



L I Z A R D

Landscape Design and Ecology

ECOLOGICAL DESIGN STRATEGY

BIODIVERSITY ENHANCEMENT & ECOLOGICAL MANAGEMENT PLAN

Merchant Taylors' School

On Behalf of: Merchant Taylors' School

Client:	Merchant Taylors'			
Project:	Merchant Taylors' School, Northwood, Middlesex			
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Validity:

This report is valid for 18 months from the date of the site visit. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

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1.0 INTRODUCTION

1.1 Lizard Landscape Design and Ecology (LLDE) has been commissioned by Merchant Taylors' School to produce an Ecological Design Strategy - Biodiversity Enhancement & Ecology Management Plan, for the development proposed at Merchant Taylors' School, Northwood, Middlesex (*Grid Reference: TQ 089 943 – hereafter referred to as 'the site'*).

1.2 This report has been prepared with due consideration for existing best practice guidance (CIEEM, 2017) (BSI, 2013) and has been prepared by Louise Barker (*Consultant Ecologist; LLDE*) and reviewed by Catherine O'Reilly (*MCIEEM, Principal Ecologist, LLDE*).

1.3 This report has been provided to outline the specifications required for the ecological enhancement measures detailed within the conditions:

“Prior to the commencement of development and any landscaping works, a Landscape and Ecological Management Plan should be submitted for approval to the LPA. This should show the details of a buffer strip to enhancement the biodiversity of the adjacent Local Wildlife Site and include a map to show its location and management prescriptions for its creation and long term maintenance. Reason: To ensure that net gains for biodiversity are delivered and maintained in the interests of local biodiversity.”

1.4 This report has been produced based in combination with a review of the baseline habitat assessment data outlined in the *Preliminary Ecological Appraisal* (Coyne Environmental, Nov 2023.). Furthermore, an updated habitat assessment was undertaken on the 12th March 2024, to further assess the condition of the existing habitats, to provide the most appropriate and meaningful recommendations for enhancement. This updated habitat assessment conformed to the UKHabs survey methodology (UKHabs Ltd., 2023).

Site Information

- 1.5 The ecologically enhanced area shall be located along the northern edge of the main Merchant Taylors' School site. The area shall be adjacent to the Hockey pitches and sports field with fenced areas; the eastern extent is lined with hedgerows and deciduous woodland. Mature trees and native hedgerows line the northern perimeter. The site is adjacent to flood zones of the River Colne and a Local Wildlife Site to the north. Adjacent to the site to the northeast is an area of trees designated as Lowland Mixed Deciduous Woodland. Soil type across the site comprises loamy and clayey floodplain soils with naturally high groundwater.

Surrounding Landscape

- 1.6 The surrounding landscape is of mixed use; 2no. large Golf Courses & School grounds consists of well-maintained amenity grass, with local nature reserves and wildlife sites including Colne River and a series of lakes to the north, including nearby Hammermill Lake LWS, an area important for birds and bats as well as its grassland, fen and swamp species. Approx. 1.0km southwest of the site is Moor Park town centre, the landscape here is formed of large residential and commercial areas.

Development Proposals

- 1.7 This report related to Planning Application reference: 23/2122/FUL for the installation of external artificial grass hockey pitch and warm up area with perimeter ball-stop fencing, ball stop netting, flood lighting system, dugouts and associated hardstanding.

2.0 STRATEGY OVERVIEW

2.1 Considerations

2.1.1 The purpose of this assessment is to provide detailed specifications for the delivery of proposed habitat recommendations. The extent of these habitats are shown in the *Figure No. 01 – Enhancement Plan*. This report does not provide descriptions of any avoidance and mitigation measures which may be required to mitigate potential impacts to protected species during the construction phase of development and an assessment of these potential impacts on the existing habitats are outlined in the PEA report (Coyne Environmental, Nov 2023).

2.2 Aims & Objectives

2.2.1 The aim of the Ecological Design Strategy - Biodiversity Enhancement & Ecological Management Plan, has been to maximise the biodiversity value of the proposed habitats within the scheme to deliver the habitat types to provide a range of opportunities for a range of wildlife.

2.2.2 The following objectives have been identified which, when implemented shall ensure that the aims of the Ecological Design Strategy are achieved:

- Provide detailed specifications of the habitats to be incorporated and how these will be created;
- Provide detailed specifications of the ongoing management of the proposed habitats;
- Outline who will be responsible for creating and managing the habitats;
- Provide a plan for monitoring and reviewing the proposed habitats to check that they are meeting the vision of this document;
- Provide a mechanism for adaptive management, through which the progression of the habitats may be monitored and amended, if required.

2.3 Responsibilities

- 2.3.1 The initial habitat creation plan outlined herein will be appointed to a suitably qualified and experienced landscape contractor to undertake, whose responsibility it will be to deliver the habitat and enhancement specifications in line with details provided herein. If there is any uncertainty regarding specific elements, or elements which their discretion think should be amended or improved upon, contact will be made with the suitably qualified ecologist to discuss this aspect and resolve the most appropriate approach.

