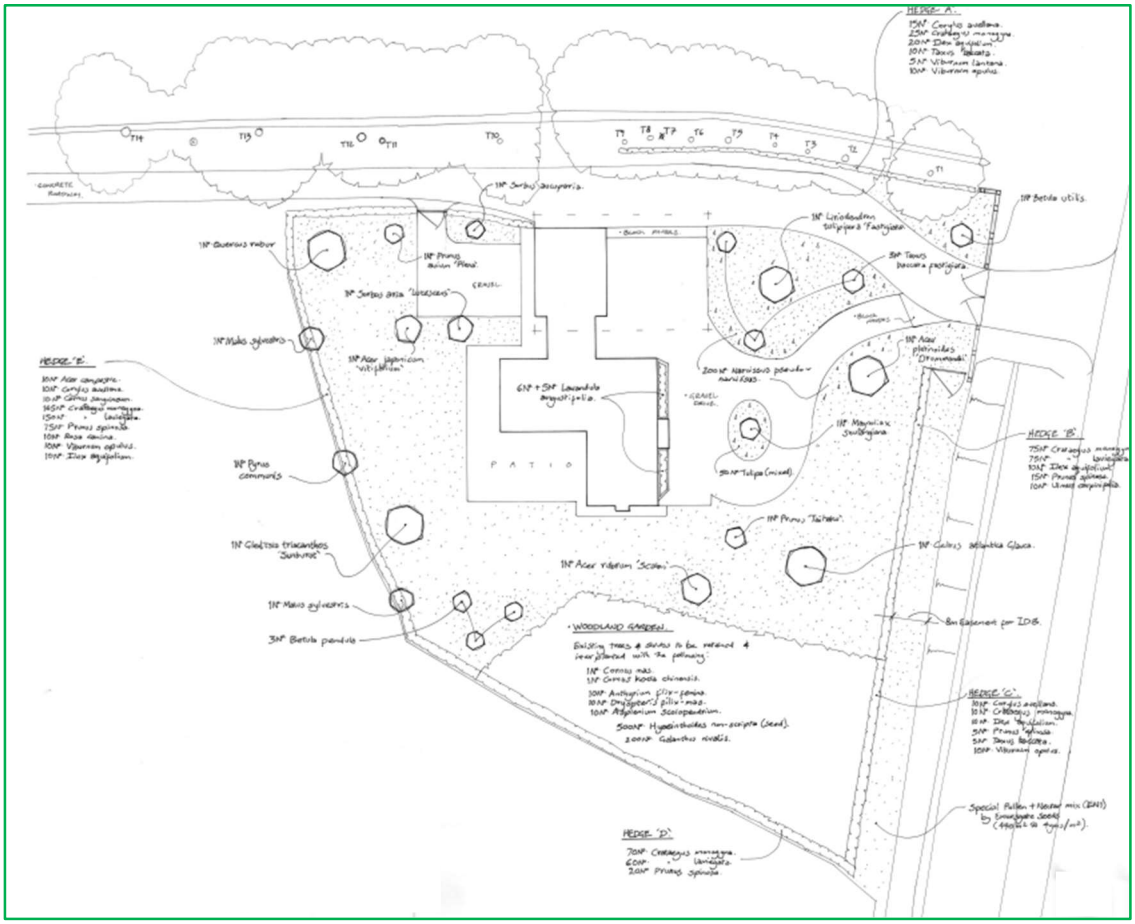
Landscape & Biodiversity Enhancements



Residential Development, Moulton Eaugate, Lincolnshire, PE12 0XJ.

Mr & Mrs Ravell

Jonathan Biggadike

Chartered Landscape Architect

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1.0 Introduction

1.1 Planning consent for the demolition of the existing portal framed barn and the erection of a replacement dwelling was obtained on 26th January 2022 (see planning reference H13-1269-21). The decision notice contains 3 conditions relating to landscape and biodiversity. For ease of reference these are quoted in full below.

