



THE
ENVIRONMENT
PARTNERSHIP



BRYN LANE

WREXHAM

HABITAT MANAGEMENT PLAN (NATURAL RESOURCE WALES - GREAT CRESTED NEWT)

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- APPENDIX A: Landscape Strategy - Overall Overview (Nicholsons ref: D22-2630, V5)
- APPENDIX B: Outline Component - Specification (Nicholsons ref: 22-2628 V3.1)
- APPENDIX C: Additional Great Crested Newt Mitigation Site (TEP ref: G9134.040) and
GCN Off-Site Mitigation Phase Plan (TEP ref: G9134.042A)
- APPENDIX D: Landscape Maintenance Schedules
- APPENDIX E: Legislation Context

1.0 Introduction

Purpose of the Management Plan

- 1.1 This Habitat Management Plan (Natural Resource Wales - Great Crested Newt) (hereby referred to as HMP) has been produced by The Environment Partnership (TEP) Limited on behalf of Net World Sports to provide a framework for long-term landscape and habitat management and maintenance of the landscaping associated with the warehousing at Bryn Lane, Wrexham Industrial Estate (hereby referred to as the 'Site') supporting the existing identified Great Crested Newt (GCN) population on-site.

Scope of the Management Plan

- 1.2 This HMP covers all areas of open space within the Site, specifically proposed woodland, grassland, and ponds. The HMP will be implemented for a duration of 25 years to manage noted habitats accordingly. The HMP also includes scope and information detailed in accordance with a Landscape and Ecological Management Plan (LEMP).
- 1.3 The HMP describes the Site in terms of landscape elements and management operations and provides a framework for the long-term landscape management and maintenance of the habitats, open space and landscaping associated with the Site in turn supporting the existing identified GCN population on-site.
- 1.4 The HMP should be read in conjunction with the following plans and reports:
- Landscape Strategy - Overall Overview (Nicholsons ref: D22-2630, V5);
 - Outline Component - Specification (Nicholsons ref: 22-2628 V3.1);
 - Arboricultural Impact Assessment (TEP ref: 9134.01.001);
 - Ecological Assessment (TEP ref: 9134.001); and
 - Additional Great Crested Newt Mitigation Site (TEP ref: G9134.040).

Structure of the Management Plan

- 1.5 Chapter 2.0 provides a summary of the factors influencing management and a site analysis. Chapter 3.0 outlines the long-term aims and objectives for management and Chapter 4.0 sets out how the success of the plan will be monitored, reviewed, and updated over time.
- 1.6 Appendix A is the Strategy - Overall Overview (Nicholsons ref: D22-2630, V5), Appendix B is the Outline Component - Specification (Nicholsons ref: 22-2628 V3.1), Appendix C includes the Additional Great Crested Newt Mitigation Site Plan (TEP ref: G9134.040) and GCN Off-Site Mitigation Phase Plan (TEP ref: G9134.042A), Appendix D provides a table of maintenance operations and Appendix E summarises relevant legislation.

Site Location

- 1.7 The site (central grid reference SJ 38614 51101) is approximately 35.4 ha in size and is located to the east of Wrexham in North Wales.

- 1.8 The Site is bounded to the south by Bryn Lane and Wrexham Industrial Estate, to the north by Francis Lane, to the west by both Industrial Estate Road and Hugmore Lane (with associated residential properties), and to the east by open agricultural fields. The wider area predominantly comprises urban development to the west associated with Wrexham town centre, with open countryside present to the north, east and south.

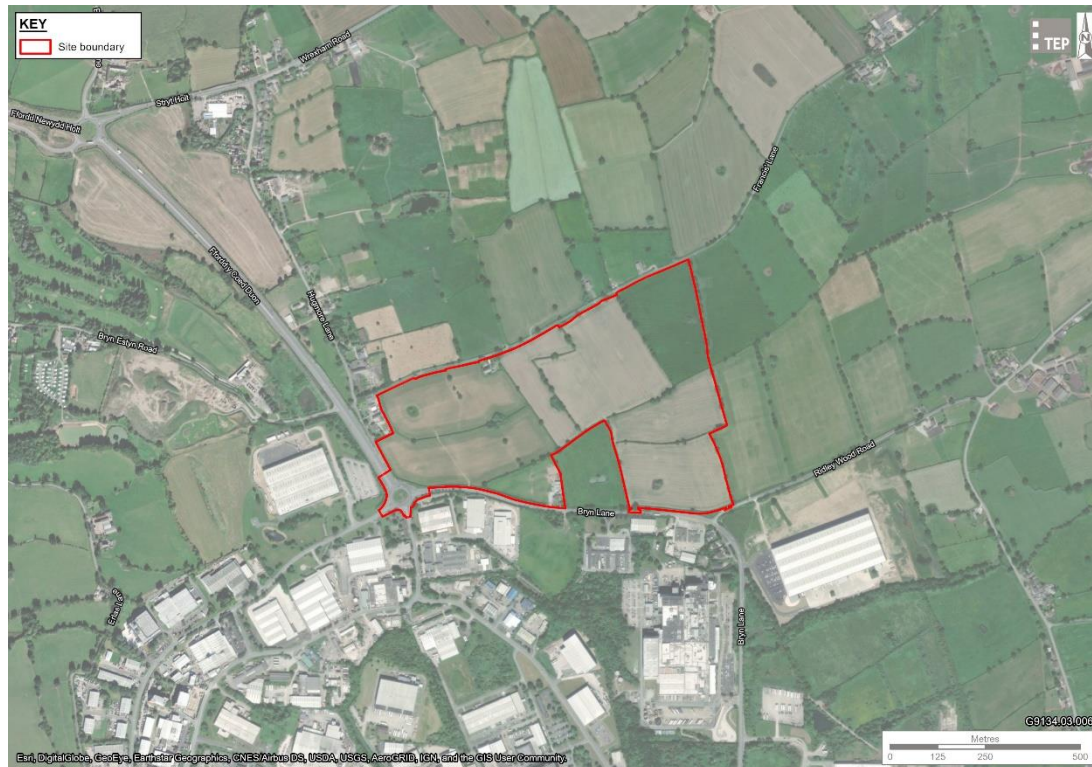


Figure 1: Site Location Plan (TEP G9134.03.006)

Planning and Development Context

- 1.9 A hybrid planning application (planning application ref: P/2023/0497) was submitted to Wrexham County Borough Council (WCBC) in July 2023, for the following:
- Full application for the demolition of existing buildings and re-profiling of the site for development comprising the severable and phased construction of employment floorspace (Use Class B1C/B2/B8) with ancillary (integral) office floorspace (Use Class B1a) and the provision of associated infrastructure including earthworks, sub-station, parking, landscaping, access from Industrial Estate Road roundabout and Byn Lane and internal estate road; and
 - Outline planning permission for the severable and phase construction of employment floorspace (Use Class B1c/B2/B8) with ancillary (integral) office floorspace (Use Class B1a), ancillary retail and drive thru facilities, a hotel and petrol filling station (Use Class A1/A3/C1/sui generis) and associated infrastructure including earthworks, internal estate road, parking, and landscaping (all matters reserved for future determination).

- 1.10 This HMP has been prepared to accompany a GCN Licence application from Natural Resource Wales (NRW) to legally permit works on Site and LEMP.

2.0 Site Management Considerations

Responsibility for Site Management

- 2.1 During the defects liability period, landscape maintenance and replacement of failed planting will be completed by the landscape contractor who has implemented the scheme.
- 2.2 Following the defects liability period Net World Sports will facilitate a managing organisation who will be responsible for operational management and maintenance of the landscape within the Site.
- 2.3 The managing organisation will require 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.

Health and Safety

- 2.4 Net World Sports will retain ultimate responsibility for the health and safety of the Site until such time as the open space and associated landscaping is transferred to a managing organisation(s). The Site will be subject to informal inspections and a formal annual inspection. Whenever the Site is visited, any deficiencies in safety provision will be noted and acted upon.
- 2.5 The appointed managing organisation is responsible for complying with the provisions of the Health and Safety at Work Act 1974. All machinery and apparatus brought onto the Site shall be safe and maintained to a standard that will not breach provisions within the Health and Safety at Work Act 1974 or any other statutory obligations.
- 2.6 The managing organisation shall be adequately trained and sufficiently competent to carry out maintenance operations without causing a Health and Safety risk to themselves or other users of the site.
- 2.7 All works shall be undertaken in accordance to the relevant codes of practice. Appropriate machinery shall be used inclusive of adequate personal protective equipment to avoid harm to themselves or any other persons.

Biosecurity

- 2.8 The management organisation should have a sufficient awareness of new and ongoing biosecurity threats, and the necessary precautions to avoid their spread should be undertaken on sites where they are known or suspected.
- 2.9 New findings of suspected non-indigenous plant pests and diseases should be reported to the Plant Health and Seeds Inspectorate or Forestry Commission - Forest Research Tree Health Diagnostic and Advisory Service or both.

Management Objectives

- 2.10 The long-term management objectives of this plan are:

- To ensure the long-term success of the scheme through effective maintenance;
- To implement the HMP for a period of 25 years to ensure habitats are managed and maintained accordingly;
- To safeguard and enhance the biological and physical integrity of the Site;
- To improve existing habitats and increase biodiversity net gain;
- To ensure that retained and newly created habitats within the open spaces and wildlife corridor are managed to enhance their biodiversity and connectivity as foraging and commuting habitat for high value wildlife;
- To ensure that a population of existing GCN is established and retained across the implemented pond network throughout the Site (see Chapter 5.0 Monitoring and Review) and
- To comply with legal obligations and constraints.

Ecological Factors

Designations

- 2.11 There are no statutory designations within 1km of the Site. However, Wrexham Industrial Estate Local Wildlife Site (LWS) is located approximately 0.6 km to the south of the site. The reason for designation of this site is unknown, but habitats present include grassland and ancient woodland.

Habitats and Species of Principal Importance in England

- 2.12 Environment Act (Wales) 2016 requires a list of habitats and species of principal importance in Wales to be drawn up.
- 2.13 Local Biodiversity Action Plans (BAP) provide an indication of the relative value given to existing habitats and species. The Wrexham Biodiversity Action Plan has been used when assessing the value of the habitats and species present within the Site.
- 2.14 Great crested newt (GCN) is the only priority species listed in the Wrexham Biodiversity Action Plan that will be sustained around or within the Site

Ecological Surveys

- 2.15 Below is a list of the ecological surveys carried out at the Site:
- Extended Phase 1 Habitat Survey (TEP, 2021)
 - GCN eDNA and Habitat Suitability Assessment (TEP, 2021);
 - Preliminary Bat Roost Assessment and Ground Based Tree Assessment (TEP, 2021);
 - Bat Activity Survey (TEP, 2021);
 - Winter Bird Survey (TEP, 2021); and
 - Breeding Bird Survey (TEP, 2021).

Chemical Use

- 2.16 The use of herbicide will be minimised wherever possible. Hand weeding will be utilised when feasible and the use of mulch around new planting will assist with suppressing weeds.

Habitats

Woodland, Trees and Hedgerow

- 2.17 The Arboricultural Impact Assessment in support of the hybrid planning application (TEP ref: 9134.01.001) identified 122 individual trees, 17 tree groups and 25 hedges within the Site and influencing distance to the Site. One Tree Preservation Order (TPO) tree was identified offsite and no additional TPO or conservation areas were identified within the Site boundary.
- 2.18 Approximately 25 individual trees, 4 tree groups and 1,355m of hedgerow will be lost to facilitate the proposed development. The proposed planting scheme implements proposed tree planting and hedge planting across the site boundary to compensate for the loss of existing vegetation. Some select trees and hedgerow will be retained as part of the development providing mature individuals within the development boundary. The retention of mature trees and the implementation of young proposed trees will provide shelter and valuable ecological habitat for identified GCN.

Watercourses and Pond

- 2.19 Seven ponds were identified within the existing site boundary. However, four of these ponds were found to be dry. Two of these existing ponds will be retained as part of the proposed development and are situated within the central ecological corridor of the development as detailed on the Landscape Strategy - Detailed Overview (Nicholsons ref: ss-2630 v5).
- 2.20 Additional, wildlife ponds will be implemented along the corridor to support the retained ponds on site. One additional relocated pond is situated to the south of the site near the southern boundary of unit 2. Another additional relocated pond is situated to the north of the site above unit 2. One last relocated pond is located along the eastern boundary next to unit 1 within Zone B. The addition of the proposed ecological corridor, concrete tunnel and relocated ponds will provide vital habitats for the identified GCN population to commute across the proposed development and to support and enhance the population on-site.

