

Condition 20: Biodiversity Enhancements



Residential Development
Land adjacent to 355 High Road
Whaplode
Lincolnshire

Haycroft Homes Ltd

Jonathan Biggadike
Chartered Landscape Architect
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1.0 Introduction

1.1 Planning consent for 33 dwellings was obtained on 20 February 2017 (see planning reference H23-0508-16). The decision notice contains a number of pre-commencement conditions including number 20 which is quoted in full below:

The development shall not commence until a scheme for the provision of biodiversity enhancements has been submitted to and approved in writing by the local planning authority, including measures for planting indigenous species of plants, trees and shrubs to encourage bats and other protected species. The details as approved shall be carried out in their entirety within 24 months of the commencement of the development.

Reason: To enhance and contribute to biodiversity in accordance with the guidance within the National Planning Policy Framework.

1.2 This report will endeavour to satisfy this condition providing a 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. This strategy will be developed further in the detailed landscape design (including tree planting) required to satisfy Condition 21 which is also a pre-over-site condition.

1.3 In addition to this Condition 19 requires a Management Plan for the areas of public open space which outlines management responsibilities and maintenance schedules. Condition 22 requires details of boundary treatments and duplicates the requirement for details of hedging. Condition 18 requires the submission of a plan illustrating all areas of public open space. Given that the layout has already been approved and that condition 21 already requires a full landscaping scheme this again would seem to duplicate the requirements.

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 11 of the National Planning Policy Framework (NPPF) *Conserving and enhancing the natural environment* outlines the ways in which the planning system should contribute to and enhance the natural and local environment. Relevant to this proposal is the requirement in Section 109 to provide net gains in biodiversity where possible and Section 118 which requires that opportunities to incorporate biodiversity in and around development should be encouraged.

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 At a county level, there is the *Lincolnshire Biodiversity Action Plan 2011-2020* (3rd edition) which includes a hedgerows and trees action plan. 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.

3.4 Bats are widespread in Britain and in Cambridgeshire and 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.

3.5 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.

3.6 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.

3.7 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.

3.8 The Welland & Deepings 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 built elements.

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 glabra*).

4.1.7 Promote edible and productive landscapes and gardens with ornamental herbs and top fruit trees, including the replanting of traditional Lincolnshire orchard varieties.

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

4.1.9 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.

4.1.10 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 bats.

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

4.1.12 Protect all new planting from browsing animals and pests including roe and muntjac deer.

4.1.13 Promote opportunities for wildlife conservation and biodiversity by the provision of a wildlife garden at the show home.

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

4.1.15 Encourage low energy bio diverse water management using sustainable urban drainage (SUDs) techniques and flood risk management.

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

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

5.0 Design Rationale for the Landscape Proposals including Biodiversity Enhancements.

5.1 The 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. Subject to condition compliance for this submission these proposals will deep be developed further in accordance with Condition 21 which requires a full landscape scheme and management plan.

5.2 The largest area of public open space within the scheme is the 9m wide Internal Drainage Board easement beside the dyke on the western boundary. Immediately adjacent to this is the swale which has been included as part of the sustainable urban drainage scheme. In total, the easement and swale cover an area of 2280 m², representing 14% of the total site area. 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.

5.3 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.

5.4 It will complement and interconnect with the existing watercourse, the newly created gardens within the estate development and the established gardens beyond the application site.

5.5 The swale is outside the required easement and so offers the opportunity for additional planting. This might include marginal aquatic varieties such as flag iris, reed mace, saw sedge and bur reed together with smaller willow varieties where the swale widens out. Goat willow attracts early insects, provides nectar for blue tits and seeds for finches.

5.6 The 2m meter wide strip along the eastern boundary of the site cannot be planted with trees due to the proximity of underground services (a 3-foot rising main). It is therefore proposed to seed this area of 260 square metres with the aforementioned meadow mixture. This area will also be

planted with native spring bulbs including daffodils and snowdrops. The bulb planting will be extended to the larger easements strip along the western boundary.

5.7 It is intended to create a predominantly native and naturalistic character for the estate planting. This will include flower and berry producing plants to provide a food source for wildlife. 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.

