



THE
ENVIRONMENT
PARTNERSHIP



BRYN LANE WREXHAM INDUSTRIAL ESTATE ECOLOGICAL AND LANDSCAPE MANAGEMENT PLAN

TEP
Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

Tel: 01925 844004
Email: tep@tep.uk.com
www.tep.uk.com

Offices in Warrington, Market Harborough, Gateshead, London and Cornwall

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Author	Amy Lee
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Checked	Alice Babb
Approved	Alice Babb

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1.0 Introduction

Purpose of the Management Plan

- 1.1 This Management Plan has been produced by The Environment Partnership (TEP) Limited on behalf of HOW Planning Limited to provide a framework for long term management and maintenance of the open space and landscaping associated with the development at Bryn Lane, Wrexham Industrial Estate, Wrexham.

Scope of the Management Plan

- 1.2 This Management Plan provides information on the creation and management of habitats at the site including a timescale for implementation. The Management Plan describes the site in terms of landscape elements and management operations.
- 1.3 The Management Plan should be read in conjunction with the Landscape Proposals (Richard Eaves Landscape Architects Ref: 4090-01), Environmental Assessment (TEP Ref: 3041.004), and the Landscape and Ecological Management Framework (HOW Planning LLP, 2013).

Structure of the Management Plan

- 1.4 Chapter 2.0 provides a summary of the factors influencing management, a site analysis and long term design and management objectives.
- 1.5 Chapter 3.0 states the habitat creation and enhancements to be incorporated into the landscaping scheme.
- 1.6 Chapter 4.0 contains the landscape intention and operations required.
- 1.7 Chapter 5.0 sets out how the success of the plan will be monitored, reviewed and updated over time.
- 1.8 Appendix A is the Landscape Proposals (Richard Eaves Landscape Architects Ref: 4090-01) and Appendix B is the landscape maintenance schedules. Appendix C summarises relevant legislation and Appendix D comprises hibernacula details.

Site Location

- 1.9 The Site is located on the north-eastern side of Wrexham Industrial Estate and lies approximately 5.75km east of Wrexham town centre. The Site comprises predominantly agricultural land and is surrounded by Ridley Wood Road to the north, further agricultural fields to the east and south, and Bryn Lane to the west with industrial units associated with Wrexham Industrial Estate beyond.

Planning and Development Context

- 1.10 Planning permission was granted following appeal in August, 2013 (Appeal Ref: APP/H6955/A/12/2188910 for Application Ref: P/2011/0891) for the development of a B8 storage and distribution warehouse and associated ecological mitigation/landscape area including means of access and layout at land at Bryn Lane, Wrexham Industrial Estate, Wrexham, LL13 9UT.

Planning Condition

- 1.11 Planning permission was granted subject to conditions, which include:

Condition 19:

No part of the development shall commence until a Landscape Management Plan, including long term design objectives, management responsibilities and maintenance schedules for all landscaped areas has been submitted to and approved in writing by the local planning authority. The landscaping shall be managed and maintained in strict accordance with the approved details.

Condition 20:

As part of the reserved matters application a long term Ecological Management Plan and Ecological Method Statement shall be submitted to and approved in writing by the local planning authority. This information shall demonstrate how existing features of ecological/wildlife interest will be protected, identify any areas of compensation and demonstrate management in the long term. The recommendations as approved shall be fully implemented in accordance with timescales to be agreed in writing before any part of the development commences on site.

Section 106 Agreement

- 1.12 A Section 106 Agreement was made in June, 2013 between Gardenbreeze Limited and Wrexham County Borough Council. Schedule 2 of the agreement for the Ecological Mitigation/Landscape Areas states:

"The Ecological Mitigation/Landscape Areas shall be managed in accordance with the Management Framework for a period of 25 years from the Commencement Date.

Following the expiry of the period referred to in paragraph 1.5 above the Owner shall undertake a review of the Management Framework to the Council for consideration."

2.0 Site Management Considerations

Responsibility for Site Management

- 2.1 The landowner will employ a managing organisation who will be responsible for management and maintenance of the landscape within the site boundary.
- 2.2 The managing organisation will have the necessary experience and certificates of competence to undertake landscape management operations on site. Where practical, contractors with experience in biodiversity management will be sought. The managing organisation will ensure that management complies with the guidelines set out in this plan.

Long Term Design and Management Objectives

- 2.3 The long term design and management objectives of this plan are:
- To safeguard and enhance the biological and physical integrity of the ecological features of the Site;
 - To maintain great crested newt (GCN) populations at a favourable conservation status*;
 - To maintain and enhance grasslands in a favourable condition**;
 - To ensure all waterbodies remain a viable habitat for wildlife;
 - To create and enhance existing woodlands as wildlife corridors;
 - To ensure no net loss of biodiversity; and
 - To comply with legal obligations and constraints.

* The definition of favourable conservation status:

The conservation status of a species is defined in Article 1(i) of the Habitats Directive as favourable when:

- *Population dynamics data on the species concerned indicate that it is maintaining itself on a long term basis as a viable component of its natural habitats;*
- *The natural range of the species is neither being reduced nor is likely to be reduced in the foreseeable future;*
- *There is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long-term basis; and*
- *The population must be viable in the long term, the range must not be contracting and sufficient habitat must exist to support the population in the long term.*

** The definition of favourable condition:

The condition of a habitat is defined in Article 1(i) of the Habitats Directive as favourable when:

- *The area that it covers within the site is stable or increasing;*
- *The specific structure and functions that are necessary for its long term maintenance exist and are likely to do so for the foreseeable future; and*
- *The condition of its typical species is favourable.*

- 2.4 The objectives of this Management Plan are focused upon managing the ecological features of the Site to ensure no net loss of biodiversity on-site and to encourage biodiversity to increase over time.
- 2.5 To increase the overall biodiversity interest of the site a range of habitats will be maintained and existing habitats will be enhanced to ensure continuity of habitat availability and to encourage the movement of wildlife within the site and wider landscape.

Ecological Factors

Designations

- 2.6 The Afron Dyfrdwy (River Dee) lies approximately 2km east of the site, part of which is designated as a Site of Special Scientific Interest (SSSI), as well as forming part of the River Dee and Bala Lake Special Area of Conservation (SAC).
- 2.7 The Wrexham Industrial Estate - Oaks Road non-statutorily protected local wildlife site (LWS) includes several plots of land in close proximity to the Site. The closest plot lies 350m south-west of the site, on the opposite side of Bryn Lane.
- 2.8 Two further LWS are located between 1km and 2km from the site to the south-west, in or on the edge of the Wrexham Industrial Estate.

Ecological Surveys

- 2.9 Below is a list of the most recent ecological surveys carried out at the Bryn Lane, Wrexham Industrial Estate site:
- Bat Survey (Whitcher Wildlife Ltd, 2010);
 - GCN Survey (Whitcher Wildlife Ltd, 2010);
 - Desktop Study (TEP, 2011); and
 - Extended Phase 1 Habitat survey (TEP, 2011).

Fauna

Great Crested Newts (Triturus cristatus)

- 2.10 Small populations of GCN are known to be present on-site and within the local area.
- 2.11 GCN are protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended and the Conservation of Habitats and Species Regulations as amended (2012). Under this legislation it is an offence to intentionally kill, injure or capture great crested newts. It is also an offence to intentionally or recklessly damage, destroy or obstruct access to places used by great crested newts for shelter or protection or to disturb them whilst they are occupying these habitats.
- 2.12 Any works affecting this species will require a licence application to Natural Resources Wales which in turn will need to demonstrate maintenance of the favourable conservation status of the species.

