





MKA
ECOLOGY

Biodiversity Mitigation and Enhancement Plan

Ashdon Road, Saffron Walden

Site	Land at 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.

CONTENTS

1. INTRODUCTION	3
1.1 Aims and objectives of plan	3
1.2 Existing site ecology	4
1.3 Proposed works	5
2. CREATION OF NEW ECOLOGICAL FEATURES	6
2.1 Calcareous grassland	6
2.1.1 Grassland translocation	6
2.1.2 Seeding	8
2.2 Reptile translocation receptor site	10
2.3 Bats	12
2.4 Breeding birds	12
2.5 Native planting.....	13
3. MANAGEMENT OF ECOLOGICAL FEATURES POST-DEVELOPMENT	15
3.1 Calcareous grassland	15
3.1.1 First-year management	15
3.1.2 Long-term management	15
3.2 Reptile mitigation area	15
3.3 Scrub and hedgerows	16
3.4 Bat boxes	16
3.5 Bird boxes	17
3.6 General.....	17
3.7 Timetable of ecological management activities	18
4. POST-DEVELOPMENT MONITORING	20
4.1 Calcareous grassland	20
4.2 Bat boxes	21
5. RESERVED MATTERS	22
6. REFERENCES	23
7. APPENDICES.....	24

1. INTRODUCTION

1.1 Aims and objectives of plan

Outline planning permission for the Ridgeons site at Land at Ashdon Road in Saffron Walden was granted in November 2014 (UTT/13/2423/OP). The outline permission for the site allows a mixed use development comprising residential (including a Local Centre), commercial and industrial buildings and public open space. Condition 7 of this outline planning permission states that;

“No development shall take place until a detailed mitigation plan for the reptiles, bats, badgers and birds identified including their breeding sites and resting places, and Calcareous Grassland has been submitted to and approved in writing by the Local Planning Authority. The development hereby permitted shall be carried out in accordance with the approved details.

REASON: To make appropriate provision for conserving and enhancing the natural environment within the approved development in the interests of biodiversity and in accordance with Policy GEN7 of the Uttlesford Local Plan (adopted 2005) and the NPPF.”

Condition 8 of the outline planning permission states that:

No development shall take place until a Biodiversity Mitigation and Enhancement Plan has been submitted to and approved in writing by the Uttlesford Planning Authority. The Plan shall include provision for habitat translocation, creation and management during the life of the development hereby permitted, and mitigation for impacts upon identified protected and priority species, in accordance with the general principles outlined in the Summary Ecological Report (dated August 2013) and all appendices to that Report and shall, without prejudice to the foregoing, include:

- (i) Aims and objectives of mitigation;*
- (ii) Extent and location of proposed works;*
- (iii) A description and evaluation of all features to be managed;*
- (iv) Sources of habitat materials;*
- (v) Timing of the works;*
- (vi) The personnel responsible for the work;*
- (vii) Disposal of wastes arising from the works;*
- (viii) Selection of specific techniques and practices for preparing the site and translocating, creating and establishing vegetation;*
- (ix) Appropriate management options for achieving aims and objectives;*
- (x) Prescriptions for management actions;*
- (xi) Personnel responsible for implementation of the Plan;*

- (xii) *The Plan shall include demonstration of the feasibility of the implementation of the Plan including details of funding for delivery of the Plan and long-term management of the habitats;*
- (xiii) *Monitoring and remedial measures triggered by monitoring to ensure that the proposed biodiversity gains are realised in full.*

The development hereby permitted shall be implemented in accordance with the approved Plan.

REASON: To make appropriate provision for conserving and enhancing the natural environment within the approved development in the interests of biodiversity and in accordance with Policy GEN7 of the Uttlesford Local Plan (adopted 2005) and the NPPF.

This Biodiversity Mitigation and Enhancement Plan is submitted pursuant to these conditions.

This Biodiversity Mitigation and Enhancement Plan (BMEP) aims to set out specific objectives for the enhancement and maintenance of biodiversity at the site, and the means by which these are to be achieved. This will include long-term design objectives, management responsibilities and maintenance schedules.

Management activities required to protect and create ecological features during the construction phases at the site, along with measures required to maintain these features long-term post-construction, are described in this document. The overarching aim of the plan is to ensure that the development of the site delivers targeted biodiversity gains to enhance the ecological value of the scheme.

Management of ecological features at the site will be the responsibility of the allocated management company once appointed and following completion of the project.

Please note that this is a live document based on information available at the time of outline planning approval, and should be updated as reserved matters and designs become finalised. A detailed planning application has been lodged for the Ridgeons site (see Phase 1a, Figure 1). Furthermore, an updated PEA has been undertaken to support the application for Phase 1d which recommended an update to this document. Specific updates relating to Phase 1d include Section 2.3 (bats), Section 2.4 (birds) and Figure 6.

1.2 Existing site ecology

A suite of ecological surveys were undertaken by MKA Ecology Ltd at Land at Ashdon Road, Saffron Walden between 2010 and 2020. These included a Preliminary Ecological Appraisal, desktop study,

nocturnal bat surveys, reptile surveys, botanical surveys, Badger survey and breeding bird surveys. These surveys highlighted the presence of the following ecological features at the site:

- Bats: a transitory summer roost of a single Common Pipistrelle bat;
- Reptiles: a medium population of Common Lizard;
- Badgers: outlier sett;
- Breeding birds: potential nesting habitat available;
- Calcareous grassland; and
- Designated site: Ashdon Roadside Verge Local Wildlife Site (LWS).

