



Clyweddog Road South

on behalf of TC Bolts Ltd.

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Habitat Management Plan

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 This Habitat Management Plan (HMP) has been produced in support of a planning application for development of industrial units on a plot of land located off Clyweddog Road South, in the south west region of Wrexham Industrial Estate. As part of the development and in line with local planning policy, a section of the site is to be dedicated to nature conservation. This HMP details habitat enhancement measures and management practices for this nature conservation area.
- 1.1.2 The site (encompassing both the development area and nature conservation area), comprised pre-development of unmanaged neutral grassland overlain with tall ruderal and scrub vegetation and scattered young trees including grey willow *Salix cinerea* and oak *Quercus robur*. A ditch is present within the site at the north-west corner and extends part way across the site before entering a culvert. The banks of the ditch were heavily vegetated with trees and dense scrub vegetation, notably hawthorn *Crataegus monogyna*, bramble *Rubus fruticosus*, grey willow and blackthorn *Prunus spinosa*. The site boundaries were marked in most cases by post and wire or pallisade fence lines. The western boundary separating the application site and the adjacent agricultural land was marked by a strip of trees and scrub vegetation.
- 1.1.3 Due to its location within Wrexham Industrial Estate, it is considered that the current vegetation structure had likely formed on previously developed land that had been cleared within the last 20 years.
- 1.1.4 The surrounding landscape supports industrial developments to both the north and the south, Clyweddog Road South fronts the site to the east and agricultural land consisting of improved pasture and arable fields adjoins the site to the west.

2 BASELINE - HABITATS & FEATURES PRE-DEVELOPMENT

2.1 SPECIES RICH NEUTRAL GRASSLAND

- 2.1.1 A site appraisal produced by Marches Ecology described the site as comprising of neutral grassland with tall-herb vegetation and states that '*broadly, much of the grassland resource is similar in structure and composition, being species rich and with an approximate average sward height of between 0.5m and 0.75m. It is unmanaged and could be described as rank; despite this the grassland is species rich.*' (Marches Ecology, 2010). This habitat covered the majority of the 2.4ha site, pre development.

2.2 STREAMS, OTHER NATURAL WATERWAYS AND RIPARIAN AREAS

- 2.2.1 A section of ditch runs for approximately 100m along the western site boundary before entering a culvert. The section of the channel within the application site was concrete lined up to a height of approximately 1.5m. The ditch, pre-development was heavily shaded by bank side trees and scrub vegetation and the channel dominated by duckweed *Lemna minor*.

2.3 PONDS AND OTHER WATER BODIES

2.3.1 There are no ponds or other water bodies within the application site.

3 SPECIES AND HABITATS OF SIGNIFICANCE

3.1 HABITATS OF PRINCIPLE IMPORTANCE

3.1.1 The key habitat within the project site is neutral species rich grassland.

3.2 SENSITIVE, THREATENED, OR ENDANGERED PLANT SPECIES

3.2.1 The 2009 site survey identified seven plant species thought to be locally scarce:

- cherry plum *Prunus cerasifera*;
- adder's tongue *Ophioglossum vulgatum*
- prickly lettuce *Lactuca serriola*;
- grass vetchling *Lathyrus nissolia*;
- bristly ox-tongue *Picris echioides*;
- pepper saxifrage *Silaum silaus*; and,
- hoary ragwort *Senecio erucifolius*.

3.3 SENSITIVE, THREATENED, OR ENDANGERED WILDLIFE

3.3.1 The following species are known to occur within Wrexham Industrial Estate and have the potential to occur within the project area (great crested newt *Triturus cristatus* have been recorded on site):

- great crested newt *Triturus cristatus*;
- badger *Meles meles*;
- bats *Chiroptera*.

3.3.2 Detailed surveys were undertaken in 2009 for the following species but no evidence indicating presence was found:

- otter *Lutra lutra*;
- water vole *Arvicola amphibius*;
- reptiles.

4 CONSERVATION AND MANAGEMENT PRACTICES

4.1.1 The above identifies the key habitats and species on-site by review of the most up to date results from survey work undertaken in 2009 and 2010. An area of the site will be set-aside and managed principally for the purpose of nature conservation. Management practices have been proposed that will enhance and safeguard key habitats and benefit sensitive or threatened species that may occur on site. The design and long-term management of the land seeks to maintain and enhance the functionality of the site using the principles of landscape ecology, identifying and protecting potentially important wildlife corridors and enhancing these with the inclusion of new linear habitat features such as native species rich hedgerows.

