

Ecology response

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Sent: 11 December 2024 16:45
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Subject: P/114/24/RES

Land west of Pagham Road Pagham.

I have reviewed the reserved matters applications above holistically, and with regards to ecology and Biodiversity Net Gain.

Recommendation: Hold for further details on pond specification, Bird and bat boxes on the dwellings, comments relating to the management plan and management of the ecological features.

A BNG assessment has been submitted to support this application

The Outline planning permission P/178/21/OUT was approved before the mandatory 10% BNG uplift became mandatory. Therefore, BNG is not a statutory requirement for this application, however Arun local Plan Policy ENV DM5 still applies in so far as the applicant shall in the first instance seek to secure a net gain.

The Biodiversity Net Gain Report November 24. A demonstrates the following results.

There is a calculated **net gain of +3.32 BU for area habitats, equivalent to +26.95%**, associated with the current development proposals.

There is a calculated **net gain of +1.12 BU for linear habitats, equivalent to +23.89%**, associated with the current development proposals.

There is a calculated **net gain of +0.95 BU for watercourses, equivalent to +73.98%**, associated with the current development proposals.

This meets the requirements of policy ENV DM5 of the local plan.

Conditions 4, 5 and 9 of P/178/21/OUT are relevant.

The ecological surveys were undertaken in 2021 and covered in the Ecological Appraisal report. These are summarised below:

Bats

11 species of bats were recorded commuting and foraging across the site. No bat roosts were identified however two trees did provide potential. There are retained so no further surveys are required. The most notable bat species was Barbastelle and brown long eared bat both of which are rare and sensitive to light pollution.

Breeding birds

Over the course of three BBS, a total of 30 bird species were recorded within site.

Of the 30 recorded bird species, twelve were found to be of conservation importance due to their inclusion under WCA Schedule 1, NERC Section 41 and/or the BoCC Red or Amber lists.

- Confirmed breeders – starling
- Probable breeders – Cetti's warbler, house sparrow, greenfinch *Chloris chloris* and dunnock
- Possible breeders – willow warbler *Phylloscopus trochilus*, song thrush *Turdus philomelos* and linnet
- Non-breeders – mallard, herring gull, stock dove and black-headed gull *Chroicocephalus ridibundus*

Cetti's warbler, a probable breeder, was the only species listed under Schedule 1 of the WCA encountered on site.

Habitat creation in the form of scrub planting and Installing nest boxes will provide adequate mitigation for this development.

Overwintering birds

Four WBS identified a total of 31 bird species within the survey area, twelve of which were of conservation importance due to their inclusion under WCA schedule 1, NERC S41 and/or the BoCC Red or Amber lists.

The report concluded that Linnet would be displaced by the development. However, there is suitable habitat available in the local area.

Great Crested Newt

No Newts were recorded on or adjacent to the site. So, they are likely absent. No further surveys are required.

Reptiles

2 Grass snakes were recorded during the surveys. A reptile mitigation plan is proposed. This should be conditioned.

Riparian Mammals

No Water voles or Otters were recorded on site. However, they are known to be present in the local area and were recorded offsite.

Enhancement of the ditches is proposed to encourage colonisation. This includes:

- Widen and deepen existing channels so that they retain water and provide suitable banks for burrowing.
- Plant suitable native riparian plants to provide food sources and cover for water voles.
- A suitable buffer between the ditches and development as provided by the green infrastructure. In addition, any footpaths should be created 5-10m from the ditch edges.

The proposed enhancement of the ditches is welcomed.

Planting

Planting species mix fine but only two of the species recommended in the ecological assessment 2021 are included in the planting schedule.

There are 16 Trees in the meadow grass shown in plan D3322-FAB-00-XX-DR-L-6005. I recommend reducing the number as meadow will be overshadowed.

