SI_9:Quality of terrestrial habitat; and SI_{10} Macrophyte cover (i.e. aquatic and emergent plants).

2.2.3 An indication of the aquatic invertebrate diversity was obtained through the use of a fine-mesh, long-handled pond net, which was swept through the ponds at intervals around their margins.

2.2.4 The raw HSI data are presented on **Table 1 at Section 6.0**. The assessment followed guidance in relation to interpreting HSI scores, following the categorical scale shown in **Table B**, below:-

Table B: HSI scoring

HSI Score	Pond Suitability for Great Crested Newt
≤0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
≥0.8	Excellent

2.3 Survey Methods and Personnel

Methods

2.3.1 The surveys were carried out in accordance with the methodologies specified in the *Great Crested Newt Mitigation Guidelines* (English Nature 2001) and included the application of the following methods: -

Torchlight searches – This involved shining a powerful torch (Clulite CB2 - 1,000,000 candle power) into the pond margins at night during suitable weather conditions (above 5°C), identifying the amphibian species and counting the number of each species of amphibian.

Egg Search – All submerged, emergent and water-margin vegetation, including the leaves of terrestrial plants that had fallen into the water, was checked in daylight for the presence of newt eggs and Great Crested Newt eggs. In addition the dead and decaying leaves of aquatic and reed species were examined. The egg searches were used to determine presence or absence only; eggs were not counted because opening the leaves enclosing the eggs can expose the eggs and developing newt larvae to predators and to other threats. Care was taken at all times to ensure that the eggs were not left exposed or damaged.

Bottle Trap Surveys – Bottle traps constructed from 2-litre plastic bottles were set around the ponds at a spacing of one trap every 2 metres. An air bubble was always provided to ensure that newts and other amphibians did not drown. The traps were set and left overnight during suitable weather (above 5°C). The traps were emptied the following morning and all captured amphibians were identified and returned to the pond.

Netting – Owing to the presence of a hard, concrete bed and shallow water it was not possible to install bottle traps at Pond 3. Similarly, owing to the paper pulp substrate at Pond 7 a bottle trap survey was not possible for health and safety reasons. At Ponds 3 and 7 bottle trapping was substituted with the application of netting to ensure three methods of detection were applied on each occasion, refer to **Table A**.

Terrestrial Searches – In addition to the surveys of the aquatic habitats suitable debris throughout the site and the surrounding area (particularly in close proximity to the ponds) was lifted and searched for the presence of amphibians.

2.3.2 All Great Crested Newt surveys were conducted during suitable weather conditions (refer to **Tables 2 to 7 at Section 6.0**).

Surveyors

2.3.3 The GCN surveys were completed by Richard Lowe B.Sc. (Hons) and Sean Hough. All surveyors were accredited agents under Victoria Burrows' Natural England Class Licence for the survey of Great Crested Newt. All surveyors have extensive experience of the appropriate survey

methodology, the identification of all species of amphibian and the specifications in the *Great Crested Newt Mitigation Guidelines* (English Nature 2001).

2.3.4 Best practice was applied throughout and all survey equipment was treated with Virkon to ensure the potential risk of the spread of the Chytrid fungus was minimised (as advised by the Herpetological Conservation Trust). The survey equipment (bottle traps) used at each pond was restricted for use at that pond only; the equipment was not used to survey any other ponds.

2.4 Survey Limitations

2.4.1 No access restrictions were encountered.

2.4.2 All areas of the site were surveyed. The survey was carried out at an appropriate time of year.

2.4.3 No survey limitations occurred.

3.0 RESULTS OF SURVEY

3.1 Pond Habitats

3.1.1 All surveyed ponds are briefly described below. **Table 1** at **Section 6.0** summarises the information.

Pond 1

3.1.2 Pond 1 (refer to **Photo 1**, below) is linear, man-made pond in the south-eastern corner of the site. The eastern bank is constructed of grit stone and the western bank is dug out of the sloping wooded embankment.

3.1.3 The pond is shaded by marginal semi-mature Pedunculate Oak and Sycamore woodland. The water is clear and approximately 0.4 metres deep.

3.1.4 No aquatic plant species were detected.

Photo 1: *Pond 1 (facing south-west)*

Pond 2

3.1.5 Pond 2 (**Photo 2**, below) is connected to Pond 1 and follows the same contours of the hillside.

3.1.6 Pond 2 is large (over 900m^2) and has a deep centre. The pond margins are shaded by surrounding Pedunculate Oak, Silver Birch, Rowan, Rhododendron and Willow.

3.1.7 Bulrush is present towards the eastern end and the aquatic moss *Fontinalis antipyretica* is abundant and constant over the whole pond.

***Photo 2**: Pond 2 (facing east)*

Pond 3

3.1.8 Pond 3 (**Photo 3,** below) comprises a rectangular concrete lined settling tank. The tank is shaded by marginal Common Sallow. The water is clear and up to 0.5 metres deep.

3.1.9 Aquatic species present comprise Common Duckweed and Common Water Starwort with very local stands of Bulrush.

***Photo 3**: Pond 3 (facing north-west)*

Pond 4

3.1.10 Pond 4 (**Photo 4**, below) is a dammed lagoon at the western end of the factory/mill buildings. Three Nooked Shaw Brook flows into the lagoon from the south.

3.1.11 The banks of the pond are formed from steeply sloping wooded banks with a red brick dam at the eastern edge. Beyond the dam is settled paper pulp with shallow pools of water colonised by Bulrush (refer to **Photo 5**). The amphibian survey concentrated on these shallow pools where fish cannot access.

***Photo 4**: Deeper, dammed area of Pond 4 connected to brook.*

***Photo 5**: Pooled water and paper pulp beyond the dam*

Pond 5

3.1.12 Pond 5 (**Photo 6**, below) is located within the woodland to the south of the complex of building. The Pond is part of the old mill race and has stone banks. The water is 0.5 metres deep over a deep sediment.

3.1.13 Local patches of *Sphagnum* moss are present on the southern margins.

***Photo 6**: Pond 5 (facing south-east)*

Pond 7

3.1.14 Pond 7 (**Photo 7**, below) is outside the main Springside Mills site. The pond comprises the headwall of a former mill race. Sedimentation has occurred which has resulted in pooling of water and colonisation by Bulrush. A steeply sloping concrete outfall directs water from Pond 7 into the stream/former mill race, refer to **Photo 8**.

3.1.15 Few areas of shallow open water are present but the majority of the pond is colonised by Bulrush and Soft Rush.

***Photo 7**: Pond 7 (facing south)*

***Photo 8**: Concrete outfall from Pond 7*

3.2 Pond HSI Results

3.2.1 The raw HSI data are appended at **Table 1 in Section 6.0**

3.2.2 No ponds have 'excellent' suitability for GCN. The scores are lowered owing to the presence of fish in all ponds except Pond 3.