Bats

- 2.13 A previous bat survey carried out by Whitcher Wildlife Limited in 2010, recorded bat foraging activity for common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), and Myotis species (*Myotis sp.*). The desktop study (TEP, 2011) showed supporting evidence of their presence with records within 1km of the site.
- 2.14 The semi-natural broadleaved woodland and hedgerows have been identified as key areas for foraging bats and will be retained and enhanced.
- 2.15 Bats and their roosts are also protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended and the Conservation of Habitats and Species Regulations as amended (2012).

Birds

- 2.16 A number of birds were noted during the extended Phase 1 Habitat Survey (TEP, 2011). None of the birds were of conservation concern. It is concluded that these species were likely to be using the site mainly for foraging due to the openness of the habitat of the site.
- 2.17 All UK wild birds are protected while at the nest. Effectively, this means that if removal of habitats (which can include buildings, trees, hedges, scrub and grassland) cannot be timed to avoid the bird breeding season (April to August inclusive), then a survey by a suitably experienced ecologist will be required to ensure no nesting birds will be affected. There is generally no process to gain a licence to disturb nesting birds; therefore, if active nests are present works will need to avoid the area of the nest until the young have fledged.

Invertebrates

- 2.18 The site is designated for the UKBAP priority species dingy skipper butterfly (*Erynnis tages*). There are no desktop records for dingy skipper within the site and the grasslands lack the butterfly's foodplant bird's-foot trefoil.
- 2.19 Desktop records show the Wrexham BAP species lesser silver water beetle (*Hydrochara caraboides*) has been recorded within the wider area of the site. This species was not found during the Extended Phase 1 Habitat Survey (TEP, 2011).

Social Factors

Health and Safety

- 2.20 The landowner will retain ultimate responsibility for the health and safety of the site and will review health and safety as part of its regular inspections of the site. The site will be subject to informal inspections and formal annual inspection. Whenever the site is visited, any deficiencies in safety provision will be noted and acted upon.

- 2.21 The Site will be managed to comply with all relevant health and safety legislation, approved codes of practice (ACOP's) and Health and Safety Executive (HSE) guidance. The landowner will be responsible for ensuring that risk assessments are undertaken for the site as required under the Management of Health and Safety at Work Regulations 1999, and for monitoring and reviewing the effectiveness of control measures implemented as a result of the risk assessment to ensure their effectiveness.
- 2.22 They will also be responsible for ensuring that accidents and incidents which occur on the site are reported to the relevant enforcing authority as required by the Reporting of Injuries, Disease and Dangerous Occurrences Regulations (RIDDOR) 2013.
- 2.23 The health and safety regime for any work undertaken on the site will follow the guidelines as laid down in the HSE publications, including HSG65 'Managing for Health and Safety' and HSG268 'How to Control Risks at Work'. As the managing organisation will be the instigator and controller of works on site, the managing organisation will fulfil the landowner's role and the work manager's role. This also places an obligation on the managing organisation to ensure that any contractor understands and fulfils their role.

Legal Factors

- 2.24 Management of the site must be in line with all legislation relating to health and safety and the environment. A review of the relevant legislation affecting site management is at Appendix C.

3.0 Habitat Enhancement and Creation

- 3.1 This chapter details the habitat enhancement and creation measures to be implemented as part of the proposed ecological mitigation features at the Bryn Lane site.

Habitat Enhancement

Woodland

- 3.2 A section of semi-natural broadleaved woodland comprising a stream and pathway runs along the southern boundary of the site. This woodland is protected by a Tree Preservation Order (TPO) and will be retained.
- 3.3 In addition, a broadleaved plantation woodland runs alongside the ditch in the south-western corner and links with the semi-natural broadleaved woodland.
- 3.4 All areas of woodland will be retained and protected for their value as habitat for a range of wildlife species including nesting birds, foraging bats and potentially sheltering amphibians, including GCN.
- 3.5 Enhancement measures are aimed at creating a varied age structure and opening up the canopy through selective thinning to allow for the growth of native woodland ground flora which may be lying dormant within the seed bank.
- 3.6 Scrub will be retained where possible as part of the woodland to retain structural diversity.
- 3.7 Facilitating the establishment of dead wood will provide habitats for fungi, lichen and invertebrates which in turn provide a source of food for amphibians, bats and birds.

Hedgerows

- 3.8 The species-poor hedgerow along the boundaries provide opportunities for nesting birds and will be retained. Hedgerows will be gap planted with native species to enhance their biodiversity value as linear wildlife corridors.

Grassland

- 3.9 Areas of retained continuous scrub, semi-improved neutral grassland and marsh grassland will be managed as favourable terrestrial habitat for GCN.
- 3.10 It has been recommended that some areas of retained grassland within the Site are to be retained. These areas will be planted with bird's-foot trefoil (*Lotus corniculatus*) seed, the foodplant of the dingy skipper butterfly (*Erynnis tages*).
- 3.11 Mowing will be restricted to areas where butterflies may be present, with the retention of some unmanaged areas close to amphibian populations.

Stream and Ditches

- 3.12 A stream runs parallel to the southern boundary within the woodland.

- 3.13 Two heavily vegetated ditches are present within the Site's boundary. One ditch flows in a north-western to south-eastern direction in the south-western corner of the site. The second ditch flows north into the south-eastern corner of the site. Both ditches will be retained and enhanced with native woodland planting to improve natural habitat.

Habitat Creation

Woodland Planting

- 3.14 Extensive stands of woodland of predominantly oak and native trees species are proposed, the species of which are listed in the planting schedules on the Landscape Proposals drawing (Richard Eaves Landscape Architects Ref: 4090-01).
- 3.15 Further guidance on operations required in the establishment phase can be found in Chapter 4.0.

Tree Planting

- 3.16 There are a large number of semi-mature English oak (*Quercus robur*) trees along boundary lines. The majority of these trees are protected by TPO's and will be retained.
- 3.17 Standard tree planting is proposed along the western boundary linking the existing woodland to the south with the woodland planting in the north. The proposed species are listed in the planting schedules on the Landscape Proposals drawing (Richard Eaves Landscape Architects Ref: 4090-01).
- 3.18 Further guidance on operations required in the establishment phase can be found in chapter 4.0.

Hedgerow Planting

- 3.19 Proposed hedgerow planting will complement the retained hedgerows to form a barrier around the whole built complex and hardstanding. The proposed planting will act as compensation for the loss of some stretches of species-poor hedgerow.
- 3.20 Hedgerow planting will be at a density of 6nr. per linear metre in a double staggered row in single species groups of 5-20nr.
- 3.21 Hedgerow species will be planted evenly in trenches wide enough to accommodate full spread of roots. Rabbit guards will be installed around the base of species in order to prevent damage to vegetation.
- 3.22 Immediately after planting, the hedgerow will be watered thoroughly and without damaging or displacing plants or soil.
- 3.23 The soil around the plants will be lightly firmed and forked and/ or raked, without damaging the roots, to a fine tilth with gentle cambers and no hollows.
- 3.24 Further guidance on operations required in the establishment phase can be found in Chapter 4.0.

