BICESTER HERITAGE

ECOLOGYSOLUTIONS

Part of the ES Group

NEW TECHNICAL SITE,
BICESTER HERITAGE,
BICESTER
OXFORDSHIRE

Landscape and Ecology Management Plan

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ecology solutions for planners and developers

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PLANS

APPENDICES

1. INTRODUCTION

1.1. Background & Proposals

1.1.1. This Landscape and Ecology Management Plan (LEMP) has been prepared by Ecology Solutions on behalf of Bicester Heritage. It sets out the management of features of ecological interest due to be retained and created at Bicester Heritage, New Technical Site, Bicester, Oxfordshire (see Plan ECO1), hereafter referred to as the site.

1.1.2. Ecology Solutions Ltd carried out habitat surveys of the site in June 2018, along with specific surveys (and assessments for) bats, badgers, reptiles and birds.

1.1.3. Previous habitat surveys and specific surveys for bats, badgers, reptiles and Great Crested Newts were undertaken by BSG Ecology Ltd between April 2016 and June 2017, the results of which are referred to in this report where appropriate.

1.1.4. This LEMP has been specifically produced to discharge Condition 9 (reproduced below) of the planning permission (ref: 18/01333/F) for new employment units comprising flexible B1(c) light industrial, B2 (general industrial), B8 (storage or distribution) uses with ancillary offices, storage, display and sales, together with associated access, parking and landscaping.

1.1.5. Condition 9 states that:

> *'No development shall commence until a Landscape and Ecology Management Plan (LEMP) has been submitted to and approved in writing by the Local Planning Authority. Thereafter, the LEMP shall be carried out in accordance with the approved details.*
>
> *Reason: To protect habitats of importance to biodiversity conservation from any loss or damage in accordance with Policy ESD10 of the Cherwell Local Plan 2011 – 2031 Part 1 and Government guidance contained within Section 15 of the National Planning Policy Framework. This information is required prior to commencement of the development as it is fundamental to the acceptability of the scheme.'*

1.1.6. This LEMP has been written with reference to published guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) and in accordance with Natural England guidelines for protected species.

1.1.7. The document is set out as follows:

- Ecological baseline and evaluation of important features within the development site, including results of updated ecological surveys and any associated mitigation measures;
- Objectives of the LEMP in order to maximise the ecological potential of features due to be retained within the site;

- Mitigation and Management prescriptions in order to achieve objectives. These include any monitoring requirements; and
- The work program for 5 years.

1.1.8. The ecological value of the site is set out in detail within the report entitled New Technical Site, Bicester Heritage, Bicester – Ecological Assessment (July 2018) produced by Ecology Solutions.

2. ECOLOGICAL BASELINE AND EVALUATION

2.1. Ecology Solutions carried out updated habitat surveys in June 2018 based upon an extended Phase 1 survey technique. The habitats and dominant plant species were recorded, together with conspicuous faunal activity and evidence of the presence, or potential presence, of protected species. The methodology and results from these habitat and faunal surveys are set out below.

2.2. Methodology

Habitat Survey Methodology

2.2.1. Habitat surveys were carried out in June 2018 in order to ascertain the general ecological value of the site and to identify the main habitats and associated plant species.

2.2.2. The site was surveyed based around extended Phase 1 survey methodology[1], as recommended by Natural England whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.2.3. Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

2.2.4. All the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent at different seasons. Nonetheless, the timing of the surveys included the optimal period for the habitats present and given the existence of prior survey information for the site it is considered that an accurate and robust assessment has been made of the botanical interest.

Previous Surveys

2.2.5. Habitat surveys were previously undertaken by BSG Ecology Ltd in April 2016.

Faunal Survey

2.2.6. Obvious faunal activity, such as birds or mammals observed visually or by call during the course of the surveys, was recorded. Specific attention was paid to any potential use of the site by protected species, species of principal importance (priority species), or other notable species.

[1] Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

2.2.7. In addition, specific surveys (and assessments) were undertaken in relation to bats, Badgers *Meles meles*, reptiles, amphibians and birds.

2.2.8. Experienced ecologists undertook the faunal surveys with regard to established best practice and guidance issued by Natural England. Details of the methodologies employed are provided below.

2.2.9. **Bats***.* Bat surveys were undertaken in June 2018 to assess the potential for roosting bats within trees on and adjacent to the site. The work was overseen by an experienced bat worker and aimed to establish the likelihood of presence / absence of bats. This survey also provided an evaluation of the quality of habitats present within the site for foraging and commuting bats. These surveys supplemented survey works previously undertaken by BSG Ecology in April 2016 and May 2017.

2.2.10. Field surveys were undertaken with regard to best practice guidelines issued by Natural England (2004[2]), the Joint Nature Conservation Committee (2004[3]) and the Bat Conservation Trust (2016[4]).

2.2.11. A detailed internal and external inspection survey was undertaken to search for any evidence of use by roosting bats within buildings. All accessible voids within buildings were surveyed, with evidence of bat such as droppings, feeding remains or individual bats searched for. Furthermore, a detailed external survey was undertaken to identify any potential access points or features which could be utilised by bats.

2.2.12. The probability of a building being used by bats as a summer roost site increases if it:

- is largely undisturbed;
- dates from pre 20th Century;
- has a large roof void with unobstructed flying spaces;
- has access points for bats (though not too draughty);
- has wooden cladding or hanging tiles; and
- is in a rural setting and close to woodland or water.

2.2.13. Conversely, the probability decreases if a building is of a modern or pre-fabricated design / construction, is in an urban setting, has small or cluttered roof voids, has few gaps at the eaves or is a heavily disturbed premises.

2.2.14. The main requirements for a winter / hibernation roost site is that it maintains a stable (cool) temperature and humidity. Sites commonly utilised by bats as winter roosts include cavities / holes in trees, underground sites and parts of buildings. Whilst different species

[2] Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
[3] Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.
[4] Collins, J. (Eds.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. Bat Conservation Trust, London.

may show a preference for one of these types of roost site, none are solely dependent on a single type.

2.2.15. Following the initial assessment of buildings within the site, a single dusk emergence survey was undertaken, by BSG in May 2017, which targeted a single building (B2) identified as supporting limited potential opportunities for roosting bats in the form of cracks in brickwork. Surveyors were positioned so as to observe potential emergence / access points, and utilised EchoMeter 3 (EM3) or Anabat SD bat detectors to aid identification of bats. Any bat activity observed was noted. Emergence surveys were undertaken from ½ hour before sunset, until 2 hours after sunset.

2.2.16. All trees at the site were assessed for their potential to support roosting bats. For a tree to be classed as having some potential for roosting bats it must usually have one or more of the following characteristics:

- obvious holes, e.g. rot holes and old woodpecker holes;
- dark staining on the tree below a hole;
- tiny scratch marks around a hole from bats' claws;
- cavities, splits and/or loose bark from broken or fallen branches, lightning strikes etc.;
- very dense covering of mature Ivy *Hedera helix* over trunk.

2.2.17. Habitats were evaluated for their potential to support foraging and commuting bats based on the presence of features of value for this group, such as a rich network of hedgerows, woodland or other habitats offering significant connective or foraging function.