3.2.3 In summary: -

a. Ponds 3 and 7 have a 'good' suitability;

b. Pond 5 has 'average' suitability;

c. Ponds 2 and 4 have 'below average' suitability; and,

d. Pond 1 is 'poor' suitability for GCN.

3.3 Great Crested Newt Presence/Absence Survey Results

3.3.1 The GCN survey data are presented at **Section 6.0.**

3.3.2 A summary of the results is presented in **Table C** in **Section 3.3.**

3.3.3 No GCN were detected at the six surveyed ponds in 2012.

3.4 Other Amphibian Species and Fish

3.4.1 **Table C** presents a summary of the amphibian survey results.

Table C: *Summary of Amphibian Survey Data (2012)*

Pond	GCN	SN	PN	CF	CFT	CT	CTT	Fish
Pond 1	0	2 (b)	2 (b)	0	P	0	0	P
Pond 2	0	1 (b)	2 (b)	0	P	0	0	P
Pond 3	0	0	16 (t)	0	0	0	0	0
Pond 4	0	2 (t)	10 (b)	0	P	0	P	P
Pond 5	0	7 (t)	5 (b)	0	P	P	0	P
Pond 7	0	0	0	0	0	0	0	P
TOTAL	**0**	**12**	**34**	**0**	**P**	**P**	**0**	**P**

KEY: - GCN = Great Crested Newt, SN = Smooth Newt, PN = Palmate Newt, CF = Common Frog, CFT = Common Frog tadpole, CT = Common Toad, CTT = Common Toad tadpole, P = Present

Please note: The numbers presented in the summary above are the maximum numbers of each species recorded by bottle trap (b) or torchlight (t) on *one survey session* these may be on different survey dates.

3.4.2 Four amphibian species were detected in total (Smooth Newt, Palmate Newt, Common Frog and Common Toad).

3.4.3 No amphibians were detected at Pond 7.

Smooth Newt and Palmate Newt

3.4.4 A small population size class (1-10) of Smooth Newt was detected at Ponds 1, 2, 4 and 5.

3.4.5 A medium population size class (11 to 100) of Palmate Newt was detected at Pond 3 and 4 and a small population size class at Ponds 1, 2 and 5.

3.4.6 Despite careful searches no eggs to confirm newt breeding were detected.

Common Frog and Common Toad

3.4.7 Breeding Common Frog (as confirmed by the presence of spawn and tadpoles) was detected at Ponds 1, 2, 4 and 5.

3.4.8 Breeding Common Toad (as confirmed by the presence of spawn and tadpoles) was detected at Pond 4. An adult Common Toad was observed by Pond 5.

Fish

3.4.9 Fish (including Stickleback) were detected at Ponds 1, 2, 4, 5 and 7.

4.0 CONCLUSIONS

4.1 Appropriate survey effort has been applied to detect Great Crested Newt. Great Crested Newt was not detected. It is reasonable to conclude that Great Crested Newt and their habitats will not be affected by the proposals.

4.2 The ponds within the site (Ponds 1 to 5) are used by four species of amphibian. The detected population sizes are not substantive. The maximum number of Palmate Newt detected on one survey effort was 16 newts.

4.3 Breeding Common Toad (a Species of Principal Importance/Priority Species) was detected at Pond 4.

5.0 REFERENCES

Department for Communities and Local Government (March 2012). *National Planning Policy Framework*. London

English Nature (2001). *Great Crested Newt Mitigation Guidelines*. English Nature. Peterborough.

Gent, T. and Gibson, S. (eds) (1998). Herpetofauna Worker's Manual. Joint Nature Conservation Committee.

Langton, T., Beckett, C. and Foster, J. (2001). *Great Crested Newt Conservation Handbook*. Froglife. Suffolk.

Wildlife and Countryside Act (1981). H.M.S.O., London.

6.0 TABLES AND FIGURES

TABLE 1: General Description and Habitat Suitability Index Assessment Criteria for Ponds 1 to 5 and 7

Pond:	Pond 1		Pond 2		Pond 3		Pond 4		Pond 5		Pond 7	
General Description:	Shaded		Shaded		Rectangular concrete tank		Formed by a red brick dam		Stone banks		Formed by a large dam at the valley projecting west of the site	
Grid Reference:	SD 69287 14988		SD 69332 14938		SD 69398 15042		SD 69010 15269		SD 69097 15195		SD 68865 15042	
Water depth (max):	0.4 metres		Up to 1 metre in the centre		0.5 metres		2 metres (dammed) 0.4 metres (beyond dam)		0.5 metres		0.5 metres	
Bank access:	Good		Moderate, with care		Good		Difficult. Unstable paper pulp substrate		Good		Good	
Bed composition:	Silt and leaf litter		Silt and leaf litter		Concrete		Earth before dam. Paper pulp beyond dam		1 metre deep sediment		Silt	
Aquatic and emergent plants detected:	None		Bulrush and aquatic moss (*Fontinalis antipyretica*)		Common Duckweed, Common Water Starwort and Bulrush		Bulrush		Common Duckweed		Reed Canary-grass, Bulrush, Yellow Iris, Soft Rush and Purple Loosestrife	
HSI Criterion	**Description relating to pond**	**Score**	**Description relating to pond**	**Score**	**Description relating to pond**	**Score**	**Description relating to pond**	**Score**	**Description relating to pond**	**Score**	**Description relating to pond**	**Score**
SI_1 Location	A	**1**	A	**1**	A	**1**	A	**1**	A	**1**	A	**1**
SI_2 Pond area	150m^2	**0.2**	900m^2	**0.95**	240m^2	**0.4**	1200m^2	**0.92**	180m^2	**0.3**	400m^2	**0.8**
SI_3 Pond drying	Never	**0.9**	Never	**0.9**	Never	**0.9**	Never	**0.9**	Never	**0.9**	Never Dries	**0.9**
SI_4 Water quality	Poor	**0.33**	Poor	**0.33**	Poor	**0.33**	Poor	**0.33**	Poor	**0.33**	Poor	**0.33**
SI_5 Shade	30%	**1**	80%	**0.6**	10%	**1**	50%	**1**	50%	**1**	5%	**1**
SI_6 Fowl	Minor	**0.67**	Minor	**0.67**	Absent	**1**	Absent	**1**	Absent	**1**	Minor	**0.67**
SI_7 Fish	Major	**0.01**	Major	**0.01**	Absent	**1**	Major	**0.01**	Major	**0.33**	Minor	**0.33**
SI_8 Ponds	7	**0.83**	7	**0.83**	7	**0.83**	7	**0.83**	7	**0.83**	7	**0.83**
SI_9 Terrestrial habitat	Good	**1**	Good	**1**	Good	**1**	Good	**1**	Good	**1**	Good	**1**
SI_{10} Macrophytes	0%	**0.3**	80%	**1**	0%	**0.3**	10%	**0.4**	0%	**0.3**	55%	**0.8**
HSI Score	**Poor**	**0.40**	**Below Average**	**0.50**	**Good**	**0.7**	**Below Average**	**0.50**	**Average**	**0.61**	**Good**	**0.71**

