LAND OFF BARNBURGH LANE, GOLDTHORPE

Results of Ecological Walkover, Reptile and Great Crested Newt Surveys

Gleeson Developments Limited

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DRAWINGS

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1.0 INTRODUCTION

SLR Consulting Limited was commissioned by Gleeson Developments Limited to undertake a repeat Ecological Walkover, reptile surveys, and great crested newt *Triturus cristatus* surveys (comprising of eDNA sampling and a single torching/ bottle trapping/ netting survey) of land located off Barnburgh Lane, Goldthorpe (approximate central OS grid reference SE 4665 0363).

Planning permission is being sought for 'Phase 2' of a Gleeson development, involving the construction of 61 residential properties within a circa 1.9 hectare field of improved/ semi-improved grassland (Drawing 1). Construction is currently on-going within 'Phase 1' of the development, which is located within the 3.7 ha field immediately to the north of Phase 2 of development.

1.1 The Site

The Phase 2 application site (herein referred to as the 'Site') is located on the south-east fringes of Goldthorpe, approximately 10 km west of Doncaster and 12 km east of Barnsley. Gleeson Developments Phase 1 active construction zone lies immediately to the north, beyond which lies Barnburgh Lane, arable fields and a disused railway line. The Site is immediately bordered to the east by Engine Lane and arable land, and to the south and west by grazing pasture. An area of woodland and scrub lies further to the south-west, and residential housing lies to the north-east beyond the grassland field.

The Site comprises of a single circa 1.9 hectare field of improved/ semi-improved grassland, bordered be species-poor hedgerows. The south-west corner is relatively wet, and contains somewhat marshy vegetation. A dry ditch, with an adjacent earth bund, stretches the length of the western boundary, and becomes wet where it continues south beyond the southern Site boundary. Another shallow dry ditch crosses the centre of the Site. A pond is located in the cattle-grazed field to the south of the Site.

The Site lies within the South Yorkshire Coal Measures, with the Southern Magnesium Limestone only several hundred metres to the east.

1.2 Background and Rationale

The study area that forms the basis of this report relates to Phase 2 of the Gleeson development only. Andrew McCarthy Associates (who are now part of SLR Consulting) carried out an Extended Phase 1 Habitat Survey of land forming Phase 1 and Phase 2 of the Gleeson development (see Drawing 1) in October 2010, however planning permission was only sought for the area comprising Phase 1 at the time.

Great crested newt surveys were carried out in the spring of 2011 on the pond immediately to the south of the Site (P1), and a pond to the north, adjacent to the disused railway. A single male great crested newt was recorded in P1 on three of the survey sessions. Due to the peak recording of only a single male GCN, and taking into account advice from Natural England on the need, or otherwise, for a great crested newt European Protected Species (EPS) licence as detailed in the 'template for Method Statement to support an application for

a licence under Regulation 44(2)(e) in respect of great crested newts (form WML-A14-2, version March 2011)', no European Protected Species Licence was considered necessary for the Phase 1 of the application site. However, as a precaution, a one-way herptile fence was erected around the east, south and west perimeter of the Phase 2 field (Plate 1; refer to Drawing 1). The 2010/ 11 Extended Phase 1 and Great Crested Newt Survey Reports are contained within Appendix F of this report.

***Plate 1**: Photograph showing one-way herptile fencing located along the southern, eastern and western boundaries of the Site.*

Watercourse works were carried out in the winter of 2012/ 13, involving the re-profiling of a channel running along the western boundary of the Phase 1 and Phase 2 areas, and extending for 100 m south of the Phase 2 area (immediately to the west of P1), while adhering to a great crested newt method statement. Some material excavated from the watercourse was used to create an earth bund. No great crested newts were encountered during the watercourse works.

This report aims to update the existing ecological survey work to support a new application for Phase 2 of the development, and assess whether the ecology of the Site has changed since 2010.

2.0 METHODOLOGY

2.1 Ecological Walkover

The updated Ecological Walkover was carried out by an experienced ecologist with SLR Consulting on 14th June 2015, using Phase 1 Habitat survey methodology (JNCC, 2010).

Habitats and features with potential to support protected and/ or conservation priority fauna, together with any field signs of such species were searched for. The Site and a surrounding 30m radius were searched for badger *Meles meles* setts and field signs. Trees were assessed for their potential to support roosting bats, based on criteria within the second edition of the Bat Conservation Trust's Good Practice Guidelines (Hundt, 2012), refer to Appendix C.

Searches were also made for invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act 1981.

In addition to general habitat classification and mapping, botanical species within the Site, and their abundance (**D**ominant, **A**bundant, **F**requent, **O**ccasional or **R**are) was recorded; the results are presented in Appendix B.

Habitats or features of interest were recorded on the field map using target notes (see Drawing 1 and Appendix A).

2.2 Reptile Presence/ Absence Survey

A total of 50 reptile refuges (a mixture of large sections of heavy-duty roofing felt; carpet tiles; and corrugated 'onduline') were deployed on the 22nd June 2015, and subsequently inspected on seven occasions between the 30th June and the 27th July 2015, before being removed (Plate 2). Forty reptile refuges were positioned across the Site, and ten refuges were deployed in the field immediately to the south of the Site, around Pond P1.

***Plate 2**: Photograph showing two of the fifty reptile refuges deployed across the Site and immediate surrounding.*

2.3 Great Crested Newt Habitat Suitability Index (HSI) Assessment

One pond (P1) and one wet ditch (D1) occurred within 500 metres of the Site, and these were subject to Habitat Suitability Index (HSI) Assessments (Oldham *et al*, 2000) on 14th June 2015, in order to assess their potential to support breeding great crested newt. A pond which was surveyed in 2011, located to the north of the Site (adjacent to the old railway line), was found to no longer exist.

Great crested newt HSI scores are calculated using ten parameters, to assess the likely value of any given water body to support breeding great crested newt (GCN). The parameters used for the assessment are: site location; pond/ ditch area; frequency of pond/ ditch drying; water quality; shade; waterfowl; fish; presence of other ponds in the area; terrestrial habitat; and macrophyte communities. Each parameter scores a value of between 0.01 and 1. These scores are then multiplied and then 'rooted' to produce a geometric mean score, of between 0 and 1. The following categorical scale is then used to estimate the overall suitability of the water body concerned:

HSI score	Pond suitability for GCN
<0.5	Poor
0.5-0.59	Below average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

2.4 Great Crested Newt eDNA Survey

Pond P1 and Ditch D1 were sampled for the presence of great crested newt environmental DNA (eDNA) by two ecologists with SLR Consulting on 22nd June 2015, following the Natural England approved protocol contained within Biggs *et al* (2014). Twenty samples were collected from each pond/ ditch using sterile equipment provided by Surescreen Scientifics, at points evenly spread out along the pond/ ditch perimeter, such that a minimum of 80 % of the margins were sampled. The water at each sampling area was gently stirred using a sterile ladle before samples were taken, to mix up DNA which tends to sink, whilst ensuring that sediment on the pond/ ditch bottom was not disturbed, where historical DNA can persist.

The samples were then 'fixed' in an ethanol preserving solution, and sent to Surescreen Scientifics Laboratory for analysis, using the Natural England approved method contained within Biggs et al (2014). Great crested newt DNA can be detected within the pond/ ditch water for up to 21 days after a great crested newt has left the water. A 99.3 % detection rate is achieved when 80 – 90 % of the water body margin is sampled.

In order to avoid contamination, the surveyors avoided entering the water. Surveyor footwear was disinfected prior to survey as an extra precaution. Latex gloves were worn when sampling, and only sterile equipment came into contact with the water. A separate sampling kit, and new gloves, were used for each of the water bodies sampled.

2.5 Great Crested Newt Torching/ Bottle Trapping/ Netting Survey

A single survey was carried out on pond P1 and Ditch D1 on the evening of 22nd and the morning of 23rd June 2015, by two surveyors, employing the following methods:

Torchlight Count

The surveyors walked slowly around the perimeter of the pond/ ditch after dark and scanned the water's edge with a powerful (one million candlepower, Clulite) torch, searching for great crested newts (including adults and efts) in a systematic fashion.

Bottle Trapping

Newt traps, comprising an open 2 litre plastic drinks bottle attached to a bamboo cane, were deployed after sunset within the water bodies. Each trap was submerged in the water at an angle of 45°, leaving a small air pocket in the bottom of the bottle (to avoid suffocating any trapped newts). The traps were then checked for newts early the following morning and removed.

Netting

During the evening, surveyors used dip nets to sweep amongst the submerged vegetation along the edges of each pond/ ditch. Netting effort was standardised by carrying out 15 minutes of netting per 50m of shoreline.

2.6 Limitations

Great crested newt surveys were commissioned outside of the optimal survey window for conventional pond survey methods, and therefore eDNA analysis was carried out to supplement this work. The eDNA sampling was undertaken within the apprpriate survey window (i.e. before 30th June) as stated within the Natural England approved methodology (Biggs *et al*., 2014).

The single conventional pond survey (i.e. torching, bottle trapping and netting) was conducted outside of the optimal survey season, however the purpose of this survey was to set the context of likely numbers of great crested newt within the water bodies, should the eDNA results have come back as positive. The survey also aimed to search for efts, to help ascertain whether great crested newt breeding and recruitment had occurred within the pond.

Several of the reptile refuges were moved during the survey period. However, the majority of the refuges, including those in the most suitable habitats, were not disturbed throughout the survey; furthermore, the refuges were deployed at a very high density, so some interference in certain areas did not affect the overall validity of the survey results.

2.7 Quality Assurance and Environmental Management

The surveyors follow the code of professional conduct set out by the Chartered Institute of Ecology and Environmental Management (CIEEM) when undertaking ecological work.

3.0 RESULTS

3.1 Ecological Walkover

3.1.1 Overview

The results of the Ecological walkover are illustrated in map form (Drawing 1), with the accompanying target notes in Appendix A. All of the plant species recorded during the field survey are listed in Appendix B.

Improved/ Poor Semi-Improved Grassland

The majority of the Site comprises of improved/ species-poor semi-improved grassland, which was un-grazed at the time of survey (but was horse-grazed during the 2010 survey) (Plate 3).

Species composition remains relatively unchanged since 2010, with a mix of fine and coarse grasses occurring, such as perennial ryegrass *Lolium perenne*, Yorkshire fog *Holcus lanatus*, common cat's tail *Phleum pratense*, false oat-grass *Arrhenatherum elatius*, annual meadow-grass *Poa annua*, red fescue *Festuca rubra* and cock's-foot *Dactylis glomerata*.

Herbs within the sward were restricted to a fairly limited diversity of predominantly commonly occurring agricultural species, such as creeping buttercup *Ranunculus repens*, scentless mayweed *Tripleurospermum inodorum*, ribwort plantain *Plantago lanceolata*, broad-leaved dock *Rumex obtusifolius* and great willowherb *Epilobium hirsutum.*

Areas of grassland loated towards the eastern boundary of the Site, and on the earth bund running close to the western boundary of the Site (Target Note 2 in Drawing 1) contain a higher proportion of tall ruderal species, such as common nettle *Urtica dioica* and creeping thistle *Cirsium arvense*.

***Plate 3**: Improved/ semi-improved grassland comprising the majority of the Site. Photograph taken from the south-east corner of the Site, looking towards the north-west corner.*

Marshy Grassland

Ground conditions become wet in the south-west corner of the Site, and water appears to drain into the Site from the south (Plate 4). Grassland within this area contains species indicative of very moist soil conditions, such as frequent soft rush *Juncus effusus*, hard rush *Juncus inflexus*, celery-leaved buttercup *Ranunculus sceleratus*, marsh foxtail *Alopercurus geniculatus* and glaucous sweet-grass *Glyceria declinata*. The most water-logged areas here support water starwort *Callitriche stagnalis* and occasional shoots of bulrush *Typha latifolia*.

Plate 4*: View of the area of marshy grassland in the south-west corner of the Site. The fence line and defunct hedgerow forming the southern Site boundary can be seen in the background.*

Hedgerows

Mature species-poor intact hedgerows border the Site to the north, east and west, and a defunct hedgerow occurs along the southern boundary.

The northern boundary hedgerow (H1) divides the Site from the active construction zone (Phase 1 of the Gleeson development) to the north. H1 measures approximately 4 m in height, is dominated by hawthorn *Crataegus monogyna*, and also contains occasional elder *Sambucus nigra*, dog rose *Rosa canina* and a semi-mature Wych elm *Ulmus glabra* standard (Plate 5). The eastern hedgerow (H2) is very similar to H1, being hawthorn-dominated, and also contains elder, bramble *Rubus fruticosus* and hedge bindweed *Calystegia sepium*.

