




MKA
ECOLOGY

Preliminary Ecological Appraisal

Ridgeons, Ashdon Road, Saffron Walden

Site	Land at Ridgeons, Ashdon Road, Saffron Walden
Project number	22710
Client name / Address	Turnstone Estates, The Warehouse, 33 Bridge Street, Cambridge, CB2 1UW

Date of issue	30/06/17
Version number	002
Revisions	Addition of Phases 1c and 1d

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Declaration of compliance

This Preliminary Ecological Appraisal has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

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.	EXECUTIVE SUMMARY	3
2.	INTRODUCTION	4
2.1.	Aims and scope of Preliminary Ecological Appraisal	4
2.2.	Site description and context	4
2.3.	Proposed development.....	5
2.4.	Legislation and planning policy.....	5
3.	METHODOLOGIES.....	7
3.1.	Desktop study	7
3.2.	Phase 1 habitat survey	8
3.3.	Protected species scoping survey	8
3.4.	Surveyor.....	9
3.5.	Date, time and weather conditions	9
3.6.	Constraints.....	9
4.	RESULTS	10
4.1.	Desktop study	10
4.2.	Phase 1 habitat survey	10
	<i>Figure 1: Phased development areas at Ridgeons, Saffron Walden</i>	<i>13</i>
	<i>Figure 2a: Phase 6 at Ridgeons, Saffron Walden</i>	<i>14</i>
	<i>Figure 2b: Phase 5 at Ridgeons Saffron Walden</i>	<i>15</i>
	<i>Figure 2c: Phase 3 at Ridgeons, Saffron Walden</i>	<i>16</i>
	<i>Figure 2d: Phases 1c and 1d at Ridgeons, Saffron Walden</i>	<i>17</i>
4.3.	Protected species scoping survey	18
5.	ECOLOGICAL CONSTRAINTS, OPPORTUNITIES AND RECOMMENDATIONS	25
6.	CONCLUSIONS	31
7.	REFERENCES	32
8.	APPENDICES	33

1. EXECUTIVE SUMMARY

In April 2017 MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal of land at Ridgeons, Ashdon Road, Saffron Walden. The appraisal included a Phase 1 habitat survey, protected species scoping survey and desktop study of protected and notable sites and species in the area. A site visit was undertaken on 18 April 2017.

Outline planning permission has been granted for the phased re-development of the site to provide residential and commercial properties. The development of the wider site is underway with the construction of a new Ridgeons store complete and clearance work beginning in other areas. This report specifically refers to Phases 1c, 1d, 3, 5 and 6 which concern residential development.

The wider site currently comprises semi-improved calcareous grassland, scrub, bare ground with scattered forbs, scattered trees and hardstanding with buildings. A Local Wildlife Site is situated within the Site boundary of Phase 1d. This is situated on the access track and is designated for its calcareous grassland habitat.

The following ecological constraints were identified at the Site with recommendations made as follows;

- Habitat: Local Wildlife Site present. Recommended that this area is protected from further impacts, and an appropriate enhancement and management regime should be established.
- Habitat: Potential high value grassland in Phase 6. Recommended that a botanical survey is completed in this area.
- Birds: suitable breeding bird habitat on site. Recommended that vegetation and/or building clearance works are scheduled between the months of September and February inclusive
- Badger: suitable foraging and sett building habitat in Phases 1d and 5. Recommended that a Badger survey be undertaken, which can be conducted at any time of year but ideally between February to April inclusive and September to October inclusive.
- Reptiles: Suitable habitat available in Phase 6. Recommended that a survey for reptiles is undertaken between April and September.

The site has scope for significant biodiversity enhancements including native species planting, hedgerow establishment and integrated bird and bat box provisions. A Biodiversity Mitigation and Enhancement Plan has been produced for the wider site and it is recommended that this is reviewed and detailed plans for biodiversity interventions are produced for each phase.

2. INTRODUCTION

2.1. Aims and scope of Preliminary Ecological Appraisal

In April 2017 MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal at land at Ridgeons, Ashdon Road, Saffron Walden by Turnstone Estates in order to support planning applications for Phases 1c, 1d, 3, 5 and 6.

The aims of the Preliminary Ecological Appraisal were to:

- Undertake a desktop study to identify the extent of protected and notable species and habitats within close proximity of each phase;
- Prepare a Phase 1 habitat map for each phase;
- Identify evidence of protected species/species of conservation concern at each phase;
- Assess the potential impacts of the proposed development;
- Detail recommendations for further survey effort where required; and
- Detail recommendations for biodiversity enhancements.

2.2. Site description and context

The survey area is shown on the map in Figure 1. Within this report this area is referred to as the Site or Ridgeons, Saffron Walden. This report refers specifically to Phases 1c, 1d, 3, 5 and 6 although it draws on data gathered across the wider site. These phases are also shown on Figure 1.

The Site is located on the outskirts of Saffron Walden, within Uttlesford District Council (centroid grid reference TL 55317 39024) and consists of scrub, bare ground with scattered forbs, semi-improved calcareous grassland, scattered trees, hardstanding and a building. The whole site is approximately 13ha but Phases 1c, 1d, 3, 5 and 6 comprise only a small part of this.

Phase 1c is vacant and comprises bare ground and hardstanding. Phase 1d is also vacant and comprises bare ground and scrub, however a small portion encompasses the Ashdon Road Verge Local Wildlife Site which is designated for its calcareous grassland habitat. Phase 3 is currently vacant and comprises hardstanding and bare ground. Phase 5 is also vacant and comprises bare ground and surrounding scrub habitats. Both Phase 3 and Phase 5 formerly contained commercial buildings but these have since been demolished. Phase 6 comprises grassland and scrub habitats.

The Site is boarded to the north and east by agricultural land, and to the south and west by residential housing and industrial premises. 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 1c, 1d, 3, 5 and 6.

2.4. Legislation and planning policy

This Preliminary Ecological Appraisal has been undertaken with reference to relevant wildlife legislation and planning policy.

Relevant legislation considered within the scope of this document includes the following:

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2010 (as amended);
- Natural Environment and Rural Communities (NERC) Act 2006;
- The Countryside and Rights of Way (CROW) Act 2000;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

Further information is provided in Appendix 1, including levels of protection granted to the species considered in Section 3.3.

In addition to obligations under wildlife legislation, the National Planning Policy Framework (NPPF) issued in 2012 requires planning decisions to contribute to conserving and enhancing the local environment. Further details are provided in Appendix 1.

The Uttlesford District Council has produced an adopted Local Plan which covers a number of policies relating to biodiversity and habitat conservation, including nature conservation, re-use of agricultural

buildings, open spaces, mature trees, protection of designated sites and agricultural land, and protection of landscape elements of importance for nature conservation. Where relevant these are discussed in further detail in Section 5.

3. METHODOLOGIES

This Preliminary Ecological Appraisal has been undertaken in accordance with the Chartered Institute for Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal (CIEEM, 2013).

3.1. Desktop study

A data search was conducted for the Site and the surrounding area within 2km of the site centroid. The organisations listed in Table 1 were contacted with regard to biodiversity data.

Table 1: Organisations providing biodiversity data

Organisation	Data collected	Date collected
Multi-agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk	Information on local, national and international statutory protected areas.	12/05/17
Essex Field Club	Information on protected and notable sites and species within 2km of the Site (TL5531639051)	19/04/17

A Phase 1 Habitat and Ecological Scoping Survey was carried out at Ridgeons Saffron Walden in April 2010 (MKA Ecology Ltd, 2010a). This was supported by a number of species specific surveys which included the following;

- Botanical survey (2010);
- Breeding bird survey (2010);
- Bat inspection (2010). Nocturnal bat surveys (2012), updated in 2014 and roost destroyed under licence in 2015;
- Hedgerow assessment 2012;
- Habitat Suitability Index assessments ponds, off-site pond surveyed for Great Crested Newt (2010);
- Reptiles surveys (2010). Reptile translocation (2015 and 2016); and
- Badger survey (2010 and 2015). Sett closures (2016).

A Wildlife Protection Plan and also a Biodiversity Mitigation and Enhancement Plan was also produced for the Site. These documents set out the methodologies to protect the retained ecological features and also methodologies to establish biodiversity interventions to promote biodiversity at the Site.

3.2. Phase 1 habitat survey

The habitat at the site was surveyed using the standardised Joint Nature Conservation Committee (JNCC) Phase 1 classification and mapping methodology (JNCC, 2010). Data were recorded onto field maps and then transferred onto a Geographic Information System (GIS) following the JNCC Colour Mapping Pallet for ArcGIS. Dominant plant species were observed and recorded within each habitat type. The plant species nomenclature follows that of Stace (2010).

