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Landscape and Ecological Management Plan

By

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For

Mark Jeffery

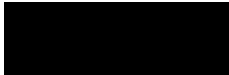
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03/04/2024

Quality Assurance	
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Version:	Version 1
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Company Background

ProHort Ltd is the sister company of Blue Iris Landscapes Limited which was established in 1998. Based in the West Midlands, we travel all over the UK, collaborating closely with architects, property developers and solicitors. We provide them with the detailed documentation that they require.

1. Introduction

ProHort Limited have been commissioned by Mark Jeffery to prepare an Ecology and Landscape Management Plan (LEMP). It provides information about the landscape and ecological management for the proposed demolition of existing stable and construction of new property.

1.2. Site location

The site is located off the main residential, Pirton Road, down a single track road to the property. The site is located within a vast area of arable and horticultural land to the south, east and west of site. To the north of site is a scattering of detached, residential dwellings.

An area of broadleaved, mixed and yew woodland is located approximately 130m to the east of the site, with an area of approximately 13,541.51m². The land on site is void of any suitable habitat. Much of the land that will be subject to development, appears to have already undergone relevant vegetation removal to create a 'blank canvas' as such, to start developing upon. There is open field to the east of the site and is part of the land on site, but is not subject to any sort of development, and is planned to be kept as open field. Habitats are not expected to be impacted during the development, as the baseline for habitats on site is lacking.

The dwelling currently on site possess a tarmacked drive up to the property, with amenity grassland surrounding up to the boundary, with an approximately 53m hedgerow running from north of the boundary to southeast of the boundary.

2. Methods

2.1. LEMP Preparation

A landscape and ecological management plan (LEMP) shall have been submitted to and approved in writing by the County Planning Authority prior to the commencement of the development. The content of the LEMP shall include the following:

- Description and evaluation of features to be managed
- Ecological trends and constraints on site that might influence management
- Aims and objectives of management
- Appropriate management options for achieving aims and objectives
- Prescriptions for management actions
- Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period)
- Details of the body or organisation responsible for implementation of the plan
- Ongoing monitoring and remedial measures

The approved plan shall be implemented in accordance with the approved details.
Reason: in the interest of biodiversity.

A desk-top study was also conducted to obtain information on notable habitats and species located within 2km of site, to ensure information gained from this desk-top study was incorporated into the management plan so no species nor habitats were lost or damaged.

2.2. Aims and Objectives of the Survey

The aim of this management plan is to ensure the successful establishment of soft landscaped areas and to provide a framework for future management of habitats. It provides information as recommended by *Biodiversity – Code of Practice for Planning and Development* (BSI, 2013), regarding all future biodiversity management and monitoring on the site.

The plan will include information to satisfy the requirements of the planning condition:

- The description and evaluation of features to be managed.
- Ecological trends and constraints on site that might influence management including, but not limited to, different stages of maturity of the screening vegetation.
- Aims and objectives of management, including conservation and biodiversity enhancement.
- Appropriate management actions, ongoing monitoring and remedial measures, including for any new trees or shrubs, which within a period of 5 years from the completion of the planting die, are removed, or become damaged or diseased – these shall be replaced on an annual basis, in the next planting season with others of a similar size and species.

2.3 Site Description

The site is located off the main residential, Pirton Road, down a single-track road to the property. The site is located within a vast area of arable and horticultural land to the south, east and west of site. To the north of site is a scattering of detached, residential dwellings.

An area of broadleaved, mixed and yew woodland is located approximately 130m to the east of the site, with an area of approximately 13,541.51m². The land on site is void of any suitable habitat. Much of the land that will be subject to development, appears to have already undergone relevant vegetation removal to create a 'blank canvas' as such, to start developing upon. There is open field to the east of the site and is part of the land on site, but is not subject to any sort of development, and is planned to be kept as open field. Habitats are not expected to be impacted during the development, as the baseline for habitats on site is lacking.

The dwelling currently on site possess a tarmacked drive up to the property, with amenity grassland surrounding up to the boundary, with an approximately 53m hedgerow running from north of the boundary to southeast of the boundary.

