Landscape & Ecology Management Strategy

Little Densole Farm

October 2016

densole eco holiday park

PURE ECOLOGY

Background

A planning application is being sought for an Eco Holiday and Fishing Park on an agricultural field of low ecological value. The land is located to the eastern edge of the village of Densole within the land holding of Little Densole Farm. The proposals include 12 lodges set around the peripheries of two connected fishing lakes. A Preliminary Ecological Appraisal (Pure Ecology 2016), which includes recommendations to enhance the site for wildlife, has been produced to support the application. The recommendations presented within that report have been incorporated within the design of the park and ecological enhancement is integral to the overall concept of the venture. This addendum Landscape and Ecology Management Strategy has been prepared in order to address comments received from the Kent Wildlife Trust, in order to clarify the biodiversity enrichment that will be provided as part of the scheme.

The existing landuse of the application site provides few opportunities for wildlife, as it is an area of improved grassland. Although there will be some minor impacts associated with the change in use, such as increased lighting and human disturbance, these can be addressed through appropriate mitigation. The proposed Eco Holiday and Fishing Park provides an opportunity for biodiversity gain and enhancement in an otherwise low value habitat. The development aims to achieve this through a number of habitat enhancements including new native tree and hedgerow planting of local provenance, the creation of two interconnecting lakes, seeding of wildflower meadows and the installation of bat, bird and insect boxes.

The scheme aims to complement and enhance the existing surrounding landscape. The carefully designed landscaping of the proposed park provides a 30m landscaped 'buffer zone' between the lodges and the adjacent Reinden Wood, to which access through the park will not be permitted. In fact, a fence and path are already present along the woodland's boundary with the application site. Reinden Wood is an ancient woodland which has been designated as a Local Wildlife Site (LWS) and is an important habitat for plants and butterflies in particular. With suitable mitigation in place impacts such as increased illumination and human disturbance are not considered to have a significant effect on this valued habitat.

Further to the buffer zone, no street lighting is proposed as part of the scheme and lighting will be controlled and kept to a minimum. Lighting will be provided via low level bollard lighting (50cm in height and no more than 70 watt) with an emphasis on background ambient illumination at key areas such as the reception, rather than full illumination. Lighting will be directed at the ground to avoid light spillage into newly created wildlife havens, the wider surroundings and Reinden Wood.

The ethos of the Eco Holiday and Fishing Park is for guests to be able to enjoy the tranquil surroundings within a beautiful landscape. The main draw of the park being the two fishing lakes; fishing is a peaceful sport in its nature and requires a serene environment which is promoted by the scheme as a whole. Guests will be asked to leave their cars within a designated parking area to the west of the lodges and will be taken to their accommodation via specially adapted golf carts to minimise disturbance. Native woodland and wildflower planting is proposed around the peripheries of the park and guests will be encouraged to access these new wooded areas via marked pathways.

The creation of green areas such as woodland and wildflower meadows, will promote and enhance the ecology of the site and protected species; as well as providing areas for recreation. They will also have the added benefit of helping to alleviate any resultant recreational pressure on the adjacent Reinden Woods LWS by encouraging guests to enjoy the green spaces directly on offer.

Furthermore, public access is already freely available to Reinden Woods. Pathways throughout the woodland are a combination of public bridleway and permissive pathways agreed with the Ministry of Defence (MOD) who own the woods. As well as the public having access, military personnel and vehicles are used in military training within the woodland. The land is used for tactical training and blank ammunition is fired; therefore, this woodland is already heavily disturbed and it is not considered the impact of increased human disturbance (such as noise) from the use of 12 holiday lodges, the primary focus of which is fishing, will have a significant impact on the woodland and the species to which this woodland is a home.

The Site and Context

The land adjacent to Little Densole Farm is located to the east of the small village of Densole in Kent. The land comprises an improved grassland with hedgerow, fence and woodland boundaries. Agriculturally improved pastures surround the site, save the eastern side, which is bounded by a fence beyond which lies Reinden Wood. The wider landscape is largely agricultural, comprising arable fields set within a network of hedgerows. Woodlands, in particular smaller copses and coppices, are abundant within the surrounding countryside and intersperse the farmland around the village of Densole.

The site lies within the The North Downs National Character Area (NCA) as defined by Natural England. This NCA forms a chain of chalk hills extending from the Hog's Back in Surrey and ending at the White Cliffs of Dover. The Kent Downs and Surrey Hills Areas of Outstanding Natural Beauty (AONB) designations are testament to the qualities and natural beauty of the area. The proposed development is not on, or immediately adjacent to any statutory sites of nature conservation; however, the adjacent Reinden Wood, Densole is designated as a Local Wildlife Site (LWS) on account that it comprises a block of ancient woodland.