TABLE 2: Great Crested Newt Survey Results *Pond 1*

Job Number & Site Name		Springside Mills, Belmont			Pond Reference:		Pond 1	Surveyors Names		R.Lowe, S.Hough		
Survey Method	**Date of result**	**Air Temp (ºC)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN**	**PN**	**CF**	**CFT**	**CT**	**CTT**	**Fish**
Bottle trap **rep 1**	09/05/12	9	2	1	0	0	0	0	0	0	0	**
OTHER, including : No of bottles, weather, access constraints, inverts, eutrophicaton, pollution & invasive sp	No. of bottle traps	25	Weather conditions	Cloud 4/8, calm and dry								
	A vertical-sided mill pond with stone sides and base. Very deep water and deep discoloured silt at base of pond.											
Bottle trap **rep 2**	13/05/12	6	1	1	0	0	1F	0	*	0	0	*
OTHER, including all of the above	No. of bottle traps	25	Weather conditions	1/8 high cloud cover, calm and dry								
	Lesser water beetle and other beetle species											
Bottle trap **rep 3**	18/05/12	10	2	2	0	2F	0	0	*	0	0	**
OTHER, including all of the above	No. of bottle traps	25	Weather conditions	8/8 cloud cover, calm and dry								
	Lesser water beetle and other beetle species, water boatman, midge larvae											
Bottle trap **rep 4**	03/06/12	7	3	1	0	1F	1F	0	*	0	0	*
OTHER, including all of the above	No. of bottle traps	25	Weather conditions	High cloud 8/8, moderate wind, dry								
	Lesser water beetle and other beetle species, leeches.											

Survey Method	**Date of result**	**Air Temp (ºC)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN**	**PN**	**CF**	**CFT**	**CT**	**CTT**	**Fish**
Torchlight **rep 1**	08/05/12	9	2	1	0	0	0	0	0	0	0	**
OTHER , including: torch power, weather, access constraints, inverts, eutrophicaton, pollution & invasive sp	Torch power	500,000/1million	Weather conditions	4/8 cloud cover, calm and dry								
	Lesser water beetle, water spider											
Torchlight **rep 2**	12/05/12	6	1	1	0	0	1F	0	0	0	0	**
OTHER, including all of the above	Torch power	500,000/1million	Weather conditions	1/8 high cloud cover, calm and dry								
	Lesser water beetle and other beetle species, water boatman											
Torchlight **rep 3**	17/05/12	10	2	2	0	0	0	0	0	0	0	**
OTHER , including all of the above	Torch power	500,000/1million	Weather conditions	8/8 cloud cover, calm and dry								
	Lesser water beetle and other beetle species, water boatman, midge larvae											
Torchlight **rep 4**	02/06/12	7	3	1	0	0	2F	0	**	0	0	***
OTHER , including all of the above	Torch power	500,000/1million	Weather conditions	High cloud 8/8, moderate wind, intermittent light drizzle								
	Lesser water beetle and other beetle species, water boatman.											

Survey Method	**Date of result**	**Air Temp (ºC)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN or PN**	**Frog spawn**	**CFT**	**Toad spawn**	**CTT**	**Fish**
Egg search **rep 1**	08/05/12	9	2	1	0	0	0	0	0	0	0
Egg search **rep 2**	12/05/12	6	1	1	0	0	0	0	0	0	0
Egg search **rep 3**	17/05/12	10	2	2	0	0	0	0	0	0	0
Egg search **rep 4**	02/06/12	7	3	1	0	0	0	0	0	0	0

TABLE 3: GCN Survey Results *Pond 2*

Job Number & Site Name		Springside Mill, Belmont			Pond Reference:		Pond 2	Surveyors Names		R.Lowe, S.Hough		
Survey Method	**Date of result**	**Air Temp (°C)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN**	**PN**	**CF**	**CFT**	**CT**	**CTT**	**Fish**
Bottle trap **rep 1**	09/05/12	9	1	1	0	1F	2F	0	0	0	0	**
OTHER, including : No of bottles, weather, access constraints, inverts, eutrophicaton, pollution & invasive sp	No. of bottle traps	100	Weather conditions	Cloud 4/8, calm and dry								
	A vertical-sided mill pond with stone sides and base. Very deep water and deep discoloured silt at base of pond. Lesser water beetle and other beetle species, water boatman, Leeches.											
Bottle trap **rep 2**	13/05/12	6	1	4	0	0	1F	0	0	0	0	**
OTHER, including all of the above	No. of bottle traps	100	Weather conditions	1/8 high cloud cover, calm and dry								
	Lesser water beetle and other beetle species, water boatman.											
Bottle trap **rep 3**	18/05/12	10	3	1	0	0	0	0	0	0	0	**
OTHER, including all of the above	No. of bottle traps	100	Weather conditions	8/8 cloud cover, calm and dry								
	Lesser water beetle and other beetle species, water boatman, louse, pond snails.											
Bottle trap **rep 4**	03/06/12	7	1	1	0	0	2F	0	**	0	0	***
OTHER, including all of the above	No. of bottle traps	100	Weather conditions	High cloud 8/8, moderate wind, dry								
	Lesser water beetle and other beetle species, water boatman, louse, pond snails and leeches.											

Survey Method	**Date of result**	**Air Temp (°C)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN**	**PN**	**CF**	**CFT**	**CT**	**CTT**	**Fish**
Torchlight **rep 1**	08/05/12	9	1	1	0	0	0	0	0	0	0	*
OTHER , including: torch power, weather, access constraints, inverts, eutrophicaton, pollution & invasive sp	Torch power	500,000/1million	Weather conditions	4/8 cloud cover, calm and dry								
	Lesser water beetle											
Torchlight **rep 2**	12/05/12	6	1	4	0	0	0	0	0	0	0	**
OTHER, including all of the above	Torch power	500,000/1million	Weather conditions	1/8 high cloud cover, calm and dry								
	Lesser water beetle and other beetle species, dragonfly larvae , midge larvae,											
Torchlight **rep 3**	17/05/12	10	3	1	0	0	1F	0	*	0	0	**
OTHER , including all of the above	Torch power	500,000/1million	Weather conditions	8/8 cloud cover, calm and dry								
	Lesser water beetle and other beetle species.											
Torchlight **rep 4**	02/06/12	7	1	1	0	0	2F	0	*	0	0	**
OTHER , including all of the above	Torch power	500,000/1million	Weather conditions	High cloud 8/8, moderate wind, intermittent light drizzle								
	Lesser water beetle and other beetle species, water boatman.											