The DAFOR scale is used to describe the relative abundance of species. The scale is shown in Table 2. It is important to note that where a species is described as rare this description refers to its relative abundance within the Site and is not a description of its abundance within the wider landscape. Therefore a species with a rare relative abundance within the Site may be common within the wider landscape.

Table 2: DAFOR scale

DAFOR code	Relative abundance
D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare

3.3. Protected species scoping survey

As part of the Preliminary Ecological Appraisal of the Site, an assessment of the potential for the habitats on site to support protected or notable species was made. This assessment was based on the quality, extent and interconnectivity of suitable habitats, along with the results of the desktop study detailed in Section 3.1.

Protected species frequently encountered on development sites include the following:

- Amphibians: Great Crested Newt *Triturus cristatus*.
- Reptiles: Adder *Vipera berus*, Common Lizard *Zootoca vivipara*, Slow-worm *Anguis fragilis*, Grass Snake *Natrix natrix*.
- Birds: All species, with special reference to species listed under Schedule 1 of The Wildlife and Countryside Act 1981 (as amended).
- Mammals: Badger *Meles meles*, bats (all species), European Water Vole *Arvicola amphibius*, Otter *Lutra lutra* and Hazel Dormouse *Muscardinus avellanarius*.

- Invertebrates: White-clawed Crayfish *Austropotamobius pallipes*.

In each case the likelihood of presence of these protected species at the Site was classified as being either high, moderate, low or negligible.

In addition to the species listed above, the potential for the Site to support other rare or notable species (or habitats) is also considered. This includes Species and Habitats of Principal Importance as listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006), and Red and Amber listed Birds of Conservation Concern (BoCC) as per Eaton *et al.*, 2015 (see Appendix 1).

This protected species scoping survey is designed to assess the *potential* for presence or absence of a particular species or species group, and does not constitute a full survey for these species.

3.4. Surveyor

The survey was undertaken by Gabrielle Horne GradCIEEM, Graduate Ecologist at MKA Ecology Limited. Gabrielle has two years' experience in undertaking Preliminary Ecological Appraisals.

3.5. Date, time and weather conditions

See Table 3 below for details of the date, time and prevailing weather conditions recording during the site visit for the Preliminary Ecological Appraisal.

Table 3: Date, time and weather conditions of survey visit

Date	Time of survey	Weather conditions*
27/04/17	10:30	Wind: 4-5 Cloud: 5 Temp: 8°C Rain: none

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

3.6. Constraints

It should be noted that a single visit cannot categorically ascertain the presence or absence of any protected species. However, an assessment is made of the likelihood for protected species to occur based on habitat characteristics and the ecology of each species. Where there is potential for protected species, additional survey work may be required to ascertain their presence or absence.

Certain areas of scrub, primarily within Phase 5 could not be surveyed due to access restrictions. A Badger survey in these areas has been recommended to identify any setts within the scrub habitat.

4. RESULTS

4.1. Desktop study

An ecological desktop study was completed for the Site and the surrounding 2km. The data, provided by Essex Field Club, identified a small number of UK and European protected species, species and habitats of principal importance (as listed under Section 41 of the NERC Act 2006), and species of conservation concern within 2km of the Site. It should be noted that this is not a comprehensive list of the distribution or extent of the local flora and fauna of conservation importance. These species records are discussed in greater detail in the protected species scoping survey section (Section 0 below).

No statutory designated sites were identified within 2km. Two non-statutory designated sites (Ashdon Road Verges Local Wildlife Site (LWS) and Protected Road Verge (PRV), and Whitehill Wood LWS were identified as part of the desktop study, Ashdon Road Verges LWS PRV is located on site. The details are displayed in Table below.

Table 4: Non-statutorily designated sites within 2km of Ridgeons Saffron Walden

Site name	Area (ha)	Distance and direction	Reasons for selection
Ashdon Road Verges (LWS and PRV)	0.1	-	<ul style="list-style-type: none"> Supports chalk grassland flora including Marjoram <i>Origanum vulgare</i>, Sulphur Clover <i>Trifolium ochroleucon</i>, Greater Knapweed <i>Centaurea scabiosa</i>, Burnet Saxifrage <i>Pimpinella saxifraga</i>, Restharrow <i>Ononis repens</i>, Hoary Plantain <i>Plantago media</i>, Field Scabious <i>Knautia arvensis</i>, Blue Fleabane <i>Erigeron acer</i> and Fairy Flax <i>Linum catharticum</i>.
Whitehill Wood LWS	8ha	240m E	<ul style="list-style-type: none"> Ancient woodland

4.2. Phase 1 habitat survey

The wider site was found to comprise scrub, calcareous grassland, bare ground with scattered forbs, hardstanding and buildings. More detailed species lists, along with their relative abundance, can be found in Appendix 2. The Phase 1 habitat survey maps for each phase are provided in Figures 2a, 2b 2c and 2d at the end of this section. Descriptions of the habitat types present along with dominant species compositions are provided below.

Scrub

Areas of scrub (Photograph 1, Appendix 3) were located primarily along the borders of the Site, and covered much of the area of Phase 6. This habitat consisted of abundant Bramble *Rubus fruticosus* agg., Blackthorn *Prunus spinosa* and Hawthorn *Crataegus monogyna* with frequently occurring Hazel *Corylus avellana* and Rose *Rosa* sp. Other occasionally and rarely occurring species were also recorded and these are listed in Appendix 2. This habitat appeared to be unmanaged.

This habitat is present in Phases 1d, 5 and 6 only.

Semi-improved calcareous grassland

Small areas of semi-improved calcareous grassland (Photograph 2, Appendix 3) were present at the site, primarily in the Phase 6 area. This supported frequent Cocks-foot grass *Dactylis glomerata*, Birds-foot Trefoil *Lotus corniculatus*, Oxeye Daisy *Leucanthemum vulgare* and Wild Marjoram *Origanum vulgare*, as well as occasionally occurring species which are listed in Appendix 2. This habitat is unmanaged and appears to be encroached by the neighbouring scrub.

This habitat is present in Phase 6 only.

Bare ground with scattered forbs

Large areas of the site are covered by bare ground (Photograph 3, Appendix 3), interspersed with scattered forb species; a list of these species can be found in Appendix 2. This bare ground is a fairly recently created habitat, as a result of the construction and landscaping works associated with the new Ridgeons warehouse building.

This habitat is present in Phases 1c, 1d, 3 and 5 only.

Scattered trees

Several scattered trees were located across the site and these Ash *Fraxinus excelsior*, Sycamore *Acer pseudoplatanus* and Wayfaring Tree *Viburnum lantana*.

This habitat is present in Phases 1d and 5 only.

Hardstanding

Areas of hardstanding were found throughout the site (Photograph 4, Appendix 3).

This habitat is present in Phase 1c, 1d, 3 and 5 only.

Buildings

A number of commercial buildings are present across the wider site, some of which are in use and some are derelict and scheduled for demolition (see Photograph 5). No buildings are present in Phases 1c, 1d, 3, 5 and 7.

Calcareous grassland

This small area of habitat was only present to the western edge of area 1d, and is a Local Wildlife Site designated for its chalk grassland flora.

