



THE
ENVIRONMENT
PARTNERSHIP



BRYN LANE, WREXHAM INDUSTRIAL ESTATE

WREXHAM

LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

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- APPENDIX B: Soft Landscape Works Maintenance and Management Proposals - 10 Years (Barry Chin Associates ref: 2147-21-RP01B)
- APPENDIX C: Landscape Maintenance Schedules
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1.0 Introduction

Purpose of the Management Plan

- 1.1 This Landscape and Ecological Management Plan (hereby referred to as 'Management Plan') has been produced by The Environment Partnership (TEP) Limited on behalf of Overload Ltd 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').
- 1.2 This Management Plan was previously prepared to accompany a great crested newt (GCN) licence application in August 2020. This Management Plan has subsequently been updated to support the reserved matters application to be submitted in due course.
- 1.3 This Management Plan will inform long term management of the Site.

Scope of the Management Plan

- 1.4 This Management Plan covers all areas of open space within the Site, specifically proposed woodland, grassland and ponds.
- 1.5 The Management Plan 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.
- 1.6 The Management Plan should be read in conjunction with the Landscape Concept Plan (Barry Chinn Associates ref: 2147-21-01B) and Soft Landscape Works Maintenance and Management Proposals - 10 Years (Barry Chinn Associated ref: 2147-21-RP01B).

Structure of the Management Plan

- 1.7 Chapter 2.0 provides a summary of the factors influencing management and a site analysis. Chapter 3.0 sets out ecological factors and method statements, Chapter 4.0 outlines the long-term aims and objectives for management and Chapter 5.0 sets out how the success of the plan will be monitored, reviewed and updated over time.
- 1.8 Appendix A is the Landscape Concept Plan (Barry Chinn Associates ref: 2147-21-01B), Appendix B is the Soft Landscape Works Maintenance and Management Proposals - 10 Years (Barry Chinn Associates ref: 2147-21-RP01B), Appendix C provides a table of maintenance operations and Appendix D summarises relevant legislation.

Site Location

- 1.9 The Site lies on the north eastern edge of the Wrexham Industrial Estate, approximately 5.4 km east of Wrexham town centre. The Site is bounded by Ridley Wood Lane to the north, agricultural land to the east and south, and Bryn Lane to the west.

Planning and Development Context

- 1.10 Outline planning permission for a B8 storage and distribution warehouse development and associated ecological mitigation area including means of access off Bryn Lane was initially refused by Wrexham County Borough Council (WCBC) planning (application ref: P/2011/0891), but was approved on appeal and granted on the 6th August 2013 (ref: APP/H6955/A/12/2188910).
- 1.11 A subsequent planning application (application ref: P/2016/0327) was submitted in 2016 to renew the initial outline planning application (application ref: P/2011/0891). The Application was refused at WCBC planning committee, and another appeal was made to the Welsh Assembly Ministers against the Council's decision. The application was granted on appeal on the 4th April 2017 (ref: APP/H6955/A/16/3164652).
- 1.12 An application was submitted in March 2020 to WCBC (ref: P/2020/0167) under Section 73 to vary the existing outline, permission under (application ref: P/2011/089) has been approved.
- 1.13 This Management Plan has been prepared to support a reserved matters application and comments from the Local Authority.

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, Overload Ltd will employ 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 Overload Ltd will retain ultimate responsibility for the health and safety of the Site and will review health and safety as part of its regular inspections of the Site. The Site will be subject to informal inspections and 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. 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 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 uses 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 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; and
- To comply with legal obligations and constraints.

Social Factors

Public Amenity

- 2.11 The public will only be able to access the access road, car parking and amenity areas to the west of the Site.

Accessibility

- 2.12 The main vehicular and pedestrian access is to the west of the Site via Bryn Lane.
- 2.13 There is also maintenance access points along the western boundary on Bryn Lane and northern boundary adjacent to Ridley Wood Lane.

Legal Factors

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

3.0 Ecological Factors and Method Statement

- 3.1 The information within this Chapter is in line with Ecological Mitigation Plan (TEP ref: 7215.005), and provides information on ecological factors and demonstrates how retained features of ecological/wildlife interest will be successfully managed.

Designations

- 3.2 There are no statutory designations within 1km of the Site. However, Wrexham Industrial Estate Wildlife Site is approximately 240m south of the Site. This is an area of unmanaged species rich grassland and ancient broadleaf woodland.

Habitats and Species of Principal Importance in Wales

- 3.3 Environment Act (Wales) 2016 requires a list of habitats and species of principal importance in Wales to be drawn up.
- 3.4 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.
- 3.5 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

- 3.6 Below is a list of the ecological surveys carried out at the Site:
- Extended Phase 1 Habitat Survey (TEP, August 2018);
 - Badger Survey (TEP, August 2018);
 - Ground Based Assessment (Bats) (TEP, August 2018);
 - Static Bat Activity Surveys (TEP, September 2018);
 - Habitats Breeding and Wintering Bird Habitat Assessment (TEP, September 2018); and
 - EDNA Surveys (TEP, June 2020).
- 3.7 The following habitats are to be created or retained within the Site:
- Trees;
 - Woodland;
 - Hedgerows;
 - Ponds;
 - Species-rich grassland; and
 - Wet grassland seeding.

Woodland

- 3.8 A woodland strip lies along the southern site boundary. Approximately 20m wide, the structure of the semi-natural broadleaved woodland is fairly young with some mature trees on the field boundary. The woodland will remain unaffected by the development.
- 3.9 The southern band of woodland is listed on the Habitat Forest Inventory as broadleaved woodland. This is considered a Habitat of Principal Importance under Section 7 of the Environment (Wales) Act 2016.

Ponds

- 3.10 There will be a total of three ponds on Site:
- One attenuation pond; and
 - Two replacement ponds for GCN habitat.
- 3.11 The two replacement ponds for GCN habitat were constructed in 2018, approved and built out as part of a separate planning application (ref: P/2018/0977).
- 3.12 The ponds created for replacement GCN habitat have been designed in line with the Great Crested Newt Mitigation Guidelines (2001), to benefit GCN and other amphibians located within the area.
- 3.13 An attenuation pond is to be constructed in due course.

Hedgerows

- 3.14 The Site is bounded by hedgerows with scattered trees. The species poor but intact hedge is dominated by hawthorn. A species-rich intact hedge lies along the arable field boundary to Ridley Wood Lane (access road onto site).
- 3.15 New indigenous hedgerow will provide foraging, nesting and commuting opportunities for a range of wildlife including amphibians, small mammals, bird and bats.

Species

Amphibians

- 3.16 Data from ponds regularly monitored (Cofnod) across the Wrexham Road Industrial Estate confirms the presence of a nationally important, large, metapopulation of GCN.
- 3.17 GCN spend most of their life on land sheltering in hedges, woods, walls and rough grassland. Adults return to the pond for a few weeks in spring to lay eggs. Eggs hatch into larvae which stay in the ponds until autumn when they leave the water.
- 3.18 GCN tend to favour well established ponds with good vegetation and no fish. They can forage up to 500m away from the pond. GCN prefer older woodlands as there is more dead wood. Hedgerows, rough grassland and scrub areas are used by GCN for refuge.
- 3.19 EDNA surveys undertaken in June 2020 confirmed GCN presence in the two newly created replacement ponds.
- 3.20 GCN are a priority species under Section 7 of the Environment (Wales) Act (2016) and are listed on the Wrexham's Biodiversity Action Plan.
- 3.21 GCN and their aquatic habitat are protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended, and the Conservation of Habitats and Species Regulations as amended (2017). 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

- 3.22 A number of protected bird species, including Schedule 1 birds, have been recorded within 1km from the site. Barn owl have been recorded on the edge of the site and the bird survey assessment identified a number of trees along the southern boundary which have roosting potential for barn owl.
- 3.23 The surrounding hedgerows, trees and off-site bordering woodland to the south provide valuable habitat for breeding birds.
- 3.24 All UK wild birds are protected while at the nest. Effectively, this means that if removal of habitats (which can include buildings, trees, hedges, scrub and grassland) cannot be timed to avoid the bird breeding season (April to August inclusive), then a survey by a suitably experienced ecologist will be required to ensure no nesting birds will be affected. There is generally no process to gain a licence to disturb nesting birds; therefore, if active nests are present works will need to avoid the area of the nest until the young have fledged.