5.8 The space between the new road junction and the western boundary of number 355 High Road offers the opportunity to plant a mixed native hedgerow up to a length of 44 m. This green infrastructure, apart from effective screening and its amenity value, would 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 may also include one or two small to medium-sized native flowering cherries e.g. *Prunus avium* or the Bird cherry (*Prunus padus*).

5.9 It would, however, 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.

5.10 As shown on the approved layout plan silver birch trees are proposed in the rear gardens. These are light shade casting trees which will soften the built elements, but also give some perceived degree of privacy between the rear aspects of dwellings. Birch are also home to 200 types of insect and provide edible winged seeds for birds.

5.11 The developers are committed to the idea of a garden to complement the show house used to market the development. This would not only provide the opportunity to promote wildlife gardening to incoming residents, but also the use of water efficient and edible plants. Traditional top fruit and orchard trees with a Lincolnshire provenance would be most appropriate. Small-scale rainwater harvesting in the form of water butts should also be encouraged for each dwelling.

5.12 In attempting to demonstrate an efficient use of land it is now common practice to provide smaller front gardens in housing layouts. Whilst this spatial constraint may make it difficult to achieve a leafy avenue effect it will be possible to provide colour, vertical and seasonal interest together with a soft foil to the built elements. Trees with small compact habits or fastigate and elliptical forms would seem to be appropriate. This palette of planting may include juniper, bay, rowan, juneberry, acer, crabs and ceanothus.

5.13 All the proposed dwellings are shown with front gardens of varying sizes, a good number of which would be able to accommodate carefully chosen small to medium sized trees. In the few instances where space does not permit tree planting in front gardens bold arrangements of low shrub planting will be used to soften hard edges and provide additional interest. This planting could include lavenders, sages, potentilla and hebes amongst others, chosen as good sources of nectar. Thorny *pyracantha* is an attractive shrub which would encourage safe nesting sites as an alternative to bird boxes.

5.14 The only notable vegetation on the application site is the high privet hedge which encloses plots 1 and 2. This is an effective screen which provides berries and nectar flowers. It is therefore proposed to retain the hedging to the eastern and southern boundaries.

5.15 The Landscape Strategy is committed to the provision of a variety of nesting boxes throughout the site, 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.

5.16 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, the inevitable domestic lighting and the proximity to the road the provision of a free-standing owl box has been discounted. The opportunity for an off-site location will be explored with adjacent landowners. All 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. They should not be positioned with the opening to the box to the west or south-west to avoid the prevailing wind and rain.

5.17 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.

5.18 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.

5.19 Bat roost units or bat boxes on new buildings within the development 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 3 bat boxes in close proximity to the easement and agricultural fields beyond. 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:

Plot 21 S. gable - Schwegler Bat Box (reference 1FF)

Plot 31 S. gable - Schwegler Bat Box (reference 1FF)

Plot 33 S. gable - Schwegler general-purpose Bat Box (reference 2F)

5.20 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.

5.21 It is proposed to locate a bird box within the curtilage of each of the new dwellings. 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 Conclusion

6.1 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 Condition 20. The outstanding detail (planting plans, schedules etc) will be submitted to the local planning authority to prior to oversight to satisfy Conditions 21 & 22.

Jonathan Biggadike

Chartered Landscape Architect

Dragonfly Building Conservation & Landscape Design Ltd

T: (01775) 680595.

M: (07772) 509351.

E: jbiggadike@outlook.com

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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

Welland & Deepings Internal Drainage Board

National Biodiversity Network (NBN) Gateway website

www.barnowltrust.org.uk

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

Appendices

NATIVE PLANTING PALETTE FOR HIGH ROAD, WHAPLODE.

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

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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

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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 Dogtail
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/m ²	Order Mixture
40	16	4	Order this mixture

PROPOSEDED BAT BOXES



Schwegler General Purpose Bat Box (Ref 2F)



Schwegler Large Bat Box (Ref 1FF)

RSPB NESTING BOXES



RSPB Sparrow terrace
nest box



Apex classic nestbox



Apex open front nestbox



Swift nestbox



SCHEDULE OF NESTING BOXES

Sparrow terrace	2No.
Apex classic 32mm dia. hole	3No.
Apex classic 25mm dia. hole	4No.
Swift	1No.
Robin/Wren Diamond	2No.
Swallow	3No.
House Martin	2No.
Total	17No.

