HAYES BRIDGE RETAIL PARK

Ecology BREEAM Assessment

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Hayes Bridge Retail Park
BREEAM
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Quality Management

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Prepared by:
RPS
Laura Taylor BSc (Hons) MRes ACIEEM
Senior Ecologist
Lakesbury House,
Hiltingbury Road
Hampshire
SO53 5SS
T **+ 44 2920 550685**
E laura.taylor@rpsgroup.com

Prepared for:
OXW Hayes Sarl.

EXECUTIVE SUMMARY

- RPS Ecology was commissioned by OXW Hayes Sarl to carry out an assessment of the land proposed for redevelopment at Hayes Bridge Retail Park, in relation to the ecology credits available under the BREEAM New Construction criteria (BRE, 2018). The site is located at Hayes Bridge Retail Park, Uxbridge Road, Hayes, UB4 0RH.
- The assessment is based on a site survey undertaken in September 2021 (RPS). Pre-development, the site comprised mainly of hardstanding and buildings, with areas of ornamentally planted introduced shrub, dense scrub in the southeast corner of the site and a boundary species poor hedgerow with trees along the eastern and southern boundaries of the site.
- The site was considered to be of limited ecological value, with the edge habitats offering low to moderate potential to support protected species such as foraging and nesting space for invertebrates and bird species, and low value habitat for commuting and foraging bats. More suitable habitat exists off site where Yeading Brook borders the eastern boundary of the site.
- A range of recommendations are made with the aim of increasing the ecological value of the site, post development, in line with the intent of the BREEAM process. These include the retention of suitable habitat, and where avoidance is not possible, measures and timings of vegetation clearance as well as compensatory planting within the landscape scheme and ecological enhancements for invertebrates, birds, and bats.
- Under the ecological component of the BREEAM New Construction (2018) assessment of the development, the existing situation (current site conditions) was compared with the situation that is predicated upon completion (proposed development). It is therefore concluded that the site can be awarded 12 credits upon implementation of measures detailed in this report (in particular, details within the LEMP under LE05 and the managing negative impacts on ecology in LE03) as follows:
    - LE01 – 1 credit for site selection;
    - LE02 – 2 credit for survey and evaluation;
    - LE03 – 3 credits for managing negative impacts on ecology; (upon confirmation that methods pertaining to ecology are implemented within the proposed works);
    - LE04 – 4 credits for change and enhancement of ecological value of the site (upon confirmation of the inclusion of all recommended enhancements); and
    - LE05 – 2 credits for long term impact on biodiversity.
- The second credit available under LE01 relating to contaminated land is outside the scope of this report. Whether this credit is available will be assessed separately by a contaminated land specialist.
- The second credit for LE02 and second and third credit for LE03 will be achievable upon acknowledgement by the design team, of their receipt and inclusion of ecology recommendations regarding bat-friendly lighting, suitable native species rich planting, installation of nest boxes and sensitive clearance methods of any vegetation due for removal. Upon confirmation that these measures have been included and adopted within the current proposals, this credit will be achievable.
- The first credit of LE04 will be achievable upon confirmation of all enhancement measures (bat boxes, bat-friendly lighting and bird boxes). **Written consent confirming the developer's intention to comply with the recommendations and suggestions within this report will be provided separately upon receipt and review of this report.**

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Appendices

1 INTRODUCTION

1.1 Background to the Study

1.1.1 RPS Ecology was commissioned by OXW Hayes Sarl to carry out an assessment of the land proposed for redevelopment at Hayes Bridge Retail Park (henceforth referred to as the site), in relation to the ecology credits available under the BREEAM UK New Construction 2018 criteria (BRE, 2018).

1.1.2 This assessment is based on data collected from the Phase 1 Habitat Survey (RPS, 2021), where habitat condition assessments were undertaken for the habitats present within the project boundary and a subsequent Biodiversity Net Gain Assessment (BNG) was conducted (RPS, 2023).

1.2 Aims and Objectives

1.2.1 The aim of the study was to examine the 2018 BREEAM New Construction assessment criteria and to provide an indication of the number of ecology credits which are available, including recommendations for ecological enhancement measures, and the actions required to obtain the available credits.

1.2.2 The objective of the site visit was to examine the current ecological status of site and identify potential ways in which biodiversity could be enhanced, in line with the delivery of the aforementioned ecology credits.

1.2.3 Habitats recorded and delivery of new habitats through the proposed development will be evaluated under the BRE-CEEQUAL assessment calculation. The results of these findings would then be delivered in the form of an ecological report and five-year BREEAM Landscape and Ecology Management Plan. This would inform the Land Use and Ecology chapter of the BREEAM In-Use International 2018 assessment.

1.2.4 The proposed development has aimed to deliver an Excellent BREEAM Assessment Rating.

1.3 Study Area

1.3.1 The site is located at Hayes Bridge Retail Park, Uxbridge Road, Hayes (National Grid coordinates: TQ115805), and the site is approximately 3.18 ha in size. The site is situated within an urban area comprising commercial and industrial land between Southall and Hayes in West London.

1.3.2 The A4020 runs along the Eastern side of the site and the M4 is approximately 1 km south of the site. Yeading Brook, Minet Country Park and Hitherbroom Park Site of Importance for Nature Conservation (SINC) is immediately south of the site.

1.3.3 The site comprises four large commercial retail units and associated hardstanding (predominantly car parking spaces). A planted hedge with trees separates the site from the adjacent Yeading Brook, Minet Country Park and Hitherbroom Park SINC to the south, whilst a second area of planted shrubs and trees separates the site from the adjacent A4020 to the east.

1.4 Development Proposals

1.4.1 The proposals for the site include the removal of existing commercial buildings at Hayes Bridge Retail Park, to be replaced by a new commercial unit with car parking and associated hard and soft landscaping. This would involve the removal and/or alteration of other buildings and existing habitats within the site boundary.

1.4.2 A suitably qualified ecologist (SQE) has been engaged during the Design Stage who will be using the Comprehensive assessment route (Route 2).

2 BREEAM ASSESSMENT ECOLOGY CRITERIA (2018 GUIDELINES)

2.1 Comprehensive Route - Appointment of SQE

2.1.1 The BREEAM assessment for ecology credits will follow the comprehensive route 'Route 2'. Route 2 is the Ecologist route. This route requires the appointment of a suitability qualified ecologist (SQE) and provides a more detailed assessment of the ecological approach for the application site. Route 2 can also provide additional credits that are not achievable on Route 1.

2.1.2 The SQE will carry out the subsequent site assessment and calculate the appropriate number of ecology credits to be awarded within the BREEAM assessment, a part of this will be the completion of the BREEAM and HQM Ecology Assessment Issues Reporting Template Guidance Note: GN40.

2.1.3 The SQE was appointed to the project in January 2022, pre-commencement of the development, and prior to the finalisation of any landscaping plans. It is considered that the SQE was therefore appointed at an appropriate time to be able to influence the final design in favour of biodiversity.