3. Results

3.1 Species Record

A desktop study has concluded the species located within 2km of the site:

Table 1: species records obtained within 2km of site.

Species	No. of Records	Distance from Site
Common Frog (<i>Rana temporaria</i>)	35	0.2km / 1.2km
Smooth Newt (<i>Lissotriton vulgaris</i>)	20	0.2km / 1km
Great Crested Newt (<i>Triturus cristatus</i>)	1	1.9km
Barn Owl (<i>Tyto alba</i>)	6	0.2km / 1.8km
Brambling (<i>Fringilla montifringilla</i>)	6	0.2km / 2km
Fieldfare (<i>Turdus pilaris</i>)	17	0.2km / 2km
Kingfisher (<i>Alcedo atthis</i>)	14	1.8km / 2km
Redwing (<i>Turdus iliacus</i>)	24	0.2km / 2km
Hedgehog (<i>Erinaceus europaeus</i>)	10	0.2km / 2km
Badger (<i>Meles meles</i>)	2	1.8km
Common Pipistrelle (<i>Pipistrellus pipistrellus</i>)	1	1.7km
Brown Long-Eared Bat (<i>Plecotus auritus</i>)	1	1.7km

3.2. Statutory and Non-Statutory Sites

A search for designated, statutory and non-statutory sites within 2km was undertaken. There were no records of such sites located within 2km of the site.

3.3. Habitats

A desk-top study search of notable habitats within 2km of the site was undertaken, the table below presents the result of the search:

Table 2: habitats within 2km of the site

Site	Distance from Site
Deciduous Woodland (Priority Habitat)	0.2km N, 0.4km NW, 0.8km SW, 1.1km N, 2km W
Traditional Orchards (Priority Habitat)	1.3km SW

4. Management

Ecological features that are present on-site or will be and which are the subject of this management plan, following completion of development and during operation of the site, are described below. This includes existing habitats, where retained and protected and those which will be newly created.

This section of the report will discuss the general management proposals and targets that apply to the site and together with recommendations, sets out the management

operations that should be applied to the various areas and planting types on the site. Habitats and species on the site or proposed to be created are all considered to be of local value and include:

- Planting of new trees, hedgerows and shrubs – planting scheme incorporates tree planting, native hedgerow and native shrub planting groups, as well as trees to be retained, which will be managed to ensure long-term value for biodiversity.
- Arable field – arable field retained on site to be managed to provide value for a range of wildlife, including foraging invertebrate, bats, birds, amphibians and small mammals.
- Species rich grassland – areas of species rich grassland to be created across the site to be managed and to provide value for a range of wildlife including foraging invertebrates, bats, birds, amphibians and small mammals.

Table 3: ecological features present on site and plans to manage features

Ecological feature	Objective and Target
Trees, hedgerows and shrubs	New planting mix of trees and shrubs to provide screening and general amenity to the site. Maintain and enhance habitat extent and condition in future years, whilst improving green infrastructure connections. • Functional green infrastructure present in good quality each year, provide increased cover and connectivity to adjacent habitats. • Healthy specimens with no failing specimens or significant gaps in vegetation cover. • Use of evergreen, fruiting and flowering ornamental species for year round cover and food for wildlife.
Arable field and species-rich grassland	Management of existing area and establishment of new areas and maintenance in future years. • Habitat structure maintained, providing shelter, refuge and foraging potential for wildlife. • No invasive flora (e.g. Japanese Knotweed or Indian Balsam) present.

4.1 Management Aims and Objectives

The aim of managing the landscape is to ensure that it successfully establishes and thereafter continues to function in the way it was designed. Landscape management objectives are to:

- Ensure the biodiversity value of the landscape is maintained and enhanced
- Control invasive and other undesirable species

Management objectives are detailed in the table below, and a brief description of the intended end state and indicators of success.

Please note, every effort has been made to accurately and practically recommend management options for ecology and landscape, therefore, specifics should be discussed between the client and the landscape architect/architect with reference to this document to ensure loss or damage to habitats and wildlife is minimal.

