Preliminary Ecological Appraisal Land at Leys Lane, Yaxley

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Summary

A Preliminary Ecological Appraisal was performed in respect of land at Leys Lane, Yaxley, Suffolk, which is proposed as the site of a synchronous condenser. A desk study and site visit were carried out, establishing that the 2.9 hectare site comprises an area of recently abandoned arable land except for an area in the SW corner, which has been cleared and surfaced as part of an already operating construction site immediately to the west.

No notable or protected species are recorded from the site, although Brown Hare and Skylark were noted during the site visit. A small pond in the NW corner of the site was found to be dry during the visit, but nearby hedgerows were assessed to be species rich and therefore of high biodiversity value. No features requiring further investigation were noted.

Potential impacts of the proposed development include incidental or intentional damage or destruction of the hedgerows and onsite pond during construction; injury or mortality to slow moving terrestrial vertebrates such as Grass Snake, ground nesting birds, Hedgehog, and young Brown Hares; and long-term effects of light spill onto surrounding habitats during the lifetime of the installation. Recommendations are made to mitigate these impacts, and to provide enhancement in the interests of local habitat connectivity.

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1. Introduction

A1 Ecology Limited was commissioned to perform a Preliminary Ecological Appraisal in support of a planning application for the proposed construction of a synchronous condenser on a greenfield site adjacent to Leys Lane, near Yaxley, Suffolk (OS grid reference TM1185774954).

1.1. Scope

The objective of the Preliminary Ecological Appraisal is to provide an initial assessment of the potential impact the development might have on protected wildlife and habitats, to make recommendations for any further survey that might be required to determine the extent of such impacts, and to propose mitigation that might be necessary to comply with relevant policy and legislation. A 2km radius was established as the spatial dimension for consultation of protected species records and sites designated for their wildlife conservation interest.

2. Planning Policy & Legislation

Local Authorities have a responsibility through the National Planning Policy Framework (NPPF)¹ to preserve and enhance biodiversity through the planning system. NPPF paragraph 175 states:

" if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused".

Further guidance is provided by ODPM Circular 06/2005², which explains the treatment of designated sites, protected species, and species considered a priority for nature conservation. Legal protection of wildlife is provided by the following:

• The Wildlife & Countryside Act 1981.

¹ National Planning Policy Framework, Ministry of Housing, Communities & Local Government. 2021.

² ODPM Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the Planning System. August 2005.

Provides comprehensive protection for wild birds, and their nests and eggs, and also provides special protection for bird species listed in schedule 1, animals listed in schedule 5, and plants listed in schedule 8.

• The Natural Environment and Rural Communities Act 2006 (NERC Act). Section 40 states:

> "Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity".

Section 41 states:

"The Secretary of State must, as respects England, publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of preserving biodiversity".

- The Conservation of Habitats and Species Regulations 2017 (Habitat Regulations) Provides special protection for 'European Protected Species" of animals listed under schedule 2, and of plants listed under schedule 5.
- Protection of Badgers Act 1992
 Prohibits interference with, or blocking or destruction of a badger's sett.

3. Methodology

The approach used conforms to that set out in the CIEEM Guidelines for Preliminary Ecological Appraisal³. A data request was submitted to Suffolk Biodiversity Information Service for records of protected and notable species, and Natural England's 'MAGIC' website (www.magic.gov.uk) was searched for statutory designated nature conservation sites.

The habitats on the site were recorded and classified by means of a site visit, as was the potential for the habitat present to support protected species. Habitats were mapped using 'UK Habitat Classification' methodology⁴ with a 25 m² minimum mapping unit. The ecological value of documented species and sites, and the potential impact of the

³ Guidelines for Preliminary Ecological Appraisal, second edition. Chartered Institute of Ecology and Environmental Management. December 2017.

⁴ UK Habitat Classification Working Group (2018). UK Habitat Classification User Manual at <u>https://ecountability.co.uk/ukhabworkinggroup-ukhab/</u>

development were then assessed in accordance with the methodology described in guidelines published by the Chartered Institute Ecology and Environmental Management (CIEEM)⁵.

4. Baseline Ecological Conditions

4.1. Ecological context

The site is located at 45-49m AOD between the valleys of the River Waveney, which passes ca. 4km to the north at Diss flowing west to east at ca. 20m AOD, and that of its tributary the River Dove, which passes ca. 3km to the east of the site at Eye, flowing SW to NE at ca. 30m AOD. The site forms part of the 'Ancient Plateau Claylands' landscape character area, which is described as a 'flat or gently rolling arable landscape of clay soils dissected by small river valleys', with a 'co-axial field pattern', and 'scattered ancient woodland parcels containing a mix of oak, lime, cherry, hazel, hornbeam, ash and holly, and hedges of hawthorn and elm with oak, ash and field maple as hedgerow trees'⁶.