The proposed development site falls within the Kent Downs AONB, which roughly follows the southeast's outcrop of chalk and greensand. The chalk ridge and its unimproved chalk grassland, scrub communities and broadleaved woodlands are all important habitats for wildlife. The well-wooded greensand ridge is particularly prominent in the Sevenoaks, Tonbridge and Malling districts, and supports heathlands and acidic woodlands. Other distinctive landscape elements include the traditional Kentish orchards, hop gardens and the rich wooded foreground of the upland ridges, together with many historic parklands.

The agricultural land directly within the application site comprises a field of improved grassland. This habitat is considered to be of low ecological value due to the dominance of common grass species and the low species diversity of the sward. The herbaceous species found within the sward are common, widespread and typical of grasslands that have received agricultural improvement. The site provides little in the way of habitats for wildlife due to its relatively sterile, open and flat nature, as well as its current management regime of regular mowing. Species such as birds, badgers, hedgehogs and amphibians living within the surrounding countryside are likely to pass through site, although no significant habitat is present within the application site itself.

A single gappy hedgerow partially marks the north-western boundary of the application site; it does not connect into a wider network of hedgerows. This hedgerow does not qualify as 'important' under ecological criteria in the Hedgerow Regulations 1997, but does qualify as a 'Hedgerow' under the UK Post-2010 Biodiversity Framework. The hedgerow provides suitable cover and foraging habitat for both hedgehogs and birds (for which it also provides nesting opportunities) and the bird species assemblage within the site is typical of farmland habitats within lowland England.

Reinden Wood, which is located along the south-eastern boundary, is connected to further woodlands via a network of hedgerows within the wider landscape. It provides a habitat for a number of species, including rare plants such as the fly and lady orchid, invertebrates such as the purple hairstreak, white-letter hairstreak and pearl-bordered fritillary as well as uncommon moth species. Reinden Woods not only provides a suitable foraging and roosting resource for bats, it is connected to a wider network resource and provides part of a corridor for movement for bats (and other mobile species) through the farmland landscape.

The Ecological Issues

The application site is currently an improved field which is of very low ecological value due to its agricultural improvements and management regime. As a result, currently the application site provides little opportunities for wildlife. It is considered that the Eco Holiday and Fishing Park provides an opportunity to enhance the ecological value and further enrich the surrounding area. Specific and targeted management will aim to lessen the impact of the park within an area of countryside that's current use is farmland. A fundamental requirement of the ecological mitigation is to maintain a permeable landscape, especially for the conservation of species with wider spatial requirements beyond the site boundary such as bats, badgers, hedgehogs and birds. This is why the landscaping of the scheme aims to provide complementary habitat enhancements that are in keeping with the local area, such as new tree planting along the peripheries of the site to create a transitional zone between the park and Reinden Wood, wildflower meadows to enhance the value of the site for butterflies and bees, as well as other insects. The creation of lakes will also provide an enhancement for species such as amphibians, foraging bats and species of dragonfly that have been recorded from Reinden Wood, including the southern and migrant hawker.

The ecological features and habitats that are to be included in the management plan are:

- Hedgerow – UK priority habitat. The only hedgerow within the site is gappy and does not link into a wider network of hedgerows. As a result, it provides little value as a wildlife corridor. However, it does offer shelter to species such as birds and hedgehogs, coupled with the fact it is a priority habitat, the north-western hedgerow is of significant local value. The retained hedgerow will need to be protected from damaging operations during the construction phases. It will be strengthened and new species rich hedges will be established as an enhancement along the new access road. The aim is to improve the network of hedgerows through the development, that will as a result of the scheme, connect to farmland hedges in the wider landscape.
- Lowland Mixed Deciduous Woodland – UK priority habitat, ancient woodland and designated LWS. Reinden Woods lies outside of the application site, along the south-western boundary. It is an important ecological resource within the local area. Potential indirect impacts include increased illumination and human disturbance (noise and visitor access). It should be noted that public access is already available to the woodland and it is also used for MOD training. A lighting scheme is a key element in the design of the park and low level bollards will be used with the emphasis on background lighting. Green areas will be created around the peripheries of the development to mitigate impacts from the potential increased pressure from recreational use on Reinden Wood as well as acting as buffer. It will be necessary to develop a woodland management plan that accommodates leisure activities and meets the nature conservation objectives.
- Bats – the site does not contain any hedgerows that are likely to be used as important commuting routes and the application site in its current state provides limited foraging habitats for bats. The south-eastern boundary of the site will provide an important route for bats along the edge of the development, in addition bat roosts are known from the local area and Reinden Woods being an ancient woodland provides not only a foraging habitat but roosting habitat also. Therefore, it is essential to maintain dark corridors for movement along this boundary. Artificial lighting within the development must be controlled and be avoided along the south-eastern boundary.
- Badgers – evidence suggests that badgers are present in the local area and forage and commute within the site. Indirect impacts include 'pitfall hazards' created by any excavations. Measures will be put in place to mitigate for this. In addition, it is essential that badgers are able to freely move throughout the site.
- Additional habitats and habitat features, such as two connecting lakes, wildflower meadows, log piles and bat, bird and insect boxes, will enhance the application site and complement the surrounding landscape and provide habitats for wildlife in the locality.