2.2.18. **Badgers.** Surveys were undertaken to search for evidence of Badgers on 13th June 2018 by Ecology Solutions, and by BSG in April 2016, and comprised two main elements. The first of these was a thorough search for evidence of Badger setts. For any setts encountered each sett entrance would be recorded and plotted, even if the entrance appeared disused. The following information was recorded if appropriate:

i) The number and location of well used or very active entrances; these are clear of any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently.

ii) The number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance.

iii) The number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be and the remains of the spoil heap.

2.2.19. Secondly, evidence of Badger activity, such as well-worn paths and run-throughs, snagged hair, footprints, latrines and foraging signs, was also searched for in order to build up a picture of the use of the site by Badgers.

2.2.20. **Reptiles.** An initial assessment to identify areas of suitable reptile habitat within the site was undertaken on 13th June 2018 by Ecology Solutions and by BSG in April 2016. Given the current management of potentially suitable habitats for reptile species (semi-improved grassland) as mown grassland, it is not considered that the majority of habitats within the site offer any significant opportunities for this group.

2.2.21. Very limited areas of grassland and woodland ground flora, along the margins of the site, may provide limited opportunities for reptile species. Given the retention of the majority of these areas within the development proposals and the use of an appropriate clearance methodology, where relevant, it is considered that there is little potential for significant impacts to reptiles within the proposals and as such no further specific surveys for this group have been undertaken.

2.2.22. **Birds.** The site offers opportunities for nesting birds in terms of the scattered trees, a single treeline and areas of woodland and scrub, in addition to limited foraging opportunities within areas of grassland. It is noted however that similar opportunities are available within the wider area.

2.2.23. The site was subject to a single breeding bird survey visit in June 2018.

2.2.24. **Amphibians.** The site was recorded, by BSG in April 2016, to support two small waterbodies which were considered to support potential breeding habitat for Great Crested Newts *Triturus cristatus*. One of these waterbodies dried out completely following this initial survey. These ephemeral waterbodies are both heavily shaded and support no aquatic vegetation.

2.2.25. A suite of specific Great Crested Newt surveys was subsequently carried out by BSG, of the single extant pond, to ascertain the presence or absence of this species from the site. Surveys were undertaken between May and June 2016.

2.2.26. All of the surveys were undertaken in suitable weather conditions in accordance with the Natural England guidelines[5] to determine the presence or absence of Great Crested Newts. Surveys undertaken by BSG utilised three methods per visit (torch survey, bottle-trapping and egg searches), where possible.

2.2.27. Suitable survey weather conditions are deemed to be those nights when the night-time air temperature is more than 5°C, with little or

[5] English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

no wind, and no rain, and surveys were conducted during such conditions.

2.2.28. Torch counting involved the use of high-powered torches to find and, if possible, count the number of adults of each amphibian species. As recommended by Natural England the entire margin of each waterbody was walked once, slowly checking for Great Crested Newts.

2.2.29. Bottle-trapping involved setting traps made from two litre plastic bottles around the margin of each waterbody, and leaving the traps set overnight before checking them the following morning. A density of at least one trap per two metres of shoreline was utilised, where possible, as recommended by Natural England.

2.2.30. In addition, an egg search was undertaken of any aquatic vegetation to search for any evidence of breeding Great Crested Newts.

2.2.31. Although Natural England guidance typically advises four survey visits between mid-March and mid-June, surveys completed by BSG in 2016 were undertaken over three survey visits, after which pond P1 dried up completely. During surveys undertaken by Ecology Solutions in June 2018 these previously recorded waterbodies were noted to be completely dry. It is considered therefore, given the nature of the supported waterbodies and the findings of the surveys conducted by BSG Ecology, that surveys undertaken are adequate to inform an accurate assessment of the use of the site by protected amphibian species.

2.3. **Ecological Features**

2.3.1. Habitat surveys were undertaken within the site June 2018.

2.3.2. The following main habitat / vegetation types were identified within the site:

- Semi-improved grassland (species poor);
- Tall Ruderal Vegetation;
- Young Broadleaved Semi-Natural Woodland;
- Scattered Trees;
- Waterbodies;
- Hardstanding; and
- Buildings.

2.3.3. Each habitat present is described below with an account of their representative plant species.

Semi-improved Grassland

2.3.4. A large proportion of the site is currently comprised of semi-improved grassland which is currently managed through regular close mowing.

2.3.5. Species present in the grassland include: Sheep's Fescue *Festuca ovina,* Perennial Rye-grass *Lolium perenne,* Cock's-foot *Dactylis glomerata,* Common Bent *Agrostis capillaris,* Annual Meadow-grass *Poa annua,* Field Wood-rush *Luzula campestre,* Dandelion *Taraxacum agg.,* Smooth Hawksbeard *Crepis capillaris,* Yarrow *Achillea millefolium,* Germander Speedwell *Veronica chamaedrys,* Broad-leaved Willowherb *Epilobium montanum,* Common Mouse-ear *Cerastium fontanum,* Cut-leaved Cranesbill *Geranium dissectum,* Herb Robert *Geranium robertianum,* White Clover *Trifolium repens,* Ground Ivy *Glechoma hederacea,* Ribwort Plantain *Plantago lanceolate,* Creeping Buttercup *Ranunculus repens,* Common Nettle *Urtica dioica,* Bird's-foot trefoil *Lotus coniculatus* and Springy Turf-moss *Rhytidiadelphus squarrosus,*

2.3.6. While the majority of the grassland was considered to be species poor, areas of grassland which were present on the turfed air-raid shelter and defensive structures, in the east of the site were considered to be of relatively greater botanical interest, supporting Red Fescue *Festuca rubra,* Common Dog-Violet *Viola riviniana,* Wild Parsnip *Pastinaca sativa,* Eyebright *Euphrasia sp.,* Red Clover *Trifolium pratense* and Oxeye Daisy *Leucanthemum vulgare.*

Tall Ruderal Vegetation

2.3.7. A small area of the eastern part of the site is comprised of tall ruderal vegetation, largely Common Nettle, in addition to Hogweed *Heracleum sphondylium* and Spear Thistle *Cirsium vulgare.*

Young Broadleaved Semi-Natural Woodland

2.3.8. A large proportion of the site is occupied by areas of young broad-leaved semi-natural woodland. This habitat is largely comprised of a relatively short dense canopy is heavily shaded with very limited ground flora. Several patches of dense scrub are also present in this area.