- 4.1.2 Within the site, the key habitat was identified as species-rich grassland throughout; the grassland would appear to have formed on previously developed land. Although extensive across much of the site, the grassland is currently unmanaged and is becoming increasingly rank with an approximate average height of 0.5m and 0.75m across the whole stand. A survey in 2009 found that the grassland contained seven plant species considered to be locally scarce.
- 4.1.3 Management is required if this grassland is to retain its current diversity. Currently there is no requirement for management; in the absence of management, grassland will over time naturally revert to less valuable scrub vegetation. This will result in the reduction of species diversity and the loss of sensitive and threatened plant species currently noted at this site.
- 4.1.4 The following paragraphs list all vegetation management practices that will be implemented on the project site in order to achieve HMP Objectives, including but not limited to cutting regime, pond development, recreational activities, hedgerow planting and trimming and vegetation clearance / felling
- 4.1.5 The HMP is designed to cover a minimum period of 21 years. In order to preserve, restore and diversify wildlife habitats within the nature conservation area ,the following conservation and management practices will be implemented.
- 4.1.6 The nature conservation area covers approximately 1ha.

4.2 INITIAL WORKS

Scrub Vegetation Clearance

- 4.2.1 Initial habitat management works will involve the removal of scrub vegetation from within the nature conservation area. The vegetation clearance will depend on planning permissions but this will avoid the breeding bird season (March to August Inclusive) or will only be undertaken following a nest search by an experienced ecologist / ornithologist. The grassland throughout the entire nature conservation area will also be subject to an initial cut at this time.

Hedgerow Planting

- 4.2.2 Hedgerows will be planted along the site boundaries (northern, western and southern boundaries). Initial investigation indicates that the site lies on clay based soils; therefore, to minimise the risk of root damage resulting from frozen or water logged conditions the hedgerows are to be planted during the months of February and March (no later than the first full year following completion of the first phase of the development).
- 4.2.3 The hedgerow should be formed using a double staggered row to provide a dense and well-structured hedgerow of value to wildlife. Species to be planted will be of local provenance and as recommended by Wrexham County Borough Council. It is recommended that between four and six whips are planted per metre of hedgerow.

4.2.4 The following species are recommended by Wrexham County Borough Council (WCBC) for use in hedgerow planting.

- Hawthorn *Crataegus monogyna*
 - Blackthorn *Prunus spinosa*
 - Hazel *Corylus avellana*
 - Dog rose *Rosa canina* spp
 - Black current *Ribes nigrum*
 - Gooseberry *Ribes uva-crispa*
 - Bramble *Rubus fruticosus* spp
 - Crab apple *Malus sylvestris*
 - Wild cherry *Prunus padus*
 - Field maple *Acer campestre*
- } should form approximately
} 80% of hedgerow planting

Aquatic Habitats

4.2.5 A pond will be created within the nature conservation area. This pond will be a multi-functional pond that is designed to work as a Sustainable Drainage System whilst also providing aquatic habitat for wildlife.

4.2.6 The pond will be constructed with approximate dimensions of 35m x 20m. The pond will be constructed to provide gently sloping sides, a range of depths and an irregular shape. The pond will have a shallow wetland shelf of less than 30cm; this will encourage a diversity of pond plants which in turn provides for invertebrates and egg laying substrate for newts.

4.2.7 Contaminants entering the pond will be controlled by preventative filtering techniques and petrol interceptors. The drainage system will provide an amphibian friendly drainage scheme..

4.2.8 The possibility of removing the concrete lining from within the ditch to create a more natural channel will be explored. If achievable, this will benefit a wide variety of wildlife including amphibians.