No statutory designated sites or ancient woodland occur within 2km, the nearest statutory sites being Major Farm, Braiseworth SSSI, 2.5km to the south, and the Gypsy Camp Meadows, Thrandeston SSSI, 2.5km to the north, both of which are designated for damp meadow habitat. The site is not within a SSSI impact risk zone for a development of the type proposed, nor is it within any of the Special Landscape Areas defined within the Mid-Suffolk development plan⁷. However the site is within a 'Network Expansion Zone' defined by Natural England as 'land with potential for expanding, linking/joining networks across the landscape'⁸. No agri-environment schemes are currently in force in respect of land on the site.

Non-statutory sites within 2km are Mellis Common ca. 1.5km to the SW, which is a Suffolk Wildlife Trust reserve for wetland and grassland habitats, Thrandeston Marsh Local Wildlife

⁵ Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute for Ecology and Environmental Management. September 2018.

⁶ <u>https://suffolklandscape.org.uk/landscapes/ancient-plateau-claylands/</u> accessed 3/7/22

⁷ Core Strategy Development Plan Document, Adopted September 2008, Mid-Suffolk District.

⁸ National Habitat Network Maps. User Guidance v. 2, May 2020. Natural England.

Site 2km to the NW, designated for wetland habitats, and Broome Field Local Wildlife Site 1.5km to the NE, designated for grassland and scrub habitats (Figure 1).





4.1.1. Notable species records

No notable species records were retrieved from within the development redline area, the nearest being records of House Sparrow (see Appendix A for scientific names) from 200m to the north at The Leas farm, and a number of records from a large pond beside the A140 road, ca. 400m to the east (Figure 1). These include Common Frog, Smooth Newt and Grass Snake, the latter being one of only two records of the species, and of reptiles in general, within the search area. Other bird records cover a typical range of farmland species, but include Turtle Dove and Marsh Tit from Hall Farm, ca. 1.5km to the SE.

Mammal records include frequent observations of Hedgehog, mostly from the surrounding villages, and a scattering of Brown Hare sightings. Only a single Water Vole record, from 2020 at the village green pond at Thrandeston, ca. 1.5km to the north, and a single Badger record, in 2018 from near the roundabout east of Yaxley, were retrieved for the search area. Nine species of bats have been recorded, including two 2019 records of Barbastelle from

Mellis Common, and a range of species including Serotine and Natterer's Bat from Thrandeston, centred on St Margaret's Church.

There is a 2018 record of Great Crested Newt from a pond 600m to the north of the site, but otherwise the species is scarce except for frequent records from Mellis Common. A pond 2km to the NE near Brome was found to be negative for Great Crested Newt eDNA in 2019 despite a Habitat Suitability Index of 0.85 (= excellent).

4.2. Site survey

A site survey was carried out between 1330 and 1730 on 30th June 2022, and between 0800 and 1000 on 1st July 2022. Conditions on both days were dry and partly overcast with an air temperature of 16-20°C and a light southerly wind.

The development site occupies a trapezoidal plot 2.87 ha in extent, bounded to the north and east by Leys Lane, which connects The Leys farm to the north with the village of Yaxley to the south. The plot has a flat topography (Photo 1, Appendix B) with a slight incline descending from SW to NE towards a canalised stream which passes ca. 200m to the NW, initially draining towards the NE before turning to the NW and merging with an unnamed tributary of the River Waveney, which it joins at Diss. The channel was found to be dry and sparsely vegetated during the survey, except for a shallow pool of water at the junction of two field drains ca. 150m NW of the development plot (Photo 2), which is marked as a pond on the 1:2500 Ordnance Survey map (Pond A in Figure 2).

The map also denotes the presence of a pond in the NW corner of the development plot (Pond B) and at Leys Farm ca. 200m to the NNW (Pond C), both of which were found to be dry during the survey (Photo 3). The only other pond within 250m of the site is located to the SE in a deep crater surrounded by trees (Pond D, Photo 4), and therefore supported relatively little aquatic vegetation, but showed a low level of turbidity and contained a substantial invertebrate fauna.

The development plot occupies part of an irregularly shaped field bounded to the north and west by Leys Lane as far north as the dry stream channel. This had the appearance of recently abandoned arable land, with a sparse and fairly uniform but stunted growth of barley, which was presumably self-seeded from a previously harvested crop (Photo 1). This

was accompanied throughout by Meadow Foxtail and Field Pansy, along with numerous other common arable weeds, and a greater diversity of grasses and forbs occurred within headlands around the margin (Appendix A). In the NW section of the field (outside the redline area) there is a recently constructed access road and temporary pylon anchored in place by guy cables (Figure 2).