2.3.9. Species comprising the canopy include English Elm *Ulmus minor var. vulgaris,* Sycamore *Acer pseudoplatanus,* Hazel *Corylus avellana,* Hawthorn *Crategus monogyna,* Blackthorn *Prunus spinosa* and Elder *Sambucus nigra.*

2.3.10. Understorey and scrub species include Hawthorn, Blackthorn, Elder, Bramble *Rubus fruticosus agg.* and Ivy *Hedera helix.*

2.3.11. Ground floral species are largely limited to Nettle and Lords and Ladies *Arum maculatum.* Further ground floral species recorded included Dandelion, Smooth Sow-thistle *Sonchus oleraceus,* Hogweed, Spear Thistle, Ribwort Plantain, Cock's-foot, Garlic Mustard *Allaria petiolata,* Cow Parsley *Anthriscus sylvestris,* Greater Burdock *Arctium lappa,* Perennial Rye-grass, Cow-slip *Primula veris,* White Clover, Comfrey *Symphytum officinale,* White Dead-nettle *Lamium album,* Red Dead-nettle *Lamium purpureum,* Common Dog-violet, Common Field Speedwell *Veronica persica,* Common Daisy *Bellis perennis,* Hairy Bittercress *Cardamine hirsuta,*

Yarrow, Teasel *Dipsacus fullonum* and Danish Scurvygrass *Cochlearia danica.*

Scattered Trees

2.3.12. Numerous scattered trees are present within the site within areas of semi-improved grassland and in proximity to several of the buildings. A treeline is also present along the northern boundary of the site.

2.3.13. Species present include Sycamore, Beech *Fagus sylvatica,* Hornbeam *Carpinus betulus,* Wild Cherry *Prunus avium* and Ash *Fraxinus excelsior*.

Waterbodies

2.3.14. The site was recorded to support two waterbodies during surveys undertaken by BSG in April 2016. These features were recorded to be dry during surveys undertaken by Ecology Solutions in June 2018. No aquatic or water tolerant species were recorded within these dry ephemeral waterbodies.

Hardstanding

2.3.15. Remnant areas of hardstanding, comprised of concrete and tarmac are present in the central areas of the site, within the young broadleaved woodland. These areas are colonised in places, largely by Bramble scrub in addition to a number of species previously recorded within the nearby semi-improved grassland.

Building

2.3.16. The site supports a number of buildings of varying structure. These structures have been described below.

2.3.17. Building B1 is a single storey red brick and concrete construction, with a flat leaded roof. The brickwork was in good condition with no potential access points for bats noted.

2.3.18. Building B2 is a single storey structure constructed from red brick and concrete with a flat concrete roof, and is in poor condition.

2.3.19. Buildings B3, B4 and B5 are half storey air raid shelters and defensive structures, constructed internally from red brick and concrete with earth mounds surrounding and, where roofs are present, overlying turf. These structures will be fully retained within the proposed development.

2.3.20. This species was not recorded within the site during the Phase 1 survey and it is considered, given the habitats supported it is not likely that the site supports this species.

2.4. **Wildlife Use of the Site**

Bats

2.4.1. A single building within the site was considered to offer limited potential opportunities for roosting bat species, that being building B2, which supported a number of small cracks in its brickwork as a result of its semi-derelict condition.

2.4.2. An emergence survey undertaken of this structure by BSG Ecology in May 2017. This survey recorded no use of this building by roosting bats. Further internal inspection of this building by Ecology Solutions in June 2018 recorded no evidence of the use of this structure by roosting bats. As such it is considered that this structure does not currently support roosting bat species.

2.4.3. A number of scattered trees in the east and north-west of the site were noted to support limited opportunities for roosting bats in the form of cracks, holes and splits. No trees offering potential opportunities were noted within the Site which are to be lost as a result of the proposed development.

2.4.4. The site is bound to the south and north-west by a wide band of immature woodland, this feature is considered to have some potential to offer limited opportunities for foraging and commuting bats. During the emergence survey of building B2 undertaken by BSG this feature was recorded to be utilised by a low number of Common Pipistrelle *Pipistrellus pipistrellus*.

2.4.5. While a proportion of the site, comprising young broadleaved woodland, is likely to offer limited foraging potential for a range of common and widespread bat species the only feature considered likely to be of any note for local bat populations is likely to be the band of woodland which comprises the sites southern boundary along the A4421. Given that this feature is to be fully retained within the proposals it was considered that specific activity surveys of the site would not be required.

2.4.6. It is considered likely that this band of woodland, which does not provide a significant link to suitable habitats in the wider area, will be utilised on a regular basis by a low number of common and widespread bat species for the purposes of foraging and commuting.

Badgers

2.4.7. No Badger setts were recorded within the Site. No other evidence of Badgers, in the form of setts, foraging pits, latrines, footprints or well-worn pathways were recorded within the site or the wider locality during any of the surveys undertaken.

Reptiles

2.4.8. Habitats within the site are considered unsuitable for reptile species, comprising either short mown grassland or heavily shaded woodland, scrub and tall ruderal habitats.

Birds

2.4.9. The site offers some opportunities for nesting birds in terms of the hedgerows and scrub, although similar opportunities are available within the wider area.

2.4.10. Bird species recorded at the site during the single breeding bird survey include: Blackcap *Sylvia atricapilla,* Wood Pigeon *Columba palumbus*, Chaffinch *Fringilla coelebs,* Robin *Erithacus rubecula*, Chiffchaff *Phylloscopus collybita*, Magpie *Pica pica*, Carrion Crow *Corvus corone*, Jay *Garrulus glandarius,* Blue Tit *Cyanistes caeruleus*, Great Tit *Parus major,* Dunnock *Prunella modularis* and Wren *Troglodytes troglodytes* in low numbers, associated with the hedgerow along the western site boundary.

Amphibians

2.4.11. The site supports two ephemeral waterbodies which were considered to provide, limited potential breeding opportunities for Great Crested Newts.

2.4.12. As such detailed aquatic surveys were undertaken to ascertain the presence or absence of amphibian species. All surveys were undertaken in line with the methodology outlined in Section 2 above, with surveys undertaken during suitable weather conditions and during the optimal period. The results of the survey are summarised in Table 1 below.

Date	Survey Number	Weather Conditions	Amphibians Recorded
24.05.16	1	11C, 30% cloud cover, dry	None
01.06.16	2	12C, 70% cloud cover, dry	None
06.06.16	3	15C, 50% cloud cover, dry	None

Table 1: 2016 Great Crested Newt Survey Results (Summary)

2.4.13. Following three survey visits in 2016 both ponds P1 and P2 dried up. Surveys undertaken by Ecology Solutions in 2018 recorded both of these features to be dry.

2.4.14. Given the results of specific survey work undertaken for amphibians, it is considered that the site is not utilised by Great Crested Newt.

3. MANAGEMENT OBJECTIVES

3.1. The aims and objectives of this LEMP are to fully safeguard the existing ecological interests of the site and to ensure that long term ecological enhancements are realised through proposed landscaping and on-going site management.

3.2. The management prescriptions as outlined in this LEMP will also ensure that there will be no adverse impacts to protected and notable species which utilise the site.

3.3. The following objectives have been identified:

- **Objective 1**: Maintain and enhance retained and newly created habitats within the site;
- **Objective 2**: Maintain populations of protected species identified within the site at a favourable conservation status;
- **Objective 3**: Increase biodiversity by maximising opportunities for flora and fauna; and
- **Objective 4:** Maintain and enhance the newly planted trees and hedgerows within the site for the purposes of visual amenity.