6.21

*New tree and shrub planting will utilise native species where possible, particularly those which provide fruit and berries for birds and other wildlife such as rowan *Sorbus aucuparia*, wild privet *Ligustrum vulgare*, yew *Taxus baccata*, holly *Ilex aquifolium*, wild cherry *Prunus avium* and apple *Malus sp.**

*• Herb planting around the site should include species which provide nectar and pollen opportunities for invertebrates throughout the year as well as amenity value. Recommended species include foxglove *Digitalis purpurea*, Crocus *sp.*, hellebores *Helleborus sp.*, lavender *Lavandula angustifolia*, marjoram *Origanum vulgare*, knapweed *Centaurea nigra*, California lilac *Ceanothus sp.*, lamb's ear *Stachys byzantine* and bee bush *Abelia sp.**

Lighting

The proposed lighting is good and meets the recommendations of the Institution of Lighting Professionals (ILP) "Guidance Notes for the Reduction of Obtrusive Light" (GN01:2011) and "Bats and Artificial Lighting at Night" (GN08 2023). It is unclear if street lighting is proposed.

Ecological enhancement in relation to Condition 9.

A range of ecological enhancements were recommended in the main report:

- Hedgehog highways and gaps in fences
- Log and/or rubble piles positioned in close proximity to SuDs and/or areas of grassland and scrub will benefit a range of species, including reptiles, amphibians, hedgehogs and invertebrates
- A range of insect houses are available, tailored for specific groups. These should be sited within or adjacent to species-rich grassland and scrub
- Rock piles and banks of chalk/bare ground can be used to create invertebrate mounds and should be south facing

The Ecological Appraisal makes recommendations for each species survey reports in the appendices.

Bats

Mitigation, Compensation and Enhancement

The retention of boundary trees, scrub and hedgerows will ensure connectivity around the site is maintained.

The main access onto site will result in the loss of a small section of hedgerow H6. Given the high activity levels recorded along H6, it is important to ensure that this access is kept as narrow as practically possible to maintain connectivity along this boundary. Lighting should also be kept to a minimum and follow the recommendations outlined to maintain a dark corridor along the eastern boundary.

To encourage bats over the site access and avoid traffic collisions, 'hop-overs' can be created by planting taller trees either side of the access with little understorey vegetation to encourage bats to fly up and over the road following the vegetation. Lighting at the road level will also encourage light sensitive species to use the darker areas above for commuting and foraging.

Benefits to bats and other wildlife will be achieved through enhancements to retained habitats and the creation of new habitats:

- A mosaic of tussocky species-rich grassland, shrubs, attenuation basin and ditches will increase opportunities for invertebrates and thereby increase foraging opportunities for bats.
- New hedgerow and tree planting will take place along the boundaries to close any existing gaps, both of which will improve foraging and commuting routes around the site.
- Native enhancement planting of retained boundary features will improve the structure and species diversity of these features and therefore increase opportunities for foraging and commuting.
- Bat boxes will be installed on mature trees around the site to enhance roosting opportunities. These will be woodcrete boxes, such as Schwegler 1F, 2FN or similar designs for trees.
- Bat tubes can also be incorporated into the brickwork of buildings close to known commuting habitat, such as the unrendered Habibat 001 bat box.

A sensitive lighting scheme will be designed into the proposals to protect a range of species using the GI from adverse indirect impacts, including bats.

Breeding Birds

Proposals for the site include the provision of new habitats within the GI, which will benefit a range of bird species. This includes:

- Planting of a native species woodland belt along the northern and western boundaries to add structural and species diversity. This will enhance the site for many of the woodland edge generalists recorded, such as blackbird, chaffinch *Fringilla coelebs* and robin.
- The creation of dense patches of native scrub/shrubs within grassland mosaics may also attract species such as bullfinch, mistle thrush and spotted flycatcher.

