Land off Station Road, Meldreth

Preliminary Ecological Appraisal

Produced for Axis Land Partnership

By Applied Ecology Ltd

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1 Introduction

Background

1.1 In April 2023 Applied Ecology Ltd (AEL) was commissioned by Axis Land Partnership to carry out a Preliminary Ecological Appraisal (PEA) of farmland located between Chiswick End and Station Road in Meldreth, Cambridgeshire, SG8 6NY ("the Site"). A map showing the location of the Site is provided in **Figure 1.1**.

1.2 The PEA was required to determine the likely ecological constraints associated with a proposal to redevelop the site (the details of which are not known), and to establish the potential scope of further, more detailed ecological surveys which may be needed to support any future planning application(s).

1.3 This report provides details of a habitat and faunal survey of the Site undertaken on 28 April 2023 and includes a description of the Site's habitats, and a summary of its biodiversity opportunities and constraints. However, this report does not, nor is it intended to, provide a detailed or comprehensive assessment of the development impacts in the form of an Ecological Impact Assessment (EcIA). Recommendations for further surveys are also provided, where these are considered relevant and necessary.

Legislation and Planning Policy

Legislation

1.4 The Wildlife and Countryside Act 1981 (as amended) provides the main legal framework for nature conservation and species protection in the UK. The Site of Special Scientific Interest (SSSI) is the main statutory nature conservation designation in the UK. Such sites are notable for their plants, or animals, or habitats, their geology or landforms, or a combination of these. Natural England is the key statutory agency in England for advising Government, and for acting as the Government's agent in the delivery of statutory nature conservation designations.

1.5 Designation of a SSSI is a legal process, by which sites are notified under the Wildlife and Countryside Act 1981. The 1981 Act makes provision for the protection of sites from the effects of changes in land management, and owners and occupiers receive formal notification specifying why the land is of special scientific interest, and listing any operations likely to damage the special interest.

1.6 The Countryside and Rights of Way Act 2000, and The Natural Environment and Rural Communities (NERC) Act 2006, provide supplementary protected species legislation. Specific protection for badgers *Meles meles* is provided by the Protection of Badgers Act 1992.

Habitats and Species of Principal Importance in England

1.7 The Natural Environment and Rural Communities (NERC) Act came into force on 1 October 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in

England. The list has been drawn up in consultation with Natural England, as required by the Act.

1.8 The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Habitats of Principal Importance

1.9 Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. They include terrestrial habitats such as upland hay meadows to lowland mixed deciduous woodland, and freshwater and marine habitats such as ponds and sub-tidal sands and gravels.

Species of Principal Importance

1.10 There are 943 species of principal importance included on the S41 list. These are the species found in England which were identified as requiring action under the UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. In addition, the hen harrier *Circus cyaneus* has also been included on the list because without continued conservation action it is unlikely that the hen harrier population will increase from its current very low levels in England.

1.11 In accordance with Section 41(4) the Secretary of State will, in consultation with Natural England, keep this list under review and will publish a revised list if necessary.

National Planning Policy Framework

1.12 The National Planning Policy Framework (NPPF) was published in March 2012 (and replaced previous planning policy guidance (PPS 9) on biodiversity. The NPPF was updated in July 2018, February 2019, and in July 2021, and states the following in relation to biodiversity and planning:

