



Ecological Impact Assessment

Deal Farm, Bressingham

Storengy UK Limited

CRM.0150.002.EC.R.001

'Experience and expertise working in union'







Contact Details:

Enzygo Ltd. (Bristol Office) The Byre Woodend Lane Cromhall Gloucestershire GL12 8AA

tel: 01454 269237 email: derek.allan@enzygo.com www: enzygo.com

Ecological Impact Assessment

Project:	Deal Farm, Bressingham
For:	Storengy UK Limited
Status:	Revision C
Date:	13 th June 2022
Author:	Derek Allan MCIEEM, MSc, BSc (Hons) – Director of Ecology
Reviewer:	Kevin Parr – Company Director

Disclaimer:

This report has been produced by Enzygo Limited within the terms of the contract with the client and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client, and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

Enzygo Limited Registered in England No. 6525159 Registered Office Gresham House, 5-7 St. Pauls Street, Leeds, England, LS1 2JG



Contents

1.0Introduction					
1.1 Comm	ission1				
1.2 Propos	ed Development/Identification of Impacts1				
1.3 Aims a	nd Objectives1				
1.4 Backgr	ound/Acknowledgments1				
1.5 Local P	Planning Policy				
1.6 Site Co	ontext2				
2.0Methodology					
2.1 Desk St	tudy4				
2.2 Field Si	urvey4				
2.3 Assess	ment5				
2.4 Limitat	ions6				
3.0Baseline Ecologi	cal Conditions				
4.0Assessment and	Mitigation				
5.0Enhancement ar	nd Monitoring				
6.0Conclusion	.0Conclusion				
7.0References					

Tables and Figures

Figure 1 – Survey Area	3
Table 1 – Survey Dates and Conditions	4
Table 2 – Ecological Features	8
Table 3 – Assessment of effect and mitigation measures	. 14



Table 4 – Enhancement & Monitoring16

Drawings and Appendices

Drawing CRM.0150.002.EC.D.001 – Habitat Map	. 20
Drawing CRM.0150.002.D.002 – GCN Plan	. 21
Drawing CRM.0150.002.D.003 – Designated Sites Plan	. 22
Appendix A – Proposed Site Layout	. 23
Appendix B – Legislation and National Planning Policy	. 24



Non-Technical Summary

- i. In October 2021 Enzygo Ltd were commissioned by Storengy UK Limited to undertake an Ecological Impact Assessment (EcIA) of a parcel of land at Deal Farm, Kenninghall Road, Bressingham, Norfolk, IP22 2HG (central grid reference: TM 08492 83517), located within the Norfolk County Council (South Norfolk District Council). This assessment has been updated in May 2022 with confirmation of updated site proposals and additional assessments in relation to Air Quality and Nutrient Neutrality.
- ii. The application is for an Anaerobic Digestion Plant (part retrospective), including 2 no. separate digestate storage lagoons.
- iii. The purpose of this report is to provide biodiversity information identifying ecological features, confirmed impacts/effect, and proportionate avoidance/mitigation/compensation strategies, followed by enhancements. This information will support the planning application and assist the Planning Officer in making an informed decision.
- iv. The following key ecological features and associated recommendations have been identified:
 - Waveney and Little Ouse Valley Fens SAC, Redgrave and South Lopham Fens Ramsar and SSSI, Shelfanger Meadows SSSI and Impact Risk Zone (within zone of influence of designated sites) – Further Air Quality and Nutrient Neutrality assessments undertaken to identify potential significant impacts to statutory designated sites and associated ecological features. Detailed assessment presented in separate Habitat Regulations Assessment Stage 1 Screening report.
 - **Bats** (suitable habitats in surrounding area) Sensitive lighting strategy.
 - Water Vole (record in area, limited potential within adjacent pond) Appropriate buffer around pond.
 - **Breeding Birds** (limited suitable nesting habitats) Clearance outside nesting period or check by Ecological Clerk of Works (ECoW).
 - **Priority Species** (limited suitable habitats) Clearance under supervision of ECoW.
- v. Biodiversity enhancements will include additional green infrastructure planting & bird boxes (refer to biodiversity metric DEFRA 3.0).
- vi. This report has demonstrated that, if the outlined mitigation measures are implemented in full then no significant residual impact could be expected, and the proposed application will result in 'no net loss in biodiversity' whilst providing opportunities for 'biodiversity net gain' in accordance with NPPF and Local Planning Policy.



1.0 Introduction

1.1 Commission

- 1.1.1 In October 2021 Enzygo Ltd was commissioned by Storengy UK Limited (the client) to undertake an Ecological Impact Assessment (EcIA), of a parcel of land at Deal Farm, Kenninghall Road, Bressingham, Diss, Norfolk, IP22 2HG (central grid reference: TM 08492 83517), located within the Norfolk County planning authority (South Norfolk District). This assessment has been updated in May 2022 with confirmation of updated site proposals and additional assessments in relation to Air Quality and Nutrient Neutrality.
- 1.1.2 The application is for an Anaerobic Digestion Plant (part retrospective), including 2 no. separate digestate storage lagoons.
- 1.1.3 Enzygo Ltd are not considered to act as a Principal Designer for any mitigation/enhancement strategies identified within this document, in accordance with the Construction (Design and Management) Regulations 2015 (CITB, 2016).

1.2 Proposed Development/Identification of Impacts

1.2.1 The study will inform full planning permission for an anaerobic digestion plant comprising underground anaerobic digestion tanks and feed mixer tank, electric transformer, substation, CHP Unit, surface mounted hopper, silage clamp and acoustic fencing. This was classified 'major' in accordance with the South Norfolk District Council planning validation checklist. Refer to Appendix A for Proposed Site Layout and location of two lagoons.

1.3 Aims and Objectives

- 1.3.1 The purpose of this report is to provide biodiversity information which succinctly identifies ecological features on site and within the corresponding zone of influence, confirmed impacts resulting from the proposed application, associated effect to identified ecological features, confirmed proportionate avoidance/mitigation/compensation strategies, and confirmed enhancements that will be implemented in accordance with the British Standard for Biodiversity BS42020:2013 (BSI, 2013).
- 1.3.2 This information will support the planning application and assist the Planning Officer in making an informed decision on whether the application can demonstrate 'no net loss in biodiversity' and a 'biodiversity net gain' in accordance with National Planning Policy Frameworks (NPPF) and Local Planning Policy.
- 1.3.3 This report has been produced with reference to current Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018), Guidelines for Ecological Report Writing (CIEEM, 2017), Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition (Collins, 2016), Great Crested Newt Habitat Suitability Index (ARG, 2010), and is in accordance with Biodiversity – Code of practice for planning and development BS42020:2013 (BSI, 2013).

1.4 Background/Acknowledgments

1.4.1 Applications at the site in 2013 & 2014 (C/&/2013/7006) were surrendered. Consented historic application 2015/0595 covers the site (construction of a farm agricultural anaerobic digestion facility). Conditions relating to this (in accordance with ecological mitigation strategy) require the planting of hedgerows and conservation/ maintenance of grass verges, precautionary steps



to protect reptiles and amphibians, low level lighting only to protect foraging and commuting bats and nocturnal animals, and 6m buffers from ponds for Water Voles.

- 1.4.2 On the 6th May 2022, a consultation response was received from Natural England identifying that these proposals may have potential impacts on Waveney and Little Ouse Valley Fens Special Area of Conservation (SAC), Redgrave and South Lopham Fens Ramsar and Redgrave and South Lopham Fens Site of Special Scientific Interest (SSSI). This concern is reflected in a consultation response received from the Norfolk Wildlife Trust (dated 29th April 2022).
- 1.4.3 The details of these consultation responses have been used to inform the separate Air Quality Assessment (Enzygo, 2022a) and Stage 1 Habitat Regulations Assessment (HRA) Screening Report.