3.4. Appropriate management options for achieving these objectives are set out below.

3.5. A Planting Proposals plan has been produced by Anthony Stiff Associates Ltd and is included at Appendix 1.

Objective 1: Maintain and enhance retained and newly created habitats within the site

3.6. The site supports a number of habitats of no significant ecological value including short mown semi-improved grassland of a low species diversity, areas of recolonising and bare hardstanding, tall ruderal vegetation, waterbodies and buildings. Features of relatively higher ecological value, within the context of the site, include the scattered trees and areas of young semi-natural broadleaved woodland.

3.7. With the exception of some semi-improved grassland within the eastern part of the site, and a number of scattered mature trees and a narrow belt of broadleaved woodland, the vast majority of existing habitats within the site will be lost to facilitate development. However, the development proposals will see the creation of a range of new species-rich habitats within the communal areas of the development.

3.8. Protective fencing shall be installed prior to the commencement of construction in order to protect retained trees. Fencing shall be undertaken in accordance with the current British Standard (BS 5837:2012) to protect roots from compaction. Fences shall be installed at canopy width from retained trees. This shall ensure that direct impacts and severance / asphyxiation of roots are avoided.

3.9. Areas of grassland which are to be retained within the proposed development will be subject to appropriate management to maintain and enhance their value for biodiversity in the long term. These areas will be delivered as species-rich grassland through the clearing of stockpiled arisings, where appropriate within the site.

3.10. Where appropriate, fencing shall also be undertaken to protect retained grassland from machinery and personnel during the construction period.

3.11. Newly created habitats within the development area will include new hedgerows, tree planting and mixed grassland habitats, including wet grassland meadow planting and marginal planting associated with the swales and balancing ponds of the SuDS.

3.12. Management prescriptions and monitoring requirements for these habitats are described below.

Grassland Habitats

3.13. A range of grassland habitats are proposed within the development include amenity grassland, wildflower meadow and wetland wildflower meadow mixes. Management regimes for these swards will vary for these habitats in order to best enhance habitat biodiversity and/or functionality.

3.14. Areas of wildflower grassland (WF19 'Pollinator Paradise') will be provided within the east of the site. Furthermore, areas of wet wildflower meadow (Emorsgate EM8 'Meadow Mixture for Wetlands' or similar) are to be provided within the proposed swales and balancing ponds in the eastern part of the site. These habitats include a wide range of native species, which will be of benefit to a range of faunal groups, particularly foraging birds and invertebrates.

3.15. Management of these swards in the first year will involve regular maintenance in order to ensure that seedling development is successful and that the growth of competitive weed species is controlled. Where required, weeding will be undertaken by hand or if necessary, through the sensitive use of Glyphosate based chemicals. Cuttings should be removed immediately from the site. For the first few years, it may be necessary to re-seed areas of wildflower meadow in order that a sufficient, self-sustainable seed-bank can develop.

3.16. Subsequent to cutting in Year 1, meadow grasslands should be cut two times a year, once in March/April and again in September/October (after flowering). These cuts should be completed once the sward has reached a height in excess of 100mm, and cutting should be completed to a height of between 40-70mm. Areas of grassland within the site should be cut on a rotational basis in order to enhance the variation and diversity of meadow habitats, which will maximise the biodiversity value of the habitat. Cuttings should be left on site to dry for approximately seven days prior to removal in order to allow for flower seeds to disperse.

3.17. Amenity grassland habitats (A24 hard-wearing general amenity and A6 supreme shade) will be provided throughout the development, including

the northern, western and southern boundaries of the site, and more centrally adjacent to the proposed buildings.

3.18. Whilst amenity grassland habitats will generally be subject to an intensive cutting regime, where possible areas may be left to grow longer, allowing herb and grass species to flower and providing benefits to biodiversity.

3.19. By complying with the management regimes above, the need for additional management to grassland habitats in the form of weed removal or scrub clearance will be largely alleviated. Should additional management be required, this should be in the form of either manual or mechanical vegetation removal. Where this is not possible, Glyphosate based herbicides may be applied to habitats of concern, where necessary.

Sustainable Urban Drainage System (SuDS)

3.20. As outlined above the proposed SuDS for the site will comprise swale habitats seeded with the wet grassland seed mixture (EM8 or similar).

3.21. Moreover, native marginal planting will be provided in these areas, and will include Common Sedge, Pendulous Sedge, Yellow Loosestrife, Water-mint, Spiked Water-millfoil, Lesser Spearwort, and Brooklime.

3.22. Areas of SUDS will be managed, wherever possible, to provide an increase in biodiversity value of the site whilst retaining their function of providing drainage to the new development. Any areas of standing water will provide new opportunities for fauna within the development area, including amphibian species.

Hedgerows

3.23. As outlined above, new hedgerow planting is proposed within the new development, specifically along the southern boundary of the site. Native hedgerows will support a range of species of value to wildlife including Field Maple, Hawthorn, Holly, Blackthorn *Prunus spinosa* and Dog-rose.

3.24. New hedgerows will be planted in double staggered rows. Where required, protection will be implemented to ensure young vegetation is not damaged by species such as Rabbits. Planting will be undertaken during the autumn or spring, during suitable weather conditions, with subsequent monitoring required in order to identify any potential gaps where plants have not survived. Should gaps or areas of dead hedgerow be identified, then replacement planting will be undertaken.

3.25. Once established, native hedgerows will be cut once every two years on a rotational basis where possible in order to enhance their structure and value to nesting birds. Cuts shall typically be undertaken as late into the autumn / winter period as possible, in order to ensure that these features provide as much of a food resource as possible for birds. However, if management is required between March and July this will be preceded by a survey by an ecologist to check for nesting birds.

3.26. Regular health checks of the hedgerows will be undertaken especially during periods of dry weather, to ensure that the hedgerows are not affected by drought.

3.27. Where possible, verges on hedgerows are to be managed to promote wildflower edges. Management will include a relaxed cutting regime in which hedge margins to 1.5m will be cut no more than twice in any one season, with one cut undertaken in late July / August and a further cut in suitable weather conditions in October (where required). Weeding of these verges by hand will be conducted on a monthly basis during the establishment period in order to prevent the establishment of undesirable species.

Tree Planting

3.28. A number of mature trees are to be retained within the site, including a band of young woodland at the southern boundary. As outlined above protective fencing will be installed at canopy width around any retained trees to protect roots from compaction, and will remain in place until construction works are completed within the vicinity of the tree.

3.29. All mature trees to be retained will be subject to appropriate arboriculture, where necessary, to help prolong their life and also make them safe. The condition of the mature and newly planted trees within the site will be monitored to ensure that favourable condition is maintained. All management involving tree removal and remedial arboricultural works to trees will be carried out by experienced and qualified contractors

3.30. Any works to trees proposed for the period March to July inclusive will be preceded by a survey by an ecologist to check for nesting birds.

3.31. A significant number of trees will be provided as part of the proposals, including screen planting at the site boundaries, within areas of open grassland, and within amenity space. Proposed tree planting comprises a range of native and wildlife beneficial species, including a number of seed and berry-bearing species such as Crab Apple and Cherry, as well as other native species such Holm Oak, Hornbeam, Small-leaved Lime, Field Maple, and Alder.