Figure 1: Phased development areas at Ridgeons, Saffron Walden

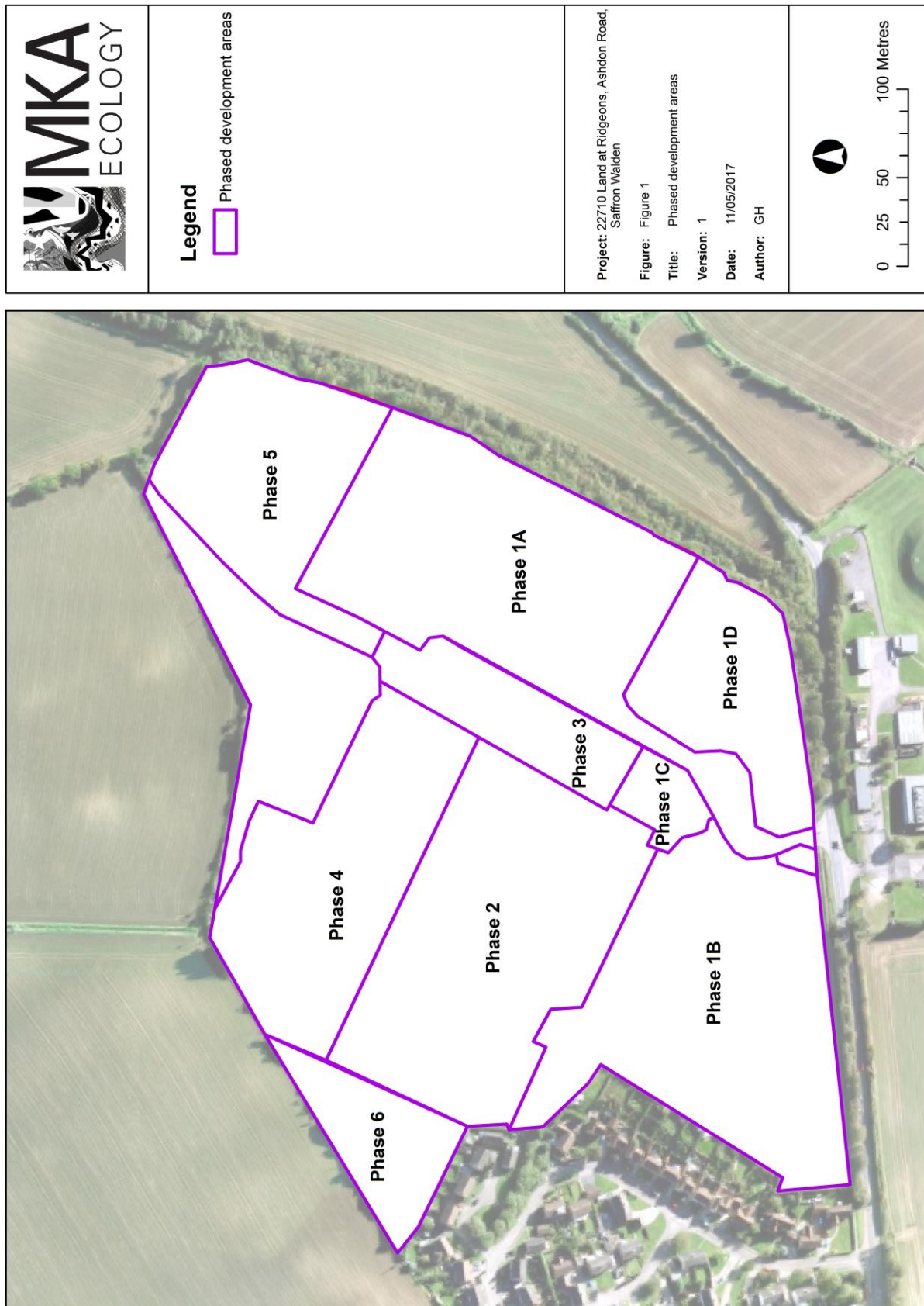


Figure 2a: Phase 6 at Ridgeons, Saffron Walden

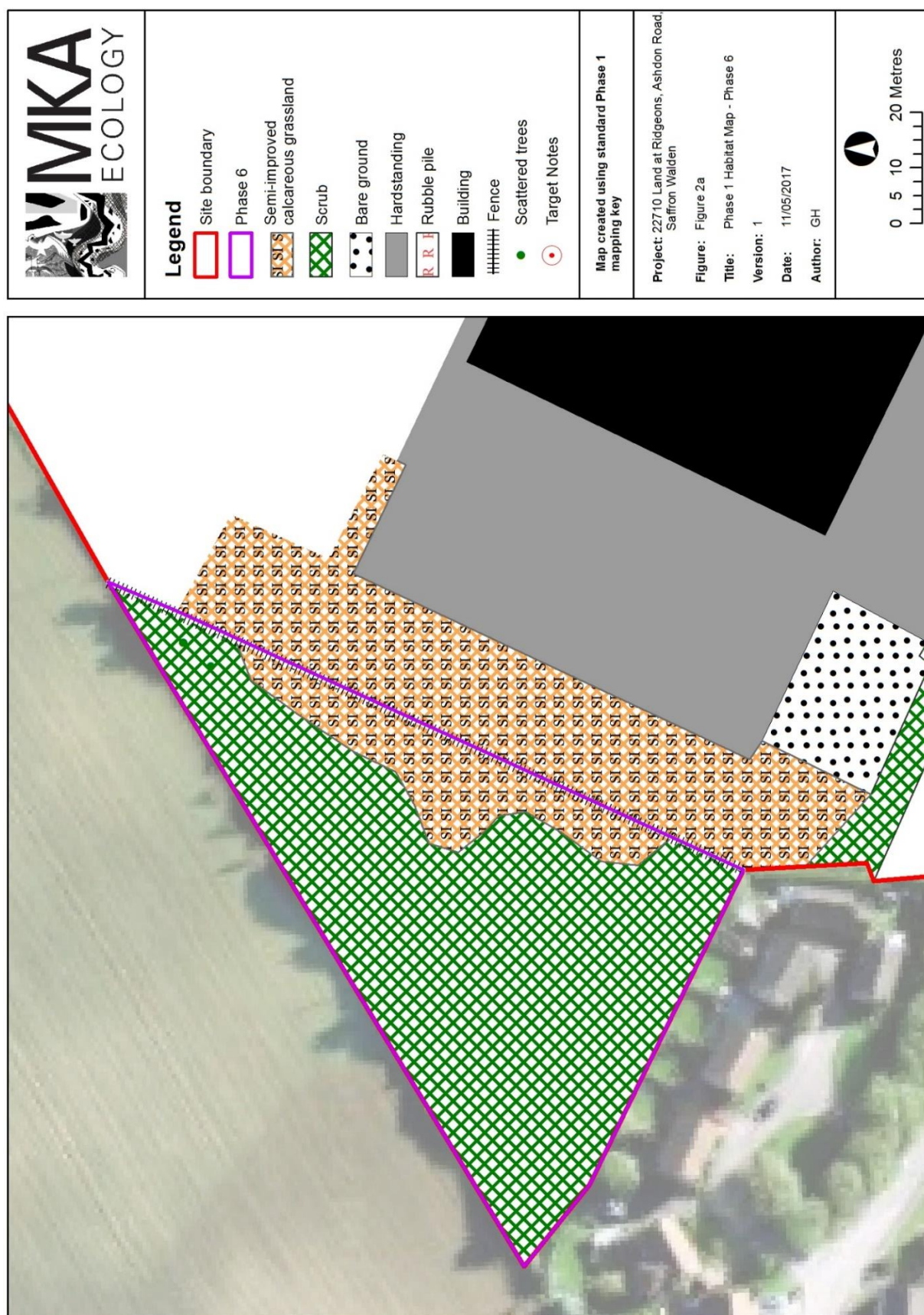


Figure 2b: Phase 5 at Ridgeons Saffron Walden

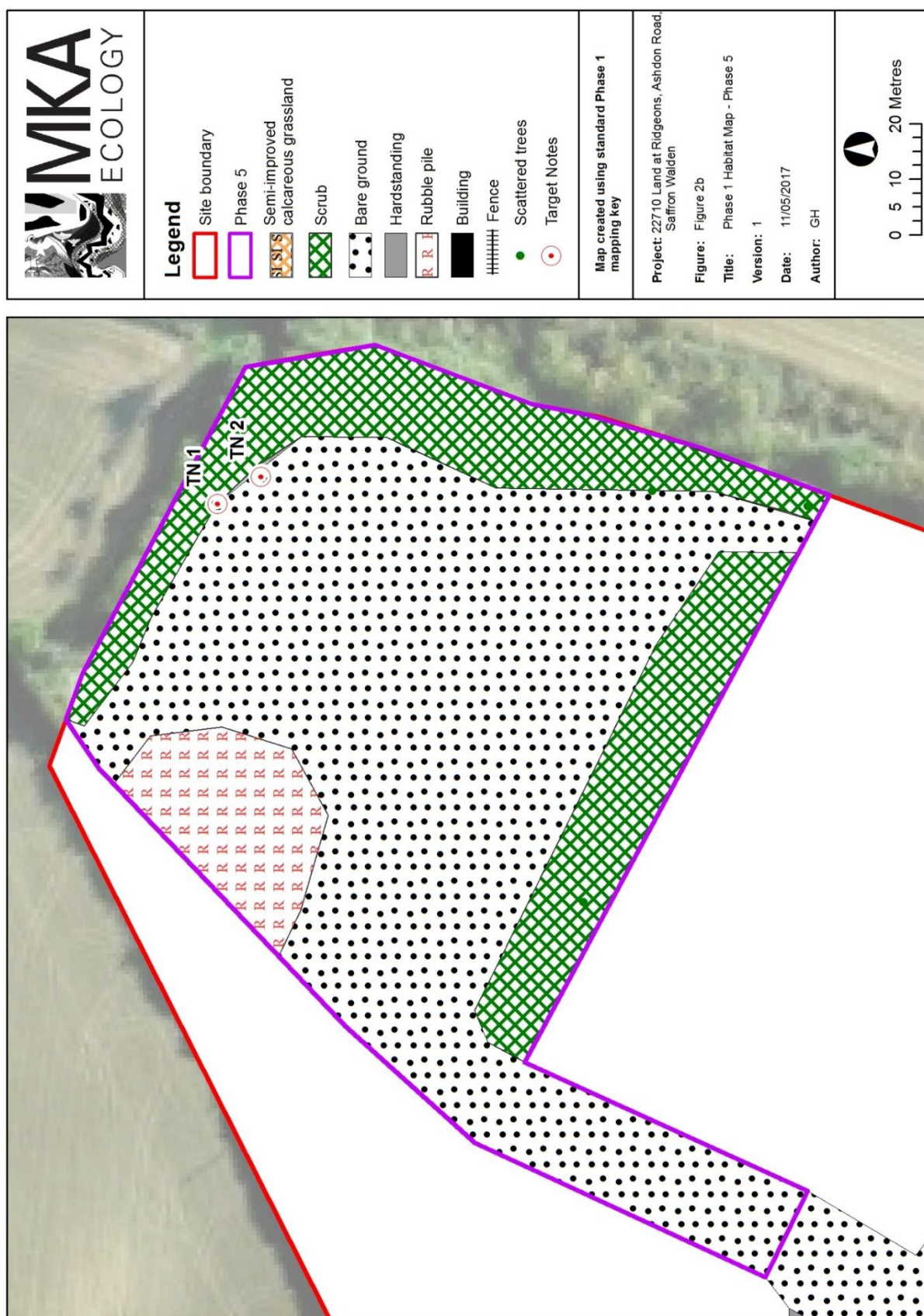


Figure 2c: Phase 3 at Ridgeons, Saffron Walden

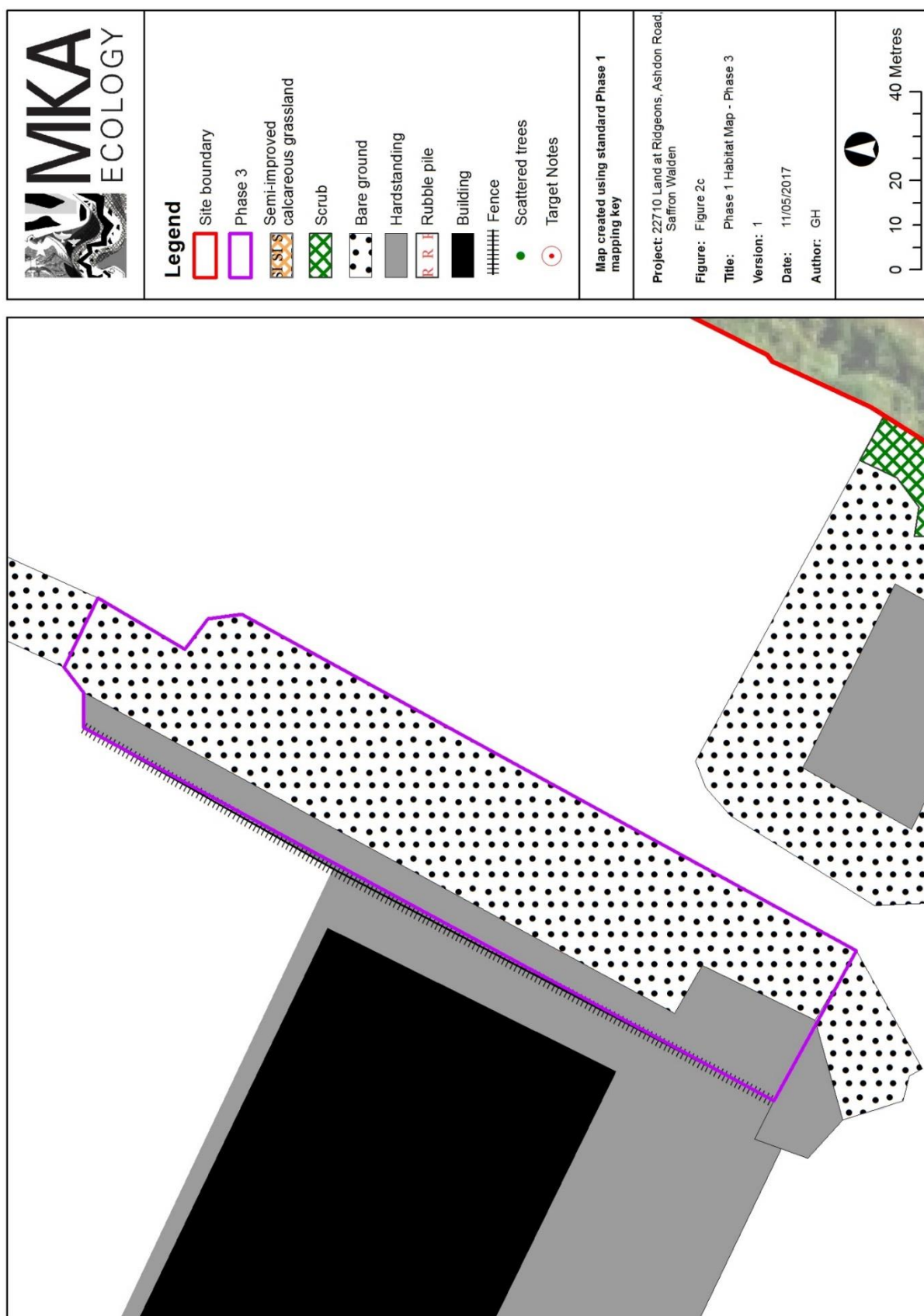
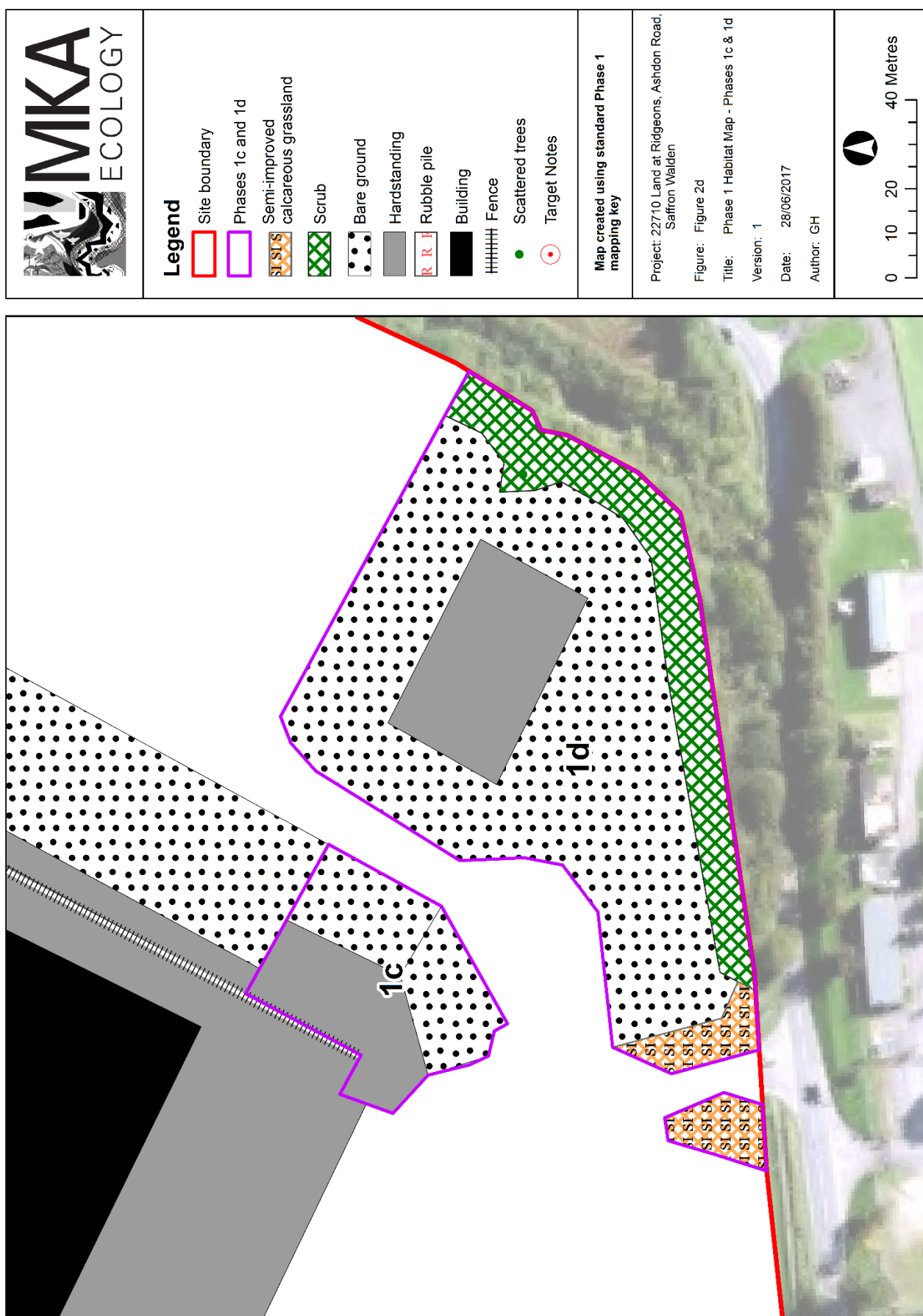


Figure 2d: Phases 1c and 1d at Ridgeons, Saffron Walden



Target Notes

TN1: Location of Wall Cotoneaster

TN2: Location of Bluebells

4.3. Protected species scoping survey

Plants

The data search returned records of several protected or notable species within the search area. These included species listed on Schedule 8 of the Wildlife and Countryside Act 1981 (Bluebell *Hyacinthoides non-scripta*), Annex B of EC CITES, species listed on the Essex Biodiversity Action Plan and species listed as Nationally Rare and Nationally Scarce. It also included plants listed as Endangered, Vulnerable (Sulphur Clover *Trifolium ochroleucon*) and Near Threatened (Hoary Plantain *Plantago media*) on the Vascular Plant Red List of Great Britain.

