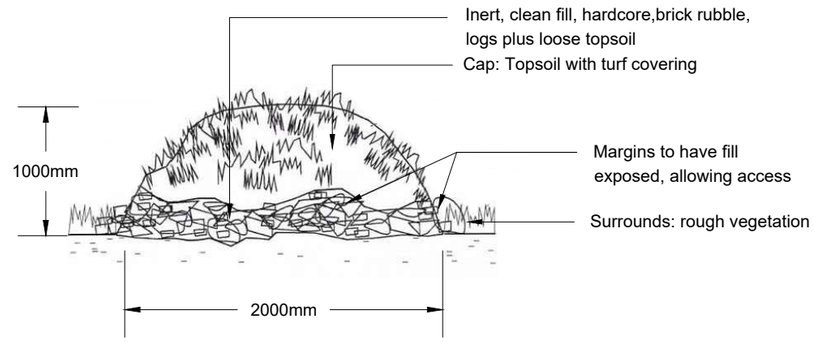

Wildlife Hibernacula

Legend

- Application Boundary
- Easement for high voltage cables
- Existing Vegetation Retained
- Approved planting to be undertaken as part of the Yaxley Substation development
  (Refer Landscape Masterplan D6492.002H)
- LMG — Low Maintenance Grass Verge
  Germinal A22 Low Maintenance Mix (Or Similar)
- WF — Meadow Seed Mix
  Emorsgate EM1 - 4gms/m^2 (or Similar)
- Understorey Woodland Seed Mix
  Emorsgate EW1 - 4gms/m^2 (Or Similar)
- PE — Pond Edge Seed Mix
  Emorsgate EP1 - 4gms/m^2 (Or Similar)
- NW — Native Woodland Mix
  Planted at 1.5m Centres
  Refer Planting Schedules Dwg 059-12-03 (S73)
- Standard Trees

Acer Campetre	(Ac)
Sorbus torminalis	(St)
Quercus robur	(Qr)
Quercus patrea	(Qp)

- Feathered Trees

Betula pendula	(Bp)
Prunus avium	(Pa)

- NH — Mixed Native Hedgerow
  Planted at 7 Plants per Lin M
  Refer Planting Schedule Dwg 059-12-03 (S73)
- Proposed earth mounding
  Refer to Drawing 059-12-02 (S73) Hard Works
- Wildlife Hibernacula
  Refer Detail Opposite
- Palisade Fence
  Refer to Drawing 059-12-02 (S73) Hard Works

For Planting Schedules Ref Dwg 059-12-03 (S73)

For Planting Specifications Ref Dwg 059-12-04 (S73)

For Earth Mounding and Topsoil Depths Ref Dwg 059-12-02 (S73)

Client
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Project
Synchronous Condenser, Yaxley
S73 Application (Single Condenser)

Drawing Title
Landscape Mitigation - Soft Works

Created by	Reviewer	Sheet Size	Scale	Date Created
CL	NR	A3	1:1000	30.01.24

Drawing Nr.
059-12-01(S73)

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DRaW Design & Assessment

N

Existing Pond Retained

Proposed Attenuation Basin
(Refer Drainage Proposals)

0.0m
0.5m

1.0m
0.5m
0.0m

1.5m
1.0m
0.5m
0.0m

1.0m
0.5m
0.0m

LEYS LANE

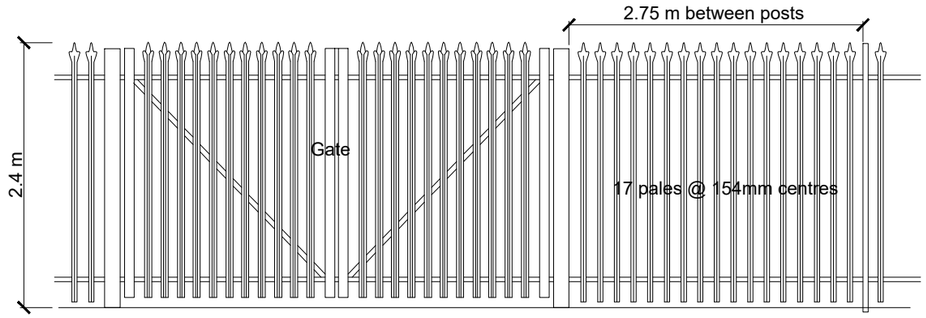
Soil arising from the construction works used to create earth mounding

Existing Hedgerow retained

4m wide access zone to maintain existing hedgerow

0 20 40 60m
1:1,000

TYPICAL PALISADE FENCE AND GATE ELEVATION AROUND COMPOUND



Material - Galvanised Steel
Finish - Holly Green BS4800 14-C-39

Legend

- Application Boundary
- Easement for high voltage cables
- Topsoil 100mm Min Depth
  (Seeded Area. Ref Planting Plan)
- Topsoil 450mm Min Depth
  (Woodland/Hedgerow Planting)
- Access Track to Yaxley Sub-station retained
- Proposed asphalt surface to match existing access track
  (Flush concrete edgings)
- Proposed Gravel Surface to Compound
  (75mm gravel, over compacted MOT Type 1)
- Proposed Earth Mounding
  (Indicative 0.5m Contours)

Client
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Project
Synchronous Condenser, Yaxley
S73 Application (Single Condenser)

Drawing Title
Landscape Mitigation - Hard Works

Created by	Reviewer	Sheet Size	Scale	Date Created
CL	NR	A3	1:1000	30.01.24

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Under Storey Woodland Seed Mix (EW1) 4gms/m		
Species	**Common Name**	**% of the Mix**
Wildflowers		
Alliaria petiolata	Garlic Mustard	1
Anthriscus sylvestris	Cow Parsley	0.5
Carex divulsa ssp divulsa	Grey Sedge	2
Carex pendula	Pendulous Sedge	0.1
Chaerophyllum temulum	Rough Chervil	4
Digitalis purpurea	Foxglove	1
Filipendula ulmaria	Meadowsweet	1.1
Galium album	Hedge Bedstraw	0.5
Geranium pyreniacum	Hedge Crane's-bill	2
Geum urbanum	Wood Avens	0.8
Hyacinthoides non-scripta	Bluebell	1
Silene dioica	Red Campion	5
Silene flos-cuculi	Ragged Robin	1
Grasses		
Agrostis capillaris	Common Bent	1
Anthoxanthum odoratum	Sweet Vernal-grass	2
Brachypodium sylvaticum	False Brome	1
Cynosurus cristatus	Crested Dogstail	50
Deschampsia cespitosa	Tufted Hair-grass	2
Festuca rubra	Red fescue	20
Poa nemoralis	Wood Meadow-grass	4

Pond Edge Mix (EP1) 4gms/m		
Species	**Common Name**	**% of the Mix**
Wildflowers		
Carex divulsa ssp divulsa	Grey Sedge	2
Carex pendula	Pendulous Sedge	0.4
Centurea nigra	Common Knapweed	2
Cruciata laevipes	Crosswort	2
Dipsacus fullonum	Wild teasel	0.4
Filipendula ulmaria	Meadowsweet	2
Galium album	Hedge Bedstraw	0.5
Geranium pyreniacum	Hedge Crane's-bill	1
Geum rivale	Water Avens	0.3
Iris pseudacorus	Yellow Iris	2.6
Lycopus europaeus	Gypsywort	0.4
Oenanthe pimpinelloides	Corky-fruited Water-dropwort	0.2
Prunella vulgaris	Selfheal	0.1
Rhinanthus minor	Yellow Rattle	0.5
Silene dioica	Red Campion	2.6
Silene flos-cuculi	Ragged Robin	3
Grasses		
Agrostis capillaris	Common Bent	2
Anthoxanthum odoratum	Sweet Vernal-grass	2
Briza media	Quaking Grass	4
Cynosurus cristatus	Crested Dogtail	48
Deschampsia cespitosa	Tufted Hair-grass	2
Festuca rubra	Red Fescue	22