Species Rich Grassland

- 3.25 Extensive stretches of species rich grassland within the northern and eastern portions of the site will promote wildlife movement throughout and within the wider landscape.
- 3.26 Grassland management will incorporate a low maintenance approach to encourage species diversity and to establish grassland corridors between habitats favoured by particular species such as butterflies.
- 3.27 A low-fertility mix will be sown at a rate of 35g per m² and an overseed rate of 20g per m².
- 3.28 When sowing seed a good seed contact with the root zone will be established. Seeds will be sown manually with a distribution of two equal sowings at right angles to each other and diagonally to the main axis.
- 3.29 When watering, the full depth of topsoil will be wet evenly without displacing the seeds, seedlings or soil. Watering will be carried out as frequently as necessary to ensure the establishment and continued thriving of all seeded areas.

Wet Grassland

- 3.30 A wet grassland mix is to be used around the GCN mitigation ponds and attenuation ponds to create botanical diversity.
- 3.31 Seed will be sown at a rate of 5g per m². Grass sowing will take place within the first planting season after construction of dwellings. Care will be taken to establish the grassland in times when there is least risk of flooding.
- 3.32 When sowing seed a good seed contact with the root zone will be established. Seeds will be sown manually with a distribution of two equal sowings at right angles to each other and diagonally to the main axis.
- 3.33 When watering, the full depth of topsoil will be wet evenly without displacing the seeds, seedlings or soil. Watering will be carried out as frequently as necessary to ensure the establishment and continued thriving of all seeded areas.

Ponds

- 3.34 GCN mitigation ponds and attenuation ponds will be created within the ecological enhancement area and planted with a range of native aquatic plant species as part of development proposals to maximise benefits for the protected species.
- 3.35 The ponds will provide habitat for small mammals, birds, amphibians and insects and will help to maintain a diverse range of flora on site. Ponds will be planted with a wet grassland mix (see 'Wet Grassland').

Amphibian Refugia

- 3.36 The creation of hibernacula for GCN will include rubble piles and log piles. These mounds will be located in the areas of woodland planting near to the proposed and existing pond(s).

4.0 Management Intentions and Operations

Landscape Elements

4.1 The landscape at the Bryn Lane, Wrexham Site will comprise various landscape elements as shown on the Landscape Proposals (Richard Eaves Landscape Architects Ref: 4090-01). Existing landscape elements to be retained are:

- Woodland;
- Trees;
- Hedgerows;
- Grassland; and
- Streams, ditches and ponds.

4.2 Proposed landscape elements are:

- Woodland planting;
- Tree planting;
- Hedgerow planting;
- Amenity grassland;
- Species rich grassland;
- Wet grassland;
- GCN ponds;
- Surface water attenuation ponds;
- Amphibian refugia; and
- Pathway.

Soft Landscape Element: All Areas

Management Intentions:

4.3 The site will be inspected and assessed annually in order to ensure the site is being managed appropriately. This will ensure the risks of any health and safety hazards are minimised whilst making sure that habitats remain attractive to wildlife.

4.4 Cleansing will be carried out regularly to retain high amenity value.

Management Operations:

4.5 A general scavenge of all soft landscape elements and hard surfaces will be carried out on a monthly basis throughout the site. All ponds are to be cleaned as part of this routine scavenge.

4.6 All litter will be removed from site and disposed of in an authorised manner.

4.7 When removing material from within or near to the ponds, care must be taken to check for amphibians, which may be hiding in or under items. Any amphibians, except GCN, found will be returned to suitable cover. It is an offence to handle GCN unless you have a specific licence from Natural Resources Wales.

4.8 Fly-tipping is likely to occur from time to time. This will be removed as soon as possible in order to discourage reoccurrences.

4.9 All new planting will be watered as required.

Constraints:

- 4.10 Care must be taken during cleansing to check for wildlife, which may be hiding in or under items. Any wildlife found will be returned to suitable cover.

Inspections:

- 4.11 Health and safety inspection: identify health and safety hazards and arrange for them to be made safe as far as is practicable, to be undertaken annually.
- 4.12 Results from the monitoring procedures will be compiled and presented within the annual report which will be used in the review of the management plan as detailed in Chapter 5.0.

Soft Landscape Element: Existing Woodland

Management Intentions:

- 4.13 Existing semi-natural broadleaved woodland and broadleaved plantation woodland will be retained and protected to provide wildlife corridors important for ecological connectivity and opportunities for foraging and refuge. Woodland will be managed for the benefit of small mammals, amphibians and invertebrates.

Management Operations:

- 4.14 The management of woodland trees will be targeted towards enhancing ecological diversity, safety and amenity value as well as creating a varied age structure. In larger stands there may be potential to open up the canopy to allow for the growth of native woodland ground flora which may be lying dormant within the seed bank.
- 4.15 To create an age structure within the woodland blocks, a cyclical programme (5-10yr cycle) of thinning, felling and coppicing introduced with the aim of increasing species as well as structural diversity of the canopy layer and woodland edges will be implemented.
- 4.16 Thinning works, when undertaken, will be targeted towards the removal of non-native tree species within the woodland. Treatment to stumps will be applied as appropriate to inhibit future regeneration.
- 4.17 Opportunities to increase biodiversity will also be explored where possible by facilitating the establishment of dead wood. This will include standing dead timber and hollow trunks as well as allowing dead wood to remain on the ground. Deadwood provides habitats for fungi, lichen and invertebrates which in turn provide a source of food for amphibians and birds. Amphibians and small mammals also favour dead wood as a place to seek refuge. Standing deadwood is also an important ecological habitat; however consideration of the proximity to the footpaths and other public access areas will be required.
- 4.18 Brushwood, if collected elsewhere on site, will also be stacked within these areas as small habitat piles.

- 4.19 Any major thinning and felling works will be subject to a bat survey prior to works being undertaken. Tree works will also avoid the bird nesting season (between March and August). Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.

Inspections:

- 4.20 Tree hazard inspection: inspection by trained arboriculturists of mature trees within or adjacent to areas of public access to check for damage and disease, and to maintain appropriate height clearances for safe pedestrian access, to be undertaken every 3 years.

Soft Landscape Element: Woodland Planting

Management Intentions:

- 4.21 Extensive stands of native woodland planting is proposed to the northern and eastern portions of the Site.
- 4.22 Additionally new native woodland will be planted to the south-eastern and south-western corners of the site to extend the woodland corridor.
- 4.23 Native planting will be planted alongside the proposed access road to improve the existing ditch habitat and to screen views.

Management Operations:

- 4.24 Where trees are staked, the stakes and ties will be checked monthly and it is anticipated that they will need adjusting at least twice annually. Any broken or damaged stakes will be replaced and ties re-fixed at a slightly lower position, allowing for growth since planting.
- 4.25 Remove stakes as necessary, when the tree is suitably established, approximately year 5.
- 4.26 To reduce excessive competition, a weed free area will be retained around any trees less than 3m in height and will be maintained to a diameter of 0.5m around the base of the trees using glyphosate spray twice a year. Newly planted trees will require re-firming as required during the first three years.
- 4.27 Young trees will require formative pruning to maintain a desirable shape as well as to maintain health and vigour.
- 4.28 Once trees attain a height of 3m, the maintenance of a weed free base and formative pruning can be discontinued. However, crown pruning is desirable and any dead or severely damaged trees will be felled and replaced accordingly.