***Plate 5**: View (looking north-west) of hedgerow H1, along the northern boundary, showing an example of one of the intact species-poor boundary hedgerows.*

Hedgerow H3, which lies immediately beyond the southern boundary, is overgrown and defunct, with largely dead elders forming the western section, and dominant mature hawthorn, with occasional elder and dog rose in the eastern section (Plate 6).

***Plate 6**: View of hedgerow H3 immediately beyond the southern boundary, which is overgrown and defunct, and is approximately eight metres in height.*

The western boundary hedgerow (H4) is also hawthorn-dominated, with blackthorn, elder, dog rose and field maple *Acer campestre*. The hedgerow is overgrown (the canopy height ranges between four and eight metres), and some dead shrubs/ trees occur at the southern end.

Dry Ditch

A largely dry ditch extends the length of the western boundary (Plate 7; Target Note 1 in Drawing 1), and extends southwards into the field beyond, where it becomes deeper and contains water. An earth bund occurs along the eastern edge of the ditch, vegetated with largely tall ruderal species. The ditch comprises of improved/ semi-improved grassland,

consistent with the grassland vegetation across the rest of the Site. The southern end of the ditch contains marshy grassland vegetation. A shallow dry ditch also occurs along the central section of the Site (Target Note 5 in Drawing 1).

Plate 7*: View (looking south) of a dry ditch located along the western boundary. An earth bund runs along the eastern edge of the ditch.*

3.1.2 Protected Species

Great Crested Newt

The Site itself does not contain any water bodies, however a pond occurs approximately 15 metres south of the Site (Plate 8), and a wet ditch occurs immediately to the west of the pond (Plate 9). A second pond (which was surveyed in 2011, located beyond the disused railway to the north of the Site) was found to no longer exist.

***Plate 8**: View (looking south) of the pond located c. 15 metres south of the Site.*

***Plate 9**: View (looking south) of the ditch (D1) to the south of the Site (immediately west of the pond illustrated in Plate 8).*

The Site contains habitat that is moderately suitable for great crested newt in their terrestrial phase. This includes grassland across the whole of the Site, but in particular the marshy grassland, and the earth bund along the western Site boundary. Habitat immediately to the south of the Site (surrounding the pond and ditch) has higher suitability for great crested newt (and other amphibians).

HSI Assessment

The pond to the south of the Site (P1) was subject to an HSI assessment to gauge its suitability for great crested newt, and scored as having 'good' suitability (refer to Appendix D for the full HSI results). The ditch immediately to the west of the pond (D1) also scored as having 'good' suitability.

eDNA Assessment

The pond and ditch were each subject to eDNA sampling on 22nd June 2015, and each water body came back as negative (i.e. no great crested newt eDNA was detected). The results from Surescreen Scientifics are presented in Appendix E.

Pond Survey

A torching, bottle trapping and netting survey was carried out on the pond and ditch on the evening of 22nd and morning of 23rd June 2015. No amphibians (at any life stage) were recorded in either the ditch or the pond. Stickleback were recorded within the pond; as stickleback can predate upon great crested newt, and in particular their eggs and efts, this reduces the suitability of the pond, to support a viable great crested newt population).

The prevailing weather conditions were overcast, calm, and approximately 15 °C.

Reptiles

As in the 2010 survey, the Site supports habitat suitable for reptiles, particularly the wetter grassland areas, and the earth bund close to the western Site boundary (which could act as a potential hibernacula). There are also links to other suitable habitat in the wider area, particularly to the south.

In order to determine if reptiles (and also amphibians, during their terrestrial phase) are present, a reptile presence/ absence survey was conducted, involving the deployment of 50 refuges (40 across the Site, and 10 within the field immediately to the south of the Site) on 22nd June 2015. In accordance with standard survey guidelines a total of seven visits were undertaken to inspect the refuges for reptiles and amphibians. The results for each visit (including the weather conditions) are present in Table 1 below.

No reptiles (or amphibians) were recorded during any of the survey visits.

Table 1: Results of reptile presence/ absence survey

Date	Start time	Temp. start	Finish time	Temp. finish	Weather	Survey Results
30 June 2015	10:10 hrs	15°C	11.00 hrs	15°C	Sunny; dry; 4/ 8 cloud cover; light breeze	No reptiles or amphibians
03 July 2015	07.15 hrs	18°C	08.00 hrs	18ºC	Hazy sunshine, humid; 2/ 8 cloud cover; calm	No reptiles or amphibians
06 July 2015	08.15 hrs	15°C	09.00 hrs	16°C	Sunny intervals; dry; 3/ 8 cloud cover; calm	No reptiles or amphibians
09 July 2015	08.45 hrs	16°C	09.30 hrs	16°C	Sunny intervals; dry; 2/ 8 cloud cover; light air	No reptiles or amphibians
13 July 2015	08:40 hrs	16°C	09: 30 hrs	16°C	Sunny intervals; dry; 4/ 8 cloud cover; light air	No reptiles or amphibians

22 July 2015	09:30 hrs	15°C	10:10 hrs	15°C	Overcast; dry; 8/ 8 cloud cover; light air	No reptiles or amphibians
27 July 2015	16:15 hrs	14°C	17:30 hrs	14°C	Overcast; some light drizzle; 8/ 8 cloud cover; light breeze	No reptiles or amphibians

Birds

The following birds were noted on or flying above the Site during the survey:

- Swift *Apus apus*;
- House sparrow *Passer domesticus*;
- House martin *Delichon urbicum*;
- Swallow *Hirundo rustica*;
- Chaffinch *Fringilla coelebs*;
- Great tit *Parus major*;
- Wren *Troglodytes troglodytes*;
- Blackbird *Turdus merula*;
- Chiffchaff *Phylloscopus collybita*;
- Jackdaw Corvus monedula;
- Woodpigeon *Columba palumbus*; and
- Magpie *Pica pica*.

Of these, one species (house sparrow) is a Bird of Conservation Concern (BoCC) Red List and UK BAP species, and three are Amber List BoCC species, namely swift, house martin and swallow.

The hirundines (swallows and martins) were noted foraging over the grassland and in the field to the south. The majority of the remaining species were associated with the hedgerows.

No ground-nesting bird species, such as skylark *Alauda arvensis*, or lapwing *Vanellus vanellus* were recorded on Site.

Bats

Only two semi-mature trees are present on the Site, and these were assessed as having negligible (i.e. Category 3) potential to support roosting bats. The mature boundary hedgerows provide suitable commuting and foraging corridors for bats, and the grassland (particularly the marshy grassland) within the Site is likely to be a productive foraging habitat.

Badger

There was no evidence of badger *Meles meles* found within or around the Site.

4.0 RELEVANT LEGISLATION & POLICY[1]

4.1 Legislation

4.1.1 Habitat Regulations

The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb[2] wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

4.1.2 Wildlife & Countryside Act

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CroW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act.

4.1.3 National Parks & Access to the Countryside Act

National Nature Reserves (NNR's) and Local Nature Reserves (LNR's) are designated under the National Parks and Access to the Countryside Act 1949.

4.1.4 Natural Environment & Rural Communities Act

The NERC 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

[1] Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References & Bibliography section.

[2] Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

4.2 Policy

4.2.1 National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) states that the planning system should contribute to and enhance the natural and local environment by:

- Recognising the wider benefits of ecosystem services; and
- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Other key principles of the NPPF relating to biodiversity are:

- The conservation of International and National statutorily designated sites;
- Protection of ancient woodland and veteran trees;
- The creation, protection, enhancement and management of networks of biodiversity and green infrastructure;
- The preservation, restoration and recreation of priority habitats and ecological networks; and
- The recovery of priority species populations.

4.2.2 Biodiversity Action Plans

The UK Biodiversity Action Plan (UKBAP) (Anon, 1995) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with all listed species/ habitats having specific action plans defining the measures required to ensure their conservation. Regional and local BAPs have also been organised to develop plans for species/habitats of nature conservation importance at regional and local levels.

4.2.3 Local Plans

County, District and Local Councils have Plans and other policy documents that include targets and policies which aim to maintain and enhance biodiversity. These are used by Planning Authorities to inform planning decisions.

5.0 DISCUSSION & RECOMMENDATIONS

5.1 Habitat Overview

The Site comprises largely of improved/ poor semi-improved grassland of low intrinsic ecological value. The boundary hedgerows are species-poor, however they do provide habitat for a range of breeding birds, and for foraging and commuting bats. Although the Site supports suitable habitat for reptiles and great crested newt, these species/ species groups were not found to occur on the Site (refer to Sections 5.2 and 5.3).

5.2 Great Crested Newt

No great crested newt eDNA was detected in the pond (P1) or ditch (D1) to the south of the Site. In addition, no great crested newts (or other amphibians) were recorded during the torching/ netting/ bottle trapping survey of the pond or ditch, and the lack of efts recorded indicates that the water bodies have not been used successfully for breeding. Similarly, no great crested newts were recorded under any of the refuges (which amphibians as well as reptiles shelter beneath), both within the Site and off-Site (to the south).

The results indicate that great crested newt do not, at the current time, occur within water bodies within 500 metres of the Site, and as such it is highly unlikely that great crested newt occur within the Site itself, during their terrestrial phase. These results are consistent with our earlier conclusions that the single male great crested newt recorded in Pond P1 during the 2011 surveys was a 'wanderer' from a more distant meta-population, rather than part of a viable breeding population. At present, the likelihood of great crested newt colonising the area remains low, given that the pond supports stickleback (which predate upon great crested newt eggs and young in particular), and given the relative isolation of the water bodies.

Given the absence of great crested newt during the 2015 surveys, a European Protected Species License is not required, and the risk of committing an offence is negligible. However, given that a single great crested newt was recorded within Pond P1 in 2011, it is recommended that, as a precaution, the one-way herptile fencing located along the eastern, southern and western boundaries of the Phase 2 development area is retained and maintained throughout the duration of the construction process.

It should be stressed that the one-way herptile fencing is precautionary only, and that given the 2015 negative survey results, and the presence of just a single great crested newt in 2011 surveys, the likelihood of great crested newts occurring on the Site is extremely low.

5.3 Reptiles

No reptiles (or amphibians) were recorded during any of the seven survey visits, either within the Site itself or on land immediately to the south of the Site. The herptile fence recommended for great crested newts (see Section 5.2 above) would also, most likely, form a barrier to the movement of most reptiles, should they occur in the vicinity of the Site, and as such no further action with respect to reptiles is recommended.

5.4 Birds

A modest assemblage of predominantly common urban fringe species were recorded on the Site. The boundary hedgerows, particularly the more continuous and overgrown hedgerows, have potential to support a number of breeding birds, particularly urban fringe species. The grassland (and particularly the marshy grassland) provides foraging opportunities for insectivorous and seed eating species, but no ground-nesting bird species were recorded.

Under current proposals, the northern hedgerow will be removed to facilitate the development. All other hedgerows will be retained, and a 10 metre landscape buffer will be created along the southern and eastern boundaries.

Vegetation clearance works should ideally take place outside of the main bird breeding season (March to August inclusive), however if this is not feasible a check for nesting birds should be undertaken immediately prior to habitat destruction. Should nesting birds be encountered, an exclusion zone around any active nests would be required to prevent damage of the nests and injury to the young birds until they had fledged.

5.5 Bats

The Site has no potential for roosting bats. The Site, and its perimeter hedgerows and marshy grassland in particular, does however, offer potential for foraging and/ or commuting bats. The 10 metre wide landscape buffers along the southern and eastern boundaries will provide suitable foraging conditions for bats, once they have matured.

5.6 Badger

No setts or evidence of badger were noted on or around the Site, and therefore no specific mitigation or sensitive working methods with respect to this species is required.