Species

Amphibians

- 2.21 GCN eDNA surveys were conducted by TEP in 2021, the surveys were completed on all 3 ponds that held water on the Site with an additional 6 ponds situated within a 500m buffer zone from the Site that held water also surveyed.
- 2.22 Ponds P1 and P2 situated on-site tested positive for GCN eDNA with Pond P9 situated off-site and within the 500m buffer also testing positive. Ponds P5a and P10 both situated off-site tested indeterminate. Results are illustrated on the Great Crested Newt Survey Results Plan (TEP ref: G9134.034A).

- 2.23 The proposed development will retain two existing ponds and will be supplemented with several new ponds to form an ecological corridor, which will support and enhance the existing GCN population on-site. The ecological corridor will also be supplemented with a reinforced concrete tunnel for amphibians and hedgehogs, to allow movement between the corridor and to a southern section of habitat situated off-site and will form a safe crossing point for wildlife.
- 2.24 Three further relocated ponds are also proposed throughout the development to support the existing population of GCN. Exact location of ponds, tunnels and habitats are detailed on the Landscape Strategy - Detailed Overview (Nicholsons ref: ss-2630 v5).
- 2.25 An additional GCN mitigation area will be implemented to the north of the proposed development. This will include seven proposed ponds, five hibernacula and scrub planting. Within the development boundary, four hibernacula are proposed. These proposals are detailed on the Additional GCN Mitigation Site plan (TEP ref: G9134.040).
- 2.26 An Ecological Clerk of Works (EcoW) will be employed to provide site supervision and advice as required throughout the duration of the works. The appointed ECoW will be an experienced amphibian ecologist holding a Natural Resource Wales GCN Survey Licence. Reasonable Avoidance Measures will be adopted during development works to avoid the risk of killing or injuring amphibians including habitat management prior to proposed works and pre-construction vegetation removal.
- 2.27 Measures to be implemented during the construction phase include a toolbox talk by the ECoW, excavation or trenches must be checked for amphibians, soil piles or materials stored will be off the ground and any animals found within any areas of the construction phase will be suspended and the ECoW contacted for further advice.
- 2.28 GCN are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). Under this legislation it is an offence to intentionally kill, injure or capture GCN. It is also an offence to intentionally or recklessly damage, destroy or obstruct access to places used by GCN for shelter or protection or to disturb them whilst they are occupying these habitats.

Birds

- 2.29 TEP conducted breeding bird surveys and winter bird surveys in 2021. A total of 29 bird species were recorded on the ground within the survey area during the winter survey with 21 of these being within the Site itself. The breeding bird survey identified 11 species being confirmed as breeding within the Site and 100m buffer. The retained and proposed habitat provides suitable nesting and foraging habitat for various bird species. Exact details regarding identified bird species on-site is detailed within the Winter Bird Survey Report (TEP ref: 9134.005) and Breeding bird survey report (TEP ref: 9134.009). Existing habitats that are mature will provide key ecological habitats for identified bird species on-site.

- 2.30 All UK wild birds are protected while at the nest under the Wildlife and Countryside Act (1981). Effectively, this means that if removal of habitats (which can include buildings, trees, hedges, scrub, and grassland) must be timed to avoid the bird breeding season (March 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.

Bats

- 2.31 The results of the bat activity surveys completed in 2021 by TEP, identified at least 4 species on the Site being identified as common pipistrelle, soprano pipistrelle, noctule and myotis species. Common pipistrelle was the most abundant at 70.42% and myotis being the least at 7.08%. The retained and proposed habitats on site provide suitable commuting habitat for the identified bat species. Further details are provided within the Bat Activity Survey Report (TEP ref: 9134.010).
- 2.32 The results of the bat roost survey identified 77 trees within the site with suitability for roosting bats. With 16 of these having high suitability, 33 having moderate suitability and 28 having low suitability. The impacts of the proposed development and proposed mitigation are assessed in the accompanying ES Chapter (TEP Ref: 9134.011).
- 2.33 Bats and their roosts are protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended and the Conservation of Habitats and Species Regulations 2017 (as amended).

Hedgehogs

- 2.34 Several records of hedgehog were returned within 2km of the Site. The habitat on-site in particular the woodland, hedgerow and grassland habitat are suitable for foraging, communing and sheltering hedgehog. As noted above a concrete tunnel will be created within the ecological corridor to allow movement between the corridor and off-site habitat. Further details are provided within the Ecological Assessment (TEP ref: 9134.001).
- 2.35 Hedgehog are S41 species of principal importance under the NERC Act (2006).

Method Statement

- 2.36 Existing features of ecological and wildlife interest will be protected to ensure that habitat and species are protected and establish long term.

Table 1 Method Statement for the Ecological Features

Ecological Feature	Method Statement
Habitat	

Ecological Feature	Method Statement
Woodland	The woodland will remain unaffected by the creation of the ponds and other proposed landscaping, with design ensuring the root protection zone (RPZ) of the trees along the periphery are not impacted by any ground works.
Hedgerow	The hedgerow and trees will be retained where possible within the proposals for new pond creation, with the RPZ avoided. Access from the Site will be through an existing gate, ensuring the northern hedge remains.
Ponds	Pond works will be undertaken in winter minimising the risk to GCN.
Species	
Amphibian	The water quality of the ponds will be ensured through the SUDS scheme, minimising post development impacts on aquatic habitats and wildlife. Removal of any identified invasive non-native species (including plants and fish) to ensure viability of habitat for GCN. No chemical use within 250m of ponds.
Birds	Removal of habitats (which can include buildings, trees, hedges, scrub, and grassland) will avoid the bird breeding season (April to August inclusive). If this is not possible a survey by a suitably experienced ecologist will be required to ensure no nesting birds will be affected.
Bats	Any retained trees within the woodland to the south or on the boundaries of the Site (shown to have the most bat roost potential) will be surveyed for bat roost potential by a suitably qualified ecologist before works begin. If bat roost potential is identified then the survey will provide additional information on reasonable avoidance measures.
Badger	If a badger sett is suspected on Site then no works should be undertaken with 30m of the sett and a survey should be undertaken by suitably qualified ecologist if required.

Social Factors

Public Amenity

- 2.37 The balance of both wildlife conservation and public amenity interests must be carefully managed due to close proximity to residential properties along the eastern boundary of the Site.

Accessibility

- 2.38 Review of WCBC Definitive Map identified no Public Right of Ways (PRoWs) within the Site. One PRoW was also identified just outside the site boundary along the eastern boundary.
- 2.39 Site management and maintenance access will be available from the proposed roundabout to the southwest of the site off Bryn Lane. This will lead to internal access roads throughout the development site for access.

Site Users and Community Groups

- 2.40 Awareness of the potential user groups, and their impact on the site is an important aspect of implementing this Plan. Net World Sport are responsible for considering the local community groups and their influence on the current use and future requirements of this landscape.

Legal Factors

- 2.41 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 in Appendix D.

3.0 Management Intentions and Operations

Landscape Elements

- 3.1 The Site will comprise the following landscape elements as shown on the Strategy - Overall Overview (Nicholsons ref: D22-2630, V5), Outline Component - Specification (Nicholsons ref: 22-2628 V3.1) and Additional GCN Mitigation Site plan (TEP ref: G9134.040);

- Existing Trees;
- Proposed Trees and Native Thicket (Scrub);
- Existing Hedgerow;
- Proposed Hedgerow, Hedgerow and Hedgerow and Shady Grass Areas;
- Shrubs and Herbaceous;
- Amenity Grass;
- Bulbs in Grass;
- Wildflower Meadow, Wildflower and Shady Grass;
- Wetland and Pond Edge Mix;
- Aquatic Marginal Mix and Ponds;
- Butterfly Bank;
- Hibernacula;
- Exercise Areas; and
- Seating Area.

Site Wide

Management Intention

- 3.2 The Site will be kept free from litter through regular cleansing. Regular inspections will ensure any health and safety hazards are identified and made safe.

Chemical Use

- 3.3 It should be recognised that plants considered as weeds can provide suitable habitat for invertebrates.
- 3.4 Weed control where feasible should be undertaken by hand pulling especially where weeds are situated near the detailed ponds and any other waterbodies on-site. However in certain instances, herbicide may be the most effective measure to remove unwanted species during the planting establishment period. Where herbicide application is needed this should be in small controlled areas and should only target the undesirable species. Herbicides should comply with the Control of Pesticides Regulations as amended (1997) and be on the current list of approved products.
- 3.5 Consideration would need to be given to the fact that chemicals can prevent growth of grasses and woody species in landscape schemes.
- 3.6 Herbicide application will not be utilised near any water bodies or ponds on-site and where required only within small areas of open landscape. Hand pulling or hand tool removal is recommended across the site when removing identified weed species.

- 3.7 Fertiliser is not to be applied to any of the meadow areas in order to conserve the development of a diverse sward.

Maintenance Operations

Site Cleansing

- 3.8 A litter pick of the Site will be carried out monthly (and will include the ponds) All litter will be removed and disposed of in an authorised manner.
- 3.9 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 without a specific licence from Natural Resources Wales (see 'Ponds' for maintenance intentions and operations below)

Site Inspections

- 3.10 Site inspections will be undertaken monthly to identify any health and safety hazards and arrange for them to be made safe as far as is practicable.
- 3.11 Results from the monthly site inspections will be compiled and presented within the annual report which will be used in the review of the Plan as detailed in Chapter 4.0.

Existing Trees

Management Intentions

- 3.12 Existing trees will supplement the site's amenity, aesthetic, and ecological value by providing mature and well-established foliage and habitat for nesting and foraging wildlife species. Existing trees will provide age and canopy diversity across the Site and will provide important ecological habitat and aesthetic views for the surrounding landscape elements including grassland, shrub, and herbaceous planting.
- 3.13 An Arboriculturist must be consulted prior to undertaking any major tree works.

Maintenance Operations

Tree Survey

- 3.14 A trained arboriculturist will carry out an inspection 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. The survey will be carried out every three years or following a storm.

Cyclical Maintenance

- 3.15 Maintenance to mature trees will be informed by the tree survey.
- 3.16 Wood under 250 mm diameter collected from thinning, pruning, brashing and vegetation clearance will, wherever possible, be chipped and used sustainably on site for mulching.
- 3.17 Wood greater than 250 mm diameter will be logged and used to create deadwood piles in suitable locations.

- 3.18 Maintenance will be undertaken on an annual cyclical programme (5 - 10 year cycle) and will be carried outside of bird nesting season (March to August inclusive). If works are required to any trees with bat roosting potential, advice must be sought from a licensed bat ecologist prior to any works commencing.
- 3.19 Disturbance to GCN refuge features should be avoided by cordoning off areas known to contain the species during works.

Proposed Trees and Native Thicket (Scrub)

Management Intentions

- 3.20 Tree planting is proposed to provide connectivity to the wider environment, foraging and nesting opportunities and or screening for the development. The addition of proposed tree planting will diversity the sites species composition with the implementation of native thicket planting supporting the ground flora. Proposed tree planting will be implemented with regular standards and will help diversify the canopy height across the site. Implementation and establishment of thicket planting will provide an ecologically rich habitat with diverse ground flora and canopy heights throughout subsequently supporting noted wildlife species.
- 3.21 Proposed scrub planting implemented within the Additional GCN Mitigation Site (TEP ref: G9343.040) will be monitored to ensure scrub established accordingly. This will provide additional shelter and commuting habitat for GCN on-site and off-site.

Maintenance Operation

Weed Control

- 3.22 To reduce excessive competition, a weed free area will be retained around all proposed trees and will be maintained to a diameter of 0.5m around the base of the trees until established (Years 3-5). Mulch will be replenished annually to a depth of 100mm.
- 3.23 Once trees are established (Years 3-5), the maintenance of a weed free base can be discontinued.

Re-firming

- 3.24 Newly planted trees will require re-firming as required annually for the first five years.

Stakes and Ties

- 3.25 Where trees are staked, the stakes and ties will be checked quarterly 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.
- 3.26 Remove stakes as necessary, when the tree is suitably established, approximately in Year 5.

Formative Pruning

- 3.27 Young trees will require formative pruning until a height of 3m is attained to maintain a desirable shape as well as to maintain health and vigour. Pruning and thinning of trees will be in accordance with BS 7370-4:1993 Recommendations for Maintenance of Soft Landscape (Other Than Amenity Turf)..
- 3.28 Crown pruning is desirable and any dead or severely damaged trees will be felled and replaced accordingly.

Fruit Tree Maintenance

- 3.29 Fruit bearing trees (Cherry and Crab Apple) trees will require additional maintenance regimes. Prune unwanted growth annually in the dormant season and train young branches/shoots along the trellis/structure to create the desired form and shape throughout the summer.