The Ashdon Road verges LWS is designed for its botanical diversity, and supports chalk grassland flora including Sulphur Clover, Wild Majoram, Hoary Plantain, Field Scabious and Fairy Flax. The boundary of Phase 1d encompasses part of this LWS.

The majority of the site is recently disturbed land and supports very little plant diversity, with commonly occurring plants recorded. However some small sections of the site (notably within Phase 6) support a greater diversity of plant species, including species associated with calcareous grassland (Wild Marjoram).

The potential for Phase 1c to contain important plant assemblages is **negligible**.

The potential for Phase 1d *outside* of the LWS to contain important plant assemblages is **negligible**.

The potential for Phase 3 to contain important plant assemblages is **negligible**.

The potential for Phase 5 to contain important plant assemblages is **negligible**.

The potential for Phase 6 to contain important plant assemblages is **low to moderate**. There is some scope for calcareous plant communities of some value to be present in this area.

Wall Cotoneaster was found in Phase 5 (Target Note 1). This species is listed as invasive under Section 9 of the Wildlife and Countryside Act 1981.

Invertebrates

The data search returned records of numerous protected or notable invertebrate species within the search area. This includes White-letter Hairstreak *Satyrrium w-album* (Wildlife and Countryside Act 1981: Schedule 5 Section 9.5a) and several moth species listed on Section 41 of the NERC Act 2006.

The potential for Phase 1c to contain important invertebrate assemblages is **negligible**. This is due to the recently disturbed nature of this area and the low botanical species and structural diversity.

The potential for Phase 1d to contain important invertebrate assemblages is **negligible**. This is due to the recently disturbed nature of this area and the low botanical species and structural diversity.

The potential for Phase 3 to contain important invertebrate assemblages is **negligible**. This is due to the recently disturbed nature of this area and the low botanical species and structural diversity.

The potential for Phase 5 to contain important invertebrate assemblages is **negligible**. This is due to the recently disturbed nature of this area and the low botanical species and structural diversity.

The potential for Phase 6 to contain important invertebrate assemblages is **negligible**. This is due to the small scale and lower botanical species diversity and low structural diversity.

Amphibians

The data search returned records of Great Crested Newt, Smooth Newt *Triturus vulgaris*, Common Frog *Rana temporaria* and Common Toad *Bufo bufo* within the search area. Two ponds are located within 500m, one of which is inside the wider site boundary.

The pond within the wider site boundary could not be accessed during the survey, however it was assessed as having 'poor' suitability for Great Crested Newt under the Habitat Suitability Assessment criteria (Oldham *et al*, 2000) in 2010 (MKA Ecology Ltd 2010b) and has very rarely held water during the intervening period.

The pond outside the site boundary was surveyed for Great Crested Newts in 2010 and a population of this species was found. However, this pond was considered to be a significant distance from the site boundary and Great Crested Newt are unlikely to migrate to the site due to the presence of widespread suitable habitat surrounding the pond.

The potential for Phase 1c to contain Great Crested Newt is **negligible**. This is due to the distance from local waterbodies and an absence of suitable habitat.

The potential for Phase 1d to contain Great Crested Newt is **negligible**. This is due to the distance from local waterbodies and an absence of suitable habitat.

The potential for Phase 3 to contain Great Crested Newt is **negligible**. This is due to the distance from local waterbodies and an absence of suitable habitat.

The potential for Phase 5 to contain Great Crested Newt is **negligible**. This is due to the distance from local waterbodies and an absence of suitable habitat.

The potential for Phase 6 to contain Great Crested Newt is **negligible**. This is due to the distance from local waterbodies which are known to contain this species.

Reptiles

The data search returned records of Slow-worm and Grass Snake within 2km of the site. Additionally, a large population of Common Lizard and one Grass Snake were recorded at the site in 2010 (MKA Ecology Ltd, 2010c), and removed in 2015 and 2016. These reptiles were moved to a receptor site in the north of the wider site.

The potential for Phase 1c to contain reptiles is **negligible**. This is due to a lack of suitable habitat.

The potential for Phase 1d to contain reptiles is **negligible**. This is due to a lack of suitable habitat.

The potential for Phase 3 to contain reptiles is **negligible**. This is due to a lack of suitable habitat.

The potential for Phase 5 to contain reptiles is **negligible**. This is due to a lack of suitable habitat.

The potential for Phase 6 to contain reptiles is **Moderate**. This is due to the fact that the area contains suitable habitat (in the form of grassland) and it is directly adjacent to an area which formerly contained a large population of Common Lizard before the translocation exercise.

Birds

A total of twelve species were recorded during the site visit. These species are shown in Table 5 together with their conservation status. It is important to note that this is not a full inventory of species for the site.

Table 5: Bird species recorded during site visit at Ridgeons, Saffron Walden

Common name	Systematic name	S1 W&CA ¹	BoCC ² Status	S41 SPI ³	Local PrSp ⁴
Pheasant	<i>Phasianus colchicus</i>	No	Green	No	No
Buzzard	<i>Buteo buteo</i>	No	Green	No	No
Woodpigeon	<i>Columba palumbus</i>	No	Green	No	No
Carrion Crow	<i>Corvus corone</i>	No	Green	No	No
Great Tit	<i>Parus major</i>	No	Green	No	No
Blue Tit	<i>Cyanistes caeruleus</i>	No	Green	No	No
Chiffchaff	<i>Phylloscopus collybita</i>	No	Green	No	No
Blackbird	<i>Turdus merula</i>	No	Green	No	No
Robin	<i>Erithacus rubecula</i>	No	Green	No	No
Dunnock	<i>Prunella modularis</i>	No	Amber	Yes	No
Chaffinch	<i>Fringilla coelebs</i>	No	Green	No	No
Goldfinch	<i>Carduelis carduelis</i>	No	Green	No	No

¹ Schedule 1 of The Wildlife and Countryside Act 1981 (see Appendix 1)

² Birds of Conservation Concern (see Appendix 1)

³ Section 41 (NERC Act 2006) 'Species of Principal Importance' (see Appendix 1)

⁴ Local Priority Species

The data search returned records of numerous bird species within the search area. These included species listed on Annex 2 of the Birds Directive, Appendix 2 of the Convention on Migratory Species, Schedule 1 of the Wildlife and Countryside Act 1981, Section 41 of the NERC Act, UK and Essex Biodiversity Action Plan (BAP) and birds listed as Amber or Red on the IUCN Red list.

Several of these species, including Kingfisher *Alcedo atthis*, Little Egret *Egretta garzetta* and Red Kite *Milvus milvus* would be unlikely to utilise the Site for breeding or overwintering, due to lack of suitable habitats. However, some passerine birds listed on the data search including Bullfinch *Pyrrhula pyrrhula* and Yellowhammer *Emberiza citrinella* (which are listed as Amber or Red on the BoCC Red List), and those recorded during the site visit, have the potential to utilise the Site for breeding and overwintering. The breeding bird survey conducted by MKA Ecology Ltd in 2010 identified Skylark *Alauda arvensis*, Dunnock *Prunella modularis*, Song Thrush *Turdus philomelos*, Starling *Sturnus vulgaris*, House Sparrow *Passer domesticus* and Bullfinch as breeding on site, all of which are listed as Amber or Red on the BOCC Red list. The Site may also provide some habitat for overwintering Fieldfare *Turdus pilaris* and Redwing *Turdus iliacus* (both listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)), but it is unlikely to support significant numbers of these.

The Site contains suitable breeding bird habitats including scattered trees and scrub.

The likelihood of birds to utilise Phase 1c for breeding is considered to be **negligible**. There is no suitable breeding habitat in this location.

The likelihood of birds to utilise Phase 1d for breeding is **high** in the surrounding scrub habitats. However, the risk of Phase 1d containing important assemblages of birds is **negligible**.

The likelihood of birds to utilise Phase 3 for breeding is considered to be **negligible**. There is no suitable breeding habitat in this location.