Survey Method	**Date of result**	**Air Temp (°C)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN or PN**	**Frog spawn**	**CFT**	**Toad spawn**	**CTT**	**Fish**
Egg search **rep 1**	08/05/12	9	1	1	0	0	0	0	0	0	0
Egg search **rep 2**	12/05/12	6	1	4	0	0	0	0	0	0	0
Egg search **rep 3**	17/05/12	10	3	1	0	0	0	0	0	0	0
Egg search **rep 4**	02/06/12	7	1	1	0	0	0	0	0	0	0

TABLE 4: GCN Survey Results *Pond 3*

Job Number & Site Name		Springside Mills, Belmont			Pond Reference:		Pond 3	Surveyors Names		R.Lowe, S.Hough		
Survey Method	**Date of result**	**Air Temp (ºC)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN**	**PN**	**CF**	**CFT**	**CT**	**CTT**	**Fish**
Torchlight **rep 1**	08/05/12	9	3	1	0	0	8F	0	0	0	0	0
OTHER , including: torch power, weather, access constraints, inverts, eutrophicaton, pollution & invasive sp	Torch power	500,000/1million		Weather conditions	4/8 cloud cover, calm and dry							
	Lesser water beetle and other beetle species, water boatman.											
Torchlight **rep 2**	12/05/12	6	1	1	0	0	1M, 15F	0	0	0	0	0
OTHER, including all of the above	Torch power	500,000/1million		Weather conditions	1/8 high cloud cover, calm and dry							
	Lesser water beetle and other beetle species.											
Torchlight **rep 3**	17/05/12	10	2	1	0	0	3F	0	0	0	0	0
OTHER , including all of the above	Torch power	500,000/1million		Weather conditions	8/8 cloud cover, calm and dry							
	Lesser water beetle and other beetle species.											
Torchlight **rep 4**	02/06/12	7	2	1	0	0	0	0	0	0	0	0
OTHER , including all of the above	Torch power	500,000/1million		Weather conditions	High cloud 8/8, moderate wind, intermittent light drizzle							
	Water level reduced to approx. Quarter of pond area. Lesser water beetle and other beetle species.											

Survey Method	Date of result	Air Temp (ºC)	Veg Cover (0 - 5)	Turbidity (0 - 5)	GCN	SN or PN	Frog spawn	CFT	Toad spawn	CTT	Fish
Egg search **rep 1**	08/05/12	9	3	1	0	0	0	0	0	0	0
Egg search **rep 2**	12/05/12	6	1	1	0	0	0	0	0	0	0
Egg search **rep 3**	17/05/12	10	2	1	0	0	0	0	0	0	0
Egg search **rep 4**	02/06/12	7	2	1	0	0	0	0	0	0	0

Survey Method	Date of result	Air Temp (ºC)	Veg Cover (0 - 5)	Turbidity (0 - 5)	GCN	SN or PN	Frog spawn	CFT	Toad spawn	CTT	Fish
Netting search **rep 1**	08/05/12	9	3	1	0	1F(PN)	0	0	0	0	0
OTHER notes:	Lesser water beetle and water boatman.										
Netting search **rep 2**	12/05/12	6	1	1	0	2F (PN)	0	0	0	0	0
OTHER notes:	Lesser water beetle and water boatman.										
Netting search **rep 3**	17/05/12	10	2	1	0	1F (PN)	0	0	0	0	0
OTHER notes:											
Netting search **rep 4**	02/06/12	7	2	1	0	0	0	0	0	0	0
OTHER notes:	Lesser water beetle.										

TABLE 5: GCN Survey Results *Pond 4*

Job Number & Site Name		Springside Mills, Belmont			Pond Reference:		Pond 4	Surveyors Names		R.Lowe, S.Hough		
Survey Method	**Date of result**	**Air Temp (ºC)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN**	**PN**	**CF**	**CFT**	**CT**	**CTT**	**Fish**
Bottle trap **rep 1**	09/05/12	9	2	2	0	0	2M,2F	0	0	0	0	0
OTHER, including : No of bottles, weather, access constraints, inverts, eutrophicaton, pollution & invasive sp	No. of bottle traps	20	Weather conditions	Cloud 4/8, calm and dry								
	Lesser water beetle and other beetle species, water boatman.											
Bottle trap **rep 2**	13/05/12	6	2	1	0	1F	1F	0	0	0	*	0
OTHER, including all of the above	No. of bottle traps	20	Weather conditions	1/8 high cloud cover, calm and dry								
	Lesser water beetle and other beetle species.											
Bottle trap **rep 3**	18/05/12	10	2	2	0	0	0	0	0	0	*	0
OTHER, including all of the above	No. of bottle traps	20	Weather conditions	8/8 cloud cover, calm and dry								
	Lesser water beetle and other beetle species, midge larvae											
Bottle trap **rep 4**	03/06/12	7	1	3	0	0	2M,8F	0	*	0	0	0
OTHER, including all of the above	No. of bottle traps	20	Weather conditions	High cloud 8/8, moderate wind, dry								
	Lesser water beetles and other beetle species.											

Survey Method	**Date of result**	**Air Temp (ºC)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN**	**PN**	**CF**	**CFT**	**CT**	**CTT**	**Fish**
Torchlight **rep 1**	08/05/12	9	2	2	0	0	1F	0	0	0	*	0
OTHER , including: torch power, weather, access constraints, inverts, eutrophicaton, pollution & invasive sp	Torch power	500,000/1million	Weather conditions	4/8 cloud cover, calm and dry								
	Lesser water beetle and other beetle species, water boatman, midge larvae, bloodworm											
Torchlight **rep 2**	12/05/12	6	2	1	0	0	1M,1F	0	0	0	0	0
OTHER, including all of the above	Torch power	500,000/1million	Weather conditions	1/8 high cloud cover, calm and dry								
	Lesser water beetle and other beetle species, midge larvae											
Torchlight **rep 3**	17/05/12	10	2	2	0	2F	0	0	0	0	0	0
OTHER , including all of the above	Torch power	500,000/1million	Weather conditions	8/8 cloud cover, calm and dry								
	Lesser water beetle and other beetle species, midge larvae.											
Torchlight **rep 4**	02/06/12	7	1	3	0	0	5F	0	*	0	0	*
OTHER , including all of the above	Torch power	500,000/1million	Weather conditions	High cloud 8/8, moderate wind, intermittent light drizzle								
	Lesser water beetle and other beetle species, midge larvae and 1x fish.											