Protection of these features during the construction phase is covered in the Wildlife Protection Plan (WPP) for the site. Creation of new ecological features and maintenance of these post-construction is dealt with in the sections below.

Please refer to the Wildlife Protection Plan for details of the following:

- Reptile translocation programme;
- Bat Natural England licence mitigation;
- Badger Natural England licence mitigation;
- Avoidance of disturbance to breeding birds during construction; and
- Protection of important habitats during construction.

1.3 Proposed works

A major mixed-use redevelopment has been proposed for the Land at Ashdon Road site. The development has received outline planning approval (Ref: UTT/13/2423/OP) from Uttlesford District Council.

The redevelopment will include a new Ridgeons commercial centre, additional industrial and commercial premises, residential housing (up to 167 units) along with leisure and amenity facilities. The development proposals also include the provision of significant areas of green space and ecological features. The development is likely to be phased over a number of years to allow the continued functioning of the existing Ridgeons premises during construction of the new facility. Please see proposed Phasing Plan in Figure 1.

2. CREATION OF NEW ECOLOGICAL FEATURES

See Figure 2 for proposed naturalised habitats post-construction at Land at Ashdon Road, Saffron Walden.

2.1 Calcareous grassland

Areas of highest quality calcareous grassland at the site will be retained in-situ where possible. This includes a large proportion of the designated LWS roadside verge in the south of the site, and the larger area of calcareous grassland in the north of the site, part of which will become part of the reptile translocation receptor site. Excluding the Ashdon Roadside Verge LWS, a total of 2043m² of calcareous grassland present at the site will be retained in-situ. However in some areas retention is not possible. The map in Figure 3 shows the areas of calcareous grassland expected to be retained, and those which will be removed / translocated as a result of the development. Translocation will involve the movement of large turves of existing calcareous grassland from within the construction footprint to areas of proposed open space at the site.

New areas of calcareous grassland will be created to offset the loss in other areas. The change in area of calcareous grassland pre and post development will be at a ratio of greater than 1:1, providing an increase in the cover of this habitat type at the site. This will be achieved through a combination of retention of habitats, translocation of turves and seeding. Areas marked in red on the map in Figure 3 show the potential locations of calcareous grassland post-development. The establishment of new areas of calcareous grassland habitat will be undertaken by translocating existing calcareous grassland (as a preference), and by new planting using appropriate seed mixes in the areas left over. Seeds of key calcareous grassland species have been collected on site to facilitate the creation of new grassland habitats. The hierarchy for calcareous grassland retention, translocation and management onsite will be as follows;

- Retain the best areas of habitat wherever possible;
- Translocate areas of high quality habitat where impacts cannot be avoided;
- Seed new areas of habitat with seeds collected onsite;
- Allow for natural re-colonisation from existing seed bank; and
- Seed new areas of habitat with calcareous grassland mix.

Methodologies for these are described in detail below.

2.1.1 Grassland translocation

Translocation of calcareous grassland will occur only after the full completion of the reptile translocation programme described in the Wildlife Protection Plan (MKA Ecology Ltd, 2015), intended to be summer 2015. Only areas of calcareous grassland of high quality within the construction footprint will be translocated as those with high levels of rank vegetation or encroaching scrub are considered unsuitable and of lower ecological value. Decisions on grassland to be translocated will be made by a suitably experienced ecologist.

Areas of grassland proposed for translocation include narrow strips of the Ashdon Roadside Verge LWS, the removal of which is necessary in order to provide the required visibility splay at the site entrance. This LWS grassland will be redistributed at the roadside verge in the format least disruptive in order to make space for the necessary changes in road layout (please see Figure 3). Overall, the area of grassland associated with this roadside verge will increase marginally as a result of these changes.

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.

Recipient sites will include areas of open space along the site boundary bordering Ashdon Road, extensions to the Ashdon Roadside Verges and areas within the designated reptile mitigation site. It is anticipated that existing calcareous grassland within the commercial parts of the site will be translocated close to the roadside verges and to areas around the reptile translocation site. The existing strip of calcareous grassland within the residential parts of the site will likely be translocated to the area adjacent to Ashdon Road at a later point during the reserved matters stage for this part of the site. It should be noted that this location will be confirmed on submission of reserved matters and that the existing masterplan is illustrative. Potential areas of calcareous grassland at the site post-development are displayed in Figure 3. 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, depending on the required profile. The soil of the recipient site should be loose and scarified. This preparation may not be necessary in all translocation areas and this should be reviewed on a case by case basis by the ecologist.

Transplantation of turves must occur immediately after harvesting as the turves cannot be stored once cut. Turves cut from donor site should be between 200mm and 500mm deep. This can be done by hand using a shovel for small areas or by using an excavator for larger areas. Using an excavator with a large bucket is recommended where possible as this maximises the length, width and thickness of turves so that disruption to the vegetation is minimised. Machinery with low ground pressure tyres or tracked machinery is also recommended as this will help avoid soil compaction.

Figure 1 shows the existing soil profile for part of the calcareous grassland in the north of the site. The soil depth is currently approximately 200 – 300mm and therefore translocated turves will be of approximately this depth although varying conditions may become apparent as work proceeds.

Figure 1: Soil profile of calcareous grassland in north of site



At the recipient site turves should be placed tight up against other turves and then pressed down with the excavator bucket, trodden or rolled to remove air pockets between and under turves which if left can result in the root systems drying out. Any cracks and gaps between turves must be filled immediately with soil from the donor site. Wherever possible the recipient site will be selected with consideration of the donor site characteristic (aspect, incline and shading etc).