Standard Trees - as shown on plans						
Species	**Common Name**	**Type/Form**	**Girth**	**Height**	**Clear Stem**	**No.**
Acer campestre (Ac)	Field Maple	RB/Std.	08 to 10	250-300	100-150	26
Quercus robur (Qr)	Pedunculate Oak	RB/Std.	08 to 10	250-300	100-150	23
Quercus patraea (Qp)	Sessile Oak	RB/Std.	08 to 10	250-300	100-150	19
Sorbus torminalis (St)	Wild Service	RB/Std.	08 to 10	250-300	100-150	35
	TOTAL					**103**

Feathered Trees - as shown on plans						
Species	**Common Name**	**Type/Form**	**Girth**	**Height**	**Clear Stem**	**No.**
Betula pendula (Bp)	Silver Birch	BR/Feathered	< 6	200-250	N/a	51
Prunus Avium (Pa)	Wild Cherry	BR/Feathered	< 6	200-250	N/a	32
	TOTAL					**83**

Native Woodland Mix - NW @ 1.5m centres (0.44 Plants per m^2)				NW1	NW2	NW3	NW4	NW5
			Area m^2	**958**	**92**	**4456**	**1216**	**1094**
Species	**Common Name**	**Type/Size**	**%**	**No.**	**No.**	**No.**	**No.**	**No.**
Acer campestre	Field Maple	BR 1+1 /60-80	10	42	4	196	54	48
Alnus glutinosa	Alder	BR 1+1 /60-80	10	42	4	196	54	48
Betula pendula	Silver Birch	BR 1+1 /60-80	10	42	4	196	54	48
Corylus avellana	Hazel	BR 1+1 /60-80	10	42	4	196	54	48
Crataegus monogyna	Hawthorn	BR 1+1 /60-80	15	63	6	294	80	72
Ilex aquifolium	Holly	Container/2 ltr	10	42	4	196	54	48
Prunus avium	Wild Cherry	BR 1+1 /60-80	10	42	4	196	54	48
Quercus robur	Oak	BR 1+1 /60-80	15	63	6	294	80	72
Sorbus torminalis	Wild Service	BR 1+1 /60-80	5	21	2	98	27	24
Tillia cordata	Small-leaved lime	BR 1+1 /60-80	5	21	2	98	27	24
	TOTAL		100	**422**	**40**	**1961**	**535**	**481**

Native Species-rich Hedgerow Mix - NH @7 plants/m (25cm centres, double staggered row)				NH1	NH2	NH3
			Length/m	**220**	**96**	**18**
Species	**Common Name**	**Type/Size**	**%**	**No.**	**No.**	**No.**
Cornus sanguinea	Common Dogwood	BR 1+1 /60-80	5	77	34	6
Corylus avellana	Hazel	BR 1+1 /60-80	10	154	67	13
Crataegus monogyna	Hawthorn	BR 1+1 /60-80	50	770	336	63
Ilex aquifolium	Holly	Container/2 ltr	10	154	67	13
Prunus spinosa	Blackthorn	BR 1+1 /60-80	20	308	134	25
Rosa canina	Dog rose	BR 1+1 /60-80	5	77	34	6
	TOTAL		**100**	**1540**	**672**	**126**

General Purpose Meadow Seed Mix (EM1) 4gms/m		
Species	**Common Name**	**% of the Mix**
Wildflowers		
Achillea millefolium	Yarrow	0.3
Centaurea nigra	Common Knapweed	1.5
Leucanthemum vulgare	Oxeye Daisy	1.5
Malva moschata	Musk Mallow	1.5
Plantago lanceolata	Ribwort Plantain	3
Poterium sanguisorba (Sanguisorba minor)	Salad Burnet	1
Ranunculus acris	Meadow Buttercup	0.2
Rhinanthus minor	Yellow Rattle	1
Grasses		
Agrostis capillaris	Common Bent	9
Cynosurus cristatus	Crested Dogstail	31.5
Festuca rubra	Red Fescue	27
Phleum bertolonii	Smaller Cat's-tail	4.5
Poa pratensis	Smooth-stalked Meadow-grass	18

Client
Conrad Energy Limited

Project
Synchronous Condenser, Yaxley
S73 Application (Single Condenser)

Drawing Title
Plant Schedules

Created by	Reviewer	Sheet Size	Scale	Date Created
CL	NR	A3	NTS	01.09.23

Drawing Nr.
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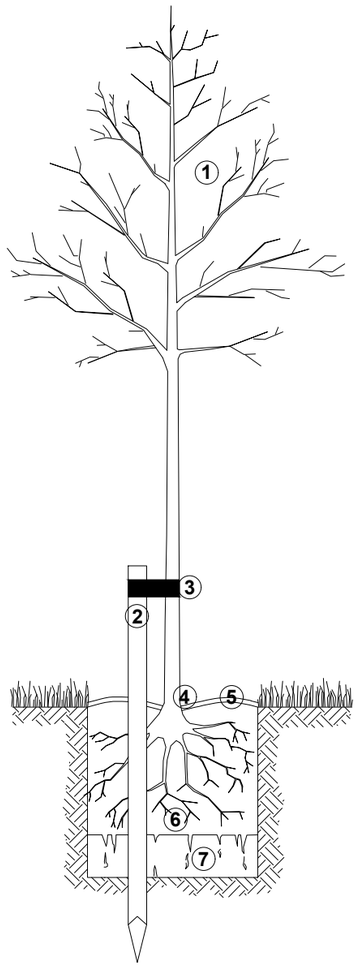
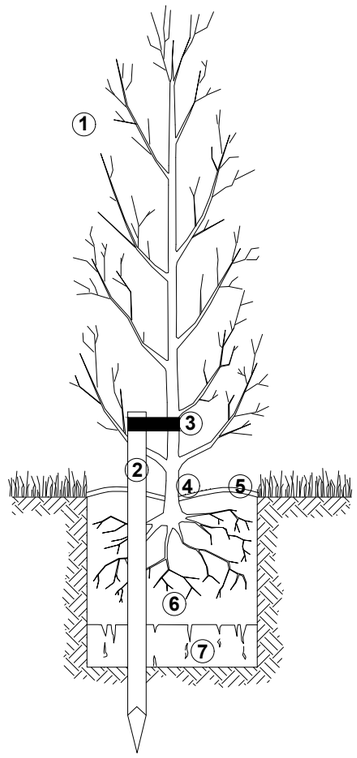
1 STANDARD TREE 250-300cm HIGH



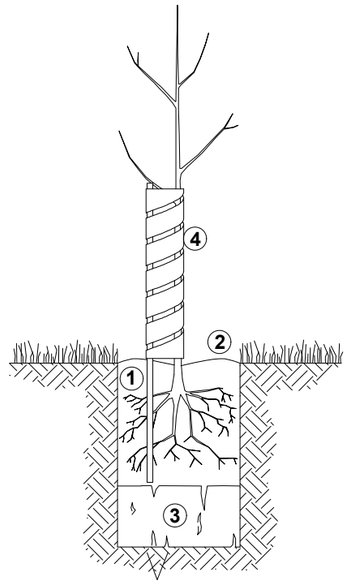
1. Standard trees shall be 250-300cm high with a minimum girth of 8-10cm. The trees shall conform to BS 3936 Part 1 and shall have a well defined clear upright stem of 100-150cm. The root shall be adequate size in relation to crown
2. The stake shall be peeled larch or chestnut previously treated with tanalith wood preservative to BS 1282. The stake shall have a minimum diameter of 65mm and shall project 500mm above finished ground level. Before planting it shall be driven a minimum of 300mm into firm ground below the excavated tree pit or as necessary to secure the tree. The stake shall be positioned to avoid disturbance to the root system. If necessary stakes are to be angled at 45° and driven 300mm into the ground (away from the prevailing wind).
3. Trees shall be securely tied by adjustable reinforced rubber bottle ties with spacers positioned to prevent any abrasion between stake and tree. Tree ties shall not be positioned more than 50mm below top of stake.
4. Soil level at nursery to be marked. Plant tree at depth to match this level. Allow for watering hollow.
5. Top dress with 75mm settled depth of mulch as specified.
6. Tree pit 600x600x450mm deep. Sides of pit loosened with fork prior to planting. Back fill with a mix of topsoil (to BS 3882) and 25 litres of peat free organic planting compost with a pH of 6.5-7.5 Incorporate slow release fertiliser tablets (15+9+9NPK) at the rate of 5 x15g tablets per pit.
7. Break up bottom of pit to a depth of 150mm.