Design Layout Plan

site location plan 1:2,500

issued 20th Feb 2016

Proposal for Eco Holiday Park
Land off Canterbury Road
Densole
Nr Folkestone

Proposed Plans and Elevations

Perspective Views

issued 18th April 2016

Proposal for Eco Holiday Park
Land off Canterbury Road
Densole
Nr Folkestone

Proposed perspective view looking north

Mr D. & Mrs L. Westgarth

do not scale

all information subject to full working drawings, engineers information and local authority approval

dwg no. 471/24

PAUL WESTRUP
Architectural design and illustration
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issued 18th April 2016

Proposal for Eco Holiday Park
Land off Canterbury Road
Densole
Nr Folkestone

Proposed perspective view looking south west

Mr D. & Mrs L. Westgarth

do not scale

all information subject to full working drawings, engineers information and local authority approval

dwg no. 471/25

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Architectural design and illustration
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Objectives

1 Maintain, strengthen and where possible enhance the green corridor function of habitats, particularly along the north-western and south-eastern boundaries of the site; as well as along the new access road.

2 Retain a dark corridor along the south-eastern boundary of the site for movement and foraging by bats (and other nocturnal species).

3 Increase the existing biodiversity value by erecting bat, bird and insect boxes and creating log piles.

4 Enhance and protect the existing ecological hedgerow resource along the north-western boundary for nesting birds and foraging hedgehogs.

5 Increase the botanic diversity of the grassland, promote the diversity of herbaceous species by creating species-rich grassland to the north and south of the application site. In turn this will increase the value of the grassland, particularly for insect species and other invertebrates and in turn provide a food resource for bird species.

6 To maximise the ecological value of new lakes and species-rich grassland and keep them litter free.

7 Provide hedgerow planting along the new access road to create an enhanced wildlife movement corridor and nesting habitat for farmland birds. And provide further woodland nesting habitats.

8 Maintain a neat appearance in areas designed for public access and amenity use, and manage areas designated for wildlife to increase habitat diversity and retain a "rural feel" to create a visual contrast between areas.

9 Restrict access to sensitive wildlife areas, such as Reinden Wood, by maintaining dense scrub habitats and/or fences and barriers, as well as wood chipped pathways within woodland.

10 Minimise the effects of adverse impacts from the construction and short-term activities.

11 Create an attractive holiday facility, encourage guests to utilise the green space and designated recreational areas (play area and tennis courts).

Habitat Creation

Key wildlife habitats have been incorporated within the green infrastructure and new habitats will be established to enhance and help protect existing habitats (including Reinden Wood). In its current state the application site is of very low ecological value and the Eco Holiday and Fishing Park provides an excellent opportunity to enrich the local area, whilst complementing the existing surrounding habitats. Habitat creation will help conserve and enhance the ecological integrity of the area and is essential for maintaining their functionality for species such as bats, birds, hedgehogs and badgers.

Broad-leaved woodland – creation of woodland habitat around the peripheries of the site in order to increase the species diversity and buffer the development from the adjacent Reinden Woods. The new woodland will create an environment for both wildlife and recreation. One of the aims is that it will function as a 'honeypot' to alleviate pressure on the Reinden Woods.

Hedgerows –protect and strengthen the north-western boundary hedgerow to increase its value as a wildlife corridor and a habitat for nesting birds and foraging hedgehogs. In addition, creation of species-rich hedgerows along the new access road to strengthen green corridors, which are currently lacking within the countryside surrounding the application site.