3.32. Regular health checks of newly planted trees and scrub species will be made during periods of dry weather to ensure that trees are not affected by drought and in order to conduct pruning of dead / damaged branches as required.

3.33. Within the areas of newly provided grassland, log-piles will be established using timber taken from on-going management of trees and hedgerows. All dead wood produced in the future will be retained as an ecological feature, offering new habitat for saproxylic invertebrates as well as potential hibernacula for amphibian and reptile species.

Future Monitoring

3.34. At the end of the fifth year post-completion of the development, this LEMP will be subject to review by a suitably qualified ecologist, and any required

amendments will be discussed and agreed with the local planning authority.

3.35. This review will include consideration of continuing management activities, allowing areas of concern or of significant ecological change to be identified and addressed, in order to maximise the biodiversity value of the new and retained habitats within the site.

Objective 2: Maintain population of protected species at a favourable conservation status

3.36. Habitat creation within the site and the introduction of a management regime will provide for a net enhancement in the quality of habitats present on site compared to the existing situation. This will be of benefit to key species / groups, such as bats and birds.

3.37. The creation of green corridors and buffer zones within public open space will link green areas on site and will be of further benefit to these groups. These areas will be sensitively managed in order to maximise their biodiversity value.

Bats

3.38. The provision of extensive areas of new landscape planting, comprising a range of species-rich grassland habitats and new tree and hedgerow planting will provide additional foraging and commuting opportunities for this group. The retention and reinforcement of green corridors across the site, notably the habitats along the southern boundary, will ensure minimal disruption to existing feeding and commuting behaviour and will provide new opportunities for bats on site.

3.39. Areas of open space within the site shall not be subject to any direct artificial lighting. Light spill will be minimised to areas of the development where illumination is not required, using appropriate means such as hoods and cowls where necessary. This will enable lighting within the development to accord with highways requirements whilst retaining dark areas for use by foraging and commuting bats.

3.40. A total of three bat boxes will be installed on retained mature and semi-mature trees in the site, with indicative locations shown on Plan ECO1. The boxes will be fitted in a south-westerley and south-easterly direction and will provide additional roosting habitats.

3.41. Schwegler bat box type 1FF is designed to be attached to trees and requires no maintenance once installed. This bat box is designed to be used by Pipistrelle bat species (see Appendix 2). It is proposed that this design should be installed and maintained on site. These boxes will be checked for damage on an annual basis and should repair or replacements be required, removal of the existing feature will be completed by a suitably licensed and experienced individual or group.

Birds

3.42. Birds will benefit from new landscaping and planting, particularly of berry bearing species, and also the implementation of appropriate habitat

management, as this will provide additional nesting/roosting habitats in addition to an increased foraging resource.

3.43. Management of habitats will be undertaken with due consideration for potential use by birds. Any necessary management of vegetation will be undertaken outside of the main bird breeding season (March – July inclusive) wherever possible.

3.44. Three nesting boxes will be provided on mature trees retained within open space (indicative positions shown on Plan ECO1). The boxes will be cleaned once a year (by persons to be agreed) and any damaged boxes will be repaired or replaced as and when necessary. Bird boxes will be of varying types to encourage a variety of species (see Appendix 3).

Objective 3: Increase biodiversity by maximising opportunities for flora and fauna

3.45. Grassland habitats created within the site will be sown with a wildflower mix and managed to increase their biodiversity value (see above).

3.46. Additional planting within the proposed development and associated public open space will utilise planting mixes based around the use of native species, or those of benefit to wildlife (berry/nut bearing varieties of shrubs and trees).

3.47. The swale and balancing pond habitats associated with the SuDS will be managed where possible to increase the biodiversity of the habitat.

3.48. Bat boxes and bird boxes will be provided on suitable retained trees within open space to provide new nesting/roosting opportunities.

3.49. The provision of log-piles within the site will provide new opportunities for faunal groups which do not currently exist within the site, including reptiles and amphibians.

Management Constraints

3.50. Management cannot be undertaken which compromises the survival or success of the species listed above. This will ensure conformance with relevant legislation relating to protected species.

3.51. All birds are legally protected from disturbance whilst actively nesting (generally March to July inclusive). Management of hedgerows, scrub and trees should therefore be undertaken outside of the bird breeding season wherever possible.

Objective 4: Maintain and enhance the newly planted trees and hedgerows within the site for the purposes of visual amenity

3.52. All new trees are to be maintained in accordance with BS8545:2014, with newly the hedgerows are to be maintained in accordance with BS4428:1989.

3.53. In order to maintain a tidy appearance, the site will be regularly monitored for litter, which if found will be removed from site.

4. SCHEDULE OF WORKS

Objective	Receptor	Management Prescription	Timing of Works	Personnel Responsible
1. MAINTAIN AND ENHANCE RETAINED AND CREATED HABITATS	Wildflower Grassland	Areas of open space will be sown / oversown with a species-rich grassland seed mixes (while the swales and balancing ponds will be sown with wetland meadow mix.	Spring or autumn, and when the ground is not frost bound or waterlogged, prior to completion of development.	Developer / Contractor
		In the first year, the dry meadow grassland will be allowed to grow freely until September / October then cut to 4cm with all arisings removed.	First year after sowing in September / October.	Landscape Contractor
		In the first year, the wet meadow grassland will be cut in mid-summer to 4-6cm with all arisings removed.	First year after sowing in mid-summer.	Landscape Contractor
		In subsequent years, the dry wildflower grassland will be cut to 15-20cm in late summer, with only 50% of the grassland cut in any one year. All arisings to be removed (and placed in a habitat pile)	Annually in late summer.	Landscape Contractor/ Management Company
		The wet meadow grassland will be allowed to grow freely until July / August then cut to 5cm, with a second cut in September / October if necessary.	Annually in July / August	Landscape Contractor/ Management Company
	Amenity Grassland	Areas of amenity grassland will be laid with new turfs prior to completion of development.	Mid-autumn to late winter, prior to completion of development	Developer / Contractor
		The amenity grassland will be checked monthly and cut to 35mm when it reaches 10cm.	Throughout the growing season.	Landscape Contractor / Management Company
	Retained trees and new hedgerows / trees	New tree and hedgerow planting will be undertaken within the site based around native species or species of benefit to wildlife.	Autumn, winter or spring.	Developer / Contractor
		For the first five years after planting, regular health checks will be undertaken to ensure plants are not affected by drought. Any failed plants will be replaced.	Annually for the first five years.	Landscape Contractor / Management Company
		Retained and new trees will be cut on a 2-3 year rotation, and where possible will be maintained at least a height of 2-4m and with wide bases.	Every 2-3 years and outside the breeding bird season (March – July inclusive) unless checks undertaken to ensure no nesting birds present.	Landscape Contractor / Management Company