2.2 Suitably Qualified Ecologist (SQE)

2.2.1 This BREEAM assessment has been completed by Laura White who holds a BSc (with Honours) in Biology and a Master of Research (MRes) in Science in Pollination Ecology and is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and has over six years' experience as an ecologist in relation to development (including continuous employment in that area in the last six years). Laura is therefore a Suitably Qualified Ecologist (SQE), as defined by BRE.

3 LAND USE AND ECOLOGY CREDITS

3.1.1 Land Use and Ecology credits can contribute 13% of the total BREEAM scheme for fully fitted assessments. The main ecology objectives are:

- Ensure a balanced measure of environmental impacts;
- Use quantified measures for determining environmental quality; and
- Use robust science and best practice as base to qualify and calibrate performance standard for defining environmental quality

3.1.2 There are five sections within Land Use and Ecology component of the BREEAM assessment, and by following the comprehensive route, a total of 13 credits[1] are available. The sections are described in (BRE, 2018), and in Table 3.1 below. This report assesses the development against all five sections under Land Use and Ecology.

Table 3.1 Land use and ecology section descriptions.

Section	Description
LE01 – Site selection[1]	Recognising the reuse of previously developed and contaminated land where appropriate remediation has taken place.
LE02 – Ecological Risks and opportunities	Identifying and understanding the ecological risks and opportunities associated with the site to inform the To determine the existing ecological value associated with the site, including surrounding areas, and the risks and Opportunities for ecological protection and enhancement as part of the project.
LE03 – Managing impacts on ecology	Recognition of steps taken to avoid impacts on existing site ecology as far as possible. To avoid, or limit as far as possible, negative ecological impacts associated with the site and surrounding areas resulting from the project.
LE04 – Ecological Change and enhancement	Recognition of steps taken to enhance site ecology. To enhance ecological value of the area associated with the site in support of local, regional, and national priorities.
LE05 – Long term ecological management and maintenance	Encouraging the long-term maintenance and management of ecology on site to ensure both new and existing ecological features continue to thrive. To secure ongoing monitoring, management and maintenance of the site and its habitats and ecological features, to ensure intended outcomes are realised for the long term.

3.2 LE01: Site Selection

Credit 1: Previously Occupied Land

3.2.1 This credit is awarded if the development is on land which, in the last 50 years previously consisted of at least 75% previous development.

3.2.2 At the time of the survey, the site comprises four large commercial retail units and associated hardstanding (predominantly car parking spaces). Habitats onsite mainly consist of ornamental

[1] A total of 13 credits are achievable, however the second unit of LE01 is outside of the remit of the SQE, it can be acquired through the appointment of an appropriately qualified surveyor to conduct a site investigation in determining whether the application site contains or is located within contaminated land.

planting of introduced shrub species as part of the soft landscaping for existing buildings. The boundary habitat of a hedgerow with trees separates the site from the adjacent Yeading Brook, Minet Country Park and Hitherbroom Park SINC to the south, whilst a second area of planted shrubs, scrub and trees separates the site from the adjacent A4020 to the east.

3.2.3 As the site comprises ~84% of previously or currently occupied structures with associated fixed surface infrastructure, under the BREEAM New Construction guidelines 2018, this qualifies as re-use of land, and **therefore, this 1 credit can be awarded.**

Credit 2: Contaminated Land

3.2.4 This credit is awarded if the development is on land which has been confirmed to be contaminated by a specialists' site investigation. This credit is outside the scope of this report, and therefore could only be awarded after investigation by a suitably qualified expert. The SQE was informed during production of this report that a site investigation will be conducted to determine if the site contains contaminated land. As the results and subsequent risk assessment and appraisal are yet to be completed, **at this stage, this credit cannot be awarded.**

3.3 LE02: Identifying and Understanding the Risks and Opportunities for the Project

Credit 1: Survey and Evaluation

Survey

3.3.1 A prerequisite criterion for ecology credits includes the completion of the GN34 checklist, and that the developer confirms that "compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site". The SQE has confirmed within the completion of the GN40 guidance note that the client and developer are aware of and will act in compliance of all relevant wildlife legislation. As the assessment Route 2 was the primary choice of assessment, the GN34 checklist is not necessary to complete.

3.3.2 The SQE has been appointed during the design process. A walkover survey assessing the habitats on site and in the immediate vicinity was undertaken by RPS in September 2021. This assessed the current and potential ecological value and condition of the site and related areas within the zone of influence. The survey also looked at direct and indirect risks to the current ecological value of the site, and capacity and feasibility for enhancement of the ecological value of the site, as well as areas within the zone of influence. Site photographs are provided in Appendix A.

3.3.3 This report will be used to share information with the design team and inform the site preparation and construction works with regards to ecological constraints.

Zone of Influence

3.3.4 Given the size of the site (3.18 ha) and percentage of hardstanding or sealed surface to vegetation present on-site, surrounding wider location of the site, proximity to nearby SINCs and the type of proposed development, the Zone of Influence for this development is considered to include the entirety of the site within the red line boundary and extend to the land adjacent to the site, no greater than 200 m, this is to incorporate the eastern and southern boundaries, where Yeading Brook and other SINCs are located, within the Zone of Influence.

3.3.5 The effect of the additional extent, that construction dust and operational impacts such as lighting would have on the surrounding 200 m from site, was also considered.

Current Flora and Fauna

3.3.6 The site comprised mainly of hardstanding and large modern warehouse commercial units (1.6 ha and 1.08 ha respectively); this comprises 84.1% surface area of the site. Vegetation on site includes ornamental planting (~0.22 ha of introduced shrub) within the existing landscaping on-site, and mixed scrub and trees surrounding a boundary hedgerow along the eastern and southern boundaries (0.26 ha of urban trees[2], ~0.02 ha of mixed scrub). The Phase 1 Habitat Plan is provided in Appendix B.

3.3.7 An area of introduced shrub borders the north of the site with species including buddleia *Buddleja davidii*, cotoneaster *Cotoneaster spp*., and box *Buxus spp*. A second smaller area on the northeast of the site includes the same species, with the addition of addition of cherry plum *Prunus cerasifera*, hawthorn *Crataegus monogyna*, ivy *Hedera helix* and bramble *Rubus fruticosus*. Small stands of box and cotoneaster were identified throughout the central hardstanding in formal planting areas.

3.3.8 Dense mixed scrub located in the southeast corner of the sites comprises of hawthorn, blackthorn *Prunus spinosa*, bramble, with occasional semi-mature ash *Fraxinus excelsior*, rowan *Sorbus aucuparia* and cherry *Prunus avium*.

3.3.9 Urban trees scattered across the site include five semi-mature silver birch *Betula pendula* trees, a semi-mature sycamore *Acer pseudoplatanus* and three semi-mature wild cherry. Several semi-mature willow *Salix sp*., cherry and ash trees are present in the non-native hedgerow along the eastern boundary of the site.

3.3.10 The hedgerow along the eastern boundary of the site (167 m in length), and a buffer to Yeading Brook, Minet Country Park and Hitherbroom Park, consists of predominantly common laurel *Prunus laurocerasus*, with occasional semi-mature trees comprising willow, cherry plum, ash, buddleia and cotoneaster. The hedgerow is approximately 2.5 m high and 2-3 m wide, due to its species composition it is classified as non-native hedgerow.