2 FEATHERED TREE 200-250cm HIGH



1. Feathered trees shall be 200-250cm high. The trees shall conform to BS 3936:Part 1 and shall have well defined, upright central stem with evenly spread lateral shoots. The root system shall be adequate size in relation to the crown (10 litres pot if container grown).
2. The stake shall be peeled larch or chestnut previously treated with tanalith wood preservative to BS 1282. The stake shall have a minimum diameter of 65mm and shall project 500mm above finished ground level. Before planting it shall be driven a minimum of 300mm into firm ground below the excavated tree pit or as necessary to secure the tree. The stake shall be positioned to avoid disturbance to the root system. If necessary stakes are to be angled at 45° and driven 300mm into the ground (away from the prevailing wind).
3. Trees shall be securely tied by adjustable reinforced rubber bottle ties with spacers positioned to prevent any abrasion between stake and tree. Tree ties shall not be positioned more than 20mm below top of stake.
4. Soil level at nursery to be marked. Plant tree at depth to match this level. Allow for watering hollow.
5. Top dress with 75mm settled depth of mulch as specified.
6. Tree pit 600x600x450mm deep. Sides of pit loosened with fork prior to planting. Back fill with a mix of topsoil (to BS 3882) and 20 litres of peat free organic planting compost with a pH of 6.5-7.5 Incorporate slow release fertiliser tablets (15+9+9NPK) at the rate of 4 x15g tablets per pit.
7. Break up bottom of pit to a depth of 150mm.

3 NATIVE WOODLAND MIX



The age and height shall be to BS 3936 Part 1

Whips shall be a BR 1+1 and a minimum height of 60-80cm.

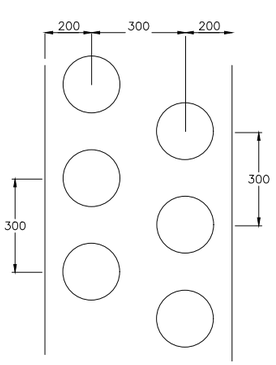
Plants shall be staked with a single 4' cane 22/24mm diameter, hammered a minimum of 400mm below ground.

1. Tree pit 300x300x300mm deep. Sides of pit loosened with fork prior to planting. Backfill with a mix of topsoil (to BS 3882) and 10 litres of peat free organic planting compost with a pH of 6.5-7.5
   Incorporate slow release fertiliser tablets (15+9+9NPK) at the rate of 2 x15g tablets per pit.
2. Soil level at nursery to be marked. Plant tree at a depth to match this level. Allow for watering hollow.
3. Break up bottom of pit to a depth of 150mm.
4. 100% recycled & recyclable tree shelter 600mm length 50mm diameter.
   (Tubex Easywrap Tree Shelter or similar)

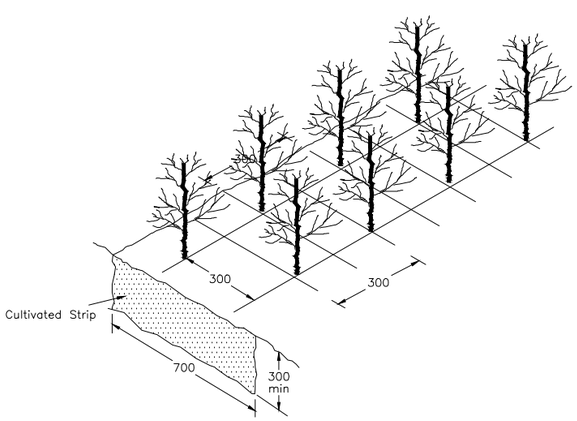
4 MIXED NATIVE HEDGEROW PLANTING

Double Staggered Row (300mm between rows)
Plants 300mm apart (Total 7 Plants per linear metre)

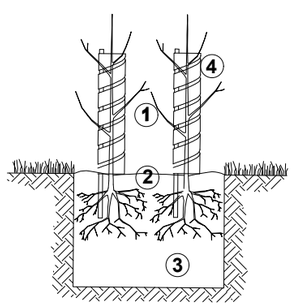
PLAN



PLANTING METHOD & SPACING



SECTION



1. Container shrubs /transplants as specified.
2. Soil level at nursery to be marked. Plant transplant at a depth to match this level. Allow for watering hollow.
3. Planting trench 700wide x 300mm deep, minimum. Sides of pit loosened with fork prior to planting. Backfill with a mix of 2 parts topsoil to BS3882:2015 and 1 part peat free organic planting compost containing trace elements. The compost shall have a pH of 6.5-7.5 and shall include a slow release fertiliser (16+10+10 NPK) at the rate of 60g per sqm.
4. 100% recycled & recyclable tree shelter 600mm length 50mm diameter. (Tubex Easywrap Tree Shelter or similar)

Client
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Project
Synchronous Condenser, Yaxley
S73 Application (Single Condenser)

Drawing Title
Planting Specifications

Created by	Reviewer	Sheet Size	Scale	Date Created
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Drawing Nr.
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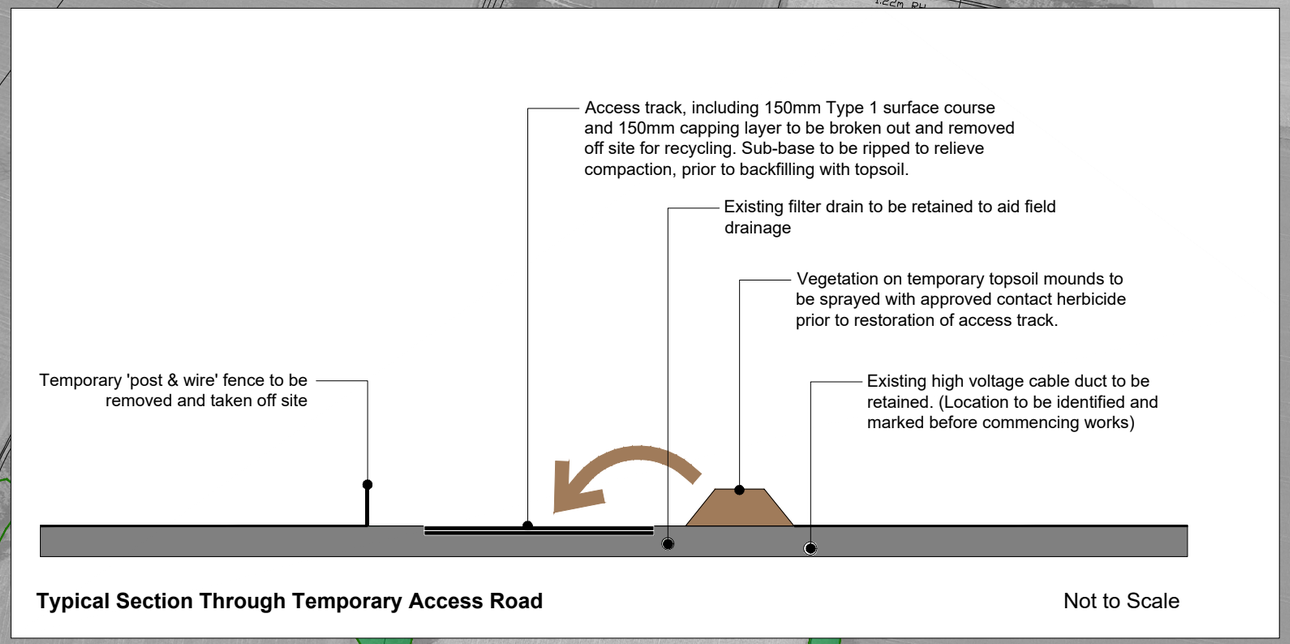

Typical Section Through Temporary Access Road Not to Scale

Culvert 1
Culvert 1 retained as exiting.
Refer to Dwg 59-012-06

Temporary access track to be broken out and granular fill removed from site for recycling. Sub-base to be ripped prior to top-soiling. Refer to Drawing 05-12- 02 for specification

Topsoil from temporary mound to be used for the reinstatement of agricultural land after the access track has been removed

Pre-existing hard-standing and vegetation retained

Kerb alignment and entrance onto A140 retained as exiting

Temporary fencing alongside the access track to be removed and disposed offsite

Below-ground 'filter-drain' adjacent to the access road to to be retained in-situ (below plough depth)