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

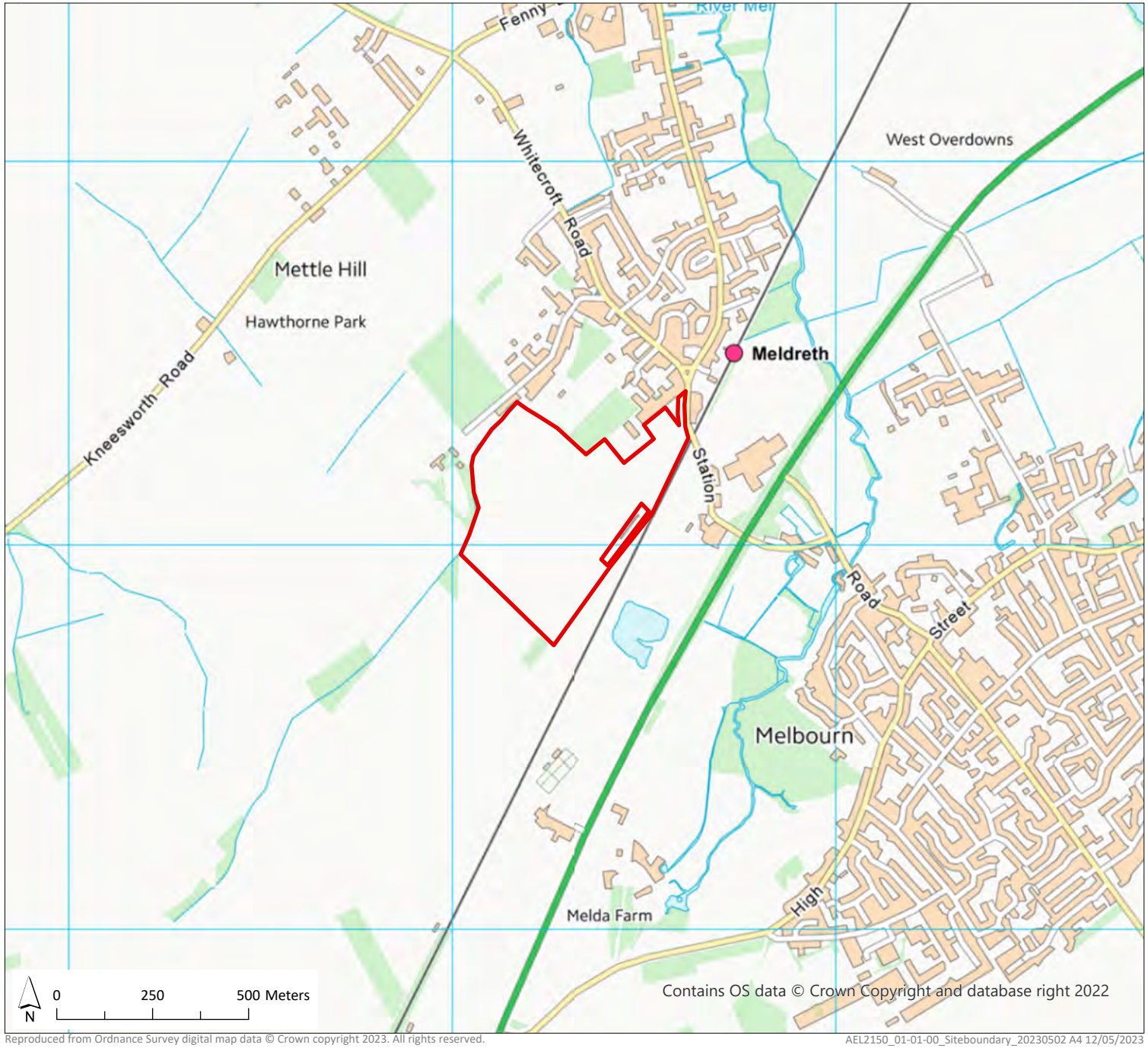
- *if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *development on land within or outside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

- *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity 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.*

1.14 The following should be given the same protection as habitats sites:

- *potential Special Protection Areas and possible Special Areas of Conservation;*
- *listed or proposed Ramsar sites; and*
- *sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.*

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



Station Road, Meldreth

Site location

Site boundary

Figure 1.1

Map Scale @ A4: 1:15,000

Surveyed by: n/a	
Survey date: n/a	
Drawn by: NB	
Checked by: DP	
Status: Final	

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AEL2150_01-01-00_Siteboundary_20230502 A4 12/05/2023

2 Survey Approach

Pre-existing Biological Data

2.1 The Cambridge and Peterborough Environmental Records Centre (CPERC) was commissioned by AEL to complete a search of its database for existing biological records. This included a search for records of statutory and non-statutory designated wildlife sites, ancient woodland, and protected and notable species both on the Site and the surrounding area.

2.2 A review of the government's MAGIC[1] online mapping tool was also completed to ascertain information on statutory wildlife sites, ancient woodland and granted European Protected Species (EPS) mitigation licences close to the Site.

Habitats and Plants

2.3 An extended Phase 1 habitat survey was undertaken for the Site on 28 April 2023 by Duncan Painter (DP) MCCIEM[2] and Nick Bayne (NB) QualCIEEM, in dry and bright weather conditions. The methodology adopted followed the standard JNCC approach to Phase 1 habitat survey (JNCC, 2010[3]) by which all habitats present within the Site were classified and mapped according to standard categories. Habitat patches were mapped as polygon features, and if sufficient space on the map linear features (such as walls and fences) as lines where this provided added value. Point features were recorded where there were notable isolated trees or scrub. Plant species abundance was noted using the DAFOR[4] system, the plant species list from the Site visit is shown in **Appendix A**.