3.3.11 The hedgerow along the southern boundary of the site is 4 m high with trees (138 m in length), comprising of privet *Ligustrum ovalifolium*, hawthorn, cherry and elder *Sambucus nigra* with box and *Leylandii* shrub. Due to its species composition, this hedgerow is noted as a native species hedgerow with trees.

3.3.12 The site is not located within any designated land areas and is not listed as a brownfield site on the brownfield registry[3].

Protected Species

3.3.13 A summary of legislation relevant to protected or other species identified as potential constraints in this report is provided in Appendix C.

3.3.14 The mixed scrub and hedgerow with trees along the southern and eastern boundaries of the site offer nesting and foraging opportunities for breeding bird species and an assemblage of relatively common and widespread invertebrate species. In addition, the introduced shrub on-site provides limited suitable foraging and nesting habitat for invertebrates and breeding birds.

3.3.15 Buildings and trees onsite were noted as having negligible potential to support roosting bats with no roosting features present, however vegetation present along the eastern and southern boundaries provides suitable habitat for foraging and commuting bats.

[2] Calculated by the Biodiversity Net Gain Assessment Metric: Urban Tree (Classified under BS5837:2012 4.5 Tree categorization method - tree category definitions)
[3]Brownfield register for West London. Accessed: https://data.london.gov.uk/dataset/brownfield-land-register

Evaluation

3.3.16 The site is located in the urban setting of Hayes Business Park, between Hayes and Southall, West London. The site is dominated by hardstanding and buildings with small amount of onsite vegetation; however, it is bordered by Yeading Brook SINC that connects onsite habitats to offsite habitats within the wider landscape, namely to Minet Country Park located 550 m south of the site boundary. The presence of shrub, mixed scrub and hedgerow provides foraging and nesting space for invertebrates and birds, and foraging and commuting habitat for bats; therefore, it is considered to be the feature of most ecological interest on the site.

3.3.17 Direct risks to the current ecological value from the proposals include the potential negative impacts on invertebrates and nesting bird species, and impact on foraging and commuting bats. These impacts include direct loss of nesting and foraging habitat through the removal of any suitable habitat within the proposals. Precautionary measures for vegetation removal will be implemented to reduce risk to breeding birds, including the timing of the works, detailed in LE03.

3.3.18 There are five cotoneaster species formerly listed within Section 9 Part 2 of the Wildlife and Countryside Act (1981, as amended) as an invasive species: wall cotoneaster (*Cotoneaster horizontalis)*, entire-leaved cotoneaster (*Cotoneaster integrifolius*), Himalayan cotoneaster (*Cotoneaster simonsii*), hollyberry cotoneaster (*Cotoneaster bullatus*) and small-leaved cotoneaster (*Cotoneaster microphyllus*). The cotoneaster present onsite has the potential to be a Schedule 9 species, therefore it should be accurately identified to species level prior to commencement of construction works, in order to appropriately control its removal and avoid spread within or outside of the site. Details of controlled removal and contamination controls are given in LE03.

3.3.19 Mitigation to compensate for loss of habitat for nesting and foraging invertebrates and birds and foraging/commuting bats have been included below in criterion LE03 and detailed within the Preliminary Ecological Appraisal (RPS, 2021) and the Biodiversity Enhancement Strategy (BNG Report, RPS 2022). Mitigation to manage the disturbance to breeding bird species and foraging/commuting bats is also provided below in LE03.

3.3.20 Indirect risks to offsite habitats within 100 m - 200 m could include noise, dust, and light pollution. Given proximity to Yeading Book SINC, it is expected provisions are made to minimise any noise or light pollution during the construction phase of the development.

3.3.21 Dust pollution will be prevented via implementing all good practice dust suppression methods.

3.3.22 There is scope for the site to be enhanced for ecology, post-development, and the SQE and RPS Ecology have provided suitable and proportionate recommendations to the project landscape architects. In addition, the SQE has recommended the provision of green roofs on new buildings and the installation of a series of invertebrate, bird, and bat boxes.

3.3.23 It is concluded that the initial ecological survey and evaluation has been undertaken in accordance with the 2018 BREEAM New Construction guidelines, and **therefore, Credit 1 can be awarded.**

Credit 2: Determining the Ecological Outcomes for the Site

3.3.24 The SQE and previous relevant reports submitted by RPS have detailed recommendations to support the optimisation of ecological outcomes for the site as well as suitable ecological enhancements. These recommendations were submitted to the project landscape team; however, direct liaison, with regards to input within the landscape design has not been undertaken with the design team. This has included enhancing the ecological value of the site by the creation of more valuable habitats (species rich grassland, thicket, and woodland planting) and retention and enhancement of existing buffer for the nearby Yeading Brook SINC. In addition, the scheme proposes providing additional resources for protected species, such as nesting boxes for invertebrates, birds, and bats. These are detailed below under LE03 and LE04 within this report.

3.3.25 There are also recommendations for native flowering and fruiting plants to be incorporated in the landscape planting scheme, which will provide a wider species diversity compared to what is currently present on site within ornamental planting. The planting scheme will benefit a range of species including invertebrates, birds, and bats.

3.3.26 Wider site sustainability and ecosystem services benefits have been considered within the design process, in particular, the landscape design will enhance the biodiversity of the site. This will be delivered through the implementation of ecologically sensitive soft landscaping, including planting of new woodland/thicket and species rich grassland.

3.3.27 The timing of practical works and implementation will be optimised to ensure that they align with the correct periods for the avoidance of impacts to protected species. Clearance of any nesting bird habitat (i.e., the existing buildings or scattered trees) will be undertaken outside of the nesting bird season (March to August inclusive) unless first checked by an ecologist. Details are further provided under LE03.

3.3.28 Lighting recommendations have been provided overleaf (following guidelines provided by Bats and Artificial Lighting in the UK (ILP, 2018)), in order to reduce potential indirect impact on protected species and wildlife utilizing the retained boundary habitats and wider offsite habitat.

3.3.29 It is considered that the optimisation of ecological outcomes for the site has been presented to the design team through recommendations in previous reports and elements of this have been adopted within the design stage; proposals include a biodiverse extensive green roof atop single storey buildings, species rich grassland will include EM1 Meadow Mixture[4], thicket planting will include up to 12 native flowering species, transitional shrub and herbaceous ornamental planting whilst not native will include flowering species attractive to pollinators, and new hedgerow will consist of native species beneficial to invertebrates and foraging bats and birds (refer to Appendix E Landscape Concept Plan) for the proposed development plan including planting schedule).

3.3.30 **Credit 2 can be awarded following** the confirmed adoption of the recommended ecological enhancements (bat and bird boxes) as stated in this report and previous PEA report, along with aforementioned timing of practical works for sensitive vegetation removal.

3.4 LE03: Managing negative impacts on ecology

Credit 1: Planning and Measures On-site

3.4.1 Roles and responsibilities for managing negative impacts on the ecology are clearly defined and allocated to support successful delivery of project outcomes are required at an early enough stage to influence the Preparation and Brief or Concept Design.