Culvert 3
Culvert 3 to be broken out and hedgerow reinstated alongside Ley's Lane.
Refer to Dwg 059-012-06

Permanent access to Synchronous condenser and Yaxley Sub-station from Ley's Lane retained

LEY'S LANE

Culvert 2
Retained as exiting

Track

Pond

Approximate alignment of underground high voltage power cable. To be retained

N

0 50 100 150m
1:2,500

Key

- Application Boundary
- Existing Vegetation
- Existing Access Track to be Broken Up and Removed from Sit
- Pre-Existing Hard-standing Retained
- Temporary Soil Mound (For Restoration of Access Track)
- Existing Drainage Ditch and Culvert
- Post & Wire Fence To be Removed
- High Voltage Cable (Not to be disturbed)
- Filter Drain Retained to Aid Field Drainage

NOT FOR CONSTRUCTION
DO NOT MEASURE FROM THIS DRAWING

For planting details Culvert 3 Ref Dwg **059-12-07**

For location of culvert details Ref Dwg **059-12-06**

Client
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Project
Synchronous Condensers, Yaxley
Application DC/22/04021 - Condition 12

Drawing Title
Reinstatement of Temporary Access Track

Created by	Reviewer	Sheet Size	Scale	Date Created
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Drawing Nr.
059-12-05

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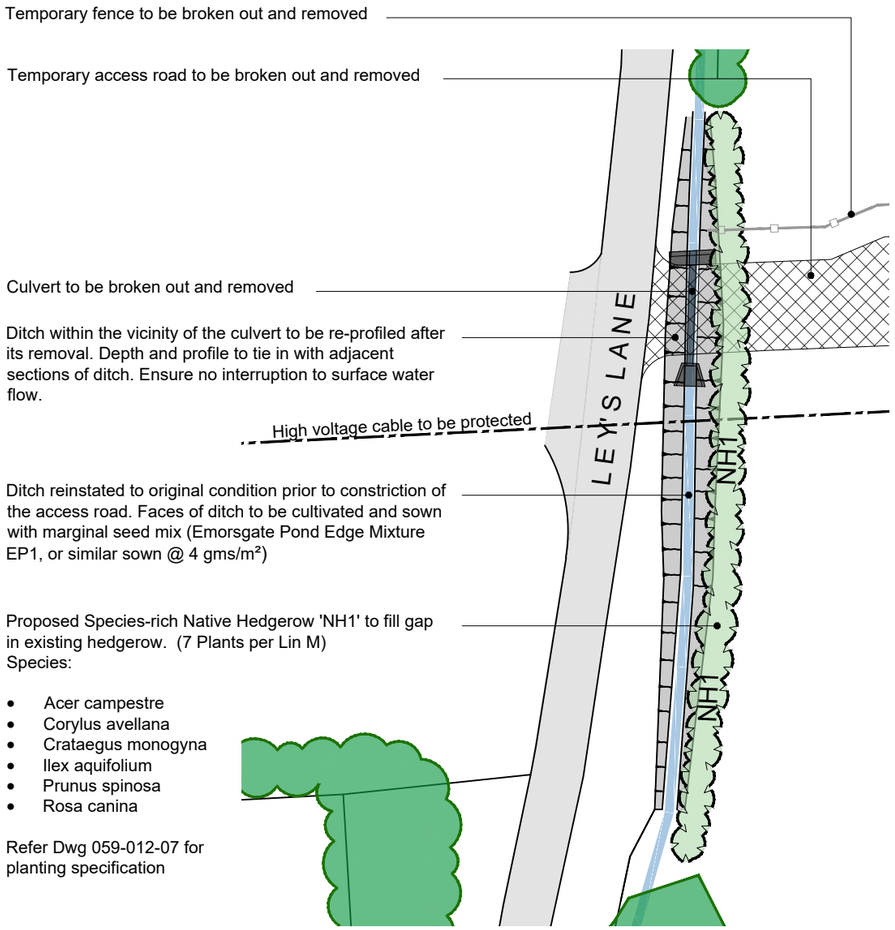
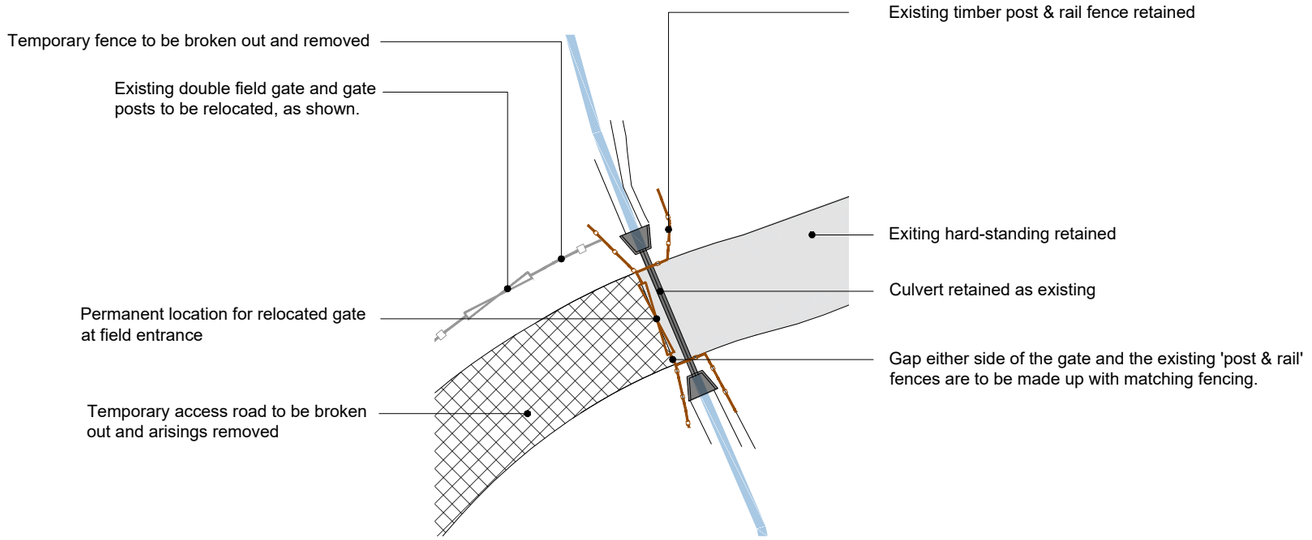
Culvert 3 Adjacent to Ley's Lane

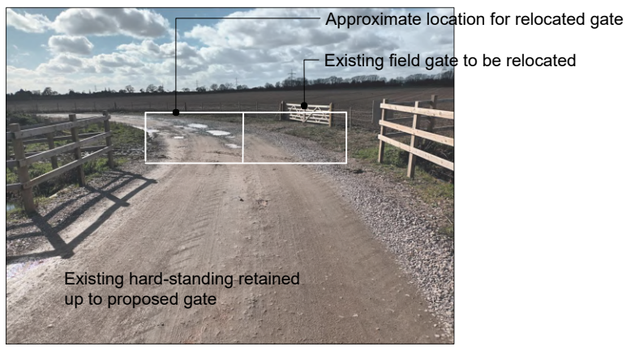


- Acer campestre
- Corylus avellana
- Crataegus monogyna
- Ilex aquifolium
- Prunus spinosa
- Rosa canina

Culvert 1 At Eastern end of the Access Track



Location for relocated gate by Culvert 1



NOT FOR CONSTRUCTION
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For planting details Culvert 3 Ref Dwg **059-12-07**

For location of culvert details Ref Dwg **059-12-05**

Client
Conrad Energy Limited

Project
Synchronous Condensers, Yaxley
Application DC/22/04021 - Condition 12

Drawing Title
Reinstatement of Temporary Access Track Works to Culverts 1 and 2

Created by	Reviewer	Sheet Size	Scale	Date Created
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Drawing Nr.
059-12-06

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Design & Assessment

Specification For Works

Retention of Existing Services
The high voltage electricity cable along the southern edge of the temporary access track will be retained. The contractor shall identify the alignment of the cable and take necessary measures to protect it.
The Contractor shall check with utility companies to ensure that there are no other services within or adjacent to the area of operations.