Native Thicket (Ground Flora)

- 3.30 Implemented native thicket planting will be reviewed and monitored to assess establishment. Adaptive management will be implemented to ensure planting established as intended.

Replacement of Failed Planting

- 3.31 Failed planting will be removed and replaced with the same species between November and March for deciduous species.
- 3.32 If there is a continuous failure of a certain species, this will be reviewed and, if appropriate, an alternate appropriate species will be planted instead.

Watering

- 3.33 Watering may be required during periods of drought in the first couple of years following planting. Water should be applied to the base of the tree and should not be in excess of 20 litres every other day, as required, between April and September.

Fertiliser

- 3.34 Apply slow release multi-purpose plant food and soil improver in Autumn during the first 5 years after planting.
- 3.35 Any bark or other weed suppressant should be carefully removed/lifted and fertilizer applied direct to the top layer of soil at the manufactures recommended rate.

Post Establishment Maintenance

- 3.36 See Existing Trees.

Existing Hedgerows

Management Intentions

- 3.37 Hedgerows will be maintained for their ecological value and will provide a vegetation screen along the boundary of the proposed development. An 'A' shape cut will provide thick and dense growth providing suitable nesting and sheltering habitat for noted wildlife species. The retention of mature hedgerow will support the age diversity across the sites landscape features and will support the sites amenity and aesthetic value.

Maintenance Operations

Hedgerow Cutting

- 3.38 Hedgerows will be cut in an 'A' shape to maintain a wide base for bird nesting and roosting. Hedgerow cutting will be cut on a rotational basis with one third cut every three years to retain foraging and sheltering opportunities. If possible, a 1m grass strip of species rich tussock grass will be left uncut next to the hedgerow to increase habitat potential and increasing connectivity. The grass strip is to be cut simultaneously with the hedge cutting regime. Arisings will be collected and removed from Site.
- 3.39 Any hedgerow management will be carried out outside of the bird nesting season (between March and August inclusive). Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.
- 3.40 Additional hedgerow cutting may be required from a health and safety perspective should there be a good growing season.

Proposed Hedgerow, Hedgerow and Shady Areas Grass

Management Intentions

- 3.41 Proposed hedgerows will complement retained hedgerow located predominantly along the site's boundary edges. In addition, the proposed hedgerows will provide structure and delineate the boundaries whilst screening the development. The proposed hedgerows will also provide further connectivity for wildlife including GCN, birds and hedgehog onsite, strengthening new and existing green corridors

Maintenance Operations

Weed Control

- 3.42 To reduce excessive competition, a weed free area will be retained around hedgerow plants to a diameter of 0.5m around the base. Mulch will be replenished annually to a depth of 100mm.

Fencing and Guards

- 3.43 Where planting is protected by spiral guards these will be checked quarterly. Any broken or damaged spiral guards will be replaced.

- 3.44 Remove bamboo canes and guards as necessary, when the planting is suitably established, approximately in Year 5.

Re-firming

- 3.45 Newly planted hedgerow plants will require re-firming as required annually between September and February.

Replacement of Failed Planting

- 3.46 Failed planting will be removed and replaced with the same species between November and March for deciduous species as detailed on the planting specification.

- 3.47 If there is a continuous failure of a certain species, this will be reviewed and, if appropriate, an alternate appropriate species will be planted instead.

Hedgerow Cutting

- 3.48 The first cut to newly planted hedgerows is recommended within year 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.

Post Establishment Maintenance

- 3.49 See Existing Hedgerow.

Shrub and Herbaceous Planting

Management Intentions

- 3.50 Proposed shrub and herbaceous planting will comprise of varying shrub and herbaceous species to create areas of diverse plant communities. The implementation of varying flowering species will diversify the Site's overall landscape. Providing seasonality across the entire site will help support the Site's ecological and amenity value.

General

Weed Control

- 3.51 To reduce excessive competition, a weed free area should be retained around planted species to a diameter of 0.5m. Any weeds that develop at the base of the trees should be removed by hand or other appropriate means. Mulch will be implemented to a depth of 75mm and should be monitored to retain depth.
- 3.52 In certain instances, herbicide maybe the most effective measure to remove unwanted species. Where herbicide application is needed this should be in small, controlled areas and should only target the undesirable species. Shields should be used as appropriate to prevent drift into sensitive areas. Herbicides should comply with the Control of Pesticides Regulations as amended (1997) and be on the current list of approved products.

Replacement of Failed Planting

- 3.53 Failed planting will be re-planted with the same species. If there is a continuous failure of a certain species, it should be reviewed and, if appropriate, an alternate species will be planted instead.

Watering

- 3.54 Watering is recommended during periods of drought in the first couple of years following planting. Water should be applied to the base of the ornamental planting amount relevant to the specific species, as required, between April and September.

Shrubs

Pruning

- 3.55 Pruning will be undertaken to clear deadwood, promote healthy growth and produce desired growth of flowers, fruit, foliage, or winter colour as appropriate. Pruning will also include for clearing out crossing and damaged branches.
- 3.56 Branches to be removed should be taken back to an outward facing node and cut cleanly approximately one inch above on a diagonal angle. Pruning will be undertaken carefully by manual means with appropriate hand tools such as secateurs or loppers, which should be regularly sharpened and cleaned after use to prevent the potential spread of disease.
- 3.57 Where pruning is limited to the extent of the current year's growth, work can be carried out at any time of year. If the pruning will be extensive then the works should be undertaken outside of bird nesting season (March to August inclusive).

Herbaceous Perennials

Deadheading

- 3.58 Herbaceous perennials should be deadheaded throughout the growing season to maintain aesthetic value and to encourage the production of new flowers, extending the flowering season. Early flowering perennials such as geraniums can be cut to near ground level after flowering to encourage late summer flowering. These will then be cut back again in between September and November or March and May.

Vegetation Removal

- 3.59 Dead, broken, damaged, diseased stems will be removed throughout the year. Maintenance must be undertaken carefully by manual means with appropriate hand tools such as shears or secateurs; which should be regularly sharpened and cleaned after use to prevent the potential spread of disease.

Soil aeration

- 3.60 Bare soil will be hand cultivated with appropriate tools by aerating and turning the soil to remove compacted areas and breaking the surface crust and removing weed growth. Care will be taken not to damage plants and their root structures.

Fertiliser

- 3.61 The bark mulch will be lifted or removed, and a suitable all-purpose organic soil fertiliser (NPK 5-5-5) will be turned into the soil in autumn to maintain appropriate growing medium for the plants throughout the following growing season where feasible.

Amenity Grass

Management Intentions

- 3.62 Open areas of grassland will be managed as required to maintain a tidy appearance as well as facilitating safe usage. These areas of amenity grassland will contribute to the sites overall amenity value and will provide additional wildlife habitat for noted wildlife species on-site and the surrounding landscape.

Maintenance Operations

Grass Cutting

- 3.63 The grass will be kept as medium 'walk on' length of 35-50 mm. Arisings will be removed and disposed of appropriately.

Cultivating and Re-seeding

- 3.64 Any bare ground will be cultivated and re-seeded as required to successfully establish sward. This will be carried out twice annually between August and October.

Weed Control

- 3.65 Weed control will be undertaken annually between April and September and where feasible should be undertaken by hand pulling and should remove all noxious weeds such as docks, thistles, nettles, ragwort, and willowherb.
- 3.66 In certain instances, herbicide maybe the most effective measure to remove unwanted species. Where herbicide application is needed this should be in small controlled areas and should only target the undesirable species. Shields should be used as appropriate to prevent drift into sensitive areas. Herbicides should comply with the Control of Pesticides Regulations as amended (1997) and be on the current list of approved products.

Bulbs in Grass

Management Intentions

- 3.67 The proposed bulb planting within the grassland areas will add further amenity value to the Site. These annual bulbs will provide floral diversity and will supplement the surrounding grassland habitat. The proposed bulb planting will be implemented along the grass habitat within the north of the proposed development.

Maintenance Operations

Grass Cutting

- 3.68 Approximately 6-8 weeks after flowering, the bulb planted area will be cut with the surrounding grass.

Wildflower Meadow, Wildflower and Shady Grass

Management Intentions

- 3.69 Areas of wildflower meadow are proposed to introduce ecological diversity and valuable wildlife habitats. The timing and frequency of grass cuts will be determined by management procedures required to maximise conservation benefits of desirable flora species and maintaining grassland habitats. These wildflower meadows will be supported by areas of shady grass providing a gradation and varied grassland habitat across the site. The implementation of varied grass habitat will support identified wildlife species on-site by providing suitable community, foraging, and sheltering habitat.

Maintenance Operations

Grass Cutting

- 3.70 The wildflower sward will be cut to a height of no less than 150mm every 6-8 weeks between April and September in the first year.
- 3.71 From year two onwards, the grass will be cut annually to a height of 150mm once seed heads have dropped in late September.
- 3.72 Arisings will be left in situ for 24 hours to allow flower seed to disperse. The arisings will then be raked and removed from the Site to prevent nutrient enrichment and to retain the desired species composition.
- 3.73 Grass cutting will be avoided between mid-March and August (inclusive) to prevent risk of disturbance and destruction to nesting birds.

Cultivating and Re-seeding

- 3.74 Any bare ground will be cultivated and re-seeded as required to successfully establish sward. This will be carried out twice annually between August and October.

Weed Control

- 3.75 Weed control will be undertaken annually between April and September and where feasible should be undertaken by hand pulling and should remove all noxious weeds such as docks, thistles, nettles, ragwort, and willowherb.

Fertiliser Use

- 3.76 Fertiliser is not to be applied to any of the wildflower areas in order to conserve the development of a diverse sward.

Wetland and Pond Edge Mix

Management Intention

- 3.77 The wet grassland and pond edge mix is proposed to provide GCN refuge and foraging habitat around the pond edge. The management of marginal vegetation should ensure that these areas retain their aesthetic function within the landscape, whilst also enhancing species diversity and valuable wildlife habitats.
- 3.78 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.

Maintenance Operations

Grass Cutting

- 3.79 Cut the vegetation to a height of 150mm (approx.) annually and remove arisings between April and October.
- 3.80 In order to avoid 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.
- 3.81 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.
- 3.82 The necessary health and safety precautions must be undertaken when cutting grass on steep slopes. 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 areas to provide additional habitat. Arisings will be lightly raked off, with great care being taken to avoid disturbance to amphibians or damaging hibernacula hidden in the grass.
- 3.83 Noxious weeds such as docks, thistles, nettles, ragwort, and willowherb will be controlled by hand pulling.

Cultivating and Re-seeding

- 3.84 Any bare ground will be cultivated and re-seeded as required to successfully establish sward. This will be carried out twice annually between August and October.

Weed Control

- 3.85 Weed control will be undertaken annually between April and September and where feasible should be undertaken by hand pulling and should remove all noxious weeds such as docks, thistles, nettles, ragwort, and willowherb.

Fertiliser Use

- 3.86 Fertiliser is not to be applied to the grassland in order to conserve the development of a diverse sward.

Key Performance Indicators

- 3.87 Key Performance Indicators are detailed to assess the development of wetland and pond edge mix. The DEFRA statutory biodiversity metric technical annex 1: condition assessment sheets have been utilised to inform KPIs. The KPIs should be reviewed by a suitably qualified person (Ecologist) during the monitoring methodology detailed in chapter 4.0. A summary of key attributes and indicators is detailed below:

Table 2 Aquatic Marginal Mix and Ponds KPIs

UKHab Definition	Monitoring interval
Wetland - Reedbeds	Annually between March and September (25-year management period)
Water Table - The water table is at, or near the surface throughout the year - this could be open water or saturation of soil at the surface. No artificial drainage unless especially to maintain water level as specified above. Appearance and composition - The vegetation identified within the areas of wetland and pond edge mix closely matches the UKHab definition, with vascular and in-vascular characteristics indicator species consistently present. Water supply - The water supplies (Groundwater, surface water or rainwater) the wetland and pond edge mix are good water quality, with clear water (low turbidity) indicator no obvious sign of pollution. Scrub cover - The cover of scrub habitat within or near the wetland and pond edge mix is less than 10%. Bare ground - Bare ground coverage near and within the wetland and pond edge mix is less than 5%. Absence of Invasive Non-Native Species (INNS) - There is an absence of listed INNS. Species indicating suboptimal condition (Creeping thistle, Spear thistle, Common nettle, Docks and Common ragwort) make up less than 5% of ground cover.	

Aquatic Marginal Mix and Ponds

Management Intention

- 3.88 The maintenance of open water and provision of dense stands of emergent, 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.
- 3.89 Once the pond has established, it should be managed in the long term to retain at least 35-60% of the surface area as open water. This should be achieved through the pulling or cutting back of marginal and emergent vegetation.