2.4 Assessment & Monitoring

- 2.4.1 An update walkover survey of the site shall be conducted once a year in May, as this would be the optimal month to review both the hedgerows, trees and grassland habitats, for the first few years, then once every 2-6 years for the years succeeding thereafter, as outlined in the monitoring schedule table below:

Table No. 01 – Assessment & Monitoring Schedule

Visit No.	1	2	3	4	5	6	7	8	9	10
Year after completion	Upon completion	1	2	3	5	8	12	17	22	28

- 2.4.2 The check shall be undertaken by an experienced landscape contractor to check on the progress of the planting and to identify any remedial measures required to ensure the habitats meet the vision and specifications of the *Ecological Design Strategy*.

3.0 BACKGROUND INFORMATION

3.1 Preliminary Ecological Appraisal

Overview

- 3.1.1 A Preliminary Ecological Appraisal (PEA) of the site was undertaken in 2023 by Coyne Environmental. The PEA provided an assessment of the sites potential to support a range of legally protected and / or notable habitats / species and outlined recommendations for further survey / mitigation measures in order to accord with local and national planning policy and wildlife legislation.

Site Description

- 3.1.2 Adjacent to the sport pitch is a mature native hedge line, it is potentially a linear ecological corridor for a range of animals. As well as oak, willow (*Salix cinerea*), sycamore (*Acer pseudoplatanus*) with alder (*Alnus glutinosa*) and hawthorn (*Crataegus monogyna*) and elder (*Sambucus nigra*) are the main understorey. This vegetation basically continues around most of the field boundary, on this side of the school grounds.
- 3.1.3 The ground flora along the hedge (on the sport field side) is sparse, mainly common hawkweed (*Hieracium vulgatum*), ribbed melioid (*Melilotus officianlis*) and yarrow (*Achillea millefolium*). Due to the high level of mowing, this is restricted to a narrow belt along the tree line.

Desk Study

- 3.1.4 To the north, is the flood plain of the river Colne (SSSI) with numerous lakes (Hampermill Lake/Wood/Spring LWS located 100m northeast), forming a riparian linear habitat adjacent to the site. One kilometre west is Moor Park Golf Course (& Sandy Lodge Golf Club LWS, located 660m south) and other recreational areas beyond. To the east is a small area of remanent farmland and Ruislip Woods, a National Nature Reserve (NNR) and an SSSI and to the south is Oxley Wood and the beginning of Metropolitan London.

- 3.1.5 Adjacent to the enhancement area to the northeast is an area of trees designated UK Priority Species Habitat – Deciduous Woodland and also recorded on the National Forest Inventory – Woodland Broadleaved.

Habitat Evaluation

- 3.1.6 The vegetation on and around the site consists of a number of mature trees, variously located as individual specimens, treebelts, and woodland.
- 3.1.7 The woodland copse located to the eastern edge of the sports pitches is classified within the National Forest Inventory 2014 as broadleaved, Priority Habitat - Deciduous Woodland. The woodland is subject to TPO644 (2005; confirmed 2006) W2 which comprises a 'Large area of mature trees with central clearing. Predominantly mixed deciduous trees.'
- 3.1.8 The adjacent mixed species woodland copse is utilised by school as an area for external learning. The woodland is described as being dominated by larger intermittent specimens and denser linear stands of Norway Maple, with occasional Oak and Ash, especially to the eastern edge. The woodland is generally of fair / good condition with lightly closed overstorey with understorey of Elder, Field Maple, Hazel and Dogwood to the woodland floor.
- 3.1.9 The site area is accessed from an existing car park area which contains a number of mature trees within planting areas and grass lawns. Several trees in this location are subject to a tree preservation order (TPO582).
- 3.1.10 The gated entrance is flanked by mature Poplars which mark the eastern extent of the woodland but also connect to the treebelt which runs to the southern edge of Hampermill Lake and River Colne.
- 3.1.11 The tree belt whilst connected to the woodland forms a distinct feature comprising mixed species trees, shrub understorey and waterside scrub; typically Poplars, Oaks Maples and Willow. Passing toward the sports pitches, species within the tree belt also comprise mature specimens of Ash and Hornbeam.

- 3.1.12 The wooded sections of the site were assessed as being of higher value, as were the mature trees. The assessment considered that the shrub and field layer of the wooded areas were not consistent with the priority habitat designation, although it was acknowledged that the habitat survey was undertaken in early March, when a more robust assessment of the botanical value of woodland was not practical.

3.2 Habitat Enhancement

Treeline Enhancement

- 3.2.1 The existing tree line and its connectivity from the woodland to the east shall be enhanced through further understorey and tree planting by seeding with woodland wildflower species, to improve its condition.

Hedgerow Enhancement

- 3.2.2 Proposals are to enhance the existing mixed-species double row native hedgerow throughout the enhancement area. This shall cover the extent along the river boundary to 'un-gap' areas of hedging and support connectivity as a continued wildlife corridor along the ditch.