The existing below-ground filter drain installed along the southern edge of the temporary access track will be retained to aid field drainage.

Existing Gates and fences
The exiting field gate adjacent to Culvert 1 will be relocated to form a new access to the farmland (Refer Detail on Dwg 059-012-06)

The temporary 'post & wire' fence along the northern side of the temporary access track will be removed and taken off site.

Removal of Culvert
Culvert 3 adjacent to Ley's Lane will be broken up and the arisings removed from site. The ditch replacing the culvert will be reinstated to the pre-existing line and levels. The ditch faces will be cultivated and sown with a marginal seed mix as specified (Refer Detail on Dwg 059-012-06).

Culverts 1 and 2 will be retained to facilitate future farm access.

Break up and Removal of Temporary Access Track
The temporary access track formation including 150mm Type 1 surface course and 150mm capping layer track will be broken out and removed off site for recycling (Minimum depth 300mm, or to undisturbed ground).
All material shall be excavated using a 360 degrees hydraulic excavator loading into dump trucks.

Ripping Sub-base
The sub-base will be ripped to relieve compaction. Following removal of access road, the sub-base will be decompacted using a three tine ripper mounted on the back of suitable tracked vehicle. Tines shall be set at 1m centres and the formation will be ripped to a minimum depth of 400mm. Following ripping the Contractor will remove any stones and other contaminants (dimension greater than 100m).

Weed killing Prior to Soil Placement
Four weeks prior to top-soiling the temporary topsoil mounds adjacent to the access track are to be sprayed with an approved contact herbicide to kill off vegetation growth on the mounds.

Soil Placement
After surface vegetation has died, soil is to be excavated from the temporary storage mounds using a 360 excavator and placed on the decompacted sub-base. The soil shall be loosely spread to a minimum depth of 300mm and graded to an even surface and left in a friable state for subsequent cultivation.

The finished ground levels shall be flush with and shall marry into the adjacent ground levels. The contractor shall ensure there are no hollows where ponding could occur, and any large stones or debris on the surface shall be removed.

The placement and spreading of soils will only be permitted when the soils are in a dry and friable condition. Compaction of soils must be avoided. No vehicles shall run on topsoil once re-spread.

Reinstatement of Hedgerow alongside Ley's Lane
A native species-rich hedgerow will be planted alongside the reinstated ditch in accordance with the detail on Dwg 059-012-07
The open ditch replacing the culvert will be sown with a pond edge seed mix
(Emorsgate Pond Edge Mixture EP1, or similar sown @ 4 gms/m²).

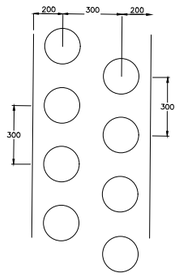
Maintenance
Upon completion of restoration works the land will revert back to agricultural use and will be managed by the landowner. The hedgerow and ditch adjacent to Leys Lane will be maintained in accordance with the Landscape and Ecological Management Plan (LEMP) submitted in relation to Planing Condition 14.

Planting Schedule for Hedgerow at Culvert 3

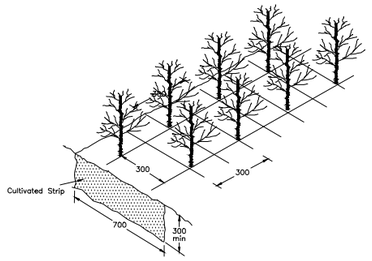
Native Species-rich Hedgerow Mix - NH @7 plants/m - 25cm centres, double staggered row				NH1
			Length/m	43
Species	**Common Name**	**Type/Size**	**%**	**No.**
Acer campestre	Field maple	BR 1+1 /60-80	5	15
Corylus avellana	Hazel	BR 1+1 /60-80	10	30
Crataegus monogyna	Hawthorn	BR 1+1 /60-80	50	151
Ilex aquifolium	Holly	Container/2 ltr	10	30
Prunus spinosa	Blackthorn	BR 1+1 /60-80	20	60
Rosa canina	Dog rose	BR 1+1 /60-80	5	15
	TOTAL		**100**	**301**

Native Hedgerow Planting to Culvert 3 (7 Plants per linear metre)

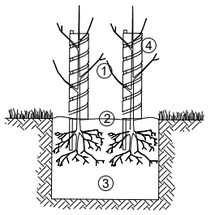
PLAN



PLANTING METHOD & SPACING



SECTION



① Container shrubs /transplants as specified.

② Soil level at nursery to be marked. Plant transplant at a depth to match this level. Allow for watering hollow.

③ Planting trench 700wide x 300mm deep, minimum. Sides of pit loosened with fork prior to planting. Backfill with a mix of 2 parts topsoil to BS3882:2015 and 1 part peat free organic planting compost containing trace elements. The compost shall have a pH of 6.5-7.5 and shall include a slow release fertiliser (16+10+10 NPK) at the rate of 60g per sqm.

④ 100% recycled & recyclable tree shelter 600mm length 50mm diameter. (Tubex Easywrap Tree Shelter or similar)

NOT FOR CONSTRUCTION
DO NOT MEASURE FROM THIS DRAWING

For planting location Ref Dwg **059-12-05**

For culvert details Ref Dwg **059-12-06**

Client
Conrad Energy Limited

Project
Synchronous Condensers, Yaxley
Application DC/22/04021 - Condition 12

Drawing Title
Reinstatement of Temporary Access Track Specification

Created by	Reviewer	Sheet Size	Scale	Date Created
CL	NR	A3	NTS	01.06.23

Drawing Nr.
059-12-07

Revision
A

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DRaW
Design & Assessment

Preliminary Ecological Appraisal
Land at Leys Lane, Yaxley

Prepared for A1 Ecology Limited by Christopher Paul Bell MCIEEM PhD
on behalf of ITPEnergised

February 2023

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Summary

A Preliminary Ecological Appraisal was performed in respect of a proposed synchronous condenser site at Leys Lane, Yaxley, Suffolk, and along the route of an access road connecting the site with the public road network. A desk study and two site visits were carried out, establishing that the main 4-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 first site visit. A small pond in the NW corner of the site was found to be dry during both site visits, including a winter visit in February, but nearby hedgerows were assessed to be species rich and therefore of high biodiversity value. A further 7 ponds within 250 m of the development area boundary were surveyed and two were assessed as having a 'good' Great Crested Newt Habitat Suitability Index. It is therefore recommended that presence/absence surveys for Great Crested Newt should be carried out if further construction is planned in connection with the parts of the access road within the 250 m impact zone of either of these ponds.

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 180a 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 06/2005[2], 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 Appraisal[3]. 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 over the course of two site visits, as was the potential for the habitat present to support protected species. Habitats were mapped using 'UK Habitat Classification' methodology[4] with a 25 m^2 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] Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). *The UK Habitat Classification User Manual Version 1.1* at http://www.ukhab.org/

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 40-50m AOD between the valleys of the River Waveney, which passes ca. 4km to the north on a west to east course at ca. 20m AOD, and that of its tributary the River Dove, which passes ca. 3km to the east of the site on a SW to NE course 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 plan[7]. 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] https://suffolklandscape.org.uk/landscapes/ancient-plateau-claylands/ 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.

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 Leys farm, and a number of records from 'Yaxley Lake' to the east of the site near the A140 road (referred to below as 'pond F'). 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).