> *5 Before the commencement of the development beyond oversite a scheme of landscaping and tree planting for the site shall be submitted to and approved in writing by the Local Planning Authority. It shall include:*
>
> > *i) Details of the number, species, heights on planting and positions of all the trees, together with details of post-planting maintenance;*
> >
> > *ii) Details of which of the existing trees on site are to be retained or removed. Such scheme as is approved by the Local Planning Authority shall be carried out and completed in its entirety during the first planting season following practical completion of the development. All trees, shrubs and bushes shall be maintained by the owner or owners of the land on which they are situated for the period of five years beginning with the date of completion of the scheme and during that period all losses shall be made good as and when necessary.*
>
> *NOTE: The submitted landscaping proposals shall demonstrate that Biodiversity Net Gain will be achieved on site, using the Biodiversity Metric 3.0 (or any successor).*
>
> *Reason: To ensure that the development is adequately landscaped, in the interests of its visual amenity and that of the area in which it is set, and that Biodiversity Net Gain will be achieved. This Condition is imposed in accordance with Policies 2, 3 and 28 of the South East Lincolnshire Local Plan, 2019 and the Environment Act 2021.*
>
> *6 Prior to its installation, details of the proposed boundary treatments, including a schedule of fencing levels, heights and materials, and details of the size and species of any hedging, shall be submitted to and approved in writing by the Local Planning Authority, and the details so approved shall be implemented in full before the development is first brought into use and retained thereafter.*
>
> *16 Before the commencement of the development hereby permitted beyond oversite full details of ecological biodiversity measures to be installed in conjunction with the development shall be submitted to and approved in writing by the Local Planning Authority. The measures shall be constructed and retained in accordance with the details so approved.*
>
> *Note: Development can incorporate a number of simple, low-cost measures to deliver biodiversity benefits and enhance priority habitats and species, such as, the use of bat and barn owl roost boxes and integrating nesting opportunities into buildings. The*

use of swift bricks on new developments would help minimise the decline in swifts, a priority species.

Reason: To ensure that the development is able to deliver a net gain in biodiversity. This Condition is imposed in accordance with Policy 28 of the South East Lincolnshire Local Plan, 2019 and national guidance contained in the National Planning Policy Framework, 2021.

1.2 This report forms part of the submission to satisfy these conditions. It will describe the landscape design rationale which has been applied to this site. In essence, this will endeavour to mitigate the impact of the development with a series of well- considered enhancements and green infrastructure which will improve nature conservation and biodiversity throughout the site. A holistic and sustainable approach, in accord with the Landscape Institute's policy statement for Green Infrastructure, has been adopted. This, it is hoped, will help assimilate the development into its setting and enhance the wider landscape context.

1.3 This strategy should be read in conjunction with the accompanying planting plan, planting schedule and post planting maintenance document.

2.0 Biodiversity

2.1 The Earth Summit in Rio de Janeiro in 1992 defined biodiversity as:

"The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." Biodiversity can be defined simply as *"the variety of life"* and encompasses the whole spectrum of living organisms, including plants, birds, mammals, and insects. It includes both common and rare species, as well as the genetic diversity within species. Biodiversity also refers to the habitats and ecosystems that support these species.

3.0 Summary of Legislation, Policy and Guidance

3.1 Section 15 of the National Planning Policy Framework (NPPF) *Conserving and enhancing the natural environment* outlines the ways in which the planning system should contribute to, protect and enhance the natural and local environment. Relevant to this proposal is the requirement in paragraph 179 which seeks to protect and enhance biodiversity, providing net gains where possible. paragraph 185 © is also relevant in that it discourages light pollution which may affect natural habitats.

3.2 This is enshrined in the Natural Environment & Rural Communities (NERC) Act 2006 which imposes a duty on all public bodies to conserve biodiversity, including restoring and enhancing a population or habitat.