- 4.29 An annual assessment of scrub encroachment onto neighbouring grassland will be undertaken. Where reduction of coverage is required, scrub growth will be controlled along its advancing face using brush cutters during the winter season (outside of the bird breeding season) and treated with a glyphosate application to stop re-growth. Future growth of stumps will be monitored and additional cuts and glyphosate applications will be made over the following two or three years as required. Arisings will be chipped and blown into woodland 'sanctuary areas', ensuring that chippings are evenly spread rather than piled up.

- 4.30 In the long term, consideration will be given to active management, e.g. cyclical thinning and coppicing to create greater structural diversity.

Inspections:

- 4.31 Assessment of condition and structure of woodland planting: an assessment of the requirement for thinning, beating up, hazard tree works, formative pruning and addressing branch/stem breakages.

Constraints:

- 4.32 Any works will be carried out outside of the bird nesting season (between March and August). Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.

Soft Landscape Element: Existing Trees

Management Intentions:

- 4.33 To mitigate any negative impacts to retained trees, including disturbance to habitats and species the trees support, appropriate protection measures will be adopted to minimise accidental damage.

Management Operations:

- 4.34 Maintenance of existing trees will include thinning and improvement through coppicing and pruning to be undertaken annually, where required. The following specification is applicable to all arboricultural works:
- 4.35 An Arboriculturalist must be consulted prior to undertaking any major tree works within the site boundary.
- 4.36 Wood under 250 mm diameter collected from thinning, brashing, or coppicing will, wherever possible, be chipped and used on site for mulching, either by blowing directly back into planting areas or by storing on site for future use.
- 4.37 Trees for coppicing will be cut back to 50 mm above ground level. Where a number of stems are coppiced on one plant, cut faces are to slope away from the centre. Care will be taken to ensure that thinning operations do not cause damage to desirable plants, or rutting of the ground in wet conditions.

- 4.38 Trees for thinning will be cut to a level stump length of 150 mm for treatment with stump killer. A minimum of 50% of the stump surface will be scored over and treated to stop re-growth. Future growth of stumps will be monitored and additional cuts and applications of stump killer will be made over the following two or three years as required.

- 4.39 Any deadwood found on site will be stacked and kept onsite where possible as it is of value to invertebrates.

Constraints:

- 4.40 Any woodland management and tree felling will be carried out outside of the bird nesting season (between March and August). Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.

Inspections:

- 4.41 Tree hazard inspection: inspection by trained arboriculturists of mature trees within or adjacent to areas of public access to check for damage and disease, and to maintain appropriate height clearances for safe pedestrian access, to be undertaken every 3 years.

Soft Landscape Element: Tree Planting

Management Intentions:

- 4.42 Trees will be planted along the western and southern western to provide connectivity to the wider environment.

Management Operations:

- 4.43 Where trees are staked, the stakes and ties will be checked and adjusted twice annually. Any broken or damaged stakes will be replaced and ties re-fixed at a slightly lower position, allowing for growth since planting.
- 4.44 Remove stakes as necessary, when the tree is suitably established, approximately year 5.
- 4.45 To reduce excessive competition, a weed free area will be retained around any trees less than 3m in height and will be maintained to a diameter of 0.5m around the base of the trees using glyphosate spray twice a year. Newly planted trees will require re-firming as required during the first three years.
- 4.46 Young trees will require formative pruning to maintain a desirable shape as well as to maintain health and vigour.
- 4.47 Once trees attain a height of 3m, the maintenance of a weed free base and formative pruning can be discontinued. However, crown pruning is desirable and any dead or severely damaged trees will be felled and replaced accordingly.

Inspections:

- 4.48 Assessment of condition and structure of tree planting: assessment of the requirement for hazard tree works, formative pruning and addressing branch/stem breakages.

Soft Landscape Element: Hedgerows

Management Intentions:

- 4.49 Hedgerows will be retained and protected during development works to maintain their biodiversity value. Retained hedgerows will be enhanced by filling in gaps with native species of trees and shrub to benefit insects.

Management Operations:

Establishment of Proposed Hedgerow Planting

- 4.50 Management operations during the establishment phase (until branches of adjacent plants fully merge together) will comprise of weed control, watering (if required) and formative 'facing up' of the hedgerow to establish dense branch growth. New planting will be re-firmed as required.
- 4.51 During the first five years of establishment, between April and October monthly inspections of hedgerow will be undertaken and weeds will be removed by hand weeding and if necessary herbicide (glyphosate) spot application. Any plant failures will be replaced.

General Maintenance for Established and Existing Hedgerows

- 4.52 The first cut to newly planted hedgerows is recommended within years 2 to 3 (dependant on growth), and will consist of 'facing up' either side of the hedge. All hedge cuts must be undertaken using appropriate hand or power tools. Mechanical methods of management, where appropriate, will be used in favour of machinery.
- 4.53 Hedgerows will be cut in an 'A' shape to maintain a wide base for bird nesting and roosting and if possible only one side will be cut annually.
- 4.54 Additional hedgerow cutting may be required from a health and safety perspective should there be a good growing season (although this is unlikely within the first few years of establishment of new hedgerows, but this will be monitored).

Constraints:

- 4.55 Any hedgerow management will be carried out outside of the bird nesting season (between March and August). Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.

Soft Landscape Element: Amenity Grassland

Management Intentions:

- 4.56 Open areas of grassland will be managed as required to maintain a tidy appearance.

Management Operations:

- 4.57 During the first three years some areas of amenity grassland may require cultivating and re-seeding.
- 4.58 Grass cutting will be undertaken fortnightly, during the growing season. The grass will be kept to a length of 35mm.
- 4.59 Weed control will include spot treatment using selective herbicide of noxious weeds such as docks, thistles, nettles, ragwort and willowherb.

Soft Landscape Element: Existing Grassland and Species Rich Grassland

Management Intentions:

- 4.60 Grassland will be retained to the south and south west of the Site and will be enhanced to manage biodiversity.
- 4.61 Species rich grass and existing grassland will be managed to improve structural and floristic diversity and to prevent scrub species colonising.
- 4.62 Grass cutting will be timed to allow the various grass species to flower.

Management Operations:

- 4.63 The grasslands will be cut once a year in September to a height of 150mm with the arisings removed from site or used sustainably elsewhere on site in order to prevent nutrient enrichment.
- 4.64 Grass cutting will be avoided between mid-March and August to prevent risk of disturbance to nesting birds. Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.
- 4.65 Grass cuts will be undertaken with flail cutters/mowers set to retain vegetation at a height of 100mm in order to prevent any risk to amphibians that may be present within the grasslands. The cuts must not be carried out by cutting the outer perimeter of the grassland areas and working in towards the centre, as this will trap young chicks, leaving them no opportunity for escape. Instead, grass cuts will work from one side of the area to the other, or from the centre of the grassland, out to the perimeters. Grass cuts will ensure the retention of a 3m buffer of uncut grass alongside hedgerows and woodlands with understorey vegetation.
- 4.66 Grassland areas will not be fertilised in order to conserve the sward diversity. Where treatment of noxious weeds such as docks, thistles, nettles, ragwort and willowherb is required, this will be controlled by hand pulling, or spot treatment of glyphosate. It is hoped that in the long term the input of chemicals into this site can be minimised as far as possible.

Soft Landscape Element: Wet Grassland

Management Intentions:

- 4.67 Wet grassland is proposed around the GCN and surface water attenuation ponds.