3.3 Underlying Substrates

- 3.3.1 The Cranfield University 'Soilscapes' website was consulted for information regarding the underlying substrates at the site, which is an important factor influencing the habitat types which could be potentially created. The whole site was considered to have the same soil type across the surrounding landscape, which comprises "loamy and clayey floodplain soils with naturally high groundwater."

4.0 SCRUB CREATION

4.1 Proposals

4.1.1 Proposals are for the provision of a mixed native scrub boundary supporting a denser vegetated connectivity into the adjacent woodland habitat (see *Figure No. 01 – Ecological Enhancement Plan*). Scrub to comprise at least 80% native species with at least three woody species present and no single species comprising more than 75% cover.

4.1.2 Proposals shall be achieved through provision of a species rich native planting plan with a range of different size classes of shrubs, whilst providing gaps between the shrub layers to encourage the development of other ground flora and maintaining these through appropriate management.

4.2 Planting Schedule

4.2.1 Native shrub planting will take place within the mixed scrub areas habitats (see *Figure No. 01 – Ecological Enhancement Plan*) which should consist of mostly young whips, in combination with at least two of each species planted as heavy standards, to create a different age structure within the scrub which will comprise an even mix of the following species:

- Field maple *Acer campestre*;
- Dogwood *Cornus sanguinea*;
- Whitebeam *Sorbus aria*;
- Wild cherry *Prunus avium*;
- Hawthorn *Crateagus monogyna*;
- Blackthorn *Prunus spinosa*; and
- Wild service tree *Sorbus torminalis*.

4.3 Preparation

4.3.1 Preparation of ground and planting stock should follow the methods outlined below.

4.4 Planting Specifications

- 4.4.1 The planting methods for the mixed native scrub should be undertaken in wavy lines whilst varying the spacing slightly across the habitat parcel. This will balance more densely planted sections with open areas for a natural aesthetic. Each specimen shall be planted on average c. 1.0m apart but varying between 0.5 - 1.5m apart occasionally, in order to encourage natural gaps, glades and rides to establish in the scrub. A tubex biodegradable shelter would be more appropriate than a tree guard mesh for shrubs.

Planting – Understorey shrubs

- 4.4.2 Native shrub planting will be undertaken in gaps around the tree planting to create a distinct understorey. Planting pits shall be excavated to a depth and size that contains the shrubs root system and allows the collar of the plant (*the mark on the tree or shrub where it has been growing above ground*) to be level with the top of the soil. The shrub will be planted during the planting season (November-March inclusive) and only when the soil is free from frost and waterlogging. The soil shall be carefully backfilled in layers, ensuring the plant is held upright, and each layer should be carefully firmed down. A cane or timber stakes with ties will be used to support the plant and ensure upright stable growth. A tree guard mesh for shrubs shall be used to shelter the newly planted shrubs to prevent deer from browsing, fraying and stripping newly planted trees, which should be a suitable size for the size of shrub planted. The pit will be supplemented with a generous amount of mulch to limit weed growth at the base and insulate the roots. The whips should be watered regularly for the first 6 months to ensure they establish. Thereafter it would only be necessary to water during exceptionally dry / hot spells.

Planting – Bulbs

- 4.4.3 Bulbs should ideally be planted out during October – December inclusive. Bulbs should be planted when dry, in a dormant, leafless and rootless state. Spring bulbs tend to thrive in same species communities and, therefore, bulbs should be planted in same species patches of approximately 10-20m², although the exact shape and size may be left to the discretion of the suitable qualified landscape contractor in order to create the most desirable aesthetic.

4.4.4 Small holes should be dug deep and wide enough to encompass the bulb and planted at two to three times their depth (E.g., for a bulb measuring 5cm, dig a whole 10-15cm deep), to sit the bulb at the bottom of it. The bulbs should be planted in their holes with their 'nose' or shoot facing upwards. The soil should then be replaced and gently firmed back with the back of a rake. Treading on the soil should be avoided as this can damage the bulbs. The bulbs should be watered straight away after planting to encourage establishment, unless the soil is already very damp.

- 4.4.5 The following bulbs should be planted at the following densities:
- Bluebells *Hyacinthoides non-scripta* (15 bulbs per metre squared);
 - Wood anemone *Anemone nemorosa* (20 bulbs per metre squared); and
 - Wild daffodil *Narcissus pseudonarcissus* (15 bulbs per metre squared).

Ground Preparation – Part 2

4.4.6 At this point the soil should be lightly cultivated to produce a 'breadcrumb' like texture with a medium tilth and free of large stones and any other debris. Cultivation close to established trees and shrubs should be avoided as this can cause damage to their root systems, so cultivation of the soil near trees should not be deep and should be kept to the minimum required to expose fresh soil.

Sowing of Seed Mix

4.4.7 Enough seed should be prepared to cover the area in question, given a sowing rate of 5g per metre squared. In autumn half the seed mix should be broadcast by hand or using a broadcast spreader on to the freshly prepared ground which will already have a little loose soil on the surface approximately 10-20mm deep. The seeds should then be lightly worked into the loose soil using a firm rake or harrow. The remaining half of the seed mix should then be broadcast onto the tilth and worked into the soil in the same way as before. Then the surfaced should be rolled to squeeze the seeds and tilth down into the seedbed. This method ensures the wildflower seeds are evenly spread, set at different depths and in good contact with the soil.

