

Botanical Assessment

Phase 6, Ridgeons, Ashdon Road, Saffron Walden

Site	Land at Ridgeons, Ashdon Road, Saffron Walden
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Declaration of compliance

The information which we have provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Validity of data

Unless stated otherwise the information provided within this report is valid for a maximum period of 24 months from the date of survey. If works at the site have not progressed by this time an updated site



visit may be required in order to determine any changes in site composition and ecological constraints.



CONTENTS

1.	EXE	CUTIVE SUMMARY4
2.	INTR	RODUCTION
	2.1.	Aims and scope of the report5
2	2.2.	Site description and previous survey effort5
	2.3.	Proposed development
	2.4.	Legislation and planning policy6
3.	MET	HODOLOGIES9
	3.1.	Walkover and NVC survey9
	3.2.	Surveyors10
	3.3.	Constraints on the methodologies11
4.	RES	ULTS12
4	4.1.	Walkover survey12
4	4.2.	NVC survey
5.	EVA	LUATION AND RECOMMENDATIONS14
į	5.1.	Overall evaluation of grassland14
į	5.2.	Conservation value of grassland14
į	5.3.	Recommendations
6.	CON	ICLUSION22
7.	REF	ERENCES
8.	APP	ENDICES
8	8.1.	Appendix 1: Photographs25
8	3.2.	Appendix 2: National Planning Policy Framework (NPPF)27
8	8.3.	Appendix 3: The quadrat data, MAVIS output and grid references for the grassland
8	8.4.	Appendix 4: Comprehensive botanical records of grassland with indicator species status .31



1. EXECUTIVE SUMMARY

MKA Ecology Ltd was commissioned to undertake a botanical survey of the grassland at Phase 6, Ridgeons in Saffron Walden. This was completed on 6 July 2017. The aim of this assessment was to identify the plant communities present and assess their conservation value, in addition to detailing further surveys or mitigation, if required.

The grassland is situated on a steep bank at the west of the Ridgeons site. The botanical survey comprised a walkover survey and National Vegetation Classification assessment to determine the plant community present.

The walkover survey identified 64 plant species in the grassland, which included strong populations of three chalk grassland indicator species. The National Vegetation Classification survey found the grassland to comprise a species-rich sub-community of *Arrhenatherum elatius* grassland.

The retention of the grassland is not possible due to the design scheme and therefore a translocation of turves to grassland in close proximity to its existing location should be undertaken. A method statement should be drafted to detail how this will be achieved and measures for enhancement and long-term management of this habitat area.

This mitigation will avoid losses to biodiversity. With the enhancement and sensitive long-term management of the translocated grassland, the development can result in an enhanced ecological value of the Site post-development.



2. INTRODUCTION

2.1. Aims and scope of the report

In June 2017 MKA Ecology Ltd was commissioned to undertake a botanical survey at Phase 6 at Ridgeons in Saffron Walden. A survey of the Site was carried out on 6 July 2017.

The Preliminary Ecological Appraisal at the Ridgeons site in Saffron Walden determined that a detailed botanical assessment of Phase 6 was required to identify the plant communities present and assess their conservation value. The aims of the survey and this subsequent report were to;

- Undertake a botanical survey of the Site by recording all plant species in the grassland and completing a National Vegetation Classification (NVC) assessment methodology;
- Record all evidence of notable grassland plant species and habitats identified within the survey area;
- Identify if the grassland meets any conservation criteria or the Local Wildlife Site (LoWS) criteria;
- Detail recommendations for further survey effort, where required; and
- Detail recommendations for mitigation and enhancement where required.

2.2. Site description and previous survey effort

The survey area is shown on the map in Figure 1. Within this report this area is referred to as the Site or Phase 6 at Ridgeons, Saffron Walden. This report refers specifically to Phase 6 of the Ridgeons development site at Ashdon Road, Saffron Walden. This area was considered as having a risk of supporting important calcareous grassland assemblages and required more detailed botanical assessment.

The Site is located on the outskirts of Saffron Walden, within Uttlesford District Council (centroid grid reference TL 55317 39024). The whole development site is approximately 13ha but Phases 6 forms only a small part of this. Phase 6 contains scrub and grassland.

Phase 6 is bordered to the north by arable field margins, to the south-east by grassland and to the south-west by residential buildings. The town centre of Saffron Walden lies approximately 1.3km to the west. The wider landscape is largely agricultural with arable fields, hedgerow, roads and wooded copses.



2.3. Proposed development

Outline permission has been granted for the wider site (UTT/13/2423/OP) for;

- Builders Merchant and Yard;
- Offices and/or Research and Development and/or Light Industrial;
- Business, General Industrial and Storage and Distribution uses;
- A Local Centre, including a local retail store, a cafe/restaurant/public house, a hotel; and
- Up to 167 dwellings including affordable housing.