Bats

- 3.25 The surrounding mature trees along the bordering hedgerow and woodland edge provide varying levels of bat roost potential.
- 3.26 Bats and their roosts are also protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended and the Conservation of Habitats and Species Regulations as amended (2012).

Badger

- 3.27 There are records of badger, including setts, within 1km of the Site. Evidence of foraging was noted within the scrub and wood strip adjacent to Bryn Lane, over 400m west of the pond development. No setts were found during the survey and there was no field evidence within the Site.
- 3.28 Badgers and their setts are safeguarded under the Protection of Badgers Act (1991). Under this legislation it is illegal to interfere, damage or destroy a sett, obstruct access to a sett, or disturb a badger whilst it is occupying a sett.

Chemical Use

- 3.29 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.

Method Statement

- 3.30 Existing features of ecological and wildlife interest will be protected to ensure that habitat and species are protected and establish long term. Habitat and species protection has been informed by the Ecological Mitigation Plan (TEP ref: 7215.005).

Table 1: Method Statement for the ecological features

Ecological Feature	Method Statement
Habitat	
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.

Ecological Feature	Method Statement
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.

4.0 Management Intentions and Operations

Landscape Elements

- 4.1 The Bryn Lane, Wrexham Industrial Estate Site will comprise the following landscape elements as shown on the Landscape Concept Proposal (Barry Chin Associates ref: 2147-21-01B) and Landscape Management and Maintenance Plan (Barry Chin Associates ref: 2147-21-RP01B):

- Existing woodland;
- Existing trees;
- Proposed tree and woodland planting;
- Thicket and woodland mix planting;
- Existing hedgerow;
- Proposed hedgerow;
- Existing grassland;
- Ornamental Shrub and low groundcover planting;
- Existing ponds;
- Attenuation ponds; and
- Amphibian refugia.

Site Wide

Management Intention

- 4.2 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

- 4.3 It should be recognised that plants considered as weeds can provide suitable habitat for invertebrates.
- 4.4 Weed control where feasible should be undertaken by hand pulling. 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.
- 4.5 Consideration would need to be given to the fact that chemicals can prevent growth of grasses and woody species in landscape schemes.
- 4.6 Where herbicides are to be used within 10m of waterbodies care must be taken to only use formulations of Glyphosate which are approved for use close to water. It is essential that Natural Resource Wales are notified and an agreement obtained.
- 4.7 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

- 4.8 A litter pick of the Site will be carried out monthly and will include the ponds and attenuation ponds. All litter will be removed and disposed of in an authorised manner.
- 4.9 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.

Site Inspections

- 4.10 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.
- 4.11 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 5.0.

Existing Woodland

Management Intention

- 4.12 There is retained woodland to the south of the Site, which provides wildlife corridors important for ecological connectivity and opportunities for foraging and refuge. Woodland will be managed for the benefit of small mammals, amphibians and invertebrates as well as recreation.
- 4.13 An arboriculturist will be consulted prior to undertaking any major tree works within the Site.
- 4.14 If invasive non-native species are encountered within the woodland, a species specific method statement will be written detailing appropriate control and treatment measures.

Maintenance Operations

Thinning and Cutting Understorey Vegetation

- 4.15 Trees for thinning will be cut to a level stump length of 150 mm for treatment with stump killer. A minimum of 50% of the stump surface will be scored over and treated to stop re-growth. Future growth of stumps will be monitored and additional cuts and applications of stump killer will be made (or an appropriate herbicide application such as eco plugs) over the following two or three years as required.
- 4.16 Thinning and cutting understorey vegetation will be undertaken on an annual cyclical programme (5 - 10 year cycle) and will be carried outside of bird nesting season. 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.
- 4.17 Disturbance to GCN refuge features should be avoided by cordoning off the features during works. Herbicide will not be used within 250m of GCN ponds other than via spot treatment.

Coppicing

- 4.18 Trees for coppicing will be cut back to 50mm above ground level. Where a number of stems are coppiced on one plant, cut faces are to slope away from the centre. Care will be taken to ensure that coppicing, thinning and pruning operations do not cause damage to desirable plants, or rutting of the ground in wet conditions.
- 4.19 Wood under 250 mm diameter collected from maintenance works will, wherever possible, be chipped and used sustainably on site.
- 4.20 Wood greater than 250 mm diameter will be logged and used to create deadwood piles. Care will be taken to ensure that thinning/pruning operations do not cause damage to desirable plants, or rutting of the ground in wet conditions.
- 4.21 Coppicing will be undertaken on an annual cyclical programme (5 - 10 year cycle) and will be carried out outside of bird nesting season. 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. 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.
- 4.22 Disturbance to GCN refuge features should be avoided by cordoning off areas known to contain the species during works.

Conserving Deadwood

- 4.23 Deadwood management will be low intervention, this means that any deadwood found will be left in situ. If leaving deadwood in situ represents a health and safety risk or hinders management access, it will be moved and stacked elsewhere in appropriate locations onsite to retain shelter and forage opportunities for wildlife.

Visual inspection

- 4.24 During monthly site inspections, woodland will be inspected for the presence of litter, debris and non-native invasive species.

Tree Survey

- 4.25 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.

Existing Trees

Management Intentions

- 4.26 There are retained trees throughout the Site and along the northern, eastern and southern boundaries, which provide a mature setting to the development and provide opportunities for foraging and refuge.
- 4.27 An Arboriculturist must be consulted prior to undertaking any major tree works.

Maintenance Operations

Cyclical Maintenance

- 4.28 Maintenance to mature trees will be informed by the tree survey.
- 4.29 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.
- 4.30 Wood greater than 250 mm diameter will be logged and used to create deadwood piles in suitable woodland locations.
- 4.31 Maintenance will be undertaken on an annual cyclical programme (5 - 10 year cycle) and will be carried outside of bird nesting season. 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.
- 4.32 Disturbance to GCN refuge features should be avoided by cordoning off areas known to contain the species during works.

Tree Survey

- 4.33 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.

Proposed Tree and Woodland Planting

Management Intentions

- 4.34 Tree and woodland planting is proposed to provide connectivity to the wider environment, foraging and nesting opportunities and screening along Bryn Lane.
- 4.35 Proposed woodland will be planted to the north, east and south west of the development to complement the existing woodland to the south.
- 4.36 The maintenance operations for proposed tree and woodland planting aligns to the Soft Landscape Works Maintenance and Management Proposals - 10 years (Barry Chinn Associates ref: 2147-21-RP01B), Appendix B.

Maintenance Operation

Weed Control

- 4.37 Weed control will be undertaken four times annually (years 1-4), reducing to twice annually (years 5-7) and then once annually (years 8-10). Weed control will be undertaken 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.

- 4.38 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.

Re-firming

- 4.39 Newly planted trees will require re-firming as required.

Stakes and Ties

- 4.40 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.

Formative Pruning

- 4.41 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 BS7370 Part 4 maintenance of soft landscape.
- 4.42 Once a height of 3m is attained, crown pruning is desirable and any dead or severely damaged trees will be felled and replaced accordingly.