3.4.2 Potential impacts detailed above in the evaluation section of LE02 and have been identified following the circulation of the PEA report. Following recommendations made by the SQE and RPS Ecologists, within a previous rendition of the Biodiversity Net Gain (BNG) Assessment and BREEAM Ecology Assessment, adaptation to the landscaping have been made to allow for native plant species within the planting scheme and an increase in delivered green space through inclusion of wildflower grassland, an extensive green roof and thicket planting,

[4] https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/basic-general-purpose-meadow-mixture/

3.4.3 Considering the above, the project team has liaised with the RPS Biodiversity Net Bain assessor regarding the proposed solutions and selected measures pertaining to ecology. LE03 criteria 2-4 have been addressed within this report, **therefore, credit 1 can be awarded.**

Credit 2 & 3: Managing Negative Impacts

3.4.4 Negative impacts from site preparation and construction works have been managed, as described below.

Birds

3.4.5 Breeding birds are protected by the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to intentionally kill, injure or take the birds or their eggs, or to intentionally destroy or disturb a nest, when it is in use or being built.

3.4.6 In order to protect breeding birds and active nests (eggs or unfledged chicks present in nest) and to comply with wildlife law protecting them, any vegetation clearance should take place outside of the breeding bird season, which is generally considered to be from March to September inclusive.

3.4.7 If this is not possible, removal will occur under the supervision of a suitably qualified ecologist who will check for any active nests. The check for active nests by ecologist must be completed within 36 hours of the intended start of vegetation removal. If active nests are found to be present, a buffer zone, where no development activities will occur, will be cordoned off by the supervising ecologist until the young have fledged (usually around six weeks). Provided these recommendations are adhered to, the proposed development of the site will not contravene any legislation or planning policy pertaining to breeding birds.

Bats

3.4.8 All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000. All species of bat present in the UK receive full protection under The Conservation of Habitats and Species (EU Exit) Regulations 2019, and the Wildlife and Countryside Act 1981 (as amended). Several bat species are also listed in Section 41 of the NERC Act 2006. These include the widespread species soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared bat *Plecotus auritus*, and the rarer woodland species such as Bechstein's *Myotis bechsteinii* and barbastelle *Barbastella barbastellus.*

3.4.9 It is an offence to:

- intentionally or recklessly kill, injure or capture bats;
- deliberately or recklessly disturb bats (whether in a roost or not); and
- damage, destroy or obstruct access to bat roosts.

3.4.10 Should any temporary lighting be required at the site during the construction phase, the design will need to include measures to control the amount of artificial lighting and consider the specifications set out in the Bat Conservation Trust guidelines (BCT, 2018) as artificial lighting can affect the feeding behaviour of bats.

3.4.11 The site is located within a well-lit urban environment, should further lighting be required the guidance provided in Bats and Artificial Lighting in the UK (ILP, 2018) should be followed;

- Where practicable, lux levels should be 0.5 lux or less at the interface with any of the retained habitats. Where this is not practicable advice from an ecologist should be sought to determine the impact on bats;
- Timing, where practicable, lighting should be turned off for periods when it is not needed to provide some dark periods; and

- It is recommended that the new thicket planting and existing hedgerows are treated as a dark corridor to retain suitable foraging and commuting habitat for bats.

Mitigation Hierarchy

3.4.12 The mitigation hierarchy has been followed to determine what measures are required for onsite habitats under the current proposed development. Avoidance of negative direct impacts on habitats and potential ecological features on site has included through the retention of the majority of the southern and eastern boundary habitat of hedgerow with trees and mixed scrub, illustrated in Appendix D: Tree Retention and Removal Plan, which shows removal and retention of onsite habitats for the current proposals.

3.4.13 Where avoidance of indirect impacts is unavoidable, protective measures have been put in place to limit and reduce the indirect impact of the proposals on retained habitats, i.e., for noise, dust, and light pollution.

3.4.14 In the few select areas where habitat removal is unavoidable, mitigation measures have been introduced to limit the negative impact on habitats and ecological features on site, and compensatory planting has been detailed in LE04 to mitigate for the limited loss of habitat for breeding birds, invertebrates, and foraging/commuting bats.

Ecological Value of the Site

3.4.15 The change in ecological value occurring as a result of the project was calculated in accordance with the process set out in GN36 – BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2. As the site area is greater than 0.5 ha, the full methodology will be used, the results of which are provided below in Credit 2, 3 & 4: Change and Enhancement of Ecology.

3.4.16 Assuming the above measures are confirmed by the project team, then criteria 2 and 4 of the BREEAM 2018 New Construction guidelines will have been achieved, and as the post-development score is 169% of the predevelopment score, the additional third credit can be awarded. Therefore, **Credits 2 and 3 can be awarded upon confirmation of mitigation detailed in LE03.**

3.5 LE04: Change and enhancement of ecological value

Credit 1: Ecological Enhancement

3.5.1 Opportunities for enhancements include creating foraging opportunities for a wider range of invertebrates and therefore providing increased foraging opportunities for bird and bat species, by adding wildflower seed mix to be included in the proposed neutral grassland creation, within the final development plan, this has been confirmed by the use of EM1 wildflower mixture in the proposed planting.

3.5.2 It is recommended by the SQE that any ornamental non-flowering species are excluded from the proposed planting schemes, as they offer limited benefit to invertebrates relevant to this proposed design. Following recommendations made by RPS and the SQE, the majority of proposed planting comprises of native species (for proposed hedgerow, thicket planting, grassland, specimen small and super semi-mature trees) with ornamental non-natives only included in specimen shrub and herbaceous planting that still include flowering species that provide pollinator resources.

3.5.3 The thicket/woodland edge planting proposed comprise a mixture of native woody species that provide foraging and nesting resources for invertebrates and birds as well as foraging opportunities for bats.

3.5.4 The addition of nest/roost bricks and boxes for birds and bats, and invertebrate nesting boxes has been recommended within previous RPS reports and would provide additional nesting and foraging opportunities for protected species.

3.5.5 These measures provided by the SQE, once implemented, will enhance ecological value of the site in accordance with the 2018 BREEAM New Construction guidelines, and **therefore, Credit 1 can be awarded upon confirmation that the aforementioned enhancement measures have been included.**

Credit 2, 3 & 4: Change and Enhancement of Ecology

3.5.6 Up to three credits can be awarded based on the calculation of the change in ecological value occurring as a result of the project. This was calculated in accordance with the process set out in GN36 – BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2. Credits are awarded as follows:

- 6.a: Minimising loss of ecological value (one credit – percentage score of 75-94);
- 6.b: No net loss of ecological value (two credits – percentage score of 95-104);
- 6.c: Net gain of ecological value (three credits – percentage score of 105-109); and
- Above a percentage score of 110, an exemplary level credit is awarded.

3.5.7 The total area of the development footprint is 3.18 ha. The ecological value of the species on site pre-development is detailed overleaf in Table 3.2, which gives the site a pre-development score of 1.57 biodiversity units. Table 3.3 overleaf shows biodiversity units lost (excluding enhancement) which is approximately 60% of the pre-development biodiversity units.