This will include public open space, landscaping and the provision of supporting infrastructure including replacement substations. Detailed planning is being sought for residential properties on Phases 6.

2.4. Legislation and planning policy

In Great Britain, wild plants that are legally protected are listed on Schedule 8 of The Wildlife and Countryside Act 1981, (as amended). Further minor amendments to wild plants protection measures are also provided under the Countryside and Rights of Way Act, 2000. In summary, it is against the law to:

- Pick, uproot or destroy wild plants listed on Schedule 8;
- Sell, offer for sale, possess or transport for the purpose of sale, wild plants listed on Schedule
 8;
- Advertise any plant listed on Schedule 8 for buying and selling.

Section 13 of The Wildlife and Countryside Act 1981 (as amended) also prohibits the uprooting of any wild plants not listed on Schedule 8. However, these actions related to all wild plants (including those under Schedule 8) are deemed lawful if:

- The action is carried out by the owner or occupier of the land;
- The action is carried out by someone who has gained permission from the owner or occupier of the land;
- The action is authorised in writing by the appropriate local authority;
- The action has been permitted under licence for purposes of science, education, conservation and photography or to preserve public health or safety, or other form of property, or fisheries.

Both calcareous and neutral grasslands (lowland meadows) are listed as Habitats of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act (NERC Act 2006). Some plant species are listed as Species of Principal Importance under the same act. The



NERC Act (2006) sets out a duty for decision makers to contribute towards maintaining, and where possible enhancing, the conservation status of any Section 41 Habitat or Species of Principal Importance found on a site.

Following the issue of the National Planning Policy Framework (NPPF, see Appendix 2), all planning decisions should aim to maintain, and enhance, restore or add to biodiversity and geological conservation interests.

Lowland meadows, which include calcareous grasslands, are also a Priority Habitat within Essex.









3. METHODOLOGIES

A walkover survey and NVC survey were both completed at the grassland at the Site on 6 July 2017. The weather conditions for these surveys are provided in Table 1 below.

Table 1: Summary of weather conditions

Date	Time of survey	Weather conditions*	
6 July 2017	08:00	Wind: 4E	Temp: 20.2°C
		Cloud: 5/8	Rain: None

*Wind as per Beaufort Scale / Cloud cover given in Oktas.

3.1. Walkover and NVC survey

A simple walkover of the Site was completed recording a full inventory of higher plant species within the grassland. The purpose of the walkover survey was to identify any different areas of habitat to sample during the subsequent NVC survey. The NVC survey is a system to classify habitats, defined by the vegetation communities which are present. Quantitative information about the distribution of plant species is gathered and compared to predefined classifications to indicate the vegetation communities that are present in an area. This enables and assessment of the ecological value of a habitat, and can assist in impact assessment, mitigation and management.

The walkover survey found the grassland to be broadly homogenous in species composition and vegetation structure. The area of homogenous grassland in Phase 6 of the Site was sampled with five quadrats on the NVC survey.

Five randomly selected 2m by 2m quadrats were surveyed in the homogenous grassland in accordance with guidelines for short herbaceous vegetation in the NVC User's Handbook (Rodwell, 2006). In each quadrat all higher and lower plant species were identified, and their cover was measured, using the Domin Scale. The Domin Scale represents estimates of cover by numbers as shown in Table 2, and it is used to quantify the cover in quadrat data in Appendix 3.

In both the walkover survey and the NVC survey, plant keys were used to aid identification (Stace, 2010; Rose, 1989 and 2006). Plant species nomenclature follows that of Stace (2010).

Percentage Cover	Domin Scale
<4% - few individuals	1
<4% - several individuals	2

Table 2. The Domin Ocale as an estimate of percentage plant cover



Percentage Cover	Domin Scale
<4% - many individuals	3
4-10%	4
11-25%	5
26-33%	6
34-50%	7
51-75%	8
76-90%	9
91-100%	10

The quadrat data was analysed using the computer software programme MAVIS (Centre for Ecology and Hydrology, 2000). MAVIS provides the best statistical fit of the quadrat data to the NVC community types described by British Plant Communities (Rodwell, 1992), indicated by a probability co-efficient. The co-efficient indicates the percentage similarity of the quadrat with the NVC community types. The NVC community type with the greatest probability co-efficient to the grassland quadrats were identified as the NVC community type of the grassland.

In the NVC system, for each sub-community there are constant species which typically occur in fourfive of the five quadrats in that sub-community and frequent species which typically occur in three of the five quadrats (Rodwell, 2006). The frequency values next to each of these constant and frequent species in Appendix 3 shows the number of the five quadrats that they were recorded in during the NVC grassland survey. This assists with understanding the species responsible for the classification of the vegetation types recorded as particular sub-communities.