Figure 2. Habitat map of development site and adjacent land using UK Habitat Classification codes and symbology.



Well-managed hedgerows form the southern and western boundaries of the field, and show a diverse flora of up to 9 species of woody plants, including Field Maple, Pedunculate and Sessile Oak, Ash, Wych Elm and Dogwood (Appendix B). A less diverse hedge is present along the east margin of Leys Lane, comprising mainly Blackthorn, Hawthorn and Hazel.

Towards the southern margin of the field, and somewhat south of the southern boundary of the development area, a 15-20m wide E-W corridor had been cleared of vegetation in conjunction with the construction of an access road connecting Leys Lane with a gravel-surfaced construction compound, which extends over the SW corner of the development area (Figure 2, Photo 5). Extensive clearance and excavation had also taken place in the field immediately to the west, but otherwise all the adjacent fields were under arable cultivation, with ripening wheat crops in fields to the east and SW, barley in the fields to the north and south, and a brassica crop in the field to the SE.

Several Brown Hares were observed in surrounding fields and one within the development plot itself. The plot also held a small party of Skylarks including a singing bird, indicating that breeding may well have taken place on the site. A single Red-legged Partridge was also seen within the plot. The surrounding habitat held a range of species typical of arable farmland, including a substantial population of Yellowhammers, and Yellow Wagtails were also present in the area.

5. Evaluation of survey and desk study results

5.1. Constraints

It was not possible to carry out surveying within the active construction area, which was delimited by Heras fencing (Figure 2), because of the absence of a prior risk assessment and induction, and the type and distribution of habitats were, therefore, assessed at a distance from the perimeter. Only very limited observation through a perimeter hedge was possible for the pond at The Leys farm, and it was not possible to obtain permission for access as it appeared that no-one was present at the farm at the time of the visit.

5.2. Designated sites

Given the localised scale of the development and the absence of either statutory or nonstatutory nature conservation sites within 1.5km, it is unlikely that any such sites will be impacted by the proposal.

5.3. Habitats

The development site is located within a landscape of high intensity agriculture in which biodiversity is focused within hedgerows and associated field margins, and also within and around water bodies, which occur at a high density as a result of the clay substrate. The development has the potential to affect the hedgerows forming the southern and western boundaries of the field containing the development area, which would be classified as having 'very high' distinctiveness under the Natural England Biodiversity Metric on account of their diversity of woody species, and would also be classified as being in good condition as a consequence of regular maintenance. Potential impacts on the small pond in the NW corner of the development site should also be considered, despite its dry condition at the time of the survey, which may be related to low rainfall over the previous months.

5.4. Invertebrates

No notable species records occur within a kilometre of the site, and invertebrate species noted during the survey comprise only common species of arable field margins. It is therefore unlikely that the development will involve significant impact on notable or protected invertebrate populations.

5.5. Amphibians & Reptiles

There is no evidence for the presence of reptiles in the area other than Grass Snake, which appears from the two existing records to be present at low density in and around local ponds. The risk that the development will impact the Grass Snake population is, therefore, largely a function of the risk of impact on the pond in the NW corner of the development site.

The available evidence also suggests that Great Crested Newts are present at only at low density despite the high density of ponds in the area, which suggests their survival and dispersal may be limited by a scarcity of suitable terrestrial habitat. The onsite pond is unlikely to support a viable population of Great Crested Newts even when it contains water, with an estimated habitat suitability index (HSI) of 0.48 (= poor), but it could be used as a satellite pond if there are other populations nearby. Great Crested Newts appear to be absent from the large pond beside the A140, and the pond 250m to the SE also has a low HSI (0.46) mainly through being surrounded by arable land. The pool at the junction of the two field drains 150m NW of the site is clearly unsuitable for Great Crested Newts since there will generally be a through-flow of water. The pond 200m to the north at Leys Farm could not be assessed but it was clearly dry at the time of the survey. On balance, therefore, it seems reasonable to conclude a negligible risk of an impact on Great Crested Newts.

5.6. Birds

The likely presence of breeding Skylarks on the site is almost certainly a temporary result of the recent abandonment of active arable farming on the land, since they are known not to breed in tall crops, especially if drilled in the autumn. Development of the site may reduce its suitability for breeding Skylarks but the post-development marginal habitats may be more suitable than the preceding arable land. The presence of Red-legged Partridge is not a

biodiversity issue since they are likely to have been captive bred for shooting purposes, and impacts on the other species present will be commensurate with any impacts on the surrounding hedges. Yellow Wagtails are likely to have bred in the brassica field to the east, so will not be affected by the development.