3.5.8 The post development ecological value of the site is shown below in Table 3.4 (Biodiversity units created) and post development habitats are shown in Appendix E: Land Concept Plan. As there are no enhancements of retained existing habitats onsite, no biodiversity units were gained from enhancements of retained habitats and therefore are not included in below tables and post development calculations, this is in line with canulations presented in the BNG report (RPS, 2022).

Table 3.2 Ecological value of linear and area habitats onsite pre-development

Habitat	Area (ha)	Distinctiveness	Condition	Biodiversity Units
Hardstanding and buildings	2.63	Not applicable	Not applicable	0
Introduced shrub	0.216	Low (1)	Poor (1)	0.432
Mixed continuous scrub	0.024	Medium (4)	Poor (1)	0.095
Scattered broadleaved trees	0.264	Medium (4)	Poor (1)	1.058
Total units	**3.135**			**1.586**

Linear Habitat (Foliage)	Length (m)	Condition	Biodiversity Units
Native hedge with trees	138	Moderate (2)	276
Non-native hedge with trees	168	Poor (1)	168
Total units	**306**		**444**

Table 3.3 Post development biodiversity units lost

Habitat	Area (ha)	Distinctiveness	Condition	Biodiversity Units
Hardstanding and buildings	1.823	Not applicable	Not applicable	0
Introduced shrub	0.178	Low (1)	Poor (1)	0.356
Mixed continuous scrub	0.005	Medium (4)	Poor (1)	0.019
Scattered broadleaved trees	0.139	Medium (4)	Poor (1)	0.554
Total units	**2.144**			**0.928**

Linear Habitat (Foliage)	Length (m)	Condition	Biodiversity Units
Native hedge with trees	19	Moderate (2)	38
Total units	**19**		**38**

Table 3.4 Post development area and linear habitats' biodiversity units created

Habitat	Area (ha)	Distinctiveness	Target Condition	Delivery Risk	Temporal Risk	Spatial Risk	Biodiversity creation
Hardstanding and Buildings	1.586	Not applicable	Not applicable	Low	Not applicable	Within the area of loss or in same ecological network (2)	0.00
Introduced shrub	0.1	Low (1)	Poor (1)	Low (1)	One year (0.97)	2	0.19
Mixed scrub (thicket planting)	0.056	Medium (2)	Moderate (2)	Low (1)	Five years (0.83)	2	0.38
Scattered trees (newly planted)	0.212	Medium (2)	Poor (1)	Low (1)	20 years (0.5)	2	0.42
Neutral grassland – semi-improved (wildflower mix)	0.11	Medium (2)	Moderate (2)	Low (1)	Five years (0.83)	2	0.74
Extensive Green Roof	0.148	Low (1)	Poor (1)	Low (1)	None	2	0.3
Total units	**2.212**						**2.03**

Linear Habitat (Foliage)	Length (m)	Biodiversity Units
Native species rich hedge	383	383
Total units	**383**	**383**

* Biodiversity creation = Distinctiveness x Target Condition x Area (ha) enhanced x Delivery Risk x Temporal Risk x Spatial Risk

3.5.9 The post development biodiversity value is calculated as follows:

- Pre-development biodiversity value (from Table 3.2) – units lost (from Table 3.3) + biodiversity units from enhancement (not applicable for this site) + biodiversity units created (from Table 3.4).

3.5.10 Substituting the relevant figures from the tables this gives:

- 1.586 – 0.928 + 2.03 = 2.69 (For area habitats)
- 444 – 38 + 383 = 789 (For linear foliage habitats)

3.5.11 The percentage score for ecological value is calculated as:

- Post development score (2.03) / pre-development score (1.586) X 100 = 169% (for area habitats)
- Post development score (789) / pre-development score (444) X 100 = 177% (for linear foliage habitats)

3.5.12 The linear foliage lost is to be replaced to ensure no overall loss in habitat.

3.5.13 The post-development score of 169% for area habitats meets criterion 6.c, in providing a net gain of ecological value (105-109%). Therefore, **Credits 2 and 3 can be awarded.**

3.5.14 As the post development score is above a percentage score of 110%, an exemplary level credit is available to be awarded **and therefore, Credit 4 is awarded,** as per the 2018 BREEAM New Construction Guidelines.

3.6 LE05: Long-term ecology management and maintenance

Credit 1: Planning, Liaison, Data, Monitoring and Review Management and Maintenance

3.6.1 The project team, in consultation with RPS ecologists and the SQE, will monitor and review the effectiveness with which the plans for LE03 and LE04 are implemented. This will include ongoing maintenance and management of the site, to ensure that the ecological measures continue to act as required.

Credit 2: Landscape and Ecology Management Plan

3.6.2 An appropriate Landscape Ecological Management Plan (LEMP) will be produced, in accordance with the BREEAM report and include all ecological recommendations.

3.6.3 Briefly, the management plan will cover the first five years after completion of the development. It provides details of the necessary maintenance, management and monitoring that will be implemented so that habitats present on site are managed to the benefit of wildlife while still having regard to other factors such as usage requirements.

3.6.4 The key responsibilities are to:

- maintain the habitats as required;
- ensure all works are undertaken with protected species in mind (clearance timings and methodology to be sensitive due to breeding birds);
- Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impacts; and
- Clearly defined and allocated roles and responsibilities.

3.6.5 With the provision of the LEMP along with the confirmed monitoring of measures implemented in LE03 and LE04 are in accordance with the 2018 BREEAM New Construction guidelines, and therefore, **Credit 1 and 2 can be awarded** in respect of long-term biodiversity impact.

4 CONCLUSIONS

4.1.1 Under the ecological component of the BREEAM New Construction (2018) assessment of the development, the existing situation (current site conditions) was compared with the situation that is predicated upon completion (proposed development). It is therefore concluded that the site can be awarded 12 credits upon implementation of measures detailed in this report (in particular, details within the LEMP under LE05 and the managing negative impacts on ecology in LE03) as follows:

- LE01 – 1 credit for site selection;
- LE02 – 2 credits for survey and evaluation;
- LE03 – 3 credits for managing negative impacts on ecology (upon confirmation that methods pertaining to ecology are implemented within the proposed works);
- LE04 – 4 credits for change and enhancement of ecological value of the site (upon confirmation of the inclusion of all recommended enhancements); and
- LE05 – 2 credits for long term impact on biodiversity, upon confirmation that the LEMP will be implemented for the current proposed works.

4.1.2 The second credit available under LE01 relating to contaminated land is outside the scope of this report. Whether this credit is available will be assessed separately by a contaminated land specialist.

4.1.3 The second credit for LE02 and second and third credit for LE03 will be achievable upon acknowledgement by the design team, of their receipt and inclusion of ecology recommendations regarding bat-friendly lighting, installation of nest boxes and sensitive clearance methods of any vegetation due for removal. Upon confirmation that these measures have been included and adopted within the current proposals, this credit will be achievable.