3.2. Surveyors

The survey was undertaken by:

- James Aldridge, Ecologist (MKA Ecology Ltd). James has been undertaking botanical assessments for over four years.
- Gabrielle Horne, Ecologist (MKA Ecology Ltd). Gabrielle has been undertaking botanical assessments for over two years.



3.3. Constraints on the methodologies

NVC communities are a continuum, and thus the surveyed quadrats do not always fit perfectly into the NVC community types. Where the species composition of the quadrat and the NVC community type differed, the closest NVC community type was assigned to the quadrat.

It was not possible to accurately identify the *Cotoneaster* sp. to species level due to an absence of berries at the time of survey. However the shape and size of the leaves and the stem structure made it possible to ensure that it was not a species of Cotoneaster protected by Schedule 8 of the Wildlife and Countryside Act (1981) as amended, of note under The Vascular Plant Red Data List for Great Britain or listed on Schedule 9 of the Wildlife and Countryside Act (1981) as amended. Therefore this did not alter the outcomes of this survey.



4. RESULTS

4.1. Walkover survey

The walkover botanical survey recorded 64 plant species including 63 higher plant species and one moss species. A comprehensive species list is provided in Appendix 4. Three species indicative of chalk grassland in Essex and one species indicative of unimproved grassland and marsh in Essex were recorded during the walkover survey (Essex Local Wildlife Sites Partnership, 2010). These species are shown in Table 3 below.

Common Name	Systematic Name	Species indicative of chalk grassland in Essex*	Species indicative of unimproved grassland and marsh in Essex*
Wild Liquorice	Astragalus glycyphyllos	Yes	
Yellow-wort	Blackstonia perfoliata	Yes	
Wild Marjoram	Origanum vulgare	Yes	
Cowslip	Primula veris		Yes

Table 3: Neutral and calcareous grassland indicator species recorded

*As set out in the Local Wildlife Site Selection Criteria (Essex Local Wildlife Sites Partnership, 2010).

Of the 64 recorded plant species, none were listed as Species of Principal Importance under the NERC Act (2006), protected under Schedule 8 of the Wildlife and Countryside Act (1981) as amended, and none were listed as invasive non-native species under Schedule 9 of the Wildlife and Countryside Act (1981) as amended. Species of Principal Importance and species listed under Schedules 8 and 9 of the Wildlife and Countryside Act (1981) as amended Act (1981) as amended. Species Act (1981) as amended are not considered further in this report.

Of the 63 recorded higher plant species, 60 were listed as having a conservation status of least concern in The Vascular Plant Red Data List for Great Britain (Cheffings and Farrell, 2005), which shows these species to be abundant and widespread. The other three species (Early Goldenrod *Solidago gigantea*, Ribbed Melilot *Melilotus officinalis* and Sycamore *Acer pseudoplatanus*) were not included in The Vascular Plant Red Data List for Great Britain because they are introduced species to Great Britain, and these are not rare or of conservation importance.

Of the grassland indicator species, the Wild Liquorice formed extensive patches throughout the surveyed grassland, and the Wild Marjoram also formed dense stands in several areas. The Yellow-wort was found at a lower density throughout the grassland, and only one Cowslip individual was



recorded during the survey. There can be considered to be strong populations of Wild Liquorice, Wild Marjoram and Yellow-wort in the grassland.

4.2. NVC survey

A total of 47 species were recorded in the five quadrats on grassland, with a mean species richness of 22.6 in each quadrat (see Appendix 3 for quadrat data). Comparison of the grassland survey results against the NVC community types indicates a strong correlation with MG1 *Arrhenatherum elatius* grasslands.

The MAVIS software calculated a significantly stronger correlation of the quadrats with the MG1e Arrhenatherum elatius–Centaurea nigra sub-community (43.26) than with MG1a Arrhenatherum elatius–Festuca rubra sub-community (39.02).

The constant occurrence of Common Knapweed *Centaruea nigra* in all five quadrats caused the high correlation of the quadrat data with the MG1e Arrhenatherum elatius–Centaurea nigra sub-community. The MG1a Arrhenatherum elatius–Festuca rubra sub-community is typically less diverse than other MG1 communities and the quadrats were found to have a relatively high species-richness. The quadrats also contained Yorkshire-fog *Holcus lanatus*, Common Bird's-foot-trefoil *Lotus corniculatus*, Yellow Oat-grass *Trisetum flavescens* and Meadow Vetchling *Lathyrus pratensi* which are constant and frequent species in a typical MG1e sub-community and absent from the constant and frequent species of a typical MG1a sub-community. The grassland on site can thus be categorised as the MG1e Arrhenatherum elatius–Centaurea nigra sub-community.

This grassland also contained some notable species which were not constant or frequent species in the MG1e sub-community. Wild Liquorice and Wild Marjoram occurred in constant frequency in the quadrats and Yellow-wort was frequent in the quadrats, all three of which are chalk indicator species in Essex. Cowslip was recorded in one quadrat and this is a species indicative of unimproved grassland and marsh in Essex.