2.4 The habitat map was subsequently digitised using a Geographical Information System (ArcGIS Pro).

Fauna

2.5 The standard Phase 1 habitat survey was "extended" to include a search for evidence of or potential for the presence of protected species or species of nature conservation interest within and close to the Site. This was not a detailed survey for such species, but included noting the presence of habitats suitable to support specific protected species, and where seen, any evidence of presence such as droppings, mammal tracks and footprints, shelters (or nests/roosts), hair caught on fence-wire, foraging signs, and so on.

[1] http://www.magic.defra.gov.uk/MagicMap.aspx accessed 07/12/2022.

[2] Holds three separate licences pertaining to bat survey: WML-CL18; WML-CL21; and WML-CL32 and has been a registered bat roost volunteer visitor for Natural England (WML-CL15). Holds class licences in relation to badger (WML-CL35) and great crested newt (WML-CL09 & WML-CL33), hazel dormouse (WML-CL10A), and native crayfish (WML-CL11).

[3] **JNCC (210)** *Handbook for Phase 1 Habitat Survey – A technique for Environmental Audit*. JNCC, Peterborough.

[4] DAFOR: whereby species occurrence may be classified as being **d**ominant, **a**bundant, **f**requent, **o**ccasional or **r**are. Rare in the context of a DAFOR score should not be confused with species rarity in the more widely accepted meaning of general scarcity.

Bats

Preliminary bat roost assessment

2.6 A preliminary bat roost assessment of any existing on-Site building and trees was completed on 28 April 2023.

2.7 The inspection of the building and trees to assess their roosting use/suitability for bats can be conducted at any time of year, according to the best practice survey guidance (Collins, 2016[5]). However, finding evidence of bats (e.g., their droppings) on external surfaces that are unprotected from rainfall may be restricted if undertaken outside the main bat active season (May to September) and/or after periods of wet weather. Bat droppings inside buildings may also quickly disintegrate in damp conditions.

2.8 On-Site buildings and trees were surveyed externally in line with Collins (2016) using binoculars and torches, as necessary, to search for evidence of bats.

2.9 Evidence of bats was searched for and included live and dead bats (e.g., roosting in cracks and crevices in brickwork and structural timbers), bat droppings on walls and other exposed surfaces and staining (caused by bat fur oils and/or urine spots).

2.10 The suitability for roosting bats of the buildings subject to potentially being demolished and trees proposed for removal as part of the Development was classified according to the categories and descriptions defined by Collins (2016) for roosting habitats, as summarised in **Table 2.1**.

Table 2.1: Guidelines for assessing the potential suitability of proposed development sites for bats, based on the present of habitat features within the landscape, to be applied using professional judgement (after Collins, 2016).

Suitability	Description of roosting habitat
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A tree of sufficient size and age to contain Potential Roost Features (PRFs) but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Great crested newt

2.11 In advance of the survey the 1:25,000 scale Ordnance Survey map was checked and online aerial photos inspected to identify any ponds within 250 m of the Site that could potentially support breeding populations of the legally protected amphibian great crested newt *Triturus cristatus* (GCN).

[5] Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).* The Bat Conservation Trust, London.

3 Results

Pre-existing Biological Data

Protected sites

3.1 The location of statutory designated wildlife sites in relation to the Site are shown in **Figure 3.1**.

3.2 The nearest nationally important statutory designated Site is **Holland Hall (Melbourn) Railway Cutting Site of Special Scientific Interest (SSSI)**, 1.5 km south. This is a railway cutting designated for its wide range of plants that are characteristic of chalk grassland such as upright brome *Bromopsis ramose*, quaking grass *Briza media*, and yellow oat-grass *Trisetum flavescens*; the nationally rare greater pignut *Bunium bulbocastanum* is also present.

3.3 The next closest nationally important statutory designated Site is **L-moor, Shepreth SSSI**, 2 km to the north This is designated for its botanically rich calcareous grasslands that also provide high value habitat for invertebrate life, these sections of grassland are scarce in Cambridgeshire and rare in the country as a whole. An adjacent chalk stream supports a range of aquatic plants such as four species of water crowfoot *Ranunulus* spp and arrowhead *Sagittaria sagittifolia*.

3.4 The closest statutory designated site is **Meldreth Local Nature Reserve (LNR)**, 590 m north, this is designated for its ash *Fraxinus excelsior* woodland and variety of habitats including open woodland, dense thicket, riverside habitat and open grassy rides.