Replacement of Failed Planting

- 4.43 Failed planting will be removed and replaced with the same species between November and March for deciduous species and between September and April for evergreen species.
- 4.44 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

- 4.45 Young single stem trees (whips) planted during the dormant season will need little or no watering. This will allow the tree to naturally acclimatise to the location and will encourage roots to spread down in search of water
- 4.46 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

- 4.47 Apply slow release multi-purpose plant food and soil improver in Autumn during the first 5 years after planting.
- 4.48 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

- 4.49 See Existing Trees and Existing Woodland.

Thicket and Woodland Mix Planting

Management Operations

- 4.50 Thicket planting serves as a dynamic interface between the woodland and grassland, providing a gradation of habitat typologies and edge zones.
- 4.51 Thicket planting is to be managed to ultimately achieve a tree canopy with understorey. A gradual development of a diverse age structure should be established over a period of time by the use of a regime of selective thinning, pruning and coppicing. Thicket planting will provide suitable terrestrial habitat and wildlife value and complement existing and proposed woodland planting.
- 4.52 It may be acceptable to allow 'wild areas' to establish for the purpose of increased biodiversity value to invertebrates, including weeds and other dominant species such as docks, thistles, nettles, ragwort and willowherb. However, these species should not be allowed to spread to other areas of the site or neighbouring land.
- 4.53 The maintenance operations for proposed tree and woodland planting aligns to the Soft Landscape Works Maintenance and Management Proposals - 10 years (Barry Chinn Associates ref: 2147-21-RP01B), Appendix B.

Management Intentions

Weed Control

- 4.54 Weed control will be undertaken four times annually (years 1-4), reducing to twice annually (years 5-7) and then once annually (years 8-10). Weed control will be undertaken 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.
- 4.55 In certain instances, herbicide may be 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.
- 4.56 After the first 10 years it may be acceptable to allow 'wild areas' to establish for the purpose of increased biodiversity value to invertebrates, including weeds and other dominant species such as docks, thistles, nettles, ragwort and willowherb. However, these species should not be allowed to spread to other areas of the site or neighbouring land.

Re-firming

- 4.57 Newly planted trees will require re-firming as required.

Stakes and Ties

- 4.58 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.
- 4.59 Remove stakes as necessary, when the tree is suitably established, approximately in Year 5.

Pruning

- 4.60 Pruning will be undertaken to clear deadwood, promote healthy growth and produce desired growth of flowers, fruit, foliage or winter colour as appropriate. Dead, broken, damaged, diseased branches will be removed. Pruning will also include for clearing out crossing branches and branches growing toward the middle of the plant. Pruning will be carried out between December and February.
- 4.61 Any plants subject to vandalism or storm damage should be pruned straight away.
- 4.62 In the long term, consideration will be given to active management, e.g. cyclical thinning and coppicing to create greater structural diversity.

Replacement of Failed Planting

- 4.63 Failed planting will be removed and replaced with the same species between November and March for deciduous species and between September and April for evergreen species.
- 4.64 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.

Constraints

- 4.65 Any works required will be undertaken outside of the bird nesting season, between September and February. Should any works be required within the bird nesting season (March to August inclusive) an assessment will be undertaken by a suitably qualified ecologist before any works commence.

Existing Hedgerows

Management Intentions

- 4.66 Native hedgerow where possible, will be retained along the northern, eastern and southern boundaries. Hedgerows provide foraging, commuting and nesting opportunities for wildlife including small mammals, birds and bats.

Maintenance Operations

Hedgerow Cutting

- 4.67 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.
- 4.68 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.
- 4.69 Additional hedgerow cutting may be required from a health and safety perspective should there be a good growing season.

Proposed Hedgerow

Management Intentions

- 4.70 Native hedgerow is proposed to provide a buffer between the development and the surrounding environment. The hedgerow planting will provide additional foraging, commuting and nesting opportunities for wildlife including small mammals, birds and bats
- 4.71 Formal hedgerow is proposed around the amenity areas of the Site including the car parking and main entrance areas. Formal hedgerow should be maintained for its aesthetic value.

Maintenance Operations

Cultivate soil

- 4.72 Lightly cultivate all planted areas, breaking up soil evenly, annually in the first two years.

Soil levels

- 4.73 Edge up planted areas to maintain soil level 25mm below adjacent hard surfaces and kerbs. Any soil washed onto hard surfaces to be cleaned off. Repeat at each maintenance visit.

Weed Control

- 4.74 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 65mm.

Formative Pruning

- 4.75 Prune as necessary to prevent invasive species smothering less aggressive species and to prevent shrubs overhanging footpaths and other areas of hard paving.
- 4.76 Formative 'facing up' the hedgerow will establish dense branch growth annually in September.

Re-firming

- 4.77 Newly planted hedgerow plants will require re-firming as required.

Replacement of Failed Planting

- 4.78 Failed planting will be removed and replaced with the same species between November and March for deciduous species and between September and April for evergreen species.
- 4.79 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

- 4.80 Native hedgerow: Prune native hedges to heights stated on landscape drawings (Appendix B) (approx. timing September) as required depending on establishment. Cut sides, tops and ends to straight and true lines.
- 4.81 Formal hedgerow: Prune formal hedges to heights stated on landscape drawings (Appendix B) (approx. timing May and September). Cut sides, tops and ends to straight and true lines.

Existing Grassland

Management Intention

- 4.82 There is existing grassland in the northern, eastern and southern area of the Site.
- 4.83 The existing grassland will be managed to maintain and promote structural and botanical diversity and prevent the grasslands from scrubbing over. Nectar-rich plants will also provide a vital source to invertebrates, and subsequently bats and birds.

Maintenance Operations

Grass Cutting

- 4.84 The grass will be cut once a year in September to a height of 150mm with the arisings removed to prevent nutrient enrichment.
- 4.85 Grass cuts will be undertaken with flail cutters/mowers set to retain vegetation at a height of 150mm in order to prevent any risk to amphibians that may be present within the grasslands. Arisings will be removed from site or if appropriate used on Site to increase habitat opportunities.
- 4.86 Grass cutting will be avoided between mid-March and August (inclusive) to prevent risk of disturbance and destruction to nesting birds.

Weed Control

- 4.87 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.
- 4.88 In certain instances, herbicide may be 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.
- 4.89 Herbicide will not be used within 250m of GCN ponds other than via spot treatment.

Fertiliser Use

- 4.90 Grassland areas will not be fertilised in order to conserve the sward diversity.

Ornamental Shrub and Low Groundcover Planting

Management Intention

- 4.91 Ornamental shrub and low groundcover planting is proposed to the west of the main offices and warehouse staff entrance, creating an attractive entrance to the Site. Management of ornamental shrub and low groundcover planting will focus on maintaining a neat and tidy appearance, which will also encourage plant growth through appropriate horticultural techniques.

Management Operations

Pruning

- 4.92 Pruning will be undertaken in order to clear deadwood, promote healthy growth and produce desired growth of flowers, fruit, foliage or winter colour as appropriate. Pruning will also include clearing out crossing and damaged branches.
- 4.93 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.
- 4.94 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.
- 4.95 Prune shrubs as necessary to prevent invasive species smothering less aggressive species and to prevent shrubs overhanging footpaths and other areas of hard paving.
- 4.96 Once established ornamental shrub planting aims to be kept above 1m but low groundcover planting will be maintained below 1m.

Soil levels

- 4.97 Edge up planted areas to maintain soil level 25mm below adjacent hard surfaces and kerbs. Any soil washed onto hard surfaces to be cleaned off. Repeat at each maintenance visit.

Weed Control

- 4.98 Weed control will be undertaken 12 times annually (years 1-3), 10 times annually (years 4-5) and 6 times (years 6-10). Weed control will be undertaken 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.
- 4.99 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

- 4.100 Failed planting will be removed and replaced with the same species in the first five years following implementation. 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

- 4.101 Water ornamental shrub beds as necessary to maintenance healthy growth.