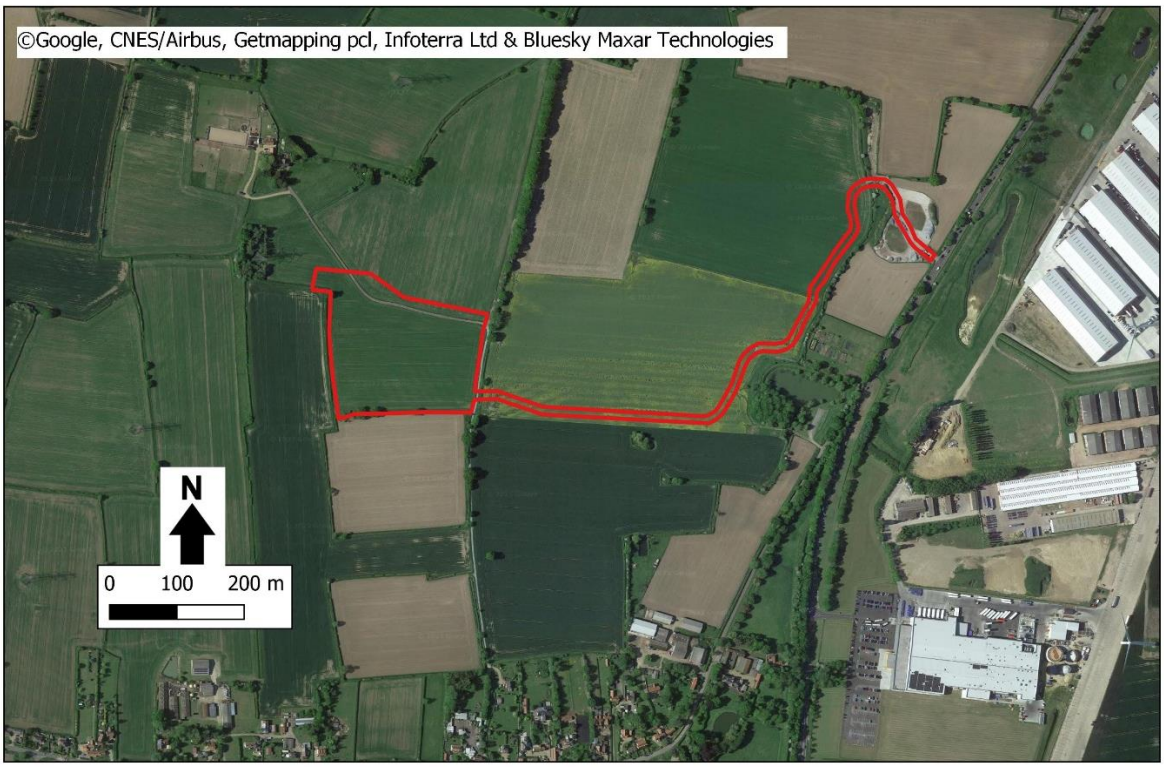
4.2. Site survey

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. An additional site survey was carried out between 1230 and 1630 on 22nd February 2023 and between 0830 and 1330 on 23rd February 2023. Both days were cloudy with intermittent drizzle with a light westerly wind and a maximum of 9°C on the 22nd and a light northerly and maximum of 7°C on the 23rd.

4.2.1. Habitats

The development site comprises a 4-hectare plot on farmland either side of Leys Lane just north of Yaxley village, which was the focus of the June/July 2022 survey, along with the route of an access road linking the main plot with the A140 road ca. 600 m to the east, which was surveyed in February 2023 (Figure 1).

Figure 1. Development site boundary superimposed on June 2021 satellite imagery.



The general area has a flat topography, with a slight descending incline towards the north, and is dominated by arable landuse with hedgerows and occasional avenues of trees (Figure 2). Several ponds occur within 250 m of the development area, all of which were surveyed for Great Crested Newt Habitat Suitability Indices (Figure 2, Table 1). The area is served by two main field drains, one of which passes ca. 200 m to the NW of the main development, where it was found to be dry with minimal vegetation during the first survey, and with a minor discharge of water during the second survey (Photo 1, Appendix B). The second channel follows the line of the access road for part of its length, and was found to contain shallow water intermittently during the second survey, though with no active flow. The section between pond F and the point where it is crossed by the access road is lined by

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

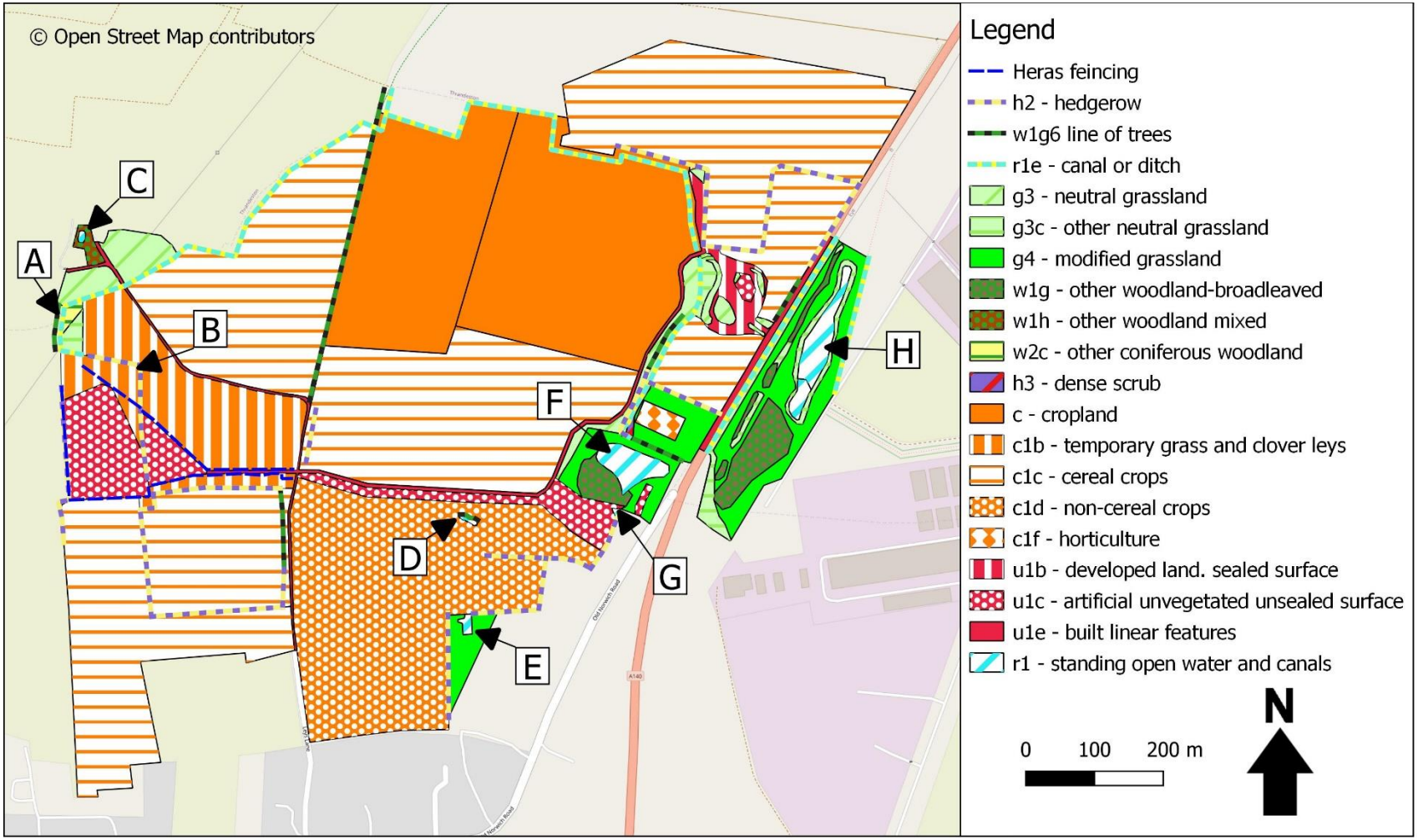


Table 1. Pond characteristics. HSI scores are tabulated in appendix C.

Pond	HSI Category	Description	Photo
A	Below average	Shallow pool of water at junction of field drains	2
B	Poor	Dry bed < 10 m^2	3
C	Below average	Dry during June 22 visit, shallow water February 23. Heavily shaded and few macrophytes.	4
D	Below average	In a deep crater surrounded by trees, and therefore supports relatively little aquatic vegetation, but showed a low level of turbidity and contained a substantial invertebrate fauna (June 22). Present on 1945 aerial photo.	5
E	Good	Present in 1999. Surrounded by amenity grassland and fitted with decking. Water turbid – in and out field drains.	6
F	Below average	Fish pond dating from ca. 2000. Carp, Roach, Bream, Perch & Gudgeon present (pers. comm. by Angler).	7
G	Below average	Small pond (ca. 120m^2) separated from pond F by a farm track.	
H	Good	Amenity pond dating from post-2007. Steep sided with some marginal Willows and Reedmace. Dry mud at southern extremity.	8

hedgerows and avenues of trees, and in part overgrown by bramble scrub (Photo 9). North of the access road crossing point the channel turns towards the west before joining the first channel ca. 500 m to the north of the main development plot (Figure 2).