2.1.2 Seeding

Where naturalised (i.e. vegetated) areas are to be seeded, these sites should be prepared by removing the uppermost 20cm of topsoil in order to remove the existing seed bank. All sites for seeding (including those formerly of hardstanding substrate) should then be laid with a thin layer (ca. 15 to 20cm) of chalk rich soil. This should be harrowed or raked to produce a medium tilth, and then rolled, or trodden to produce a firm surface.

Emorsgate EM6 '*Meadow Mixture for Chalk and Limestone Soils*' is recommended for seeding of these new areas. Composition details are provided in Table 1 below.

The seed mix should be sown onto the prepared ground in autumn (August-September) or spring (March-April) months, however may be sown during the winter months if required. EM6 should be sown at a rate of 4g per m². It is recommended that sowing is undertaken immediately subsequent to the preparation of the substrate layer to avoid colonisation by weeds. If this is not possible then the substrate layer should be left covered in the intervening period and monitored for weeds. Alternatively the substrate layer can be cultivated regularly to create a stale seed-bed.

Seeds for the three supplementary species listed in Table 1 below (selected due to their inclusion on the Essex Red Data List, and their known presence within 2km of the site) should be sourced and included within the grassland seeding. Seeds for these species are readily available from *Emorsgate Seeds*.

Additionally, seeds from calcareous species present on site were hand collected during late summer 2014 and stored appropriately with the aim of using this to re-seed habitats post-construction. These will be used to supplement the EM6 seed mix. Species from which seeds were hand collected are shown in Table 1 below. Throughout the phased construction programme it is recommended that further seeds are collected from key calcareous species where possible.

Table 1: Grassland species to be seeded in new areas of calcareous grassland at Land at Ashdon Road

Common Name	Systematic Name	% total
EM6 Seed Mix		
Yarrow	<i>Achillea millefolium</i>	0.5
Kidney Vetch	<i>Anthyllis vulneraria</i>	0.8
Common Knapweed	<i>Centaurea nigra</i>	1
Greater Knapweed	<i>Centaurea scabiosa</i>	2
Wild Basil	<i>Clinopodium vulgare</i>	0.4
Wild Carrot	<i>Daucus carota</i>	0.6
Lady's Bedstraw	<i>Galium verum</i>	1
Field Scabious	<i>Knautia arvensis</i>	2
Rough Hawkbit	<i>Leontodon hispidus</i>	0.4
Oxeye Daisy	<i>Leucanthemum vulgare</i>	1.5
Birdsfoot Trefoil	<i>Lotus corniculatus</i>	2
Sainfoin	<i>Onobrychis viciifolia</i>	1.2
Wild Marjoram	<i>Origanum vulgare</i>	0.2
Hoary Plantain	<i>Plantago media</i>	0.4
Salad Burnet	<i>Sanguisorba minor</i>	2
Cowslip	<i>Primula veris</i>	1.5
Meadow Buttercup	<i>Ranunculus acris</i>	1.5
Small Scabious	<i>Scabiosa columbaria</i>	1
Quaking Grass	<i>Briza media</i>	2.4

Common Name	Systematic Name	% total
Crested Dogstail	<i>Cynosurus cristatus</i>	32
Sheep's Fescue	<i>Festuca ovina</i>	22
Slender-creeping Red-fescue	<i>Festuca rubra</i>	16
Crested Hair-grass	<i>Koeleria macrantha</i>	1.2
Smaller Cat's-tail	<i>Phleum bertolonii</i>	6.4

Supplementary	
Betony	<i>Betonica officinalis</i>
Greater Burnet Saxifrage	<i>Pimpinella major</i>
Pepper Saxifrage	<i>Silaum silaus</i>

Seeds collected from site pre-development	
Agrimony	<i>Agrimonia eupatoria</i>
Wild Basil	<i>Clinopodium vulgare</i>
Small Scabious	<i>Scabiosa columbaria</i>
Blue Fleabane	<i>Erigeron acer</i>
Wild Liquorice	<i>Astragalus glycyphyllos</i>
Sulphur Clover	<i>Trifolium ochroleucon</i>
Hoary Plantain	<i>Plantago media</i>
Perforate St John's-wort	<i>Hypericum perforatum</i>
Wild Carrot	<i>Daucus carota</i>
Wild Marjoram	<i>Origanum vulgare</i>

2.2 Reptile translocation receptor site

The location of the proposed reptile translocation receptor site is shown in Figure 2. Prior to work this area consisted of calcareous grassland and a large area of scrub. Before the installation of herptile fencing and the start of reptile translocation programme, this habitat required modification in order to enhance its value for reptiles.

As reptiles are ectothermic (i.e. they do not generate their own body heat, but rather use external warmth to raise their body temperatures to optimal levels), they require a variety of sheltered basking locations to make the most of varying weather conditions. This is best achieved by providing habitat

consisting of a mosaic of open areas and dense cover. Areas of scrub create windbreaks and pockets of warm microhabitat, as well as being a refuge in hot weather.

The area contained some dense scrub, the coverage of which was reduced as part of the receptor site preparation works. Reduction of scrub coverage involved the widening of a grassland ride, and retention of small low-growing patches of scrub within the grassland habitat in order to create a variety of micro-climates and areas of cover. Scrub height within the receptor site should be phased, lowest near the grassland edges, progressing to taller areas in the centre of the scrub patches. Retention of some taller scrub should be of benefit to breeding birds. Please see Appendix 4 for proposed target habitat composition at the reptile mitigation area, including scrub coverage and height.