Ecological feature	Objective and Target
Trees, hedgerows and shrubs	New planting of silver birch trees and hedgerows (mixed / dog rose etc) to provide screening and general amenity to the local site. Maintain and enhance habitat extent and condition in future years. • Functional green infrastructure present in good quality each year, provide increased cover and connectivity to adjacent habitats. • Healthy specimens with no failing specimens of significant gaps in vegetation cover. • Use of evergreen, fruiting and flowering ornamental species for year-round cover and food for wildlife.
Species rich grassland	Establishment of new areas and maintenance in future years. • Habitat structure maintained, providing shelter, refuge and foraging potential for wildlife. • Floristically rich with no single species dominating and no encroachment of scrub or abundance of undesirable noxious weeds. • No invasive flora present.

4.2 Management of Grassland

On the bare land on site, once developed, it is proposed that wildflower seeds are to be planted, preferably Dual Purpose Wildflower Seeds LWXP (<https://www.wildflower.co.uk/products/wildflower-seed-mixtures/100-wildflower-seed-mixtures/lwx-dual-purpose-100.html>). This wildflower combines a feast of annual and perennial wildflowers for both 'instant' colour and a long-lasting meadow. It contains 5 bold cornfield annual species, including cornflower and poppy, will loom beautifully in the first year while the perennial plants develop. From year 2, these long lasting species will flower for 4 years to come, creating a permanent wildflower area.

Not only does the Dual Purpose mix provide a practical solution for areas where speed of flowering and a long-lasting meadow are both important, it's a treat for bees and butterflies too – stuffed full of flowers recommended by the Royal Horticultural Society (RHS) as 'perfect for pollinators'. Each pack contains 27 different native wildflower species. Planting of seeds is open to suggestion by the client.

The first cut of wildflower areas should occur in March/April, after an autumn sowing or in June / July and a spring sowing. During the first year's maintenance, grassland should be cut approximately every 6 to 8 weeks until autumn, ensuring the reduction of the dominance of faster-growing grasses and pernicious weeds. Grass should be cut to a height of approximately 40-60mm and arising should be collected and removed from site.

The species rich meadow grassland area to be created and to be managed, provides a floristically diverse habitat, providing good connectivity and wildlife corridor function and providing high-value habitat for wildlife, including amphibians, foraging and nesting birds and bats.

From the second year onwards, grasslands to have a single, annual 'hay cut' in late summer to a height of 40-60mm. This will promote a tall, tussocky grassland sward which is floristically diverse. The grass cuttings should be left for a minimum of 1 week, allowing for seed dispersal, which will be followed by either removal from site or into compost piles – which would serve as hibernacula for wildlife.

These cutting activities are also to remove any self-seeded saplings and the grassland is to be monitored to ensure no single undesired species (e.g. bramble, common nettle, bracken etc.) establish, with additional efforts to cut back and control if necessary. The monitoring is also required to ensure no invasive flora (as listed on Schedule 9 of the Wildlife and Countryside Act).

The following steps and working methods will be included in the specification:

- Where practicable, seed will be obtained from a local source for the purpose of maintaining continuity with local species-rich grasslands.
- Receiving soils should be prepared to reduce nutrients where possible. This could include spraying with a herbicide to remove existing material and incorporating a substrate to reduce nutrient levels or removing topsoil to expose the sub-soil.
- Once the nutrient level is reduced, all clods will be broken up and alien material (such as plastics and metals) above 50mm in size will be removed. The top 50mm of the soil will then be raked to prepare a fine tilth for the seedbed. The raking will occur immediately before sowing.
- Seeding will be completed in either autumn or spring and only once the receiving soils have been tilled and adequately prepared.
- Seeding and rolling will be carried out in dry weather and access will be prohibited to seeding areas until seed has germinated and a sward has established.

The long-term management of species-rich grassland will be undertaken to maintain a relatively stable grassland community in the long-term, and to avoid areas naturally progressing into tall, dense, grass dominated areas.