Maintenance Operations

Inspection

- 3.90 An annual inspection of the marginal mix and waterbody area will be undertaken in September to assess bank stability, presence of fish, water quality, and coverage of aquatic/marginal vegetation, drainage, and depths.
- 3.91 The pond will be regularly inspected and kept free from litter and debris which may have a detrimental effect on biodiversity. 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 dominant 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.
- 3.92 In the event monitoring identifies the presence of fish as a concern to the viability of the pond (specifically its suitability for maintaining the GCN population), fish removal will be implemented in accordance with current best practice. At the time of writing, guidance set out by Amphibian and Reptile Conservation is the most relevant (Fish Control Methods for Great Crested Newt Conservation, September 2010). The first option for fish removal will include draining down ponds in winter and leaving them to dry to remove fish. This may be combined with trapping or electrofishing, during the dormant period during late autumn or early spring. It should be noted that the NRW no longer issue consents for Rotenone application for this type of activity.
- 3.93 No fertilisers or pesticides will be used within the pond or wet grassland within such proximity to the associated pond so that drift will affect the wet grassland or pond.

Proposed Aquatic Planting

- 3.94 To ensure the diversity of aquatic flora species, macrophytes 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.
- 3.95 Marginal and emergent vegetation control will be implemented during the autumn (September to November). Cutting or pulling will be implemented by hand. Arisings will be placed onto protective membrane around the pond edge for 48 hours to allow invertebrate to re-enter the pond. The arisings will then be removed from Site.

Desilting

- 3.96 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. De-silting will be restricted to the central section of the pond with marginal vegetation retained. 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.
- 3.97 In the event dominant or harmful species are identified, a treatment plan will be drawn up; spot treatment or pulling by hand will be the preferred method.
- 3.98 In the event significant works are required to the pond more than one year after its completion (such as draining to fix levels or desilting), a licensed GCN ecologist will be appointed to carry out an amphibian survey prior to the works.

Key Performance Indicators

- 3.99 Key Performance Indicators are detailed to assess the development of aquatic marginal mix and ponds. The DEFRA statutory biodiversity metric technical annex 1: condition assessment sheets have been utilised to inform KPIs. The KPIs should be reviewed by a suitably qualified person (Ecologist) during the monitoring methodology detailed in chapter 4.0. A summary of key attributes and indicators is detailed below:

Table 3 Aquatic Marginal Mix and Ponds KPIs

UKHab Definition	Monitoring interval
Lakes - Ponds (Non-priority habitat)	Annually between March and September (25-year management period)

UKHab Definition	Monitoring interval
Water Quality - The ponds is of good water quality, with clear water indicating no obvious sign of pollution. Semi-natural habitat - Where achievable the ponds should have semi-natural habitat completely surrounding the pond, for at least 10m from the pond edge of its entire perimeter. Weed/Algae coverage - Less than 10% of the ponds water surface is covered by duckweed or filamentous algae. Connection and water levels - Where relevant the ponds will not be artificially connected via ditches or artificial pipe work and pond levels can fluctuate naturally throughout the year. No obvious artificial dams or pipework. Absence of Invasive Non-Native Species (INNS) - There is an absence of listed INNS plant and animal species. Fish Stock - The ponds are not artificially stocked with fish, if the pond naturally contains fish these will be removed accordingly to support GCN populations. GCN Newt Number - 25 newts per land parcel will be monitored and reviewed as part of the 25-year monitoring period.	

Butterfly Bank

Management Intention

- 3.100 Butterfly banks will be implemented along the site boundary and will be situated within surrounding landscape elements including amenity grassland and wildflower meadow. These bank areas will form open, sunny spaces rich with early herbs and perennial species which will form a variety of breeding habitat for locally identified butterfly species.

Maintenance Operations

Removal of Debris and Rubbish

- 3.101 Any debris and rubbish identified during the monthly visual inspections will be removed.
- 3.102 Any soft pliable debris noted within the pond during April to, and including, August will be left in situ as they may support GCN eggs. A full cleanse after mid-September will be implemented once eggs are hatched and most larvae have developed.

Strimming

- 3.103 The butterfly bank areas will be strimmed annually to a height of 100mm, and will be conducted at the end of the growing season to minimise disturbance to these areas of forbs and herbaceous species.

Scrub and Weed Control

- 3.104 Encroachment of scrub other vegetation including noxious weed species will be monitored annually and reduced as required. Any colonising scrub within 5m of the bank will be removed to reduce shading. This will be carried out annually between September and February to avoid bird nesting season.

Herbicide Use

- 3.105 Use of herbicides near the butterfly banks will be avoided.

Cultivating and Re-seeding

- 3.106 Any bare ground will be cultivated and re-seeded as required to successfully establish sward. This will be carried out twice annually between August and October.

Hibernacula

Management Intention

- 3.107 Amphibian hibernacula are to be maintained in a viable condition so as to provide shelter and winter refuge to amphibians. Amphibian refuge features are located across the development site and the additional GCN mitigation area.

Maintenance Operations

Inspections and Remedial Measures

- 3.108 Hibernacula will be inspected during the monthly site inspections to ensure they are in a viable condition.
- 3.109 In the event the condition of the hibernacula deteriorates to a point that maintenance cannot ensure its viability, a new hibernacula will be implemented nearby. The existing hibernacula will be maintained in situ in its existing condition; if this is not desirable, an ecologist licensed to handle GCN will be appointed to supervise the dismantling of the non-functioning hibernacula.
- 3.110 Grass or shrub atop the hibernacula and within 0.5m of the refuge features will be left uncut to avoid disturbance to the refuge feature.

Wildlife Tunnel Corridor

Management Intention

- 3.111 A wildlife tunnel corridor will be implemented within the development boundary and will provide a connectivity through the centre of the development footprint from the north site to the south site, allowing for viable commuting habitats for GCN and hedgehog on-site. Similar specification has been utilised on previous sites within the Buckley Special Area of Conservation (SAC). The tunnel will also protect wildlife from road traffic, providing a safe crossing point.
- 3.112 The approximate specification for the wildlife tunnel will be 2m width, 0.8m height and the length of a standard road (approximately 10m). This will enable wildlife to channel towards the entrance via the fencing and stopped short of third-party land and allowed to commute into the wider landscape.

Management Operations

Inspection and Remediation measures

- 3.113 The tunnel will be inspected monthly to assess for any debris or litter which may be blocking the entrances to ensure it is commutable from both access points.
- 3.114 Where debris and litter has been identified this will be removed from site accordingly. Any damages will be repaired as required and following the original specification.

Exercise Areas

Management Intention

- 3.115 Two 'Fitness Stops' with training equipment and reclaimed timber seating will be implemented across the Site. These areas of amenity use will be utilised for recreational activities and will support the Site's overall amenity value. These areas will supplement the surrounding soft landscape and provide hard landscaping that is functional and safe for usage as intended as part of the proposed development.

Maintenance Operations

Routine Inspection and Remedial Measures

- 3.116 A routine inspection of the equipment will be carried out twice weekly to identify any signs of vandalism and general damage/ wear of equipment and minor repairs carried out promptly. Any item considered unsafe must be removed or made safe and replaced as soon as possible.
- 3.117 The use of materials for repairs and replacements will conform to the original design specification for external works.

Detailed Operational Inspection

- 3.118 A detailed operational inspection will be undertaken every two months to check the operation and stability of the equipment, and any signs of wear.
- 3.119 The use of materials for repairs and replacements will conform to the original design specification for external works.

Exercise Area Surfacing

- 3.120 The exercise area surfacing will be repaired as required and replaced at a frequency recommended by the manufacturer's guidelines. The use of materials for repairs and replacements will conform to the original design specification for external works.

Seating Areas

Management Intention

- 3.121 The various seating areas across the Site will be maintained to a safe, clean, and functional condition. Any identified damage will be repaired or replaced following the original specification during implementation.

Maintenance Operations

Inspections and Remedial Measures

- 3.122 Benches will be inspected during the monthly site inspection. Any bench considered unsafe will be removed or made safe and/or replaced as soon as possible. The use of materials for repairs and replacements will conform to the original design specification for external works.
- 3.123 Graffiti removal will be carried out as required.

Surfacing and GCN Kerbs

3.124 Management Intention

- 3.125 Hardstanding surfacing will include newt friendly kerbs which will provide suitable commuting surfacing for identified GCN on-site and to support the identified population. The GCN friendly kerbs will be implemented on drains adjacent to the ecological areas within the Utopia City.

3.126 Management Operation

Inspection and Remediation measures

- 3.127 Kerbs and surfacing will be inspected monthly with any identified damaged areas being repaired as required and following the original specification.

Salt Surfacing

- 3.128 During winter months and during periods of ice and frost salt will be avoided in favour of gritting roads to support the ecological value of the Site.

4.0 Monitoring and Review

Site Monitoring

- 4.1 The key measures described in the table below will enable the landowner and/or the managing organisation to measure the appropriateness of landscape maintenance operations and whether management of the Site is meeting the long term management objectives.

Table 4 Key Measures for Monitoring

Feature	Key Measures
Site wide	Is the landscape establishing well and attractive to residents and wildlife overall? Is the Site in a clean and tidy condition? Is public access to the Site maintained? Are there any health and safety hazards / deficiencies which require rectification? Does the Site comply with the relevant environmental and health and safety legislation (as set out in Appendix D of this Plan)? Are there any instances where planting is repeatedly failing? If so, has an Arboricultural consultant or landscape architect been consulted with to specify an alternative species?
Existing Trees	Carry out an inspection to note any deficiencies. Concerns about risks to public health and safety and tree health, should be reported and specialist input sought as necessary. Review arboriculture assessment for recommendations on thinning and tree works.
Proposed Trees and Native Thickets	Stakes and ties to be inspected and newly planted trees re-firmed and kept weed free. Any dead or dying trees should be replaced as specified in the original planting plan. Review arboriculture assessment for recommendations on thinning and tree works.
Existing Hedgerow	Carry out an inspection to note any gaps and re-plant with suitable native species.

Feature	Key Measures
Proposed Hedgerow, Hedgerow and Hedgerow and Shady Area Grass	Inspection of the general establishment of the hedges until the branches of adjacent plants fully merge together to establish dense branch growth. Any dead or dying plants should be replaced as specified in the original planting plan. Inspect planting and prune as required, or prune straight away if presents a hazard.
Shrubs and Herbaceous	Condition of mulch, including coverage, depth and effectiveness as a weed suppressant to be inspected. Any dead or dying specimens should be replaced as specified in the original planting plan. Inspect planting and prune as required, or prune straight away if damaged and presents a hazard.
Amenity Grass	Inspection of the grass to ensure a well maintained weed free appearance. Re-seed as required.
Bulbs in Grass	Inspection of the general condition of the bulb planting.
Wildflower Meadow, Wildflower and Shady Grass	Inspection of the grass to ensure botanical diversity, weeds kept to a minimum, and no scrub encroachment. Re-seed as required.
Wetland and Pond Edge Mix	Inspection of the grass to ensure botanical diversity, weeds kept to a minimum, and no scrub encroachment. Re-seed as required.
Aquatic Marginal Mix and Ponds	Inspection of the marginal mix to ensure botanical diversity, weeds kept to a minimum, and no scrub encroachment.
Butterfly Bank	Inspection to the banks and ensure any tree or shrub saplings within 5m are removed. Review assessments following inspections and carry out recommended works.
Hibernacula	Carry out inspection to check condition and remove blockages from access points.
Exercise Areas	Carry out regular inspections to identify deficiencies such as any signs of vandalism and general damage/ wear of equipment and minor repairs carried out promptly. Any item considered unsafe must be removed or made safe and replaced as soon as possible.

Feature	Key Measures
Seating Areas	Carry out an inspection to note any damage and carry out repairs/ replacement.

GCN Monitoring

- 4.2 The Post Construction Monitoring Plan will follow the Wales Great Crested Newt (GCN) Monitoring Scheme which will be implemented on-site for the duration of the 25 year management period. This will include an annual GCN survey that will be implemented across the site to review the GCN population growth or declines, this will be implemented alongside the HMP review.
- 4.3 The GCN surveys will be implemented as abundance counts and Habitat Quality Assessments via the Habitat Suitability Index (HIS) scores to ensure GCN habitats is being managed to support the noted GCN population.
- 4.4 Net world Sports will work in conjunction with the appointed Management organisation to facilitate a suitably qualified person (Ecologist) who will monitor and detail key performance indicators for GCN and will report the results of the annual GCN surveys for a period of 25 years.
- 4.5 All associated water bodies on-site including mitigation ponds will be labelled as detailed on the Additional Great Crested Newt Mitigation Plan (TEP ref:G9134.040). The plan should be reviewed in conjunction with the Key Performance Indications as detailed in tables 3 and 4 for Wetland and aquatic planting habitat which will support the noted GCN population.