1.5 Local Planning Policy

- 1.5.1 The South Norfolk Local Plan is composed of various documents of which the relevant biodiversity related policies within them include:
 - **Policy 1**: Addressing climate change and protecting environmental assets (Joint Core Strategy, 2014);
 - **Policy 2:** Promoting good design (Joint Core Strategy, 2014).
- 1.5.2 There are no apparent Biodiversity Supplementary Planning Documents (SPD) related to thermophilic digestion plants.
- 1.5.3 Refer to Appendix B for relevant details of European and National Legislation, and National Planning Policy.

1.6 Site Context

- 1.6.1 The approximately 5.5 ha site is a domestically occupied working farm with large barns and agricultural (livestock) outbuildings on hard standing with agricultural fields. There is also a large pond surrounded by trees. The site is predominantly arable crops and some woodland areas ~2km North and West. There are an additional six ponds in the immediate surrounding area. The site also includes two areas of existing arable cropland where lagoons are proposed approximately 50m east and 500m south. The nearest town is Bressingham ~2km South. Please note that the survey area may differ from the red-line application boundary, as off-site areas may have been included where relevant to this assessment.
- 1.6.2 The site lies within the South Norfolk and High Suffolk Claylands National Character Area (Natural England, 2019) which is characterised by high and predominantly flat clay plateau incised by numerous small-scale wooded river valleys with complex slopes.



Figure 1 – Survey Area



Image courtesy of Google Image Pro 7.3.2.5491. Imagery date June 2021.



2.0 Methodology

2.1 Desk Study

- 2.1.1 Desk study details were obtained from the following sources on the associated dates to provide background on ecological features in the vicinity of the site. In each case the search included the site and the specified area beyond the site boundary based on the expected zone of influence. Candidate and potential designations are considered too as these are also legally protected. Records obtained included:
 - Statutory sites designated or classified under international conventions or European legislation within a 5km radius, statutory sites designated under national legislation (including Marine) Natural England GCN Pond Surveys for District Level Licensing data (and GCN Risk Zones), local nature reserves and existing EPS Licence applications within a 2km radius, and Priority Habitat & Ancient Woodland Inventory within a 0.5km radius 30th May 2022 (DEFRA, 2022);
 - Tree Preservation Orders (TPOs) and Biodiversity Conservation Areas within the immediate zone of influence (Broadland and South Norfolk County Council; 30th May 2022);
 - Waterbodies within a 0.5km radius (Online mapping sources including: Google Maps; MAGIC; and Ordnance Survey Street View, 30th May 2022); and
 - Locally designated wildlife sites & any notified Local Biodiversity Action Plan (BAP) Habitats, Legally protected species, any Priority species (which includes: National Biodiversity Species, Local BAP Species, Species of conservation concern and Red Data Book (RDB) species, Birds of Conservation Concern (BOCC), nationally rare and nationally scarce species, and OSPAR Commission list of threatened/declining species) and Invasive species (listed under section 14 of Schedule 9 only) within a 2km radius, and any important hedgerows/veteran trees within the immediate zone of influence (Norfolk Biodiversity Information Service [NBIS] 26th November 2021).
- 2.1.2 Data received has been extracted and summarised using QGIS 2.18, with original sources not extracted directly. Data has also been edited where relevant to prevent sensitive or confidential records being made public in accordance with Guidelines for Accessing and Using Biodiversity Data (CIEEM, 2016).

2.2 Field Survey

2.2.1 Field Surveys were undertaken on the following dates by the identified staff, all of whom satisfy necessary field survey competencies as stipulated by the Chartered Institute for Ecology and Environmental Management (CIEEM). Weather conditions on the day of survey have been included and where relevant survey/class licence numbers referred to.

Survey	Date	Staff/Licence	Environmental Conditions
Preliminary Ecological Appraisal.	19/11/21	Eleanor Pople Consultant Ecologist (MSc; BSc-hons), under guidance of Derek Allan Director of Ecology (MSc, BSc Hons).	Dry, light wind, 95% cloud cover, 8°C

Table 1 – Survey Dates and Conditions



Preliminary Ecological Appraisal

2.2.2 In accordance with Guidelines for Preliminary Ecological Appraisal 2nd Edition (CIEEM, 2017) the Preliminary Ecological Appraisal (PEA) survey included the following.

Mapping of Habitat Types

- 2.2.3 This assessment has utilised the UK Habitat Classification (UKHab) methodology (UKHab, 2020), which has been adopted to replace the previously used Phase I Habitat Survey (JNCC, 2010) as the recommended published method of habitat classification. It has been used to categorise and map the primary habitat types present within the survey area using a standard set of habitat categories, with associated secondary codes/features identified where applicable. Details of current management and habitat condition have also been recorded where appropriate.
- 2.2.4 Each of the main habitats has been described; including details of component plant species abundances (recorded using the DAFOR scale: D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare). Additionally, any stands of non-native invasive plant species were recorded. Habitat extents have been visually mapped onto a topographic plan, with approximate location/areas recorded only (a GPS unit has not been utilised to accurately recorded these).

Assessment of possible presence/likely importance for Protected & Priority Species

2.2.5 An assessment of the possible presence of protected or priority species, and the likely importance of habitat features present for such species was also undertaken, particularly where uncommon or specialised habitats are present in accordance with current PEA guidelines (CIEEM, 2017). However, no specific protected species survey has been undertaken unless listed under additional surveys as below. Any incidental sightings of protected or priority species, or field signs of such species has also been recorded. Species assessed include Plants; Trees; Amphibians; Reptiles; Bats (including potential roost sites, foraging and commuting habitats/features), Badger, and other mammal species.

2.3 Assessment

- 2.3.1 A level of importance has been assigned to each ecological feature, where sufficient baseline data is available to do so, in accordance with current guidance (CIEEM, 2018). This is defined within a geographical context as follows: International and European; National; Regional; Metropolitan, County, vice-county or other local authority-wide area; River Basin District; Estuarine system/Coastal cell; and Local (plus Negligible where no associated value has been identified). For example, importance of designated sites reflects the geographical context of the designation (where designated sites no longer meet designation criteria and those formally 'de-notified' OR where an undesignated site meets published selection criteria must also be considered). When considering habitats and species contextual information about distribution and abundance of that habitat/species in the area must be considered (if the habitat/species status is currently in a degraded or unfavourable condition its potential value should be considered).
- 2.3.2 The assessment then considers potential impacts (both positive and negative) generated during the construction and operational phase of the proposed application. Only impacts that are likely to be significant are considered. Impacts that are either unlikely to occur, or if they did occur are unlikely to be significant, are not considered.
- 2.3.3 Cumulative impacts are then considered where the application meets criteria in accordance with national EIA screening guidance (GOV.UK, 2019), and where agreed with the competent



authority during scoping. This takes into consideration existing background levels of threat or pressure, looks at critical thresholds, and assess both additive/incremental and associated/connected impacts and effects.