4.3 Management of Hedgerows and Trees

Subject to the clients' wishes regarding newly planted hedgerows and hedgerow trees, weed control should be carried out on these newly planted hedgerows for the first 5 years after planting. Weeding can be carried out by spot-treating or by spraying with a suitable herbicide.

Hedgerows should be lightly trimmed during the first year, which will be carried out in January or February to avoid the bird nesting season, allowing for birds to eat berries that the hedges yield. Thereafter, hedgerows will be trimmed every 3 years, with 50% of the total length trimmed one year and the other 50%, the next.

Hedgerows are to be trimmed to a tapered profile, approximately 1.5 metres wide at the base, with the cutting height raised by approximately 10cm each cut. Hedgerow trees will be left to grow to maturity.

Once the hedgerows have reached 2.5 – 5 metres in height, with their stems approximately 5-10cm in width, they will be laid. Laying should be carried out in rotation, i.e. 50% of the total length laid in one year and the remaining 50% laid in the next.

The table below contains management operations that apply to the areas of retained trees, which should be undertaken to ensure that trees remain in a healthy, attractive and safe condition. The services of a suitably qualified arboricultural consultant should be obtained in relation to any tree matters.

Years 1-5	Years 6-30
• Checks on safety and condition of trees (at least annually and additionally after periods of strong winds) • Undertake works as recommended by the arboriculturist to ensure continued health and safety of trees • Safely and promptly remove any branches and/or entire trees that are deemed potentially hazardous by arboriculturalist.	• Continued regular checks of the condition of trees at an appropriate frequency as advised by the arboriculturist. • Undertake any pruning works as and when recommended by the arboriculturist and when identified through regular inspections. • Safely and promptly remove any branches and/or entire trees that are deemed potentially hazardous by the arboriculturalist.

The following table contains management operations that apply to new hedgerow planting that is to be undertaken, ensuring the establishment and the maintenance of a healthy, dense and an attractive hedge, with seasonal and ecological interest. Following planting, establishments checks need to be undertaken annually during August/September for a period of 5 years. All hedges shall be allowed to grow to

maturity and thereafter be maintained at a minimum height of 1.5 metres. Hedge management shall be carried out through routine cutting of alternative sides of the hedge at a maximum triennial cut, unless annual cutting is necessary to maintain clearances and visibility splays from public highways or private access roads. This should be done in selective phases to maintain a variety of hedgerow habitats across the site.

Years 1-5	Years 6-30
- Any dead or drying plants should be removed and replaced during the next available planting season - Meadow / grass cuttings in early spring to suppress weed growth - Plant areas to be weed free throughout summer - During periods of dry weather, water the base of the hedges a minimum of 2 times per week, for the first 2-3 years - Establishment pruning in the first year, in January and February, to encourage bushy side growth, following by light trimmings until established - Trim sides every 3 years with a rip cutting blade on hedge cutter, or similar and approved - Trim tops of hedges in January or February of closing year	- Remove supports - Trim sides every 3 years with a rip-cutting blade on hedge cutter, or similar - Trimming should be undertaken in January or February, after berries have been eaten, but prior to bird nesting, this ensures dense growth and good form.

4.3.1 Proposed Tree Planting

The following table contains management operations that apply to individual tree planting (subject to clients wishes) which should be undertaken to ensure that trees remain in a healthy, attractive and safe condition. It's recommended that services of a suitably qualified landscape architect (during the establishment) and/or an arboricultural consultant in the future should be obtained in relation to any tree matters, these include; inspections, reports and liaison with the local planning authority and any proposed tree works.

Years 1-5	Years 6-30
- Inspect trees on regular basis to ensure healthy growth - Clear any weeds from around the trees, once at the end of summer - If herbicide is required, this should be non-residual and implemented by suitable qualified individuals in line with the current standards and regulations. - Failed and / or diseased trees to be removed and replaced in the next planting season	Continue to inspect on an annual basis to check the condition of the trees and any remaining guards, ties and stakes to be replaced and/or removed as necessary to ensure successful establishment up to 25 years.