Fertilizer

- 4.102 Slow release fertilizer application as appropriate in the first three years to ensure establishment of planting.

Existing Ponds

Management Intention

- 4.103 Two ponds have been created to the east and southeast of the Site to mitigate the loss of GCN habitat.
- 4.104 Throughout the waterbodies the maintenance of open water and provision of dense stands of emergents, tall herbs and wet grasslands are important to support a diverse and healthy population of small mammals, amphibians, insects and waterfowl. Management should focus primarily on maximising the nature conservation potential of component features.
- 4.105 Once established ponds should be managed to retain at least 35-60% of the surface area as open water through the cutting back of marginal and emergent vegetation. Waterbodies will also be managed to minimise health and safety issues. Vegetation will be regularly managed to ensure the top and bottom of the bank and the water level of the waterbody is clearly visible.

Maintenance Operations

Inspections and Remedial Measures

- 4.106 A visual inspection will be carried out as part of the monthly site inspection. This will include an inspection of the water quality for any signs of pollutants (e.g. scum, excessive algal growth and discolouration), extent of vegetation zones and open water, presence of invasive species (including fish) and presence of rubbish and debris.
- 4.107 If pollutants are detected, options for remedial action will be discussed with the landowner and appropriate authorities.
- 4.108 In the event invasive or harmful species are identified, a treatment plan will be drawn up; spot treatment or pulling by hand will be the preferred method. Any other remedial actions will be implemented accordingly.
- 4.109 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 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.
- 4.110 It should be noted that Natural Resource Wales no longer issue consents for Rotenone application for this type of activity.

Removal of Debris and Rubbish

- 4.111 Any debris and rubbish identified during the monthly visual inspections will be removed.
- 4.112 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.

Aquatic and Emergent Vegetation Removal

- 4.113 Maintenance of open water and provision of dense stands of emergent vegetation, tall herbs and wet grasslands are important for maximising biodiversity.
- 4.114 Regular and gentle removal of aquatic and emergent vegetation to maintain 35% to 60% open water. Cutting or pulling by hand is the preferred method to minimise disturbance and will be carried out annually between late October and mid-November. The works will be carried out on a three year rotation (i.e. a 1/3 each year) or as required according to pond condition.
- 4.115 Vegetation will be removed according to a wedge rotation and laid on terram (or similar matting) at the pond's edge for a minimum 24hrs. The vegetation and terram will then be removed from the Site.

- 4.116 Vegetation removal will, wherever possible, avoid the amphibian breeding and bird nesting season.

Marginal Vegetation Management

- 4.117 The marginal vegetation around the pond will be cut to no less than 150mm on a rotation basis. The inner fringe of vegetation immediately by the water's edge will be retained throughout the year to serve as a buffer and to maintain food and cover sources.
- 4.118 Arisings will be removed and disposed of appropriately.

Scrub Control

- 4.119 Encroachment of scrub, grassland and other vegetation will be monitored and reduced so that no more than 25% of the banks of the ponds will be covered by scrub.
- 4.120 Scrub to be cut back on a rotational basis between October and mid-November. All arisings will be chipped and used sustainably on the Site. Larger brash will be utilised to create deadwood features within woodland.

Fertiliser and Herbicide Use

- 4.121 No fertilisers, pesticides or herbicides will be used on or around the pond.

De-silting

- 4.122 Should the water levels within the deepest area of the pond fall below half a metre in two consecutive years, de-silting will be required. De-silting will be carried out approximately every five years depending on the condition of the pond and will be undertaken between November and January.
- 4.123 De-silting 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.
- 4.124 The top third of a metre of silt will be temporarily placed around the margins of the excavated pond, onto protective membrane, to allow amphibians and invertebrates to return to the pond and to be used on completion of works to repopulate the invertebrate assemblage within the ponds.
- 4.125 All other materials generated will be placed on protective membrane around the pond for a minimum 48hrs to allow amphibians and invertebrates to return to the pond. After a period of 48hrs, the silt and the protective membrane will be removed from site.

Attenuation Pond

Management Intention

- 4.126 An attenuation pond is proposed which has been designed to attenuate surface water flows by storing runoff during the storm and releasing it at a controlled rate during and after the storm. The attenuation pond will always contain water.

- 4.127 The attenuation pond has the added benefit of providing habitats for amphibians and other invertebrates as well as attenuating surface water run-off.

Maintenance Operations

Inspections and Remedial Measures

- 4.128 A visual inspection will be carried out as part of the monthly site inspection. This will include an inspection of the water quality for any signs of pollutants (e.g. scum, excessive algal growth and discolouration), extent of vegetation zones and open water, presence of invasive species (including fish) and presence of rubbish and debris.
- 4.129 If pollutants are detected, options for remedial action will be discussed with the landowner and appropriate authorities.
- 4.130 In the event invasive or harmful species are identified, a treatment plan will be drawn up; spot treatment or pulling by hand will be the preferred method. Any other remedial actions will be implemented accordingly.

Grass Cutting

- 4.131 The grass around the attenuation pond will be cut to a height of 150mm (approx.) annually in September.
- 4.132 Arisings will be lightly raked off and removed to prevent nutrient enrichment and retain the desired species composition.
- 4.133 Grass cutting will be avoided between mid-March and August (inclusive) to prevent risk of disturbance and destruction to nesting birds.
- 4.134 Great care will be taken to avoid disturbance to amphibians or damaging refugia hidden in the grass.

Reedbed Maintenance

- 4.135 Dominant species (particularly reed, bulrush and reed sweet grass) will be cut back to prevent them from encroaching on areas of open water.
- 4.136 Vegetation will be strimmed back (to 150mm) annually between November and January. Approximately 25-30% of wetland vegetation will be removed to retain between 30% and 60% of open water each year with arisings removed from the Site.
- 4.137 It is important that cutting does not take place over the entire reedbed area, and should therefore be cut in alternate sections on annual rotation leaving uncut areas as refuge for wildlife.

Herbicide Use

- 4.138 Use of herbicides near the pond will be avoided.

De-silting

- 4.139 Should the water levels within the deepest area of the pond fall below half a metre in two consecutive years, de-silting will be required. De-silting will be carried out approximately every five years depending on the condition of the SUDS and will be undertaken between November and January.
- 4.140 De-silting 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.
- 4.141 The top third of a metre of silt will be temporarily placed around the margins of the excavated pond, onto protective membrane, to allow amphibians and invertebrates to return to the pond and to be used on completion of works to repopulate the invertebrate assemblage within the ponds.

Amphibian Refugia

Management Intention

- 4.142 Amphibian refuge features are to be maintained in a viable condition so as to function to provide shelter and winter refuge to amphibians. Amphibian refuge features are located within species-rich grassland areas associated with tree cover and hedgerows. Species-rich grassland provides sheltered connectivity between the refuge feature and other suitable habitats.

Maintenance Operations

Inspections and Remedial Measures

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

5.0 Monitoring and Review

Site Monitoring

- 5.1 The key measures described in the table below will enable Overload Ltd to measure the appropriateness of landscape maintenance operations and whether management of the Site is meeting the long term management objectives.
- 5.2 An annual report will be produced by the managing organisation, summarising the management of the Site over the last year and the key measures achieved. This report will be submitted to Overload Ltd with financial information.

Table 2: 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 woodland and 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.
Tree and woodland planting	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.