3.5 There are no non-statutory designated wildlife sites within 1 km of the Site

3.6 The closest parcel of ancient woodland is **Rouses Wood**, a 4.7 ha section of ancient and semi-natural woodland 6.3 km north-west.

Protected species

3.7 A total of 773 records were returned by CPERC, these are summarised below.

3.8 **Amphibians** – two records for common frog *Rana temporaria*, both over 1 km away from the Site.

3.9 **Bats** – 31 records, including 21 recorded to species level between five species, these were soprano pipistrelle *Pipistrellus pygmaeus* (one record), common pipistrelle *P. pipistrellus* (eight records), brown long-eared bat *Plecotus auritus* (eight records), noctule *Nyctalus noctula* (three records), and Natterer's bat *Myotis nattereri* (one record).

3.10 **Birds** – 615 records between 51 species, most of these were not relevant to the Site but species of conservation importance relevant to the Site include skylark *Alauda arvensis* (21 records), grey partridge *Perdix perdix* (33 records), turtle dove *Streptopelia turtur* (16 records), and corn bunting *Emberiza calandra* (55 records).

3.11 **Other mammals** – 60 records between five species, including badger *Meles meles* (14 records), otter *Lutra lutra* (11 records), water vole *Arvicola amphibius* (31 records),

hedgehog *Erinaceus europaeus* (two records), and brown hare *Lepus europaeus* (two records). The majority of these were recorded around the River Mel, 500 m east.

3.12 **Reptiles** – one record for common lizard *Zootoca vivipara* 800 m south of the Site.

3.13 **Invertebrates** – three records between grey dagger *Acronicta psi* (two records) and cinnabar moth *Tyria jaconaecae* (one record).

Habitats and Plants

3.14 The Phase 1 habitat map is shown in **Figure 3.2**. A summary of the habitats recorded is provided in **Table 3.1** below and a selection of habitat survey photographs can be found in **Figure 3.3**.

3.15 The Site was entirely dominated by **arable** land that was in crop with wheat at the time of the survey.

3.16 A narrow field edge strip of **poor semi-improved neutral grassland** that was characterised by perennial rye-grass *Lolium perenne*, common nettle *Urtica dioica*, cleavers *Galium aparine*, and garlic mustard *Alliaria petiolate* was present around the edge of the field.

3.17 A wider field edge strip of **semi-improved neutral grassland** (reported to have been sown with a wildlife stewardship AB9 winter bird seed mix) was present along the south-eastern edge of the field and supported, amongst other species, red campion *Silene dioica*, oxeye daisy *Leucanthemum vulgare*, and common knapweed *Centaurea nigra*. **Tall ruderal** vegetation was present at the western end of this grassland area which supported cow parsley *Anthriscus sylvestris*, with hemlock *Conium maculatum*, and common hogweed *Heracleum sphondylium*.

3.18 A strip of **hard-standing** was present along the eastern boundary of the Site in the form a track, at the northern end of this track was a small amount of **dense hawthorn scrub**.

Table 3.1: Summary of habitat types recorded on the Site.

Habitat	Area (ha)	% of Site
Arable	18.435	91.38
Dense scrub	0.033	0.16
Hard-standing	0.863	4.28
Poor semi-improved neutral grassland	0.236	1.17
Semi-improved grassland	0.500	2.48
Tall ruderal	0.106	0.53
TOTAL	**20.174**	**100.00**

3.19 Off-Site habitats comprising scrub, hedgerow, mature trees and woodland bounded the western boundary of the Site. These habitats had elevated nature conservation and biodiversity value.

Faunal species

Bats

Roosting bats

3.20 The Site was devoid of buildings, built structures and trees, and offered no opportunity for roosting bats.

Commuting and foraging bats

3.21 Arable land 500 m to the south of the Site has been subject to bat activity (manual and automated surveys over spring, summer and autumn) by AEL in the recent past, and was found to be of negligible value to commuting and foraging bats.

3.22 The value of the current Site for foraging and commuting bats was considered to be negligible as it was almost entirely dominated by intensive arable land.

Birds

3.23 The land within the Site boundary was of limited value to breeding birds, with only a single skylark *Alauda arvensis* holding territory over the Site at the time of the survey.