3.3 Natural England have developed the Biodiversity Net Gain Regulations under the Environment Act 2021. As part of a submission for planning consent developers must now use the Biodiversity Metric 3.1 (revised 21/04/22) to assess the baseline ecological value of a site. The method also requires a description of what is to be retained, enhanced and conserved with the need to demonstrate a minimum 10% biodiversity net gain. As this proposal is for a single dwelling the Small Site Metric has been applied.

3.4 At a county level, there is the *Lincolnshire Biodiversity Action Plan 2011-2020* (3rd edition) which includes a hedgerows and trees action plan. Currently this document has not been superseded. This guidance advocates several measures which are applicable to this development including the planting of hedgerows and wildflower rich meadows. Both are local and national priorities under the Biodiversity Action Plan.

3.5 Bats are widespread in Britain and in Lincolnshire, where 11 species have been recorded. All bat species are grouped as Priority Species in the Lincolnshire BAP. LBAP targets for bats are to survey and monitor the status of populations, to maintain and enhance existing populations, enhance bat foraging habitats, promote public understanding of bats, encourage appropriate building techniques and identify sites for artificial roosts.

3.6 All species of bats are protected under Section 9 of The Wildlife and Countryside Act (1981 Schedule 5); as amended by The Environmental Protection Act 1990, and The Conservation (Natural Habitats, &c) Regulations 1994. Bats, and their roost sites, are also protected at all times from *'reckless'* disturbance or damage, along with *'intentional'* damage, under The Countryside & Rights of Way Act 2000, irrespective of whether bats are present.

3.7 Lincolnshire County Council's *Natural Environment Strategy and Action Plan 2012-2018* was published in September 2012. This document is largely concerned with improving access to the countryside at both a regional and local level.

3.8 The Lincolnshire Wildlife Trust's *Plan for Nature: Living Landscapes for All* promotes a bold new approach to wildlife conservation, namely habitat restoration at a landscape scale, creating green infrastructure and links to connect existing fragmented habitats. It also advocates ecosystem services and the concept of a natural health service improving people's well-being through contact with nature.

3.9 The South Holland Internal Drainage Board is a partner of the county Biodiversity Action plan (BAP) and have also prepared their own which seeks to improve the nature conservation of rivers, watercourses and wetlands. The aims of the IDB BAP are summarised below:

> To ensure that habitat and species targets from the UK Biodiversity Action Plan and the local LBAP are translated into effective action within the drainage district.
>
> To identify targets for other habitats and species of local importance within the drainage district.

To develop effective local partnerships to ensure that programs for biodiversity conservation are maintained in the long term.

To raise awareness within the IDB and locally of the need for biodiversity conservation, and to provide guidance to landowners, occupiers and their representatives on biodiversity and inland water management.

To ensure that opportunities for conservation and enhancement of biodiversity are fully considered throughout the IDB's operations, and

To monitor and report on progress in biodiversity conservation.

4.0 Aims & Objectives of the Landscape Strategy

4.1 The following summary is intended to demonstrate that the chosen strategy is well conceived, appropriate for the site and in accordance with the requirements of both local and national policy and guidance.

4.1.1 Develop a verdant, robust and naturalistic landscape setting for the development which acts as a soft foil for the new dwelling.

4.1.2 Introduce a wide variety of trees and shrubs to enhance visual interest and seasonal variety which, in turn, should safeguard against significant loss through disease or climate change.

4.1.3 Retain, integrate and enhance as much of the existing vegetation and positive landscape features within the scheme as possible to avoid harm.

4.1.4 Where some adverse harm impact is unavoidable compensate for the loss of features of nature conservation value to result in a net gain in biodiversity.

4.1.5 Introduce new structure planting to define the development edge and help assimilate it into its wider context.

4.1.6 All new native planting to be of British provenance and should include less commonly used varieties e.g. Midland hawthorn (Crataegus laevigata) and elm (Ulmus).

4.1.7 Use planting to improve microclimate by creating shade, improving air quality and reducing the perception of noise.