- 4.68 The principal management requirement of these areas is to ensure ruderal species and succession of shrubs and tree saplings are not permitted to compromise the integrity of the grassland composition or habitat value.

Management Operations:

- 4.69 Routine management will include cutting the grass to a height of 100mm (approx.). In order to minimise disturbance to terrestrial habitat it is recommended that areas are cut in sections (e.g. one third of the grassland area) on a weekly rotation to ensure areas of uncut vegetation are retained as refuge for amphibians and small mammals.
- 4.70 The cutting of all grass areas is to be carried out using manual methods with particular care, using 'strimmers' fitted with guards so as to protect obstacles from damage. The necessary health and safety precautions must be undertaken when cutting grass on steep slopes (e.g. steep banks on the grass swale). All cuttings must be removed from these areas in order to prevent nutrient enrichment and retain the desired species composition, but can be stacked within suitable woodland areas to provide additional habitat. Arisings will be lightly raked off, with great care being taken to avoid disturbance to amphibians or damaging refugia hidden in the grass.
- 4.71 Noxious weeds such as docks, thistles, nettles, ragwort and willowherb will be controlled by hand pulling, or spot treatment of glyphosate.

Constraints:

- 4.72 Grass cutting will be avoided between mid-March and August to prevent risk of disturbance to nesting birds. Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.

Soft Landscape Element: Stream

Management Intentions:

- 4.73 Management of the stream within the southern woodland will focus on maximising its nature conservation potential so that it may support a diverse and healthy population of small mammals, amphibians, insects and waterfowl.

Management Operations:

- 4.74 The stream will be kept free from litter and debris which may have a detrimental effect on biodiversity and affect public health and safety and will be included within the routine site cleansing.

Soft Landscape Element: Ditches

Management Intentions:

- 4.75 Ditches will be maintained for both functionality and as a habitat in their own right. Management will ensure ditches are able to support a diverse and healthy population of small mammals, amphibians, insects and waterfowl.

Management Operations:

Strimming

- 4.76 Strimming will be undertaken in late September or early October after seed heads have dropped, and cut to no less than a height of 100mm in order to prevent any risk to amphibians that may be present. All cuttings must be removed to prevent a build-up of nutrients.
- 4.77 Works must leave at least one third of the ditch bottom untouched retaining a dense fringe of marginal emergents alongside either bank. Works will progress upstream in order to permit dislodged plant propagules and invertebrates to re-colonise in the disturbed substrate downstream.
- 4.78 Ditches will have a buffer of grassland which is mown regularly to 150mm to indicate the edge of the ditch; due to the proximity of the residential area. One third of the banks of the ditches will be strimmed annually and arisings removed. Use of herbicides near the ditches will be avoided/minimised.

Scrub Encroachment

- 4.79 Any colonising trees or shrubs within 5m of the ditches will be removed to prevent shading, which in time will reduce the biodiversity value of the ditches and access for maintenance.

De-silting

- 4.80 Ditches may require dredging in the future, however this will only be carried out if necessary to minimise disturbance of the microhabitat of the ditch. The requirement to dredge the ditches will be reviewed after the first five years; it is unlikely that there will be a need for any ditch clearance works at this point but it will indicate when the next appropriate review interval will be.
- 4.81 De-silting of ditches will be undertaken from only one bank and minimised to short stretches at certain problem areas along the ditch to ensure minimal interference to banks wherever possible.
- 4.82 Spoil removed in de-silting is to be spread thinly along the top outside edge of the banks.
- 4.83 Dredging works will not be undertaken during the amphibian breeding season (February to August). Should any works be required an assessment will be undertaken by a suitably qualified ecologist before any works commence.

Constraints:

Licensing Restrictions

- 4.84 Natural Resources Wales will be consulted to undertake any of the above works as they may require a Natural Resources Wales Licence. However, where work could be associated with GCN's a licensed person will be present.

Inspections:

- 4.85 Waterbodies inspection: ditches will be monitored annually to assess signs of colonisation by vegetation and any accumulation of sediment or debris.

Soft Landscape Element: GCN Ponds

Management Intentions:

- 4.86 An existing pond will be retained to the northern boundary within the woodland planting. Several GCN ponds are proposed along the eastern portion of the site.

Management Operations:

- 4.87 Throughout the waterbodies the maintenance of open water and provision of dense stands of emergents, tall herbs and wet grasslands are important to support a diverse and healthy population of small mammals, amphibians, insects and waterfowl. Management should focus primarily on maximising the nature conservation potential of component features.
- 4.88 Ponds should be managed to retain at least 35-60% of the surface area as open water through the cutting back of marginal and emergent vegetation.
- 4.89 Waterbodies will also be managed to minimise health and safety issues.
- 4.90 Vegetation will be regularly managed to ensure the top and bottom of the bank and the water level of the waterbody is clearly visible.
- 4.91 To ensure a diversity of aquatic flora species, macrophytes (e.g. reeds) will be cut back or pulled out if they are starting to become particularly dominant, to allow space for other species to grow and avoid the pond silting up.
- 4.92 Marginal and emergent vegetation control will be implemented during the autumn. Cutting or pulling will be implemented by hand. Arisings will be placed onto protective membrane around the pond edge for 48 hours. The arisings will then be removed to a designated compost heap within the open space and the membrane will be removed from site.
- 4.93 Should water levels within the deepest area of the pond fall below half a metre in two consecutive years, de-silting will be required. These works will be undertaken within the period November to January inclusive. Desilting will be undertaken by a long armed excavator and entry and access to the pond will be limited to one point or section of bank. Ground protection will be utilised to reduce damage to marginal habitats. The top third of a metre of silt will be temporarily placed around the margins of the excavated pond, onto protective membrane, to allow the invertebrate assemblage to repopulate the pond. After a period of 48hrs, the silt and the protective membrane will be removed from site.
- 4.94 No fertilisers or pesticides will be used within the wet grassland or within such proximity to that drift will affect the wet grassland or pond.

4.95 The new wildlife ponds will be visually inspected on a monthly basis and any debris or rubbish will be removed. However, in the event that soft pliable debris is noted within the water during the period April to August inclusive, these items will be left in situ as they may potentially support amphibian eggs. A full cleanse after mid-September will be implemented once eggs are hatched and most larvae are developed. Water quality will be visually monitored during these inspections for any signs of pollutants (e.g. scum, excessive algal growth and discolouration) and invasive species. Remedial actions will be implemented accordingly. The advice of an ecologist will be sought if required, if remedial actions may significantly affect the ecology of the pond.

4.96 In the event significant works are required to either pond more than one year after their completion (such as draining to fix levels or desilting), a licensed newt ecologist will be appointed to carry out an amphibian survey prior to the works.

Inspection:

4.97 Inspection of waterbodies: an assessment of bank stability, presence of fish, water quality, coverage of aquatic/marginal vegetation, drainage and depths.

Soft Landscape Element: Surface Water Attenuation Ponds

Management Intentions:

4.98 Surface water attenuation ponds are proposed to the north-eastern and south-eastern corners of the site.

4.99 Attenuation ponds are water basins designed to temporarily fill during times of high rainfall or flooding but have the added benefit of providing habitats for amphibians and other invertebrates as well as being a source for education.