- 4.4.8 Woodland understory schemes are sown in a wide variety of circumstances with varying degrees of shading and other effects from tree roots. For this reason, the results of sowing seed will be quite variable. Establishment of ground cover can be slow and patchy and in deeper shade full ground cover may never reach 100%. The area should be water immediately after planting to encourage establishment.
- 4.4.9 The whips should be watered regularly for the first 6 months to ensure they establish. Thereafter it would only be necessary to water during exceptionally dry / hot spells.

5.0 OTHER NEUTRAL GRASSLAND ENHANCEMENT

5.1 Proposals

5.1.1 This enhancement is only required on sparsely diverse grass to increase the existing flora diversity. Proposals are for the provision of 'additional' enhancement of the pre-existing grassland, as indicated by 'other neutral grassland' on *Figure No. 01 – Enhancement Plan*. As the underlying geology of the site is loamy and clayey floodplain soils with naturally high groundwater, an appropriate seed mix shall be provided.

5.1.2 The sward height will be varied by managing the grassland to different heights. If bare ground is not naturally present, this will be provided through intervention to scarify the ground (or removed through sowing additional wildflower seed, as required). Bracken, scrub and flora indicative of suboptimal condition will be kept in check through regular management and spot treatment.

5.2 Planting Schedule

5.2.1 A suitable seed mix recommended; 'Emorsgate EM8 - Meadow Mixture for Wetlands', or similar and approved shall be sown. Emorsgate EM8 - Meadow Mixture for Wetlands.' comprises c. 80% slow growing grasses (EG8) and 20% native wildflowers (EM8F).

5.2.2 The grass mix is as follows:

- Common bent *Agrostis capillaris* (4%);
- Sweet vernal grass *Anthoxanthum odoratum* (4%);
- Crested dogstail *Cynosurus cristatus* (34%);
- Grey Sedge *Carex divulsa subsp. divulsa* (1.60%);
- Tufted hair-grass *Deschampsia cespitosa* (1.60%);
- Red fescue *Festuca rubra* (20%);
- Meadow barley *Hordeum secalinum* (4%);
- Rough-stalked meadow-grass *Poa trivialis* (8%);
- Tall fescue *Schedonorus arundinaceus* (2.4%).

5.2.3 The wildflower component would comprise:

- Yarrow *Achillea millefolium* (2%);
- Agrimony *Agrimonia eupatoria* (0.60%);
- Common knapweed *Centaurea nigra* (3.6%);
- Meadowsweet *Filipendula ularia* (1%);
- Lady's bedstraw *Galium verum* (2%);
- Water Avens *Geum rivale* (0.20%);
- Meadow Vetchling *Lathyrus pratensis* (0.50%);
- Rough Hawkbit *Leontodon hispidus* (0.10%);
- Oxeye daisy *Leucanthemum vulgare* (1.2%);
- Common birdsfoot trefoil *Lotus corniculatus* (0.10%);
- Greater birdsfoot trefoil *Lotus pedunculatus* (0.40%);
- Ribwort plantain *Plantago lanceolata* (3.2%);
- Cowslip *Primula veris* (0.2%);
- Selfheal *Prunella vulgaris* (0.10%);
- Meadow buttercup *Ranunculus acris* (0.4%);
- Yellow rattle *Rhinanthus minor* (1.4%);
- Common sorrel *Rumex acetosa* (1.2%);
- Great Burnet *Sanguisorba officinalis* (1%);
- Ragged robin *Lychnis flos-cuculi* (0.3%);
- Devil's bit scabious *Succisa pratensis* (0.1%);
- Tufted vetch *Vicia cracca* (0.4%).

5.3 Preparation

- 5.3.1 *Only required, on patches of bare earth or sparse floral diversity grass only -* Preparation of the ground should follow the methods outlined. A weed and vegetation free substrate will be prepared through mechanical / physical cultivation and the use of herbicides and pesticides should be avoided. The lightest machine practicable to complete the job should be used in order to limit the adverse impacts of soil compaction. The soil will be lightly cultivated to produce a 'breadcrumb' like texture with a medium tilth and any large stones / other debris shall be removed. Cultivation close to established trees and shrubs will be avoided as this can cause damage to their root systems.

5.4 Laying and Sowing Specifications

- 5.4.1 Enough seed should be prepared to cover the area in question, given a sowing rate of 5g per metre squared. In spring or autumn (i.e., April-May or August-September) half the seed mix should be broadcast by hand, or by using a broadcast spreader, on to the prepared ground which will already have a little loose soil on the surface approximately 10-20mm deep. The seeds will then be lightly worked into the soil using a rake or harrow. The remaining half of the seed mix will then be broadcast onto the borders and worked into the soil in the same way. The surface can be rolled or trodden in to squeeze the seeds down into the seedbed. This method ensures the wildflower seeds are evenly spread, set at different depths and in good contact with the soil.