		Any arboricultural management, e.g. pruning / lopping, will be carried outside the breeding bird season (March – July inclusive) or checks will be undertaken by a suitably qualified ecologist to ensure there are no nesting birds present.	Annually as necessary (outside March – July inclusive unless checks undertaken to ensure no nesting birds present).	Landscape Contractor / Management Company
2. MAINTAIN POPULATIONS OF PROTECTED SPECIES AT A FAVOURABLE CONSERVATION STATUS	Bats	Retention and creation of new boundary hedgerows and trees and planting of new trees and wildflower grassland within the site will provide retained and new foraging opportunities for bats.	Prior to completion of development.	Developer / Contractor
		Dark corridors will be retained within the site.	Prior to completion of development.	Developer / Contractor
		New bat boxes will be provided on suitable trees will provide new roosting opportunities for bats.	Prior to the completion of development.	Developer / Contractor
		Bat boxes will be checked annually to ensure they are in place and replacements supplied if necessary.	Annually.	Landscape Contractor / Management Company
	Birds	Retention and creation of new boundary hedgerows and trees and planting of new trees and wildflower grassland within the site will provide retained and new foraging opportunities for birds.	Prior to completion of development.	Developer / Contractor
		Any management of suitable vegetation (such as cutting, lopping or pruning) will be carried outside the breeding bird season (March – July inclusive) or checks will be undertaken by a suitably qualified ecologist to ensure there are no nesting birds present.	Annually (outside March – July inclusive, unless checks undertaken to ensure no nesting birds present).	Landscape Contractor / Management Company
		Provision of new bird boxes on suitable trees at the boundaries of the site will provide new nesting opportunities for birds.	Prior to completion of development.	Developer / Contractor
		Bird boxes will be checked annually to ensure they are in place and replacements supplied if necessary.	Annually	Landscape Contractor / Management Company
	Reptiles	New areas of wildflower grassland will be created at the boundaries of the site and connected to offsite habitats.	Prior to completion of development.	Developer / Contractor

		The wildflower grassland will be subject to a sensitive management regime, with a maximum of 50% of the grassland be cut annually in September / October to 15-20cm and all arisings removed. The remaining 50% of the grassland will be left uncut, to maintain tussocky stands suitable for reptiles. The areas left uncut will be alternated between years.	A maximum of 50% annually	Landscape Contractor / Management Company
		New log piles will be created that will provide new shelter and hibernation opportunities for reptiles.	Prior to completion of development.	Developer / Contractor
	Invertebrates	New tree and hedgerow planting and the creation of areas of meadow grassland will provide new and enhanced opportunities for invertebrates.	Prior to completion of development.	Developer / Contractor
		Creation of log piles from any arboricultural works will provide new shelter and foraging opportunities for a range of invertebrates.	Annually as necessary.	Landscape Contractor / Management Company
3. INCREASE BIODIVERSITY BY MAXIMISING OPPORTUNITIES FOR FLORA AND FAUNA	New wildflower grassland	Creation of new areas of dry and wet meadow grassland will create new opportunities for invertebrates, and in turn provide foraging opportunities for bats and birds.	Prior to completion of development.	Developer / Contractor
	New tree and hedgerow planting	New tree and hedgerow planting throughout the site, based around native species and species of benefit to wildlife, will increase the floristic diversity of the site and provide new foraging opportunities for a range of wildlife. The provision of new fruit / berry-bearing species will also provide new seasonal foraging opportunities for wildlife.	Prior to completion of development.	Developer / Contractor
	Bats and birds	Provision of new bird and bat boxes on trees will provide new roosting and nesting opportunities over the existing situation.	Prior completion of development.	Developer / Contractor
	Reptiles and amphibians	Provision of log-piles will provide new opportunities for faunal groups previously unrecorded within the site.	Prior completion of development.	Developer / Contractor
4. MAINTAIN AND ENHANCE THE NEWLY PLANTED TREES AND HEDGEROWS	Newly planted trees and new hedgerows	Weeding (hard pulling and sensitive use of glyphosate).	Annually for the first five years.	Landscape Contractor / Management Company
		Maintenance of bark mulch tree rings and hedgerow at 75 mm.	Annually for the first five years.	Landscape Contractor / Management Company

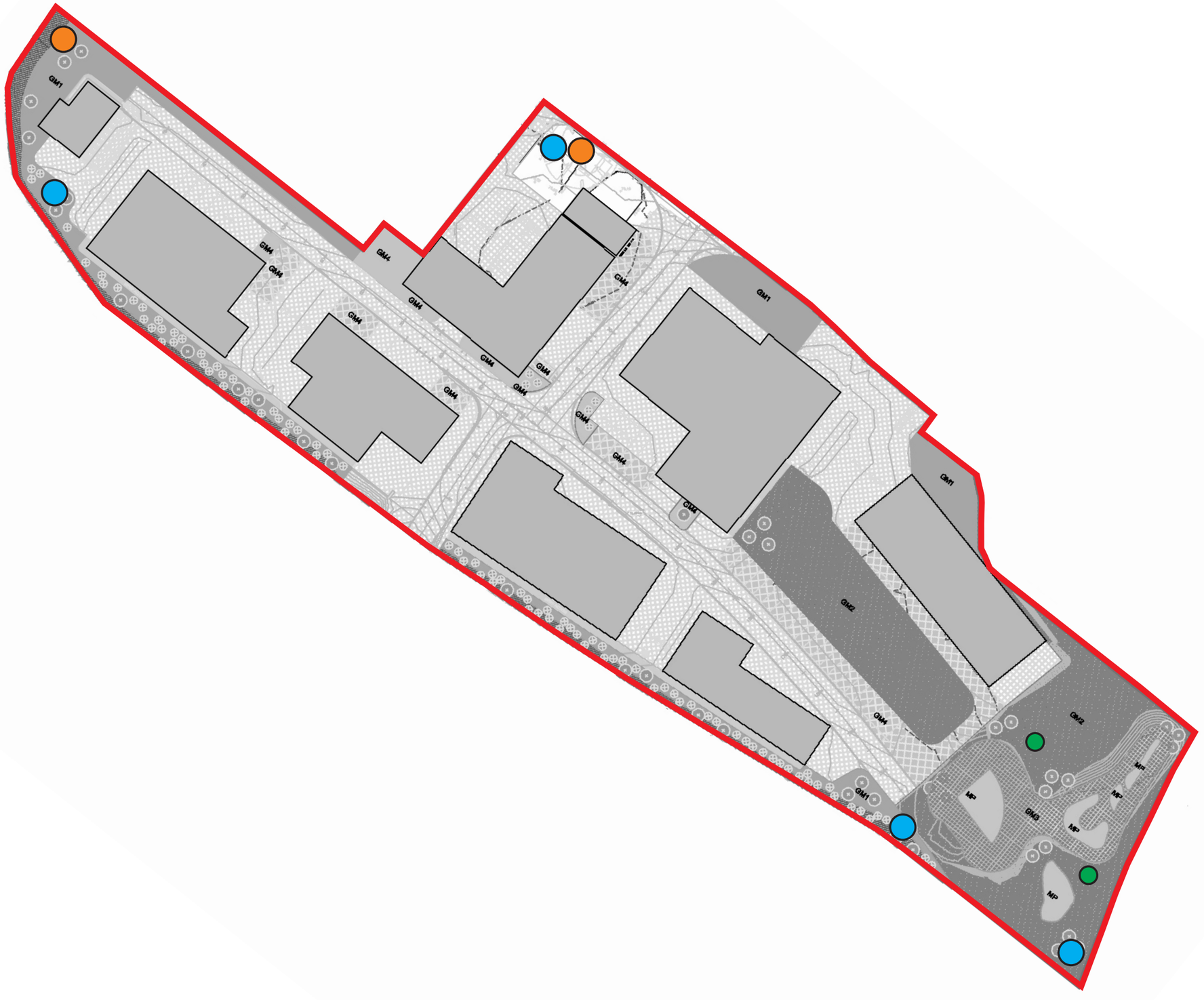
WITHIN THE SITE FOR THE PURPOSED OF VISUAL AMENITY		Firming in after frost heave and strong winds.	As appropriate following climatic extremes.	Landscape Contractor / Management Company
		Checking and re-securing of tree stakes/ties or replace defective elements, to allow for growth and prevent chafing.	Annually for the first five years.	Landscape Contractor / Management Company
		re-securing/replacing canes and spiral rabbit guards.	Annually for the first five years.	Landscape Contractor / Management Company
		Watering to field capacity during drought.	As appropriate following climatic extremes.	Landscape Contractor / Management Company