Feature	Key Measures
Thicket and woodland mix planting	Stakes and ties to be inspected and new plants, re-firmed and kept weed free. Any dead or dying plants should be replaced as specified in the original planting plan Carry out an inspection to assess any encroachment of scrub.
Existing Hedgerows	Carry out an inspection to note any gaps and re-plant with suitable native species.
Proposed hedgerows	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.
Existing grassland	Inspection of the grass to ensure botanical diversity, weeds kept to a minimum, and no scrub encroachment. Re-seed as required.
Ornamental shrub and low groundcover planting	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.
Existing ponds	Inspection to the banks and ensure any tree or shrub saplings within 5m are removed. Review assessments following inspections and carry out recommended works.
Attenuation pond	Inspection to the banks and ensure any tree or shrub saplings within 5m are removed. Carry out inspection of control structure and carry out minor repairs as required. Review assessments following inspections and carry out recommended works.
Amphibian refugia	Inspected during the monthly site inspections to ensure they are in a viable condition.

- 5.3 With respect to monitoring habitat creation, an annual habitat walkover survey will be carried out to ensure that habitats created are still viable for their intended purpose and to inform future management policies concerning potential matters such as protected species and invasive species control.

Review

- 5.4 The Management Plan will be reviewed on an annual basis by Overload Ltd and its 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.
- 5.5 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 management plan;
 - An annual site meeting with the managing organisation and stakeholders and the appointed contractor to assess quality standards and deliverables in line with this management plan; and
 - Ad hoc unannounced inspections by the managing organisation to review quality of maintenance work and any potential Health and Safety issues.
- 5.6 The Management Plan will be re-assessed and updated by an appropriately qualified landscape consultant on a five yearly basis to ensure the habitats and landscaping associated with the Site are maintained for ten years.

APPENDIX A: Landscape Concept Plan (Barry Chin Associates ref: 2147-21-01B)

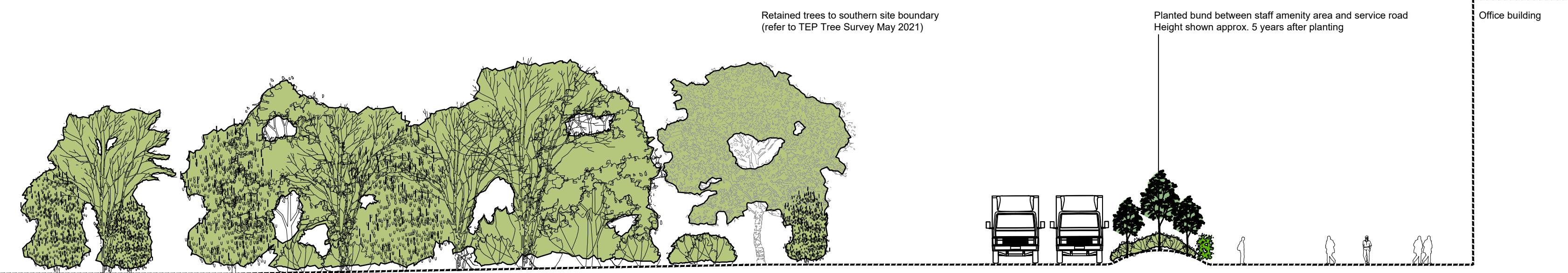


Retained trees to southern site boundary
(refer to TEP Tree Survey May 2021)

Planted bund between staff amenity area and service road
Height shown approx. 5 years after planting

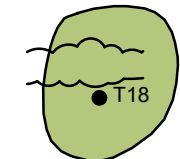
Office building

ILLUSTRATIVE SECTION 1:100 PLANTED BUND

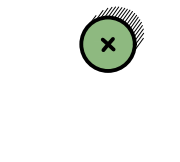


SECTION A-A 1:200 PLANTED BUND IN RELATION TO EXISTING RETAINED BOUNDARY TREES

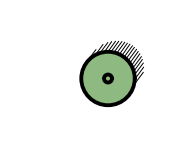
KEY



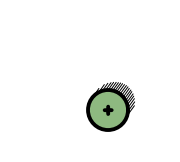
EXISTING HEDGEROW AND TREES TO BE RETAINED



EXTRA HEAVY STANDARD TREES
(Tree pit size: 1000x1000x900mm backfilled with topsoil)
18-20m stem girth
4-5.5m height
1.8-2.1m clear stem
Rootballed



EXTRA HEAVY STANDARD TREES
(Tree pit size: 1000x1000x750mm backfilled with topsoil)
14-16m girth
4.25-5.0m height
1.8-2.1m clear stem
Rootballed



HEAVY STANDARD TREES
(Tree pit size: 1000x1000x750mm backfilled with topsoil)
12-14m stem girth
3.5-4.2m height
1.8-2.1m clear stem
Root wrapped



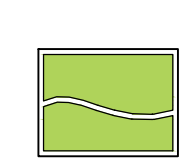
FEATHERED TREES
1.75-2.0m height 2x transplanted
Well furnished with lateral shoots to base
Root wrapped



PROPOSED ORNAMENTAL SHRUB PLANTING
(300mm depth of topsoil onto 300mm depth subsoil)
Ultimate plant height is above 1m.



PROPOSED LOW GROUNDCOVER PLANTING
(300mm depth of topsoil onto 300mm depth subsoil)
Ultimate plant height is below 1m.



APPLICATION BOUNDARY

PROPOSED WOODLAND MIX PLANTING
(300mm depth of topsoil onto 600mm depth subsoil)
Where woodland or thicket is planted next to a hard surface/kerb/footpath, it should be positioned 1m from the edge.

%	Species	Common Name	Size	Age	Root Pit Size
20%	Corvus avellana	Hazel	600-800mm	1+1	OG
20%	Crataegus monogyna	Hawthorn	600-800mm	1+1	OG
5%	Eurospira europaea	Spiraea	600-800mm	1+1	OG
5%	Ilex aquifolium	Holly	400-600mm	2L	OG
5%	Ligustrum vulgare	Privet	600-800mm	1+1	OG
20%	Prunus spinosa	Blackthorn	600-800mm	1+1	OG
5%	Sambucus nigra	Elder	600-800mm	1+1	OG

%	Species	Common Name	Size	Age	Root Pit Size
2.5%	Acer campestre	Field Maple	1.8-2.1m height	Bare rooted (unwrapped)	
2.5%	Betula pendula	Weir Birch	1.8-2.1m height	Bare rooted (unwrapped)	
2.5%	Prunus avium	Weir Cherry	1.8-2.1m height	Bare rooted (unwrapped)	
2.5%	Sorbus aucuparia	Rosier	1.8-2.1m height	Bare rooted (unwrapped)	

PROPOSED THICKET MIX PLANTING
(300mm depth of topsoil onto 600mm depth subsoil)
Where woodland or thicket is planted next to a hard surface/kerb/footpath, it should be positioned 1m from the edge.

%	Species	Common Name	Size	Age	Root Pit Size
20%	Corvus avellana	Hazel	600-800mm	1+1	OG
20%	Crataegus monogyna	Hawthorn	600-800mm	1+1	OG
10%	Eurospira europaea	Spiraea	600-800mm	1+1	OG
5%	Ilex aquifolium	Holly	400-600mm	2L	OG
5%	Ligustrum vulgare	Privet	600-800mm	1+1	OG
20%	Prunus spinosa	Blackthorn	600-800mm	1+1	OG
5%	Sorbus aucuparia	Rosier	600-800mm	1+1	OG
5%	Viburnum lantana	Wayfaring tree	600-800mm	1+1	OG

PROPOSED INDIGENOUS HEDGEROW
(300mm depth of topsoil onto 600mm depth subsoil)
Planted at 400mm centres in a double staggered row. Rows to be 500mm apart.