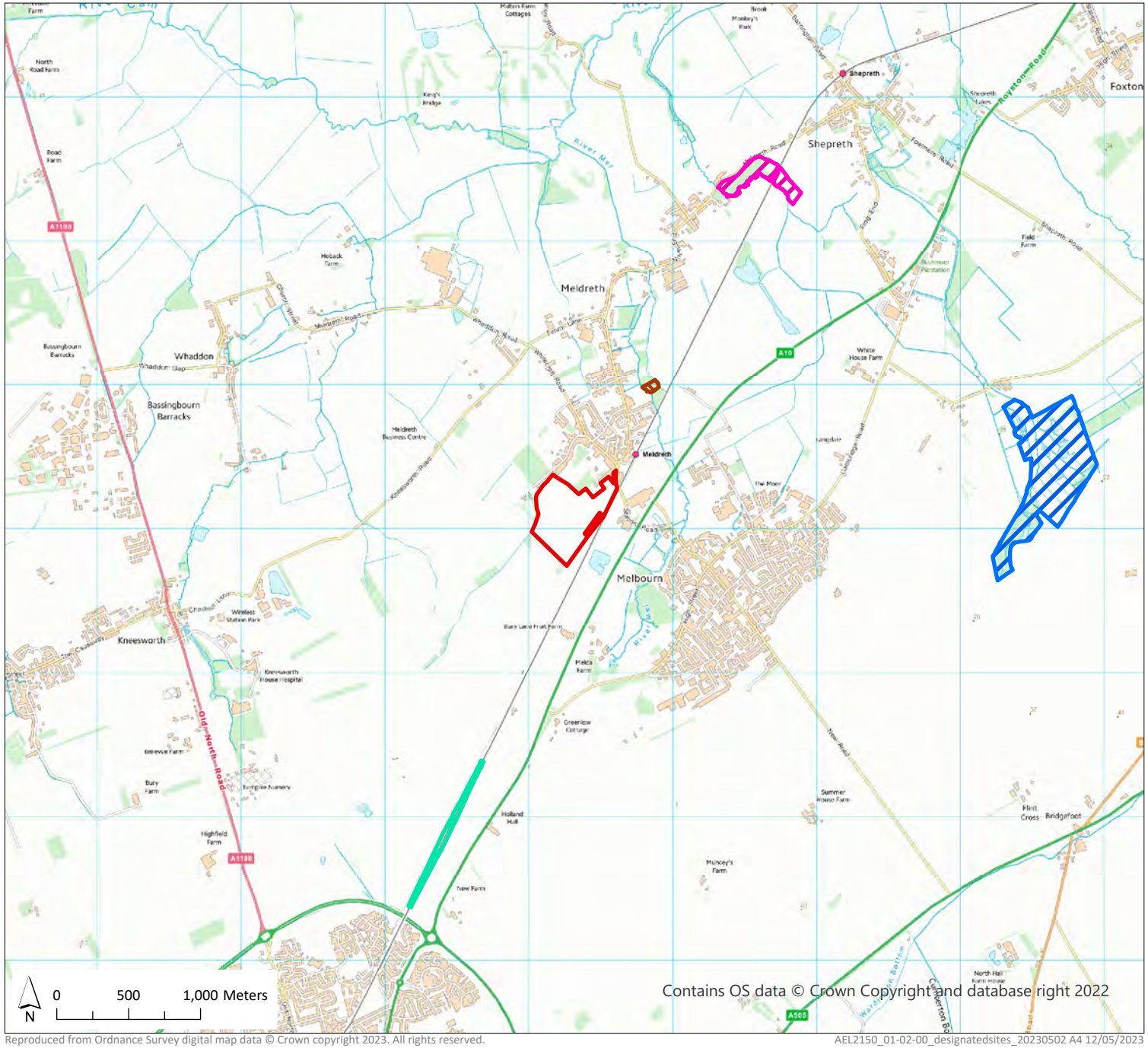
3.24 The off-site scrub, hedgerow, trees and woodland alongside the western Site boundary held small numbers of garden and woodland birds that were on territory during the walkover survey. The species present included song thrush (2 pairs), robin (3 pairs), blue tit (1 pair), great tit (1 pair), greenfinch (1 pair), dunnock (1 pair), wren (1 pair), carrion crow (1 pairs), goldfinch (1 pair), chiff chaff (1 pair), wood pigeon (1 pair).