- 2.3.4 Relevant aspects of ecological structure and function are then considered when determining if identified impacts will have a significant effect upon ecological features. Where necessary, this assessment utilises information from other specialists i.e., air quality, hydrology etc, to determine the level of impact. In accordance with current guidance (CIEEM, 2018) these are described using the following characteristics, where relevant: positive or negative; extent; magnitude; duration; frequency and timing; and reversibility.
- 2.3.5 The mitigation hierarchy is then explored in accordance with BS42020:2013 (BSI, 2013). This seeks as a preference to avoid impacts, then to mitigate unavoidable impacts, and as a last resort, to compensate for unavoidable residual impacts that remain after avoidance and mitigation measures. Justification has been provided by the client/their planner where the mitigation hierarchy cannot be followed, or for example where compensation is a preferred approach where the competent authority has adopted a County wide strategy i.e., District Level Licensing Schemes (GOV.UK, 2019). In this instance current national Biodiversity Offsetting guidance has also been consulted (GOV.UK, 2019). Additional information has also been provided by the client/their planner where the applicant wishes to demonstrate exceptional circumstances or where they wish to pursue alternative strategies. Any residual impacts following mitigation measures etc are then identified.
- 2.3.6 All mitigation measures follow species specific current best practice guidance, and the source has been identified accordingly. Deviation from guidance has been explained by the ecologist and is proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed works.
- 2.3.7 It is important that planning decisions are based on up-to-date ecological data, and the specific timeframe over which survey data is considered valid should follow general advice (CIEEM, 2019). Although it should be noted that the presence/absence and status of protected species can change seasonally/annually. The age of data should also be assessed separately when considering the submission of an EPS Licence (i.e., Natural England may require data to be from the current season).
- 2.3.8 Local Environmental Records Centres (LERC) issue a licence for use of provided biodiversity data for 1 year only, after which time this should be renewed to validate an application (and reports updated accordingly to incorporate any new records). Following completion of surveys all relevant biodiversity data will be submitted to the relevant LERC and other groups as appropriate.

2.4 Limitations

- 2.4.1 Data held by consultees may not be exhaustive. The absence of evidence, does not indicate evidence of absence. Enzygo cannot take responsibility for the accuracy of external data sources and as such discrepancies and inaccuracies may occur.
- 2.4.2 Natural England do not hold information of Ancient Woodland less than 2ha in size.
- 2.4.3 Records over 10 years old for transient species (as these are likely to have moved during the interim) and species protected from sale only under the W&C Act 1981 and amendments, are excluded (as these are not relevant to a planning application). Additionally, given the large number of priority species, these have only been included if identified from the desk study and/or habitats recorded on site have been assessed as providing suitable conditions.



- 2.4.4 Sites designated for Landscape or Geological reasons have not been included within this report.
- 2.4.5 This document does not contain a comprehensive list of botanical species on site. Only plant species characteristic of each habitat and incidental observations of notable plant species were recorded. In addition, many flora species are only evident at certain times of the year and so some plant species may have gone undetected, including invasive species. This is because at certain times of year flora species may be in a state of senescence and are not readily identifiable.
- 2.4.6 All areas of the site were fully accessible, including both proposed lagoon areas.



3.0 Baseline Ecological Conditions

3.1.1 Ecological features identified by the desk study/field survey are presented below, along with their details and associated ecological value. Refer to Drawing CRM.0150.002.EC.D.001 and 002 for the location/extent of ecological features where relevant.

Table 2 – Ecological Features

Ecological Feature	Details	Ecological Importance
Statutory sites designated or classified up	nder international conventions or European legislation	-
Redgrave & South Lopham Fens Ramsar and Site of Special Scientific Interest (SSSI) 4km South-west	 Site qualifies in respect of the following Ramsar Criterion: Criterion 1 – The site is an extensive example of spring-fed lowland base-rich valley, remarkable for its lack of fragmentation. Criterion 2 – The site supports many rare and scarce invertebrates, including a population of the Fen Raft Spider (Dolomedes plantarius). This spider is also considered vulnerable by the IUCN Red List. Criterion 3 – The site supports many rare and scarce invertebrates, including a population of the Fen Raft Spider (Dolomedes plantarius). The diversity of the site is due to the lateral and longitudinal zonation of the vegetation types characteristic of valley mires. 	International
Waveney & Little Ouse Valley Fens Special Area of Conservation (SAC) 4km South-west	 Annex I habitats that are a primary reason for selection of this site: Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) Calcareous fens with Cladium mariscus and species of the Caricion davallianae Annex II species that are a primary reason for selection of this site: Desmoulin's Whorl Snail (Vertigo moulinsiana) 	International
Statutory sites designated under nationa	l legislation (& Impact Risk Zones)	
Shelfanger Meadows SSSI 2km East	This site which lies in a tributary valley of the River Waveney is one of the most important areas of unimproved grassland in Norfolk, forming an outstanding example of traditionally managed, herb-rich, hay meadows. For several hundred years the grassland has received an annual hay-cut followed by grazing and this traditional management has ensured the survival of a rich and unusual flora. In addition, diverse marshy grassland has developed in seepage zones where springs emerge on the valley-side.	National



Ecological Feature	Details	Ecological Importance
Impact Risk Zone (IRZ)	 Planning Officer should consult Natural England on likely risks from the following: Airports, helipads and other aviation proposals. Planning applications for quarries, including new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Any industrial/agricultural development that could cause AIR POLLUTION (including industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m² & manure stores > 3500t). General combustion processes >50MW energy input. Including: energy from waste incineration, 	National
	other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.	
Locally designated wildlife sites		County
Boyland Common CWS 900meters ~North-East of site	Unimproved neutral grassland over a well-drained soil. partially surrounded by mature hedgerows and thick scrub. Early purple orchid, Green-winged orchid and Bee orchid are found scattered in the grassland.	
Roadside Nature Reserves (RNR) x4 nearest being ~1622 meters West of site	Designated due to Sulphur clover.	
-	Woodland, Important Hedgerows, Veteran Trees, TPOs and Conservation Areas	L.
Deciduous Woodland HPI ~473 meters North-West of site	Small parcel of woodland.	Local
Veteran trees Nearest is ~469meters South-West	There are ~41 veteran trees within search area. These are dominantly Oak (29 trees), and frequently Ash (9 trees).	
Traditional Orchards HPI ~167meters South-East of site	Traditional orchard.	Local
Tree Preservation Order (TPO) Nearest ~576 meters South-West of site.	Cluster of TPO trees.	
Green/Blue & Aquatic Infrastructure, Dar	k Zones, and Local Policy	
Green Infrastructure	The area is predominantly arable crop fields which may have periods or areas of set-aside. Although there are lots of hedgerows in the area these were largely fragmented and well managed (flailed). There are mature trees in the area including Oak species including some with holes and splits. Trees were mainly located around ponds. There were no extensive connected habitat corridors within the area.	Negligible
Blue/Aquatic Infrastructure	There are no blue corridors.	Negligible



Ecological Feature	Details	Ecological Importance
Dark Zones	Although the site is located within arable crop fields and there was minimal lighting seen there are no designated dark zones within the search area. Potential light sources would be any floodlights on barns and buildings as well as vehicle lights.	N/A
Habitat Types		1
Developed Land (u1b) & Buildings (u1b5)	The application footprint has been recently developed, with a large area of cleared/bare ground and new buildings/facility under construction. From aerial maps it appears this was formerly an arable field. No vegetation in associated with these habitats. Not an England HPI or Local BAP.	Negligible
c1 Arable and Horticulture Cropland	Ploughed arable fields extend throughout the northern and eastern part of the site. This habitat type also extends throughout the two proposed lagoon locations. No flora noted in association at time of survey (but annual crops previously seeded). Not an England HPI or Local BAP.	Negligible
u Earthbank and c Track	Stoney vegetated banks along southern, eastern and western edge of development with recently planted trees. Vegetation dominated by self-seeded Grass sp., with flora associated with that of disturbed ground including occasional Poppy, Purple Thistle, Common Daisy, Dandelion, Speedwell and Nightshade sp Not an England HPI or Local BAP.	Negligible