Species rich grassland – wildflower meadow seed mixes will be used to create hay meadows to the northern and southern southern sides of the site, on the edges of newly created woodlands.

Lakes – two connecting lakes will be created towards the centre of the application site. Although the primary function is for fishing, the lakes will be managed to maximize benefits for wildlife of the wetlands.

Bat, bird and insect boxes – artificial nest and roost sites will be provided in the new woodland and hedgerows, with insect boxes also being erected within the grassland.

Log piles – log piles will be created within the new woodlands and to the peripheries of the newly created hay meadows. Log piles will create habitats for hedgehogs, invertebrates, fungi and small mammals.

Habitat Management

Broad-leaved Woodland

Protect the existing trees along the south-eastern boundary (Reinden Wood) with the provision of clearly defined tree protection zones during the construction phase.

The new woodland will be created to ensure a good structural and species diversity by establishing an understorey of scrub and ecotones from woodland to grassland along woodland edges. Designated footpaths for recreational use will be provided and thorny planting will be used to discourage informal routes and protect quiet wildlife refuges, especially along the boundary with Reinden Wood. Dead wood and brash will be retained to encourage saproxylic insects and fungi growth.

Dark woodland habitats for nocturnal species, such as bats, will be maintained by restricting artificial lighting and retaining a dense canopy cover.

Hedgerows

Temporary fencing to protect the north-western hedgerow during the construction phase will establish stand-off zones of at least 5m.

Upon the strengthening of the north-western hedgerow and creation of hedgerows along the access road, hedgerow management should create and maintain tall, dense hedges with at least 6 woody species within a 30m stretch. The management objective should be to create hedges with a height of 2-5m and minimum width of 2m.

Grassland

Species-rich grasslands will be established from seed mixes that comprise approximately 80% grasses and 20% wildflowers. In line with traditional hay meadow cutting, an annual grass cut should take place in late August. Removal and disposal of the cuttings should be carried out immediately after any cutting has taken place. This prevents the thick cut material from killing the underlying vegetation by over shadowing it, and reduces the amount of nutrients from entering the soil encouraging the more vigorous grass species from developing.

Tall grasses should be left at the margins of areas (such has along hedges and woodland) to provide refuges for animals, including invertebrates which are a source of food for bats and birds. Mown pathways through the grassland will direct reactional use away from areas maintained for their wildlife benefit.

Lakes

The newly created lakes will be stocked with fish, as their primary purpose is to create a fishing lakes. However, they will improve the potential of the area for wildlife and increase the complexity of ecological niches. This would lead to increased populations of aquatic invertebrates, wetland plants, mammals and waterfowl.

It is recommended that the lakes have shallow, convoluted edges to encourage invertebrates and aquatic plants. Native aquatic planting should be established within the lakes number of suitable plant species are recommended in Appendix 1. This list includes species which are adapted to the margins and boggy edges of ponds, as well as submerged species of deeper water and emergent plants of the shallows. By adding plant biodiversity, the lakes will also become suitable habitat for a diversity of invertebrates and the emergent planting will offer nesting sites and cover for amphibians and wildfowl.

Species Enhancements

Introduction

This section sets out enhancements and mitigation for the target species associated with the application site and the wider surrounding countryside. It outlines key features that will enrich the site and encourage a greater diversity of species, providing a number of new opportunities to a site that a present lacks any significant opportunities.

Bats

The green infrastructure will provide new corridors for movement by bats through the landscape. Bat boxes erected within the woodland and on lodges will provide new roosting opportunities. To help maintain a permeable landscape for bats it will be necessary to ensure a dark corridor is maintained along the south-eastern boundary with Reinden Wood. The mitigation and enhancement measures include:

- Woodland planting to the peripheries of the site and creation hedgerows along the access road to create a movement corridor from the village of Densole to the new lakes, woodland and wildflower meadows.
- The south-eastern boundary must remain dark, maintaining ambient light levels of below 0.1lux on moonless nights.
- The new woodland habitat will provide a transitional habitat between the development and Reinden Woods. It will also serve as a buffer and will be used to screen lighting and ensure a dark area is kept along the edge of Reinden Wood.
- Lighting within the development will be achieved via low level bollard lights (no more than 50cm in height and have no more than 70watts) that will provide background ambient illumination. The emphasis of the lighting scheme will be on key areas, such as reception.