Great crested newt

3.25 One waterbody is present within 250 m of the Site boundary, this is 90 m south-east of the Site and is a large coarse fishing lake that is unsuitable for great crested newt as it is fish stocked and is isolated from the Site by a rail line – see **Figure 3.4.**

Badger

3.26 A small number of multi-pit badger latrines and a badger sized push under a fence were present alongside the south-western Site boundary fence just inside the Site boundary. No badger setts or other evidence of badger was obviously present within the wider Site.



Station Road, Meldreth

Statutory designated sites

- Site boundary
- Holland Hall (Melbourn) Railway Cutting SSSI
- Fowlmere Watercress Beds SSSI
- L-moor, Shepreth SSSI
- Melwood LNR

Figure 3.1

Map Scale @ A4: 1:40,000

Surveyed by: n/a	
Survey date: n/a	
Drawn by: NB	
Checked by: DP	
Status: Final	

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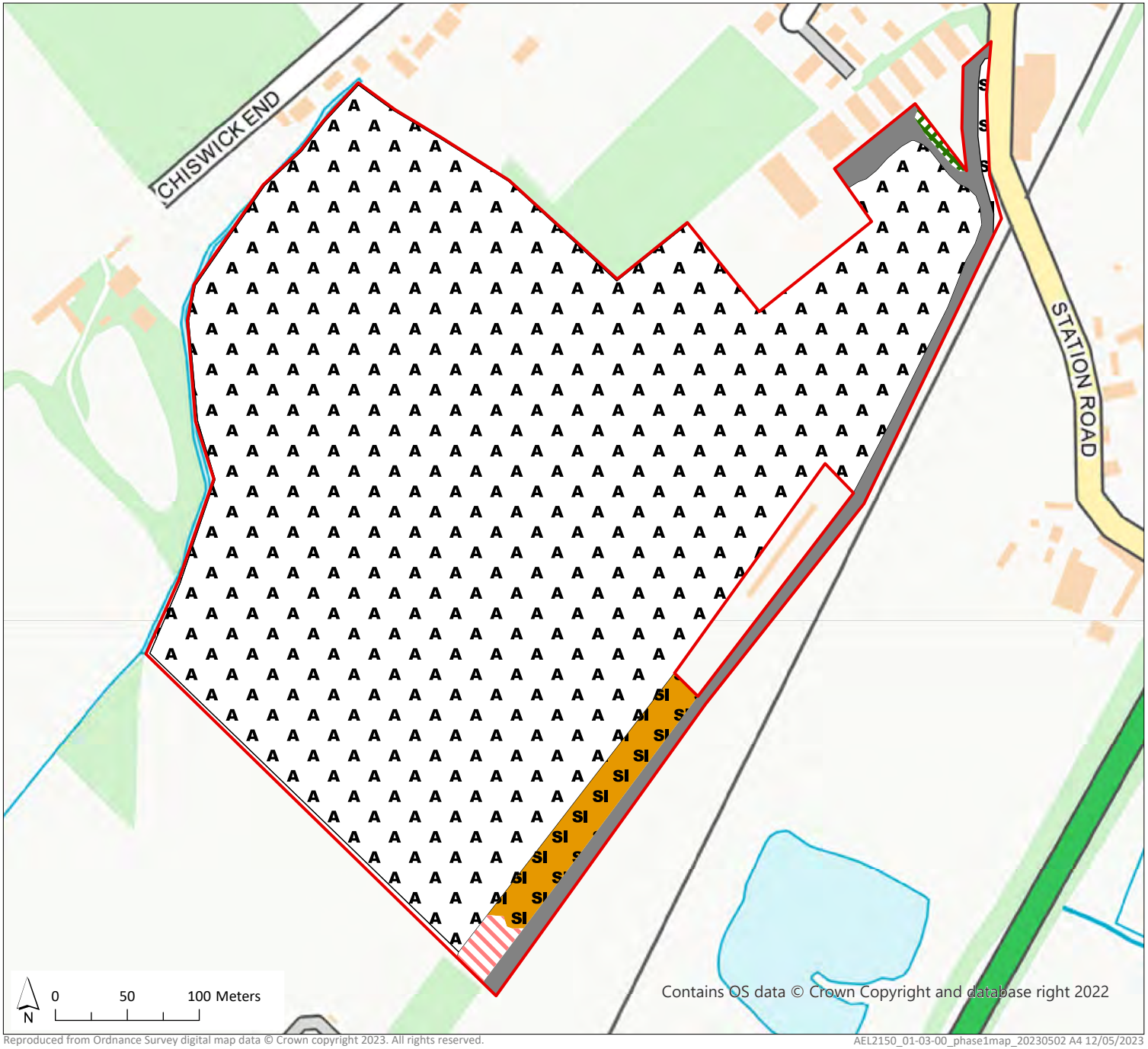