5.7. Bats

Bats may use the network of hedgerows in the area as commuting routes and the lines of trees provide potential foraging beats for several of the locally recorded bat species. Since no lines of trees are immediately adjacent to the development site, the impact on bats will be largely determined by the effect of the development on hedgerows.

5.8. Other mammals

There is connectivity between the site and the location of the recent Water Vole record at Thrandeston via the drainage network, but no signs were present during the survey, and the small pond on the site is unlikely to be attractive to the species. Similarly, only a single Badger record was retrieved for the search area and no indication of the species' presence was seen during the survey. The probability of impacts on both Water Vole and Badger can therefore be assessed as negligible.

Brown Hare was confirmed as present on the site during the survey and this is also likely for Hedgehog, though current use by both species may again relate to its current condition of abandonment, and the site is likely to have had relatively little importance for either species as intensively farmed arable land.

6. Development impacts

6.1. Details of the proposed development

The proposal involves the construction of a synchronous condenser associated with nearby National Grid electricity transmission lines, which will involve conversion of ca. ³/₄ of the site to hard standing, and the rest to screening bunds supporting native woodland and wildflower meadows.

6.2. Short-term impacts

Clearance, excavation, storage of building materials, and the intrusion of vehicles and machinery required for construction will result in possible disturbance or damage to habitats and protected species that occur within or in the immediate vicinity of the site. This includes terrestrial vertebrates that could be present on the site, including Brown Hare, Hedgehog and Grass Snake, and leverets in particular, as well as ground-nesting birds such as Skylark may be at risk during site clearance if this occurs during spring or summer.

The redline area includes the pond in the NW corner and is adjacent to the high value hedgerow habitats along its western edge, both of which may be exposed to disturbance and damage from vehicular movements and construction activities. However the presence of a purpose build access road connecting the site with the A140 to the west across former arable land removes the risk of damage to hedgerow and arboreal habitats from increased vehicular traffic on Leys Lane.

Stripping of soil and vegetation, and churning of the soil surface caused by vehicle access may result in additional runoff and consequential transmission of sediments to local ponds and watercourses, thereby affecting the water quality in the latter at all points downstream.

6.3. Long-term impacts

The development will involve the loss of ca. 2.9 ha of intensively farmed arable land of little biodiversity value. However there are likely to be some impacts of the ongoing operation of the installation on surrounding habitats including the hedgerows and the adjacent pond, especially considering the additional effects of the associated development occurring immediately west of the site. In particular the value of the hedgerows to the west, south and east of the site may be reduced as a commuting and foraging route for bats by increased illumination, and for breeding birds as a result of increased background noise. Given the small size of the pond in the NW corner of the development plot, any landscaping or boundary fencing that occurs may result in damage or destruction, and the installation itself may affect the water table and thereby impact its ecological function.

7. Recommendations

No features requiring further investigation were observed during the site visit, and therefore no further survey of ecological features is required.

7.1. Construction period

A suitably qualified ecologist should be commissioned to carry out a check of the site immediately prior to commencement of construction works. This is especially relevant during the bird breeding season, when active nests may be present, but also at other times of the year to check for the presence of leverets, Hedgehogs and Grass Snakes, which may be unable to evade moving vehicles and other construction activities.

Care should also be taken, if practicable, to avoid impacts on adjacent hedgerows and on the pond in the extreme NW corner of the redline area, by establishing an exclusion zone sufficient to ensure that no inadvertent damage will occur as a result of construction activity. If this is not possible, an ecologist should be commissioned to devise an appropriate mitigation strategy.

Excavations that are left open during construction have the potential to trap vertebrates such as Hedgehog, Brown Hare and Grass Snake that may be present on the site, which can be avoided by the overnight installation of escape ramps. Following standard regulatory requirements and good practice with respect to control of surface water should prevent harm to biodiversity from surface water runoff during construction.

7.2. Design for biodiversity

Impacts on commuting and foraging bats from light spillage onto the surrounding hedgerows can be minimised by designing the development in conformity with good practice regarding the effect of lighting regimes on bats⁹. Maintenance of the value of both the hedgerows and the onsite pond will depend on continued management, and it should be clear where responsibility for this lies. A suitable management regime should be devised for any habitats that lie within the area managed as part of the installation, including maintenance of hedgerows and control of vegetation in and around the pond. Currently the

⁹ Bats and artificial lighting in the UK. Institute of Lighting Professionals Guidance Note 08/18.

latter is shaded by a large oak tree, but is also surrounded by a growth of scrub. Since this contributes further shading and may be contributing reduction in the local water table, regular cutting back of scrub around the pond margin should enhance its value.