• Monitor the growth of trees and carry out formative pruning as necessary to lift canopy to a minimum of 3m and to ensure good form and vigour. • Remove stakes and tree guards once establishment is deemed to be complete through site visits. • Keep a minimum diameter of 1000mm free of grass and weed species in the first 2 years after planting. • During periods of prolonged dry weather, water as necessary according to species, size and recommended guidelines.	• Undertake works as recommended by the arboriculturist to ensure continued health and safety of trees. • Carry out formative pruning as necessary to lift canopy to minimum 3m and ensure good form and vigour.
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4.4 Species Management

4.4.1 Birds and Bats

The provision of 6 bird boxes and 2 bat boxes have been recommended on the buildings, once development has been completed, and in the trees that are located on site. These boxes will provide nesting and roosting opportunities for local species of birds and bats. The boxes should be placed at a height between 3-5m. The type of bat and bird boxes proposed to be installed are listed below:

Bird boxes	Bat boxes
Schwegler 1B 32mm – great, blue, marsh, coal and crested tit, redstart, nuthatch, collared and pied flycatcher, wryneck, tree and house sparrow	Schwegler 1FS large colony box – provides large internal space, allowing for high number of bats to congregate together and makes it very popular for accommodating large colonies in summer.
Schwegler 1b 26mm – blue, marsh, coal and crested tit and possibly wren. All other species are prevent from using the nest box due to the smaller entrance hole.	Schwegler bat box 1FD – for small bats, occupied by small bats e.g. pipistrelle and daubentons bats and long-eared bats.
Tree Creeper nest box – mount on trees to encourage treecreepers to nest where natural nest sites are rare	
Robin and wren nest box – by putting up nest boxes such as this, which replicates a bird's natural nesting preference, you can encourage birds to breed near your home.	

Bat boxes are to be erected to a south and east orientation to avoid prevailing winds.

4.4.1.2. Long Term Management of Boxes

All wild birds, their active nests and eggs are protected under the Wildlife and Countryside Act (1981), as amended. This makes it an offence to deliberately, or recklessly kill or injure any wild bird or damage or destroy any active nest or eggs of a wild bird. Annual cleaning of bird boxes cannot be undertaken between the months of March and August inclusive, when birds may be using the boxes. Therefore, bird boxes will be cleaned between October and February to prevent the build up of nest parasites in the boxes, while avoiding the risk of disturbing birds using the boxes as a roost site during the cold winter months.

Barn owl boxes will be inspected annually between November and December by a suitably licensed ecologist. Where barn owls are absent, any nesting material of other species will be removed where required, after ensuring the nest is empty.

Bat boxes will be inspected by an appropriately licensed bat surveyor for the evidence of uptake. Bat boxes are, in general, unlikely to be used by hibernating bats during winter months (between November and February) therefore, any maintenance that is required should be undertaken during these months, when any bird nests will be removed, after ensuring that they are not in use. All bats and their roosts are protected under the Wildlife and Countryside Act (1981), as amended. Therefore, it is an offence to possess, control, transport, sell or exchange any live or dead bat. Therefore, if bats are inadvertently discovered during maintenance, the person undertaking the maintenance should leave the box undisturbed.

4.5 Hedgehogs

Hedgehogs (*Erinaceus europaeus*) are one of Britain's' most loved mammals, it is a solitary, nocturnal ground dweller. Hedgehogs are protected under Section 6 of the Wildlife and Countryside Act 1981 (as amended) and by the Wild Mammals Protection Act (1996). They are recognised as Species of Principal Importance for the Conservation of Biodiversity under Section 41 (England) and Section 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act (2006).

A good hedge for hedgehogs is one that has a thick base, with a wide field margin, allowing for the linkage of habitats to the further landscape.

Foraging habitat for hedgehogs include field margins, where ground-dwelling invertebrates are found. A wide field margin with different plant species and good vegetation structure, helping to maintain different micro-habitats favoured by invertebrates.