Station Road, Meldreth

Phase 1 habitat map

- Site boundary
- arable
- dense scrub
- hard-standing
- poor semi-improved grassland
- semi-improved neutral grassland (AB9 seed mix)
- tall ruderal

Figure 3.2

Map Scale @ A4: 1:4,000

Surveyed by: DP, NB	
Survey date: 28 April 2023	
Drawn by: NB	
Checked by: DP	
Status: Final	

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Photo 1 - narrow strip of species poor neutral grassland along field edge with off-site hedge left of picture

Photo 2 - arable wheat crop

Photo 3 - arable wheat crop and off-site mature trees and woodland

Photo 4 - badger latrine

Photo 5 - semi-improved grassland

Photo 6 - tall ruderal

Figure 3.3

Photos taken April 2023

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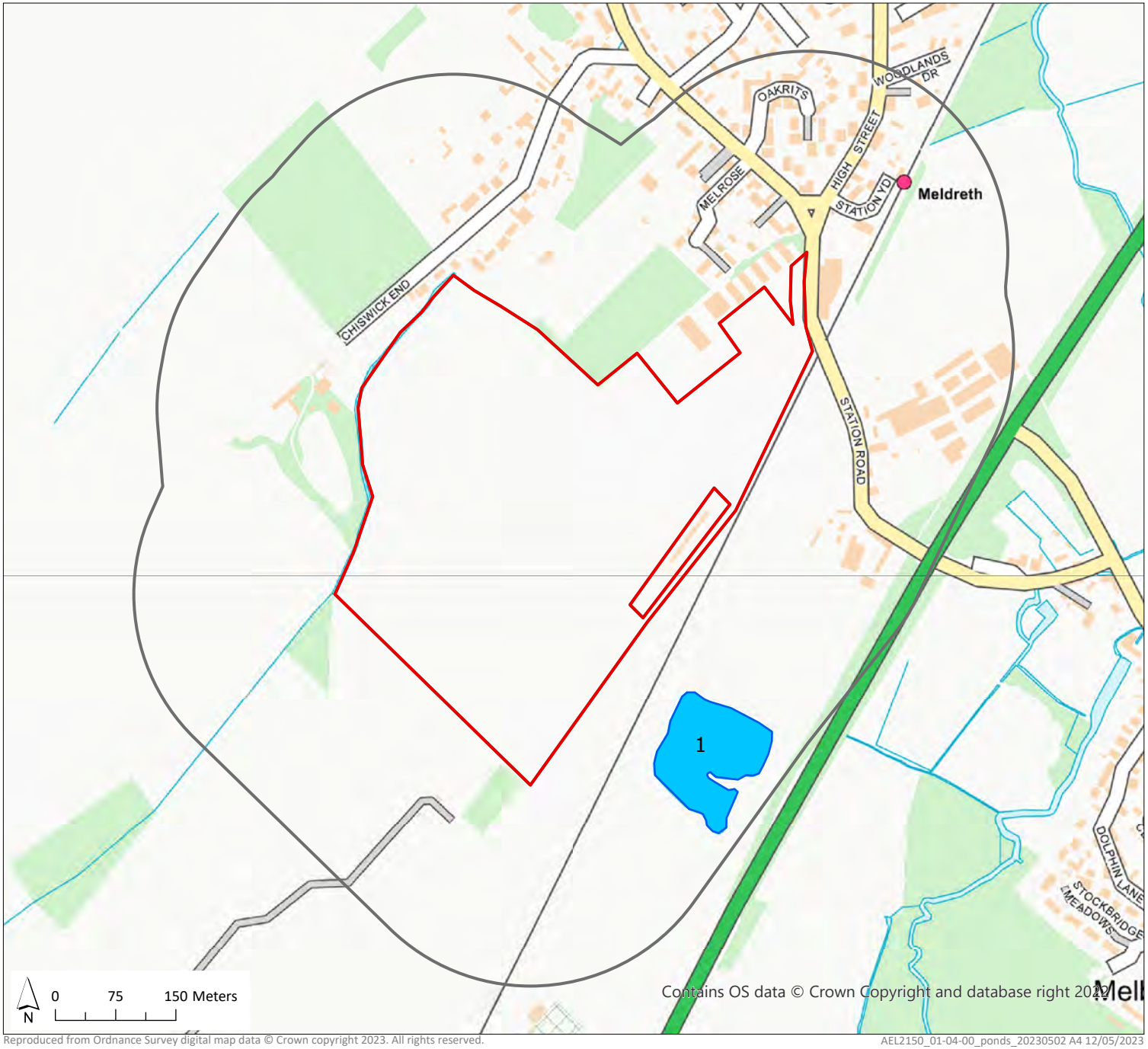