PLANS AND APPENDICES

PLANS

PLAN ECO1

Enhancements Plan



KEY:

- SITE BOUNDARY
- INDICATIVE LOCATION OF 1FF BAT BOX (2 PER TREE)
- INDICATIVE LOCATION OF BIRD BOX
- LOG PILE

N

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7884: NEW TECHNICAL SITE,
BICESTER HERITAGE, BICESTER

PLAN ECO1:
ENHANCEMENT PLAN

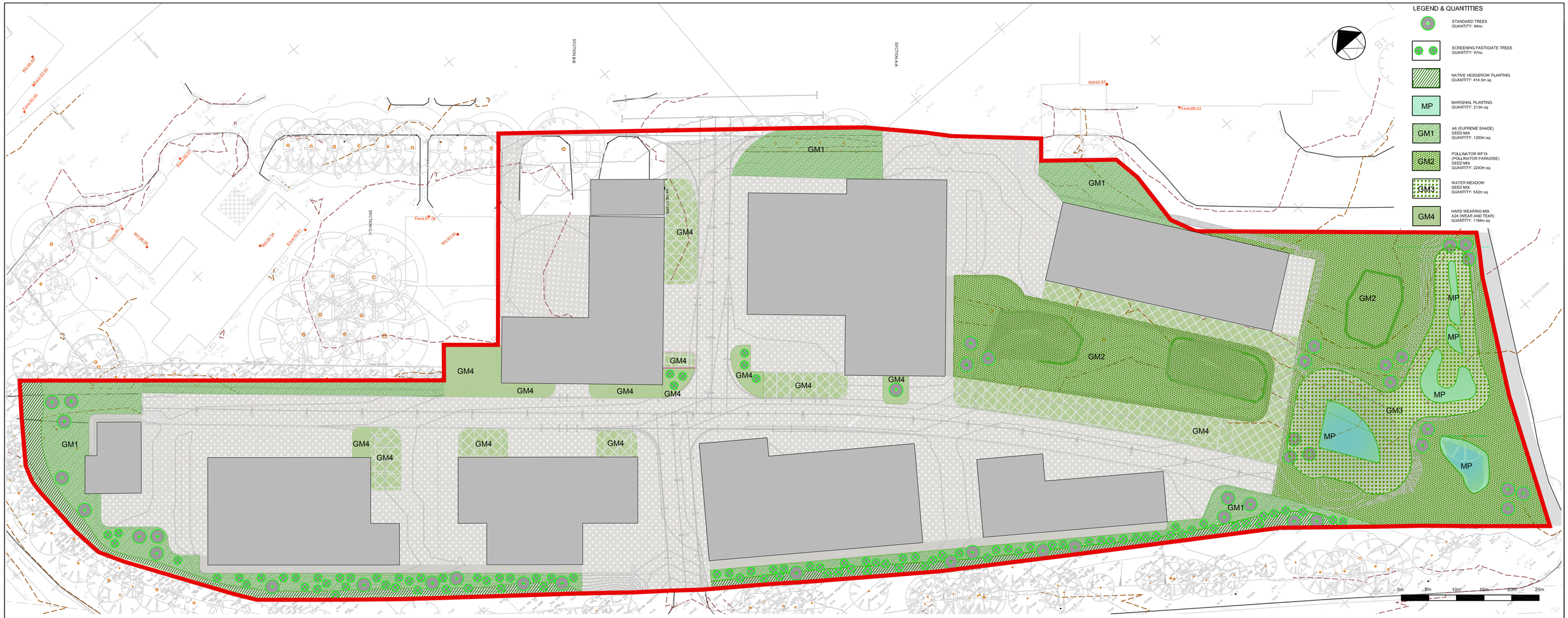
Rev: A

June 2019

APPENDICES

APPENDIX 1

Planting Proposals



PLANTING SCHEDULE

	Plant Species	Common Name	Percentage Mix	Size	Location & Planting
	Grass / Meadow Mixes From Germinal Seeds - Sown as recommended by Germinal Seeds. (01522 868714)				
GM1	Shade Seed Mix A6		As supplied	Seeds	*Areas of seed mix in proximity to hedgerow and tree planting.*
GM2	Pollinator Seed Mix WF19		As supplied	Seeds	*All general open areas of grass seeding.*
GM3	Water Meadow Seed Mix RE3		As supplied	Seeds	*Swathes of meadow around the perimeter of the infiltration basins.*
GM4	Hard Wearing Mix A24		As supplied	Seeds	*General amenity and Grasscrete areas.*
	Marginal Planting				
	Carex nigra	*Common Sedge*	20%	2L pot	
	Carex pendula	*Pendulous Sedge*	20%	2L pot	
	Lysimachia vulgaris	*Yellow Loosestrife*	15%	2L pot	*Infiltration basin - plants to be planted at density of 3/m.sq*
	Mentha aquatica	*Water-mint*	10%	2L pot	
	Myosotis scarpoides	*Spiked Water-milfoil*	10%	2L pot	
	Ranunculus flammula	*Lesser Spearwort*	15%	2L pot	
	Veronica beccabunga	*Brooklime*	10%	2L pot	
	Native / Hedge Planting				
	Acer campestre	*Field Maple*	10%	Bareroot 80-100cm	
	Crataegus monogyna	*Hawthorn*	40%	Bareroot 80-100cm	
	Corylus avellana	*Hazel*	10%	Bareroot 80-100cm	
	Prunus spinosa	*Blackthorn*	15%	Bareroot 80-100cm	
	Rosa canina	*Dog Rose*	15%	Bareroot 80-100cm	
	Ilex aquifolium	*Holly*	10%	Bareroot 80-100cm	
	Standard Trees				
	Alnus glutinosa	*Black Alder*	As per plan	14-16cm Standards	
	Quercus ilex	*Holm Oak*	As per plan	14-16cm Standards	*Planted along perimeter of site*
	Quercus palustris	*Pin Oak*	As per plan	14-16cm Standards	
	Tilia cordata	*Small-leaved Lime*	As per plan	14-16cm Standards	
	Screening Fastigiate Trees				
	Acer campestre 'William Caldwell'	*Field Maple*	As per plan	15% - Standard 10-12cm girth	
	Alnus cordata - ***Feathered***	*Alder*	As per plan	85% - whips	
	Carpinus betulus 'Frans Fontaine' - ***Feathered***	*Hornbeam*	As per plan		*Planted along roads within development*
	Fagus sylvatica 'Dawyck' - ***Feathered***	*Fastigiate Beech*	As per plan		
	Liquidamber styraciflua 'Slender Silhouette'	*Sweetgum*	As per plan		
	Malus 'Tschonoskii'	*Crab Apple*	As per plan		
	Prunus 'Amanogawa' - ***Feathered***	*Cherry*	As per plan		

Levels and dimensions to be checked on site prior to commencement of work.
All discrepancies to be reported to the landscape architect immediately.