Management Operations:

4.100 The banks of the ponds, until operational, will be strimmed on a fortnightly basis to a height of 50mm during the growing season in line with informal grass and will be managed to maintain a tidy appearance. Strimming will apply to the bankside vegetation.

4.101 Within the first five years of management it is unlikely that there will need to be any silt clearance works to the ponds. However, should clearance works be necessary the ecological surveys shall be consulted which will highlight the presence of protected species.

4.102 Any material that is removed from the ponds will be left on the bank for approximately a week, to allow for any invertebrates or amphibians which may be in the silt to crawl back to their habitat before the material is disposed of or used sustainably elsewhere on site.

4.103 Aquatic vegetation management will 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.

Constraints:

- 4.104 If required, herbicide treatment of weeds will be limited to a controlled treatment of glyphosate which will require prior approval by the Environment Agency where within close proximity to waterbodies.

Inspection:

- 4.105 Inspection of waterbodies: Bank stability, water quality, coverage of aquatic/marginal vegetation, drainage and depths.

Ecological Feature: Amphibian Refugia

Management Intentions:

- 4.106 Rubble piles (see Appendix D for details) and log piles will be situated in woodland planting in close proximity to the proposed ponds.
- 4.107 Amphibian refuge features are to be maintained in a viable condition so as to function to provide shelter and winter refuge to amphibians.

Management Operations:

- 4.108 Amphibian refuge features will be inspected at least once a month to ensure they are in a viable condition.
- 4.109 Access points into the refuge features will be maintained free of blockages (debris and silt, for example).
- 4.110 Grass or shrub atop the refuge features and within 0.5m of the refuge features will be left uncut to avoid disturbance to the refuge feature.
- 4.111 In the event the condition of the refuge feature deteriorates to a point that maintenance cannot ensure its viability, a new refuge feature will be recreated nearby. The existing refuge feature will be maintained in situ in its existing condition; if this is not desirable, an ecologist licensed to handle great crested newts (to ensure competency) will be appointed by the Contractor to supervise the dismantling of the non-functioning refuge feature.
- 4.112 Dead wood arising from tree or hedgerow maintenance (where this cannot be left in situ) will be stacked in piles within the species rich meadow grassland or shrub surrounding or atop the amphibian refuges to supplement their function.

Ecological Feature: Bird Boxes

Management Intentions:

- 4.113 Bird boxes will be installed, the locations of which will be included in the Ecological Method Statement to be included in the updated Bat Roost and Bird Breeding Assessment. The updated Bat Roost and Bird Breeding Assessment is a requirement of Condition 22, which states:

"No part of the development shall commence until an updated Bat Roost and Bird Breeding Assessment, carried out by a qualified ecologist, has been submitted to and approved in writing by the local planning authority. The report shall include an Ecological Method Statement demonstrating/identifying any measures of protection/compensation/mitigation. The recommendations as approved shall be implemented in strict accordance with timescales to be agreed in writing before any part of the development commences on site."

- 4.114 This Assessment will be completed prior to commencement on site.
- 4.115 Bird nest boxes will be maintained in a viable condition to provide nest and roost habitat throughout the year.

Management Operations:

- 4.116 Bird nest boxes will be inspected annually to ensure they remain in viable condition. Where any box is found to be damaged, it will be replaced outside the nesting bird season by a similar model prior to the next March.
- 4.117 Bird boxes will be inspected in November and cleaned of any residual nest material and debris. This will be done in situ without adjustment to position or orientation of the box by removal of the inspection panels. In the event the nest box is occupied (by bird, bat or other animal), the box will be closed without cleaning and cleaning will be delayed until the following year. In the event that a bat is occupying the nest box, the advice of a licensed bat ecologist will be sought. In the event that the box is occupied by wasp or hornets, the box will be removed to a safe place away from regularly accessed public places and a replacement box will be installed.

Hard Landscape Feature: Pathway

Management Intentions:

- 4.118 An existing pathway runs through the southern woodland and will be maintained for its intended use.

Management Operations:

- 4.119 The pathway will be inspected on a monthly basis and will be kept safe and usable and cleared of overhanging vegetation and broken branches. Any item considered unsafe must be removed or made safe and replaced as soon as possible.
- 4.120 An annual herbicide spray to both sides of the path will be undertaken to prevent encroachment of vegetation.

5.0 Monitoring and Review

Monitoring

- 5.1 Simple monitoring reports against key measures will be submitted to the landowner on a quarterly basis, together with financial information. An annual report will be produced by the managing organisation(s), summarising the management of the site over the last year and the measures achieved.
- An annual site meeting and review: with the managing organisation;
 - Quarterly (initially) formal site inspections: with the managing organisation; and
 - Ad hoc unannounced inspections: to be made as frequently as possible to review condition of entrances, site boundaries etc.

Review

- 5.2 The Management Plan will be reviewed on an annual basis by the landowner and its managing organisation and other key partners to ensure that the plan is meeting the original management aims and objectives and responding to the developing needs of the site.
- 5.3 Following the end of the initial five year period of this management programme, the management plan will be re-assessed and updated. This can be facilitated by undertaking site surveys as detailed above. These will identify the need for additional operations and inform future management decisions in relation to continual improvement of the biodiversity value of the landscape as a whole.
- 5.4 It is proposed that the management activities as described will be undertaken for a period of 25 years following which a review will be undertaken in conjunction with the Local Authority and a revised Landscape and Ecological Framework submitted to the Council at that time.

APPENDIX A: LANDSCAPE PROPOSALS (RICHARD EAVES LANDSCAPE ARCHITECTS REF: 4090-01)



SPECIFICATION NOTES:

- Materials and workmanship shall generally be in accordance with the following documents - BS 3936 Nursery Stock, BS 4043 Transplanting root-balled trees and BS 4428 Code of Practice for General Landscape Operations (excluding hard surfaces).
- Plant material to be to the sizes and dimensions as stated in the schedule and shall be healthy with good fibrous root systems. Trees, shrubs and hedge plants to conform to BS 3936 and the HTA's National Plant Specification. Supply, delivery and storage of plants shall comply to the Plant Handling Code published by CPSE.
- Woodland transplants to be planted in pits 300x300x300mm with the sides and bottom broken up. Each to be provided with a Tubex standard tree shelter 750mm high, 105mm diameter with timber stake in accordance with the suppliers recommendations.
- Hedge plants are to be notch planted in a cultivated trench and provided with a spiral guard 450mm high, 38mm diameter supported with internal bamboo cane.
- Extra heavy standard trees are to be double staked and secured to a cross spar with approved rubber spacer block and strapping. All stakes shall be 75mm diameter, straight with bark removed and pointed at one end. Trees planted in grass to have a 1m diameter clear zone at base.