Survey Method	**Date of result**	**Air Temp (ºC)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN or PN**	**Frog spawn**	**CFT**	**Toad spawn**	**CTT**	**Fish**
Egg search **rep 1**	08/05/12	9	2	2	0	0	0	0	0	0	0
OTHER notes:	Dangerous pond to search around pond margins, but decaying emergent vegetation was searched.										
Egg search **rep 2**	12/05/12	6	2	1	0	0	0	0	0	0	0
Egg search **rep 3**	17/05/12	10	2	2	0	0	0	0	0	0	0
Egg search **rep 4**	02/06/12	7	1	3	0	0	0	0	0	0	0

TABLE 6: GCN Survey Results *Pond 5*

Job Number & Site Name		Springside Mills, Belmont			Pond Reference:		Pond 5	Surveyors Names		R.Lowe, S.Hough		
Survey Method	**Date of result**	**Air Temp (°C)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN**	**PN**	**CF**	**CFT**	**CT**	**CTT**	**Fish**
Bottle trap **rep 1**	09/05/12	9	1	2	0	0	3F	0	0	0	0	0
OTHER, including : No of bottles, weather, access constraints, inverts, eutrophicaton, pollution & invasive sp	No. of bottle traps	55	Weather conditions	Cloud 4/8, calm and dry								
	Lesser water beetle and other beetle species, water boatman.											
Bottle trap **rep 2**	13/05/12	6	1	2	0	0	1M,2F	0	0	0	0	**
OTHER, including all of the above	No. of bottle traps	55	Weather conditions	1/8 high cloud cover, calm and dry								
	Lesser water beetle and other beetle species, water boatman.											
Bottle trap **rep 3**	18/05/12	10	2	2	0	2F	1F	0	*	0	0	0
OTHER, including all of the above	No. of bottle traps	55	Weather conditions	8/8 cloud cover, calm and dry								
	Lesser water beetle and other beetle species, pond snails.											
Bottle trap **rep 4**	03/06/12	7	2	3	0	0	1M,4F	0	**	0	0	0
OTHER, including all of the above	No. of bottle traps	55	Weather conditions	High cloud 8/8, moderate wind, dry								
	Lesser water beetle and other beetle species, leeches.											

Survey Method	**Date of result**	**Air Temp (°C)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN**	**PN**	**CF**	**CFT**	**CT**	**CTT**	**Fish**
Torchlight **rep 1**	08/05/12	9	1	2	0	0	1M,2F	0	0	1	0	*
OTHER , including: torch power, weather, access constraints, inverts, eutrophicaton, pollution & invasive sp	Torch power	500,000/1million	Weather conditions	4/8 cloud cover, calm and dry								
	Lesser water beetle and other beetle species											
Torchlight **rep 2**	12/05/12	6	1	2	0	7F	1F	0	0	0	0	**
OTHER, including all of the above	Torch power	500,000/1million	Weather conditions	1/8 high cloud cover, calm and dry								
	Lesser water beetle and other beetle species, midge larvae											
Torchlight **rep 3**	17/05/12	10	2	2	0	2F	1F	0	*	1	0	**
OTHER , including all of the above	Torch power	500,000/1million	Weather conditions	8/8 cloud cover, calm and dry								
	Lesser water beetle and other beetle species, midge larvae											
Torchlight **rep 4**	02/06/12	7	2	3	0	0	1F	0	*	0	0	0
OTHER , including all of the above	Torch power	500,000/1million	Weather conditions	High cloud 8/8, moderate wind, intermittent light drizzle								
	Contains a lesser amount of water than previous survey. Lesser water beetle and other beetle species.											

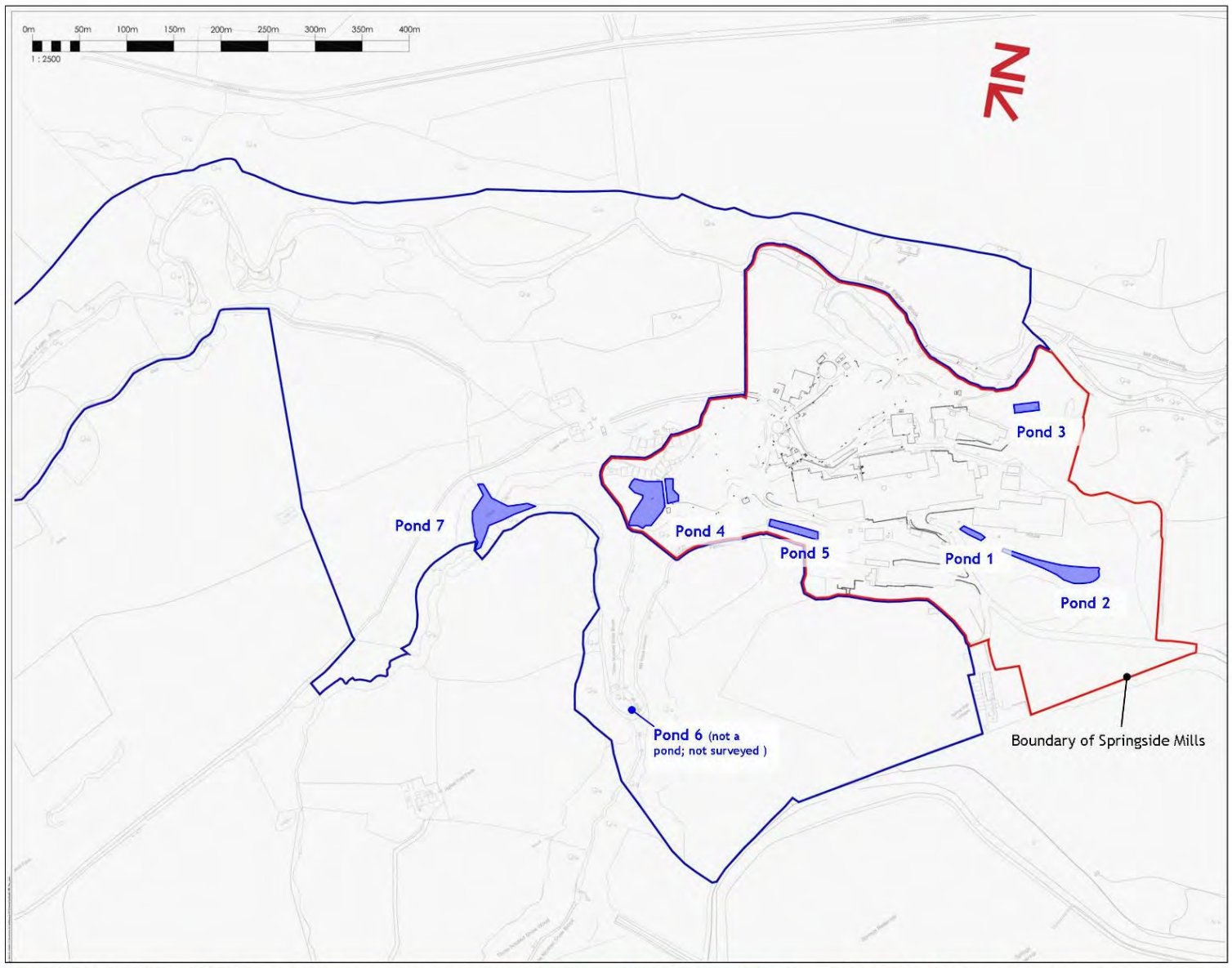
Survey Method	**Date of result**	**Air Temp (°C)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN or PN**	**Frog spawn**	**CFT**	**Toad spawn**	**CTT**	**Fish**
Egg search **rep 1**	08/05/12	9	1	2	0	0	0	0	0	0	0
Egg search **rep 2**	12/05/12	6	1	2	0	0	0	0	0	0	0
Egg search **rep 3**	17/05/12	10	2	2	0	0	0	0	0	0	0
Egg search **rep 4**	02/06/12	7	2	3	0	0	0	0	0	0	0