Initial clearance of scrub to achieve the target habitat composition shown in Appendix 4 was undertaken early in March 2015. Scrub was cut to a height of 15cm, with root boles left intact to avoid any potential impacts on reptiles still in hibernation which may have been sheltering below ground. Where required, removal of root boles will take place by hand under a watching brief by an experienced ecologist between the months of May and September (when reptiles are at their most active and least vulnerable to disturbance).

The aim is for the open areas of habitat to be comprised of calcareous grassland. Existing grassland has been retained and areas of cleared scrub will now be allowed to naturally regenerate to grassland through active grassland management. Where natural regeneration is not successful in this area, grassland will be established using one of the methods identified in Section 2.1 above.

Furthermore three logpiles will be created in the receptor site (see Appendix 4) to act as additional cover and refuges for reptiles. Logpiles should be created from deadwood and brash cuttings of a variety of sizes. The central core of the logpile should be compacted, with the outer layers laid more loosely on top of this. They should be positioned in areas of long grass and near scrub, so that there is a cover of vegetation immediately surrounding or adjacent to the pile. Small derelict outbuildings within the receptor site will be retained as additional cover and habitat features for bats and birds.

Upon completion the entire reptile translocation site will be fenced off using a 1.2m post and rail fence with wire, and a hedgerow planted in front of this. These measures will act to minimise pressures from human activities and discourage domestic cats from entering. It is vital that any fencing systems installed do not impede the movement of Common Lizard in and out of the mitigation area as it is hoped that Common Lizard may re-colonise the other calcareous grassland areas at the site post-development.

2.3 Bats

Mitigation included under the terms of the Natural England Bat licence for the site (to offset the loss of the existing bat roost in Building C) is discussed within the separate Wildlife Protection Plan (MKA Ecology Ltd., 2015) which covers protection of biodiversity at the site during the construction phase. In addition to the mitigation provided under the terms of the Natural England licence, enhancements for roosting bats are recommended across the wider site as follows.

Enhanced bat roosting provisions on Phases 1b, 2 and 4 should include a minimum of 30 integrated bat tubes in residential dwellings at the site, six free-standing bat boxes and five bat boxes on trees around the site. Examples of suitable boxes can be found in Appendix 5. Three of the free standing bat boxes will be installed within the reptile mitigation area, one box will be installed in the open space in the south-western corner of the site, and two boxes will be placed near the attenuation basin area. The location of these are shown in Figure 5, Appendix 1.

Additional bat roosting provisions will be provided under the terms of the Natural England bat licence for the new Ridgeons site in Phase 1a. The extent of these provisions will be agreed in advance with Natural England and are likely to include bat boxes in trees and in the new Ridgeons building.

Roosting provisions for bats on Phase 1d should include four externally mounted bat boxes. The location of these are shown in Figure 6, Appendix 1.

Access to any bat roosting features should not be lit and should also be at a reasonable height to avoid predation (at least 2m if possible). The access should also be close to features such as trees, green space and hedgerows in order to provide immediate cover for bats leaving the roost. When mounting boxes on trees it is often more effective to mount three boxes to a tree. All three boxes should be at the same height but facing in different directions, usually south-east, south and south-west. This provides different conditions for the bats throughout the day. Boxes on trees should be mounted as high as possible (ca. 4 -5 m). Integrated bat boxes within buildings should be positioned, where feasible, facing south to maximise solar heating.

2.4 Breeding birds

The proposed new planted trees, hedgerow / scrub and garden habitats will provide additional breeding habitat for common tree-nesting bird species (see native planting below). Much of the existing scrub habitat around the site boundary will also be retained. The grassland provision at the site (including the area to be managed for reptiles), will provide suitable potential nesting habitat for some ground nesting bird species.

For detailed planning for Phases 1b, 2 and 4 (residential housing), minimum of 0.3 bird nesting boxes per residential dwelling should be provided at the site. These should comprise roughly 40% Sparrow Terraces, 40% Swift Boxes, with the remaining 20% being Generalist Boxes with a variety of entrance hole sizes (26mm or 32mm) which will attract different species. Additionally, a Kestrel box should be provided in the grassland area in the south west corner of the site (away from the reptile habitat). Examples of suitable boxes can be found in Appendix 6.

With the detailed planning application for the Ridgeons Building (Phase 1a) the following boxes will be installed;

- Three Sparrow terraces;
- Nine Swift boxes; and
- Five Generalist boxes.

With the detailed planning application for Phase 1d, the following boxes will be installed (positions of these are shown in Figure 6, Appendix 1):

- Tree generalist boxes
- Two swift boxes
- One kestrel box

Bird boxes should be fixed two to five metres high on buildings, trees or walls, out of the reach of predators such as domestic cats. Sparrow terraces should be mounted close to vegetation on walls or buildings, and Starling boxes should be mounted on trees. Swift boxes should be integrated into building designs and grouped together for this colony nesting species.

Unless trees or buildings surrounding the boxes give permanent shelter, boxes are best mounted facing between north and east, thus avoiding strong sunlight and the wettest winds. Boxes should also be tilted forward slightly to minimise the effect of any driving rain.

2.5 Native planting

All planting schemes at the site will aim to provide a high proportion of native species (minimum 60% native). This will benefit invertebrate populations at the site, which in turn will be of benefit to foraging birds and bats. The current masterplan for the site includes a large number of trees planted in association with garden boundaries, amenity areas and commercial facilities. The species listed in Table 2 are recommended for inclusion in these areas due to their association with scarce or notable invertebrate species known to occur in the area, or being scarce themselves. Planting schedules will be developed by landscaping teams in cooperation with ecologists to maximum biodiversity potential

at the site. These schedules will be developed at the reserved matters stages for the phased development.