4.1.4 The first credit of LE04 will be achievable upon confirmation of all enhancement measures (bat boxes, bat-friendly lighting and bird boxes).

4.1.5 Written consent confirming the developer's intention to comply with the recommendations and suggestions within this report will be provided separately upon receipt and review of this report.

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APPENDICES

Appendix A
Site Photographs

Photograph 1: Non-native species-poor hedgerow with mature cherry trees along southern site boundary.

Photograph 2: Native species-poor hedgerow with trees bordering the eastern site boundary.

Photograph 3: Introduced shrub with cotoneaster bordering the hardstanding on site.

Photograph 4: Introduced shrub with scattered trees along the northern boundary of the site.

Appendix B

Phase 1 Habitat Plan

Notes
1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.

Legend

- Site boundary
- Tree
- <all other values>
- Species-poor hedge with trees
- Fence
- Hardstanding
- Building
- Dense scrub
- Introduced shrub

Rev	Description	By	CB	Date

MAKING COMPLEX EASY

20 Western Avenue, Milton Park, Abingdon, Oxfordshire, OX14 4SH
T: +44(0)1235 821 888 E: rpsox@rpsgroup.com

Client: OXW Hayes Sarl.

Project: Hayes Bridge Retail Park

Title: Pre-development Habitats (Phase 1 Habitat Survey)

Status	Drawn By	PM/Checked By
DRAFT	MS	NH
Project Number	**Scale @ A3**	**Date Created**
ECO02269	1:1,250	APR 2022
Figure Number		**Rev**
1.1		-

rpsgroup.com

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Appendix C

Relevant Legislation

Bats

All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000. All British bats are also included on Schedule 2 of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 as European Protected Species. It is an offence to:

- intentionally or recklessly kill, injure or capture bats;
- deliberately or recklessly disturb bats (whether in a roost or not); and
- damage, destroy or obstruct access to bat roosts

A roost is defined as 'any structure or place which [a bat] uses for shelter or protection'. As bats tend to reuse the same roosts, legal opinion is that a roost is protected whether or not bats are present at the time of survey.

A licence will therefore be required by those who carry out any operation that would otherwise result in offences being committed.

The following bat species are listed as being of principal importance for the conservation of biodiversity in England, (commonly referred to as UKBAP Priority species): barbastelle, Bechstein's, noctule, soprano pipistrelle, brown long-eared, greater horseshoe, and lesser horseshoe.

Birds

All birds, their nests and eggs are afforded protection under the Wildlife and Countryside Act 1981, as updated by the Countryside and Rights of Way Act 2000. It is an offence to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; and
- intentionally take or destroy the egg of any wild bird.

Schedule 1 birds cannot be intentionally or recklessly disturbed when nesting and there are increased penalties for doing so. Licences can be issued to visit the nests of such birds for conservation, scientific or photographic purposes but not to allow disturbance during a development even in circumstances where that development is fully authorised by consents such as a valid planning permission.

Appendix D

Tree Retention and Removal Plan

NORTH

SCALE 1:500 0 12.5 25 37.5 50m

SCALE 1:1 0 10 20 30 40 50 60 70 80 90 100mm

NOTES

THIS DRAWING IS BASED ON FOLLOWING DOCUMENTS:

UMC ARCHITECTS SITE PLAN LAYOUT DRG.NO 21048_P0001 REV J DATED 22/09/2023

BB TREES TREE CONSULTANT BRIDGEWATER RETAIL PARK SURVEY DATED 22/02/2022 FOR DETAILS OF EXISTING TREES.

TREE LOCATIONS SHOWN ARE BASED ON INFORMATION PROVIDED BY GREENHATCH SURVEYS

THIS DRAWING HAS BEEN PREPARED IN ACCORDANCE WITH BS5837:2012.

KEY

ROOT PROTECTION AREA:
Area of hatching around protected trees indicates the minimum Root Protection Area required in accordance with BB TREES TREE SURVEY dated 22/02/2022.

PROTECTIVE BARRIER:
Existing trees to be retained shall be protected by protective barrier erected in accordance with the specification figure 2 of BS5837:2012. Barrier to be erected on the edge of the root protection area for each tree to be protected. To be erected prior to the commencement of any construction works on site.

T13

EXISTING TREES AND VEGETATION TO BE TO BE RETAINED AND PROTECTED AS PART OF THE PROPOSALS

T8

EXISTING TREES AND VEGETATION TO BE REMOVED AS PART OF THE DEVELOPMENT

EXISTING LAYOUT
As surveyed by Greenhatch Surveys

PROPOSED LAYOUT
To UMC Architects Site Plan layout Reference: 21048_P0001 REV J

SITE BOUNDARY

REV	DESCRIPTION	BY	CKD	DATE
D	Updated with latest UMC architects' plan (Rev J)	RG	GH	22/09/23
C	Updated with latest UMC architects' plan (Rev H)	RG	GH	19/05/23
B	Client logo updated	JL	JL	10/05/22
A	Amendments to landscape following new site boundary	MH	GH	18/03/22