Ecological Feature	Details	Ecological Importance
Legally Protected & Priority Species (& Co	nsultation Zones where applicable)	
Bats	There are numerous bat records within the search area, of which are dominantly Pipistrelle with frequent records of Brown Long Ear, Natterer's bat and occasional Western Barbastelle, Serotine, Whiskered/Brandt's, Daubenton's and Noctule. There were also four recorded roosts within search area of which two were identified as autumnal dispersal roosts for Brown Long-ear bats. There is one European protected species (EPS) license within search area for bats (2016-26657-EPS-MIT) permitting destruction of a resting place for BARB, BLE, C-PIP ~748meters North-West of site. No buildings within application footprint which provide opportunities for roosting bats (all are new metal framed constructions). However, adjacent old farm buildings/wood barns are likely to provide roosting opportunities. No trees on/adjacent application footprint which provide Potential Roosting Features (PRFs). However, larger/mature trees in the surrounding landscape were noted to contain PRFs such as woodpecker holes, splits, broken branches etc. Currently there is a lack of linear features such as connected hedgerows or tree lines for commuting bats to use as corridors and none in relation to site. Open arable fields and developed land is unlikely to provide high quality foraging opportunities, but pond/hedgerow habitats throughout the surrounding landscape is likely to provide habitat of better quality (Collins, 2016).	Local
Badger	There was only one record for badger within 2km. This is indicative of the heavy clay soil in the area which badgers tend to avoid. Visual checks were conducted on site and no obvious badger features were found. Likely absence of species from site.	Negligible
Dormouse	No EPS licence and no records within of Dormice within search area. The natural range of Dormice does not extend into Norfolk. Although there were hedgerows and trees in the area there was a lack of habitat with minimal deciduous woodland in the area and poorly connected, fragmented, well-managed hedgerows.	Negligible



Ecological Feature	Details	Ecological Importance
Otter & Water Vole	One European Water Vole recorded but no Otter records recorded within search area. Some suitable habitats in area for Water Vole such as banks by the ponds and ditches. There is no suitable habitat for Otter. There were some holes in vegetation by the ditch but too large for Water Vole and some in the scrub area by Pond D however likely rats as the farmer noted a high rat population in area around buildings. Rats are a predator of Water Vole so would most likely outcompete Water vole. There are no adjoining major watercourses to ponds and the culvert ditch is periodically dry so no suitable connecting Water Vole sources, but this species could be present in the wider area.	Local
Other Protected Mammals	No records within search radius. Lack of available and connected habitat.	Negligible
Specially Protected Birds	The area has notable reference for Schedule 1 birds including various birds of prey Merlin, Hobby, Peregrine, as well as Barn Owl, Fieldfare, Lapland bunting and Snow bunting. No suitable nesting habitats within the application footprint. However, habitat in the surrounding area is more suitable with trees, open fields well rotated to expose invertebrates, hedgerows, and accessible barns with high levels of rodent.	Negligible
Breeding, Wintering and Migratory Birds	Numerous UKBAP, Bern Convention protected, and common birds have been recorded within search area. This includes Little Owl, Grey partridge, Tree Sparrow, Ring Ouzel, Tree sparrow, Yellow-legged gull, Turtle dove, Swift and Wheatear. An old bird nest was noted in a barn off site, and the habitat in the area is highly suitable with trees, open fields well rotated to expose invertebrates, hedgerows, and accessible barns with high levels of rodent. The site is located within a Priority Species area for Lapwing and arable crop fields do provide suitable habitat for ground nesting birds however this is less likely given the surrounding vegetation is short meaning they would be highly exposed. There is a lack of large aquatic habitat in the area for wintering and migratory birds and a lack of deciduous woodland.	Local
Common Reptiles	There were no records of reptiles within the search area. Although there were limited areas of suitable habitat such as hedgerow banks for basking there were no significant corridors such as connected hedgerows or long grass for commuting. Large open arable fields/disturbed ground do not provide suitable habitat.	Negligible



Ecological Feature	Details	Ecological Importance
Great Crested Newt	 There were no Great Crested Newt (GCN) Class survey licences or records within search area. Five surveys had been recorded as being conducted in 2019 and GCN were absent from all ponds. There are a number of waterbodies throughout the surrounding landscape. Eight (Ponds 1-5 & A-C) were specifically assessed. All provide unsuitable conditions for breeding GCN either being stocked with Fish (which predate newts/eggs) or with poor water quality i.e. slurry pits/algal blooms from nutrification etc. A few contained limited margins of emergent vegetation such as Reedmace and Bulrush. Habitats within the application footprint are bare/heavily disturbed and do not provide opportunities for use during the terrestrial phase of GCN life-cycle. Species likely absent. 	Negligible
Other Protected Herpetofauna	No records. No suitable habitats.	Negligible
Protected Fish/Marine	No records. Although there are ponds in the area suitable for fish none were seen, and they were not connected to watercourses that would allow natural colonisation.	Negligible
White-clawed Crayfish	No records. No suitable habitats.	Negligible
Protected Invertebrates	No records. No suitable habitats.	Negligible
Protected Flora	No records. Arable cropland surrounds the site so no suitable sources or areas for pollination from nearby flora.	Negligible
Invasive Flora	Records of Himalayan Balsam within search area. No Sch9 invasive flora noted.	Negligible
Invasive Fauna	Records of Chinese Muntjacs (>170 records) within search radius. Given the high amount of habitat such as agricultural fields in the surrounding area they may occur on site. However, fencing largely excludes them from most of the site.	Negligible
Priority Species	Records of common mammals i.e., >100 records of West European Hedgehog and a couple of records of Brown Hare within search radius. Given the high amount of habitat such as agricultural fields in the surrounding area they may occur on site, although no species signs were noted. Although hedges may provide some habitat for common invertebrate species in the area due to them being highly managed and fragmented, they are largely unsuitable. Some invertebrates such as Dragonfly could occur around pond areas however these are located away from site or where development has already occurred so are unlikely to be present.	Local



4.0 Assessment and Mitigation

4.1.1 Assessment of impacts and the associated ecological effect to identified ecological features are presented below. To clarify, ecological features have been screened out where no likely significant impacts have been identified or where impact is unlikely to occur i.e. no impacts to statutory sites/wider woodland etc as no recreation pressure/air pollution/aquatic runoff etc (in comparison to already consented application). Mitigation measures can be subject of a condition where appropriate.