%	Species	Common Name	Size	Age	Root Pit Size
10%	Acer campestre	Field Maple	600-800mm	1+1	OG
20%	Corvus avellana	Hazel	600-800mm	1+1	OG
60%	Crataegus monogyna	Hawthorn	600-800mm	1+1	OG
5%	Ilex aquifolium	Holly	400-600mm	2L	OG
5%	Ligustrum vulgare	Privet	600-800mm	1+1	OG
2%	Maia sylvatica	Chair apple	600-800mm	1+1	OG
2%	Rosa canina	Dog rose	600-800mm	1+1	OG
2%	Sambucus nigra	Guelder Rose	600-800mm	1+1	OG
2%	Viburnum lantana	Wayfaring tree	600-800mm	1+1	OG

PROPOSED CLIPPED INDIGENOUS HEDGEROW
(300mm depth of topsoil onto 600mm depth subsoil)
Planted at 400mm centres in a double staggered row. Rows to be 500mm apart.

%	Species	Common Name	Size	Age	Root Pit Size
10%	Acer campestre	Field Maple	600-800mm	1+1	OG
20%	Corvus avellana	Hazel	600-800mm	1+1	OG
60%	Crataegus monogyna	Hawthorn	600-800mm	1+1	OG
5%	Ilex aquifolium	Holly	400-600mm	2L	OG
5%	Ligustrum vulgare	Privet	600-800mm	1+1	OG
2%	Maia sylvatica	Chair apple	600-800mm	1+1	OG
2%	Rosa canina	Dog rose	600-800mm	1+1	OG
2%	Sambucus nigra	Guelder Rose	600-800mm	1+1	OG
2%	Viburnum lantana	Wayfaring tree	600-800mm	1+1	OG

PROPOSED POND

APPLICATION BOUNDARY

REV NOTE
A Drawing rescaled and reformatted to show extent of red line. Section added through landscape bund between service yard and office amenity space.
B Indicative location of future link road (subject to separate planning application) added to drawing, plan rescaled to 1:1000@A0.

DATE AUTH
04.06.21 DP

15.06.21 DP

BCA BARRY CHINN
associates
Landscape Architects

CLIENT
NET WORLD SPORTS

PROJECT
BRYN LANE, WREXHAM

DRAWING
LANDSCAPE CONCEPT PLAN

CONTRACT	2147/21	DRG NO.	
DATE	25/05/21	DRAWN	DP
ISSUE	For Planning	CHECKED	DP
SCALE	1:1000 sections as shown	DRG SHEET	A0
CAD FILE	2147-21-01B Landscape Concept Plan.dwg	REV	B

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PLAN 1:1000@A0

APPENDIX B: Soft Landscape Works Maintenance and Management Proposals - 10 Years (Barry Chin Associates ref: 2147- 21-RP01B)

**SOFT LANDSCAPE WORKS
MAINTENANCE AND
MANAGEMENT PROPOSALS
– 10 YEARS**

NET WORLD SPORTS

Bryn Lane, Wrexham



Barry Chinn Associated Limited
Harbury Road, Deppers Bridge
Southam, Warwickshire, CV47 2SZ

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APPENDIX C	BCA DRAWING 2147-21-01B (REDUCED DO NOT SCALE FROM DRAWING)

Reference:	2147-21-RP01B
Date:	04/06/2021
Author:	DP
Checked:	DP

MAINTENANCE AND MANAGEMENT STATEMENT

(Refer to Appendix C for BCA drawing 2147-21-01B Landscape Concept Plan)

This Landscape Maintenance & Management Plan (LMMP) has been prepared in order to discharge condition 18 of permission ref P/2020/0167.

The establishment and future success of the external landscape is largely dependent on the standard and frequency of the subsequent maintenance and management it receives. Throughout the development period and thereafter a maintenance and management regime will be adopted with the following aims and objectives.

The aims and objectives of the landscape maintenance and management will be:

- To ensure the successful establishment and continued growth through to maturity of the Soft Landscape scheme shown on drawing no 2147-21-01B Landscape Concept Plan.
- To ensure that the infrastructure landscape at Bryn Lane, Wrexham develops in a manner commensurate with the original design intentions.
- To ensure the successful establishment and retention of effective landscape buffer planting, particularly along the boundaries of the site.
- To secure a long term future for the existing trees and new tree and thicket planting with particular emphasis upon achieving enhancement of ecological potential, conservation and visual amenity.
- To achieve rapid establishment of the plant material with resultant total ground cover, thereby suppressing weed growth and reducing maintenance requirements.
- To retain the natural growth form and maximise the seasonal potential of individual species by the pruning methods adopted.
- To provide both visual and recreational amenity for site users and visitors.
- To manage the landscape in a manner convivial with the safety of site users, such as maintaining visibility splays and the removal of dead, dying or diseased tree branches.

The soft landscape will, for the initial 1 year after Practical Completion, be maintained by the Landscape Contractor responsible for implementation of the works. The contract will include a defects liability clause to ensure replacement planting is carried out and successful establishment achieved. Refer to Appendix A for the schedule of maintenance for year 1. Thereafter maintenance contracts will be organised by facilities management on an annual basis.

The maintenance and management matrix (Appendix B) provides information the general techniques and methods to be adopted for the ongoing maintenance operations.

These will be reviewed at regular intervals to respond to natural or man-made changes in the environment which affect the landscape types (eg. tree disease).

The above approach will ensure that the quality of the landscape infrastructure created in the early years can be maintained for the benefit of visitors to the site as well as providing a benefit to persons who live near and pass by the boundaries. In addition it will ensure that the landscape develops to maximise the ecological potential of the proposals.

APPENDIX A

YEAR 1 MAINTENANCE SCHEDULE

	YEAR 1 LANDSCAPE MAINTENANCE SCHEDULE	FREQUENCY
	DESCRIPTION	
	During the initial twelve month period after Practical Completion.	
	Note: Allow for twenty-two maintenance visits (18 during the growing season, 4 during the dormant season). A visit shall be defined as the period of time required by the Contractor to carry out all maintenance items specified in the Schedule of work below.	
A	GENERAL	
A.1	Tidy up areas removing rubbish, litter, etc., from planted and grassed areas.	At each visit
A.2	Check that the plant material is firmly planted and firm in where required.	6 times
A.3	Treat pests and diseases by agreement with the Contract Administrator.	As necessary
A.4	Prune woodland transplants / shrubs as necessary to avoid conflict with footpaths, grass mowing, etc.	As necessary
B	TREE PLANTING	
B.1	To extra heavy standard/heavy standard trees: Check, adjust and replace stakes and ties as necessary. Prune, water and feed where required.	As necessary
B.2	Check spiral guards and replace when required.	Four times
C	WOODLAND / THICKET / NATIVE HEDGE PLANTED AREAS	
C.1	Keep areas clear of weed growth by spot herbicide treatment as appropriate from mid April to late September.	Four times
C.2	Check shelter guards and refirm / replace when required. Remove weed growth from within.	Four times
D	CLIPPED NATIVE HEDGEROW	
D.1	Keep areas clear of weed growth by hand weeding and spot herbicide as appropriate from mid April to late September in accordance with ecologist's recommendations..	Four times
D.2	Check shelter / spiral guards and refirm/replace when required. Remove weed growth from within if necessary.	Four times

04.06.2021

APPENDIX B

MAINTENANCE AND MANAGEMENT SCHEDULE MATRIX FOR 10 YEAR PERIOD

MAINTENANCE AND MANAGEMENT SCHEDULE MATRIX FOR 10 YEAR PERIOD										
ITEM OF WORK	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10

GENERAL

Tidy up areas removing rubbish, litter, etc, from planted and grass areas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Treat pests and disease as necessary	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Water all plant material and grass as necessary to maintain healthy growth	✓	✓	✓							
Check plant material is firmly planted and firm in where required.	✓	✓	✓							
Dead, dying or diseased wood to be pruned out	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check shelter guards / rabbit protection and refirm / replace as required including removing weed growth from within. Consider removal at years 4 to 5.	✓	4 times	4 times	2 times	2 times	✓	✓	✓	✓	✓
Removal of diseased or dead plants with replacements as appropriate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