5. EVALUATION AND RECOMMENDATIONS

5.1. Overall evaluation of grassland

MG1 grassland communities typically contain tussocky grasses, primarily *Arrhenatherum elatius*, along with lower densities of Cock's-foot *Dactylis glomerata* and Yorkshire Fog. The MG1 community often becomes choked by legumes at the height of the growing season, and this was case on the surveyed grassland with the extensive occurrence of Wild Liquorice which is an Essex chalk grassland indicator species.

The MG1 community is defined as an ungrazed grassland and this lack of grazing disturbance can over time permit succession from grassland to scrub (Rodwell, 1992). This succession was evident on the surveyed grassland, with the presence of encroaching Bramble and Rose species from surrounding scrub habitat. Without disturbance these scrub species will begin to become dominant in the existing grassland. This MG1 community is typically found on freely-draining soils as seen here with the steepness of gradient on which the grassland is situated.

The MG1e Arrhenatherum elatius–Centaurea nigra sub-community is known to exist over a range of soil pH's, more commonly on mesotrophic soils and sometimes occupying calcareous soils. There is a surface exposure of chalk in Saffron Walden. Ruderal vegetation will often develop on MG1 grassland where nutrient enrichment has occurred and this ruderal vegetation is absent from the grassland at Phase 6. The grassland is of high species-richness with 63 vascular plant species recorded and with the occurrence of three chalk indicator species. With the local geology, high species-richness and the lack of obvious nutrient enrichment it is considered that the grassland is unimproved calcareous grassland.

5.2. Conservation value of grassland

Evaluation against Local Wildlife Site criteria

To be eligible for designation as a LoWS the Site must be found to comply with the following criterion for lowland calcareous grassland, neutral grassland, vascular plants or bryophytes displayed in Table 4 below.



Table 4: Minimum criteria for Essex Local Wildlife Site designation*



Reasons for designation	Habitat criterion (taken directly from Local Wildlife Site
	Selection Criteria)
Neutral grassland	Lowland meadows - type MG5 (Cynosurus cristatus
	 Centaurea nigra grassland). Presence of rarities
	such as Green-winged Orchid, Pepper-saxifrage,
	Lady's Smock and many other grasses and herbs
	meet criteria. Species-rich grasslands on circum-
	neutral soils. Parts of Essex are underlain by chalky
	boulder clay, and the more base-rich areas can
	support limited numbers of the Essex chalk
	indicator grassland plants and these are included
	within this broad category.
	 Other Essex Natural Area 'priority' grassland types
	in the East Anglian Plain comprise: MG4
	Alopecurus pratensis – Sanguisorba officinalis
	grassland and MG8 <i>Cynosurus cristatus</i> – Caltha
	palustris grassland. Indicate long continuity as
	grassland and support notable populations of
	invertebrates.
	 This criterion should include all grasslands that are
	in a deteriorated condition but which can be
	restored to this vegetation type.
	 Special consideration should be given to the
	presence in species indicative of unimproved
	grassland and marshland in Essex. Old unimproved
	grasslands can be identified by other evidence such
	as ridge and furrow.
Vascular plants	 Nationally significant plant species should be
	identified according to the current Vascular Plant
	Red Data List for Great Britain.
	 Should take into account published national and
	local Red Data Lists, Schedules within the Wildlife
	and Countryside Act 1981 (and subsequent
	amendments).



Reasons for designation	Habitat criterion (taken directly from Local Wildlife Site Selection Criteria)
Bryophytes	 Sites supporting significant populations of 'notable' bryophytes will be eligible for selection. Notable follows the definitions of Nationally Rare and Nationally Scarce species given by Hill et al. (1991, 1992 and 1994), with Red Data species following Church et al. (2001). The 57 local status will follow the Essex Red Data List, which currently lists four liverworts and three mosses that are considered rare in the county.

*As set out in the Local Wildlife Site Selection Criteria (Essex Local Wildlife Sites Partnership, 2010).

The other LoWS habitat designations in Essex are for woodland, scrub and related habitats, heathland and acid grassland, river floodplain, wetland habitats, open water habitats, coastal habitats, brownfield sites, mosaic habitats, arable field margins and wildlife corridors. The grassland at Phase 6 does not meet these designations as following the survey analysis the qualifying habitat types are clearly different to the grassland present on site. A designation as a wildlife corridor is not relevant as the grassland does not connect two or more other LoWSs.

The grassland does not appear to have been managed in the past and supports a species-rich assemblage. The grassland is located in Saffron Walden where there is a surface exposure of chalk. The Local Wildlife Site Selection Criteria states that where perhaps two or more chalk indicator species are present the habitats should be considered for designation. As chalk grasslands in Essex are likely to have far fewer chalk grassland indicator species than typical high quality chalk grasslands, the presence of strong populations of three of these chalk indicator species (Wild Liquorice, Yellow-wort and Wild Marjoram) in the grassland at Phase 6 means that this grassland is of suitable condition to be considered for designation as a lowland chalk grassland LoWS in Essex although this is of a small scale.