HMP Review

- 4.6 The HMP will be reviewed on an annual basis by the landowner and the appointed managing organisation and other key partners to ensure that the plan is meeting the original management objectives and responding to the developing needs of the Site.
- 4.7 The annual review will identify the need for additional maintenance operations and inform future management decisions. This can be achieved by:
- Quarterly formal site inspections by the managing organisation to assess the appointed contractor's quality standards and deliverables in line with this HMP relating to habitats and noted species;
 - An annual site meeting with the managing organisation and stakeholders and the appointed contractor to assess quality standards and deliverables in line with this HMP; and
 - Ad hoc unannounced inspections by the managing organisation to review quality of maintenance work and any potential Health and Safety issues.
- 4.8 The managing organisation will produce an annual report, summarising the management of the Site over the last year. The report will include the key measures achieved, actions going forward and any updates to the maintenance operations if required, and how this information will be communicated to stakeholders and resident/friends groups.

- 4.9 It is also recommended the managing organisation produces a cash-flow forecast for the next 3-5 years but that can be flexible enough to respond to changing circumstances. This will ensure sufficient funds are in place to deliver long term management of the Site.
- 4.10 An appropriately qualified landscape consultant will formally re-assess the HMP and annual review information on a five yearly basis to ensure the habitats and landscaping associated with the Site are being maintained as intended for the Sites use and ecological value.

APPENDIX A: Landscape Strategy - Overall Overview (Nicholsons ref: D22-2630, V5)



GENERAL NOTES:
Mature existing trees on site will be protected in accordance with BS5837 (2012) Trees in Relation to Design, Demolition and Construction and based on the approved Tree Protection Scheme for the site.
Bird and Bat box provision will be included on site using appropriate boxes in locations in line with Ecological recommendations based on findings of species on site and to help establish the wider bat and bird populations within the Industrial Estate.
Butterfly and Bee Banks can also be created in identified locations by using sharp sand over soil in a linear or horseshoe shape on South/West facing areas. A mosaic patchwork arrangement can support a rich diversity of invertebrate including the rare Dingy Skipper and Grizzled Skipper butterflies that are within the wider industrial estate site.
Footpaths have been aligned to avoid the Root Protection Areas (RPA) of existing mature tree groups on site to ensure continued health and longevity of species identified in accordance with BS5837(2012) guidelines.
Native Tree species will be used throughout the scheme and will follow guidance from the North Wales Wildlife Trust and ecological consultants to include suitable local species such as Pendurculet Oak, Field Maple, Alder, Birch and Crack Willow in appropriate locations.

PROPOSED LANDSCAPE ELEMENTS:
Proposed Trees in Detailed component: 575 no. mixed native species
Proposed Trees in Outline component: 546 no. mixed native species (Total: 1121 no.)
Proposed native hedgerow - Detailed and Outline component: 4830m (4.83km) mixed native species
Proposed hedgerow trees (larger sizes planted within hedgerows): 69 no. mixed native species
Ponds - proposed additional in-line corridor to be retained: 78m² (0.078ha) 16 no. additional 'step stone' ponds
Ponds - existing ponds in-line corridor to be retained: 90.1m² (0.090ha) 2 no. existing ponds
Relocated ponds within site: Pond 01 (242m²); Pond 02 (798m²); Pond 03 (740m²)

Contoured Mounding using landform in a flowing way can help define space and create a pleasant sense of enclosure
Bare Earth scarified mosaic mounds to provide butterfly and bee blank habitat and breeding grounds at intervals around site
Relocated Pond 01 from within site (242m²)
BUNDLING LANDFORM to follow engineers specification and to include native tree species, shade tolerant wildflower grass mix on north side of bund
BOUNDARY BUND PLANTING - native woodland planting using suitable evergreen and deciduous species will create screening from the outside and reinforce the existing boundary hedgerows
Informal seating spaces within landscaped areas
Wellness Trail circulation path to connect to external path system
Drainage swales along main avenue to follow Tier Consulting drainage strategy drawings
ENTRY SIGNAGE - brick signage walls, brick landform and G1 planting to create legible entrance
ENTRY ROUNDABOUT - wildflower grass mix
For Detailed Existing Tree Information, refer to TEP drawings D9134.01.200-203 Tree Constraints Plan and associated Arboricultural survey data sheets

BOUNDARY HEDGEROWS - protecting and enhancing the existing boundary hedgerows is important for visual screening but also as part of the wildlife corridors and habitats creating linear connections for commuting bats and bird species
Informal Boundary Planting - existing boundary planting can be enhanced with informal groups of native species to create a cohesive planting approach and improve the hedgerow characteristics
CENTRAL ECOLOGICAL CORRIDOR - 38m width wildlife connection corridor which retains existing trees, ponds with additional 'step stone' ponds, aquatic marginal planting, native trees and scrub, and wildflower species to further enhance this important site feature.
EXISTING TREE GROUPS AND HEDGEROWS TO BE RETAINED ALONG BOUNDARY
T93, T94, G12#, H18, T96, T118#, T95, T105, T103, T104, T102, T101, T100, T106, T107, T108, T109, T110, T112, T111, T113, T114, T115, T116, T117, T119, T120, T121, T122, T123, T124, T125, T126, T127, T128, T129, T130, T131, T132, T133, T134, T135, T136, T137, T138, T139, T140, T141, T142, T143, T144, T145, T146, T147, T148, T149, T150, T151, T152, T153, T154, T155, T156, T157, T158, T159, T160, T161, T162, T163, T164, T165, T166, T167, T168, T169, T170, T171, T172, T173, T174, T175, T176, T177, T178, T179, T180, T181, T182, T183, T184, T185, T186, T187, T188, T189, T190, T191, T192, T193, T194, T195, T196, T197, T198, T199, T200, T201, T202, T203, T204, T205, T206, T207, T208, T209, T210, T211, T212, T213, T214, T215, T216, T217, T218, T219, T220, T221, T222, T223, T224, T225, T226, T227, T228, T229, T230, T231, T232, T233, T234, T235, T236, T237, T238, T239, T240, T241, T242, T243, T244, T245, T246, T247, T248, T249, T250, T251, T252, T253, T254, T255, T256, T257, T258, T259, T260, 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APPENDIX B: Outline Component - Specification (Nicholsons ref: 22-2628 V3.1)

OUTLINE COMPONENT AREAS (ZONE A1, A2 AND ZONE B) PLANTING SCHEDULE

EXISTING TREES - To be protected in accordance with 'BS5837 (2012): Trees in Relation to Design, Demolition and Construction' and based on approved Tree Protection Scheme for the site.
Refer to TEP drawings D9134.01.200-203 Tree Constraints Plan and associated Arboricultural survey data sheets for detailed information on trees.

PROPOSED REGULAR STANDARD TREES
8-10cm, 10-12cm and 12-14cm girth; 2.75 - 3.0m height; 1.75 - 2.0m clear stem BARE ROOT.
To be planted within all landscape external and bund mounding areas as shown on plan. Pedunculate Oak trees to be sited at specified intervals to allow good long term growth to follow the pattern of existing Oaks on site. Other species to be planted in groups of 2-5 to form a natural flow within the landscape areas.

Acer campestre	Field Maple
Alnus glutinosa	Common Alder
Betula pendula	Silver Birch
Carpinus betulus	Hornbeam
Crataegus monogyna	Hawthorn
Corylus avellana	Hazel
Frangula alnus	Alder Buckthorn
Malus sylvestris	Crab Apple
Pinus sylvestris	Scots Pine
Populus nigra	Black Poplar
Prunus avium	Wild Cherry
Prunus padus	Bird Cherry
Prunus spinosa	Blackthorn
Quercus palustris	Pin Oak
Quercus robur	Pendunculate Oak
Salix fragilis	Crack Willow
Salix caprea	Goat Willow
Sorbus aucuparia	Rowan
Sorbus torminalis	Wild Service Tree

PROPOSED HEDGEROW TREES
6-8cm girth; 1.5-1.75m height; BARE ROOT
To be planted within native hedgerow grid mix in positions indicated on plan.

Acer campestre	Field Maple
Crataegus monogyna	Hawthorn
Malus sylvestris	Crab Apple
Populus nigra	Black Poplar
Prunus avium	Wild Cherry
Quercus robur	Pendunculate Oak
Sorbus aucuparia	Rowan

PROPOSED REGULAR STANDARD TREES (Within car park areas)
12-14cm girth; 2.75 - 3.0m height; 1.75 - 2.0m clear stem BARE ROOT.
Trees to have a slightly more urban feel as cultivars, to be planted within landscape planter beds in the car park areas.

Acer davidii 'George Forrest'	Snake Bark Maple
Carpinus betulus 'Fastigiata'	Upright Hornbeam
Malus purpurea 'Purple Wave'	Flowering Crab Apple
Pyrus calleryana 'Chanticleer'	Ornamental Pear
Sorbus aucuparia 'Cardinal Red'	Rowan

PROPOSED NATIVE HEDGE (MIX 1) SITE BOUNDARIES
0.75m wide hedge, planted in a double staggered row at 0.75m spacing; 0.5m between rows.

Crataegus monogyna	Hawthorn	35%
Prunus spinosa	Blackthorn	20%
Alnus glutinosa	Alder	5%
Corylus avellana	Hazel	10%
Ilex aquifolium	Holly	5%
Rosa canina	Dog Rose	5%
Sambucus nigra	Elder	5%
Frangula alnus	Alder Buckthorn	10%
Viburnum opulus	Guelder Rose	5%

PROPOSED NATIVE HEDGE (MIX 2) SECURITY HEDGING
0.75m wide hedge, planted in a double staggered row at 0.75m spacing; 0.5m between rows. This hedge is situated where access and security are more of an issue in closer proximity to fences and units.

Crataegus monogyna	Hawthorn	50%
Prunus spinosa	Blackthorn	35%
Corylus avellana	Hazel	5%
Ilex aquifolium	Holly	5%
Rosa canina	Dog Rose	5%

SHRUB & GROUNDCOVER PLANTING
Shrubs to be planted at around 500mm centres; 4no plants/m2; pot grown 1-3L; 300-600mm height based on species, bushy form with multiple breaks from base. Planting areas are within car parks, at specified entrances and key areas where pedestrian use is higher. To include but not limited to the following:

Cornus sanguinea 'Midwinter Fire'
Escallonia 'Apple Blossom'
Ceanothus 'Skylark'
Hebe rakaiensis
Rosa 'Snow Carpet'
Lonicera nitida
Spiraea shirobana
Sarcococca hookeriana var Digyna
Stephanandra incisa 'Crispa'
Symphoricarpos x chenaultii 'Hancock'
Osmanthus burkwoodii
Pachysandra terminalis
Potentilla 'Primrose Beauty'
Viburnum trilobum
Crab Apple
Viburnum tinus 'Eve Price'
Vinca minor
Weigela florida 'Ebony & Ivory'
Anemranthe lessoniana (ornamental grass)
Deschampsia caespitosa (ornamental grass)

NATIVE THICKET (SCRUB) MIX - (Woodland Understorey planting)	
Cornus sanguinea	10%
Crataegus persimilis 'Prunifolia'	10%
Euonymus europaeus	10%
Viburnum lantana	15%
Hippophae rhamnoides	15%
Rhamnus cathartica	5%
Ilex aquifolium	5%
Rosa canina	10%
Salix phylicifolia	10%
Rubus 'Betty Ashburner' (groundcover)	5%
Vinca major (groundcover)	5%

BULBS PLANTED WITHIN GRASS AREAS
Random planted drifts of native and non-native bulbs to include but not limited to the following:

Crocus chrysanthus 'Blue Pearl'	25%
Galanthus nivalis	25%
Narcissus thalia	15%
Tulipa negrita	15%
Anemone blanda 'Blue'	10%
Camassia leichtlinii 'Caerulea'	10%

AQUATIC AND MARGINAL PLANTING - GENERAL
Planting palette to include locally occurring water plants and marginal species (under local suitability guidance) such as:
Lemna minor Duckweed
Apium nudiflorum Fools Watercress
Filipendula ulmaria Meadowsweet
Anthriscus sylvestris Cow Parsley

Other marginal species to be used in addition to wildflower mixes below:			
Angelica gigas	Purple angelica		
Caltha palustris	Marsh marigold		
Eupatorium cannabinum	Hemp agrimony		
Lotus pedunculatus	Greater birds foot trefoil		
Lycopus europeaus	Green archangel		
Mentha aquatica	Water mint		
Pulicaria dysenterica	Common fleabane		
Ranunculus acris 'Flore-Plena'	Double meadow buttercup		