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http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1

Birds Directive:

eur-lex.europa.eu/LexUriServ/site/en/consleg/1979/L/01979L0409-20070101-en

Wildlife and Countryside Act 1981:

www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1

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www.legislation.hmso.gov.uk/acts/acts2000/20000037

Natural Environment and Rural Communities Act 2006:

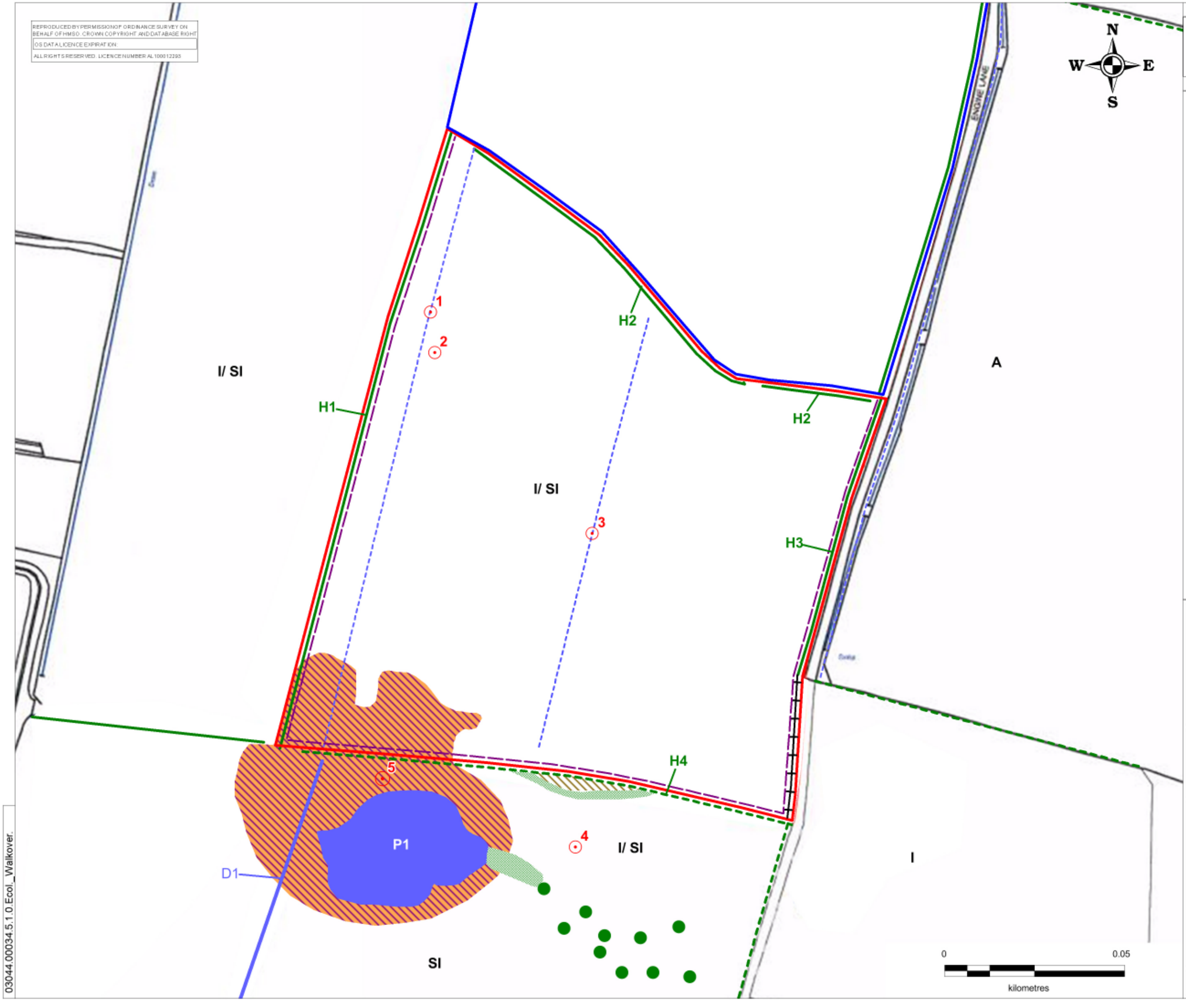
http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

Protection of Badgers Act 1992:

http://www.opsi.gov.uk/ACTS/acts1992/ukpga_19920051_en_1

DRAWING 1

RESULTS OF ECOLOGICAL WALKOVER SURVEY



NOTES

LEGEND

- SITE BOUNDARY (PHASE 2)
- EXISTING PHASE 1 GLEESON DEVELOPMENT (ACTIVE CONSTRUCTION ZONE)
- SI — IMPROVED/ POOR SEMI-IMPROVED GRASSLAND
- MARSHY GRASSLAND
- I — IMPROVED GRASSLAND
- A — ARABLE
- INTACT HEDGEROW
- DEFUNCT HEDGEROW
- TALL RUDERAL
- DENSE SCRUB
- TREE
- POND
- WET DITCH
- DRY DITCH
- FENCE
- TARGET NOTE
- ONE-WAY HERPTILE FENCING

GLEESON DEVELOPMENTS

SLR
UNIT 2
NEWTON BUSINESS CENTRE
NEWTON CHAMBERS ROAD
CHAPELTOWN
SHEFFIELD
S35 2PW
T:0114 2455153
www.slrconsulting.com

LAND AT BARNBURGH LANE, GOLDTHORPE

RESULTS OF ECOLOGICAL WALKOVER SURVEY

DRAWING 1

SCALE 1:1,000 @ A3

DATE JULY 2015

03044.00034.5.1.0.Ecol._Walkover.

APPENDIX A

TARGET NOTES ASSOCIATED WITH DRAWING 1

Target Note Number	Photograph	Description
1		Dry ditch running the length of the western Site boundary, measuring approximately 2-3 m wide x 0.5-1 m deep.
2		Earth bank running adjacent to the dry ditch, on its eastern bank, measuring approximately 4 m wide by 1-2 m high, and comprising of tall ruderal vegetation.
3		Very shallow dry ditch located through the centre of the site, measuring approximately 1 m wide x 0.5 m deep.

4		Field of cattle-grazed pasture.
5		The land around Pond P1 is waterlogged and somewhat poached by cattle, and is dominated by celery-leaved buttercup and rushes.

APPENDIX B

BOTANICAL SPECIES LIST

Common Name	Latin Name	Frequency (DAFOR)
Annual meadow-grass	*Poa annua*	LF
Blackthorn	*Prunus spinose*	LF
Bramble	*Rubus fruticosus*	O
Bristly oxtongue	*Helminthotheca echioides*	R
Broad-leaved dock	*Rumex obtusifolius*	LA
Bulrush	*Typha latifolia*	O
Celery-leaved buttercup	*Ranunculus sceleratus*	LF
Cleavers	*Galium aparine*	O
Cock's-foot	*Dactylis glomerata*	F
Common bent	*Agrostis capillaris*	O
Common daisy	*Bellis perennis*	O
Common mouse-ear	*Cerastium fontanum*	O
Common nettle	*Urtica dioica*	LA
Common poppy	*Papaver rhoeas*	O
Common ragwort	*Senecio jacobaea*	O
Common vetch	*Vicia sativa*	O
Cow parsley	*Anthriscus sylvestris*	O
Creeping bent	*Agrostis stolinifera*	F
Creeping buttercup	*Ranunculus repens*	F
Creeping thistle	*Cirsium arvense*	LA
Dandelion	*Taraxacum officinale agg.*	O
Dog rose	*Rosa canina*	O
Elder	*Sambucus nigra*	LF
Field maple	*Acer campestre*	R
Glaucous sweet-grass	*Glyceria declinata*	LF
Great willowherb	*Epilobium hirsutum*	O
Hard rush	*Juncus inflexus*	LF
Hawthorn	*Crataegus monogyna*	LD
Hedge bindweed	*Calystegia sepium*	LO
Hogweed	*Heracleum sphondylium*	O
Lesser trefoil	*Trifolium dubium*	O
Marsh foxtail	*Alopercurus geniculatus*	O
Meadow buttercup	*Ranunculus acris*	O
Perennial ryegrass	*Lolium perenne*	A
Pineappleweed	*Matricaria discoidea*	R
Red clover	*Trifolium pratense*	O
Red fescue	*Festuca rubra*	O
Ribwort plantain	*Plantago lanceolate*	O
Rosebay willowherb	*Chamerion angustifolium*	LF
Scentless mayweed	*Tripleurospermum inodorum*	O
Sedge	*Carex sp.*	LF
Smooth rush	*Juncus effusus*	LF
Spear thistle	*Cirsium vulgare*	LF
Timothy-grass	*Phleum pratense*	O

Common Name	Latin Name	Frequency (DAFOR)
Water starwort	*Callitriche stagnalis*	LO
White clover	*Trifolium repens*	F
Whych elm	*Ulmus glabra*	O
Yorkshire fog	*Holcus lanatus*	F

APPENDIX C

BAT ROOSTING POTENTIAL CATEGORIES OF TREES

Category (Bat Potential)	Description
Grade 3 Negligible potential	Trees with no suitable features. • No cracks or crevices • No ivy cover • No deadwood in canopy or stem • No decay cavities or hollows.
Grade 2 Low potential	Trees with few suitable features noted below, only capable of supporting individual bats. • Some small cracks or crevices • Low ivy cover • Deadwood in canopy or stem • Snagged branches.
Grade 1 Moderate potential	Trees with several suitable features noted below, capable of supporting individual bats. • Woodpecker holes • Fractured limbs • Large sections of loose or flaking bark • Cavities/cracks/crevices either large in size or numerous in quantity • Crossing and rubbing branches • A hollow trunk, stem or branches • Dense ivy cover with thick stems • Tightly forked branch unions • Bat, bird or dormouse boxes • Mature, well established, profuse and thick epicormic growth.
Grade 1* High potential	Trees with multiple highly suitable features noted above, and/or capable of supporting larger roosts.
Confirmed Bat Roost	• Bats • Bat droppings • Scratch marks or staining • Desk study record of roost.

APPENDIX D

RESULTS OF GREAT CRESTED NEWT HABITAT SUITABILITY INDEX (HSI) ASSESSMENTS

Great Crested Newt Survey

1. Pond Details

Project	Gleeson Developments
Project number	424.03044.00034
Site	**Barnburgh Lane, Goldthorpe**

Pond number/reference	**P1**
OS Grid reference	SE 4660 0352
Location details	c. 15 m south of Site
Access permission	Access via public right of way
Access instructions	

Habitat Suitability Index

				SI value
SI1.	Map location	**A/B/C**	A	1.00
SI2.	Surface area	**rectangle/ellipse/irregular**	irregular	
		length (m)	45	
		width (m)	40	
		OR estimate (m^2) if irregular	1800	
		area (m^2) =	1800	0.82
SI3.	Dessication rate	**never/rarely/sometimes/frequently**	rarely	1.00
SI4.	Water quality	**good/moderate/poor/bad**	moderate	0.67
SI5.	Shade	% of margin shaded 1m from bank	10	1.00
SI6.	Waterfowl	**absent/major/minor**	absent	1.00
SI7.	Fish population	**absent/possible/minor/major**	minor	0.33
SI8.	Pond density	number of ponds within 1km	5	1.00
SI9.	Terrestrial habitat	**good/moderate/poor/isolated**	good	1.00
SI10.	Macrophyte cover	%	20	0.51

HSI =	**0.79**
provisional HSI =	0.77

Use provisional HSI value if above 0.75

Date undertaken	14-06-15

Great Crested Newt Survey

1. Pond Details

Project	Anesco Limited
Project number	424.03044.00034
Site	**Barnburgh Lane, Goldthorpe**

Pond number/reference	**D1**
OS Grid reference	SE 4656 0350
Location details	immediately south of Site
Access permission	Access via public right of way
Access instructions	

Landowner name	
Address/email	
Telephone	

Habitat Suitability Index

				SI value
SI1.	Map location	**A/B/C**	A	1.00
SI2.	Surface area	**rectangle/ellipse/irregular**	rectangle	
		length (m)	100	
		width (m)	1	
		OR estimate (m^2) if irregular	100	
		area (m^2) =	100	0.20
SI3.	Dessication rate	**never/rarely/sometimes/frequently**	rarely	1.00
SI4.	Water quality	**good/moderate/poor/bad**	moderate	0.67
SI5.	Shade	% of margin shaded 1m from bank	0	1.00
SI6.	Waterfowl	**absent/major/minor**	absent	1.00
SI7.	Fish population	**absent/possible/minor/major**	possible	0.67
SI8.	Pond density	number of ponds within 1km	5	1.00
SI9.	Terrestrial habitat	**good/moderate/poor/isolated**	good	1.00
SI10.	Macrophyte cover	%	30	0.61

HSI =	**0.75**
provisional HSI =	0.72

Use provisional HSI value if above 0.75

Date undertaken	14-06-15

APPENDIX E

RESULTS OF GREAT CRESTED NEWT EDNA ASSESSMENTS

Technical Report
Confidential

Folio No: D0966
Report No: 1
Client: SLR CONSULTING
Order No:-
Attn: HAZEL SRANWORTH

Date: 06/07/2015

TECHNICAL REPORT

EXAMINATION OF ENVIRONMENTAL DNA

IN POND WATER FOR THE DETECTION OF

GREAT CRESTED NEWTS

A.Stodolna

Sample overview

Sample	Co-Ordinates	Result
D0966-1	SE 46566 03518	Negative
D0966-2	SE 46602 03526	Negative

Methodology

When Great Crested Newts (GCN) inhabit a pond, they deposit traces of their DNA in the water as evidence of their presence. By sampling the water we can analyse these small environmental traces to detect GCN inhabitation.