Table 2: Tree species for inclusion in planting schedule at Land at Ashdon Road, Saffron Walden

Common Name	Systematic Name	Reason for inclusion
Apple	<i>Malus sp.</i>	Food plant for Apple Pith Moth (Essex Red Data List)
Pendunculate Oak	<i>Quercus robur</i>	Food plant for Brown Spot Pinion (UK BAP)
Hawthorn	<i>Crataegus monogyna</i>	Food plant for Brown Spot Pinion (UK BAP) and Green Brindled Crescent (UK BAP)
Blackthorn	<i>Prunus spinosa</i>	Food plant for Green Brindled Crescent (UK BAP)
Wych Elm	<i>Ulmus glabra</i>	Food plant for White Letter Hairstreak (UK BAP, W&CA Sch 5, IUCN Red List: Endangered)
Large-leaved Lime	<i>Tilia platyphyllos</i>	A nationally scarce species, listed on the Essex Red Data List.

3. MANAGEMENT OF ECOLOGICAL FEATURES POST-DEVELOPMENT

3.1 Calcareous grassland

Calcareous grassland present within the reptile habitat area identified in Figure 2 will be managed as per the recommendations in Section 3.2 below. All other calcareous grassland at the site will be managed in accordance with the following.

3.1.1 *First-year management*

The species in the EM6 meadow mix used in the newly seeded areas of grassland are perennial and slow to germinate and grow. They are therefore unlikely to flower in the first growing season. As such there is an increased risk of weed growth during this first year, which if left unmanaged may hinder the establishment of the new grassland. Weed growth should therefore be controlled by mowing or topping before the weeds set seed. All newly established wildflower grassland should be cut regularly during the first year to a height of 50mm to ensure establishment and strong root growth.

3.1.2 *Long-term management*

Regular cuts of wildflower areas should be made between October and May to a height of 50mm. No cuts should take place between May and October to allow the grassland to flower and seed. All arisings should be removed from site to avoid an increase in nutrient levels of the soil which over time may result in a change in sward composition.

The calcareous grassland areas will not require watering or feeding, as many of the target species have developed to colonise nutrient poor soils. Doing so may encourage vigorous growth of ruderal species which will out-compete the more desirable native calcareous species.

Occasional control of weeds such as Bramble and Common Nettle may be required. Weed control should involve removal by hand in the first instance. Spot treatment using a targeted herbicide can be used if removal by hand is not feasible.

Annual monitoring of the grassland should occur with the target species composition set out in Table 1.

3.2 Reptile mitigation area

Management practices in the designated reptile mitigation area in the north of the site (as shown on the map in Figure 2) will aim to maintain a mosaic of habitat types and age structure within the

vegetation. Variety in habitats will act to increase the range of microclimates available, as well as ensuring that some areas of taller vegetation are present throughout the year for use as cover and protection from predators.

This outcome will be achieved through the use of a phased management system, on a rotation of 3 years (i.e. no more than one third of vegetation in any habitat type cut in any one year). Using this practice, areas will be mown / cut at different times in order to ensure that there is always some cover of taller vegetation present. A plan for the rotational cutting has not been provided within this document. It is proposed that decisions on vegetation cutting should be made on a yearly basis based on those areas which have the greatest requirement for it.

Grassland in the reptile habitat will be cut using a strimmer or brush cutter to a minimum height of 15cm (no shorter than this due to the risk of harm to reptiles). These cuts are best done during winter months (i.e. between the months of November to February) when reptiles are least active and are unlikely to be moving amongst the sward. All arisings should be removed from site to avoid an increase in nutrient levels of the soil which may over time alter plant community composition.

Scrub cutting should only be undertaken as and when it becomes necessary, with the aim of maintaining the gradient of scrub heights shown in Appendix 4. Management should aim to keep the scrub within the reptile mitigation area at the mid-successional stage and maximise the amount of 'edge' habitat available by the use of scalloping the edges of blocks of scrub. Cutting of scrub should take place between mid-September and mid-February to avoid disturbance to nesting birds, however particular care must be taken to avoid 'below ground' disturbance during this period as reptiles may be hibernating amongst the roots at this time of year. Stumps should be left in-situ as these can create refuges for reptiles.

Waste from scrub management should for the most part be removed from site, however some cuttings may be used to supplement the reptile refugia logpiles on site as they decay over time.

3.3 Scrub and hedgerows

Under the Wildlife and Countryside Act 1981 it is an offence to disturb breeding birds and therefore control and maintenance of scrub and hedgerow habitats should be undertaken outside of the bird breeding season (which runs from March to August inclusive). If works are unavoidable within the bird breeding season, a suitably experienced ornithologist will be required to confirm that no resident birds will be affected by the proposed work.

3.4 Bat boxes

A special licence is required in the UK to disturb and handle bats and therefore the cleaning of bat boxes should be managed carefully. Boxes are generally unlikely to be used by hibernating bats and winter (i.e. November to February inclusive) is therefore generally the best time of year to undertake maintenance. Any droppings and bird nesting material should be removed. If bats are discovered during the maintenance process staff should replace the box as found and withdraw immediately. An annual check should be made each winter to ensure that all boxes are still in position and secure. Integrated bat tubes in buildings do not require cleaning.

MKA Ecology Ltd can monitor the use of bat boxes should you wish to maintain a record, or your local bat group, may be able to assist with the work.