The MG1 *Arrhenatherum elatius* grassland community identified on site is not suitable to be designated as a neutral grassland and did not contain any of the rarities listed for neutral grassland in the Local Wildlife Site Selection Criteria. Additionally, with only one species indicative of unimproved grassland and marshland in Essex present here this is unlikely to be considered sufficient number for the grassland on site to qualify for a neutral grassland LoWS through indicator species.

The absence of vascular or non-vascular plants that are protected under Schedule 8 of the Wildlife and Countryside Act (1981) as amended, nationally rare, nationally scarce or on the red data list on site, means that the grassland does not meet LoWS criteria for vascular or non-vascular plants.



Evaluation of grassland against Habitats of Principal Importance under the NERC Act (2006) and local priority habitats

Lowland meadows, which includes calcareous grasslands, are a local priority habitat in Essex. Lowland meadows and calcareous grasslands are Habitats of Principal Importance under the NERC Act (2006), which were formerly classed as UK Biodiversity Action Plan habitats. The grassland on site was assessed against the UK Biodiversity Action Plan (BAP) habitat descriptions for lowland meadows and lowland calcareous grasslands, which are shown in Tables 5 and 6 below.

Table 5: Lowland Meadow UK BAP Habitat description

Lowland Meadow Description

- They are taken to include most forms of unimproved neutral grassland across the enclosed lowland landscapes of the UK.
- In terms of National Vegetation Classification plant communities, they primarily embrace each type of *Cynosurus cristatus-Centaurea nigra* grassland, *Alopecurus pratensis-Sanguisorba officinalis* floodplain meadow and *Cynosurus cristatus-Caltha palustris* flood-pasture.
- Excluded from this plan are maritime grassland communities confined to coastal habitats (which will be covered in maritime cliff and machair action plans), *Anthoxanthum odoratum-Geranium sylvaticum* grasslands (which are treated in a companion action plan for upland hay meadows) and Molinia-Juncus pastures (which are covered in the purple moor grass and rush pasture (*Molinia-Juncus*) plan).
- The plan concentrates on meadows and pastures associated with low-input nutrient regimes, and covers the major forms of neutral grassland which have a specialist group of scarce and declining plant species. Among flowering plants, these include fritillary *Fritillaria meleagris*, Dyer's greenweed *Genista tinctoria*, green-winged orchid *Orchis morio*, greater butterfly orchid *Platanthera chlorantha*, pepper saxifrage *Silaum silaus* and wood bitter vetch *Vicia orobus*.
- Agricultural intensification has led to the extensive development of nutrient-demanding, productive *Lolium perenne* grasslands. These are managed for grazing and also silage production which has widely replaced traditional hay-making. Where fertiliser input is relaxed or in swards which have only been partially improved, *Lolium-Cynosurus* grassland is common; in many respects this is intermediate between improved and unimproved lowland neutral grasslands but has few uncommon species and is generally of low botanical value.

The grassland communities which can be considered as lowland meadows are shown in Table 5 above to consist primarily of MG5 *Cynosurus cristatus-Centaurea nigra* grassland, MG4 *Alopecurus pratensis-Sanguisorba officinalis* floodplain meadow and MG4 *Cynosurus cristatus-Caltha palustris* flood –pasture. The grassland on site is shown by the NVC survey to comprise the MG1 *Arrhenatherum elatius* community, which does not correspond with any of these typical lowland



meadow communities. Additionally no scarce or declining plant species were recorded on site which are typically present in specialist groups on lowland meadows.

The MG1e Arrhenatherum elatius–Centaurea nigra sub-community is more species-rich than the majority of the other MG1 sub-communities and this was seen here with 63 vascular plants recorded in the grassland. The indicator species which are present indicate that the grassland is more calcareous in character and therefore it does meet the description for a lowland meadow Habitat of Principal Importance.

Table 6: Lowland Calcareous Grassland UK BAP Habitat description

Lowland Calcareous Grassland Description

The definition of the habitat as given in the pre-existing Habitat Action Plan has been amended to:

- Include examples of NVC CG10 *Festuca ovina-Agrostis capillaris-Thymus praecox* grassland where they clearly occur below the upper limits of agricultural enclosure; and
- Exclude examples of CG1 *Festuca ovina-Carlina vulgaris* grassland and CG2 *Festuca ovina-Avenula pratensis* grassland where these clearly occur above the upper limits of enclosure.

Following the 2007 review, occurrences of this habitat on roadside verges are also covered by the definition.