The laboratory testing is conducted in two phases. The sample first goes through an extraction process where all 6 tubes are pooled together to acquire as much eDNA as possible. The pooled sample is then tested via real time PCR (or q-PCR). This process amplifies select part of DNA allowing it to be detected and measured.

qPCR combines PCR amplification and detection into a single step. This eliminates the need to detect products using gel electrophoresis. With qPCR, fluorescent dyes specific to the target sequence are used to label PCR products during thermal cycling. The accumulation of fluorescent signal during the exponential phase of the reaction is measured for fast and objective data analysis.

The primers used in this process are specific to a part of mitochondrial DNA only found in GCN ensuring no other DNA is amplified.

Samples are tested in a clean room and the different phases of testing are kept separate to reduce any risk of cross contamination.

Each pooled sample is replicated 12 times to ensure results are accurate. If one of the twelve replicates tests positive the sample is declared positive. The sample is only declared negative if no replicates show amplification.

Results

Sample	Co-Ordinates	Positive Replicates	Negative Replicates	Result
D0966-1	SE 46566 03518	0	12	Negative
D0966-2	SE 46602 03526	0	12	Negative

Advice

Negative results may not indicate the absence of GCN just the absence of eDNA above the detection limits of the method. It is still advised to survey a pond using traditional methods within 2km of a positive result or a known habitat for GCN.

Positive results may be true positives but also may be due to contamination of samples from another pond or improper sampling technique. Please ensure traditional surveys are performed on positive ponds.

The number of positive replicates does not correspond to the size of the GCN population.

Reported By: **Agata Stodolna BSc (hons) Biology**

Analysed By: **Thomas Wood BSc(hons) LIBMS**

APPENDIX F

ORIGINAL EXTENDED PHASE 1 HABITAT REPORT AND GREAT CRESTED NEWT SURVEY RESULTS (CARRIED OUT BY ANDREW McCARTHY ASSOCIATES, IN 2011)

Extended Phase 1 Habitat Survey

Land off Barnburgh Lane, Goldthorpe

Andrew McCarthy Associates

AMA ecology & environment

Extended Phase 1 Habitat Survey

Land off Barnburgh Lane, Goldthorpe

Client: UK Coal Mining Ltd and Gleeson Homes
Project Number: A24.02437.00003
Revision: 00
Issue Date: 25 October 2010

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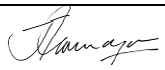
Document Verification Table

File: Extended Phase I Habitat Survey of Land off Barnburgh Lane, Goldthorpe JFGO 25.10.10					
Revision	Date		Prepared by	Checked by	Approved by
00	25 October 2010	Name	Jim Flanagan	Gary Oliver	Gary Oliver
		Signature			

Disclaimer

This document has been prepared by Andrew McCarthy Associates for UK Coal Mining Ltd and Gleeson Homes, solely as an Extended Phase 1 Habitat Survey report in response to a planning application. Andrew McCarthy Associates accepts no responsibility or liability for any use that is made of this document other than by the clients for the purposes for which it was originally commissioned and prepared.

NON-TECHNICAL SUMMARY

UK Coal Mining Limited and Gleeson Homes commissioned Andrew McCarthy Associates to undertake an Extended Phase I Habitat Survey of agricultural land off Barnburgh Lane, Goldthorpe, Barnsley, on 7 October 2010. This was in connection with a proposal to develop the site for housing. The survey was accompanied by a desk study comprising of a request for information on protected species and statutory and non-statutory sites from the Barnsley Biodiversity Trust supported with an internet-based search. During the site visit habitats and land-use were mapped and target-noted and a botanical species list was compiled.

The desk study did not record protected species for the site, but there a number of recent records for the wider search area. No statutory or non-statutory sites for nature conservation were present within the search area (site plus 2 km radius).

The site comprised a mix of arable and grazing land with several species-poor hedgerows dividing or forming boundaries to the fields. No evidence of protected species was found within the site. However, two red-listed birds of conservation concern were recorded during survey – house sparrow and starling.

The survey also revealed that no ponds are present within the site boundary, but two off-site ponds were found within 500m of the site. Habitat Suitability Index (HSI) assessments were carried out on these to determine their potential to support great crested newt, and one of these (a relatively short distance to the south of the site) was found to have 'excellent' suitability for the species. Although the site itself does not contain any ponds, and therefore has no potential to support breeding great crested newt, it does potential to support this species during the terrestrial phase of its life-cycle, should it be present within one or more of the adjacent ponds. Great crested newt presence/absence surveys are therefore required, for the two off-site ponds, involving four visits between mid-March and mid-June inclusive.

The southern part of the site has potential to support common reptile species, namely grass snake and common lizard, and if the southern part of the site is due to be affected it is recommended that presence/absence surveys should be carried out during the spring/summer (involving the deployment of artificial refuges within suitable habitat across the site, and their subsequent inspection on seven occasions). If the southern part of the site, as defined by land south of the hedgerow running west-east across the larger of the two fields, is not to be affected, then such reptile surveys are not considered necessary.

CONTENTS

1 INTRODUCTION

1.1 Terms of Reference

Andrew McCarthy Associates (part of the SLR group) was commissioned by UK Coal Mining Ltd and Gleeson Homes to undertake an 'extended' Phase 1 Habitat Survey of land off Barnburgh Lane, Goldthorpe, Barnsley (approximate central OS grid reference SE466038).

1.2 Site Context

The site is located on the southeast edge of the township of Goldthorpe and comprises mainly arable land, delineated and divided by hedges accompanied by shallow, mostly dry ditches. Most of the western boundary of the site is adjacent to residential development, whilst land to the east and south is a mix of arable and some improved grazing fields. In terms of its geology the site lies just within the South Yorkshire Coal Measures, with the Southern Magnesian Limestone only several hundred metres to the east.

2 METHODOLOGY

2.1 Desk Study

The following organisation was contacted for archive data on designated sites[1] and species of conservation concern at a national, regional and/or local level[2]:

- Barnsley Biodiversity Trust

The data search was conducted within a 2 km radius of the site for bats and statutory designated sites, and within a 2 km radius for non-statutory designated sites and all other species of conservation concern. The data received from the Trust is included in Appendix 4 of this report

The following websites were accessed to search for statutory designated sites and legally protected taxa within 2 km of the proposed development site:

- Multi-Agency Geographic Information for the Countryside - www.magic.gov.uk
- National Biodiversity Network Gateway – data.nbn.org.uk

2.2 Field Survey

2.2.1 Flora

2.2.1.1 Habitats

The habitat survey and mapping exercise was carried out by Jim Flanagan, AIEEM on 7 October 2010, using standard Phase 1 Habitat survey methodology (JNCC, 2003).

Ponds found on or within 500m of the site were subjected to a Great crested newt Habitat Suitability Index (HSI) assessment. In this a range of scores are calculated using ten parameters, to assess the likely value of any given water body to support breeding great crested newt. The parameters used for the assessment are: site

[1] Designated sites include those protected under national or international legislation, such as Sites of Special Scientific Interest (SSSI), and local sites afforded protection under the planning system, such as County Wildlife Sites (CWS) and Regionally Important Geological and Geomorphological Sites (RIGS).

[2] This includes species protected under international and national legislation as well as species included in the UK and/or local Biodiversity Action Plans, Red Data Book taxa, and Red or Amber listed birds of conservation concern.

location; pond area; pond drying; water quality; shade; waterfowl; fish; presence of other ponds in the area; terrestrial habitat; and macrophyte communities. Each parameter scores a value of between 0.01 and 1. These scores are then multiplied and then 'rooted' to produce a geometric mean score, of between 0 and 1. The following categorical scale is then used to estimate the overall suitability of the water body concerned:

HSI score	**Pond suitability**
<0.5	Poor
0.5-0.59	Below average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

Generally, ponds assessed as being of 'below average' or better (i.e. having a HSI score of 0.5 or above) are then subject to great crested newt presence/absence surveys[3].

2.2.1.2 Species

In addition to general habitat classification and mapping, a botanical species list was also compiled[4], with the abundance of each species being estimated for each main habitat-type using standard 'DAFOR' codes: **D**ominant, **A**bundant, **F**requent, **O**ccasional, **R**are (**L**ocally is used as a prefix where appropriate). Particular searches were undertaken for the presence of invasive species such as Japanese knotweed.

2.2.2 Fauna

Habitats and features with potential to support protected and/or conservation priority fauna species, together with any field signs of such species, were recorded on the field map using target notes (relevant details are reproduced on the digitised plan in Figure 1).

Amongst others, a search was undertaken for the following key habitats and/or field signs for protected or conservation priority species (see Table 1).

[3] For further information refer to Oldham, R.S., Keeble, J., Swan, M.S.S, and Jeffcote M. (October 2000) Evaluating the suitability of habitat for the great crested newt *Triturus cristatus* in *The Herpetological Journal* volume 10, number 4, British Herpetological Society.

[4] Botanical nomenclature follows Stace (2nd edition, 1997).

Table 1: Key habitats & field signs or protected & priority species

Taxon	Indicative Habitat(s)	Field Signs (in addition to sightings)
Bats	Roosts – Trees, buildings, bridges caves etc. Foraging areas – e.g. parkland, water bodies and streams, wetlands, woodland edge, hedgerow Commuting routes – linear features (e.g. hedgerows, water courses, tree lines)	In or on potential roost sites: Droppings stuck to walls; urine spotting in roof spaces; oil from fur staining round roost entrances; feeding remains (e.g. moth wings under a feeding perch)
Badger	Found in most rural and many urban habitats	Excavations and tracks: sett entrances, latrines, hairs, well worn paths; prints; scratch marks on trees
Birds	Trees, scrub, hedgerow, field margins, grassland, buildings	Nests; droppings below nest sites (especially in buildings of trees); tree holes
Reptiles	Rough grassland, log and rubble piles	Sloughed skins
Great Crested Newt	Ponds within 500 m of suitable habitat within the site boundary. Suitable (terrestrial) habitat includes rough grassland, scrub and woodland, log and rubble piles and other debris, animal burrows	No specific field signs
Invertebrates	All terrestrial habitats are likely to support an invertebrate assemblage, but the richest sites are ancient semi-natural habitats (e.g. woodland, grassland and heath) and some sites of anthropogenic origin, in particular those with the widest range of habitat-types, such as bare ground, ecotone (edge) habitat, wetlands etc. Such sites include former rail yards and sewage works, sand pits and quarries etc.	Few specific field signs, but could include solitary bee and wasp burrows etc

2.3 Limitations

2.3.1 Desk Study

Desk study data is not exhaustive and is intended mainly to set a context for the study. It is therefore possible that protected species not identified during the data search do in fact occur within the vicinity of the proposed development site.

2.4 Quality Assurance & Environmental Management

The surveyor is a member of the Institute of Ecology and Environmental Management (IEEM) and follows the Institute's code of professional conduct when undertaking ecological work.

3 RESULTS

3.1 Habitat Descriptions

3.1.1 Overview

The results of the Phase 1 Habitat Survey are illustrated in map form (Figure 1, Appendix 1) with associated target notes listed in Appendix 2. All of the plant species recorded during the field survey are listed in Appendix 3, and scientific names provided in this Appendix (English names only have been provided in the main text). The site comprises a mix of fields under agricultural cultivation – both cultivated and abandoned arable occupy the northern half of the site horse-grazed pasture in southern half. Arable cultivation and pasture occur along the east and southern boundaries. An allotment lies in the extreme north-western corner of the site, which is immediately abutted by residential properties (off-site). Barnburgh Lane forms the northern boundary. The site is located on the south-eastern fringe of Goldthorpe and is just within the South Yorkshire Coalfield.

3.1.2 Habitats

3.1.2.1 Grassland & Arable

The larger part of the site is made up of actively cultivated arable, with the western portion an abandoned field of oil-seed rape and now overgrown with locally abundant ruderals such as thistle and willowherb species and abundant creeping bent.