PLANT SCHEDULE		Size	Centres
%	Name		
Native Woodland Planting Mix			
Source: Local provenance			
Planted in groups of 3-15no. of the same species together at 1.5m x 1.5m spacing.			
10%	Acer campestre	60-90cm B1+1	
20%	Alnus glutinosa	60-90cm B1+1	
20%	Betula pendula	60-90cm B1+1	
10%	Cornus sanguinea	60-90cm B1+1	
15%	Crataegus monogyna	60-90cm B1+1	
5%	Prunus spinosa	60-90cm B1+1	
20%	Quercus robur	60-90cm B1+2	
Native Hedgerow Planting			
Source: Local provenance			
Planted in double staggered rows 30cm apart. Plants on each row to be 45cm apart giving 5no. plants per linear metre.			
10%	Acer campestre	60-90cm B1+1	
10%	Cornus sanguinea	60-90cm B1+1	
50%	Crataegus monogyna	60-90cm B1+1	
5%	Prunus spinosa	60-90cm B1+1	
5%	Rosa canina	60-90cm B1+1	
10%	Sambucus nigra	60-90cm B1+1	
10%	Viburnum opulus	60-90cm B1+1	
Standard Tree Planting			
	Quercus robur	14-16cm girth. Extra Heavy Standard.RB.	10m

Species Rich Grassland Mix:

- 20% Festuca arundinacea
- 20% Festuca pratensis
- 20% Festuca rubra
- 12 % Phleum pratense
- 5% Agrostis capillaris
- 3% Cynosurus cristatus
- 2% Achillea millefolium
- 1.5% Anthoxanthum odoratum
- 1.5% Lotus corniculatus
- 1.5% Leontodon hispidus
- 1.5% Medicago lupulina
- 1.5% Plantago lanceolate
- 1.5%Prunella vulgaris
- 1.5% Rhinanthus minor
- 1.5% Rumex acetosa
- 1% Centaurea nigra
- 1% Dactylis glomerata
- 1% Ranunculus acris
- 1% Lathyrus pratensis

Sowing rate: 5g/m²

Wet Grassland Mix:

- 30% Festuca arundinacea
- 30% Festuca pratensis
- 15% Phleum pratense
- 5% Agrostis canina
- 2% Achillea millefolium
- 2% Dactylis glomerata
- 2% Prunella vulgaris
- 1.5% Leontodon hispidus
- 1.5% Medicago lupulina
- 1.5% Ranunculus acris
- 1.5% Ranunculus repens
- 1.5% Rhinanthus minor
- 1.5% Rumex acetosa
- 1% Plantago lanceolate
- 1% Potentilla erecta
- 1% Centaurea nigra
- 1% Succisa pratensis
- 1% Trifolium repens

Sowing rate: 5g/m²

Amenity Grassland Mix

Supplier: Germinal Amenity.

Mix: A18 Road Verge and Embankments.

Sowing rate: 20g/m²

NOTE:-

- Bird boxes will be installed the locations of which will be included in the Ecological Method Statement to be included in the updated Bat Roost and Breeding Bird Assessment.
- Surface water attenuation ponds will require interceptors.

Project/Client

KINGMOOR PARK
WREXHAM

Drawing

LANDSCAPE PROPOSALS

Scale	Drawn	Date
1:1250 @ A1	JC	JULY 2016
	Checked	
	RE	

Drawing No.	Revision
4090-01	

Richard Eaves
Landscape Architect
3 Park Terrace, The Green, Wrea Green Preston PR4 2WN
Tel. 01772 685779. Email info@eaveslandscape.co.uk

APPENDIX B: LANDSCAPE MAINTENANCE SCHEDULES

Activity	Frequency per annum	Years	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Inspections, Surveys and Cleansing														
Health and Safety														
Annual formal inspection to review hazards identified by original assessment.	1	1 to 25												
Specialist Surveys														
Tree hazard and condition survey of mature trees by trained arboriculturalists every 3 years.	1	1, 3, 6, 9, 12, 15, 18, 21 and 24												
Assessment of condition and structure of new tree planting annually.	1	1 to 5												
Post development GCN monitoring as per NRW License requirements.	TBC	TBC												
Site Cleansing														
Monthly cleanse.	12	1 to 25												
Fly-tipping to be removed as required as soon as possible.	As required	1 to 25												
Soft Landscape Elements														
Woodland/ Trees- Existing														
Selective thinning, coppicing and pruning as required to maintain visual amenity and biodiversity objectives.	N/A	1 to 25												
Woodland/ Tree Planting- Proposed														
Check stakes and ties and adjust as required twice annually and replacing any damaged or missing stakes and ties and removing them in years 4 or 5.	2	1 to 5												
Twice annually glyphosate spot spray to vegetation around base of trees within 0.5m.	2	1 to 5												
Replacement of areas of failed planting.	1	1 to 5												
Re-firming newly planted trees as required.	1	1 to 5												
Watering of new planting.	As required	1 to 5												
Formative pruning to maintain health and vigour.	N/A	5 to 25												
Hedgerows- Existing														
Cut one side (alternate each year) and top annually.	1	1 to 25												
Hedgerows- Proposed														
Twice annually glyphosate spot spray to vegetation around base of trees within 0.5m.	2	1 to 5												
Replacement of areas of failed planting as required to maintain visual amenity.	1	1 to 5												
Re-firming new planting as required.	1	1 to 5												
Annual strim to vegetation between trees and removal of arisings until canopy layer closes over.	1	1 to 5												
Annual face up to both sides of hedge.	1	5 to 25												
Amenity Grassland- Proposed														
Fortnightly cut (35mm) with arisings removed from site.	16	1 to 25												
Cultivate and re-seed as required.	1	1 to 3												
Weed control.	1	1 to 25												
Species Rich Grassland- Proposed														
2x yearly cut (100mm) with arisings removed from site.	2	1 to 25												
Cultivate and re-seed as required.	1	1 to 3												
Weed control.	1	1 to 25												
Grassland- Existing														
1x yearly cut (100mm) to areas where butterflies may be present with arisings used sustainably elsewhere on-site.	1	1 to 25												
Weed control.	1	1 to 25												
Wet Grassland- Proposed														
1x yearly cut (100mm) with arisings removed from site.	1	1 to 25												
Cultivate and re-seed as required.	1	1 to 3												
Weed control.	1	1 to 25												
Stream														
See 'Site Cleansing'	12	1 to 25												
Ditches														
Remove leaf litter and other debris from ditch monthly.	12	1 to 25												
1x yearly strim (100mm) to 1/3 of ditch with arisings used sustainably elsewhere on-site. Strim sections on annual rotation.	1	1 to 25												
Cut back of anv scrub within 5m of ditch.	1	1 to 25												

Activity	Frequency per annum	Years	Indicative timing of operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Silt removal as necessary in November to 1/3 of ditch to maintain areas of open water.	1	1 to 25												
GCN Ponds- Existing and Proposed														
1x yearly strim (150mm) to 1/3 of bankside vegetation with arisings removed from site/used sustainably elsewhere on site. Strim sections on annual rotation.	1	1 to 25												
Removal of marginal/emergent vegetation in autumn to maintain open water areas.	As required	1 to 25												
Reduction of macrophytes where becoming too dominant.	As required	1 to 25												
Removal of dead fish as required.	As required	1 to 25												
Silt removal as necessary in November to maintain areas of open water every five years.	1	5, 10, 15, 20 and 25												
Surface Water Attenuation Pond- Proposed														
1x yearly strim (150mm) with arisings used sustainably elsewhere on site.	2	1 to 25												
Silt removal as necessary in November.	1	1 to 25												
Ecological Feature														
Amphibian Refugia- Proposed														
Monthly inspection to check condition and clear any blockages from access points.	1	1 to 25												
Repairs and/or replacement as required.	1	1 to 25												
Bird Boxes - Proposed														
Annual visual inspection from the ground to check condition.	1	1 to 25												
Removal of nesting debris by hand and disposal.	1	1 to 25												
Replacement, as required, before March.	1	1 to 25												

NOTE Glyphosate formulations containing the surfactant Polyethoxylated tallow amine (POEA) should not be used within close proximity to waterbodies or other wetland habitats as it can cause high amphibian larvae mortality.