The main development plot occupies part of an irregularly shaped field bounded to the north and east by Leys Lane as far north as the drainage channel, and part of the adjacent field to the north of Leys Lane. The latter was in active cultivation with a wheat crop in progress during both surveys, but the former had the appearance of recently abandoned arable land, with a sparse and fairly uniform but stunted growth of barley evident during the June/July survey, which was presumably self-seeded from a previously harvested crop (Photo 10). 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). By the time of the second survey in February 2023 a short covering of turf had established across the entire field (Photo 11).

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, and no hedging or fencing is present along the rest of the lane within the development site boundary.

During the first survey a gravel-surfaced construction compound was found to extend over the SW corner of the main development area (Figure 2, Photo 12), and 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. A single large building was present in the construction area to the west of the development site by the time of the February 2023 survey (Photo 13).

A 5 m-wide gravel surfaced road proceeds east from the construction compound (Photo 14), crossing Leys Lane and continuing for ca. ½ km before turning north-east along a course roughly parallel with the A140 road to connect with a 'loop hardstanding' remaining adjacent to the road as a relic from the Second World War Eye aerodrome (Figure 1). Several consolidated soil bunds occur on the hardstanding area supporting ruderal vegetation dominated by Cow Parsley (Photo 15).

Satellite imagery indicates that the construction of the access road took place no earlier than 2021 across arable land, which continues in use north and west of the road apart from a narrow strip between the road and adjacent fencing, which retains the remains of previous cereal crops (Photo 16). Earth bunds are present along the south and east margins of the road for almost its entire length (Photo 17), and a cleared 10-15 m wide strip to the south of the E-W section of the road (Photo 14), as well as an area of ca. ½ hectare to the SW of the bend in the road, remains more or less unvegetated (Photo 18), while the strip to the east of the SW-NE section of the road has been colonised by grasses and ruderals (Photo 19). The remainder of the land between the access road and the A140 road is occupied to the south mostly by amenity grassland surrounding pond F and an adjacent area of allotments, and to the north by further active arable landuse. A small area of semi-mature

broadleaved woodland, comprising Oak and Sycamore occurs immediately south of pond F (Photo 20).

The area immediately east of the A140 surrounding pond H consists of a mosaic of amenity grassland, unkempt areas of tall grass adjacent to the pond and on nearby soil bunds, and areas of densely planted young trees, denoted as woodland in Figure 2 (Photo 21).

4.2.2. Protected species

Several Brown Hares were observed during both surveys in surrounding fields including one within the main development plot during the first survey. During the second survey up to 7 Roe Deer were regularly present in the field to the west of the northern end of the access road, and many deer slots were present in the cleared area south of the E-W section of the access road.

A number of burrows were observed along the route of the access road, most of which were attributable to Rabbit, several of which were also seen. Numerous burrows were present in one of the soil bunds on the hardstanding area adjacent to the A140 road, suggesting the presence of a substantial warren, but no evidence of current occupation observed. An isolated burrow was also observed in the bank surrounding pond H, but appeared too large to suggest Water Vole (Photo 22) and was quite far above the water level, so may also have been attributable to Rabbit.

A large burrow in the side of a soil bund to the east of the access road is characteristic of Fox (Photo 23), and Fox scats were also observed near the junction of the road with the loop hardstanding. Mammal trails consistent with Fox were also seen in long grass entering hedge-lined ditches just north of pond F (Photo 24) and along the west boundary of the main development area, and a single footprint was observed in the cleared area south of the access road. No evidence of the presence of Badger was observed at any point during either survey.

Hedgerow trees surrounding the main development plot were inspected for potential bat roost features during the February 2023 survey, but the only features observed were in two mature oaks near the SW corner of the main development site, one of which featured a hazard beam (Photo 25) and the other a major branch pull-out (Photo 26).

During the June/July 2022 survey a small party of Skylarks was observed on the main development site, including a singing bird indicating that breeding may well have taken place. 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.

No birds were observed on the main development site during the February 2023 survey, but small parties of Yellowhammers and Linnets were frequent on the surrounding farmland, as were parties of both Grey and Red-Legged Partridge. More woodland associated bird species were observed in the area adjacent to the A140, including Song Thrush and Green Woodpecker, and a pair of Oystercatchers was present on pond H.

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.

5.2. Designated sites

Given the localised scale of the development and the absence of either statutory or non-statutory 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 both surveys, 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. Pond A is clearly unsuitable for Great Crested Newts since there will generally be a through-flow of water, and pond B is unlikely to support a viable population of Great Crested Newts even when it contains water, with an estimated habitat suitability index (HSI) of 0.46 (= poor), though it could be used as a satellite pond if there are other populations nearby.

A 'Protected Species Report'[9] produced by Peter Brett Associates in support of the Eye Airfield gas-fired power station development in 2017 summarises the outcome of presence/absence surveys for Great Crested Newt carried out in 2013-14 confirming absence from ponds C, D, E, F & G, which accords with the low suitability scores for all except pond E (Table 1). No presence/absence survey was carried out for pond H, which in

[9] The Progress Power Gas Fired Power Station. Requirement 19 - European Protected Species. Peter Brett Associates, November 2017.

common with pond E was assessed as having a 'good' habitat suitability index (Table 1) suggesting a prior occupancy probability of 79% (ibid.).

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. No trees or hedges will be removed as a result of the proposed development, and the impact on bats will be largely determined by possible disturbance effects on the hedgerows, including potential for disturbance of any roosting bats present in the two mature oak trees along the southern boundary of the main development site.

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 ponds and mostly dry field drains on or adjacent to the site are 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. Both Fox and Roe Deer are also clearly present on the site.

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 construction of a compound with associated installations covering about ¼ of the main development site, 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 main development plot includes the pond in the NW corner and is adjacent to the high value hedgerow habitats along its western and southern edges, all of which may be exposed to disturbance and damage from vehicular movements and construction activities. 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.

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. However, any additional works associated with the access road could potentially affect the probable Fox and Rabbit burrows observed adjacent to its course, and any works taking place along the access road could potentially affect terrestrially refuging Great Crested Newts, should there be breeding populations associated with ponds E or H.

6.3. Long-term impacts

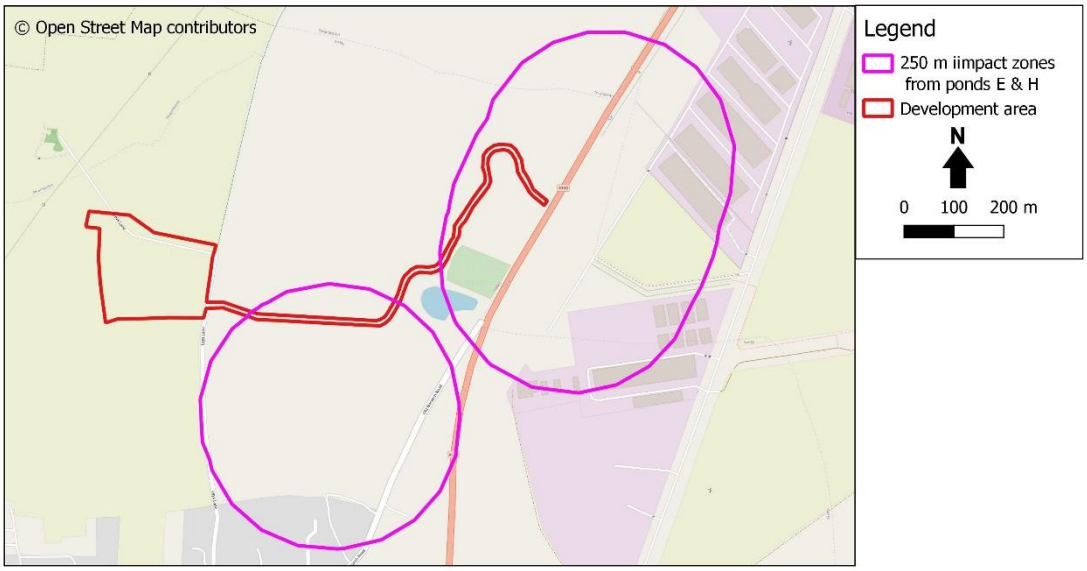
The development will involve the loss of ca. 4 ha of intensively farmed arable land of little biodiversity value. However, there are likely to be some impacts of the ongoing operation of the installation on surrounding habitats including the hedgerows and the adjacent pond, especially considering the additional effects of the associated development occurring immediately west of the site. The development will include lighting for the main plant building, compounds and circulation routes, as a result of which 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 because of increased illumination, which may also affect any roosts present in the two mature Oak trees along the southern perimeter. 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