Aftercare - Watering

- 5.4.2 Immediately after sowing the grassland areas should be kept well watered as most of the sown seed species are perennial and are slow to establish. During the first year it may be necessary to supplement the grassland with additional watering to ensure the young plants do not dry out before fully establishing, in light of any unseasonably hot / dry spells.

6.0 TREE ENHANCEMENT PLANTING

6.1 Proposals

6.1.1 Proposals are for the provision of 'additional' tree planting on site. It will be the landowner's responsibility to manage the trees in line with the measures outlined herein.

6.1.2 This shall be achieved through providing native tree planting, giving the tree space to grow and would require minimal input.

6.2 Planting Schedule

6.2.1 An even mix of the following native species will be provided, to complement and enforce the natural native woodland aesthetic of the wider woodland area. The trees shall be provided as extra heavy standards so that the time taken to reach maturity is shorter:

- Grey willow *Salix cinerea subsp. Oleifolia*;
- Silver birch *Betula pendula*;
- Field maple *Acer campestre*;
- Hazel *Corylus avellana*.

6.3 Preparation

6.3.1 Preparation of ground and planting stock should follow the methods outlined in section 4.4.

6.4 Planting Specifications

6.4.1 Planting specifications should follow the methods outlined in herein. *Planting – Understorey Shrubs*, although tubex biodegradable shelters would be more appropriate.

7.0 HEDGEROW ENHANCMENT PLANTING

7.1 Proposals

7.1.1 Proposals are for the provision of '*additional*' native species rich hedgerow planting on site to un-gap areas along the existing hedgerow, as illustrated in *Figure No. 01 – Ecological Enhancement Plan*. Specifications are provided to ensure that the biodiversity potential of the hedgerows are maximized.

7.2 Planting Schedule

7.2.1 The hedgerows would consist of an even mix of the following, species, which would be planted out as whips.

- Field maple *Acer camperstre*;
- Hazel *Corylus avellana*;
- Dogwood *Cornus sanguinea*; and
- Spindle *Euonymus europaeus*.

7.3 Preparation

7.3.1 Preparation of ground and planting stock should follow the methods outlined in section 4.4. A minimum soil depth of 900mm should be provided within 1m radius of each whip.

7.4 Planting Specifications

- 7.4.1 Planting pits shall be excavated to a depth and size that contains the tree whip root system and allows the collar of the plant (*the mark on the whip where it has been growing above ground*) to be level with the top of the soil. The tree whip will be planted during the planting season (November-March inclusive) and only when the soil is free from frost and waterlogging. The soil shall be carefully backfilled in layers, ensuring the plant is held upright, and each layer should be carefully firmed down. A cane or timber stakes with ties will be used to support the plant and ensure upright stable growth. Tubex biodegradable shelters will be used on any young trees and whips to prevent animals from browsing, fraying and stripping newly planted trees, which should be a suitable size for the size of tree planted, not smaller than 1.2m high. The pit will be supplemented with a generous amount of mulch to limit weed growth at the base and insulate the roots. Whips are to be watered immediately after planting.
- 7.4.1 Whips should be planted in double rows, at a density of five whips planted per metre squared, in a zig zag fashion, with a gap of 500mm between each whip in each row. Whips are to be watered immediately after planting and regularly for the first 6 months to encourage establishment. Thereafter, it would only be necessary to water in excessively hot / dry spells.

8.0 SCRUB MANAGEMENT

8.1 Overview

8.1.1 The scrub should be reasonably quick to establish and is forecast to achieve target condition in 10 years. Ongoing management shall focus on pruning / strimming, to encourage the creation of glades and rides within the scrub.

8.2 Ongoing Management

8.2.1 Ongoing management should focus on pruning or strimming back the scrub once a year in January to manage the previous years growth. Pruning / strimming should aim to form the scrub into an approximately diagonal structure, from approaching ground level in the garden to over head height beside the woodland. This will create a natural ecotonal aesthetic and encourage the formation of open areas at the ground layer.

8.2.2 During the monitoring checks the ecologist will check the scrub and identify any undesirable species present which may require removal and review the presence of open areas and recommend remedial measures, should they be required.

9.0 OTHER NEUTRAL GRASSLAND MANAGEMENT

9.1 Overview

9.1.1 Initial management for the first few years shall focus on reducing weed cover through topping / mowing or spot treatment whilst the grassland establishes. Thereafter it will be possible to manage the grassland into shorter areas (less than 7cm) through frequent mowing and longer areas (over 7cm) through infrequent mowing, to achieve the conditions targeted.

9.2 Ongoing Management

9.2.1 Most of the sown seed species are perennial and are slow to establish. In the first year, soon after sowing there will be a flush of annual weeds, arising from the soil seed bank. These weeds can look unsightly, but they will offer shelter to the sown seedlings, are beneficial for invertebrates and will die before the year is out. Any perennial weeds, such as docks, thistles, bindweed, rank grass's, nettles and brambles should be spot treated through manual cutting, pulling, or dug out in and the use of herbicides and pesticides should be avoided unless other methods prove untenable. Once the any annual plants die out and any perennial weeds are removed, the young ground flora will be revealed.