The grassland community at the Site is MG1e Arrhenatherum elatius–Centaurea nigra subcommunity, which is not a suitable community to meet the lowland calcareous grassland definition as a Habitat of Principal Importance. Whilst the MG1 community is typically found on mesotrophic soils and does not cause the grassland to qualify as a lowland calcareous Habitat of Principal Importance, this community is found on a range of soil pH's including calcareous soils and therefore this grassland could still be classed as a unimproved calcareous grassland, considering the chalk indicator species and the high species-richness.

5.3. Recommendations

The mitigation hierarchy should be followed during the development process and this hierarchy is firstly to avoid impacts, secondly to minimise impacts and thirdly to compensate for impacts.

Ideally the grassland in Phase 6 would be retained in the site design, however in this case the retention of these areas is not possible due to the site layout. As a measure to minimise impacts on the grassland, turves from the grassland should be translocated to an area in close proximity to its existing location. This receptor site could comprise the nearby Ashdon Road Verges Protected Roadside Verge and LoWS or the receptor site previously by MKA Ecology Ltd used to translocate reptiles to at the north (MKA Ecology Ltd, 2015).



Turves cut from the grassland should be between 200mm to 500mm in depth. Use of an excavator with a large bucket is recommended to dig turves where possible as this maximises the length, width and thickness of turves so that disruption to the vegetation is minimised. For smaller areas a shovel could also be used to dig the turves although this is generally less effective.

Preparation of recipient sites should include removal of a layer of soil equivalent to the depth of the turves to be cut from the donor site. This preparation may not be necessary in all translocation areas and this should be reviewed on a case by case basis by the ecologist.

Grassland is best translocated in the autumn when the soils are warm and moist and new root growth is possible before winter. Translocation in early spring is also an option, however there is a greater risk of failure as the roots may not develop sufficiently before the dry summer season.

Recommendation 1:

Where retention of grassland is not possible, a translocation of turves from the grassland should be completed to an area of grassland in close proximity.

A method statement should be produced outlining the process of translocation to enable it to be completed successfully. This will include information regarding timings, equipment and agreed locations for the translocation. The method statement will also include measures to avoid or mitigate impacts on the retained grassland during construction.

Recommendation 2:

Produce a method statement for the translocation.

Further areas of calcareous grassland should be provided within the wider scheme to offset impacts on existing grassland. Suitable species would be those such as Pyramidal Orchid Anacamptis pyramidalis, Quaking Grass Briza media, Clustered Bellflower Campanula glomerata, Carline Thistle Carlina vulgaris, Great Knapweed Centaurea scabiosa, Stemless Thistle Cirsium acaule, Woolly Thistle Cirsium eriophorum, Basil-Thyme Clinopodium acinos, Crosswort Cruciata laevipes, Autumn Gentian Gentianella amarelle, Rock-Rose Helianthemum nummularium, Meadow Oat-Grass Helictotrichon pratense, Ploughman's Spikenard Inula conyzae, Catmint Nepeta cataria, Knapweed Broomrape Orobanche elatior, Salad Burnet Sanguisorba minor ssp. Minor, Small Scabious Scabiosa columbaria, Wild Thyme Thymus polytrichus which are all chalk grassland indicator species in Essex.

Recommendation 3:

Further areas of calcareous grassland should be considered within the designs scheme for the wider site to offset impacts on existing grassland.



This nearby grassland which is to be retained and enhanced should then be managed in the longterm under a habitat management plan. This type of management plan is referred to in the British Standards publication for Biodiversity and the Code of practice for planning and development as a landscape and ecological management plan (British Standards Institution, 2013). In line with the Biodiversity Standards document this habitat management plan will include:

- Description and evaluation of features to be managed.
- Ecological trends and constraints on site that might influence management.
- Aims and objectives of management.
- Appropriate management options for achieving aims and objectives.
- Prescriptions for management actions.
- Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period).
- Details of the body or organisation responsible for implementation of the plan.
- Ongoing monitoring and remedial measures.

This habitat management plan document should be combined with the method statement for the translocation, which can be made available to on site contractors.

Recommendation 4:

Manage the retained and enhanced grassland sensitively in the long-term under a habitat management plan.



6. CONCLUSION

After completing a Preliminary Ecological Assessment of Phase 6 at Ridgeons in Saffron Walden, MKA Ecology Ltd were commissioned to undertake a botanical survey due to the presence of potentially high quality calcareous grassland. This botanical survey and report aimed to assess the grassland quality and identify if it was of conservation concern, and also detail any further surveys or mitigation measures, if required.

The botanical survey was completed on 6 July 2017 during the flowering period of the grassland. It identified strong populations of three chalk indicator species and an individual of one unimproved grassland and marsh indicator species. With the three chalk indicator species and the high-species richness, the grassland on site would be eligible to be considered as a Local Wildlife Site designation for lowland chalk grassland in Essex. The grassland did not meet criteria for any Habitat of Principal Importance designations.