The likelihood of birds to utilise Phase 5 for breeding is **high** in the surrounding scrub habitats. However, the risk of Phase 5 containing important assemblages of birds is **negligible**.

The likelihood of birds to utilise Phase 6 for breeding is **high** in the scrub habitats. However, the risk of Phase 6 containing important assemblages of birds is **negligible**.

Bats

The data search returned records of several bat species including Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Brown Long-eared Bat *Plecotus auritus*, Noctule Bat *Nyctalus noctula*, Natterer's Bat *Myotis nattereri*, Daubenton's Bat *Myotis daubentonii*, Serotine *Eptesicus serotinus*, Barbastelle *Barbastella barbastellus* and several unidentified Pipistrelle *Pipistrellus* and Long-eared *Plecotus* species.

The habitats within Phase 1c are considered to be of **negligible** value for bats. There are no opportunities for roosting and no opportunities for foraging.

The habitats within Phase 1d are considered to be of **negligible** value for bats. There are no opportunities for roosting and the foraging habitats are limited.

The habitats within Phase 3 are considered to be of **negligible** value for bats. There are no opportunities for roosting and no opportunities for foraging.

The habitats within Phase 5 are considered to be of **negligible** value for bats. There are no opportunities for roosting and the foraging habitats are limited.

The areas of scrub and grassland in Phase 6 may provide opportunities for foraging and commuting bats although the area is unlikely to be of significant potential for the local bat populations. As such, the

foraging and roosting potential is considered to be **Low**. The potential for roosting bats within Phase 6 is **negligible**.

Badgers

The data search returned several records of Badger within the search area. Additionally, Badger setts were recorded within 30m of the site boundary in 2015 (MKA Ecology Ltd, 2015) some of which were closed under licence to enable the construction of the new Ridgeons shop. Suitable foraging and sett-building habitat exists within scrub habitats in the wider site.

The potential for Phase 1c to support foraging or sett building Badger is considered to be **negligible**.

The potential for Phase 1d to support setts is considered to be **moderate** due to the presence of suitable habitat and the known presence of this species in this area, and particularly along the disused rail track which forms the eastern boundary of the wider site.

The potential for Phase 3 to support foraging or sett building Badger is considered to be **negligible**.

The potential for Phase 5 to support setts is considered to be **moderate** due to the presence of suitable habitat and the known presence of this species in this area, and particularly along the disused rail track which forms the eastern boundary of the wider site.

The potential for Phase 6 to support Badger is considered to be **negligible**. Whilst this area contains suitable habitat for setts it was thoroughly searched during the survey visit and no evidence of Badger was observed.

Other mammals

The data search returned records of Brown Hare *Lepus europaeus*, Hedgehog *Erinaceus europaeus*, Harvest Mouse *Micromys minutus*, Field Vole *Microtus agrestis*, Bank Vole *Myodes glareolus*, Yellow-necked Mouse *Apodemus flavicollis* and Wood Mouse *Apodemus sylvaticus*.

No suitable habitat exists on site for Brown Hare and the likelihood of this species being present on site is considered to be **Negligible**. These species are not considered further within this report.

The scrub and grassland may provide habitat for the Mouse and Vole species listed above, although it is not considered optimal habitat. The likelihood of these species being on site is considered to be **Low** to **Moderate**.

Suitable habitat is present in Phase 1d, 5 and 6 for Hedgehog in the form of dense scrub and the likelihood of this species being present is considered to be **Low to Moderate**.

5. ECOLOGICAL CONSTRAINTS, OPPORTUNITIES AND RECOMMENDATIONS

This section outlines key ecological issues for consideration, recommendations for further work and ecological enhancements where appropriate.

Off-site habitats

No statutorily designated sites were located within 2km. Two non-statutorily designated sites were located within 2km. Ashdon Road LWS-PRV is located within the site boundary and this is addressed below. Whitehill Wood LWS is located 280m east of the Site and is designated for its ancient woodland flora. However, it is considered likely that this area falls outside the zone of influence for the development.

On-site habitats

The Ashdon Road LWS is located along the southern boundary of the wider site at the access point. This site has been designated for its botanical diversity and calcareous plant communities. Although small areas of the LWS have been impacted by construction activities associated with the development of the Ridgeons site, it remains a valuable area of botanical interest.

This area falls within Phase 1d, and measures should be taken to protect it from further impacts by construction activities. It should also be appropriately managed to ensure the botanical diversity to be maintained. Measures to protect and enhance this area are set out within the Wildlife Protection Plan (MKA Ecology Ltd, 2015) and the Biodiversity Mitigation and Enhancement Plan (MKA Ecology Ltd, 2015).

Recommendation 1

Protect the Ashdon Road Verge LWS from further impacts and implement appropriate management.

Plants

Wall Cotoneaster is listed on Schedule 9 of the Wildlife and Countryside Act 1981. It is illegal to plant or otherwise cause to grow in the wild any plant listed in Schedule 9. This species was recorded in Phase 5.

It is recommended that this species is disposed of appropriately and the species should not be allowed to spread in the wild.

Recommendation 2

Dispose of Wall Cotoneaster appropriately with the assistance of an invasive species specialist if required.

There is some potential for important plant communities associated with calcareous habitat to be present within the grasslands in Phase 6. Lowland calcareous grassland is a Habitat of Principal Importance listed on the Natural Environment and Rural Communities Act, 2006. It is recommended that a botanical assessment is completed at Phase 6 to review the area and establish the value of the grassland communities present. This assessment should take the form of a National Vegetation Classification (NVC) survey and should be completed between June and July.

Recommendation 3

Undertake an NVC survey of the grasslands at Phase 6 to establish whether any grasslands of ecological value are present. This survey should be completed between June and July.

Reptiles

Suitable habitat for reptiles (Common Lizard, Grass Snake and Slow-worm) is present on Phase 6, such as grassland and scrub. Impacts on reptiles are possible through clearance of vegetation and construction activities, as well as longer term habitat loss. Reptiles are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (see Appendix 1).

Survey work is recommended in order to determine the presence or absence of reptiles at Phase 6 and establish potential impacts on these species. These surveys should be carried out using artificial cover objects (on or under which reptiles can bask) in the active season which runs from March to October. The optimum survey times are in April, May and September. Seven visits should be conducted during suitable weather conditions according to guidance published by Froglife (1999).

Recommendation 4

Undertake a survey for reptiles at Phase 6.

Birds

A total of twelve bird species were recorded during the Preliminary Ecological Appraisal. Several of the habitats recorded at the Site have the potential to provide suitable nesting habitats for birds, in particular the scrub.

All wild birds, their active nests and eggs are protected under The Wildlife and Countryside Act 1981 (as amended), which makes it an offence deliberately, or recklessly, to kill or injure any wild bird or damage or destroy any active birds' nest or eggs.

Scheduling vegetation removal works between the months of September and February inclusive (i.e. outside of the bird season) would avoid impacts on breeding birds.

Where vegetation clearance works are required during the breeding bird season (between the months of March and August inclusive), such works can only proceed following the completion of a nesting bird check undertaken by an experienced ornithologist. Any active birds' nest identified during this check must be protected from harm until the nesting attempt is complete. This will require a buffer to be left around the nest, the size of which will depend upon the species involved (as a general rule, this will be 10m in all directions around the nest). Any buffers established as a result of the initial nesting bird check must be subjected to a second check after the original nesting attempt is completed, before such areas can be removed during the breeding bird season.

Recommendation 5

Schedule vegetation clearance works between the months of September and February inclusive to avoid impacts on breeding birds.

It is strongly recommended that any potential nesting bird habitat is cleared outside the breeding bird season in order to avoid potentially lengthy delays if nests are found during nesting bird checks.

The loss of bird nesting habitat at the site will be mitigated for by the provision of bird boxes as part of the biodiversity enhancements proposed for the site. The provision of bird boxes is discussed in greater detail in the relevant section below.

Bats

Bat roosting behaviour, commuting and foraging activity can additionally be dramatically affected by artificial lighting (BCT, 2009). It is strongly recommended that any proposed exterior lighting is managed appropriately to ensure that the area remains suitable for foraging bats. A sensitive lighting scheme should be developed to allow suitable roosting and foraging areas for bats.

Recommendation 6

Light pollution from any lighting should be minimised both during and after the construction phase. A sensitive lighting scheme should be developed to allow for suitable roosting and foraging areas for bats within the site with maximum use of down lighting and hoods where necessary.

Badgers

Suitable foraging and sett building habitat exists in the scrub habitats on Phases 1d, 5 and 6. No evidence of Badger was noted on site during the visit, however, it was not possible to survey all of the suitable areas of scrub in Phase 1d and Phase 5. Badger activity is widespread in the area and notably along the disused railway which forms the eastern boundary of the wider site and of Phase 5.

Impacts on Badgers are possible through disturbance from vegetation clearance and construction activities. Badger setts and Badgers occupying a set are protected under the Protection of Badgers Act 1992.