7.1. Additional survey

Although Great Crested Newts were confirmed absent from pond E in 2013/14, this can no longer be relied upon given the length of time that has passes since then, and no presence/absence survey was carried out at the same time at pond H. Consequently, if any further construction or landscaping activity is planned for areas within 250 m of either of these ponds, which includes parts of the development area along the access road (Figure 3), a presence/absence survey should be carried out. The most straightforward method would be to perform an eDNA survey, which should be carried out between mid-April and the end of June to ensure a reliable result. Should Great Crested Newts be found to be present in either pond, construction works carried out within 250 m are likely to require a protected species licence.

Figure 3. Overlap between development area and 250 m impact zones for ponds E & H.



7.2. 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 main development 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.

Foxes and Rabbits are not protected by biodiversity-related legislation, but are subject to the Wild Mammals (Protection) Act 1996, which may include potential harms to animals

inhabiting burrows affected by construction. An ecologist should therefore be commissioned to check for occupation of the Fox and Rabbit burrows detailed in this report prior to any works affecting them.

7.3. 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 bats[11]. This also applies to potential bat roost features in trees along the southern boundary of the main development site, although any impact is likely to be minor given that these features are ca. 100 m from the proposed single condenser installation.

In particular the lighting regime should conform to the following specifications:

- LED security lighting to be installed, using a warm white colour temperature with peak wavelengths higher than 550nm, and therefore emitting no/very little UV light;
- Lighting to be controlled by motion-sensors with timers programmed for short interval illumination (1 minute);
- Luminaires to be mounted on the horizontal plain with no upward tilt and an upward light ratio of 0%

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 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

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

hedgerows, which will also contribute to the objectives of the Network Expansion Zone by enhancing the connectivity of the surrounding landscape.

Appendix A – Species recorded on-site or mentioned in the text.

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

Common Name	Scientific name	Main field	Main field margin	Hedges & Tree lines	Pond D	Other
Field Maple	*Acer campestre*			✓		
Sycamore	*Acer pseudoplatanus*					✓
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	*Rubus fruticosus*			✓		
Broad-leaved Dock	*Rumex obtusifolius*		✓			
Grey Willow	*Salix cinerea*			✓		
Crack-willow	*Salix fragilis*				✓	
Elder	*Sambucus nigra*					✓
Common Ragwort	*Senecio jacobaea*	✓				
Groundsel	*Senecio vulgaris*	✓				
Woody Nightshade	*Solanum dulcamara*				✓	
Prickly Sow-thistle	*Sonchus asper*	✓				
Branched Bur-reed	*Sparganium erectum*				✓	
Scentless Mayweed	*Tripleurospermum inodorum*	✓				
Reedmace	*Typha latifolia*				✓	
Wych Elm	*Ulmus glabra*			✓		
Common Nettle	*Urtica dioica*				✓	
Field Pansy	*Viola arvensis*	✓				
(Smooth Newt)	*Lissotriton vulgaris*					
(Grass Snake)	*Natrix natrix*					
(Common Frog)	*Rana temporaria*					
(Great Crested Newt)	*Triturus cristatus*					
Oystercatcher	*Haemantopus ostralegus*					
Long-tailed Tit	*Aegithalos caudata*					
Skylark	*Alauda arvensis*					
Red-legged Partridge	*Alectoris rufa*					
Buzzard	*Buteo buteo*					
Stock Dove	*Columba oenas*					
Woodpigeon	*Columba palumbus*					
Carrion Crow	*Corvus corone*					
Blue Tit	*Cyanistes caeruleus*					
Yellowhammer	*Emberiza citrinella*					
Robin	*Erithacus rubecula*					
Linnet	*Linaria cannabina*					
Yellow Wagtail	*Motacilla flava*					
(House Sparrow)	*Passer domesticus*					
Grey Partridge	*Perdix perdix*					
Pheasant	*Phasianus colchicus*					
Green Woodpecker	*Picus viridis*					
(Marsh Tit)	*Poecile palustris*					
Dunnock	*Prunella modularis*					
(Turtle Dove)	*Streptopelia turtur*					
Whitethroat	*Sylvia communis*					
Blackbird	*Turdus merula*					
Song Thrush	*Turdus philomelus*					
(Water Vole)	*Arvicola amphibius*					
(Barbastelle)	*Barbastella barbastellus*					

Roe Deer	*Capreolus capreolus*
(Serotine)	*Eptesicus serotinus*
(Hedgehog)	*Erinaceus europaeus*
Brown Hare	*Lepus europaeus*
(Badger)	*Meles meles*
(Natterer's Bat)	*Myotis nattereri*
Rabbit	*Oryctolagus cuniculus*
Fox	*Vulpes vulpes*

Appendix B – Photos

Photo 1. Field drain NW of main development area in June 2022 (left) and February 2023.

Photo 2. Pond A looking south, June 2022.

Photo 3. Dry bed of pond B, June 2022 (left) and February 2023.

Photo 4. Pond C, February 2023.

Photo 5. Pond D in June 2022 (left) and February 2023.

Photo 6. Pond E looking south, February 2023.

Photo 7. Pond F from the SE, February 2023.

Photo 8. Pond H viewed from the north, February 2023.

Photo 9. Drainage channel east of access road, February 2023.

Photo 10. View to the west from near the NW corner of the main development site, June 2022.

Photo 11. View to the south from near the NW corner of the main development site, February 2023.

Photo 12. View from the north of construction compound in SW corner of the main development area, June 2022.

Photo 13. Building on construction site to west of main development area, viewed from the north, February 2023.

Photo 14. Access road looking west towards main development plot, February 2023.

Photo 15. View to the east across the loop hardstanding near the A140 road, February 2023.

Photo 16. Access road north of pond F, looking SW, February 2023.

Photo 17. Soil bunds east of access road near junction with loop hardstanding, February 2023.

Photo 18. Cleared area SE of point at which the access road turns north, looking east, February 2023.

Photo 19. View south along the access road from NW of pond F, February 2023.

Photo 20. Woodland south of pond F, February 2023.

Photo 21. Area south of pond H, looking south.

Photo 22. Burrow in the SW side of the pond H excavation.

Photo 23. Burrow entrance in the east side of a soil bund beside the access road NW of the area of allotments.

Photo 24. Mammal trails through a hedgerow into a dry section of the drainage channel north of pond F.

Photo 25. Hazard beam in hedgerow Oak along southern boundary of main development site, February 2023.

Photo 26. Branch pull-out, hedgerow Oak along southern boundary of main development site, February 2023.

Appendix C – Great Crested Newt Habitat Suitability Index Scores

Factor	**Ponds**							
	A	B	C	D	E	F	G	H
Location	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area	0.05	0.05	0.30	0.40	0.80	0.80	0.30	0.80
Drying	0.50	0.10	0.10	0.50	0.90	0.90	1.00	0.50
Water quality	0.33	0.67	0.67	1.00	0.33	1.00	1.00	0.67
Shade	0.20	0.20	0.20	0.60	1.00	1.00	1.00	1.00
Fowl	1.00	1.00	1.00	1.00	0.67	0.67	0.67	0.67
Fish	1.00	1.00	1.00	1.00	0.67	0.01	0.01	0.67
Ponds	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Terrestrial Habitat	1.00	0.67	1.00	0.01	0.33	0.67	0.67	0.33
Macrophytes	0.30	0.30	0.50	0.60	0.40	0.60	0.60	0.30
Score	0.53	0.46	0.58	0.51	0.72	0.56	0.52	0.72
Suitability	Below average	Poor	Below average	Below average	Good	Below average	Below average	Good