As retention of the grassland is not feasible, a translocation of turves should be completed. These species should be moved to an area of grassland of suitable character in close proximity to the existing grassland under a method statement.

The grassland to which the turves are moved should be enhanced by the planting of chalk grassland indicator species, and managed in the long-term under a habitat management plan. It is considered that with this mitigation strategy the development can be completed in a sustainable manner, and the high quality grassland can remain viable and have enhanced diversity in the future as a chalk grassland Local Wildlife Site.



7. REFERENCES

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8. APPENDICES

8.1. Appendix 1: Photographs



Photograph 1: Wild Marjoram in Quadrat 1

Photograph 2: The grassland bank with some Wild Liquorice in the bottom left corner







Photograph 3: Quadrat 4



8.2. Appendix 2: National Planning Policy Framework (NPPF)

Full text is available at: <u>http://www.communities.gov.uk/planningandbuilding/planningsystem/planning</u>policy/planningpolicyframework/

The NPPF was published in late March 2012 setting out the Government's planning policies for England and the process by which these should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour of sustainable development, with sustainable development defined as a balance between economic, social and environmental needs.

Policies 109 to 125 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:

- Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;
- Recognise the wider benefits of ecosystem services; and
- Minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

Furthermore there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also "promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan".



		Vegetation cover in Quadrat					
Common Name	Scientific Name	(Domin Scale):					
		Q1	Q2	Q3	Q4	Q5	Frequency
Yarrow	Achillea millefolium	4		5			Ш
Alder	Alnus glutinosa	4	1				II
Meadow Foxtail	Alopecurus pratensis		4				1
False Oat-grass	Arrhenatherum elatius		7	7	7	6	IV
Wild Liquorice	Astragalus glycyphyllos		5	7	4	4	IV
Yellow-wort	Blackstonia perfoliata	4	4		4	4	IV
False-brome	Brachypodium	2					1
T alse-bronne	sylvaticum	2					
Common Sedge	Carex nigra	4				4	II
Common Knapweed	Centaurea nigra	5	5	4	5	5	V
Common Centaury	Centaurium erythraea				2	4	11
Creeping Thistle	Cirsium arvense	4	4				11
Traveller's Joy	Clematis vitalba			4			1
Dogwood	Cornus sanguinea			4			1
Rough Hawk's-beard	Crepis biennis		4	4	5	5	IV
Cock's-foot	Dactylis glomerata	5		4			11
Wild Carrot	Daucus carota	4	5	5	4	5	V
Common Feather-	Eurhynchium	7	7	7	5	7	V
moss	praelongum	'	'	'	5	'	v
Red Fescue	Festuca rubra		4		5	5	III
Wild Strawberry	Fragaria vesca				1		I
Yorkshire-fog	Holcus lanatus	6	6				II
Perforate St. John's-	Hypericum perforatum	2	1				11
wort		_	-				
Meadow Vetchling	Lathyrus pratensis	5					1
Oxeye Daisy	Leucanthemum vulgare	4	7	5	5	4	V
Common Toadflax	Linaria vulgaris	1					1
Fairy Flax	Linum catharticum	1	6	1	4	6	V
Common Bird's-foot-	l otus corniculatus	2			4	4	
trefoil		2				.	
Black Medick	Medicago lupulina	4	8	5	7	5	V
Wild Marjoram	Origanum vulgare	7			6	5	III
Ribwort Plantain	Plantago lanceolata	5	5	5			111
Rough Meadow-grass	Poa trivialis	6					1
Creeping Cinquefoil	Potentilla reptans			5			I

8.3. Appendix 3: The quadrat data, MAVIS output and grid references for the grassland



		Vegetation cover in Quadrat					
Common Name	Scientific Name	(Domin Scale):					
		Q1	Q2	Q3	Q4	Q5	Frequency
Cowslip	Primula veris				4		1
Selfheal	Prunella vulgaris			4		1	II
Blackthorn	Prunus spinosa	4		2	4		
Creeping Buttercup	Ranunculus repens	2	2				II
Field Rose	Rosa arvensis		1		4	4	
Dog Rose	Rosa canina	4					I
Common Ragwort	Senecio jacobaea		5	2			II
Early Goldenrod	Solidago gigantea					2	I
Upright Hedge-	Torilis iaponica			4			1
parsley				-			•
Goat's Beard	Tragopogon pratensis		1				I
Hop Trefoil	Trifolium campestre		5		4	4	III
Red Clover	Trifolium pratense	4	5				II
White Clover	Trifolium repens	4	4				II
Yellow Oat-grass	Trisetum flavescens	5	7	5	5		IV
Colt's-foot	Tussilago farfara	1					I
Hairy Violet	Viola hirta					4	I
Number of species		28	25	20	20	20	
Mean number of	22.6						
species	LL.V						