9.2.2 In order to manage the growth and reduce the nutrient levels over time it will be necessary to 'top' / mow the growth regularly for the first few years, starting in spring. Ideally, once in early March and again in September; the grassland should not be cut between these months to give the plants time to flower and provide opportunities for invertebrates. However, the growth might be particularly vigorous during the first few years, and it may be necessary to cut the grass in April or May. In each instance the grassland should be cut to a height of no less than 7cm. After topping / mowing it is important that any cuttings are removed to prevent nutrients from returning to the soil and to prevent weeds from dropping seed and restabilising.

9.2.3 A closed grassland sward will take time to develop and the right time to 'top' or mow will depend on the growth rate of the vegetation and the need to control weeds. Before perennial weeds (e.g., docks, thistles, nettles, bramble etc.) cover greater than 30% of the site area and before they set seed is a good time to intervene with topping and this should be done regularly in the first year as and when required. The growth should be topped to a height of 7cm-10cm. If the regrowth is very vigorous it will be necessary to top the site again. This method should be effective for controlling most weeds and rank grasses although any pernicious or problematic weeds, such as ragwort and bramble should be spot treated with manual cutting, pulling, or dug out in early August and the use of herbicides and pesticides should be avoided unless other methods prove untenable. Topping in late June is particularly important for controlling thistles. Should any areas of bare ground develop, these should be reseeded in line with the aforementioned 'Laying and Sowing' methodology.

9.2.4 For the first few year's priority should be given to managing perennial weed cover and reducing nutrient levels through successive mowing and removal of nutrient. However, when a distinct grassland sward has established a variable mowing regime will be initiated, to provide areas of short and long length grass, to offer a diversity of opportunities for biodiversity, as illustrated in *Figure No. 01 – Enhancement Plan*.

- Areas of short height will be managed through regular mowing, c. once a month during the growing season (April to September inclusive) to a height of 50mm;
- Areas of long height will receive little management, managed to a height of c. 300mm and should not require mowing more than twice a year, which should take place in early June and / or late July.

Adaptive Management

9.2.5 Grassland development can be unpredictable, and it is therefore necessary that this plan is adaptive rather than overly prescriptive. Processes should initially focus on reducing nutrient content through successive removal of growth and controlling perennial weeds through topping, cutting, digging and finally, spraying if other methods prove untenable. Once weed growth is reduced and a grassland sward has developed the botanical diversity of the sward should improve over time with progressive cutting and consequent removal of arisings. Some potential options for adaptive management are provided below which may be implemented at the ecologists discretion. In instances where the addition of new plants are proposed, the species chosen must be determined by a suitably qualified and experienced ecologist to ensure they are appropriate to the area:

- If grass growth is too vigorous additional yellow rattle should be sown, which is a hemi-parasite and helps to reduce the vigour of grasses;
- If the diversity of herbs is poor additional herbs may be sown;
- If thatch accumulations appear at the base of the sward harrowing the field in late autumn can help to create gaps which remain open to flower seed germination from autumn through to spring and adds an opportunity to add additional seed to the grassland;
- Small amounts of scrub are acceptable and provide opportunities for invertebrates and wild birds. However, cover of >5% is likely to be detrimental as the grassland can become encroached upon and should be cleared outside of the main bird nesting season (avoid February – September inclusive).

9.2.6 During the monitoring visits the suitably qualified ecologist shall assess the grassland to determine whether it is necessary to scarify area of the grassland to create bare ground habitat, intervene to reduce cover of scrub / bracken and identify any species indicative of sub-optimal condition which may require removal.

10.0 TREE MANAGEMENT PLAN

10.1 Overview

- 10.1.1 Newly planted trees should be watered regularly for the first 6 months after planting to encourage establishment. Thereafter it will only be necessary to water during excessively hot / dry spells. Any land underneath the crown of the trees should be left along and not used for storage, paving etc. The ecologist will assess the trees condition regularly through monitoring and provide any recommendations for management, should this be required. The tubex biodegradable shelters shall be removed after several years, to be determined by the suitably qualified ecologist during the monitoring visits.

11.0 HEDGEROW MANAGEMENT PLAN

11.1 Overview

- 11.1.1 The hedge will require watering initially to encourage establishment, until fully grown, at which point it will only be necessary to trim the hedge back once over winter to manage the regrowth.

11.2 Ongoing Management

- 11.2.1 The whips should be watered regularly for the first 6 months to ensure they establish. Thereafter it would only be necessary to water during exceptionally dry / hot spells. If any plants do not take root, die or are otherwise destroyed these should be replaced. Within the first two years all stakes, canes and ties will be checked in each season and after particularly strong winds to ensure that the ties are still effective. Any stakes, canes or ties found not fit for purpose will be adjusted, replaced or removed. After 2 years all stakes, canes and ties may be removed, which should be determined based on whether the whip is tall enough to withstand browsing impacts from deer / rabbits. The area around the base of the trees should be weeded by hand on a biannual basis for the first three years of growth and be topped up with additional wood chipping as required.