3.5 Bird boxes

Under the Wildlife and Countryside Act 1981 it is an offence to disturb breeding birds and therefore annual cleaning cannot be undertaken between the months of March and September inclusive. Bird nest boxes should be cleaned in November to prevent the build-up of nest parasites in the boxes whilst avoiding the risk of disturbing birds using the boxes as a roost site during the cold winter months. All nesting material and other debris should be removed from the box. Ideally, it should then be scrubbed clean with boiling water to kill any parasites (avoid using any chemicals). Once the box is clean, it should be left to dry out thoroughly. Bird boxes should be left up over winter as they can provide useful roosting sites for birds in bad weather.


3.6 General

Good horticultural practices should be employed to ensure no, or minimal, use of pesticides and herbicides within the grounds. Where required, 'weeds' (e.g. thistles, nettles, docks, etc.) should be reduced by using spot treatment with a targeted weed killer; Glyphosate (Roundup) is recommended. Care must be taken to avoid spray drift and to avoid saturating the soil during application; Roundup becomes inert in the soil so long as the soil is not saturated with the liquid.

Exterior lighting should be managed appropriately to ensure that the bat boxes and adjacent greenspaces are not floodlit.

3.7 Timetable of ecological management activities

KEY

Appropriate timing of works 

Activity	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Reptile habitat area													
Reptile habitat grassland cut	Annual (3 year rotation)												
Reptile habitat scrub management	As needed												
Reptile logpile inspections	Annual												
Reptile logpile repairs	As needed												
Calcareous grassland (excluding reptile habitat area)													
Calcareous grassland mowing	Regular, to 50mm												
Scrub and hedgerows (excluding reptile habitat area)													
Scrub and hedgerow management	As needed												
Other													
Bat box maintenance	Annual												

Activity	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bird box maintenance	Annual												

4. POST-DEVELOPMENT MONITORING

Periodic checks of habitats should be undertaken at the site post-development to ensure management practices detailed within this document are having the appropriate effect and impact. Where significant changes or deterioration of habitats occurs over time, this should trigger a review of all management proposals in order to return the habitats to their desired state. Habitat-specific monitoring objectives are outlined in the sections below. Management will be undertaken as part of the management of the wider public open spaces to be provided on the site,

4.1 Calcareous grassland

The calcareous grassland habitats should undergo regular monitoring for injurious weeds. This is particularly important during the first year post-development when the seeded grassland is still in an establishing phase and the translocated grassland is adjusting to altered environmental conditions.

Injurious weeds as classified under the Weeds Act (1959) include:

- Common Ragwort *Senecio jacobaea*;
- Spear Thistle *Cirsium vulgare*;
- Creeping Thistle *Cirsium arvense*;
- Broad-leaved Dock *Rumex obtusifolius*; and
- Curled Dock *Rumex crispus*.

In addition to these we would recommend also including the following:

- All Schedule 9 plants as listed on Wildlife and Countryside Act (1981) as amended;
- Common Nettle *Urtica dioica*;
- Bindweeds *Convolvulus sp.*;
- Dandelion *Taraxacum agg.*;
- Willowherbs *Epilobium sp.*;
- Bramble *Rubus sp.* (excluding in scrub habitats);
- Horsetails *Equisetum sp.*; and
- Creeping Buttercup *Ranunculus repens*.

In the first year post-development, a monitoring check of the calcareous grassland habitats for weeds should be undertaken once in winter / autumn and monthly during spring / summer. After this initial one year period, annual weeding should take place.

4.2 Bat boxes

Compensatory bat roosting provisions will be monitored for a minimum period of two years post-development as part of the Natural England EPS licence for the site (details provided within the licence agreement and the Wildlife Protection Plan for the site). However, it is recommended that the bat roosting provisions included as part of the enhancement of the site (i.e. those detailed within this report) should also be monitored concurrently during period.

5. RESERVED MATTERS

The details of the following should be finalised at the reserved matters stage of each Phase of the development:

- Location of bird and bat box installations within Phases 1b - 5; and
- Planting schedules (to include minimum 60% native species) within Phases 1b to 5.

6. REFERENCES

Crofts, A. & Jefferson, R.G. (1999). *The Lowland Grassland Management Handbook (2nd ed.)*. English Nature: Peterborough.

Edgar, P., Foster, J. and Baker, J. (2010). *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.

MKA Ecology Ltd. (2015). *Wildlife Protection Plan: Land at Ashdon Road, Saffron Walden*. MKA Ecology Ltd: Shepreth.

White, G. & Gilbert, J. (2003). *Habitat Creation Handbook for the minerals industry*. RSPB: Sandy.

7. APPENDICES

Appendix 1: Figures

Figure 1: Proposed Phasing Plan for Ridgeons site, Ashdon Road, Saffron Walden



Figure 3: Proposed and existing calcareous grassland habitat at Land at Ashdon Road, Saffron Walden