4.1.8 Create and improve habitats such as hedgerows, flower rich meadows which can support populations of beneficial predator species to control common agricultural pests. Habitats which provide a nectar source, shelter and additional prey species all have the potential to increase beneficial predator numbers.

4.1.9 Enhance and promote opportunities for wildlife and biodiversity including nest boxes for key species to ensure the future of coherent ecological networks. This should include,

where possible, artificial roosts for bats and nesting boxes for sparrows, house martins, owls and swifts.

4.1.10 Less intensive management of hedgerows to increase numbers of beneficial predators.

4.1.11 Protect all new planting from browsing animals and pests including rabbit, roe and muntjac deer.

4.1.12 Minimise light pollution (night blight) through a sensitive and efficient lighting design (LED/solar).

4.1.13 Encourage low energy biodiverse water management using sustainable urban drainage (SUDs) techniques and flood risk management.

4.1.14 Promote the use of natural materials and hard landscape details which complement the rural setting and local vernacular traditions.

4.1.15 Promote well-being through continuing contact with nature and the creation of tranquil spaces.

5.0 Design Rationale for the Landscape Proposals & Biodiversity Enhancements.

5.1 This section will describe elements of the recommended planting proposals and how they complement the ethos of the Landscape Strategy which sets out to achieve net gains in biodiversity.

5.2 The existing vegetation was planted approximately 10 years ago by the applicant, to screen the barn and complement the much older avenue of trees to the north. The plantation mix consists of primarily native species including yew, hawthorn, cherry, ash, oak and hazel. There is also extensive lonicera along the perimeter which is a non-native evergreen. For the most part the planting is established but with many overgrown trees with poor form and so is now in need of comprehensive management including selective thinning, removal and replacement.

5.3 It is intended to create a naturalistic character for the site planting using predominantly native species but using more ornamental and smaller scale planting closer to the house. The planting will include flower and berry producing plants to provide a food source for wildlife. The chosen palette of trees will include oak, rowan, acer, crab apples, common pear and silver birch. These species will provide colour, vertical emphasis and seasonal interest as well as a soft foil to the new building. A particularly important consideration will be the inclusion of early flowering plants and those which provide spring pollen and nectar to extend the feeding season.

5.4 The approved layout shows the removal of the vegetation to the West of the new dwelling to permit views out to the open countryside. Several of these trees are leggy, self-seeded or, as in the case of the oak, too close to the footprint of the existing building as well as the approved dwelling. The visual impact of this element of the scheme will initially

appear quite drastic but is considered necessary as part of the long-term management and improvement of the site. The losses will be mitigated for and compensated by comprehensive replanting including mixed native hedgerows to all perimeters as well as replacement specimen trees within the curtilage. Where possible a limited number of understorey shrubs will be retained, cut back and integrated into the new hedgerow planting. There is at least 1 no yew and a hawthorn for which this approach may be appropriate, subject to closer inspection.

5.5 It is proposed to retain the tree group which extends along the southern site boundary. Most of the vegetation here will be retained, although ivy will be cut back and 1 or 2 of the elders will be grubbed out. Dead wood will be removed, particularly below head height. As mentioned previously, the lonicera will be replaced with a mixed native hedge. The character of the space here is relatively open and so it will be developed as a naturalistic woodland garden with informal paths and log piles dotted around for invertebrates. The ground layer will be enhanced by the planting of ferns and drifts of spring bulbs including bluebells and snowdrops. Highlights will also be created using naturalised varieties of shrub with dramatic seasonal effects e.g. Dogwood varieties.

5.6 The mixed native hedgerow around most of the site boundary represents significant green infrastructure. Apart from effective screening and its amenity value, it will provide berries together with nesting and roosting sites. A schedule containing a typical palette of native planting has been included in the Appendices. The planting mix will include 2 or 3 small to medium-sized native hedgerow trees.