Hedgerows – Ongoing Pruning / Trimming

- 11.2.2 Pruning and trimming of the hedgerows should be carried out in January, thus avoiding the main bird nesting season whilst giving wintering birds opportunity to maximise the foraging resource. Cuts should be undertaken on alternate sides of the hedgerow on alternate years to maximise opportunities for biodiversity, so that one side of the hedgerow is always left grown out over winter. When hedgerow trimming is required, this should be done such that the front and back of the hedge are near vertical, with the top 500mm of the hedge tapering to an apex. Pruning of hedgerows should be carried out in such a way to achieve a dense hedgerow.

12.0 BIRD & BAT BOX INSTALLATION & MAINTENANCE

Bat Box Enhancements

- 12.1 Installation of 1no. bat box (3FN Schwegler Bat Box) shall be located on a south facing mature tree specimen (*non-TPO specimen*), as supplied by nhbs.com or, of similar specification/design. The box shall be away from any artificial lighting and obstructions to allow access, and away from access by predators, such as cats and squirrels, positioned at a height of 3 - 6m.

Bird Box Enhancements

- 12.2 Installation of 2no. Vivara Pro Seville WoodStone Nest Box with 32mm Oval Hole bird boxes, as supplied by nhbs.com (<https://www.nhbs.com/> or similar specification/design), shall be located on a on a northerly to easterly aspect or south-easterly of a mature tree (*non-TPO specimen*) and positioned between 1.5 – 3m high. The bird box must be away from artificial lighting and obstructions to allow access and sheltered from wind and rain.

Maintenance

- 12.3 A visual inspection from the ground should be carried out annually to ensure the boxes remain in good condition and the entrance hole is clear/open. Remedial measures should be undertaken to refix / replace these as necessary.

Monitoring

- 12.4 Bird and Bat Boxes - A visual inspection should be carried out annually to ensure the boxes remain in good condition. If the bat boxes have broken down or disintegrated, they should be replaced. However, only a suitably qualified ecologist may remove, relocate, or otherwise disturb bat boxes for any reason (as otherwise this could constitute an offence under the *Habitat Regulations (2017)* / *Wildlife and Countryside Act (1981) (as amended)*). Bird boxes are to be replaced or cleaned as required in the autumn.

13.0 REFERENCES

BSI. (2013). *BS 42020:2013 Biodiversity – Code of practice for planning and development*. London: British Standards Institution

BSI. (2014). *BS 8545: 2014 Trees: from nursery to independence in the landscape Recommendations*. London: British Standards Institution. ISBN 978 0 580 731317 0

BSI. (2015). *BS 3882:2015 Specification for topsoil*. London: British Standards Institution. ISBN: 978 0 539 08117 6

CIEEM. (2017). *Guidelines For Ecological Report Writing*. Second Edition. December 2017. Chartered Institute of Ecology and Environmental Management. Available online: <https://cieem.net/wp-content/uploads/2019/02/Ecological-Report-Writing-Dec2017.pdf> [last accessed 26/08/2023]

Coyne Environmental. *Preliminary Ecological Appraisal*. Merchant Taylors' School. Prepared by K. Coyne. Nov 2023. Coyne Environmental, 5 Philosophers Gate, Ashwell, Herts. SG7 5DL.

LLDE. (2021). *Preliminary Ecological Appraisal Report*. Merchant Taylor School. Prepared by LB. Checked by COR. Date: 14.10.2019. Report Ref: LLD1784-ECO-REP-001-02. Lizard Landscape Design and Ecology, Worthing.

UKHab Ltd. (2023). *UK Habitat Classification Version 2.0* (at <https://www.ukhab.org>)

Figure No. 01 – Proposed Ecological Enhancement Plan

Notes: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.
Habitat areas are indicative and for information only - please do not scale from this drawing.