Further survey for Badger is recommended to inform any mitigation or licensing measures required at Phase 5. Badger survey can be conducted at any time of year but the optimal time periods are February to April inclusive and September to October inclusive.

Recommendation 6

Undertake a Badger survey of Phases 1d and 5.

Opportunities for biodiversity enhancement

Following the issue of the National Planning Policy Framework (NPPF; see Appendix 1), all planning decisions should aim to maintain and enhance, restore or add to biodiversity and geological conservation interests. Ecological enhancements should aim to deliver biodiversity gains for the proposed development site.

A Wildlife Protection Plan and Biodiversity Mitigation and Enhancement Plan have been produced for the wider site (MKA Ecology Ltd, 2015). It is recommended that these plans are reviewed and detailed versions produced for Phases 1c, 1d, 3, 5 and 6. These detailed plans should include information on habitat creation, planting schemes and the provision of bird and bat boxes.

Recommendation 7

Review the Wildlife Protection Plan and Biodiversity Mitigation and Enhancement Plan and produce detailed versions for the detailed planning applications at Phases 1c, 1d, 3, 5 and 6.

Summary of recommendations

Table 6 to Table 8 below summarise the recommendations made within this report, and specifies the stage of the development at which action is required. Colour coding of cells within the table is as follows:

Key:

	No action required for this species group at this stage
	Action required (see notes for details)
	Level of action required will be determined following the further survey work

Table 6: Summary of recommendations at Phase 6 Ridgeons, Saffron Walden

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Habitats	Yes – further survey of grassland	TBC	TBC	Yes – review of enhancement plans
Reptiles	Yes – further survey	TBC	TBC	TBC
Birds	No	No	Yes – timing of works for vegetation removal OR further survey work	Yes – bird boxes and native planting

Table 7: Summary of recommendations at Phase 5 Ridgeons, Saffron Walden

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Invasive species	No	No	Yes – appropriate disposal of Cotoneaster	No
Birds	No	No	Yes – timing of works for vegetation removal OR further survey work	Yes – bird boxes and native planting
Badgers	Yes – further survey	TBC	TBC	TBC

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Habitats	No	No	No	Yes – review of enhancement plans

Table 8: Summary of recommendations at Phase 3 Ridgeons, Saffron Walden

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Habitats	No	No	No	Yes – review of enhancement plans

Table 9: Summary of recommendations at Phase 1d Ridgeons, Saffron Walden

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Birds	No	No	Yes – timing of works for vegetation removal OR further survey work	Yes – bird boxes and native planting
Badgers	Yes – further survey	TBC	TBC	TBC
Habitats	No	Establish methodology to protect Ashdon Road Verge LWS	Protection of Ashdon Road Verge LWS	Yes – review of enhancement plans

Table 10: Summary of recommendations at Phase 1c Ridgeons, Saffron Walden

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Habitats	No	No	No	Yes – review of enhancement plans

6. CONCLUSIONS

The Site at Ridgeons, Saffron Walden contains several habitats which have the potential to support several protected species groups, including birds, reptiles and Badger. The Site also supports a Local Wildlife Site which is designated for its calcareous grassland flora. A suite of ecological surveys and assessments have been completed to support an outline planning application for the wider site.

The development is phased and this report refers specifically to detailed planning applications for Phases 1c, 1d, 3, 5 and 6. Different ecological constraints were identified at the each phase and these will require further assessment or mitigation measures. No identified constraints are likely to preclude development at each of the phases.

The scattered trees and scrub habitats have the potential to support breeding birds. It is considered that by adhering to the timing constraints for the removal of suitable nesting bird habitat, proposed within this report, that the potential for direct disruption and adverse impacts on breeding birds at the Site can be avoided.

Further survey work in Phase 6 has been recommended for reptiles, to ascertain their presence or likely absence. Furthermore it is recommended that the value of the calcareous grassland in Phase 6 is assessed. Further survey work has been recommended for Badger in Phase 1d and 5 which are in close proximity to areas which are known to contain high Badger activity.

The Ashdon Road Verges LWS is situated within Phase 1d and this must be protected from any damage during the development process.

The site has scope for significant biodiversity enhancements and these have been detailed in a Wildlife Protection Plan and Biodiversity Mitigation and Enhancement Plan for the wider site. It is recommended that detailed enhancement plans are developed for each phase to ensure that appropriate biodiversity interventions can be made and the overall biodiversity value of these areas increased.

7. REFERENCES

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8. APPENDICES

Appendix 1: Relevant wildlife legislation and planning policy

Please note that the following is not an exhaustive list, and is solely intended to cover the most relevant legislation pertaining to species commonly associated with development sites.

Subject	Legislation (England)	Relevant prohibited actions
Amphibians		
Great Crested Newt <i>Triturus cristatus</i> Natterjack Toad <i>Epidalea calamita</i>	Schedule 2 of Conservation of Habitats and Species Regulations 2010 (as amended)	<ul style="list-style-type: none">Intentionally or deliberately capture or kill, or intentionally injure;Deliberately disturb or intentionally or recklessly disturb them in a place used for shelter or protection;Damage or destroy a breeding site or resting place;Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; andPossess an individual, or any part of it, unless acquired lawfully.
	Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	
Reptiles		
Common Lizard <i>Zootoca vivipara</i> Adder <i>Vipera berus</i> Slow-worm <i>Anguis fragilis</i> Grass Snake <i>Natrix natrix</i>	Part of Sub-section 9(1) of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none">Intentionally kill or injure individuals of these species (Section 9(1)).

Subject	Legislation (England)	Relevant prohibited actions
Sand Lizard <i>Lacerta agilis</i> Smooth Snake <i>Coronella austriaca</i>	Full protection under Section 9 of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none"> • Deliberately or intentionally kill, capture (take) or intentionally injure; • Deliberately disturb; • Deliberately take or destroy eggs; • Damage or destroy a breeding site or resting place or intentionally damage a place used for shelter; or • Intentionally obstruct access to a place used for shelter.
<i>Birds</i>		
All wild birds	Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none"> • Intentionally kill, injure, or take any wild bird or their eggs or nests.
'Schedule 1' Birds	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none"> • Disturb any wild bird listed on Schedule 1 whilst it is building a nest or is in, on, or near a nest containing eggs or young; or • Disturb the dependent young of any wild bird listed on Schedule 1.
<i>Mammals</i>		
Bats (all UK species)	Schedule 2 of Conservation of Habitats and Species Regulations 2010 (as amended)	<ul style="list-style-type: none"> • Deliberately capture, injure or kill a bat; • Deliberately disturb a bat (disturbance is defined as an action which is likely to: (i) Impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) Impair their ability to hibernate or migrate; or (iii) Affect significantly the local

Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	<p>distribution or abundance of the species);</p> <ul style="list-style-type: none"> • Damage or destroy a bat roost; • Intentionally or recklessly disturb a bat at a roost; or • Intentionally or recklessly obstruct access to a roost. <p>In this interpretation, a bat roost is "<i>any structure or place which any wild [bat]...uses for shelter or protection</i>". Legal opinion is that the roost is protected whether or not the bats are present at the time.</p>
Badger <i>Meles meles</i>	Protection of Badgers Act 1992	<p>Under Section 3 of the Act:</p> <ul style="list-style-type: none"> • Damage a sett or any part of it; • Destroy a sett; • Obstruct access to, or any entrance of, a sett; or • Disturb a Badger when it is occupying a sett. <p>A sett is defined legally as any structure or place which displays signs indicating current use by a Badger (Natural England 2007).</p>
Hazel Dormouse <i>Corylus avellana</i>	Schedule 2 of Conservation of Habitats and Species Regulations 2010 (as amended)	<ul style="list-style-type: none"> • Intentionally or deliberately capture or kill, or intentionally injure; • Deliberately disturb or intentionally or recklessly disturb them in a place used for shelter or protection;

Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none"> • Damage or destroy a breeding site or resting place; • Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and • Possess an individual, or any part of it, unless acquired lawfully.
Otter <i>Lutra lutra</i>	Schedule 2 of Conservation of Habitats and Species Regulations 2010 (as amended)	<ul style="list-style-type: none"> • Deliberately capture, injure or kill an Otter; • Deliberately disturb an Otter in such a way as to be likely to significantly affect the local distribution or abundance of otters or the ability of any significant group of otters to survive, breed, rear or nurture their young; • Intentionally or recklessly disturb any Otter whilst it is occupying a holt; • Damage or destroy or intentionally or recklessly obstruct access to an Otter holt.
	Section 9(4)(b) and (c) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	
Water Vole <i>Arvicola amphibius</i>	Section 9 of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none"> • Intentionally kill, injure or take Water Voles; • Possess or control live or dead Water Voles or derivatives; • Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection; or • Intentionally or recklessly disturb Water Voles whilst occupying a structure or place used for that purpose.
<i>Crustaceans</i>		

Subject	Legislation (England)	Relevant prohibited actions
White-clawed Crayfish <i>Austropotamobius pallipes</i>	Section 9(1) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none">Intentionally kill, injure or take White-clawed Crayfish by any method.