- Buffered areas adjacent to hedgerows and within larger areas of green space will be planted with a species-rich meadow grassland mix, incorporating vetch species, common bird's-foot-trefoil *Lotus corniculatus*, white and red clover *Trifolium repens/pratense*, black medick *Medicago lupulina* and common fumitory *Fumaria officinalis*. This would provide a valuable foraging resource for seed specialists and will support a diverse invertebrate assemblage for insectivorous migrant species, such as warblers.
 - Marginal planting, including both herbaceous and woody species, around the margins of the attenuation basin, including reed where appropriate, will increase the amount of habitat available to wetland species such as Cetti's warbler, reed bunting *Emberiza schoeniclus*, moorhen *Gallinula chloropus* and mallard.
- A mixture of bird boxes should be installed within retained habitats. Specialised boxes can also be designed into the built environment. Recommendations include:
- A mixture of small hole (26mm and 32mm) boxes placed throughout the site on suitable trees and buildings to provide nesting opportunities for blue tit and great tit. These boxes generally have a high uptake rate.
 - Larger nest boxes with a 45mm hole should be placed under the eaves of buildings or approximately 2.5m above ground in trees to provide nesting opportunities for starling.
 - Terraced-style or multiple single-holed 32mm nest boxes should be placed on buildings to attract house sparrows.
 - Small open fronted nest boxes should be placed throughout the site, especially on trees that support a climber such as ivy *Hedera helix*, which provides a degree of concealment for the nest. These boxes typically attract robin.
 - A mixture of more specialised nest boxes should be placed on retained trees and new buildings particularly on the edge of new residential areas and should include boxes suitable for stock dove *Columba oenas*, kestrel, swallow *Hirundo rustica*, and swift *Apus apus*.

Overwintering birds

Hedgerow enhancements and new woodland/scrub will include native tree planting that will increase foraging and nesting resources available for local bird populations, while appropriate management will help protect nesting/roosting birds from predation.

Linnet typically forage in arable land or grassland in close proximity to low, woody hedgerows with scattered trees, into which they can easily take cover, therefore the habitats created around the site peripheries, where the site abuts neighbouring arable fields, will accommodate these requirements in the long term.

Existing and newly created hedgerows, scrub and woodland will use species that are seed and fruit bearing species, as these provide additional foraging resources for local frugivorous and granivorous bird populations. Such seed/fruit bearing plants also support more diverse invertebrate communities, which increase available foraging opportunities for insectivorous birds, including meadow pipit and overwintering warblers, such as Cetti's warbler.

The following are a list of habitat creation and management principles that would be of benefit to wintering bird species within areas of GI on site:

- Edge habitats bordering areas of scrub/woodland and grassland areas will be managed to create habitat gradients that will encourage ecological 'edge effects' and micro-habitats to form that will favour, among other wildlife, invertebrates and therefore create increased foraging opportunities for birds.

Hedgerows will be managed to maximise their nature conservation potential and increase the diversity of resources available for birds. An appropriate management regime would involve trimming on a three-year rotational basis once established.

- Increased structural diversity within existing hedgerows will be encouraged through the planting of standard trees, which will increase height, while existing gaps and sparser sections, will be planted up with native berry bearing tree and shrub species, which will increase width and depth.

Planting of native, low-lying shrub species throughout the hedgerow will also encourage greater structural diversity by forming a denser base layer, which will provide areas of cover to help protect foraging birds from predation.

- Areas of wildflower flower meadow will be created around the scheme to provide additional foraging areas for granivorous species such as stock dove, linnet, chaffinch, and greenfinch, throughout the year. Given the provision of an appropriate diversity of floral species that produce seed at different times of year, these species will benefit from a consistent and reliable source of food throughout the year.

Reptiles

The proposals for the site include the provision of reptile-suitable habitats within the green infrastructure (GI) as well as the maintenance of connectivity around the site and into the wider area. New habitats will include:

- A mosaic of tussocky species-rich grassland, shrubs and edge habitats to provide a range of opportunities for foraging and basking.
- Linear features, such as hedgerows and tree lines, around the development to provide cover and corridors for individuals.
- Hibernacula and log piles to increase refuge availability.

Habitats created and maintained on site will be managed in the long-term to ensure they remain in favourable condition. Details will be outlined in a separate management plan.

Riparian Mammals

In order to encourage the expansion of this species into the on-site watercourses, it is proposed that the ditches should be enhanced to provide suitable habitats to support and sustain a population. This includes the following measures:

- Widen and deepen existing channels so that they retain water and provide suitable banks for burrowing.
 - Plant suitable native riparian plants to provide food sources and cover for water voles.
 - A suitable buffer between the ditches and development as provided by the green infrastructure.
- In addition, any footpaths should be created 5-10m from the ditch edges.