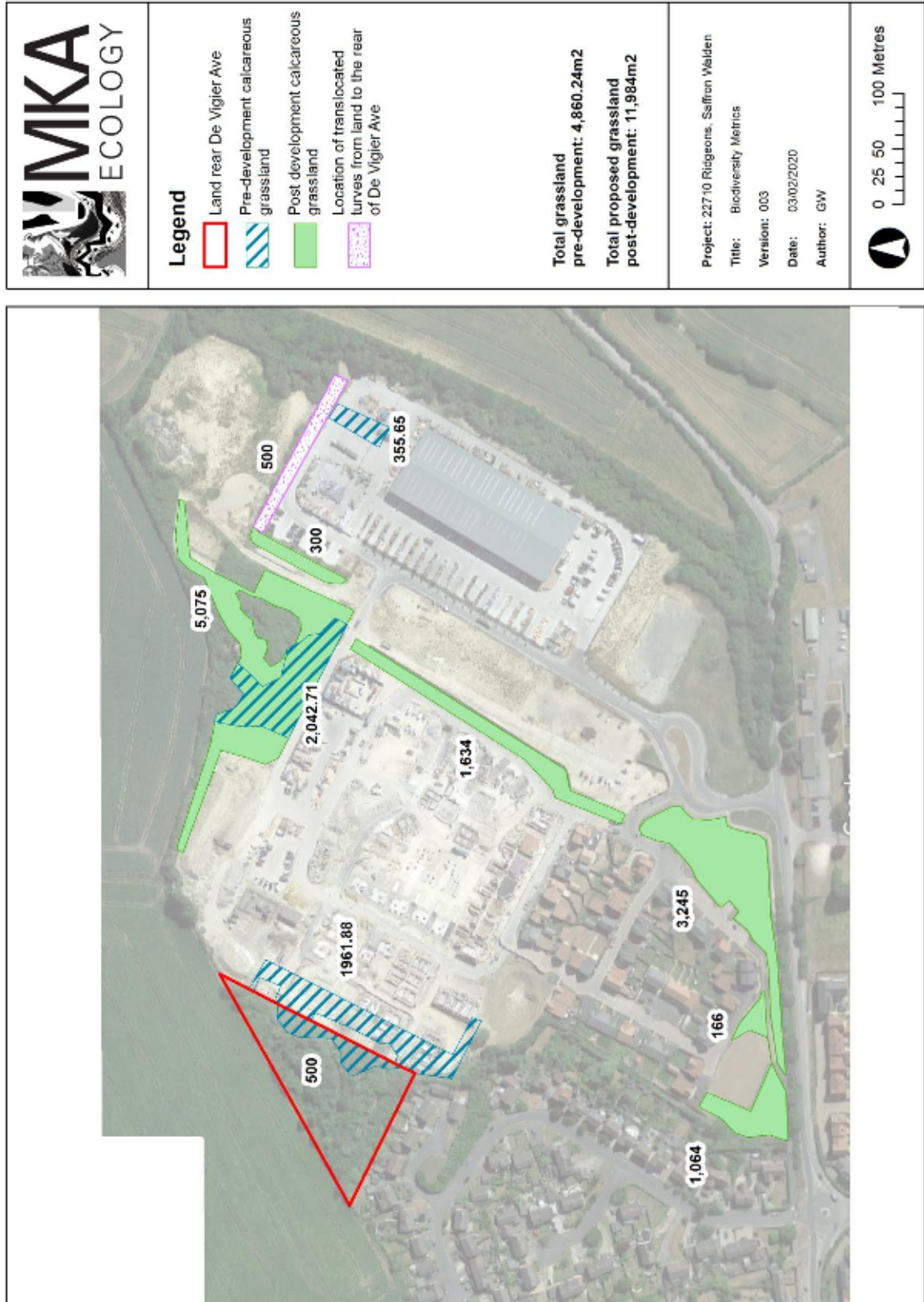


Figure 4: Target habitat composition for reptile mitigation area at Land at Ashdon Road, Saffron Walden