TREE PLANTING

Check, adjust, replace stakes and ties as necessary. Remove stakes after approximately 3 years if appropriate. Prune, water and feed as necessary.	✓	✓	✓	✓	✓					
Remedial tree surgery as necessary to remove any dead, dying or diseased branches and to allow the tree to achieve full stature. All works to be carried out by an Arboricultural Association approved contractor in accordance with BS3998: Recommendations for Tree Work.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

MAINTENANCE AND MANAGEMENT SCHEDULE MATRIX FOR 10 YEAR PERIOD (CONTINUED)										
ITEM OF WORK	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10

WOODLAND / WOODLAND EDGE THICKET / NATIVE HEDGE PLANTED AREAS

Keep areas clear of weed growth by herbicide treatment as appropriate from mid April to late September.	4 times	4 times	4 times	4 times	2 times	2 times	2 times	Once	Once	Once
Woodland mix planting to be managed to ultimately achieve a tree canopy with understorey. Woodland Edge mix to achieve age diversity. A gradual development of a diverse age structure should be established over a period of time by the use of a regime of selective thinning, pruning and coppicing.					1/3 of thicket plants			1/3 of thicket plants		
Remove branches that overhang footpaths or prevent access for grass cutting. Allow native hedges to achieve natural form with only lower branches removed.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prune native hedges to heights stated on landscape drawings (approx. timing September) as required depending on establishment. Cut sides, tops and ends to straight and true lines.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

SHRUB AND FORMAL HEDGE PLANTED AREAS

Keep ornamental shrub and formal hedge areas clear of weed growth by hand weeding or spot herbicide treatment.	12 times	12 times	12 times	10 times	10 times	6 times	6 times	6 times	6 times	6 times
Prune shrubs as necessary to prevent invasive species smothering less aggressive species and to prevent shrubs overhanging footpaths and other areas of hard paving.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Slow release fertilizer application as appropriate to ensure establishment of planting.	✓	✓	✓							

MAINTENANCE AND MANAGEMENT SCHEDULE MATRIX FOR 10 YEAR PERIOD (CONTINUED)

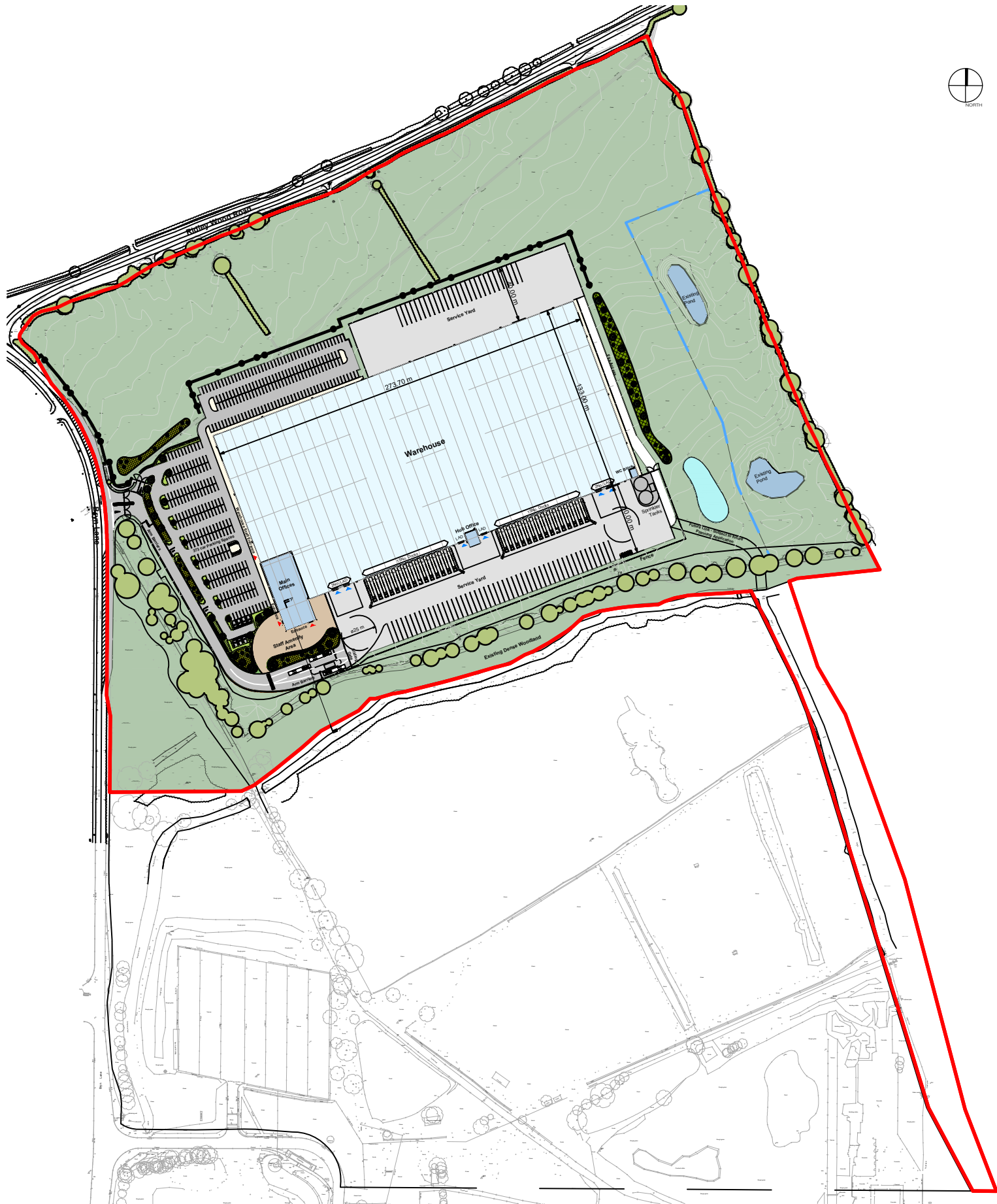
ITEM OF WORK	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
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SHRUB AND FORMAL HEDGE PLANTED AREAS (CONTINUED)

Prune formal hedges to heights stated on landscape drawings (approx. timing May and September). Cut sides, tops and ends to straight and true lines.	✓	2 times	2 times	2 times	2 times	2 times	2 times	2 times	2 times	2 times
Lightly cultivate all planted areas, breaking up soil evenly. Once only.	✓	✓								
Edge up planted areas to maintain soil level 25mm below adjacent hard surfaces and kerbs. Any soil wash onto hard surfaces to be cleaned off.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

APPENDIX C

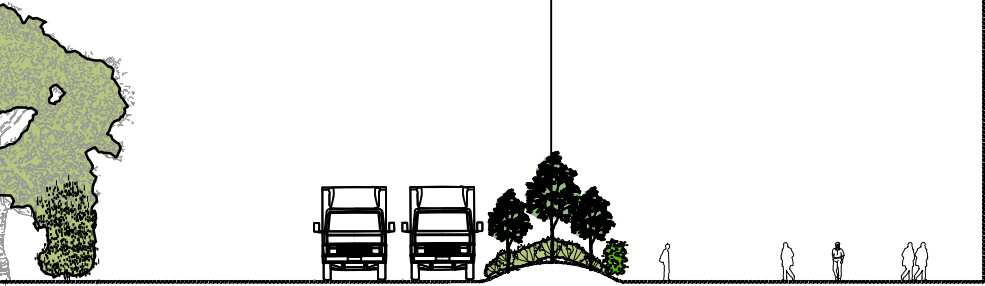
BCA DRAWING 2147-21-01B LANDSCAPE CONCEPT PLAN (APPENDED AS A0 REDUCED TO A3 – DO NOT SCALE OFF THIS DOCUMENT)