Plate 1: View of abandoned arable field forming north-western half of site now dominated by tall ruderals species and coarse grasses (view to the north).

Forming much of the southern end of the site was a field that had been used for the grazing of horses/ponies. The sward was largely improved and species-poor, although the south-eastern end of the field was found to support vegetation characteristic of highly moist soils such as marsh fox-tail and glaucous sweet-grass. In addition there were scattered clumps of hard rush and an occasional shoot of bulrush. Within this was a small area of very shallow standing water over muddy ground. All these indicators of wetness were observed to originate from water entering the area from the adjacent field to the south where a pond was present.

Plate 2: This picture shows land forming the eastern half of the site (view to north). In the foreground is a part of a horse-grazed pasture field and in the distance managed hedge and arable cultivation stretching up to Barnburgh Lane. The hedgerows in the extreme right of the picture run along the west side of Engine Lane.

3.1.2.2 Hedgerows & Hedgerow Trees

Hedgerows were predominantly species-poor and formed of managed and un-managed hawthorn. Additional species were (in order of frequency) elder, dog rose, field maple, blackthorn, Wych elm and ash. No length of hedgerow was seen to fulfil the criteria for importance under ecology as set out in the Hedgerow Regulations (1997). None of the hedges contained mature trees – only a few semi-mature specimens (wych elm and field maple).

3.1.2.3 Streams, Ditches & Water Bodies

Many of the hedges within or along their margins of the site had associated shallow ditches, and these were almost all found to be dry. No water bodies were found within the site boundary. However, two ponds exist within 500m of the site boundary; these are not shown on the latest OS 1:25,000 maps. One of these was located within 20m of the southern site boundary and was a moderately sized pond, some 40 x 40m in area, and containing large stands of bulrush (Target Note 2).

Plate 3: This is a view of the pond located to the south of the site and shows well-vegetated marginal areas comprising mostly rushes and bulrush (view to the southwest).

There was much open water present within this pond, and a moorhen *Gallinula chloropus* was noted calling from the denser stands of bulrush. A ditch to the west of this was also inundated and formed an extension of the pond. In this area the water was generally shallower and mixed in with heavily waterlogged ground. The ditch followed a route directly south and entered another field (arable) as a dike. This dike was observed to be heavily vegetated and un-managed. The condition of this dike appears to have prevented water from draining away from the field resulting in the consequent impoundment of water, resulting in the creation of the pond. Other plants noted within the pond included a raft of floating broad-leaved pondweed as well as occasional emergent water plantain, and much hard rush and celery-leaved buttercup in shallower and more water-logged ground. The HSI carried out on this

pond gave a score of 0.81 which indicates 'excellent' suitability for great crested newt (refer to Appendix 5).

Another off-site pond was located 160 metres north of Barnburgh Lane (Target Note 4). The pond was irregular in shape but perhaps covered an area of about 50 square metres and comprised shallow open water as well as marginal/emergent vegetation with some willow scrub (see Plate 2 below). The pond appeared to be partly or wholly ephemeral and potentially dries up completely in hot summers. The HSI score for this pond was calculated at 0.56 which is indicative of 'below average' suitability for great crested newt (refer to Appendix 5).

Plate 4: This is a view of the pond located some 160m north of the site on the north side of a disused railway line over which the Barnsley Boundary Walk crosses. This pond is only a few metres away from the footbridge across the railway line. In the distance new housing developments are in the process of being completed.

Two additional ponds, recorded on the relevant OS map a short distance to the south east of the site, were found to no longer exist, upon site inspection.

3.2 Designated/non-designated Sites

No statutory or non-statutory designated sites of nature conservation interest were recorded from the desk study, either for the site itself, or its immediate surroundings.

3.3 Protected Species

Relevant protected and conservation priority taxa likely to present a constraint to development are listed in Table 2. Inclusion in this table is based upon:

a) Presence of suitable habitat for a species and a national distribution which suggests its presence is likely;
b) Confirmed field evidence of individual species (e.g. presence of badger setts);
c) Records returned during the desk study, which confirm the presence of the species in the local area.
d) Potential for the proposed development to have an adverse impact upon the species.

Table 2: Key protected species

Species	Legal Protection/ Conservation Priority Status[5]	Present in Desk Study Results	Suitable Habitat Within or Near Site	Evidence Within or Near Site	Notes
Bats					
Daubenton's *Myotis daubentonii*	HR, WCA, LBAP	Y (not on site)	Y	N	Desk study records for R. Dearne to south of site
Common pipistrelle *Pipistrellus pipistrellus*	HR, WCA, LBAP	Y (not on site)	Y	N	Possible roosts within 2km of desk study search area
Soprano pipistrelle *Pipistrellus pygmaeus*	HR, WCA, UKBAP, LBAP	Y (not on site)	Y	N	As above
Noctule *Nyctalus noctula*	HR, WCA, UKBAP, LBAP	Y (not on site)	Y	N	As above
Other Mammals					
Badger *Meles meles*	PBA	Y (not on site)	Y	N	Desk study indicated activity in Bella Wood to NE of site - 5 years ago
Birds					
Starling *Sturnus vulgaris*	UKBAP, Red	N	Y	Y	Possible breeding sites in domestic properties to west of site
House sparrow *Passer domesticus*	UKBAP, Red	N	Y	Y	Possible breeding sites in domestic properties to west of site
Barn owl *Tyto alba*	WCA, UKBAP, LBAP	Y (not on site)	Y (abandoned arable)	N	Desk study indicates a regular breeding pair

[5] See Section 4 on relevant legislation and policy for further information on the terms used here.

Species	Legal Protection/ Conservation Priority Status[5]	Present in Desk Study Results	Suitable Habitat Within or Near Site	Evidence Within or Near Site	Notes
					5-600m east of site (under road-bridge across disused railway line at SE474036)
Reptiles					
Grass snake *Natrix natrix*	WCA, UKBAP	N	Y	N	
Common lizard *Zootoca vivipara*	WCA, UKBAP	N	Y	N	
Amphibians					
Great crested newt *Triturus cristatus*	HR, WCA, UKBAP, LBAP	Y (not on site)	Y	N	Desk study indicates possible presence in fishing ponds at Bolton 550m distance to SW at SE460034

Key to protection/status:

HR	Habitat Regulations
WCA	Wildlife & Countryside Act
PBA	Protection of Badgers Act
UKBAP	UK Biodiversity Action Plan
LBAP	Local (or Regional) Biodiversity Action Plan
Red	Red list bird of conservation concern (Eaton *et al.*, 2009)

3.4 Other Species of Conservation Concern

Of the small range of additional bird species recorded on the site, bullfinch *Pyrrhula pyrrhula* and snipe *Gallingo gallingo* (amber-listed birds of conservation concern) were the most notable.

3.5 Non-native invasive species

No invasive species were found to be present within the site but at the northern end of Engine Lane were two stands of Japanese knotweed (see Figure 1, Target Note 6 in Appendix below). These were both elongate and about 1-1.5m wide and ran parallel with the adjacent defunct hedge. One stand was 30m long and another, located nearby further south, was 10m long. Both appeared to show strong re-growth from previous attempts at control.

PLATE 5: This is a view of southernmost and smaller of the two stands of Japanese knotweed located on the east side of Engine Lane showing fairly vigorous/healthy growth (view to northeast).

4 RELEVANT LEGISLATION & POLICY[6]

4.1 Legislation

4.1.1 Habitat Regulations

The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb[7] wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

4.1.2 Wildlife & Countryside Act

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act.

4.1.3 Natural Environment & Rural Communities Act

The NERC 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

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[6] Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References & Bibliography section.

[7] Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

4.2 Policy

4.2.1 Planning Policy Statement 9

PPS9 and its accompanying document ODPM 06/2005 sets out current government policy on biodiversity and nature conservation and places a duty on planners to make material consideration to the effect of a development on legally protected species when considering planning applications. PPS9 also promotes sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within a development.

4.2.2 Biodiversity Action Plans

The UK Biodiversity Action Plan (UKBAP) (Anon, 1995) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with all listed species/habitats having specific action plans defining the measures required to ensure their conservation. Regional and local BAPs have also been organised to develop plans for species/habitats of nature conservation importance at regional and local levels.

4.2.3 Local Structure Plans

County, District and Local Councils have Structure Plans and other policy documents that include targets and policies which aim to maintain and enhance biodiversity. These are used by Planning Authorities to inform planning decisions.

5. DISCUSSION & RECOMMENDATIONS

5.1 Potential Ecological Issues

5.1.1 Amphibians - Great crested newt

Two ponds within 500m of the site have potential to support great crested newt. One pond, located 20m to the south of the site, has 'excellent' potential to support this species, another pond, 160m to the north of the site, has 'below average' potential. Furthermore, desk study data from the Barnsley Biodiversity Trust reveals that great crested newt may be present within fishing ponds at Bolton, 550m from the site boundary. Great crested newt are known to use hedgerow habitats and long grassland as winter refugia, and as these habitats are present within the site it is recommended that both off-site ponds are subject to full presence absence surveys, between March and June (refer to 5.2.1).

5.1.2 Reptiles

The southern part of the site (as defined by land to the south of the hedgerow which divides the larger of the two fields) has potential to support common reptile species, namely grass snake Natrix natrix, and common lizard *Zootoca vivipara*. If the southern part of the site is likely to be affected, presence/absence surveys, involving the deployment of artificial refuges and their checking on seven occasions between April and September inclusive, would be recommended. However, if the southern part of the site shall remain unaffected, then reptile presence/ absence surveys will not be required (refer to 5.2.2).

5.1.3 Japanese knotweed

There may be potential for the two stands of Japanese knotweed, on the east side of Engine Lane, to be inadvertently spread. Underground rhizomes of Japanese knotweed can occur several metres from the edge of the stands and, although no Japanese knotweed was found on the west side of Engine Lane, there is the possibility that rhizomes may actually occur within the site boundary. Further advice should be obtained from the Environment Agency with regard to management/eradication, if earth-moving operations are to take place close to this part of Engine Lane.

5.2 Recommendations for Further Survey

5.2.1 Amphibians – Great Crested Newt

It is recommended that great crested newt presence/absence surveys be undertaken on both off-site ponds previously described. This involves four survey visits between mid-March and mid-June inclusive, with two of these four visits taking place between mid-April and mi-May. Survey techniques, used on each visit, must comprise at least three of the following four methods: bottle-trapping; torch-light survey; netting and egg-search. If great crested newt are found to be present, 'size class assessment' surveys need to be carried out (to support a subsequent European Protected Species Licence EPSL, see overleaf), and this involves an additional two visits, which should be completed by mid-June (making six visits in total).

5.2.2 Reptiles – Grass snake and Common lizard

As the southern part of the site has potential to support grass snake and common lizard, both of which are protected against killing and injury under the Wildlife and Countryside Act 1981 (as amended) it is recommended that presence/absence surveys are carried out. This would involve the deployment of artificial refuges (in this instance at least 50 should be deployed), such as metal 'tins'; large wooden boards, and sections of heavy-duty roofing felt and ondoline, and their subsequent checking on seven occasions between April and September inclusive. If the southern part of the site is not due to be affected, then these presence/ absence surveys are not considered necessary.

5.3 Summary

The ecological issues pertaining to the proposed development and the associated recommendations for further survey and mitigation are summarised in Table .