AQUATIC MARGINAL MIX 1 (Wildflowers for Pond Edges - EP1F mix)			
Carex pendula	Pendulous sedge	2%	
Centaurea nigra	Common knapweed	10%	
Crucata aevoipes	Crosswort	10%	
Dipsacus fullonum	Wild teasel	2%	
Filipendula ulmaria	Meadowsweet	10%	
Galium album	Hedge bedstraw	2.5%	
Geranium pyreniacum	Hedge cranesbill	5%	
Geum rivale	Water avens	1.5%	
Iris pseudacorus	Yellow iris	13%	
Lycopus europaeus	Gypswort	2%	
Oenanthe pimpinelloides	Corky fruited water dropwort	1%	
Prunella vulgaris	Selfheal	0.5%	
Rhinanthus minor	Yellow rattle	2.5%	
Silene dioica	Red campion	13%	
Silene flos-cuculi	Ragged robin	15%	

AQUATIC MARGINAL MIX 2 (Central Ecological Corridor) Wildflowers for wetlands - EM8F Mix			
Achillea millefolium	Yarrow	10%	
Betonica officinalis	Betony	0.5%	
Galium verum	Ladys bedstraw	12%	
Leucanthemum vulgare	Oxeye daisy	3%	
Plantago lanceolata	Ribwort plantain	20%	
Rumex acetosa	Common sorrel	0.5%	
Silaum silaus	Pepper saxifrage	0.5%	
Primula veris	Cowslip	1%	
Silene flos-cuculi	Ragged robin	5%	
Ranunculus acris	Meadow buttercup	7%	
Lotus pedunculatus	Greater birdsfoot trefoil	4%	
Lathyrus pratensis	Meadow vetchling	2%	
Succisa pratensis	Devils bit scabious	0.5%	
Sanguisorba officinalis	Great burnet	5%	
Vicia cracca	Tufted veitch	0.5%	
Angelica	Wild angelica	0.5%	
Centaurea nigra	Common knapweed	20%	
Filipendula ularia	Meadowsweet	5%	
Leontodon hispidus	Rough Hawkbit	3%	

WILDFLOWER GRASS AREAS
Species Rich Wildflower Meadow mix 20:80 mix (20 Wildflower species; 5 grass species). Mix BFS 10 - supplied by British Flora Ltd or similar approved; seed sown at rate of 3gm/m2 in accordance with the suppliers sowing instructions.

- Wildflowers:**
- 3% Achillea millefolium - (Yarrow)
 - 8% Centaurea nigra - (Black Knapweed)
 - 5% Centaurea scabiosa - (Greater Knapweed)
 - 3% Daucus carota - (Wild Carrot)
 - 8% Galium verum - (Lady's Bedstraw)
 - 2% Hypericum perforatum - (Perforate St John's Wort)
 - 1% Hypochaeris radicata - (Cat's-ear)
 - 7% Knautia arvensis - (Field Scabious)
 - 4% Leucanthemum vulgare - (Oxeye Daisy)
 - 4% Lotus corniculatus - (Bird's-foot Trefoil)
 - 3% Malva moschata - (Musk Mallow)
 - 4% Medicago lupulina - (Black Medick)
 - 6% Plantago lanceolata - (Ribwort Plantain)
 - 2% Primula veris - (Cowslip)
 - 8% Prunella vulgaris - (Selfheal)
 - 6% Ranunculus acris - (Meadow Buttercup)
 - 6% Rhinanthus minor - (Yellow Rattle)
 - 8% Sangisorba minor - (Salad Burnet)
 - 6% Silene alba - (White Campion)
 - 6% Vicia sativa ssp nigra - (Common Vetch)

- Grasses:**
- 5% Agrostis castellana - (Common Bent)
 - 15% Cynosurus cristatus - (Crested Dogtail)
 - 25% Festuca rubra ssp commutata - (Chewings Fescue)
 - 25% Festuca rubra ssp litoralis - (Slender CRF)
 - 30% Festuca ovina - (Sheep's Fescue)

HEDGEROW AND SHADY GRASS AREAS
A mixture of grasses and perennial wildflowers that are tolerant of shade and semi-shade conditions. Mix BFS 6 - supplied by British Flora Ltd or similar approved; Suitable for sowing alongside hedges, under trees and within established woodland. Mix BFS6; Sowing Rate: 5g/m²; Contains: Wildflowers 20% (20 species) Grasses 80% (9 species)

- Wildflowers:**
- 6.0% Achillea millefolium - (Yarrow)
 - 10.0% Agrimony eupatoria - (Agrimony)
 - 4.0% Alliaria petiolata - (Hedge Garlic)
 - 0.5% Arum maculatum - (Lords-and-Ladies)
 - 3.0% Campanula trachelium - (Nettle Leaved Bellflower)
 - 10.0% Centaurea nigra - (Black Knapweed)
 - 8.0% Digitalis purpurea - (Foxglove)
 - 4.0% Galium mollugo - (Hedge Bedstraw)
 - 1.0% Geranium pyrenaicum - (Hedgerow Crane's-bill)
 - 7.0% Geum urbanum - (Wood Avens)
 - 4.0% Hypericum hirsutum - (Hairy St John's Wort)
 - 8.0% Knautia arvensis - (Field Scabious)
 - 8.0% Prunella vulgaris - (Selfheal)
 - 8.0% Silene dioica - (Red Campion)
 - 5.0% Stachys sylvatica - (Hedge Woundwort)
 - 6.0% Teucrium scorodonia - (Wood Sage)
 - 3.0% Torilis japonica \endash (Upright Hedge Parsley)
 - 0.5% Verbascum thapsus - (Greater Mullein)
 - 2.0% Vicia sepium - (Bush Vetch)
 - 2.0% Vicia sylvatica - (Wood Vetch)

- Grasses:**
- 10.0% Agrostis capillaris - (Common Bent)
 - 2.0% Anthoxanthum odoratum - (Sweet Vernal Grass)
 - 1.0% Brachypodium sylvaticum - (Wood False Brome)
 - 30.0% Cynosurus cristatus - (Crested Dogtail)
 - 4.0% Deschampsia cespitosa - (Tufted Hair Grass)
 - 25.0% Festuca rubra ssp commutate - (Chewings Fescue)
 - 15.0% Festuca rubra ssp litoralis - (Slender CRF)
 - 8.0% Poa nemoralis - (Wood Meadow Grass)
 - 5.0% Poa trivialis - (Rough Meadow Grass)

WETLAND AND POND EDGE GRASS AREAS
A mixture of wildflowers and grasses suitable for sowing at the edges and wet margin of ponds, streams, lakes and ditches. Mix BFS 5 - supplied by British Flora Ltd or similar approved; Sowing Rate: 5g/m²; Contains: Wildflowers 20% (21 species) Grasses 80% (6 species)

- Wildflowers:**
- 6% Achillea ptarmica - (Sneezewort)
 - 2% Caltha palustris - (Marsh Marigold)
 - 5% Carex acutiformis - (Lesser Pond Sedge)
 - 1% Eupatorium cannabinum - (Hemp Agrimony)
 - 9% Filipendul ulmaria - (Meadow Sweet)
 - 2% Hypericum tetrapterum - (Square Stemmed St John's Wort)
 - 4% Iris pseudacorus - (Yellow Flag Iris)
 - 1% Juncus effusus - (Soft Rush)
 - 4% Leucanthemum vulgare - (Oxeye Daisy)
 - 8% Lotus pedunculatus - (Greater Bird's-foot Trefoil)
 - 5% Lychnis flos-cuculi \endash (Ragged Robin)
 - 4% Lythrum salicaria - (Purple Loosetrife)
 - 4% Lycopus europaeus - (Gypswort)
 - 8% Plantago lanceolata \endash (Ribwort Plantain)
 - 8% Prunella vulgaris - (Selfheal)
 - 1% Pulicaria dysenterica - (Fleabane)
 - 8% Ranunculus acris - (Meadow Buttercup)
 - 2% Ranunculus flammula - (Lesser Spearwort)
 - 8% Rhinanthus minor - (Yellow Rattle)
 - 2% Scrophularia auriculata - (Water Figwort)
 - 8% Succisa pratensis - (Devil's Bit Scabious)

- Grasses:**
- 12% Agrostis capillaris - (Common Bent)
 - 6% Alopecurus pratensis - (Meadow Foxtail)
 - 2% Anthoxanthum odoratum - (Sweet Vernal Grass)
 - 35% Cynosurus cristatus - (Crested Dogtail)
 - 5% Deschampsia cespitosa - (Tufted Hair Grass)
 - 40% Festuca rubra ssp litoralis - (Slender CRF)

GENERAL GUIDANCE

Timing
Ground preparation to be undertaken in advance of all planting and seeding. No soil handling to be undertaken when the soil is wet to the extent that loss of structure would occur.
Planting to be carried out in the first planting season following completion of the development (between December and March inclusive) unless by prior agreement with the Local Planning Authority.
Seeding of grassed areas to be undertaken in autumn.

Best practice
All soil handling and storage to be undertaken in accordance with the following British Standard Specifications and Code of practice:

- BS 1377: 1990 Soils for Civil Engineering Purposes
- BS 8601: 2013 Specification for Subsoil and Requirements for Use
- BS 3882: 2015 Specification for Topsoil
- Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (DEFRA)

All plant stock, plant handling and planting to be undertaken in accordance with the following British Standard Specifications and Code of Practice:

- BS 3936:1992 Part 1 Nursery Stock - Specification for trees and shrubs;
- BS 3936:1981 Part 10 Nursery Stock - Specification for ground cover plants;
- BS 3936:1998 Part 9: Nursery Stock - Specification for Bulbs, Corms, and Tubers;
- BS 4428:1989 - Code of Practice for General Landscaping Operations (excluding hard surfaces);
- BS 8545: 2014 Trees from nursery to independence in the landscape; and
- The Code of Practice for Plant Handling 2002 (Horticultural Trades Association).

Planted Stock quality
General
All stock must comply with the **Nicholsons Biosecurity Statement**.
Standard Trees
Tree form and overall condition, including root condition, to be in accordance with BS 8545: 2014 *Trees from nursery to independence in the landscape*. All trees are to be inspected prior to planting by a suitably qualified third party.
Plants and Shrubs
Plant stock to be supplied in accordance with the size and description specified on the plant schedule. Plants to be healthy, vigorous, free from pests and diseases, suitably hardened off for the proposed situation of planting, and lifted at a time in accordance with good nursery practice. Stock shall have a well-formed fibrous root system and be free from perennial weeds.
Bulbs
Bulbs to be true to name, free of pests and pathogens, and of the correct approved size for the species.
The following information must be made available upon request:

- The botanical name, genus, species and cultivar, and, if appropriate, the colour or the designation 'mixed';
- The number of bulbs/plants;
- The size class;
- Any preparatory treatment that has been carried out (for example, pre-treatment for Christmas flowering);
- Any recommendation regarding appropriate planting periods and any requirements for special conditions.

Ground preparation
Compliance:

- Topsoil to comply with BS 3882.
- Subsoil to comply with BS 8601.
- Operations to comply with Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (DEFRA).

Cultivation of Grassed Areas
Topsoil to be cultivated to a fine tilth, and be free from weeds, contaminants, stones over 50mm, and any other debris. Levels to be graded to form agreed finished levels and be free of local mounds and depressions.
Cultivation of Shrub Beds and Tree Pits
When shrub beds and tree pits occur in large grass areas, formation levels should be prepared at the specified depth for grass over the whole area. Further excavation should be subsequently carried out to the additional depth for shrub and tree planting.
In all cases, the soil profile is to be maintained when replacing.

Handling stock
Trees
All standard trees to be lifted, labelled, handled, transported, and temporarily stored in accordance with the procedures and methods illustrated in chapter 9 of BS 8545: 2014
Shrubs and smaller nursery stock
All plant stock to be lifted, bundled, labelled, packaged, transported, stored and planted in accordance with the procedures and methods illustrated in "Plant Handling" (Horticultural Trades Association).
Bare root stock
All plant stock to be lifted, bundled, labelled, packaged, transported, temporarily stored and planted in accordance with the procedures and methods illustrated in chapter 9 of BS 8545: 2014.
Plants to be delivered to site in quantities that can be planted the same day. Any unplanted stock is to be stored overnight in a covered location within nursery bags, or heeled in trenches, and is to be well watered. Desiccated root systems will not be accepted.