Table 3 – Assessment of effect and mitigation measures

Ecological Feature	Impact	Avoidance/Mitigation	Compensation	Significance of Residual Effect
Redgrave & South Lopham Fens Ramsar and SSSI, Waveney & Little Ouse Valley Fens, Shelfanger Meadows SSSI and Impact Risk Zone	Potential operation air quality impacts through degradation of habitats, and associated indirect impact on qualifying species. Significant adverse, permanent, reversible impact. Potential operational drainage impacts through an increase in nutrient inputs causing habitat degradation Significant adverse, permanent, reversible impact. No other pathways for potential	Separate Stage 1 Habitat Regulations Assessment (HRA) Screening Report presents details of assessment of likely significant effects of the proposals on qualifying features of the designated sites. This HRA report is informed by an Air Quality Assessment (Enzygo, 2022a) and Nutrient Neutrality Technical Note (Enzygo, 2022b).	None	None
Bats	impacts identified. Indirect impacts to surrounding buildings/habitats from lighting. Minor adverse, temporary, reversible impact. [no loss/disturbance of roost, or foraging/commuting habitats].	No works to existing farm buildings & mature trees throughout surrounding area. Sensitive lighting strategy to be adopted in accordance with current guidance (ILP, 2018).	None	None
Water Vole	Indirect impacts to surrounding ponds & associated species. Minor adverse, temporary, reversible impact.	Where habitats in proximity of the adjacent farm pond have not already been cleared under the consented application, appropriate buffers should be installed.	None	None



Ecological Feature	Impact	Avoidance/Mitigation	Compensation	Significance of Residual Effect
Breeding Birds	Disturbance of nesting birds during clearance of habitats. Minor adverse, temporary, reversible impact.	Where habitats have not already been cleared under the consented application, this should be done so outside of the nesting bird period which runs from March to August. Alternatively, if clearance is required during this period, then an Ecological Clerk of Works (ECoW) should directly supervise habitat disturbance, first checking for the presence of any active nests. Appropriate buffers would need to be retained around any active nest until young have fledged.	None	None
Priority Species	Risk of killing/injury during clearance of habitats. Minor adverse, temporary, reversible impact.	As above, supervision by ECoW where habitats have not already been cleared under the consented application. Allow any priority species to disperse into off site habitats.	None	None



5.0 Enhancement and Monitoring

- 5.1.1 Opportunities for biodiversity enhancement (above and beyond those required to mitigate for any identified impacts) have been determined through consideration of: Ecological Features identified on site and within the zone of influence; Historical records of protected species/habitats present within the locality; National and Local planning policy including National and Local Biodiversity habitats/species; Local Development Plans including consideration of Green/Blue Infrastructure Resource; Consultation with third parties/stakeholders where applicable; and Other influencing factors such as underlying Geology/Hydrology, intended operational activities, and existing disturbance activities within the locality. This makes specific reference to Biodiversity Net Gain, Good practice principles for development (CIEEM, IEMA, CIRA, 2019).
- 5.1.2 The following enhancements, in combination with the above-described mitigation measures, will demonstrate an overall net gain for biodiversity in accordance with the Environment Act 2021. Refer also to biodiversity metric (DEFRA 3.0). The specific location and details of the proposals can be secured by an appropriately worded planning condition.

Ecological Feature	Enhancement & Monitoring	Significance of Residual Effect
Breeding Birds	2x traditional wooden bird nesting boxes (or similar product) will be installed upon mature trees alongside the pond. These will be located at least 6ft from ground level, on an east/north facing aspect, and situated away from human/noise/lighting disturbance. They will provide additional nesting opportunities for common bird species in the local area.	Minor Gain
Green Infrastructure, Trees	Additional hedgerows and trees will be/were historically planted throughout surrounding habitats to provide additional green infrastructure connection. A screening bund will also be created along the southern and eastern boundaries. These will also provide additional nesting opportunities/ cover for birds and priority species.	Minor Gain

Table 4 – Enhancement & Monitoring

5.1.3 No post-development monitoring is required. To comply with guidance set out in BS42020:2013, a Construction Environment Management Plan (CEMP) which includes consideration of biodiversity would normally be produced prior to the commencement of construction activities, including site clearance works. However, due to the limited number of ecological features identified, this EcIA report (specifically the mitigation details outlined within section 4.0) will sufficiently serve to advise site contractors of any measures necessary to avoid/mitigate impacts to any protected habitat/species.



6.0 Conclusion

- 6.1.1 Suitable mitigation measures can be incorporated into the proposed application to avoid/ mitigate/ compensate any potential impacts to ecological features and to demonstrate 'no biodiversity net loss' in accordance with NPPF and local planning policy. As such, no significant residual impact can be expected which would prevent determination of a planning application or development of this site.
- 6.1.2 Additionally, the site re-development allows the opportunity to provide local enhancements to demonstrate a 'biodiversity net gain'.



7.0 References

- ARG. (2010). ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index.
- BSI. (2013). *Biodivesity Code of practice for planning and development BS 42020:2013*. London: BSI Standards Limited.
- CIEEM. (2016). *Guidelines for Assessing and Using Biodiversity Data*. Winchester: Chartered Institute of Ecology and Environmental Management.
- CIEEM. (2017). *Guidelines for Preliminary Ecological Appraisal*. Winchester: Chartered Institute of Ecology and Environmental Management.
- CIEEM. (2017). *Guidelines on Ecological Report Writing*. Winchester: Chartered Institute of Ecology and Environmental Management.
- CIEEM. (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, coastal and Marine. Winchester: Chartered Institute of Ecology and Environmental Management.
- CIEEM, IEMA, CIRA. (2019). *Biodiversity Net Gain: Good practice principles for development*. CIEEM, CIRIA & IEMA.
- CITB. (2016). Construction (Design and Management) Regulations 2015. Norfolk: Construction Industry Training Board . Retrieved from https://www.citb.co.uk/Documents/CDM%20Regs/2015/cdm-2015-designers-printerfriendly.pdf
- Collins, J. (2016). *Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. London: The Bat Conservation Trust.
- DEFRA. (2022). MAGIC. Retrieved from https://magic.defra.gov.uk/MagicMap.aspx
- Enzygo. (2022a). Air Qaulity Assessment for Planning Permission Deal Farm Anaerobic Digestion Facility, Kenninghall Road, Bressingham, Norfolk. Manchester: Enzygo Ltd.
- Enzygo. (2022b). Nutrient Neutrality Technical Note Deal Farm Bressingham. Sheffield: Enzygo Ltd.
- GOV.UK. (2019). *Collection on Biodiversity Offsetting*. Retrieved from https://www.gov.uk/government/collections/biodiversity-offsetting
- GOV.UK. (2019). *Guidance on Environmental Impact Assessment*. Retrieved from https://www.gov.uk/guidance/environmental-impact-assessment#Screening-Schedule-2projects
- GOV.UK. (2019). Guidance on GCN District Level Licensing Schemes. Retrieved from https://www.gov.uk/government/publications/great-crested-newts-district-level-licensingschemes?utm_source=987533b2-4ba3-44e7-9707-93f5189921d8&utm_medium=email&utm_campaign=govuknotifications&utm_content=immediate