Table 3: Ecological issues summary

Site/Species	Potential Development Impacts	Further Survey Requirements
Great crested newt	Direct loss of potential winter refugia and killing/injuring of individual animals	Survey of two off-site ponds in accordance with standard survey practice (Foster, J, 2001) during March-June, which involves a minimum of four visits
Reptiles	Direct loss of potential habitat and potential killing/injuring of individual animals, if the southern part of the site is due to be affected	Survey of habitats in the southern part of the site, involving the deployment of 50 artificial refuges and their subsequent checking (on 7 occasions)
Japanese knotweed	Disturbance of areas close to off-site stands along Engine Lane	None

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www.naturalareas.naturalengland.org.uk (Accessed 21/10/2010)

www.nbn.org.uk (Accessed 11/10/2010)

www.ukbap.org.uk (Accessed 21/10/2010)

www.barnsleybiodiversity.org.uk (Accessed 21/10/2010)

Web addresses for access to full UK legislation and policy text:

Conservation of Habitats and Species Regulations 2010:
http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1

Habitats Directive:
www.europa.eu.int/eur-lex/en/lif/dat/1992/en_392L0043

Birds Directive:
eur-lex.europa.eu/LexUriServ/site/en/consleg/1979/L/01979L0409-20070101-en

Wildlife and Countryside Act 1981:
www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1

Countryside and Rights of Way Act 2000:
www.legislation.hmso.gov.uk/acts/acts2000/20000037

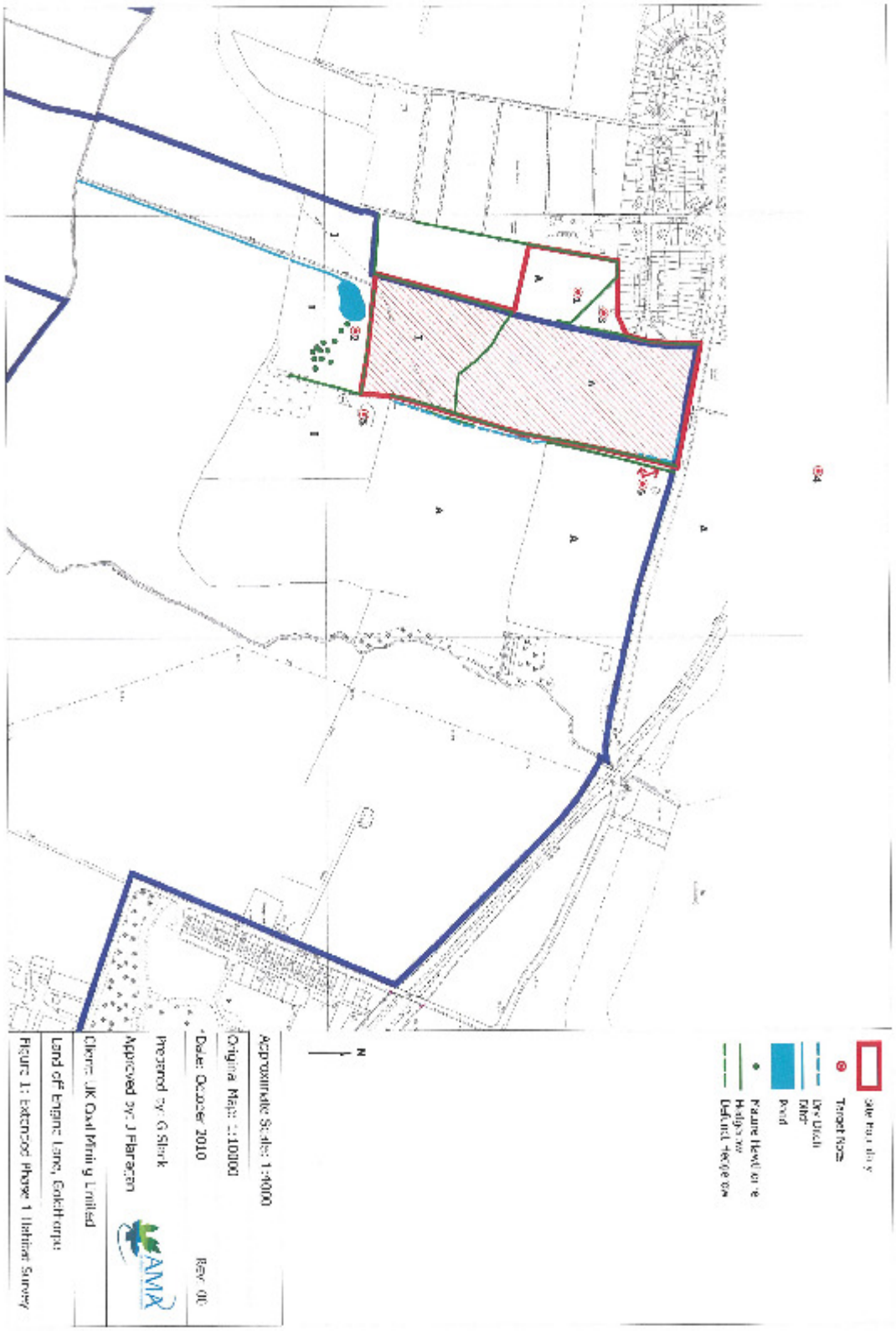
Natural Environment and Rural Communities Act 2006:
http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

Protection of Badgers Act 1992:
http://www.opsi.gov.uk/ACTS/acts1992/ukpga_19920051_en_1

National Parks and Access to the Countryside Act 1949:
http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga_19490097_en_1

Planning Policy Statement 9:
www.communities.gov.uk/documents/planningandbuilding/pdf/147408

APPENDIX 1 – EXTENDED PHASE 1 HABITAT MAP


Approximate Scale: 1:4000
Original Plot: 1:10000
Date: October 2010
Rev: 00
Prepared by: G Slevin
Approved by: J Flaherty
Client: UK Coal Mining Limited
Land off Engine Lane, Goldthorpe
Figure 1: Extended Phase 1 Habitat Survey
N

APPENDIX 2 – TARGET NOTES

Number	Note
1	Abandoned/neglected arable field formerly occupied by oil-seed rape/cabbage crop. Now heavily overgrown with tall herbs (mostly thistles) and abundant creeping bent.
2	Pond 20 metres from site boundary, with open water and a limited variety of marginal wetland plants - mainly stands of bulrush and rushes (but also some eater plantain and some locally frequent celery-leaved buttercup) and there is a small area of floating broad-leaved pondweed. A single snipe was flushed from the northern margins of pond during site visit and flew over the site northwards.
3	Location of a triangular piece of land used as allotments and for the keeping of domestic animals (including a pony).
4	Location of a small irregular and shallow pond 160 metres from site boundary, with open water and small stands of bulrush. Slightly shaded by nearby willow scrub.
5	Former location of two ponds shown on recent Ordnance Survey 1:25,000 maps. There is evidence that these became dried up some considerable time ago and are completely vegetated over – only shallow hollows provide any evidence that they were once ponds – none of the vegetation present is indicative of wetland habitats.
6	Two stands of Japanese knotweed were found on the east side of Engine Lane (at Barnburgh Lane end). These stands were circa 3m from the site boundary and appear to have been subject to control in the past. Stand 1, the northernmost and nearest to Barnburgh Lane was about 30m long and 1.5m wide and was no more than 1.0-1.25m high. Stand 2 a little further south along the lane was about 10m long and 1.4m wide and was more vigorous in growth with a height of 1.6m (on average). A meticulous search was made of hedge vegetation located on the west side of Engine Lane but this resulted in no Japanese knotweed being found.

APPENDIX 3 – BOTANICAL SPECIES LIST

Scientific Name	*Common Name*	*DAFOR*
Grasses, sedges and rushes		
Agrostis capillaris	Common bent	Occasional
Agrostis stolonifera	Creeping bent	Occasional
Alopecurus geniculatus	Marsh foxtail	Occasional
Arrhenatherum elatius	False oat-grass	Frequent
Bromus sterilis	Barren brome	Rare
Carex sp.	Sedge	Locally frequent
Dactylis glomerata	Cock's-foot	Frequent
Deschampsia cespitosa	Tufted hair-grass	Occasional
Elytrigia repens	Common couch	Locally frequent
Festuca rubra	Red fescue	Rare
Glyceria declinata	Glaucous sweet-grass	Locally frequent
Holcus lanatus	Yorkshire fog	Abundant
Hordeum murinum	Wall barley	Locally frequent
Juncus inflexus	Hard rush	Occasional
Lolium perenne	Perennial rye-grass	Locally abundant
Poa annua	Annual meadow-grass	Locally frequent
Herbs		
Alisma plantago-aquatica	Water plantain	Occasional
Alliaria petiolata	Garlic mustard	Locally frequent
Anthriscus sylvestris	Cow parsley	Rare
Arctium minus	Lesser burdock	Rare
Artemisia vulgaris	Mugwort	Locally frequent
Brassica sp.	Cabbage	Frequent
Capsella bursa-pastoris	Shepherd's-purse	Locally frequent
Chamerion angustifolium	Rosebay willowherb	Frequent
Chenopodium album	Fat-hen	Locally frequent
Cirsium arvense	Creeping thistle	Occasional
Cirsium vulgare	Spear thistle	Occasional
Epilobium hirsutum	Great willowherb	Locally frequent
Epilobium montanum	Broad-leaved willowherb	Frequent
Epilobium hirsutum	Great willowherb	Frequent

Geranium pyrenaicum	Hedgerow Crane's-bill	Rare
Geranium robertianum	Herb Robert	Locally frequent
Galium aparine	Cleavers	Rare
Hedera helix	Ivy	Locally dominant
Heracleum sphondylium	Hogweed	Occasional
Lamium purpureum	Red dead-nettle	Occasional
Lapsana communis	Nipplewort	Rare
Lunaria annua	Honesty	Rare
Matricaria discoidea	Pineappleweed	Locally frequent
Persicaria maculosa	Redshank	Rare
Picris echioides	Bristly ox-tongue	Rare
Plantago lanceolata	Ribwort plantain	Locally frequent
Plantago major	Greater plantain	Locally frequent
Polygonum aviculare	Knotgrass	Locally frequent
Potamogetan natans	Broad-leaved pondweed	Occasional
Potentilla repens	Creeping cinquefoil	Rare
Ranunculus repens	Creeping buttercup	Frequent
Ranunculus sceleratus	Celery-leaved buttercup	Occasional
Rumex obtusifolius	Broad-leaved dock	Locally frequent
Rubus fruticosus agg.	Bramble	Occasional
Senecio jacobaea	Common ragwort	Occasional
Senecio vulgaris	Groundsel	Occasional
Sisymbrium officinale	Hedge mustard	Occasional
Solanum dulcamara	Bittersweet	Occasional
Sonchus arvensis	Perennial sow-thistle	Rare
Sonchus oleraceus	Smooth sow-thistle	Occasional
Stellaria media	Common chickweed	Locally fequent
Stachys sylvatica	Hedge woundwort	Locally frequent
Tamus communis	Black bryony	Locally frequent
Taraxacum officinale agg.	Dandelion	Occasional
Trifolium repens	White clover	Locally frequent
Trifolium pratense	Red clover	Rare
Tripleurospermum inodorum	Scentless mayweed	Locally frequent
Urtica dioica	Common nettle	Frequent
Veronica persica	Common field speedwell	Occasional

Trees and shrubs

Acer campestre	Field maple	Occasional
Crataegus monogyna	Hawthorn	Abundant
Fraxinus excelsior	Ash	Rare
Prunus spinosa	Blackthorn	Locally frequent
Rosa canina	Dog rose	Occasional
Sambucus nigra	Elder	Frequent
Ulmus glabra	Wych elm	Occasional

APPENDIX 4 – DESK STUDY DATA

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21st October, 2010.

Dear Jim,

DESK TOP STUDY – BARNBURG LANE/ENGINE LANE, GOLDTHORPE

Although The Trust is still not set-up with an ecological data-base the Trustees and members hold a vast amount of records for the Barnsley area and at some point we need to address the data-base issue if Barnsley Council are not going to fund and run a system.
However, i have been recently surveying the area south of your study area for the RSPB and can provide records which should be useful and with the addition of other members records will provide an up to date status of the area.

Schedule 1 Species

Bats
Noctule Bat *Nyctalus noctula* and Common Pipistrelle *Pipistrellus pipistrellus* are recorded throughout your study area and Daubenton's Bat *Myotis daubentonii* are recorded along the River Dearne. Although not on record with The Trust, it is likely that roosts will occur within a 2km radius from your study area.

Badger *Meles meles*
There has been some evidence of badger in Bella Wood to the south-east of Barnburgh Park in the past and a sett may be still active in this area but this is a

record from 5+ years ago. Probably best to check with South Yorkshire Badger Group on this if necessary.

Otter *Lutra lutra*
This species is becoming more active along the River Dearne in recent years and a survey last year found scats between Bolton and Harlington. It is thought that they are not breeding (yet) but they are exploring males.

Water Vole *Arvicola terrestris*
An extensive and intensive survey of the adjacent River Dearne and the linking dikes south of your study area this year found no evidence of water vole.

Great Crested Newt *Triturus cristatus*
May be present in the fishing ponds in Bolton at SE460034 and this is an area The Trust need to investigate for possible great crested newt.

Barn Owl *Tyto alba*
One pair breeds each year under the road bridge where Westfield Lane crosses the disused railway at SE474036

Kingfisher *Alcedo atthis*
They are seen regularly throughout the year along the River Dearne and on the dikes south of your study area. It is thought that they breed each year along the Rver Dearne between Adwick Bridge and Bolton.