MAVIS Output:		
NVC: MG1e 43.26		
NVC: MG1a 39.02		
NVC: CG3b 37.17		
NVC: CG4c 36.92		
NVC: MG4a 36.85		
NVC: CG3c 36.79		
NVC: MG5a 36.27		
NVC: MG1d 36.09		

MG1e constants	MG1e frequents
Arrhenatherum elatius (IV)	Achillea millefolium (II)
Dactylis glomerata (II)	Galium verum (absent from quadrats)
Heracleum sphondylium (absent from quadrats)	Trisetum flavescens (IV)
Centaurea nigra (V)	Veronica chamaedrys (absent from quadrats)
Holcus lanatus (II)	Anthoxanthum odoratum (absent from quadrats)
Plantago lanceolata (III)	Lathyrus pratensis (I)
Festuca rubra (III)	
Lotus corniculatus (III)	
MG1a constants	MG1a frequents
Arrhenatherum elatius (IV)	Heracleum sphondylium (absent from quadrats)
Dactylis glomerata (II)	Plantago lanceolata (III)
	Festuca rubra (III)
	Cirsium arvense (II)

Grid references of quadrats

Q1	Q2	Q3	Q4	Q5
TL 55131 39129	TL 55135 39121	TL 55148 39145	TL 55154 39154	TL 55160 39163



8.4. Appendix 4: Comprehensive botanical records of grassland with indicator species status

Common Name	Scientific Name	Species indicative of chalk grassland in Essex*	Species indicative of unimproved grassland and marsh in Essex*
Sycamore	Acer pseudoplatanus		
Yarrow	Achillea millefolium		
Agrimony	Agrimonia eupatoria		
Alder	Alnus glutinosa		
Meadow Foxtail	Alopecurus pratensis		
False Oat-grass	Arrhenatherum elatius		
Wild Liquorice	Astragalus glycyphyllos	Yes	
Yellow-wort	Blackstonia perfoliata	Yes	
False-brome	Brachypodium sylvaticum		
Common Sedge	Carex nigra		
Spiked Sedge	Carex spicata		
Common Knapweed	Centaurea nigra		
Common Centaury	Centaurium erythraea		
Creeping Thistle	Cirsium arvense		
Traveller's Joy	Clematis vitalba		
Dogwood	Cornus sanguinea		
Cotoneaster sp.	Cotoneaster sp.		
Hawthorn	Crataegus monogyna		
Rough Hawk's-beard	Crepis biennis		
Cock's-foot	Dactylis glomerata		
Wild Carrot	Daucus carota		
Wild Teasel	Dipsacus fullonum		
Common Feather-moss	Eurhynchium praelongum		
Sheep's Fescue	Festuca ovina		
Red Fescue	Festuca rubra agg.		
Wild Strawberry	Fragaria vesca		
Cleavers	Galium aparine		
Cut-leaved Crane's-bill	Geranium dissectum		
Wood Avens	Geum urbanum		
Yorkshire-fog	Holcus lanatus		
Perforate St. John's-wort	Hypericum perforatum		
Meadow Vetchling	Lathyrus pratensis		
Oxeye Daisy	Leucanthemum vulgare		
Common Toadflax	Linaria vulgaris		



Common Name	Scientific Name	Species indicative of chalk grassland in Essex*	Species indicative of unimproved grassland and marsh in Essex*
Fairy Flax	Linum catharticum		
Common Bird's-foot- trefoil	Lotus corniculatus		
Black Medick	Medicago lupulina		
Ribbed Melilot	Melilotus officinalis		
Wild Marjoram	Origanum vulgare	Yes	
Wild Parsnip	Pastinaca sativa		
Bristly Oxtongue	Picris echioides		
Ribwort Plantain	Plantago lanceolata		
Smooth Meadow-grass	Poa pratensis		
Rough Meadow-grass	Poa trivialis		
Creeping Cinquefoil	Potentilla reptans		
Cowslip	Primula veris		Yes
Selfheal	Prunella vulgaris		
Blackthorn	Prunus spinosa		
Creeping Buttercup	Ranunculus repens		
Field Rose	Rosa arvensis		
Dog Rose	Rosa canina		
Bramble sp.	Rubus fruticosus agg.		
Curled Dock	Rumex crispus		
Common Ragwort	Senecio jacobaea		
Early Goldenrod	Solidago gigantea		
Upright Hedge-parsley	Torilis japonica		
Goat's beard	Tragopogon pratensis		
Hop Trefoil	Trifolium campestre		
Red Clover	Trifolium pratense		
White Clover	Trifolium repens		
Yellow Oat-grass	Trisetum flavescens		
Colt's-foot	Tussilago farfara		
Common Nettle	Urtica dioica		
Hairy Violet	Viola hirta		

*As set out in the Local Wildlife Site Selection Criteria (Essex Local Wildlife Sites Partnership, 2010).