Station Road, Meldreth

Ponds within 250 m of Site

- Site boundary
- 250 m buffer
- ponds

Figure 3.4

Map Scale @ A4: 1:7,164

Surveyed by: n/a	
Survey date: n/a	
Drawn by: NB	
Checked by: DP	
Status: Final	

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4 Development Implications and Recommendations

Development Implications

Protected sites

4.1 Redevelopment of the Site will have no direct adverse impact on any protected wildlife site given its location far from any designated site.

4.2 The Site is, however, located within an outer Natural England development impact risk zone around Holland Hall (Melbourn) Railway Cutting SSSI and L-moor Shepreth SSSI. NE state the following with regards potential impacts on these SSSIs from development "*New housing developments will require an assessment of recreational pressure on relevant SSSIs and measures to mitigate adverse impacts e.g. alternative open space provision*."

Habitats

4.3 The Site was comprised mainly of arable land of low habitat value and supported no habitats with high levels of nature conservation value / biodiversity importance that could be considered to be a development design constraint.

Fauna

4.4 The redevelopment of the Site is considered unlikely to result in significant adverse impacts on faunal species.

4.5 The loss of farmland will result in the displacement (loss) of habitat suitable for farmland nesting birds, and it can be predicted that this would result in the loss of a single pair of skylark.

4.6 Direct development Impacts on other faunal species are not considered to be significant. In-direct adverse impacts on nocturnal wildlife (notably bats) that may utilise off-Site woodland, trees, hedgerows and scrub alongside the western boundary of the Site is something that should be considered with regards to development design.

Recommendations

Development Design

4.7 Off-site scrub, hedgerow, mature trees and woodland habitats that adjoin the Site along the western boundary should be regarded as high value habitats that should not subject to increased levels of illumination at night from street or other security lighting associated with the new development. If there is a risk that these habitats may be subject to increased levels of illumination at night, further survey and assessment of their use by bats is recommended.

4.8 Areas of recreational open space should be designed and incorporated within the development to minimise the risk of indirect recreational disturbance to nearby SSSI

wildlife sites. Creation of meadow grassland with cut grass footpaths will provide recreational space for dog walking and play and could also could contribute to any future Biodiversity Net Gain (BNG) requirement.

4.9 Tree planting in areas of public realm within the Site should also assist with meeting BNG requirements, alongside the use of biodiverse roofs and permanent SUDS wetlands within the development.

4.10 Consideration should also be given to the incorporation of swift nest boxes in the exteriors of new buildings as a biodiversity enhancement measure.

Appendix A
Plant species lists

Poor semi-improved grassland

Species	DAFOR
common nettle *Urtica dioica*	A
cleavers *Galium aparine*	A
hogweed *Heracleum sphondylium*	O
cow parsley *Anthriscus sylvestris*	F
garlic mustard *Alliaria petiolata*	A
dove's-foot crane's-bill *Geranium molle*	F
cock's-foot *Dactylis glomerata*	D
false oat-grass *Arrhenatherum elatius*	F
perennial rye-grass *Lolium perenne*	A
bramble *Rubus fruticosus*	O
lords-and-ladies *Arum maculatum*	O
red dead-nettle *Lamium purpureum*	F
white dead-nettle *Lamium album*	O
common ragwort *Senecio jacobaea*	R

Tall ruderal

Species	DAFOR
cow parsley *Anthriscus sylvestris*	D
hemlock *Conium maculatum*	A
hogweed *Heracleum sphondylium*	D
dandelion *Taraxacum officinale* agg.	O
common nettle *Urtica dioica*	F

Semi-improved grassland

Species	DAFOR
red campion *Silene dioica*	A
clustered dock *Rumex conglomeratus*	A
oxeye daisy *Leucanthemum vulgare*	D
common knapweed *Centaurea nigra*	A
hedge bedstraw *Galium mollugo*	F
red clover *Trifolium pratense*	A
spurge species *Euphorbia sp*	O
yarrow *Achillea millefolium*	O