Planting operations
General
Planting to be undertaken between December and March inclusive during suitable weather conditions. All planted stock to be watered on same day to field capacity.
Standard Trees
Pits to be excavated to twice the diameter of the root system, container, or root ball, deep enough to accommodate the full root system to the base of the main stem following settlement. Trees must not be planted too deep. Sides of pit to be scarified by 200mm. Base to be punctured without breaking up soil.
Tree to be centrally located and stem placed in an upright position. Back-fill with excavated material, maintaining the original soil profile unless specifically stated otherwise.
Trees up to 12-14cmg to be supported with single 75mm stake to the prevailing windward side, and anchored with a single supersoft adjustable tree tie. Saw stakes to leave 500mm above soil level. Fix adjustable tree ties to the top 75mm of the stake.
All trees to be watered to field capacity on day of planting.
All works shall be carried out to the minimum standard according to BS 8545: 2014.
Planting Beds - General
Planting to be undertaken in appropriate weather conditions, avoiding prolonged periods of drought, and preferably preceding predicted precipitation.
Planting Beds - Containerised Shrubs
Pits to be excavated to at least one third larger than the root system. Backfill material to incorporate 30% organic matter and slow release fertiliser at 3g/m². Firm plants upright, ensuring root flare sits at soil level.

Planting Beds - Bare root stock up to 60cm high
Roots to be dipped in rooting hormone prior to planting. Notch plant at specified density using 'T' or 'L' notches, or pit planting if the root system is too large to accommodate this method. Firm in upright, protect with specified mammal guards and support with 22-24lb/100 bamboo canes with tapered end uppermost.
Planting Beds - Bare root stock over 60cm high
Planting to be undertaken in appropriate weather conditions, avoiding prolonged periods of drought, and preferably preceding predicted precipitation. Pits to be excavated to at least one third larger than the root system. Backfill material to incorporate 30% organic matter and slow release fertiliser at 3g/m². Firm plants upright, ensuring root flare sits at soil level. Protect with suitable mammal guards and support with 22-24lb/100 bamboo canes with tapered end uppermost.
Hedgerows - Bare root stock up to 60cm high
Hedge line is to be cultivated to a depth of 150mm prior to planting unless specifically indicated otherwise. Stock to be notch-planted at 5 plants per metre in double staggered rows using 'T' or 'L' notches. Rows to be 40 - 45cm apart and follow the line as shown on the Detailed Landscape Design. Protect with clear, non-perforated spiral guards and support with 22-24lb/100 bamboo canes with tapered end uppermost.
Hedgerows - Bare root stock over 60cm high
Hedgerow stock to be trench planted at 5 plants per linear metre in double staggered rows. Rows to be 40-45cm apart and follow the line as shown on the Detailed Landscape Design. Backfill material to incorporate 30% organic matter and slow release fertiliser at 3g/m². Firm plants upright, ensuring root flare sits at soil level.
Hedgerows - Containerised stock
Pits to be excavated to at least one third larger than the root system. Backfill material to incorporate 30% organic matter and slow release fertiliser at 3g/m². Firm plants upright, ensuring root flare sits at soil level. Fit with appropriate canes or stakes as appropriate, and fit mammal guards if there is a risk of predation.

Mulching
General
Mulch to be locally sourced where possible, to be medium grade, organic, free from fines, weeds, disease and contaminants.
Standard Trees
Trees planted within grass are to be mulched to a 500mm radius from the main stem to a settled depth of 100mm.
Planting Beds
Spread with bark mulch to a settled depth of 100mm.
Hedges
Hedge lines to be spread with bark mulch to a depth of 100mm, reaching 500mm either side of the centre line.

Grass Seeding
General
Areas must be seeded with the approved seed mix as specified on the Detailed Landscape Design. Any deviations or substitutions must be agreed with the project landscape architect in advance of any works being undertaken. Evidence must be supplied upon request. For ground preparation see above.
Amenity Grass
Remove all existing vegetation by spraying one month in advance. Spread slow-release fertiliser at 5g/m², 10-14 days prior to seeding. Sow at rate of 35g/m² in two perpendicular passes and lightly rake to a depth of 30mm. First cut to be undertaken when grass reaches a height of 50mm.

AFTERCARE AND MAINTENANCE
General
All stock to be thoroughly watered through periods of prolonged drought. Any stock that dies or becomes damaged or diseased is to be replaced on a like for like basis. If stock fails due to climatic or ground conditions then a suitable alternative is to be agreed with the project landscape architect.

Standard Trees -Establishment period (c. 2 years following planting)
Stakes to be checked for stability monthly. Loose stakes to be straightened and driven in to be stable if still required. Damaged stakes to be replaced if still required.
Tree ties to be checked monthly. Restrictive ties to be loosened, missing/broken ties to be replaced.

Standard Trees - Continual maintenance
Damaged/dead limbs to be removed as required - ensure works are undertaken at the appropriate time for the species. Crown lift and thin as required. Inspect for public safety on a suitable inspection schedule. Seek advice of qualified arborist.

NICHOLSONS BIOSECURITY STATEMENT
Nicholsons ensures it is fully aware of and understands the current and future risks relating to threats from pests and diseases, and how they affect both native and non-native trees and plants. We follow the most up to date guidance from DEFRA and Forestry Commission, and keep regular contact with the horticultural industry.

We will inform, update, and advise our clients and contractors on all relevant biosecurity information. Our staff will adhere to current biosecurity good practice when on site, and will monitor contractor practice when administering contracts.

We insist that all planted stock as specified is UK grown for a minimum of two years at an approved UK nursery. All plants shall be certified as disease free at the time of delivery to their destination.

All planted stock must be accompanied with a certificate stating it has been grown in the UK for a minimum of two years and that it is free of pests and diseases. This certification must be provided to Nicholsons before planting is to commence.

Nicholsons accepts no responsibility for any planted stock that fails due to improper handling, planting, or aftercare. We expect contractors to adhere to our stated methodology, in line with current best practice guidance, and ensure that all stock meets the above criteria.

WFL 01

W3.1 CR

DETAILS

Revised Worksheet

NICHOLSONS

Leading solutions for the natural environment

TITLE

Outline Component

LAYOUT

Specification

PREPARED BY

Bryn Lane, Wrexham

CHECKED BY

Net World Sports

QUANTITY

22-2628

REVISION

V3.1

DATE

19/12/2023

SCALE

NA @A1

APPROVED BY

JK

PROCESSED BY

CB

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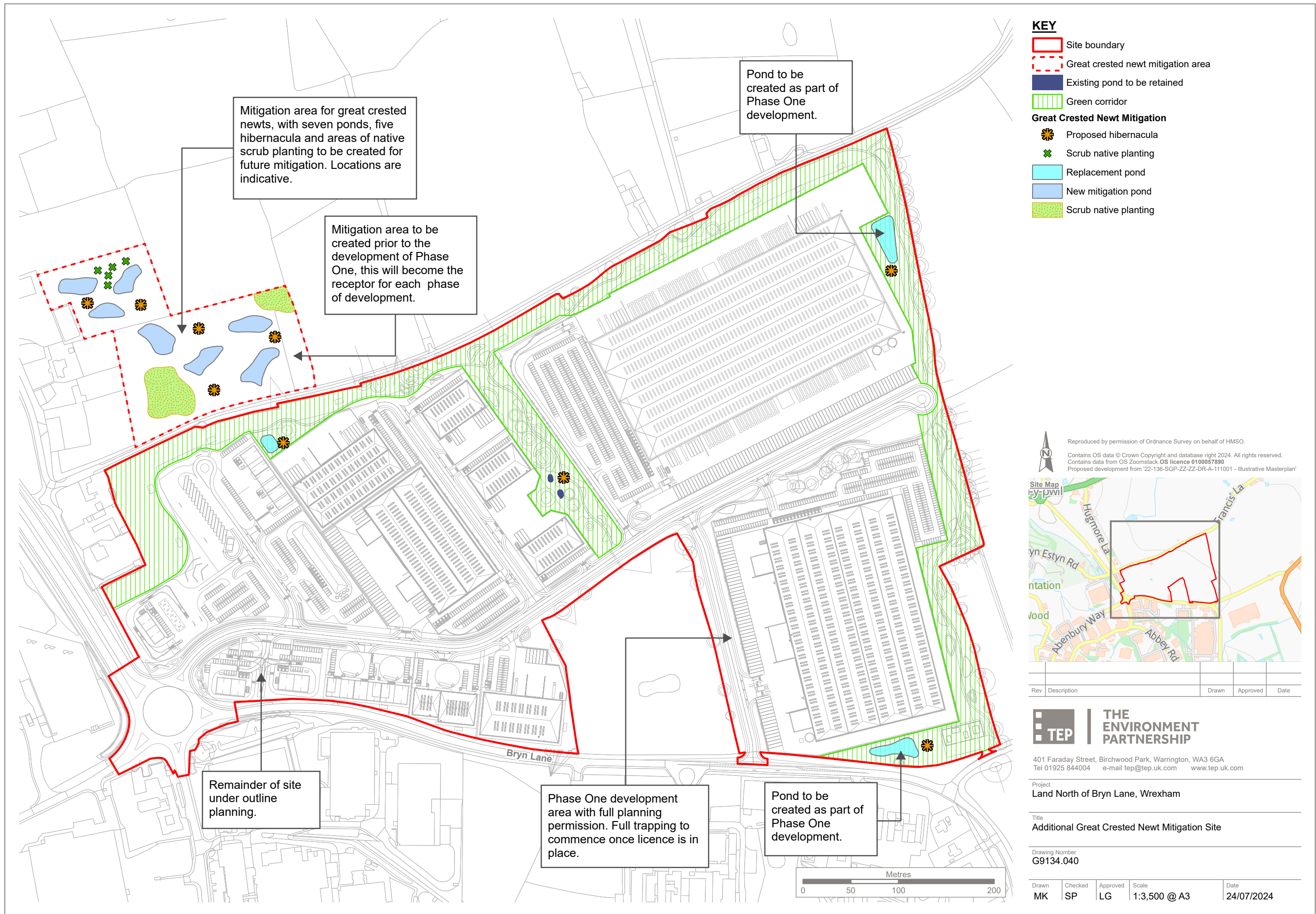
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APPENDIX C: Additional Great Crested Newt Mitigation Site (TEP ref: G9134.040) and GCN Off-Site Mitigation Phase Plan (TEP ref: G9134.042A)

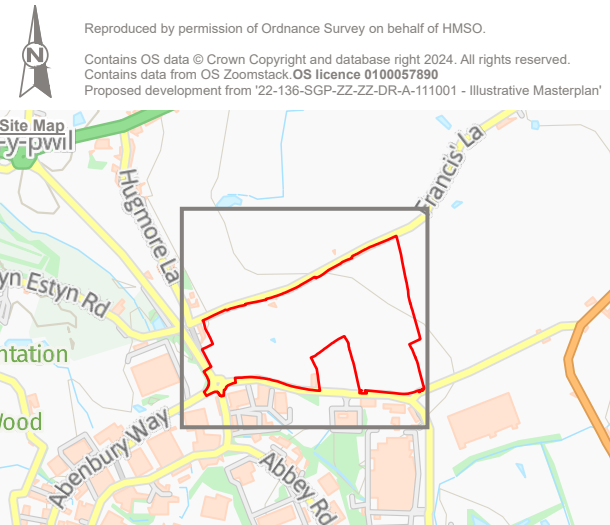


KEY

- Site boundary
- Great crested newt mitigation area
- Existing pond to be retained
- Green corridor

Great Crested Newt Mitigation

- Proposed hibernacula
- Scrub native planting
- Replacement pond
- New mitigation pond
- Scrub native planting