4.3 OTHER WORKS

Amphibian Hibernacula

4.3.1 Two artificial hibernacula will be constructed to provide wintering refuge for amphibian and reptile species. These will follow the standard design as detailed in Figure 1 below

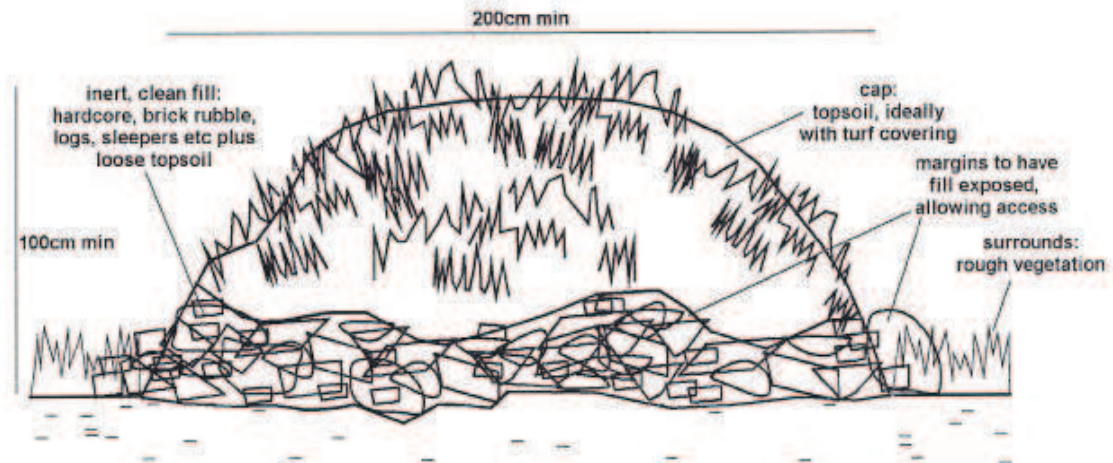


Figure 1 Suggested hibernaculum design as depicted in the Great Crested Newt Mitigation Guidelines (English Nature 2001).

Bird and bat boxes

- 4.3.2 It is proposed that bird nest / bat roost boxes be installed within the nature conservation area to encourage breeding birds and bats. These will be situated either in trees or where these features are lacking, attached to posts. It is proposed to include eight bird nest boxes and six bat roost boxes.

4.4 LONG-TERM ANNUAL MANAGEMENT

Grassland Cutting Regime

- 4.4.1 A cutting regime will be implemented to develop species rich grassland with a varied structure across the area of set-aside land, thus maximising its value as an ecological resource.
- 4.4.2 The set-aside land will be divided into two distinct management areas, Area A and Area B (see Figures 1, Habitat Management Plan for indicative areas).
- 4.4.3 Area A will be subject to two cuts per year. Each cut will reduce the sward height to approximately 150mm. The first cut will be undertaken in February with a second cut undertaken in July. Every third year the period between cuts will be extended, with the second cut undertaken in August to support late flowering species.
- 4.4.4 Area B, will cover a greater area to maximise benefit for grassland species and a variety of fauna including amphibians, invertebrates and small mammals. Area B will be subject to just a single annual cut in October, reducing the sward to a height of 150mm.
- 4.4.5 The grassland management will take a flexible approach and the exact dates will be dependent upon weather conditions.
- 4.4.6 All cutting will take place using powered hand trimmers with cut material raked and removed from site. Cutting will work in a systematic method; Area A will be cut from

east to west, working towards Area B, while Area B will be cut from the centre of the site outwards, this systematic cutting will allow fauna such as invertebrates, amphibians, birds and small mammals to vacate the area temporarily.

- 4.4.7 A path (a mown strip within the grassland) will be maintained by regular cuts throughout the main growing season (anticipated to be one cut per month between the periods April to October inclusive). The path will be created by a phased cut where necessary, gradually reducing the height of the vegetation to ground level to minimise any risk to wildlife. All cut vegetation will be raked and removed from site.

Hedgerow

- 4.4.8 In years one to three after planting, light trimming of hedgerows should encourage a dense growth. After this period it is recommended that the hedgerows should be maintained on a two or three year cycle, with cutting undertaken in late January or February.

Aquatic Habitats

- 4.4.9 The pond will be monitored annually (July) following creation to assess colonisation by vegetation and any accumulation of sediment or debris. Annual routine management will include removal of debris and rubbish.
- 4.4.10 Any build up of sediment requiring removal may require a licence from the Welsh Assembly Government (WAG). WCBC and CCW should be contacted prior to any such works commencing. Sediment build up will vary with local conditions but removal may be anticipated once every 10 years on a pond used within a sustainable drainage scheme (Highways Agency 2006).
- 4.4.11 Overly vigorous or invasive plant species may need to be cutback or removed from the ponds. Management of aquatic vegetation should be undertaken annually (little and often) with vegetation thinned rather than removed. Aquatic vegetation management should avoid the amphibian breeding season (March to June inclusive) when amphibians are most active at ponds, the optimum period for undertaking such works are September to November. Removed vegetation should be hand sorted to ensure no animals are caught up in the vegetation. A licence from the Welsh Assembly Government (WAG) may be required if protected species such as great crested newts are present, therefore WCBC and CCW should be contacted prior to any such works commencing.