Conservation of Habitats and Species Regulations 2010 (as amended)

Full legislation text available at: <http://www.legislation.gov.uk/ukxi/2010/490/regulation/61/made>

The Wildlife and Countryside Act 1981 (as amended)

Full legislation text available at: <http://www.legislation.gov.uk/ukpga/1981/69>

Countryside and Rights of Way Act 2000

Full legislation text available at: <http://www.legislation.gov.uk/ukpga/2000/37/contents>

Protection of Badgers Act 1992

Full legislation text available at: <http://www.legislation.gov.uk/ukpga/1992/51/contents>

Section 41 of Natural Environments and Rural Communities (NERC) Act 2006

Full legislation text available at: <http://www.legislation.gov.uk/ukpga/2006/16/contents>

Many of the species above, along with a host of others not afforded additional protection, are listed on Section 41 of the NERC Act 2006.

Section 41 (S41) of the Natural Environment and Rural Communities (NERC Act 2006) requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 943 species) has been drawn up in consultation with Natural England and draws upon the UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats.

The S41 list should be used to guide decision-makers such as local and regional authorities to have regard to the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006. The duty applies to all local authorities and extends beyond just conserving what is already there, to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

Schedule 9 of Wildlife and Countryside Act 1981 (as amended)

In addition to affording protection to some species, The Wildlife and Countryside Act 1981 (as amended) also names species which are considered invasive and require control. Section 14 of the Act prohibits the introduction into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, Great Britain in a wild state, or any species of animal or plant listed in Schedule 9 to the Act. In the main, Schedule 9 lists non-native species that are already established in the wild, but which continue to pose a conservation threat to native biodiversity and habitats, such that further releases should be regulated.

Wild Mammals (Protection) Act 1996

Full legislation text is available at: <http://www.legislation.gov.uk/ukpga/1996/3/contents>

Under this legislation it is an offence to cause unnecessary suffering to wild mammals, including by crushing and asphyxiation. It largely deals with issues of animal welfare, and covers all non-domestic mammals including commonly encountered mammals on development sites such as rabbits, foxes and field voles.

Birds of Conservation Concern (BoCC)

This is a quantitative assessment of the status of populations of bird species which regularly occur in the UK, undertaken by the UK's leading bird conservation organisations. It assesses a total of 246 species against a set of objective criteria to place each on one of three lists – Green, Amber and Red – indicating an increasing level of conservation concern. There are currently 52 species on the Red list, 126 on the Amber list and 68 on the Green list. The classifications described have no statutory implications, and are used merely as a tool for assessing scarcity and conservation value of a given species.

National Planning Policy Framework (NPPF)

Full text is available at: <http://www.communities.gov.uk/planningandbuilding/planningsystem/planningpolicy/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”.

Appendix 2: Phase 1 Habitat species list

Please note that these lists are intended to be incidental records and do not constitute a full botanical survey of the site. Relative abundance is given using the DAFOR scale. Please see Table 2 for details.

Scrub

Common Name	Systematic Name	Relative abundance
Bramble	<i>Rubus fruticosus</i> agg.	Abundant
Blackthorn	<i>Prunus spinosa</i>	Abundant
Hawthorn	<i>Crataegus Monogyna</i>	Abundant
Hazel	<i>Corylus avellana</i>	Frequent
Rose	<i>Rosa</i> sp.	Frequent
Alder	<i>Alnus glutinosa</i>	Occasional
Bindweed	<i>Convolvulus</i> sp.	Occasional
Butterfly Bush	<i>Buddleia davidii</i>	Occasional
Chickweed	<i>Stellaria media</i>	Occasional
Common Mallow	<i>Malva sylvestris</i>	Occasional
Common Nettle	<i>Urtica dioica</i>	Occasional
Creeping Cinquefoil	<i>Potentilla reptans</i>	Occasional
Dogwood	<i>Cornus sanguinea</i>	Occasional
Field Maple	<i>Acer campestre</i>	Occasional
Greed Alkanet	<i>Pentaglottis sempervirens</i>	Occasional
Ground Ivy	<i>Glechoma hederacea</i>	Occasional
Hogweed	<i>Heracleum sphondylium</i>	Occasional
Periwinkle	<i>Vinca</i> sp.	Occasional
Teasel	<i>Dipsacus fullonum</i>	Occasional
White Dead-nettle	<i>Lamium album</i>	Occasional
Bluebell	<i>Hyacinthoides non-scripta</i>	Rare
Wall Cotoneaster	<i>Cotoneaster horizontalis</i>	Rare

Semi-improved calcareous grassland

Common Name	Systematic Name	Relative abundance
Cocks-foot grass	<i>Dactylis glomerata</i>	Frequent
Birds-foot Trefoil	<i>Lotus corniculatus</i>	Frequent
Oxeye Daisy	<i>Leucanthemum vulgare</i>	Frequent
Wild Marjoram	<i>Origanum vulgare</i>	Frequent
Cleavers	<i>Galium aparine</i>	Occasional
Common Nettle	<i>Urtica dioica</i>	Occasional
Cow Parsley	<i>Anthriscus sylvestris</i>	Occasional
Cowslip	<i>Primula veris</i>	Occasional
Fescue grass	<i>Festuca sp.</i>	Occasional
Garlic Mustard	<i>Alliaria petiolata</i>	Occasional
Moss	<i>Bryophyta</i>	Occasional
Yarrow	<i>Achillea millefolium</i>	Occasional

Scattered forbs

Common Name	Systematic Name	Relative abundance
Agrimony	<i>Agrimonia eupatoria</i>	Occasional
Bristly Oxtongue	<i>Helminthotheca echioides</i>	Occasional
Broadleaved Dock	<i>Rumex obtusifolius</i>	Occasional
Chickweed	<i>Stellaria media</i>	Occasional
Cleavers	<i>Galium aparine</i>	Occasional
Cock's-foot grass	<i>Dactylis glomerata</i>	Occasional
Colt's Foot	<i>Tussilago farfara</i>	Occasional
Cowslip	<i>Primula veris</i>	Occasional
Cow Parsley	<i>Anthriscus sylvestris</i>	Occasional
Creeping Bent	<i>Agrostis stolonifera</i>	Occasional
Creeping Buttercup	<i>Ranunculus repens</i>	Occasional
Creeping Cinquefoil	<i>Potentilla reptans</i>	Occasional
Creeping Thistle	<i>Cirsium arvense</i>	Occasional

Common Name	Systematic Name	Relative abundance
Dandelion	<i>Taraxacum officinale</i>	Occasional
Fescue grass	<i>Festuca sp.</i>	Occasional
Field Bindweed	<i>Convolvulus arvensis</i>	Occasional
Garlic Mustard	<i>Alliaria petiolata</i>	Occasional
Groundsel	<i>Senecio vulgaris</i>	Occasional
Ground Elder	<i>Aegopodium podagraria</i>	Occasional
Ground Ivy	<i>Glechoma hederacea</i>	Occasional
Hawthorn (sapling)	<i>Crataegus Monogyna</i>	Occasional
Herb Robert	<i>Geranium robertianum</i>	Occasional
Hogweed	<i>Heracleum sphondylium</i>	Occasional
Oxeye Daisy	<i>Leucanthemum vulgare</i>	Occasional
Perennial Ryegrass	<i>Lolium perenne</i>	Occasional
Red Deadnettle	<i>Lamium purpureum</i>	Occasional
Ribwort Plantain	<i>Plantago lanceolata</i>	Occasional
Shepherd's Purse	<i>Capsella bursa-pastoris</i>	Occasional
Spear Thistle	<i>Cirsium vulgare</i>	Occasional
Sycamore (seedling)	<i>Acer pseudoplatanus</i>	Occasional
Weld	<i>Reseda luteola</i>	Occasional
White Comfrey	<i>Symphytum orientale</i>	Occasional
Willowherb	<i>Epilobium sp.</i>	Occasional
Yarrow	<i>Achillea millefolium</i>	Occasional
Yorkshire Fog	<i>Holcus lanatus</i>	Occasional

Scattered trees

Common Name	Systematic Name	Relative abundance
Ash	<i>Fraxinus excelsior</i>	n/a
Sycamore	<i>Acer pseudoplatanus</i>	n/a
Wayfaring Tree	<i>Viburnum lantana</i>	n/a

Appendix 3: Site photographs

Photograph 1: Scrub



Photograph 2: Semi-improved calcareous grassland



Photograph 3: Bare ground with scattered forbs



Photograph 4: Hardstanding



Photograph 5: Building





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