Deal Farm, Bressingham Storengy UK Limited

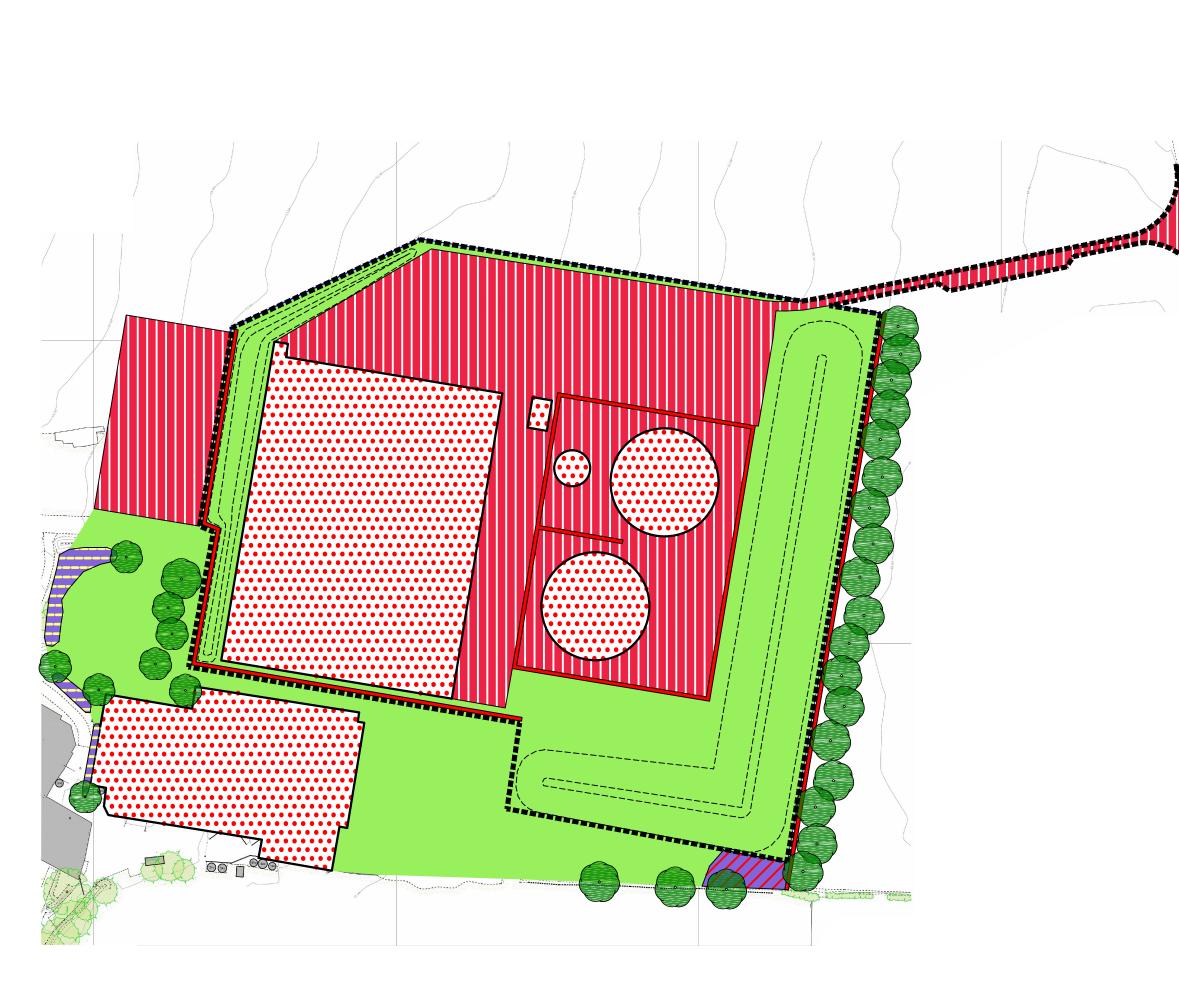


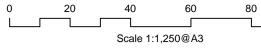
- JNCC. (2010). *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit.* Peterborough: Joint Nature Conservation Committee.
- Natural England. (2019). *National Character Area*. Retrieved from http://publications.naturalengland.org.uk/category/587130

UKHab. (2020). The UK Habitat Classification User Manual. Stockport: UKHab Ltd.



Drawing CRM.0150.002.EC.D.001 – Habitat Map







Key

Site Boundary

Modified Grassland (g4)

Dense Scrub (h3)



Developed Land, Sealed Surface (u1b)



Hedgerow (h2)

Buildings (u1b5)



۲

Built Linear Features (u1e)



Scattered Tree (11)



Samuel House, 5 Fox Valley Way, Stocksbridge, Sheffield, S36 2AA

CLIENT: Storengy Limited

PROJECT REF: CRM.0150.002

1:1,250@A3

SCALE:

DRAWN:

MG

DATE:

CHECKED: EΡ

Dec 2021

PROJECT: Deal Farm

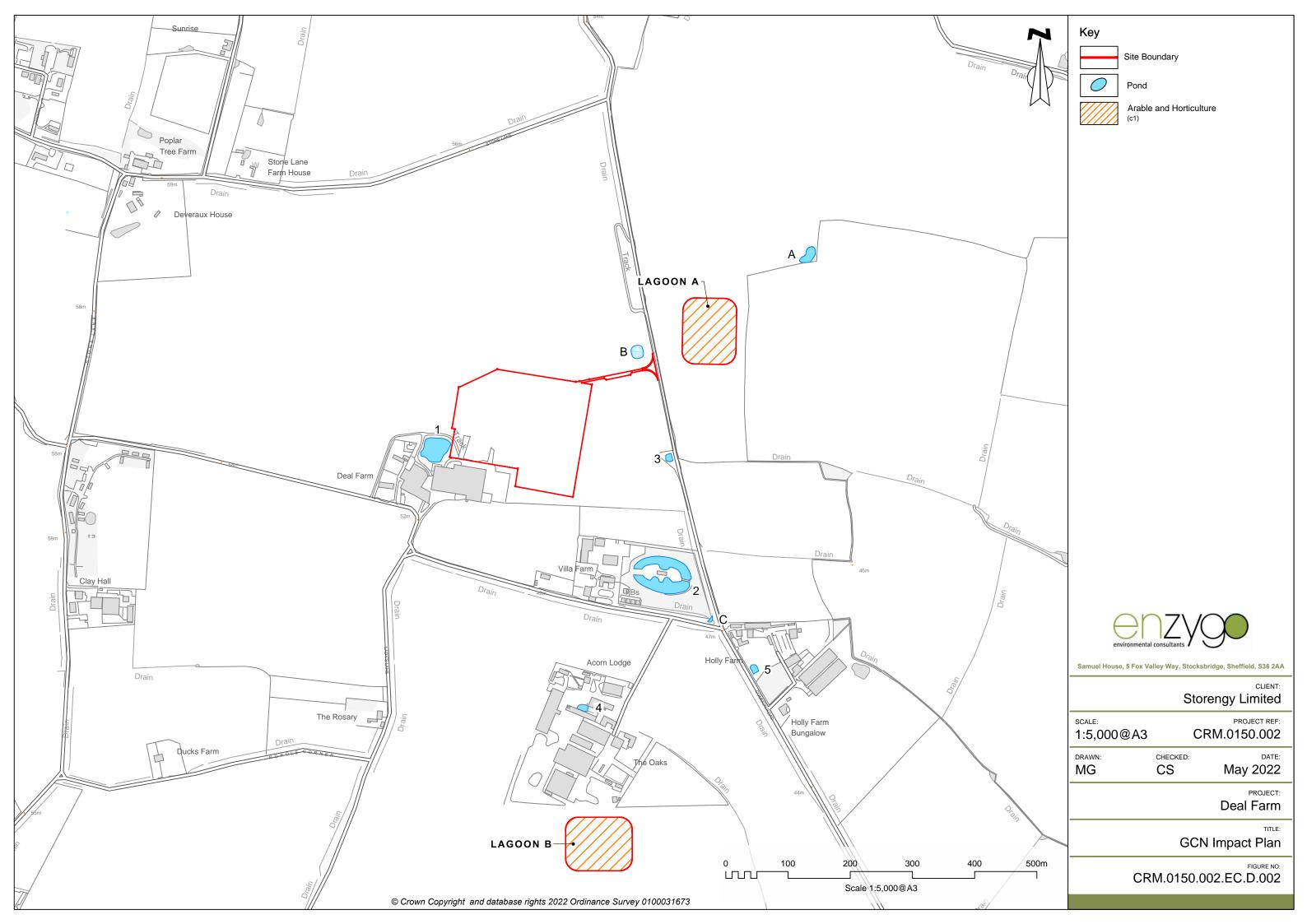
TITLE: UK Habitat Classification Map

FIGURE NO: CRM.0150.002.EC.D.001

100m

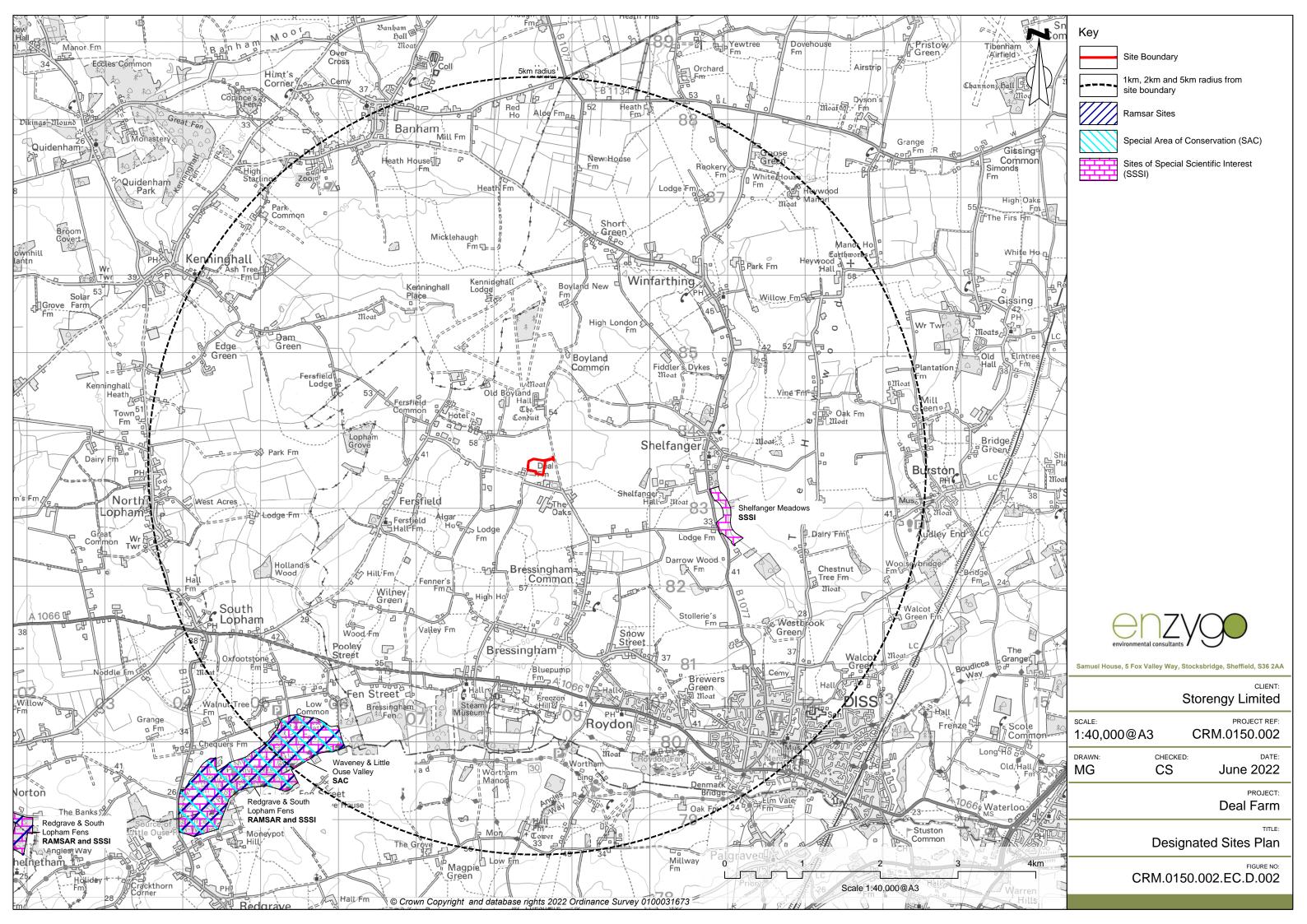


Drawing CRM.0150.002.D.002 – GCN Plan





Drawing CRM.0150.002.D.003 – Designated Sites Plan

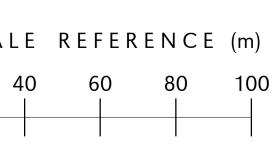




Appendix A – Proposed Site Layout



Manure Store Feeding Unit (2No.) Oxygen Generator Hygienisation Feeding Tank Separator Separation Unit CHP Biogas Boiler Flare Weighbridge Gas To Grid GEU Biomethane Con ROV PRS Skid LV Distribution Substation Transformer Propane Tanks Pump Unit & Ele Preliminary Pit Biogas Treatmer C02 Recovery Bu Lightening Cond Below Ground Le Lined Fire Water Topsoil Bund (31 Car Park (5 No. Filling Station Site Office/Facili C02 Delivery Sys Buffer Tank C02 Storage Tar Sample Store (24 Water Cooling S Secondary Dige (36.00mØ)



	Proposed AD Plant Deal Farm, Kenning Bressingham, Diss,
	Drawing Title
	Proposed Site Layo Overview
n)	Seale UNO Date

Scale U.N.O. 1:1000 (A1)	_{Date} November 2021	Drawn By OAJ	
Drawing No.	27249/612	Rev B	

iit	Site Boundary (41,856m²/4.1856ha)
	300mm Deep Swale
	Proposed Concrete
	Proposed D.o.T Type 1
	Proposed Asphalt Surfacing
	Grass Seeded / Landscaped Area
ompressor	ISSUED FOR CLIENT REVIEW
n Board	
3	
lectric Container	
ent	B 10-06-22 OAJ OAJ Redline Amended A 17-12-21 MJP OAJ Minor Amendment To Key
Building	0 30-11-21 - OAJ First Issue
nductors (8No.)	Rev Date Rev By Chkd Description
Leachate Tank	
er Holding Lagoon	plandescil consulting engineers
3No.)	consulting engineers
p. Spaces)	Connaught Road Attleborough Norfolk NR17 2BW Telephone: (01953) 452001 Fax: (01953) 456955 E-mail: pdc@plandescil.co.uk www.plandescil.co.uk
cilities (2no. 32ft x 10ft)	
System	civil / structural / environmental / surveying
	Client
ank (2No.)	Burden Bros
(24ft x 9ft)	Project
g System	
gester & Digestate Store	Proposed AD Plant,
	Deal Farm, Kenninghall Road, Bressingham, Diss, IP22 2HG
	Drawing Title
	Proposed Site Layout Overview
FERENCE (m)	Scale U.N.O. Date Drawn By

GENERAL NOTES:

document.

2.

5.

6.

GENERAL KEY:

All dimensions noted are in metres unless stated otherwise.

Ltd. Terms & Conditions along with the scope of works provided by the client to Plandescil Ltd. Any use of this

document other than for its original purpose is prohibited, Plandescil Ltd. accept no liability for any third party uses of this

Plandescil Ltd. to be immediately notified of any suspected

7. This drawing is to be read in conjunction with all other relevant

omissions or discrepancies. This drawing and the information contained herein are subject

(A.O.Dm) unless noted otherwise.

to Plandescil Ltd Terms & Conditions.