Key

	Works not to be carried out in these months
	Bird breeding and nesting season
	Works to be carried out in these months

APPENDIX C: SUMMARY OF RELEVANT LEGISLATION

Summary of Relevant Legislation

The following legal obligations, among others must be considered in carrying out any management operations:

Legislation	Obligations
Health and Safety Legislation	
The Health and Safety at Work Act 1974	All operations carried out on site must only be undertaken by trained personnel, using methods and equipment approved by the Health and Safety Executive (HSE).
Occupiers Liability Act 1984	Management organisation must ensure that every reasonable care is taken to remove any risks to both legitimate visitors and to any trespassers. In compliance it will be necessary: • To make sure that all footpaths and any other structures are safe; • To remove any hazardous objects; and • To conduct an annual safety audit in order to identify any further hazards.
Environmental Legislation	
Conservation of Habitats and Species Regulations (as amended) (2012)	The Habitat Regulations assign a greater level of protection to a variety of native species of animals and plants listed, which are known as European Protected Species (EPS).
Wildlife and Countryside Act 1981	There is an obligation to comply with legislation for UK species protected (including amphibians, reptiles and bats) under this Act.
Environmental Protection Act 1990	There is an obligation to keep the site free from litter and refuse.
Countryside and Rights of Way Act 2000	Imposes a new right of access on foot to registered common land and other areas of 'open countryside' which under certain circumstances allows access without being confined to footpaths.

APPENDIX D: HIBERNACULA DETAILS

Fill scrape with loose tipped material as available: tree roots, felled trees and or branches (in sections), site rubble, subsoil, etc., to SO approval. Do not compact. Minimum depth of fill 1000mm

Base of scrape must be set below local frost depth and above groundwater level.

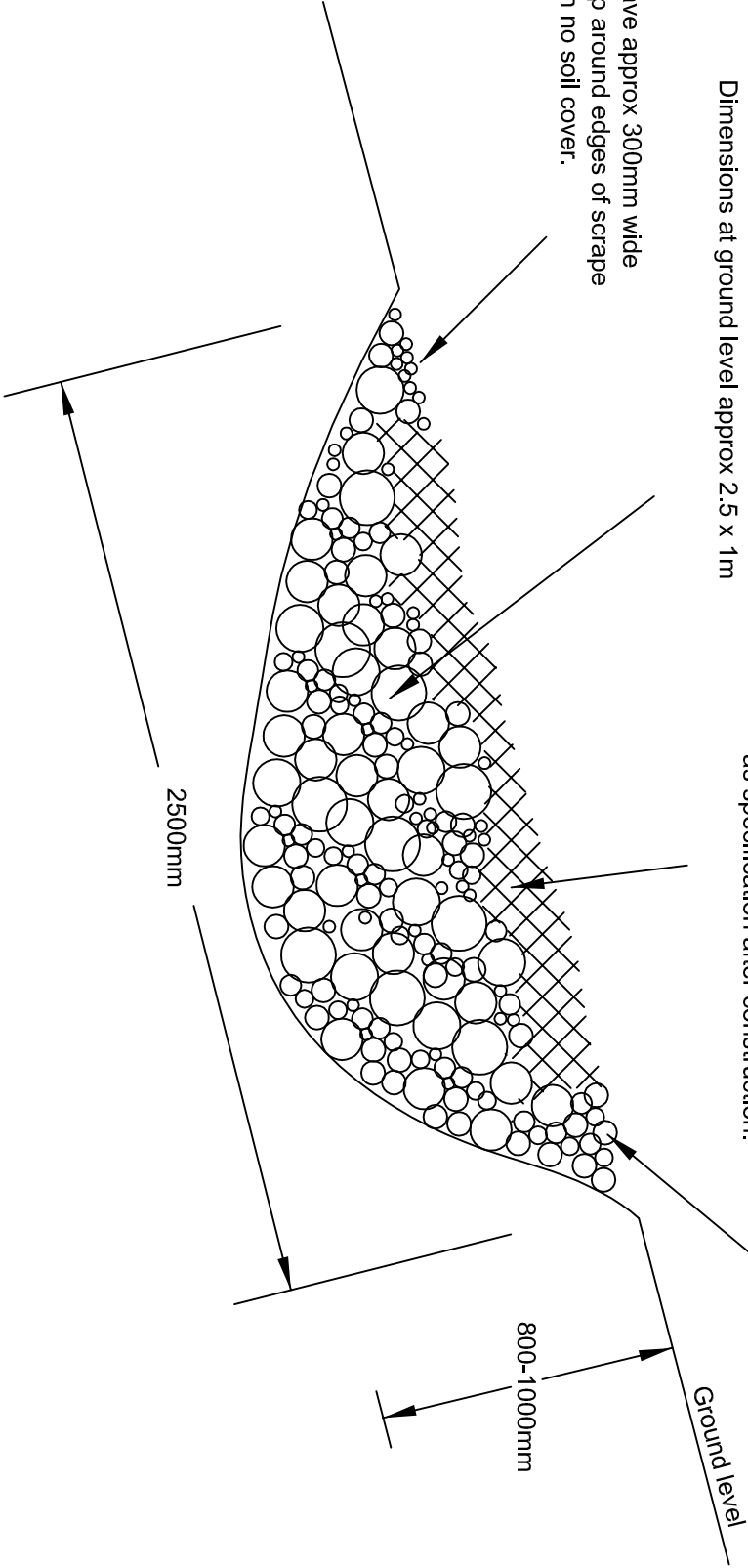
Dimensions at ground level approx 2.5 x 1m

Cover fill with 100 - 200mm layer local subsoil to meet existing gradient. Do not compact.

Surface must be seeded or turfed as specification after construction.

Leave approx 300mm wide strip around edges of scrape with no soil cover.

Leave approx 300mm wide strip around edges of scrape with no soil cover.



Revision	Description	Amended by	Date



General Centre
Blenwood Science Park Warrington
WA3 7BH
Tel 01925 844004
Fax 01925 844002
e-mail tep@tep.co.uk

Project		
TEP Details		
Title		
Newt Hibernaculum Detail - scrape		
Drawn No		
TEP.MIS.005		
Scale		
1:20@A4		
Drawn by	Checked by	Date
AR	HR	Sept 01



HEAD OFFICE

Genesis Centre,
Birchwood Science Park,
Warrington
WA3 7BH

Tel: 01925 844004
E-mail: tep@tep.uk.com

**MARKET
HARBOROUGH**

Harborough Innovation
Centre,
Airfield Business Park,
Leicester Road,
Market Harborough
Leicestershire
LE16 7WB

Tel: 01858 383120
E-mail: mh@tep.uk.com

GATESHEAD

Office 26, Gateshead
International Business
Centre,
Mulgrave Terrace,
Gateshead
NE8 1AN

Tel: 0191 605 3340
E-mail: gateshead@tep.uk.com

LONDON

8 Trinity Street,
London,
SE1 1DB

Tel: 020 3096 6050
E-mail: london@tep.uk.com

CORNWALL

4 Park Noweth,
Churchtown,
Cury,
Helston
Cornwall
TR12 7BW

Tel: 01326 240081
E-mail: cornwall@tep.uk.com