5.7 These hedges to the South, West (beside the trees) and north (beneath the avenue) would not be managed as traditional hedge but be encouraged to free-form to create a more naturalistic dense woodland edge character at a height of 3 to 4 m. Upon reaching maturity, these hedges would only need to be cut back every two to three years. The hedge to the eastern boundary, in front of the house, and the cleared open section to the West, would be more formal and uniform, managed to a height of 1.8 metres (6 feet).

5.8 The site layout shows a 9m wide Internal Drainage Board easement beside the dyke on the eastern. As an alternative to close mown amenity grass it is proposed to seed this with a species rich wildflower meadow mix by Emorsgate Seeds. Flower meadows are a very rare habitat in the Fens as identified in the Lincolnshire Biodiversity Action Plan. Species rich meadows represent one of the most diverse habitats with up to 40 different kinds of plants per square metre. Yellow rattle is a particularly important constituent as it parasitizes vigorous grasses enabling the development of a flower rich sward.

5.9 The EN1 *Special Pollen and Nectar Meadow Mixture* (see Appendices) is intended to provide an important food source for insects including bees, butterflies, and hoverflies. Recent research shows that a variety of pollen from a wide range of plant species will produce healthier immune systems in honeybees. This in turn creates a foraging area for amphibians, skylarks, bats and barn owls.

5.10 It is proposed to realign the entrance and separate the farm access from the forecourt of the dwelling. The entrance will be framed by a new brick gateway complete

with ornamental metal gates (see Oglesby & Limb drawing). It is traditional and restrained in style to complement the character of the new dwelling.

5.11 A number of specimen trees will be planted within the lawns and open spaces at the front of the property. Larger forest sized trees such as maple, tulip tree and cedar will be used to frame the principal elevation. Smaller ornamental trees nearer the house, including topiary. As shown on the planting plan a group of silver birch trees are proposed in the site entrance. These are light shade casting trees which are also home to 200 types of insects and provide edible winged seeds for birds.

5.12 The lawns will also be planted with native spring bulbs including daffodils and tulips.

5.13 Planting beds adjacent to the house will planted with lavenders. This will soften hard edges and provide additional interest. This planting is chosen as a good source of nectar.

5.14 The Landscape Strategy is committed to the provision of a variety of nesting boxes throughout the site. In the main, these will be located within the woodland garden, catering primarily for priority species such as sparrows, house martins, swallows, and bats. It must be recognized that attracting swifts to nest boxes is exceedingly difficult and so only a modest provision will be attempted as part of this scheme. This will take the form of a nest box attached to the north gable of the garaging.

5.15 The Barn Owl Trust recommends that the best location for owl boxes is on existing trees, away from people and at least half a mile from busy roads. Given the spatial constraints of the site, the absence of suitable trees, domestic lighting and the proximity to the road the provision of a free-standing owl box within the curtilage has been discounted. However, one box will be provided at an off-site location within the farm holding, identified by the applicants. As mounted boxes are best placed along a hedgerow or treeline, ideally at a height of 4 ½ to 7 m (14-24 feet) overlooking open countryside, it is proposed to fix another to the willow (T14) to the north of the site. It is important that they should not be positioned with the opening to the box to the west or south-west to avoid the prevailing wind and rain.

5.16 A bat roost is defined as being any structural place that is used for shelter and protection. In their active period during the summer (April-November) roosts are used for colonial breeding and hibernation in winter. Roosts also provide safe places to feed during the night. Bats have complex habitat requirements and are known to move regularly throughout the year. They may return to roosting sites on an annual basis, and it is important to note that a roost retains its designation and protection whether it is in use or not.

5.17 The 15 species of UK bats have declined due to the loss of roosting and hibernation sites and habitats which allow them to forage for their diet of insects.