Scrub Vegetation

- 4.4.12 An area of scrub vegetation will be retained along the western site boundary. This will be monitored and managed on a two or three year cycle to prevent encroachment into the ditch and grassland habitats. Cutting of scrub vegetation will be undertaken simultaneously with hedgerow management with cutting undertaken in late January or February.

5 MANAGEMENT RESPONSIBILITIES & MONITORING

5.1 SUBMITTAL OF MONITORING REPORTS

- 5.1.1 The nature conservation area will be monitored annually by an appointed ecological consultant / land management company. An annual monitoring report will be produced detailing what works have been undertaken and whether any remedial operations are required. These monitoring reports will be kept and used in discussions with WCBC and to inform progress reports. .
- 5.1.2 After the third year following commencement of habitat management works a HMP progress report will be issued to WCBC. The report will detail progress and status of the delivery of the HMP. The report will be accompanied by photographic documentation and shall detail all works undertaken up to that point. Photos will be taken facing the same direction from fixed, GPS referenced points. The report may be followed by a site meeting. Further progress reports will be issued in years 7, 15 and 21 following the commencement of habitat management works.
- 5.1.3 WCBC and CCW staff will be allowed access to the site to monitor habitat management and ensure compliance is met.
- 5.1.4 Upon delivery of the HMP update report, discussions will be held with WCBC and modifications or amendments will be made, if required. The HMP is a dynamic plan that will be amended to achieve conservation goals. Further

5.2 RECREATIONAL ACTIVITIES

- 5.2.1 Recreation within wildlife habitat such as wildlife viewing, photography, plant identification, and walking provide enjoyment of the surroundings with little impact on habitat integrity and are encouraged. Other uses such as evening activities may interfere and reduce wildlife utilisation of the area. Destruction of vegetation, soil disturbance, erosion and wildlife disturbance are potential problems associated with unmanaged types of recreation. Recreation that damages habitat or otherwise reduces habitat quality is not approved under this plan.
- 5.2.2 If the landowner or appointed land manager decides that some of the practices listed within this HMP will not be conducted, or if the landowner or land manager decides that other practices will be conducted that are not listed here, WCBC must be consulted prior to taking actions. A plan amendment approved by both parties will be necessary to add or delete the changes to the HMP.

REFERENCES

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

Highways Agency (2006) *Design Manual for Roads and Bridges Volume 4 Geotechnics and drainage, Section 2, Drainage Part 1 HA103/06 Vegetated Drainage Systems for Highway Runoff*. Highways Agency.

APPENDIX 1 – HABITAT MANAGEMENT PLAN (WORKS SCHEDULE)

Key

	No works programmed
	Management works can be undertaken but not the preferred period
	Recommended period for undertaking management works
*	Works only required if conditions / monitoring demonstrate that management is required

Pond creation, the pond will be created as part of the initial phase of development.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Pond Creation												

The following management programme shows possible months in which activities will be undertaken. The Programme will commence no later than the first planting period after completion of the first phase of development.

Management	Year 1											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Scrub Removal												
Initial Cut Grass Area A & B												
Hedgerow Planting												

Management	Year 2											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Hedgerows Planting												
Hedgerow Cut (light trimming)												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 3											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut (light trimming)												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Progress report to be issued to WCBC

Management	Year 4											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut (light trimming)												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 5											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 6											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 7											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Progress report to be issued to WCBC

Management	Year 8											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 9											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 10											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 11											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 12											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 13											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 14											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 15											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Progress report to be issued to WCBC

Management	Year 16											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 17											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 18											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 19											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 20											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Management	Year 21											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Terrestrial Habitat</i>												
Cut Grass Area A												
Cut Grass Area B												
Path Maintenance												
Hedgerow Cut												
<i>Aquatic Habitat</i>												
Clear debris/ Litter												
Vegetation Thinning												
Sediment Removal												

Progress report to be issued to WCBC

APPENDIX 2 – FIGURE 1, HABITAT MANAGEMENT PLAN