Retained trees to southern site boundary
(refer to TEP Tree Survey May 2021)

Planted bund between staff amenity area and service road
Height shown approx. 5 years after planting

Office building



ILLUSTRATIVE SECTION 1:100 PLANTED BUND



SECTION A-A 1:200 PLANTED BUND IN RELATION TO EXISTING RETAINED BOUNDARY TREES

KEY



EXTRA HEAVY STANDARD TREES
(Tree pit size: 1500x1500x600mm backfilled with topsoil)
15.2m clear span
15.2m clear span
Roadside
Quercus robur 'Fastigiate Koster'

EXTRA HEAVY STANDARD TREES
(Tree pit size: 1500x1500x750mm backfilled with topsoil)
14.1m clear span
14.1m clear span
Roadside
Acer campestre 'Saxatilis', Prunus avium 'Polar'

HEAVY STANDARD TREES
(Tree pit size: 1000x1000x750mm backfilled with topsoil)
12.4m clear span
12.4m clear span
Roadside
Acer campestre, Betula pendula, Prunus avium, Quercus robur

FEATHERED TREES
1.75-2.0m height 2x transplanted
Well furnished with lateral shoots to base
Roadside
Acer campestre, Betula pendula, Prunus avium, Quercus robur, Sorbus aucuparia

Species	Supply Size	Pot	Spacing
Cornus alba 'Sibirica'	400-600mm	3L	500mm c/b
Cornus alba 'Sibirica'	600-800mm	3L	600mm c/b
Cornus alba 'Sibirica'	800-1000mm	3L	700mm c/b
Cornus alba 'Sibirica'	1000-1200mm	3L	750mm c/b
Cornus alba 'Sibirica'	1200-1400mm	3L	750mm c/b
Cornus alba 'Sibirica'	1400-1600mm	3L	750mm c/b
Cornus alba 'Sibirica'	1600-1800mm	3L	750mm c/b
Cornus alba 'Sibirica'	1800-2000mm	3L	750mm c/b
Cornus alba 'Sibirica'	2000-2200mm	3L	750mm c/b
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PROPOSED WOODLAND MIX PLANTING
(300mm depth of topsoil onto 300mm depth subsoil)
Where woodland or thicket is planted next to a hard surface/structure, it should be positioned 1m from the edge.
Planted trees planted in single species groups of 3-5 at 3m apart and 3m from edge heavy standard trees. Shrubs to be planted in groups of 1-3 of the same species on a 1.5m grid.

PROPOSED THICKET MIX PLANTING
(300mm depth of topsoil onto 300mm depth subsoil)
Where woodland or thicket is planted next to a hard surface/structure, it should be positioned 1m from the edge.
Transplants planted in groups of 1-3 of the same species on a 1.5m grid.

PROPOSED INDIGENOUS HEDGEROW
(300mm depth of topsoil onto 300mm depth subsoil)
Planted at 450mm centres in a double staggered row. Rows to be 500mm apart.

PROPOSED CLIPPED INDIGENOUS HEDGEROW
(300mm depth of topsoil onto 300mm depth subsoil)
Planted at 450mm centres in a double staggered row. Rows to be 500mm apart.

Species	Supply Size	Pot	Spacing
Cornus alba 'Sibirica'	400-600mm	3L	500mm c/b
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REV NOTE
A Drawing amended and reissued to show extent of red line.
B Indication of future fire road subject to separate planning application subject to planning plan submitted to 11/03/2024

DATE AUTH
04.08.21 DP

13.08.21 DP



CLIENT
NET WORLD SPORTS

PROJECT
BRYN LANE, WREXHAM

DRAWINGS
LANDSCAPE CONCEPT PLAN

CONTRACT	214721	DRG NO.	01
DATE	20/05/21	DRAWN	DP
ISSUE	For Planning	CHECKED	DP
SCALE	As shown	ORIG SHEET	A0
CAD FILE	2147-21-018 Landscape Concept Plan.dwg	REV	B

Barry Chinn Associates Limited, Techno House, Queens Bridge, Southam, Wiltshire, SN6 7JH
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APPENDIX C: Landscape Maintenance Schedules

✓

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.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Specialist Surveys														
Instruct an ecologist to carry out an annual habitat walkover survey to monitor habitat creation.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
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.	12	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove fly-tipping and graffiti as soon as possible.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Soft Landscape Elements														
Existing Woodland and Trees														
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	✓	✓								✓	✓	✓
Treat any stumps following felling works with stump killer.	N/A	Every 5 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monitor stumps and, if required, cut any re-growth and re-apply stump killer as required.	N/A	Every 2 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Proposed Trees and Woodland Planting														
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Glyphosate spot spray around base of trees any vegetation within 0.5m.	4	1 to 4				✓	✓	✓	✓	✓				
	2	5 to 7				✓	✓	✓	✓	✓				
	1	8 to 10				✓	✓	✓	✓	✓				
Replace failed or damaged deciduous species.	1	1 to 5	✓	✓	✓								✓	✓
Replace failed or damaged evergreen species.	1	1 to 5	✓	✓	✓	✓	✓					✓	✓	✓
Re-firm newly planted trees as required.	1	1 to 5	✓	✓								✓	✓	✓
Water new planting.	As required	1 to 5				✓	✓	✓	✓	✓				
Formative prune to maintain health and vigour.	N/A	5 to 10	✓	✓								✓	✓	✓
Assessment of condition and structure of new tree planting.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Apply slow release multi-purpose plant food and soil improver.	1	All years									✓	✓	✓	
Thicket and Woodland Mix Planting														
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Glyphosate spot spray around base of trees any vegetation within 0.5m.	4	1 to 4				✓	✓	✓	✓	✓				
	2	5 to 7				✓	✓	✓	✓	✓				
	1	8 to 10				✓	✓	✓	✓	✓				
Replace failed or damaged deciduous species.	1	1 to 5	✓	✓	✓								✓	✓
Replace failed or damaged evergreen species.	1	1 to 5	✓	✓	✓	✓	✓					✓	✓	✓
Re-firm newly planted trees as required.	1	1 to 5	✓	✓								✓	✓	✓
Formative prune to maintain health and vigour.	1	1 to 10	✓	✓								✓	✓	✓
Existing Hedgerows														
Cut both sides and top.	1	All years	✓	✓								✓	✓	✓
Proposed Hedgerows														

✓

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

[illegible]

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
1x yearly cut to tree and shrub saplings encroaching the pond and stump treat.	1	All years									✓	✓	✓	
Inspect the control structure to and from the pond monthly.	12	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Inspect the pond annually to assess bank stability, water quality, coverage of aquatic/marginal vegetation, drainage and depths.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cut grass around the attenuation pond (to 150mm) and remove arisings sustainably on the site.	1	All years									✓			
Amphibian Refugia														
Monthly inspection to check condition and clear any blockages from access points.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Repairs and/or replacement as required.	As required	All years	✓	✓	✓							✓	✓	✓
Monitoring														
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.	0.5	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 D: 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 (as amended) (2017)	The Habitat Regulations assign a greater level of protection to a variety of native species of animals and plants listed, which are known as European Protected Species (EPS).
Wildlife and Countryside Act 1981	There is an obligation to comply with legislation for UK species protected (including amphibians, reptiles and bats) under this Act.
Environmental Protection Act 1990	There is an obligation to keep the Site free from litter and refuse.
Countryside and Rights of Way Act 2000	Imposes a new right of access on foot to registered common land and other areas of 'open countryside' which under certain circumstances allows access without being confined to footpaths.



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