The maintained ditches would provide opportunities for commuting, resting and foraging which would be of benefit to the local water vole population.

Nest Bricks

Integral bat and bird boxes. Only 6 mixed bird boxes and 3 bat boxes are located on dwellings and 5 bird boxes are proposed for the open spaces in the proposed ecological features plan.

I have reviewed the recommendations for nest bricks as part of the ecological enhancements set out in the ecological assessment. The report recommends (Number), of swift, sparrow, other nesting bricks.

Research has shown that the 'universal nesting brick' provides the best opportunity for successful nesting on buildings by a range of species including Swifts, House Sparrows, Starlings and Tits. Numbers of universal nesting bricks:

A ratio of at least 1:1 nest brick per dwelling is now generally accepted as good practice however on larger developments (100+ units) a ratio of 1:2 nest bricks is acceptable as long as bat bricks are included at a ratio of 1:2.

Universal nest bricks can be installed in groups of three and should be at least 4 or five metres high. Under the eaves is the best place as birds naturally seek nesting opportunities in this location.

From the details provided it is unclear how many of the recommended ecological enhancement features are being delivered. There is one insect mound, and 1 reptile hibernacula noted on the

proposed ecological features plan. Neither have a specification of size and construction. For a site this size it seems an inadequate number.

There is no reference to hedgehog highways or small mammal gaps in fencing. The numbers of bat and bird boxes do not meet best practice and should be increased to 1:2 for both bat tubes and swift bricks for all the dwellings.

It is clear that native planting and habitat creating will bring ecological gains providing they are managed for wildlife.

Management plan:

Grass and meadows

4.6. Meadow grass mixes will be composed of 20% wildflowers and 80% grasses. GT1 and GT3 do not meet this target as listed in the planting schedule.

GCC1: Meadow Grass can require more than one cut a year if the growth is vigorous during the year.

GCD1 Wetland grass would also benefit from removal of arisings.

6.11. Wildflower Grass Maintenance is listed as Identical to that for seeded areas (Specification 6.10). This would be an incorrect specification for wildflowers as they should be sown on a low nutrient soil or sub soil not topsoil.

Basins

Guidance from the Freshwater Habitats Trust suggests that the ideal side of a pond for wildlife is 1:5 where the drainage information show a steeper 1:3 side.

Ponds will be dug to varying depths, providing shallow and deep-water areas. Margins are to have maximum gradients of 1 in 5 and have planted along them aquatic, lower, and upper marginal vegetation species, with the cutting or hand pulling of aquatic and marginal plants to maintain open water areas and edges.

Control invasive and undesirable species, with removal by hand pulling, of non-natives such as Himalayan Balsam and Giant Hogweed.

Giant hogweed is noxious and can cause permanent skin damage when the sap reacts with sunlight. I strongly advise correct control methods and PPE are used when managing GH.

Clarification of the pond's specification in relation to the sides and depths is required.

The soft landscape plans 1 of 6 and 2 of 6 show willow being planted near the ponds. This is fine but willow can be invasive so will need careful management.

AQM1: Maintenance of water bodies, marginal and aquatic plant states that marginal and aquatic plants will be monitored and managed to restrict dominance. The planting schedule does not include aquatic or marginal plants.

Hedges

HMO2: Maintenance of Hedge Base. For native hedges It would be better for biodiversity to allow weeds to remain for most of the year. Annual clearance is recommended. Native hedges should be managed to achieve an **A** shape.

For the benefit of biodiversity leaf clearance on meadows and native shrub areas should be avoided.

SBB1: Native Shrub Area Maintenance. I advise that a less intrusive management approach is adopted for this habitat.

It would be better to visit outside bird nesting season and retain flower and leaf debris and weeds unless noxious within the beds.

There is no provision for the monitoring and maintenance of the ecological enhancements. Who will maintain these features?

I recommend condition:

PCREP1

Regards,

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