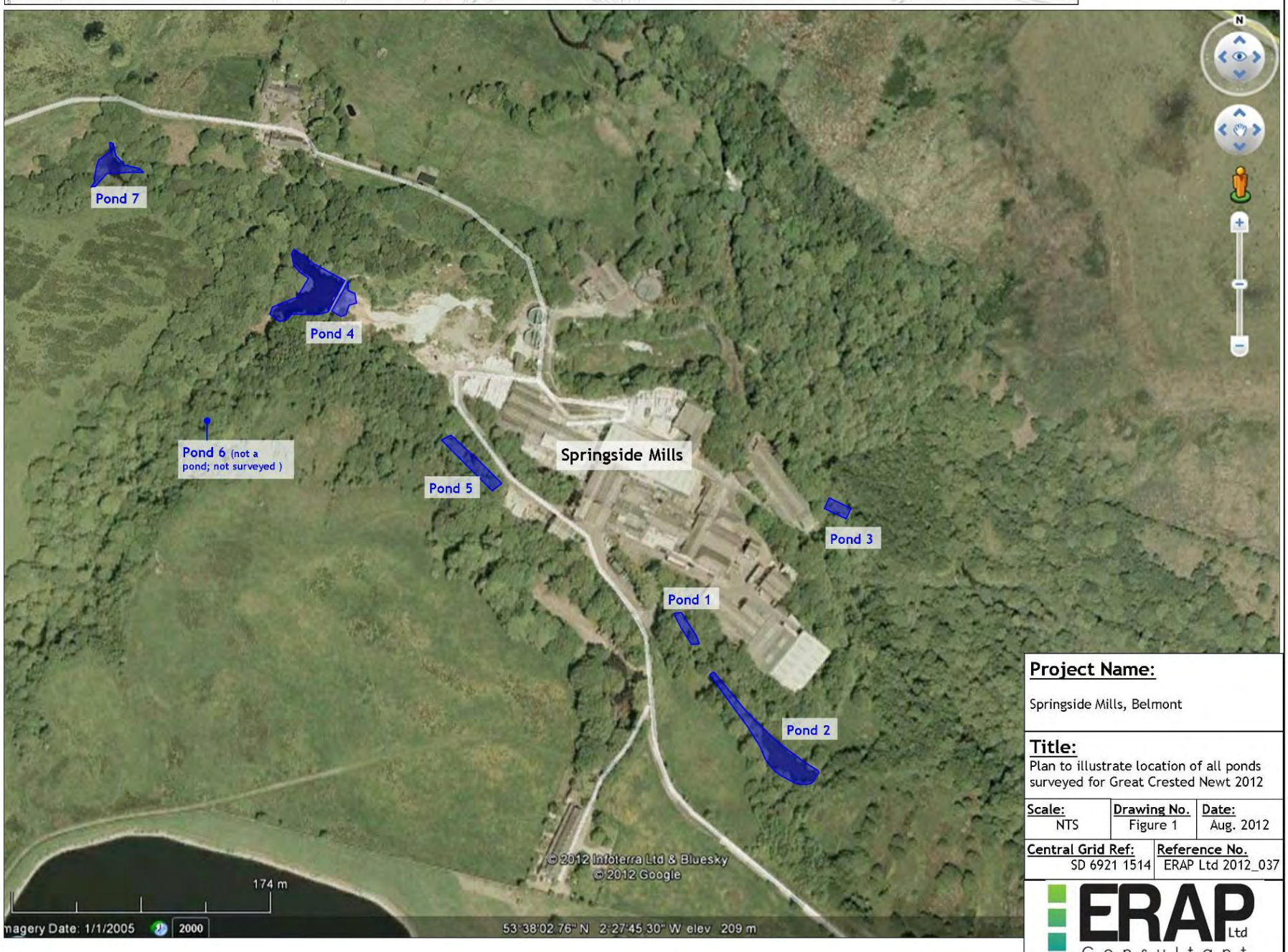
TABLE 7: GCN Survey Results *Pond 7*

Job Number & Site Name		Springside Mills, Belmont			Pond Reference:		Pond 7	Surveyors Names		R.Lowe, S.Hough		
Survey Method	**Date of result**	**Air Temp (ºC)**	**Veg Cover (0 - 5)**	**Turbidity (0 - 5)**	**GCN**	**SN**	**PN**	**CF**	**CFT**	**CT**	**CTT**	**Fish**
Torchlight **rep 1**	08/05/12	9	3	1	0	0	0	0	0	0	0	*
OTHER , including: torch power, weather, access constraints, inverts, eutrophicaton, pollution & invasive sp	Torch power	500,000/1million		Weather conditions	4/8 cloud cover, calm and dry							
	Lesser water beetle, water boatman and stickleback.											
Torchlight **rep 2**	12/05/12	6	3	1	0	0	0	0	0	0	0	*
OTHER, including all of the above	Torch power	500,000/1million		Weather conditions	1/8 high cloud cover, calm and dry							
	Lesser water beetle and other beetle species.											
Torchlight **rep 3**	17/05/12	10	3	2	0	0	0	0	0	0	0	*
OTHER , including all of the above	Torch power	500,000/1million		Weather conditions	Cloud 8/8, calm and dry							
	Lesser water beetle and other beetle species, water boatman and stickleback.											
Torchlight **rep 4**	02/06/12	7	3	3	0	0	0	0	0	0	0	*
OTHER , including all of the above	Torch power	500,000/1million		Weather conditions	High cloud 8/8, moderate wind, intermittent light drizzle							
	Lesser water beetle and other beetle species. Water level reduced and drying out in places.											

Survey Method	Date of result	Air Temp (ºC)	Veg Cover (0 - 5)	Turbidity (0 - 5)	GCN	SN or PN	Frog spawn	CFT	Toad spawn	CTT	Fish
Egg search **rep 1**	08/05/12	9	3	1	0	0	0	0	0	0	0
Egg search **rep 2**	12/05/12	6	3	1	0	0	0	0	0	0	0
Egg search **rep 3**	17/05/12	10	3	2	0	0	0	0	0	0	0
Egg search **rep 4**	02/06/12	7	3	3	0	0	0	0	0	0	0

Survey Method	Date of result	Air Temp (ºC)	Veg Cover (0 - 5)	Turbidity (0 - 5)	GCN	SN or PN	Frog spawn	CFT	Toad spawn	CTT	Fish
Netting search **rep 1**	08/05/12	9	3	1	0	0	0	0	0	0	*
OTHER notes:	Fish										
Netting search **rep 2**	12/05/12	6	3	1	0	0	0	0	0	0	**
OTHER notes:											
Netting search **rep 3**	17/05/12	10	3	2	0	0	0	0	0	0	*
OTHER notes:	Fish										
Netting search **rep 4**	02/06/12	7	3	3	0	0	0	0	0	0	*
OTHER notes:											





Project Name:

Springside Mills, Belmont

Title:

Plan to illustrate location of all ponds surveyed for Great Crested Newt 2012

Scale:	Drawing No.	Date:
NTS	Figure 1	Aug. 2012

Central Grid Ref:	Reference No.
SD 6921 1514	ERAP Ltd 2012_037

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SPRINGSIDE MILLS, OFF BELMONT ROAD, BELMONT

APPENDIX 4:
RESULTS OF REPTILE SURVEY 2008

September 2012

[ERAP Ltd ref: 2012_037]

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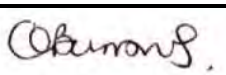
Signed	
Date	2nd September 2012
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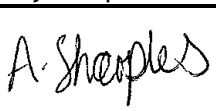
Signed	
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A. SUMMARY

Survey Approach

i. ERAP Ltd (Consultant Ecologists) carried out a presence/absence survey for reptile species at Springside Mills and surrounds in 2008.

ii. The survey was carried out in accordance with standard and recognised methods (Froglife 1999; Gent and Gibson 1998) and comprised setting 297 bitumen felt refuges throughout the site and surrounds.

iii. Traps were set on 28th August 2008 and left to 'bed in' for two weeks.

iv. Traps were then inspected on seven occasions between 12th September 2008 and 10th October 2008.

Results

v. No reptile species were detected.

vi. Three species of amphibian were detected beneath the refuge traps (Palmate Newt, Common Frog and Common Toad). This is consistent with the results of Great Crested Newt survey carried out in 2012.

Conclusion

vii. No reptile species were detected within the surveyed area. The survey effort applied is in accordance with standard guidance is an appropriate level of effort to detect reptiles.

viii. It is reasonable to conclude that reptiles and their habitats will not be adversely affected by the development proposals.

ix. Although the survey was carried out four years ago it is concluded that the survey results remain valid and no updated surveys are necessary, rationale to support this conclusion are presented in **Section 4.0.**

1.0 INTRODUCTION

Background and Rationale

1.1 In connection with future re-development proposals at Springside Mills, Belmont, ERAP Ltd (Consultant Ecologists) recommended the completion of, and carried out, a reptile survey in 2008.

Legislation and Conservation Status

1.2 All native reptile species receive some legal protection in Great Britain, arising from the following main items of legislation:-

a. *Wildlife and Countryside Act 1981* (as amended); and,

b. *Conservation of Habitats and Species Regulations 2010.*

1.3 In England and Wales all reptile species are listed on schedule 5 of the 1981 Act. The more threatened species are also listed on schedule 2 of the 2010 Regulations, which designate them 'European protected species'. The legislation effectively creates two levels of protection. The European protected species, the sand lizard and smooth snake, receive strict protection. It is an offence to capture, possess, disturb, kill, injure, or trade in individuals of these species. In addition, it is an offence to damage or destroy the places they use for breeding or resting.

1.4 The remaining species (viviparous/common lizard, slow-worm, grass snake and adder) are protected against killing, injuring and unlicensed trade only. The legislation applies to all life stages of wild animals only.

1.5 All British reptile species are listed as Priority Species under the UK Biodiversity Action Plan and have been adopted as a Species of Principal Importance in England under section 41 of the NERC Act 2006 (section 42 in Wales).

Objectives

1.6 The objectives of the reptile survey were to: -

a. Detect the presence/absence of reptiles at the site;

b. If present, determine species present, their abundance and whether breeding occurs on site.

2.0 METHOD OF SURVEY

2.1 Desktop Study

2.1.1 The Lancashire Environment Record Network (LERN) was contacted and a data search for reptile records within a 2 kilometre radius from the centre of the proposed development site was obtained.

2.2 Presence/Absence Refugia Reptile Survey

2.2.1 A presence/absence reptile survey was carried out in accordance with standard survey methodology (Froglife1999; Gent and Gibson 1998).

Surveyors

2.2.2 The survey was conducted by experienced surveyors (Aidan and Marie Pickering) during an appropriate time of year and under suitable conditions, refer to **Table 1**.

Survey Dates

2.2.3 The survey was carried out between the 29th August 2008 when the site was assessed and the refuges set, and the 10th October 2008 which was the date of the final survey

2.2.4 September is generally an optimal time to conduct such surveys with reptiles being most active. It has the additional benefit that if the reptiles have bred successfully that year, then young as well as adults will be found under the traps; four site visits were carried out in September 2008.

Survey Methods

2.2.5 The survey involved laying 297 artificial refuges traps within the proposed redevelopment site and the wider wooded clough, refer to **Figure 1**.

2.2.6 The refuges comprised thick bitumen based roofing felt cut into 50 cm by 50 cm squares.

2.2.7 The refuges were placed in locations within the site and in the surrounding area that were considered to be favourable for use by basking reptiles. Such locations include sunny banks and hollows that are in close proximity to cover. Two pieces of stone or wood were used to secure the refuges and to prevent them being blown away.

2.2.8 Because the survey was particularly targeted at Common Lizard, a proportion of the refuges had corners loosely folded over because the surveyor's experience at other sites where Common Lizard have been detected confirmed that Common Lizard typically select the space between the two folds of felt, particularly if the underside of the refuges become colonised by ants.

2.2.9 The refuges were then left to bed in for two weeks which allowed time for the reptiles to find the refuges and to use them for basking and cover.

2.2.10 The refuges were checked on seven occasions between 8am and 11.30am during suitable weather conditions. The dates of the inspections are presented at **Table 1.**

2.2.11 The artificial refugia were approached carefully and were checked for any reptiles basking/sheltering on top or underneath. Natural refugia e.g. logs/debris were also checked.

2.2.12 In more open areas and when the refuges were being placed and established, binoculars were used in the reptile searches; this assists in avoiding disturbing reptiles before they can be detected and examined.

2.3 Survey Limitations

2.3.1 No survey limitations occurred. The traps remained in situ and were not tampered with (as can often occur).

3.0 RESULTS

3.1 Desktop Study

3.1.1 Lancashire Environment Record Network (LERN) hold not records of reptile species within a 2 kilometre radius from the site.

3.2 Reptile Survey: 2008

3.2.1 The results of the reptile surveys are presented in **Table 1,** below.

Table 1: Results of Reptile Survey 2008

Date	Temp (ºC.)	Weather	Reptiles seen (transects)	Reptiles seen (refuges)	Amphibians
28th August 2008	Traps set and left to 'bed in' for two weeks.				
12th September 2008	16	Bright, overcast, calm	None	None	1 adult Common Toad 1 juvenile Common Toad
16th September 2008	16	Bright, overcast, calm	None	None	None
19th September 2008	17	Bright, overcast, calm	None	None	None
29th September 2008	16.5	Dry, sunny spells, calm	None	None	1 adult Common Frog 2 juvenile Common Toad
5th October 2008	16	Sunny, calm	None	None	1 adult Common Toad 2 juvenile Common Toad 3 adult Palmate Newt 2 juvenile Common Frog
6th October 2008	16	Sunny, calm	None	None	1 adult Common Toad 1 adult Common Frog 3 adult Palmate Newt
10th October 2008	13	Long sunny spells	None	None	1 juvenile Common Toad

3.2.2 No reptile species were detected.

3.2.3 Three species of amphibian were detected beneath the refuge traps (Palmate Newt, Common Frog and Common Toad). This is consistent with the results of Great Crested Newt survey carried out in 2012 (refer to **Appendix 3**).