The following detail provides a list of wintering birds found adjacent and south of your study area from the 2009/2010 surveys which may be useful.

Survey Results.
The following table gives a list of all important species recorded on the site during the three surveys and totals from each visit. It also gives the status of the species which fit into the following category: Schedule 1, UK BAP and LBAP, and "Red List" and "Amber List" species from Species of Conservation Concern 2009-2012.

Table 1

Species	**1st Survey**	**2nd Survey**	**3rd Survey**	**Status**
Mute Swan *Cygnus olor*	2	0	0	
Greylag Goose *Anser anser*	0	0	7	Amber List
Mallard *Anas platyrhnchos*	4	2	7	Amber List
Common Teal *Anas crecca*	1	0	1	Amber List
Tufted Duck *Aythya fuligula*	0	0	1	Amber List
Goosander *Mergus merganser*	0	0	1	
Grey Partridge *Perdix perdix*	13	9	0	Red List; UK BAP;

				LBAP
Little Grebe *Tachybaptus ruficollis*	2	0	0	Amber List
Grey Heron *Ardea cinerea*	0	0	2	
Sparrowhawk *Accipiter nisus*	0	0	2	
Kestrel *Falco tinnunculus*	1	2	0	Amber List
Peregrine Falcon *Falco peregrinus*	0	0	1	Schedule 1
Northern Lapwing *Vanellus vanellus*	6	0	35	Red List; UK BAP; LBAP
Redshank *Tringa totatus*	1	0	0	Amber List
Black-headed Gull *Chroicocephalus ridibundus*	0	20	44	Amber List
Stock Dove *Columba oenas*	8	6	6	Amber List
Kingfisher *Alcedo atthis*	3	0	0	Amber List; Schedule 1
Skylark *Alauda arvensis*	4	1	0	Red List; UK BAP; LBAB
Pied Wagtail *Motocilla alba*	0	20	20	
Dunnock *Prunella modularis*	2	1	1	Amber List
European Stonechat *Saxicola rubicola*	1	0	0	
Song Thrush *Turdus philomelos*	2	1	0	Red List; UK BAP; LBAP
Redwing *Turdus iliacus*	4	20	0	Red List
Fieldfare *Turdus pilaris*	50	130	4	Red List
Willow Tit *Poecile montanus*	0	2	0	Red List; UK BAP; LBAP
Starling *Sturnus vulgaris*	0	2	4	Red List; UK BAP; LBAP
House Sparrow *Passer domesticus*	4	2	0	Red List; UK BAP; LBAP
Linnet *Carduelis cannabina*	0	5	0	Red List; UK BAP; LBAP
Bullfinch *Pyrrhula pyrrula*	4	2	0	Amber List; UK BAP; LBAP
Reed Bunting *Emberiza schoeniclus*	4	0	2	Amber List; UK BAP: LBAP
Yellowhammer *Emberiza citrinella*	1	1	0	Red List;

				UK BAP: LBAP

The following detail provides a list of breeding birds found adjacent and south of your study area from the 2010 survey which may be useful.

Survey Results - Lowland Wader, Red List or other species of Conservation Concern including Schedule 1, Red or Amber List species.

Table 1

Species	Ist Survey	2nd Survey	3rd Survey	Maximum Population
Gadwall	1 pair			1 pair
Mallard		1 female	1 female with young	1 pair
Grey Partridge		2 pair		2 pair
Ringed Plover	1 bird			0
Northern Lapwing	16 birds	4 birds (3 territories)	12 (flocks)	8 pair
Common Snipe		1 bird "chipping"	1 drumming male	1-2 territories
Kestrel	1 bird hunting			1
Hobby		1 bird hunting		0
Stock Dove		1 pair	8 (flock)	1 pair
Cuckoo	1 territorial male			1 territory
Green Woodpecker	1 pair feeding			0
Skylark	10 singing birds	11 singing males	12 singing males	12 territories
Dunnock		2 territorial males	1	2 territories
Common Whitethroat		3 territorial males	5 territorial males	5 territories
Lesser Whitethroat	1 territorial male	1 territorial male	1 territorial male	1 territory
Sedge Warbler		5 territorial males	3 territorial males	5 territories
Grasshopper Warbler		3 singing males		3 territories
Reed Warbler		1 territorial male	2 territorial males	2 territories
Willow Warbler		5 territorial males	2 territorial males	5 territories

House Sparrow	2 males	10 (flocks)	12 (flocks)	0
Linnet	2 territorial males + flock of 12	4 territorial males	10 (flock)	4 territories
Bullfinch		1 pair	1 territorial male	1 pair
Reed Bunting	3 territorial males	9 territorial males	8 territorial males	9 territories
Yellowhammer	4 territorial males	1 territorial male	3 territorial males	4 territories

The above tables give an indication of populations adjacent and south of your study area although there is some overlap into your study area in places. Overall populations of "urban" red-list birds will be greater than what is indicated on the tables as the fringe of Bolton and Goldthorpe was not surveyed.

These records represent what The Trust know about at the present time but there may be other records we do not know about.

I hope this information is useful but if you need any clarification please do not hesitate to contact me.

Yours sincerely

Geoff Carr
Chairman
Barnsley Biodiversity Trust

APPENDIX 5 – HABITAT SUITABILITY INDEX SCORES FOR THE TWO OFF-SITE PONDS

Great Crested Newt Survey

1. Pond Details

Project	**Extended Phase I**
Project number	A24.02437.00003
Site	Land off Engine Lane/Barnburgh Lane, Goldthorpe

Pond number/reference	**Pond 1**
OS Grid reference	SE465035
Location details	<20m south of proposed development site
Access permission	NO
Access instructions	Via public bridleway running immediately west of the location

Landowner name	Harworth Estates
Address/email	Harworth Park, Blyth Road, Harworth, Doncaster, South Yorkshire, DN11 8DB
Telephone	

Habitat Suitability Index

				SI value
SI1.	Map location	**A/B/C**	A	1.00
SI2.	Surface area	**rectangle/ellipse/irregular**	irregular	
		length (m)	40	
		width (m)	40	
		OR estimate (m^2) if irregular		
		area (m^2) =	1600	0.85
SI3.	Dessication rate	**never/rarely/sometimes/frequently**	rarely	1.00
SI4.	Water quality	**good/moderate/poor/bad**	good	1.00
SI5.	Shade	% of margin shaded 1m from bank	0	1.00
SI6.	Waterfowl	**absent/major/minor**	minor	0.67
SI7.	Fish population	**absent/possible/minor/major**	possible	0.67
SI8.	Pond density	number of ponds within 1km	6	1.00
SI9.	Terrestrial habitat	**good/moderate/poor/isolated**	moderate	0.67
SI10.	Macrophyte cover	%	15	0.46

HSI = **0.81**

Use provisional HSI value if above 0.75

provisional HSI = 0.79

Date undertaken 11-10-10

Notes/comments

Pond is quite large and well vegetated for a body of such a recent origin - as a result of impoundment from a heavily vegated & un-managed outflowing dike to south. Much stands of bulrush and rushes along with some floating broad-leaved pondweed; also some celery-leaved buttercup in less deep areas - pond is thought not to be deeper than 1.25m.

% of shoreline accessible for torching/bottle trapping	100

Great Crested Newt Survey

1. Pond Details

Project	**Extended Phase I**
Project number	A24.02437.00003
Site	Land off Engine Lane/Barnburgh Lane, Goldthorpe

Pond number/reference	**Pond 2**
OS Grid reference	SE467040
Location details	c.160m north of proposed development site
Access permission	NO
Access instructions	Via public bridleway (Barnsley Boundary Walk)

Landowner name	Harworth Estates
Address/email	Harworth Park, Blyth Road, Harworth, Doncaster, South Yorkshire, DN11 8DB
Telephone	

Habitat Suitability Index

				SI value
SI1.	Map location	**A/B/C**	A	1.00
SI2.	Surface area	**rectangle/ellipse/irregular**	irregular	
		length (m)	10	
		width (m)	5	
		OR estimate (m^2) if irregular		
		area (m^2) =	50	0.10
SI3.	Dessication rate	**never/rarely/sometimes/frequently**	sometimes	0.50
SI4.	Water quality	**good/moderate/poor/bad**	poor	0.33
SI5.	Shade	% of margin shaded 1m from bank	40	1.00
SI6.	Waterfowl	**absent/major/minor**	absent	1.00
SI7.	Fish population	**absent/possible/minor/major**	absent	1.00
SI8.	Pond density	number of ponds within 1km	2	0.84
SI9.	Terrestrial habitat	**good/moderate/poor/isolated**	moderate	0.67
SI10.	Macrophyte cover	%	0	0.31

HSI =	**0.56**
provisional HSI =	0.53

Use provisional HSI value if above 0.75

Date undertaken	11-10-10

Notes/comments

Contains stands of bulrush and some rushes on the margins + young willow (Salix caprea) nearby. Water clouded but pond considered not to be deep

% of shoreline accessible for torching/bottle trapping	100

global environmental solutions

UK Coal Mining Ltd and Gleeson Homes

Results of great crested newt surveys

SLR Ref: 424.02437.00004

June 2011

Version: Rev 1

CONTENTS

1.0 INTRODUCTION

1.1 Background

SLR Consulting Limited, which acquired Andrew McCarthy Associates (who undertook the original Extended Phase I Habitat Survey for this site) in 2010 was commissioned by UK Coal Mining Ltd and Gleeson Homes to undertake great crested newt *Triturus cristatus* surveys on a site on the southeast side of Goldthorpe on land adjacent to Barnburgh Lane (OS grid reference SE 466 038).

These surveys were undertaken between April and May 2011.

Previous recommendations to undertake reptile surveys of the southern part of the site, as defined by land to the south of the hedgerow which divides the larger of the two fields forming the site, do not apply, as this part of the site shall remain unaffected.

1.2 Site Description

Survey involved a large pond on the south side off Barnburgh Lane (Pond 1) and a much smaller pond north of Barnburgh Lane on developed land just beyond the old railway line (Pond 2); access to Pond 2 was via a public pathway.

1.3 Relevant Legislation & Policy[1]

1.3.1 Legislation

1.3.1.1 Great crested newt

In England, great crested newt is protected under the Conservation of Habitats and Species Regulations 2010, which defines European protected species, and the Wildlife and Countryside Act 1981, as amended by the Countryside & Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006. These pieces of legislation combine to give substantial protection to great crested newts and their resting places, making it an offence to:

- Deliberately/intentionally kill, injure or take a great crested newt;
- Take or destroy the eggs of a great crested newt;
- Possess or control any live or dead specimen or anything derived from a great crested newt;
- Damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt[2];
- Deliberately/intentionally or recklessly disturb[3] great crested newts while they are occupying a structure or place which they use for shelter or protection.

[1] Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References & Bibliography section.

[2] The ecology of the species means that it spends the majority of its life in the terrestrial habitats surrounding breeding ponds and it has been accepted as a guiding rule that all land within 500 m of a breeding pond must be considered to be a shelter or resting place.

[3] Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

This legislation applies to all life-stages of the species, from egg through larvae to sub-adults and adult newts.

1.3.2 Policy

Planning Policy Statement 9 and its accompanying document ODPM 06/2005 sets out government policy on biodiversity and nature conservation and places a duty on planners to make material consideration to the effect of a development on legally protected species when considering planning applications. PPS9 also promotes sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within the development.

The UK Biodiversity Action Plan (UKBAP) (Anon, 1995) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with all listed species/habitats having specific action plans defining the measures required to ensure their conservation. Regional and local BAPs have also been organised to develop plans for species/habitats of nature conservation importance at regional and local levels. Great crested newt is a UKBAP priority species.

2.0 METHODOLOGY

2.1 Field Survey

2.1.1 Great crested newt

In compliance with best practice guidelines (Gent & Gibson, 1998; Foster, 2001), a combination of the survey techniques described below was employed to assess the great crested newt status of the two ponds that lay within 500m of the proposed development site. The railway line could potentially act as a barrier for the movement of newts. Despite this, the pond on the newly developed site north of Barnburgh Lane (Pond 2) was surveyed for 'completeness'. Three of the four survey techniques described in Sections 2.1.1 to 2.1.4 below were used during each of the visits. Pond 2 within the newly developed site was found to be virtually dry (containing only very shallow water) on all six visits and could therefore not be subject to bottle trapping.