BCA DESIGN
Landscape Architects

CLIENT
OXW Hayes Sarl

PROJECT
HAYES BRIDGE
RETAIL PARK

DRAWING TITLE
TREE PROTECTION AND REMOVAL PLAN

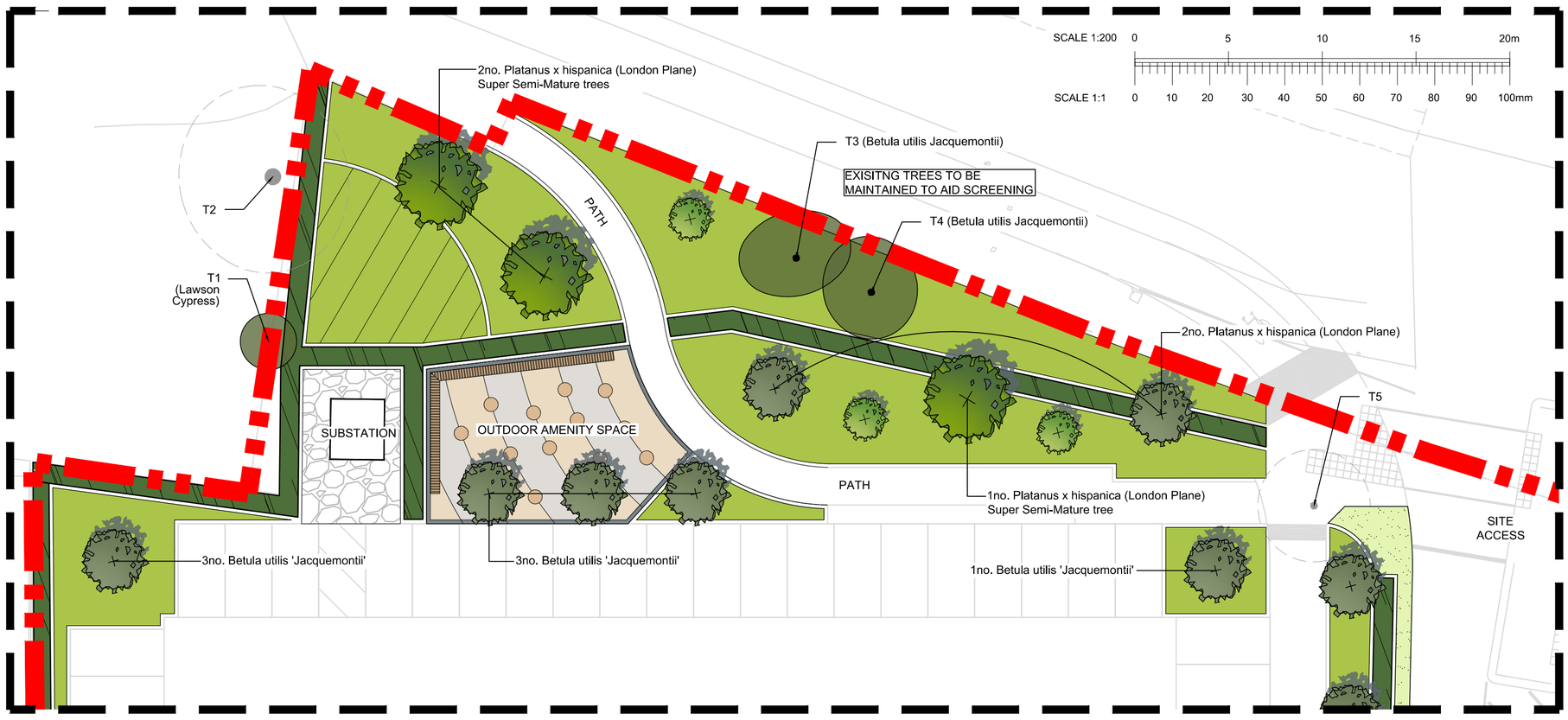
CONTRACT NUMBER:	2246-21	DATE:	11/03/2022
DRAWING STATUS:	PLANNING	CAD REFERENCE:	2246-21-02
DRAWN BY:	MH	CHECKED BY:	GH
SCALE:	1:500	ORIGINAL SHEET:	A1

PROJECT	ORIGINATOR	VOLUME	LEVEL	TYPE	ROLE	NUMBER	STATUS	REV
HAY	BCA	ELS	XX	DR	L	2246-21-02	S5	D

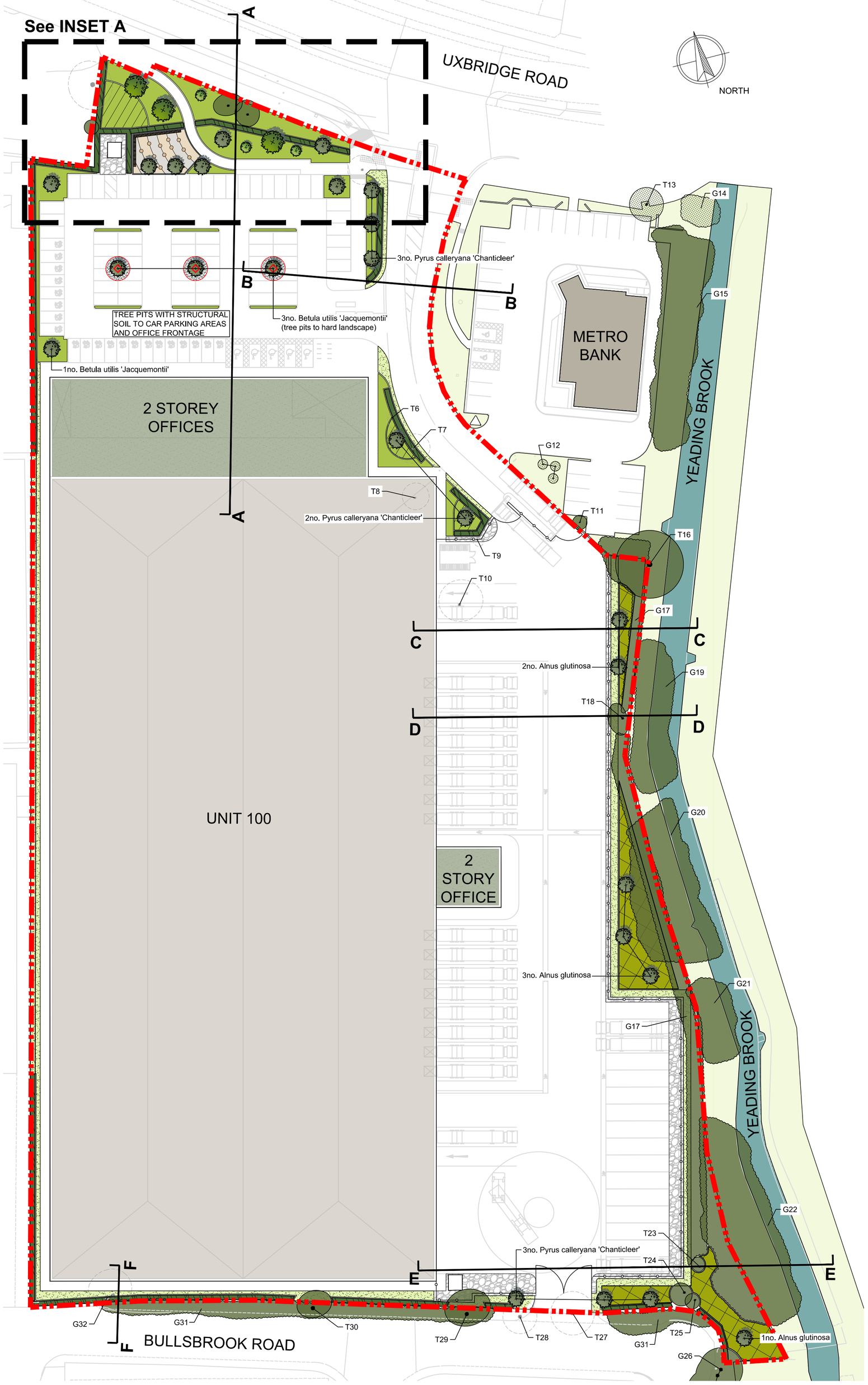
Barry Chinn Associates Ltd. Harbury Road, Deppers Bridge, Southam, Warwickshire, CV47 2SZ
Tel: +44 (0)1926 614031 Email: gen@bca-landscape.com Website: www.bca-landscape.com

Appendix E

Land Concept Plan



INSET A: SITE FRONTAGE (scale 1:200)



SCALE 1:500 0 12.5 25 37.5 50m
SCALE 1:1 0 10 20 30 40 50 60 70 80 90 100mm

NOTES
THIS DRAWING IS BASED ON FOLLOWING DRAWINGS/DOCUMENTS:

- UMC Architects Site Layout (dwg. ref. 21048_P0001 Rev K dated: 28/09/23)
- Trees and other existing vegetation areas are an approximate given by tree consultant BB Trees Ltd. 'Pre Development Tree Survey' (doc. ref. 665-22 dated: 22/02/22)
- Tree locations are based upon survey information from Greenhatch Surveys.
- Refer to BCA Design 2246-21-04 for Landscape Sections