4.0 EVALUATION AND CONCLUSIONS

Evaluation of Results and Habitats

4.1 The terrain and vegetation of the site and its surroundings is not favourable for reptiles of any species and is classified as sub-optimal for the following reasons:-

a. The Springside Mills site has been affected by a high level of disturbance in the past and because of the regular industrial activities there, all reptiles, being very sensitive to disturbance, are unlikely to have colonised the site;

b. It is unlikely that reptile colonisation would have occurred since closure of the works because all 'common' reptile species are uncommon or absent from most parts of Lancashire including the area to the west of Bolton;

c. The combination of woodland and wet ground associated with the woodland and marshy grassland is less suitable for reptiles which typically require sunny and dry habitats for basking, with a southern aspect; and,

d. In Greater Manchester including the Bolton area and in the adjacent areas of Lancashire all reptile species are absent or rare or at best uncommon. The principal habitats occupied by reptiles in this area are quarries and mosslands.

Validity of the Age of Survey Data

4.2 It is recognised that the reptile survey was carried out in 2008 and the data are now four years old. However it is concluded that the survey remains valid and applicable in connection with proposals from 2012 onwards for the reasons given in bullets a to d at paragraph 4.1.

4.3 In addition, since 2008, conditions at the site have remained similar. The habitats have not become more favourable for colonisation by reptiles and the desktop study, carried out in 2012, confirmed there are no known/reported populations of reptile species within the valley to act as a source for colonisation.

4.4 No updated surveys are necessary.

Conclusion

4.5 No reptile species were detected within the surveyed area. The survey effort applied is in accordance with standard guidance is an appropriate level of effort to detect reptiles.

4.6 It is reasonable to conclude that reptiles and their habitats will not be adversely affected by the development proposals.

5.0 REFERENCES

Department for Communities and Local Government (March 2012). *National Planning Policy Framework*. London

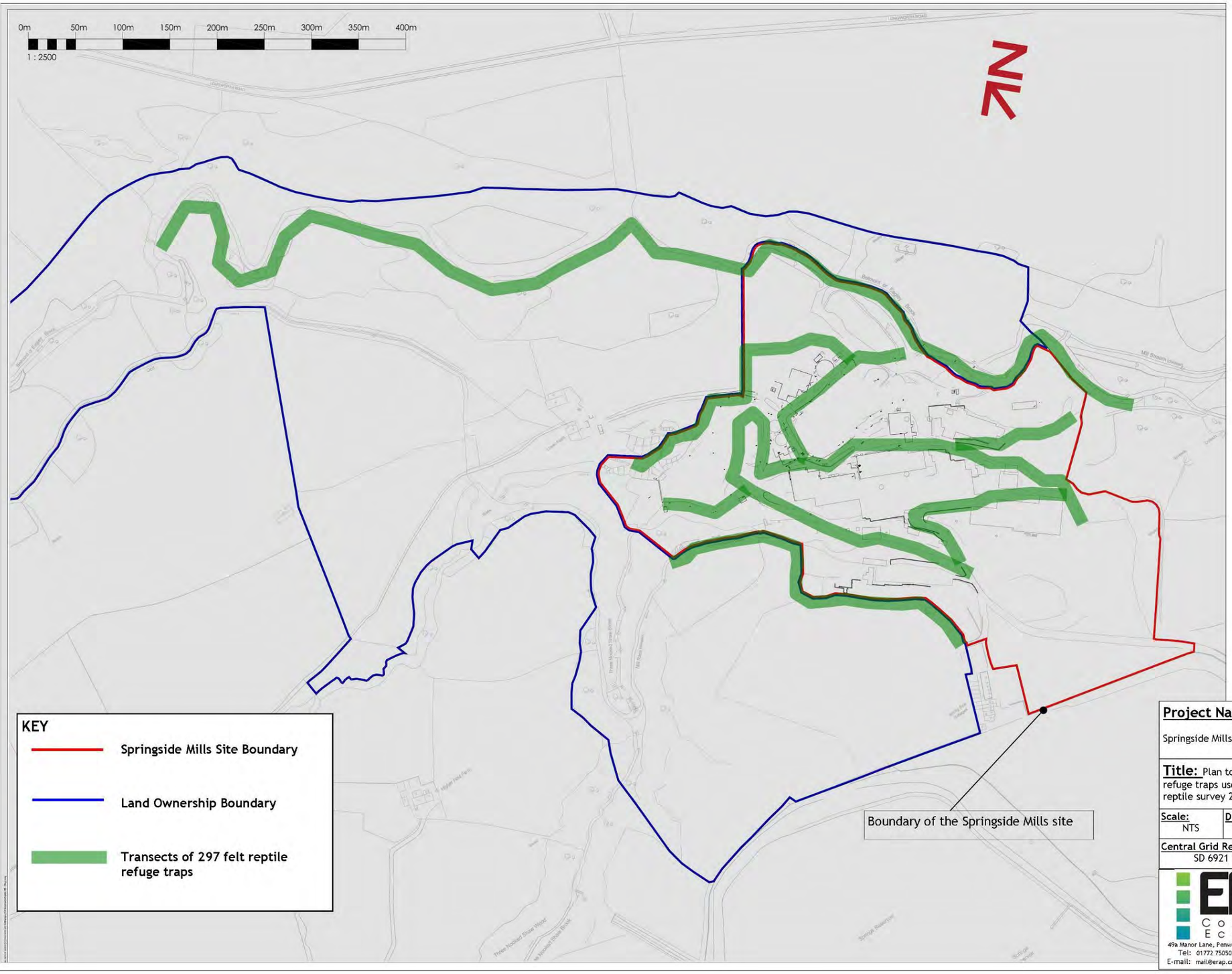
Froglife (1999) *Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation.* Froglife Advice Sheet 10.Froglife, Halesworth.

Gent, T. and Gibson, S.D. eds (1998) *Herpetofauna workers' manual*. Peterborough, Joint Nature Conservation Committee.

Wildlife and Countryside Act (1981). H.M.S.O., London.

6.0 FIGURE

Figure 1: Plan to illustrate the approximate distribution of the 297 refuge reptile traps set and checked at Springside Mills in 2008.



Project Name:

Springside Mills, Belmont

Title: Plan to illustrate distribution of refuge traps used presence/absence reptile survey 2008

Scale:	Drawing No.	Date:
NTS	Figure 1	Aug. 2012

Central Grid Ref:	Reference No.
SD 6921 1514	ERAP Ltd 2012_037

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