Hedgehogs utilise thick hedge bases with tussocky vegetation and plenty of woody material and leaves. This creates a suitable habitat for daytime shelter and winter hibernation sites. Their nests are likely to be under dense, low cover provided by bramble outgrowths.

Hedges with no gaps and good connectivity with other hedgerows, or patches or scrub, woodland or rough ground, allows for hedgehogs to move freely throughout

the landscape. Hedgehogs tend to avoid wide, open ground, as this leaves them open to predation.

4.5.1 Hedgehog Management

To ensure and promote hedgehog habitat and presence on site, hedges should be kept thick (i.e. have a good width) and only be cut once every 3 years. Outgrowths of bramble or field rose clumps should be encouraged, as they provide excellent nesting places and are a good food source. Clumps need not be very big, approximately a metre or so wide is sufficient.

Missing links in the landscape should be joined up by the planting of new native, species rich hedges, or the management of current hedges, as this allowed for the free movement of hedgehogs to other habitats.

5. Impact Avoidance

The impact avoidance measures outlined below would be implemented, as relevant and appropriate, prior to and during construction, the purpose being to minimise the impact of works on biodiversity features and to achieve legislation compliance.

Standard environmental best practice and mitigation will be implemented so that construction and operation of the development complies with legislation relating to protected species. It would also ensure the development does not compromise the local conservation status of ecological receptors present within or in the vicinity of the development.

Design principles that should be applied to avoid and/or reduce potential ecology and nature conservation effects include:

- The creation of buffers to protected hedgerows and trees on site during construction.
- Tree Root Protection Area fencing will be erected around retained trees, in line with British Standard BS 5837: Trees in relation to design, demolition and construction.
- Ensuring that the existing designated sites are not impacted during construction and to minimises any temporary habitat loss during construction. No designated sites will be affected during this development.
- Ensuring that existing priority habitats are avoided, where reasonably practical, and compensated for where not, through habitat creation and replacement. No priority habitats will be affected during this development due to the scale of the project.
- Habitat planting and reinstatement replaces any habitat temporarily damaged, or permanently lost as a result of the development.

5.1. Protected Species Licences

No protected species licenses are currently required, although the need for such (e.g. badger or bats), prior to construction, will be informed.

All necessary protected species licenses would be applied for and obtained prior to undertaking any works that might result in offences under the relevant legislation.

5.2. Ecological Clerk of Works

The scope of the Ecological Clerk of Works (ECoW) would be advised by the ecologist based on relevant environmental commitments and the protected species licensing requirements.

Relevant site staff would receive toolbox talks as necessary from the ECoW on the relevant ecological risks present, legal requirements, and the working requirements necessary to comply with legislation, and the final approved landscaping and biodiversity management and enhancement measures. Toolbox talks would be repeated as necessary over the duration of the works.

An ECoW would not be required during this development.

5.3. Tree works

The location of the development would largely avoid the need for the removal of mature trees. Where works in close proximity to retained trees cannot be practicably avoided, these works would be undertaken in accordance with current best practice at the time of the works.

All necessary protective fencing would be installed prior to the commencement of any site clearance or construction works.

5.4. Hedgerow and Tree Works

The layout of the development means there is minimal damage to the landscape features.

5.5. Precautionary Working Method

Precautionary working methods would be adopted to minimise potential adverse effects on protected/notable species prior to and during construction. Precautionary working method statements would be produced as necessary to specify working requirements and other necessary impact avoidance measures.

5.6. Animal Welfare Requirements

Construction excavations have the potential to trap wildlife, such as badgers and otters, and result in offences under animal welfare legislation. This would be avoided through implementation of simple precautionary mitigation. All excavations deeper than 1m would be covered or fenced overnight, or where this is not practicable, a means of escape would be fitted to provide an escape route should any animals stray into the construction site and fall into an excavation.

5.7. Pre and Post Construction Monitoring

An annual maintenance check of wildlife boxes (bats, birds) would be made each winter to ensure that all boxes are still in position and secure. Some refitting of

boxes, repairs and replacements are likely to be required over the life of the development.

Recommendations for habitat monitoring have previously been made.