Rev	Description	Drawn	Approved	Date

TEP | **THE ENVIRONMENT PARTNERSHIP**

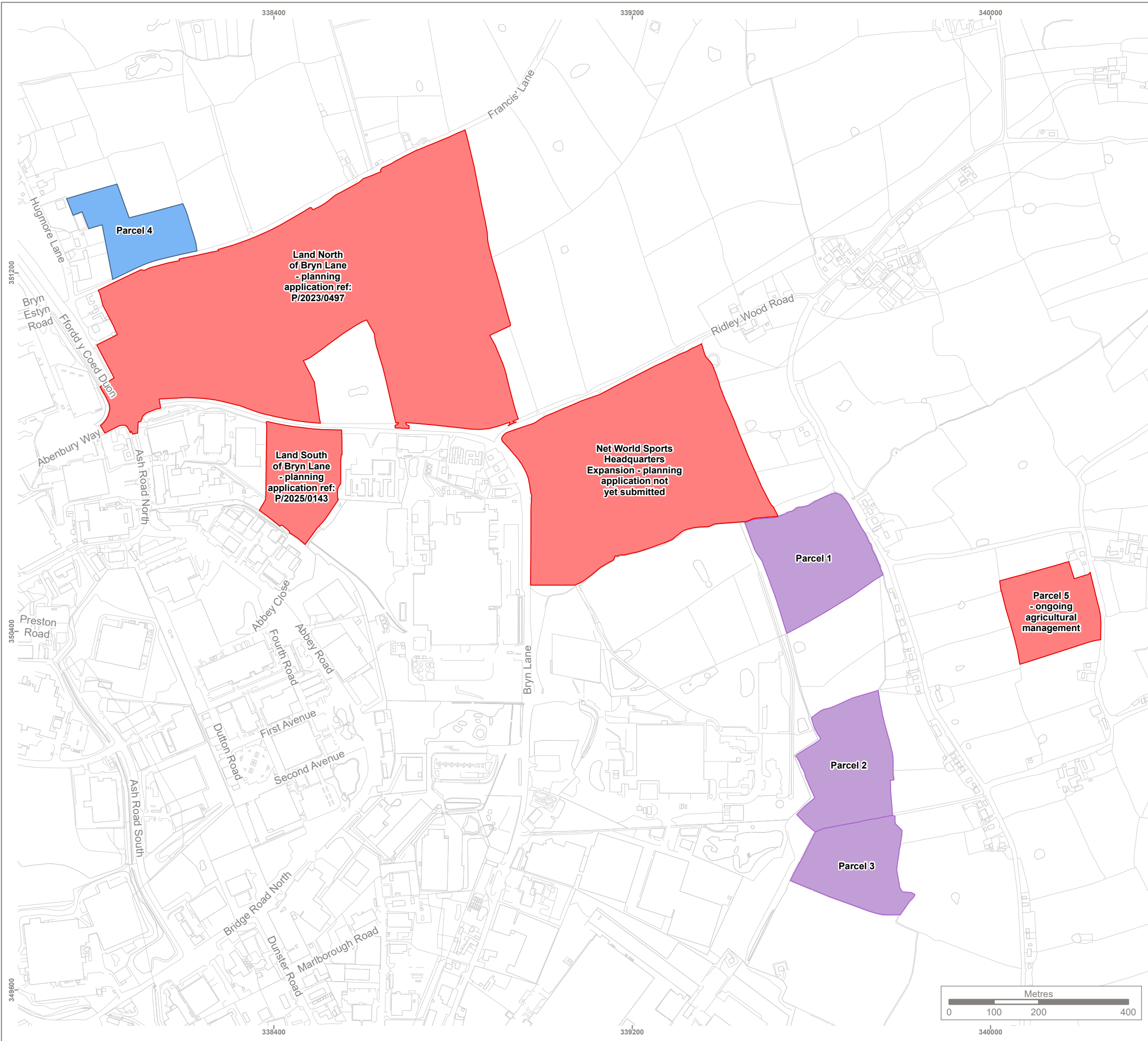
401 Faraday Street, Birchwood Park, Warrington, WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Land North of Bryn Lane, Wrexham

Title
Additional Great Crested Newt Mitigation Site

Drawing Number
G9134.040

Drawn	Checked	Approved	Scale	Date
MK	SP	LG	1:3,500 @ A3	24/07/2024



KEY

Construction Phase

Autumn 2025

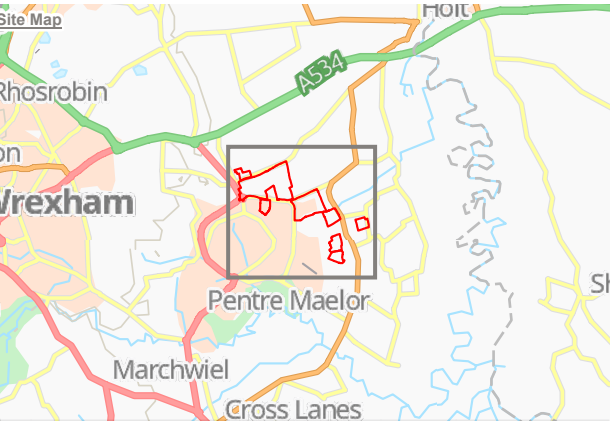
Autumn 2026

Applicant Owned Land

Other land in applicant ownership



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A	Update to Parcel 5 management details.	MG	MT	23/07/2025
Rev	Description	Drawn	Approved	Date



THE ENVIRONMENT PARTNERSHIP

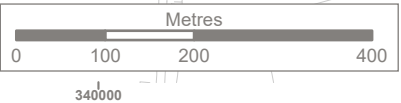
401 Faraday Street, Birchwood Park, Warrington, WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Land North of Bryn Lane, Wrexham

Title
Great Crested Newt Off-Site Mitigation Phasing Plan

Drawing Number
G9134.042A

Drawn	Checked	Approved	Scale	Date
MG	SP	MT	1:8,500 @ A3	18/07/2025



APPENDIX D: Landscape Maintenance Schedules

✓

Works to be carried out in these months

Works not to be carried out in these months

*Bird breeding and nesting season (March to August inclusive) no works that may have an impact on nesting birds are to be undertaken

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														
Undertake a formal inspection to review hazards identified by original assessment.	12	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Specialist Surveys														
Instruct a trained arboriculturist to undertake a tree hazard and condition survey of mature trees.	0.3	Every 3 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site Cleansing														
Cleanse the whole site monthly, including ponds.	12	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove fly-tipping and graffiti as soon as possible.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Soft Landscape Elements														
Existing Trees														
Complete tree survey to inform cyclical programme: Undertake a cyclical programme of selective thinning, coppicing, pruning and felling. Wood under 250 mm diameter collected from thinning, pruning, brashing and scrub/vegetation clearance will, wherever possible, be chipped and used on site for mulching. Wood greater than 250 mm diameter will be logged and used to create deadwood piles to increase biodiversity.	N/A	Every 5 years	✓	✓								✓	✓	✓
Proposed Trees and Native Thicket														
Top up mulch to maintain a depth of 100mm and to a diameter of 0.5m around the base of all young plants.	1	1 to 5										✓	✓	
Re-firm newly planted trees as required.	1	1 to 5	✓	✓								✓	✓	✓
Check stakes and ties quarterly, adjust twice annually.	4	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace any damaged or missing stakes and ties.	1	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove stakes and ties.	1	Year 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Formative prune to maintain health and vigour and crown pruning once established.	N/A	5 to 10	✓	✓								✓	✓	✓
Fruit Tree Maintenance: Prune unwanted growth.	1	All years					✓	✓	✓	✓	✓			
Native Thicket Maintenance: Prune/thin as required	As required	All years	✓	✓								✓	✓	✓
Replace failed or damaged individuals with the same species.	1	1 to 5	✓	✓	✓								✓	✓
Water new planting during periods of drought.	As required	1 to 5				✓	✓	✓	✓	✓	✓			
Apply slow release multi-purpose plant food and soil improver.	1	1 to 5										✓	✓	✓
Existing Hedgerow														
Cut existing hedge to an 'A' shape and where possible a 1m tussocky grass strip will be left un-cut.	1	All years	✓	✓								✓	✓	✓
Additional hedge cut for health and safety perspective (where required).	1	As required	✓	✓								✓	✓	✓
Proposed Hedgerow, Hedgerow and Shady Areas Grass														
Top up mulch to maintain a depth of 100mm and 0.5 diameter around the base of all young plants.	1	1 to 5										✓	✓	
Check spiral guards.	4	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace any damaged or spiral guards.	1	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove spiral guards.	1	Year 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Re-firm new planting as required.	1	1 to 5	✓	✓								✓	✓	✓
Replace failed or damaged individuals with the same species.	1	1 to 5	✓	✓	✓								✓	✓
Hedge cutting: Face up to both sides and top of hedge.	1	Year 3+	✓	✓								✓	✓	✓
Shrubs and Herbaceous														
General														
Weed control: Hand pull where possible and monitor mulch depth (75mm).	3 to 4	All years				✓	✓	✓	✓	✓	✓			
Replace failed or damaged species with the same species.	1	1 to 5	✓	✓	✓								✓	✓
Watering should be conducted during periods of drought.	As required	All years				✓	✓	✓	✓	✓	✓			
Replace failed or damaged coniferous/evergreen species.	1	1 to 5	✓	✓	✓	✓	✓					✓	✓	✓
Shrubs														

✓

Works to be carried out in these months

Works not to be carried out in these months

that may have an impact on nesting birds are to be undertaken

Activity	Frequency per Annum	Years	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Formative prune to maintain health and seasonal foliage.	1	All years	✓	✓							✓	✓	✓	✓
Herbaceous														
Deadhead spent flower heads and remove damaged/dead vegetation	1	All years			✓	✓	✓				✓	✓	✓	
Vegetation removal - dead, broken and diseases stems will be removed throughout the year.	4	All years	✓			✓			✓			✓		
Soil aeration - remove compacted areas of soil.	2	All years			✓							✓		
Apply organic slow release soil fertiliser	1	All years								✓	✓			
Amenity Grass														
Cut (35-50mm) fortnightly during the growing season and remove arisings from the Site.	16	All years				✓	✓	✓	✓	✓	✓			
Cultivate and re-seed as required.	As required	1 to 5								✓	✓	✓		
Weed control.	1	All years				✓	✓	✓	✓	✓	✓			
Bulbs in Grass														
Cut (35mm) 6-8 weeks after flowering.	1	All years				✓	✓	✓	✓	✓	✓	✓		
Wildflower Meadow, Wildflower and Shady Grass														
First year cutting: 150mm every 6-8 weeks in 1st year.	6	Year 1				✓	✓	✓	✓	✓	✓	✓		
Year 2+ cutting: 150mm in September	1	Year 2+									✓			
Cultivate and re-seed as required.	As required	1 to 5								✓	✓	✓		
Weed control.	1	All years				✓	✓	✓	✓	✓	✓			
Wetland and Pond Edge Mix														
Strim to 150mm. Remove arising from the Site.	1	All years				✓	✓	✓	✓	✓	✓			
Cultivate and re-seed as required.	As required	1 to 5								✓	✓	✓		
Weed control.	1	All years				✓	✓	✓	✓	✓	✓			
Review KPIs by suitably qualified person	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wildlife Tunnel Corridor														
Inspections of wildlife tunnel: Removal debris and litter off-site.	1	Monthly	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Aquatic Marginal Mix & Ponds														
Inspections of marginal mix and pond area.	1	All years									✓			
Proposed Aquatic Planting: Reduction of macrophytes if becoming too dominant, these will be cut back.	As required	In year 3 - 5									✓	✓	✓	
Removal of marginal/emergent vegetation in autumn to maintain 35-60% of open water.	As required	In year 3 - 5									✓	✓	✓	
De-silting: Should water levels within the deepest area of the pond fall below half a metre in two consecutive years, de-silting will be required	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Review KPIs by suitably qualified person	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ecological Feature														
Butterfly Banks														
Remove leaf litter and other debris from butterfly bank areas.	12	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1x yearly strim (100mm) to the butterfly bank areas.	1	All years									✓			
Cut back of any scrub within 5m and weed control.	1	All years	✓	✓							✓	✓	✓	✓
Cultivate and re-seed areas where required.	1	All years								✓	✓	✓		
Hibernacula														
Monthly inspection to check condition and clear any blockages from access points.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Repair or replacement as required.	As required	All years	✓	✓	✓							✓	✓	✓
Wildlife Tunnel Corridor														
Inspections of wildlife tunnel: Removal debris and litter off-site.	1	Monthly	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hard Landscape Elements														
Exercise Areas														

Key

☒ Works to be carried out in these months

☐ Works not to be carried out in these months

*Bird breeding and nesting season (March to August inclusive) no works that may have an impact on nesting birds are to be undertaken

Activity	Frequency per Annum	Years	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Twice weekly inspection to identify any vandalism or signs of general damage / wear and tear. Minor repairs to be carried out promptly with any unsafe items removed and replaced as soon as possible.	104	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
A detailed operational inspection will be carried out every two months to check the operation and stability of the equipment, and any signs of wear.	6	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Repairs to surfacing.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site Furniture														
Seating Areas														
Inspect during monthly site inspections.	12	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Repairs to benches as required.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Graffiti removal as required.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Surfacing and GCN Kerbs														
Inspections of surfacing and GCN Kerbs: Inspect and remove debris and litter from Site.	1	Monthly	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monitoring and Review														
Formal site inspections by managing organisation.	4	All years			✓			✓			✓			✓
Annual site meeting with stakeholders.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Formal review of management plan and maintenance operations.	0.2	Every 5 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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.

APPENDIX E: Legislation Context

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 the 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 2017 (as amended)	The Habitat Regulations for England and Wales assign a greater level of protection to a variety of native species of animals and plants listed. The 2017 Regulations have been amended by the 2019 EU Exit Regulations.
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.



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