This drawing has been prepared in accordance with BS5837:2012

KEY

T1 — **EXISTING VEGETATION TO BE REMOVED**

G2 — **EXISTING VEGETATION TO BE RETAINED**

T3 — **CATEGORY U TREES OUT OF SITE BOUNDARY**

INDICATIVE SPECIES LIST

SUPER SEMI-MATURE TREE (90-100cm stem girth)
(Tree pit size: 3000x3000x1600mm)
Species
Platanus x hispanica

EXTRA HEAVY STANDARD TREE (18-20cm stem girth)
(Tree pit size: 1500x1500x900mm)
Species
Platanus x hispanica
Alnus glutinosa
Betula utilis 'Jacquemontii'
Pyrus calleryana 'Chanticleer'

SPECIMEN SHRUBS
(300mm depth of topsoil, 300mm depth subsoil)

Species	Supply size	Pot size
Amelanchier lamarckii	1200-1500mm	15L
Miscanthus sinensis 'Purpurascens'	600-800mm	15L
Ribes sanguineum 'King Edward V11'	800-1000mm	15L

THICKET (WOODLAND EDGE) MIX PLANTING
(*300mm depth of topsoil + minimum 600mm depth subsoil*)

PROPOSED WOODLAND EDGE PLANTING
(*300mm depth of topsoil*)

Where woodland or thicket is planted next to a hard surface/kerb/fence, it should be positioned 1m from the edge.

Transplants planted in groups of 7-15 of the same species on a 1.0m grid.

%	Species	Common Name	Size	Age	Root/ Pot Size
10%	Corylus avellana	Hazel	400-600mm	1+1	OG
5%	Crataegus monogyna	Hawthorn	400-600mm	1+1	OG
5%	Cornus sanguinea	Common Dogwood	400-600mm	1+1	OG
10%	Euonymus europaeus	Common Spindle	400-600mm	1+1	OG
5%	Ilex aquifolium	Common Holly	400-600mm	1+1	2L
5%	Ligustrum vulgare	Privet	400-600mm	1+1	OG
10%	Prunus padus	Bird Cherry	400-600mm	1+1	OG
10%	Rhamnus cathartica	Common Buckthorn	400-600mm	1+1	OG
5%	Rosa canina	Dog Rose	400-600mm	1+1	OG
15%	Salix caprea	Goat Willow	600-800mm	1+0	OG
10%	Salix fragilis	Crack Willow	600-800mm	1+0	OG
10%	Viburnum opulus	Guelder Rose	400-600mm	1+1	OG
100%					

MIXED SPECIES NATIVE HEDGEROW
(*300mm depth of topsoil + minimum 600mm depth subsoil*)

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

%	Species	Common Name	Size	Age	Root
10%	Corylus avellana	Hazel	400-600mm	1+1	OG
20%	Crataegus monogyna	Hawthorn	400-600mm	1+1	OG
20%	Cornus sanguinea	Common Dogwood	400-600mm	1+1	OG
15%	Ilex aquifolium	Common Holly	400-600mm		2L
15%	Rosa arvensis	Field Rose	400-600mm	1+1	OG
20%	Viburnum opulus	Guelder Rose	400-600mm	1+1	OG
100%					

TALL TRANSITIONAL SHRUB PLANTING
(*300mm depth of topsoil + minimum 300mm depth subsoil*)
Ultimate plant height is above 1m.

Aucuba japonica 'Varigata'	300-400mm	3L	500c/s
Berberis thunbergii	400-600mm	3L	500c/s
Buddleia davidii 'Royal Red'	400-600mm	3L	600c/s
Cornus sanguinea	400-600mm	2L	600c/s
Cotoneaster franchetii	400-600mm	3L	600c/s
Elaeagnus x ebbingei	400-600mm	3L	600c/s
Euonymus europaeus	600-800mm	3L	600c/s
Rhamnus frangula	400-600mm	2L	500c/s
Symphoricarpos albus	400-600mm	3L	500c/s

ORNAMENTAL GROUND COVER SHRUB/HERBACEOUS PLANTING
(*300mm depth of topsoil + minimum 300mm depth subsoil*)
Ultimate plant height is below 1m.

Bergenia 'Silver Light'	300-400mm	2L	450c/s
Chaenomeles superba 'Jet Trail'	300-400mm	3L	500c/s
Geranium macrorrhizum 'Alba'	200-300mm	2L	450c/s
Hebe albicans	200-300mm	3L	500c/s
Lonicera nitida 'Silver Beauty'	300-400mm	3L	500c/s
Persicaria affinis 'Darjeeling Red'	200-300mm	2L	450c/s
Philadelphus 'Manteau d' Hermine'	300-400mm	3L	600c/s
Rosa 'Bingo Meidiland'	250-300mm	2L	500c/s
Sarcococca hookeriana var.digyna	200-300mm	2L	500c/s
Skimmia japonica 'Rubella'	200-300mm	3L	500c/s
Spiraea japonica 'Firelight'	300-400mm	3L	500c/s

SPECIES RICH GRASSLAND AREAS
(150mm depth of topsoil + minimum 150mm depth subsoil)

EM1 Basic General Purpose Meadow mixture sown at 4g/m2 supplied by Emosgate Seeds

GREEN ROOF SOLUTION
Extensive Bio Diverse Green Roof

SITE BOUNDARY

REV	DESCRIPTION	BY	CKD	DATE
I	*Updated to show latest UMC layout P0001 Rev K*	RG	GH	29/09/23
H	*Updated to show latest UMC layout P0001 Rev J*	RG	GH	22/09/23
G	*Tree stock sizes updated*	RG	GH	26/05/23
F	*Updated to show latest UMC layout P0001 Rev H*	RG	GH	19/05/23
E	*Updated to show latest UMC layout P0001 Rev G*	HC	GH	12/05/23
D	*Updated to show latest UMC layout P0001 Rev E*	HC	GH	24/11/22
C	*Client logo updated*	JL	JL	10/05/22
B	*Minor changes to extend sections*	MH	JL	14/04/22
A	*Amendments to landscape following new site boundary*	MH	GH	18/03/22

BCA DESIGN
Landscape Architects

CLIENT
OXW Hayes Sarl

PROJECT
HAYES BRIDGE RETAIL PARK

DRAWING TITLE
LANDSCAPE CONCEPT PLAN

CONTRACT NUMBER:	2246-21	DATE:	11/03/2022
DRAWING STATUS:	PLANNING	CAD REFERENCE:	2246-21-03
DRAWN BY:	MH	CHECKED BY:	GH
SCALE:	AS SHOWN	ORIGINAL SHEET:	A1

PROJECT	ORIGINATOR	VOLUME	LEVEL	TYPE	ROLE	NUMBER	STATUS	REV
HAY	BCA	ELS	XX	DR	L	2246-21-03	S5	I

Barry Chinn Associates Ltd. Harbury Road, Deppers Bridge, Southam, Warwickshire, CV47 2SZ
Tel: +44 (0)1926 614031 Email: gen@bca-landscape.com Website: www.bca-landscape.com