In line with the Great Crested Newt Mitigation Guidelines (Foster, 2001), six survey sessions were undertaken between early April and late May, to establish whether or not great crested newt was present (first four surveys) and to determine a population size estimate (additional two surveys).

Survey work was carried out by Chris Morrell (Natural England great crested newt license holder), with assistance from Anna McGrath Louise Bunn, Andrew Hill and Sarah Rothwell all of SLR consulting. Work was undertaken in pairs for health and safety reasons.

2.1.1.1 Torchlight Counts

The surveyors walked slowly around the perimeter of each pond after dark and scanned the water's edge with a powerful torch (500,000 candlepower), searching for great crested newt, and other amphibians.

2.1.1.2 Bottle Trapping

Newt traps, comprising 2 litre plastic drinks bottles with the top cut off and inserted back into the main body of the bottle and secured to the bottom of the pond using a bamboo cane, were deployed after sunset around the perimeter of each pond. Each trap was deployed so that the top three quarters of the bottle were submerged in the water at an angle of 45°, leaving a small air pocket in the bottom of the bottle, which protruded just above the water's surface (to avoid the risk of suffocating any trapped newts). The traps were then checked for newts early the following morning and removed from the pond; the numbers of newts in each trap having been recorded. Only Pond 1 could be subject to bottle trapping, as Pond 2 was too shallow.

2.1.1.3 Netting

During the morning, surveyors used dip nets to sweep amongst the submerged vegetation along the edges of each pond (as this is where newts tend to be found during the day). Netting effort was standardised by carrying out three sweeps per four metres of pond bank, ensuring that each sweep was approximately the same length (1 m).

2.1.1.4 Egg Searching

The surveyors checked the leaves of water plants around the edge of each pond for great crested newt eggs (which can be easily distinguished from the eggs of other newt species by

their size and colour). It can be fairly easy to spot leaves which have been used for egg laying, as the female folds the leaf over each egg, which can result in giving the leaf a characteristic 'concertina' appearance when multiple eggs are laid.

2.2 Limitations

2.2.1 Field Survey

Due to its shallow and ephemeral nature, Pond 2 was too shallow to trap, and in fact was almost dry for the entirety of the survey period.

No survey constraints applied for Pond 1.

2.3 Quality Assurance & Environmental Management

All ecologists employed by SLR Consulting are members of, or are under application for, membership of the Institute of Ecology and Environmental Management (IEEM) and follow the Institute's code of professional conduct when undertaking ecological work.

All fieldwork was carried out in accordance with current best practice guidelines (Gent & Gibson, 1998; Foster, 2001), under the supervision of senior staff and licensed great crested newt ecologists or accredited agents working under their licence.

3.0 RESULTS

3.1 Great crested newt survey results

Very low numbers of great crested newt were found in Pond 1 (with a maximum count of one GCN found on three occasions). Pond 2 had no presence of any newt or amphibian species whatsoever and is therefore not included in this summary. Three other species of amphibian were also found within Pond 1, these being the smooth newt *Lissotriton vulgaris*, common frog *Rana temporaria* and common toad *Bufo bufo*. These results are summarised in Table 2 (overleaf), using the key below. The weather conditions for the survey visits are detailed in Table 1.

Key

GCN male	Great crested newt, male
GCN fem	Great crested newt, female
SN male	Smooth newt, male
SN fem.	Smooth newt, female
CT	Common toad
CF	Common frog
√	Indicates presence
T	Torchlight counts
B	Bottle trapping
N	Netting
E	Egg searching

Table 1. Weather data

Visit No.	Date	Weather
1	06.04.11	Clear, calm and dry 15℃
2	11.04.11	Clear, calm and dry, 11℃
3	19.04.11	Clear, calm and dry, 8℃
4	05.05.11	Cloudy, wet underfoot, 13℃
5	17.05.11	Clear and dry, no wind, 12℃
6	26.05.11	Scattered showers, cloudy, breezy, 13℃

Table 2. Great crested newt survey data

Pond No.	Visit No.	Methods used	Great crested newt		Other Amphibian Species				Fish
			GCN male	GCN fem.	SN male	SN fem.	CT	CF	
1	1	T,BT,N	1		1	4			√
	2	T,BT,N							√
	3	T,BT,N				1			√
	4	T.BT,N	1			1	2	2	√
	5	T,BT,E							√
	6	T,BT,N	1						√

4.0 DISCUSSION

4.1 Great crested newt

4.1.1 Summary of Great crested newt Survey Results

Great crested newts were not recorded in Pond 2 throughout the six survey visits during 2011.

A single great crested newt was recorded in Pond 1, on three separate occasions; (Visit 1, 4 and 6 respectively); this may have been the same animal on each occasion. This categorises the GCN population as 'small' (i.e. less than 10 individuals). The presence of fish within Pond 1 significantly lowers its potential for breeding great crested newt; at present Pond 1 does not support a viable GCN population, and has no appreciable potential to do so.

4.1.2 The need or otherwise for a GCN European Protected Species Licence (EPSL)

Advice from Natural England on the need, or otherwise, for a great crested newt European Protected Species (EPS) licence takes the form of the 'template for Method Statement to support an application for a licence under Regulation 44(2)(e) in respect of great crested newts (*form WML-A14-2, version March 2011*)', available from the Natural England web site. This contains a section entitled '*Application tools: Do I need a license?*

This gives Natural England's position on situations when a European Protected Species Licence (EPSL) is likely to be needed, and not needed:

Part (I) "licence risk assessment" of this document, under "background" states:

"In recent years there has been a trend towards increasingly precautionary applications, resulting from a risk-averse approach to [great crested newt] mitigation. Whilst considering potential risks to great crested newts is laudable, many recent mitigation schemes were designed for developments that actually had very little or no effect on the newt population….Newts tend to be present at increasingly low density the further one looks from ponds….further from ponds there is a corresponding reduction in the scale of impact on populations. Given that great crested newts can disperse over 1 km from breeding ponds, the potential for offences may seem vast, yet the probability of an offence outside the core breeding and resting area is often rather small, and even if an offence takes place, the effect on the population may be negligible".

This document goes on to state:

"Natural England recognizes that the two key factors leading consultants to adopt this risk-averse approach are: (a) uncertainty over the presence of newts and whether there will be an offence in areas distant from ponds; (b) undertaking mitigation under license "just in case", so that there is no perceived risk of litigation for their client. Natural England wishes to see mitigation planning shift away from such a highly risk-averse starting point. The domestic legislation protecting great crested newts arises largely from the Habitats Directive, which has a central aim to restore scheduled species to a favorable conservation status. A more proportionate approach to mitigation, addressing tangible impacts on populations whilst giving lower priority to negligible effects, is consistent with the aims of the Directive. The recent loss of the "incidental result" defence from the legislation may create a tension with this approach, but it is hoped that the guidance here will assist".

4.1.2.1 Implications for the main development site (Land adjacent to Barnburgh Lane)

Drawing 1 illustrates the location of Ponds 1 and 2, along with the value of the habitat for great crested newt, in their terrestrial phase. From this it may be seen that the field containing Pond 1, and another small field immediately to the west of it have high suitability for GCN (see photo 1, Appendix B); these fields contains scrub, lightly grazed pasture and tussocky grassland, affording shelter to GCN, and providing habitat for invertebrates, upon which GCN feed.

The southern part of the application site is classed as having medium value for GCN (see photo 2, Appendix B), and the northern part of low value for this species (see photo 3, Appendix B). Most of the rest of the surrounding landscape, primarily consisting of arable land or built up areas, is also of low value for GCN.

Given that only a single male GCN was recorded throughout the six visit survey programme, and that the best terrestrial habitat is located immediately adjacent to the pond, to the south and south-west of the application site, it is considered unlikely that the application site itself is used by the very small population of GCN found within Pond 1 (potentially comprising just a single non-breeding animal).

Indeed, the fact that Pond 1 was only found to contain a single great crested newt, strongly suggests that this newt was a 'wanderer' from a more distance meta-population, and not part of a self-sustaining colony. In time, Pond 1 might become colonised by a viable population of great crested newts, but at present, this is certainly not the case; furthermore this seems unlikely long as long as Pond 1 continues to support fish, which may predate upon GCN, particularly larval GCN.

Taking into account the advice from Natural England in 'WML-A14-2', summarised in Section 4.1.2, no European Protected Species Licence is therefore considered necessary for the application site.

Notwithstanding this, the erection of one-way fencing has been recommended, as a precaution (see below).

4.1.3 Recommendations for Mitigation

Even though an EPSL is not considered necessary for the application site, it is recommended that a one-way herptile fence is erected around the southern half of the field which contains the development plot, as illustrated in Drawing 1.

The fence would be angled 'inwards' at 45^{o}, preventing GCN from entering the development site from the south, whilst not obstructing the movement of animals towards Pond 1, from the north. It is stressed, that this fence shall be constructed as a precaution; it is, as previously stated, unlikely that GCN occur on land to the north Pond 1, due to the very small GCN population involved and the fact that much better quality habitat occurs immediately to the west, east and south of this pond (see Drawing 1).

A suitable design for one way herptile fencing, manufactured by Herpetosure, is provided in Appendix A of this report.

5.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of UK Coal Mining Ltd. and Gleeson Homes; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

DRAWING 1: VALUE OF GCN TERRESTRIAL HABITAT AND PROPOSED POSITION OF HERPTILE FENCING

APPENDIX A: DESIGN FOR ONE WAY HERPTILE FENCING

Photographs © 2007 David Green www.naturesimage.co.uk

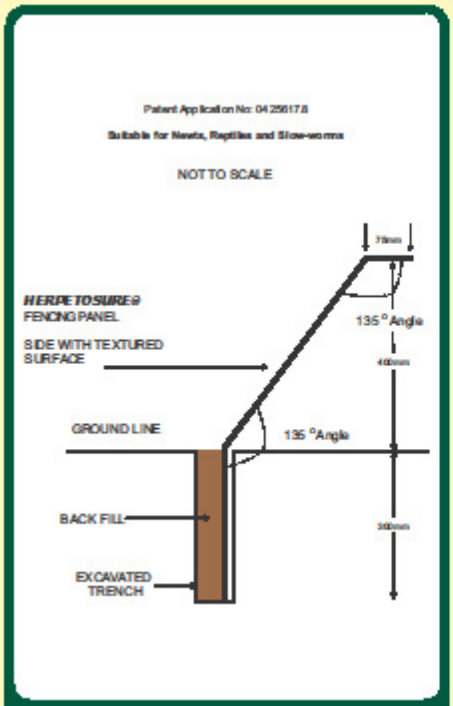
ONE WAY FENCING

FENCING SPECIFICATIONS

Fence panel size; 1500 X 950 X 4.5mm green recycled polypropylene panels

FITTED MEASUREMENTS

300mm vertically below ground, 400mm vertically above ground



TECHNICAL DATA

Density	Kg/m^3	930
Tensile strength (Mpa)	N/mm^2	26.0
Elongation at break	%	460
Flexural yield strength (Mpa)	N/mm^2	42.0
Flexural modulus (Mpa)	N/mm^2	1250
Linear Thermal expansion	$mm/m/°c$	0.150
Surface spread of flame		Class 3

FITTING DESCRIPTION

The fence panels are fitted either into a 300 x 50mm slit created by a V backed sub soiler or "wiz" plough pulled by a tractor or in a trench excavated using a chain trencher or mini digger. Alternatively, if necessary, the trench is dug by hand.

The preferred method for best results and most efficient fitment is the slitting method, where conditions suit. Once the panels are sited the slit is closed up by driving back along the line of the fence with a tractor, vehicle or compacted by hand. This creates a total seal between the soil and panels, which are fitted to the side of the trench nearest to the relevant population or the inside if a containment area. The panels are overlapped by 50mm then secured by aluminium blind rivets along the overlap joint. Panels can be cut down or the overlap increased to allow for uneven ground or contours.

HERPETOSURE® fencing is designed to be reusable and recyclable, it also has a high level of impact resistance, therefore offering a much higher level of boundary security and removing the need to landfill expired fencing materials at the end of the project. **ZERO project waste.**

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Scalford | Leicestershire LE14 4SS
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www.herpetosure.com

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APPENDIX B PLATES OF SITE AND SURROUNDING AREA

Plate 1: High value terrestrial habitat off-site (grassland with wet hollows and rush patches, and scattered scrub/hedgerow).

Plate 2: Medium value terrestrial habitat (long-sward improved grassland) located within the southern part of the application site, which is not being directly affected).

Plate 3: Low value terrestrial habitat (arable land) comprising the northern half of the application site.

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