GENERAL NOTES:

1. Drawing for planning purposes and Employers Requirements.
2. Existing trees to be retained on or adjacent to the site to be protected in accordance with BS 5837:2012 trees in relation to design, demolition and construction. To be undertaken throughout construction to the point of completion.
3. All excavated areas to be backfilled with site-won subsoil and topsoil the contractor shall test the subsoil and topsoil to be used at an appropriate soil testing laboratory/ specialist to provide evidence of its suitability for amenity use. Any recommendations for remediation of its structure or nutrient status shall be acted upon. Subsoil to BS8601:2013 specifications for subsoil and requirements for use shall otherwise apply. All overlaid - imported topsoil to BS3882:2015 specification for topsoil BS 3882: general purpose grade. All topsoiled areas to be cleared of rocks and rubble larger than 50mm diameter and any other debris that may interfere with the establishment of plants. Shrub areas to be a minimum depth of 400mm topsoil. Grass mixes A6 and A24 to have a minimum depth of 150mm. grass mixes RE3 and WF19 to have low fertility soil prepared to a medium tilth. If the subsoil is suitable no additional topsoil should be used. Tree pit soil depth/volume in accordance with BS8545:2014 trees: from Nursery to Independence in the Landscape.
4. Grasscrete. Soil to comprise 70:30 Sand:Soil approved root zone mix or suitable mix equivalent from site won topsoil. Grass seed shall be mixed into final top dressing fill.
5. All plants to be supplied in accordance with horticultural trade association's National Plant Specification from an HTA certified nursery. Delivery and backfilling of all plant material to be in accordance with BS4428/JCLI/CPSE code of practice for 'handling and establishing landscape plants, parts I, ii, iii.
6. All specimen shrubs and groundcover shrubs to be planted in accordance with BS3936 specification for nursery stock.
7. All trees to be supplied and planted in accordance with BS8545:2014. All tree planting to be undertaken in informal groupings with no formal lines. Densities, sizes and species as per planting schedule.
8. Tree planting: all standard trees to be planted in min.500x500x400mm tree pits as per detail. Trees to be tall staked with 2 tall stakes and protected with tree guards. Base of pit broken up to depth of 150mm. backfilled with 80% approved topsoil and 20% compost mix with granular fertiliser applied to manufacturer recommendations. All feathered trees to be planted with bamboo canes and rabbit guards and well healed into pit.
9. Hedge planting: all plants to be planted in trenches 600mm wide and 300mm deep to accommodate full roots spread, backfilled with approved mix of topsoil, compost, and granular fertiliser. Native hedge to be planted in species blocks of 3's and 5's. Planted in a double staggered row. All plants to be supported with bamboo canes and protected with approved rabbit guards or plant shelter. All beds to be mulched with a min. 50mm approved bark mulch.
10. Root barriers to be used (reroot 1000 or equivalent) adjacent to buildings and services where necessary.
11. All planting and grass establishment/ maintenance operations to be in accordance with BS4428:1989 code of practice for general landscape operations (excluding hard surfaces). With special measures taken to spray all perennial weeds prior to sowing and allowing for oversowing of all wildflower areas to aid the establishment of a continuous sward. Trees to be established and maintained in accordance with BS8545. Watering to be undertaken to field capacity during drought conditions.
12. All soft works to have 12 months contract maintenance and defects / replacement guarantee. As part of the tender, the contractor shall submit a detailed programme of maintenance operations.

T1	TENDER ISSUE	CP	30.11.18
P5	FIFTH ISSUE	RS	26.11.18
P4	FOURTH ISSUE	AM	23.11.18
P3	THIRD ISSUE	AM	22.11.18
P2	SECOND ISSUE	RS	21.11.18
P1	FIRST ISSUE	CP	20.07.18

Revision description | No. | By | Date

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Status
TENDER

Project
BICESTER HERITAGE - NEW TECHNICAL SITE

Description
PLANTING PROPOSALS

Scale(s) 1:500 @ A2 | Date 23.11.18

Drawn By AM | Checked By AS

Drg. No. ASA-561-DR-001 | Rev. T1 | Draft

File Ref. Z:\Data\Projects\561 - Bicester Technical Centre\ 4.3 Work\Documents and Drawings\Current Working Documents and Drawings\ASA561-DR-001.dwg

APPENDIX 2

Schwegler 1FF Bat Box Specification

Bat Boxes

Schwegler bat boxes are made from ‘woodcrete’ and have the highest rates of occupation of all types of box.
The 75% wood sawdust, clay and concrete mixture is ideal, being durable whilst allowing natural respiration and temperature stability. These boxes are rot and predator proof and extremely long lasting.
Boxes can be hung from a branch near the tree trunk or fixed using ‘tree-friendly’ aluminum nails.

1FF Bat Box

The rectangular shape makes the 1FF suitable for attaching to the sides of buildings or in sites such as bridges, though it may also be used on trees. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Width: 27cm
Height: 43cm
Weight: 8.3kg

APPENDIX 3

Schwegler 1B, 2H, 2M Bird Box Specifications

Bird Boxes

Schwegler bird boxes have the highest rates of occupation of all types of box.
They are designed to mimic natural nest sites and provide a stable environment with the right thermal properties for chick rearing and winter roosting.
Boxes are made from 'Woodcrete'. This 75% wood sawdust, clay and concrete mixture is breathable and very durable making these bird boxes extremely long lasting.

1B Bird Box

This is the most popular box for garden birds and appeals to a wide range of species. The box can be hung from a branch or nailed to the trunk of a tree with a 'tree-friendly' aluminium nail.

Available in four colours and three entrance hole sizes. 26mm for small tits, 32mm standard size and oval, for redstarts.

2H Bird Box

This box is attractive to robins, pied wagtails, spotted flycatcher, wrens and **black redstarts**.

Best sited on the walls of buildings with the entrance on one side.

Schwegler boxes have the highest occupation rates of all box types. They are carefully designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance.

2M Bird Box

A free-hanging box offering greater protection from predators.

Supplied complete with hanger which loops and fastens around a branch.

With standard general-purpose 32mm diameter entrance hole.

Schwegler boxes have the highest occupation rates of all box types. They are carefully designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance.

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