5.18 Bat roost units or bat boxes on new buildings should ideally be placed on the northern and southern elevations respectively, 3-6m above ground level. To enhance biodiversity within the scheme it is proposed install 5 bat boxes within the curtilage. The Schwegler bat box (Ref 2F) is a general-purpose summer roost for smaller British bats (see

illustration in Appendices). According to the manufacturer's instructions they can be arranged in groups of 3 on either buildings or trees with an open sunny position facing different directions. The Schweiger bat box (reference 1 FF) provides a summer roost and nursery. It should be located at a height of between 4 and 6 m. The location for each of the boxes will be as per the schedule below:

3 no. Schwegler general-purpose Bat Box (reference 2F).

2 no. Schwegler Bat Box (reference 1FF).

5.19 60 species of bird are known to use boxes. Open-sided boxes are known to attract spotted flycatchers, robins, pied wagtails, blackbirds and wrens. Ideally these are located low down on fence posts or sheds which benefit from dense cover. Enclosed boxes will attract different birds depending on the size of the entrance holes. A 25mm diameter hole will attract blue tits, 28 mm great tits and tree sparrows, 32 mm house sparrows and 52 mm starlings.

5.20 It is proposed to locate a variety of bird boxes within the curtilage both on the new dwelling and existing trees. To attract different priority species a mixture of boxes and locations will be used. These should be securely fixed into mortar joints avoiding northern and south-eastern aspects to avoid direct midday sun and driving rain. Terraced nest boxes at eaves level will be used to attract house sparrows whose population has halved in the last 20 years. Although swallows are not on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) it is now on the list of birds of conservation concern and so some provision for nesting within the new development will be provided. Generally, swallows prefer to nest in buildings, and it can therefore be difficult to incorporate nesting sites but some provision has been included. Boxes for house martins are best located at eaves level. All boxes are best installed early January to the end of February.

5.21 A comprehensive schedule of the RSPB bird boxes proposed for the scheme is provided in the Appendices.

6.0 Summary

6.1 The comprehensive range of proposals will result in the following:

The removal of 8 no juvenile trees with poor form + understorey, including Non-native lonicera.

Creation of 440 square metres of pollen & nectar rich wildflower margin.

The planting of 22 no. specimen trees and hedgerow trees.

The planting of 215 linear metres of new mixed native hedgerow.

Management & improvement of existing spinney to create woodland garden of 740 square metres.

6.2 Together with the bird, bat and owl boxes this represents a significant improvement to the wildlife value of the site and its biodiversity. Added to which are the log piles and diversification of the ground flora proposed in the woodland garden.

6.3 It has not been possible to finalise the Small Sites Metric for this submission as the Unit Increased Targets under section 11 have not been presented by or agreed with the local planning authority. in the interim, it is safe to assume that the proposals represent way more than the 10% improvement in biodiversity normally required for comparable sites.

7.0 Conclusion

7.1 The range of measures proposed here to complement the landscape planting scheme will undoubtedly serve to benefit wildlife conservation and biodiversity, both within the site and beyond, in accordance with the requirements of both local and national guidance and legislation.

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References/Bibliography

CPRE. *Hedgerows Policy Position Statement*. February 2006.

Landscape Institute. *Green infrastructure: an integrated approach to land use.* LI Position Statement. April 2009.

Landscape Institute. *Local Green infrastructure-helping communities make the most of their landscape.* September 2011.

National Planning Policy Framework (NPPF) Section 11 *Conserving and enhancing the natural environment.* DCLG March 2012.

Lincolnshire Wildlife Trust. *Living Landscape - Protecting Wildlife for the Future.* 2010.