Birds

Enhancement for farmland and woodland bird species is primarily concerned with providing an increase nesting habitat along the boundaries of the development and along the new access road. The aim is to provide hedgerows, woodland and species-rich grassland for nesting and summer feeding areas. Habitat enhancement includes:

- A strengthening of the north-western hedgerow
- New native species rich hedgerow planting along the access road.
- Species rich grassland to the north and south of the development, areas where no lodges will be present and public access will be restricted to mown pathways.
- Long grassland margins should be left along hedgerows and new woodland planting as this will support invertebrate prey such as grasshoppers and beetles.
- Erection of nest boxes within the new woodland and on lodges.

Invertebrates

Enhancement for invertebrate species will be achieved through the seeding of wildflower meadows, establishment of woodland habitats and installation of insect boxes within the wildflower meadows.

Amphibians

Frogs, toads and palmate and smooth newts are species that respond well generic pond habitats. New lakes should have gentle slopes and an irregular shape to maximize the range of micro-habitats in the waterbodies. Habitat creation should use a combination of planting aquatic and emergent vegetation and allow natural colonization. Log piles and refuges should be provided around the lakes.

Hedgehogs

The habitat enhancements for other key species will also benefit hedgehogs. The species rich grassland, hedgerows and woodland planting will increase the amount of foraging habitat available for this species. Creation of these habitats will also create additional areas of shelter, in particular log piles will provide suitable refuges in areas of foraging habitat.

Appendix 1: Wetland Planting

S **Species for wetland planting:**

Common Name	Botanical Name
Amphibious bistort	*Persicaria amphibia*
Arrowhead	*Sagittaria sagittifola*
Branched bur-reed	*Sparganium erectum*
Broad-leaved pondweed	*Potamogeton natans*
Brooklime	*Veronica beccabunga*
Cuckoo flower	*Cardamine pratensis*
Curled pondweed	*Potamogeton crispus*
Curled pondweed	*Potamogeton crispus*
Flowering rush	*Butomus umbellatus*
Frogbit	*Hydrocharis morsus-ranae*
Gipsywort	*Lycopus europaeus*
Greater skullcap	*Scutellaria gallerica*
Hard rush	*Juncus inflexus*
Hemp agrimony	*Eupatorium cannabinum*
Jointed rush	*Juncus articulatus*
Marsh marigold	*Caltha palustris*
Marsh woundwort	*Stachys palustris*
Meadow sweet	*Filipendula ulmaria*
Nodding bur-marigold	*Bidens cernua*
Purple loosestrife	*Lythrum salicaria*
Ragged robin	*Lychnis flos-cuculi*
Soft rush	*Juncus effusus*
Sweet flag	*Acorus calamus*
Water crowfoot	*Ranunculus aquatilis*
Water forget-me-not	*Myosotis scorpiodes*
Water mint	*Mentha aquatica*
Water plantain	*Alisma plantago-aquatica*
Water starwort	*Callitriche stagnalis*
Watercress	*Nasturtium officinale*
Yellow iris	*Iris pseudacorus*
Yellow loosestrife	*Lysimachia punctata*

Certain non-native aquatic plants should be strictly avoided and they can cause serious damage to ponds and natural watercourses as they spread very quickly and easily, forming dense mats of vegetation. A reputable supplier of aquatic plants should be used and the plants should be checked thoroughly prior to planting for any evidence of the following invasive, non-native species.

- Australian Swamp stonecrop / New Zealand Pygmyweed *Crassula helmsii / Tillaea recurva*
- Fairy Fern *Azolla filiculoides*
- Parrots feather *Myriophyllum aquaticum*
- Floating pennywort *Hydrocotyle ranunculoides*
- Himalayan balsam *Impatiens glandulifera*
- Canadian pondweed / Nuttalls pondweed *Elodea canadensis / Elodea nuttalli*
- Curly waterweed *Lagarosiphon major*

Appendix 2: References

1. Pure Ecology (2015). Preliminary Ecological Appraisal: Land adjacent to Little Densole Farm, Densole, nr Folkeston, Kent.

2. DEFRA (2005). Hedgerow management and wildlife: A review of research on the effects of hedgerow management and adjacent land on biodiversity.

3. Bat Conservation Trust (2008). Bats and Lighting in the UK. Bats and the Built Environment Series. Bat Conservation Trust.

4. Emery, M (2008). The effect of street lighting on bats. Urbis Lighting Ltd.

5. Stone, E.L., Jones, G., & Harris, S. (2009). Street lighting disturbs commuting bats. Current Biology 19:1-5