The landscaping plan for the site provides for considerable net gain in biodiversity in the form of planted native woodland and wildflower meadows, and new species rich hedgerows, which will also contribute to the objectives of the Network Expansion Zone by enhancing the connectivity of the surrounding landscape.

Appendix A – Species mentioned in the text.

Brackets indicate that no observations of the species were made during the site visit.

		Main	Main field	Hedges &	Pond	
Common Name	Scientific name	field	margin	Tree lines	D	Other
Field Maple	Acer campestre					
Common Bent	Agrostis capillaris					
Meadow Foxtail	Alopecurus pratensis					
Scarlet Pimpernel	Anagallis arvensis					
Barren Brome	Anisantha sterilis					
Cow Parsley	Anthriscus sylvestris					
False Oat-grass	Arrhenatherum elatius					
Meadow Brome	Bromus commutatus					
Soft-brome	Bromus hordaceus					
Fat-hen	Chenopodium album					
Creeping Thistle	Cirsium arvense					
Spear Thistle	Cirsium vulgare					
Field Bindweed	Convolvulus arvensis					
Dogwood	Cornus sanguinea					
Hazel	Corylus avellana					
Hawthorn	Cratageus monogyna					
Cock's-foot	Dactlyis glomerata					
Great Willowherb	Epilobium hirsutum					
Eyebright	Euphrasia nemorosa					
Beech	Fagus sylvatica					
Ash	Fraxinus excelsior					
Cleavers	Galium aparine					
Small-flowered Cranesbill	Geranium pusillum					
Hogweed	Heraclium spondylium					
Yorkshire Fog	Holcus lanatus					
Two-rowed Barley	Hordeum distichon					
Henbit Dead-nettle	Lamium amplexicaule					
Autumn Hawkbit	Leontodon autumnalis					
Perennial Rye-grass	Lolium perenne					
Pineapple Weed	Matricaria dicoidea					
Amphibious Bistort	Persicaria amphibia					
Norway Spruce	Picea abies					
Ribwort Plantain	Plantago lanceolata					
Great Plantain	Plantago major					
Knotgrass	Polygonum aviculare					
Grey Poplar	Populus canescens					
Tormentil	Potentilla erecta					
Blackthorn	Prunus spinosa					
Sessile Oak	Quercus petraea					
Pedunculate Oak	Quercus robur					
Bastard Cabbage	Rapistrum rugosum					
Weld	Reseda luteola					

Dog-rose Rosa canina Bramble **Broad-leaved Dock Grey Willow** Salix cinerea Crack-willow Salix fragilis Elder **Common Ragwort** Groundsel Woody Nightshade Prickly Sow-thistle Branched Bur-reed Scentless Mayweed Reedmace Wych Elm Ulmus glabra **Common Nettle** Urtica dioica **Field Pansy** (Smooth Newt) (Grass Snake) Natrix natrix (Common Frog) (Great Crested Newt) Long-tailed Tit Skylark **Red-legged Partridge** Buzzard Buteo buteo Linnet Stock Dove Woodpigeon **Carrion Crow** Blue Tit Yellowhammer Robin Yellow Wagtail (House Sparrow) Pheasant (Marsh Tit) Dunnock (Turtle Dove) Whitethroat Blackbird (Water Vole) (Barbastelle) (Serotine) (Hedgehog) Brown Hare (Badger) Meles meles (Natterer's Bat) Myotis nattereri

Rubus fruticosus Rumex obtusifolius Sambucus nigra Senecio jacobaea Senecio vulgaris Solanum dulcamara Sonchus asper Sparganium erectum Tripleurospermum inodorum Typha latifolia Viola arvensis Lissotriton vulgaris Rana temporaria Triturus cristatus Aegithalos caudata Alauda arvensis Alectoris rufa Carduelis cannabina Columba oenas Columba palumbus Corvus corone Cyanistes caeruleus Emberiza citrinella Erithacus rubecula Motacilla flava Passer domesticus Phasianus colchicus Poecile palustris Prunella modularis Streptopelia turtur Sylvia communis Turdus merula Arvicola amphibius Barbastella barbastellus Eptesicus serotinus Erinaceus europaeus Lepus europaeus

Appendix B – Photos



Photo 1. View to the west from near the NW corner of the development site.

Photo 2. Pond A looking south.



Photo 3. Dry bed of Pond B.



Photo 4. Pond D.



Photo 5. View from the north of construction compound in SW corner of redline area.