Websites

Council for the Preservation of Rural England www.CPRE.org.uk

The Lincolnshire Wildlife Trust www.lincstrust.org.uk

Natural England www.naturalengland.org.uk Bat mitigation guidelines

The Landscape Institute www.landscapeInstitute.org.uk

Woodland Trust www.Woodlandtrust.org.UK

South Holland Internal Drainage Board

National Biodiversity Network (NBN) Gateway website

www.barnowltrust.org.uk

www.rspb.org.uk/bird-wildlife/nestboxes

Appendices

NATIVE PLANTING PALETTE

TREES & SHRUBS

No.	Botanical Name	Common Name
	Acer campestre	Field maple

Alnus glutinosa	Common Alder
Betula pendula	Silver birch
Betula pubescens	Downey birch
Corylus avellana	Hazel
Cornus sanguinea	Common dogwood
Crataegus monogyna	Hawthorn
Crataegus laviegata	Midland hawthorn
Fagus sylvatica	Beech
Ligustrum vulgare	Wild privet
Malus sylvestris	Common crab apple
Prunus avium	Wild cherry
Prunus padus	Bird cherry
Prunus spinosa	Blackthorn/sloe
Populus tremula	Aspen
Pyrus communis	Wild pear
Rosa arvensis	Field rose
Rosa canina	Dog rose/briar
Tilia cordata	Small leaved lime
Ulmus glabra	Elm
Viburnum lantana	Wayfaring tree
Viburnum opulus	Guelder rose
Ilex aquifolium	Holly
Taxus baccata	Yew

EN1 – SPECIAL POLLEN AND NECTAR MEADOW MIXTURE

Composition

This meadow mixture is designed to create flower rich grassland with a particular emphasis on species which are known to be important as sources of pollen and nectar for bees, butterflies, hoverflies and other insects.

Wild Flowers

%	Latin name	Common name
0.5	Achillea millefolium	Yarrow
1.6	Centaurea nigra	Common Knapweed
1	Centaurea scabiosa	Greater Knapweed
1	Daucus carota	Wild Carrot
2	Echium vulgare	Viper's Bugloss
0.5	Eupatorium cannabinum	Hemp Agrimony
1.5	Galium verum	Lady's Bedstraw
0.5	Knautia arvensis	Field Scabious
0.4	Leontodon hispidus	Rough Hawkbit
0.8	Leucanthemum vulgare	Oxeye Daisy
1.7	Lotus corniculatus	Birdsfoot Trefoil
1	Onobrychis viciifolia	Sainfoin
0.2	Origanum vulgare	Wild Marjoram
0.3	Primula veris	Cowslip
2	Prunella vulgaris	Selfheal
0.1	Pulicaria dysenterica	Common Fleabane
1.8	Ranunculus acris	Meadow Buttercup
1.5	Rhinanthus minor	Yellow Rattle
1	Silene dioica	Red Campion
0.2	Trifolium pratense	Wild Red Clover
0.4	Vicia cracca	Tufted Vetch
20		

Grasses

%	Latin name	Common name
10	Agrostis capillaris	Common Bent
2	Anthoxanthum odoratum	Sweet Vernal-grass (w)
2	Briza media	Quaking Grass (w)
32	Cynosurus cristatus	Crested Dogstail
10	Festuca ovina	Sheep's Fescue
20	Festuca rubra	Slender-creeping Red-fescue
3	Phleum bertolonii	Smaller Cat's-tail
1	Trisetum flavescens	Yellow Oat-grass (w)
80		

Sowing Rates

kg/ha	kg/acre	g/m²	Order Mixture
40	16	4	Order this mixture

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EM3

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Wildflower diversity linked to the health of bees and other pollinating insects

PROPOSDED BAT BOXES



3 no. Schwegler General Purpose Bat Box (Ref 2F)



2 no. Schwegler Large Bat Box (Ref 1FF)

RSPB NESTING BOXES



RSPB Sparrow terrace nest box



Apex classic nestbox



Apex open front nestbox



Swift nestbox



RSPB Robin and wren diamond nestbox



Swallow Nest



House Martin Nest

SCHEDULE OF NESTING BOXES

Sparrow terrace	1 No.
Apex classic 32mm dia. hole	2 No.
Apex classic 25mm dia. hole	1 No.
Swift	1 No.
Robin/Wren Diamond	1 No.
Swallow	1 No.
House Martin	1 No.
Total	8 No.

In addition to the above 2 no. owl boxes will be installed.