Proposed - Bat Box

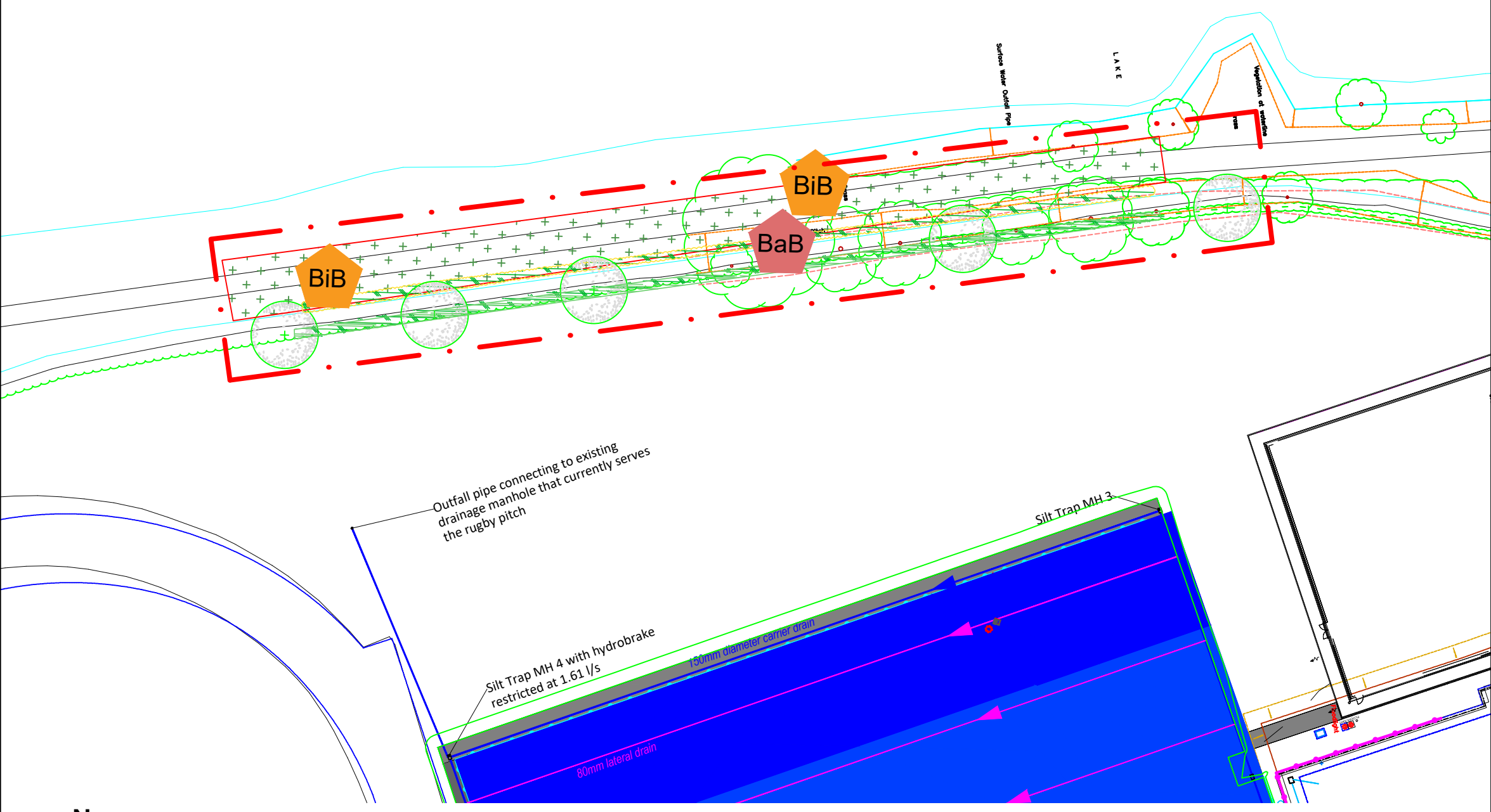
Product: 3FN Schwegler Bat Box

Proposed - Bird Box

Product: Vivara Pro Seville
WoodStone Nest Box

Legend

-  **Proposed - Ecological Enhancement Area**
-  **Proposed - Wildflower Planting/ Seeding**
Product: Emorsgate EM8 - Meadow Mixture for Wetlands
-  **Proposed - Trees**
Product: Grey willow *Salix cinerea subsp. Oleifolia*; Silver birch *Betula pendula*; Field maple *Acer camperstre*; Hazel *Corylus avellana*.
-  **Proposed - Hedgerow Enhancement**
Field maple *Acer camperstre*; Hazel *Corylus avellana*; Dogwood *Cornus sanguinea*; and Spindle *Euonymus europaeus*.
-  **Proposed - Bat Box**
Product: 3FN Schwegler Bat Box
-  **Proposed - Bird Box**
Product: Vivara Pro Seville
WoodStone Nest Box
-  **Proposed - Scrub Creation**
Product: Dogwood *Cornus sanguinea*; Whitebeam *Sorbus aria*; Wild cherry *Prunus avium*; Hawthorn *Crateagus monogyna*; Blackthorn *Prunus spinosa*; and Wild service tree *Sorbus terminalis*.



PLANNING ISSUE

Rev	Description	Date	Initials
00	Planning Issue	28.03.24	LB



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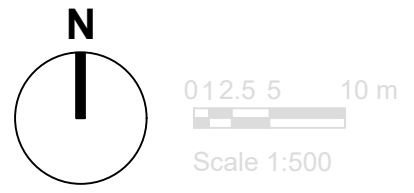
Client
Merchant Taylors' School

Project Title and Location
Hockey Pitches
Northwood, Middlesex

Drawing Title
Ecological Enhancement Plan

Scale: 1:500@A3 Drawn: LB Approved: COR Date: 28/03/2024

Drawing No: LLD3181-ECO-FIG-01-EEP Revision: 00



Ecological Enhancement Plan
Merchant Taylors' School