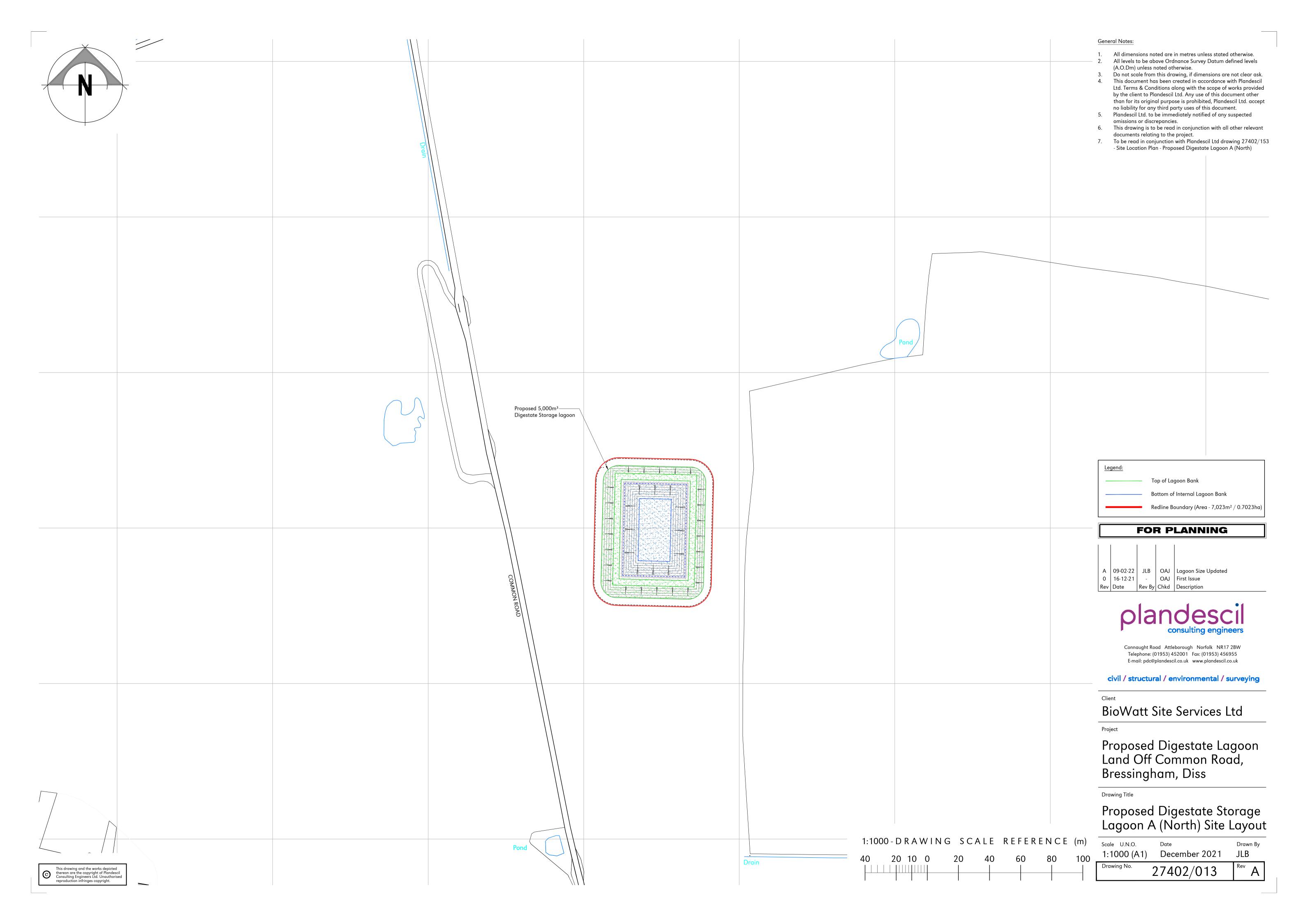
documents relating to the project.

All levels to be above Ordnance Survey Datum defined levels

Do not scale from this drawing, if dimensions are not clear ask. 4. This document has been created in accordance with Plandescil

- Digester (36.00mØ)

- Maize Silage Clamp (45.00m x 70.00m)
- Rye Silage Clamp (23.50m x 70.00m)
- Grass Silage Clamp (34.00m x 70.00m)







Appendix B – Legislation and National Planning Policy

Wildlife legislation and policy relevant (or potentially relevant pending further survey) to the proposed works, based on the findings of the desk study and field survey are set out below. This legal information is a summary only, and the original legal documents should be consulted for definitive information.

Legislation Protection Afforded to Sites/Habitats that could Potentially be Affected by the Proposed Works

Designated Site/Habitat	Legal Status
Ramsar Sites	Ramsar Sites are wetlands of international importance designated under The Ramsar Convention. They are afforded the same level of protection as SSSIs under the Wildlife and Countryside Act 1981 (as amended). UK policy, however, affords the same level of protection to Ramsar Sites as SPAs/SACs in terms of the consideration of impacts on their integrity subject to Habitats Regulations Assessment.
Special Area of Conservation (SAC)	SACs are strictly protected areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed in Annexes I and II of the EC Habitats Directive. The Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2012 (as amended) are the legal instrument for implementing the Habitats Directive in the UK.
Sites of Special Scientific Interest (SSSI)	SSSIs are the national suite of sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs have been re-notified under the Wildlife and Countryside Act 1981 (as amended). Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000.

Legislation Protection Afforded to Species that could Potentially be Affected by the Proposed Works

Species	Legal Status
Nationally Protected	
Water Vole	 These animals receive full protection under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal (subject to exceptions) to: Intentionally kill, injure or take any such animal; Intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any such animal; and Intentionally or recklessly disturb such animals while they occupy a place used for shelter or protection.
Breeding Birds	 All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal (subject to exceptions) to: Intentionally kill, injure, or take any wild bird; Take, damage, or destroy the nest (whilst being built or in use) or eggs of any wild bird.
Wild Mammals	The Wild Mammals (Protection) Act 1996 makes it illegal to mutilate, kick, beat, nail, or otherwise impale, stab, burn, stone, drown, crush, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.
Invasive Species	
None	-



Section 40 of the Natural Environment and Rural Communities Act 2006 (the NERC Act) places a legal duty on public bodies, including planning authorities, to 'have regard' to the conservation of biodiversity when carrying out their normal functions, which includes consideration of planning applications.

In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is known as the list of Habitats and Species of Principal Importance (HPI/SPI), of which there are fifty-six habitats and 943 species. The HPI/SPI list is used to guide planning authorities in implementing their duty under the NERC Act.

National Planning Policy

The NPPF (2021) set out the Government's planning policies for England and how these are expected to be applied. At the heart of the NPPF is a presumption in favour of sustainable development.

The NPPF states that:

'To protect and enhance biodiversity and geodiversity, plans should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping-stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.'

'When determining planning applications, local planning authorities should apply the following principles:

- 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;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists;
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate

'The following should be given the same protection as European sites:

- potential Special Protection Areas (SPA) and possible Special Areas of Conservation (SAC);
- listed of proposed Ramsar Sites; and,
- site identified, or required, as compensatory measures for adverse effects on European sites, potential SPAs, possible SACs, and listed or proposed Ramsar sites.'

Deal Farm, Bressingham Storengy UK Limited



The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on European sites (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.'



Enzygo specialise in a wide range of technical services:

Property and Sites Waste and Mineral Planning Flooding, Drainage and Hydrology Landscape Architecture Arboriculture Permitting and Regulation Waste Technologies and Renewables Waste Contract Procurement Noise and Vibration Ecology Services Contaminated Land and Geotechnical Traffic and Transportation Planning Services

BRISTOL OFFICE

The Byre Woodend Lane Cromhall Gloucestershire GL12 8AA Tel: 01454 269 237

SHEFFIELD OFFICE

Samuel House 5 Fox Valley Way Stocksbridge Sheffield S36 2AA Tel: 0114 321 5151

MANCHESTER OFFICE

Ducie House Ducie Street Manchester M1 2JW Tel: 0161 413 6444

Please visit our website for more information.