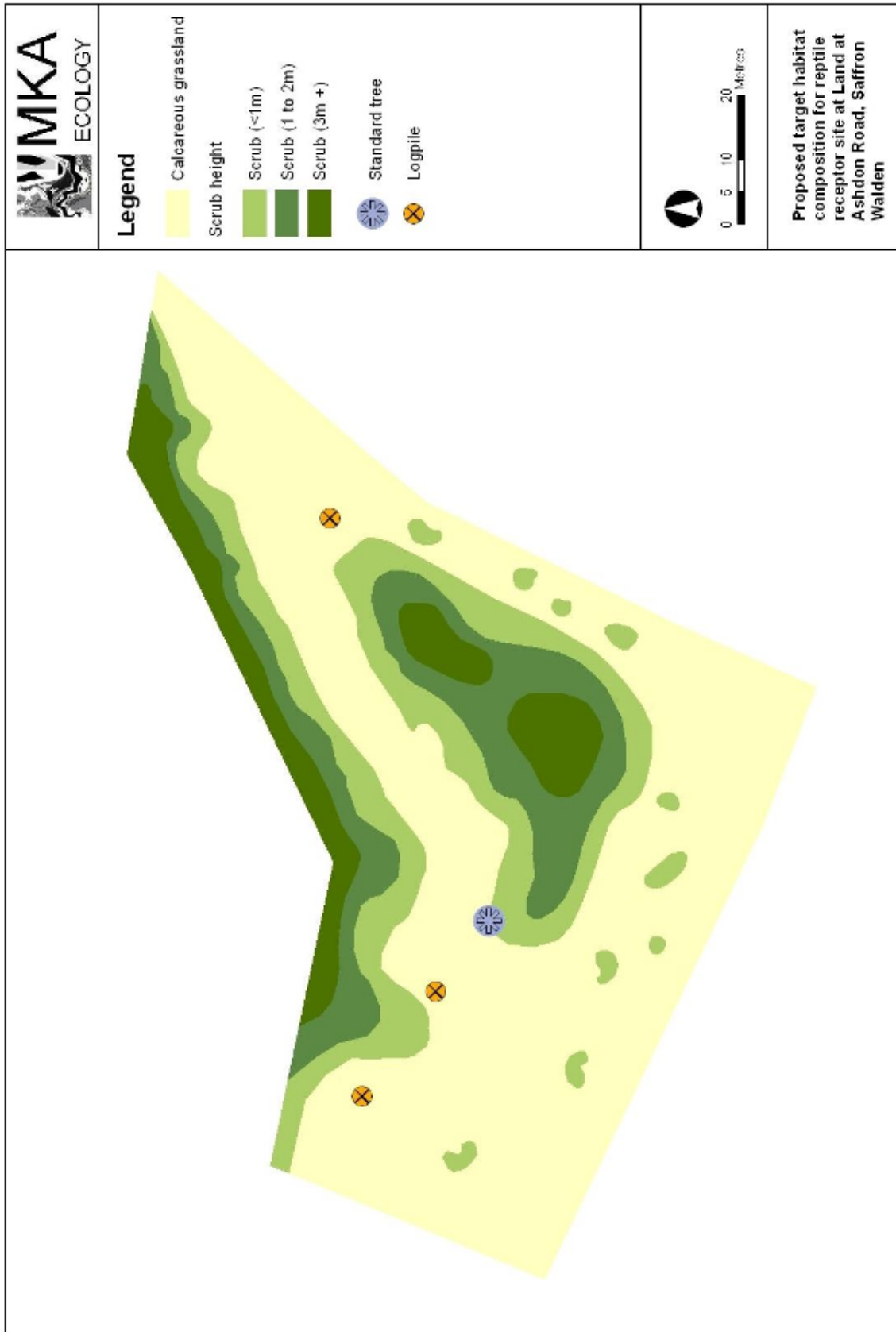


Figure 5: Bird and bat box placement for Phases 1b, 2 and 4

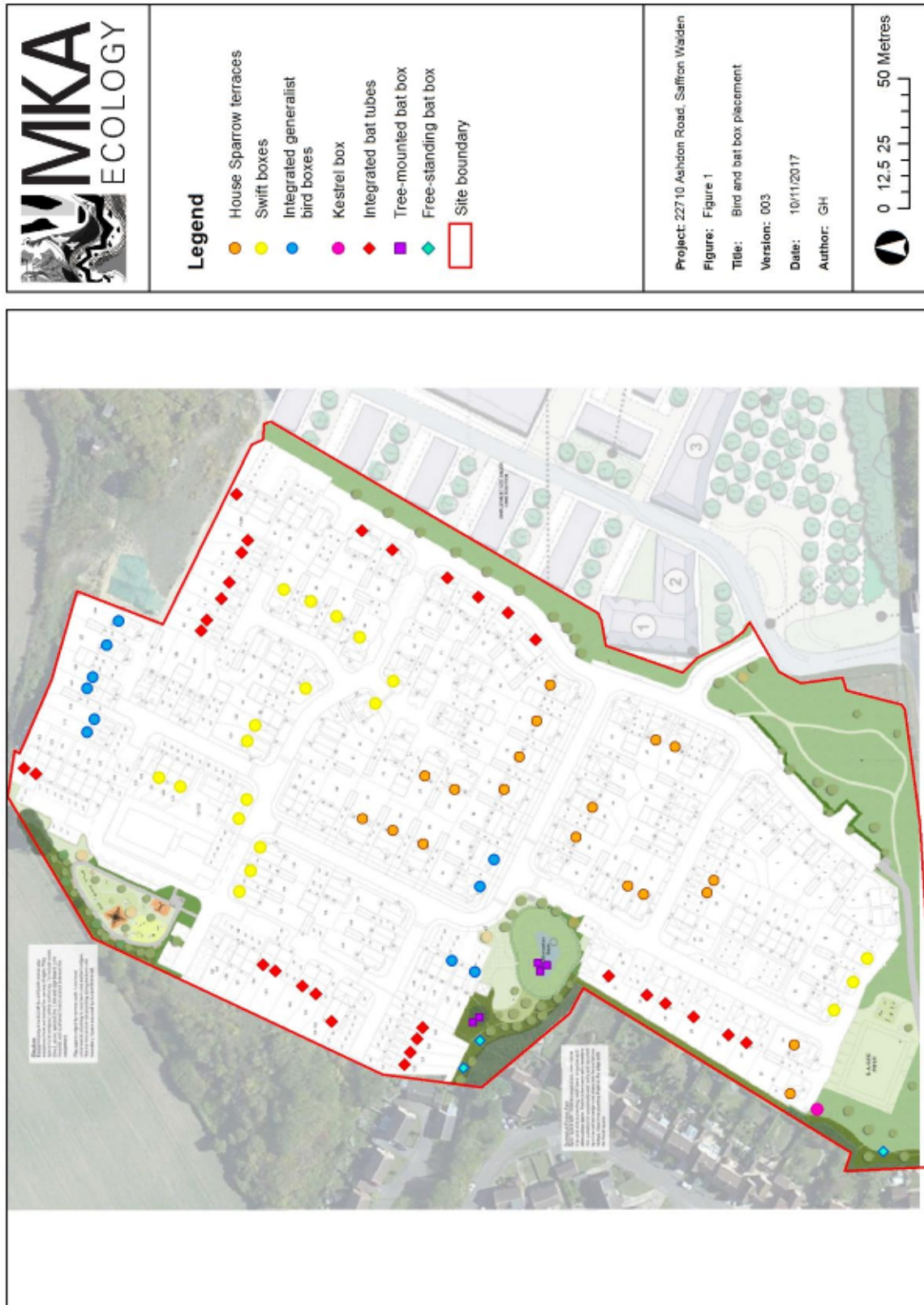
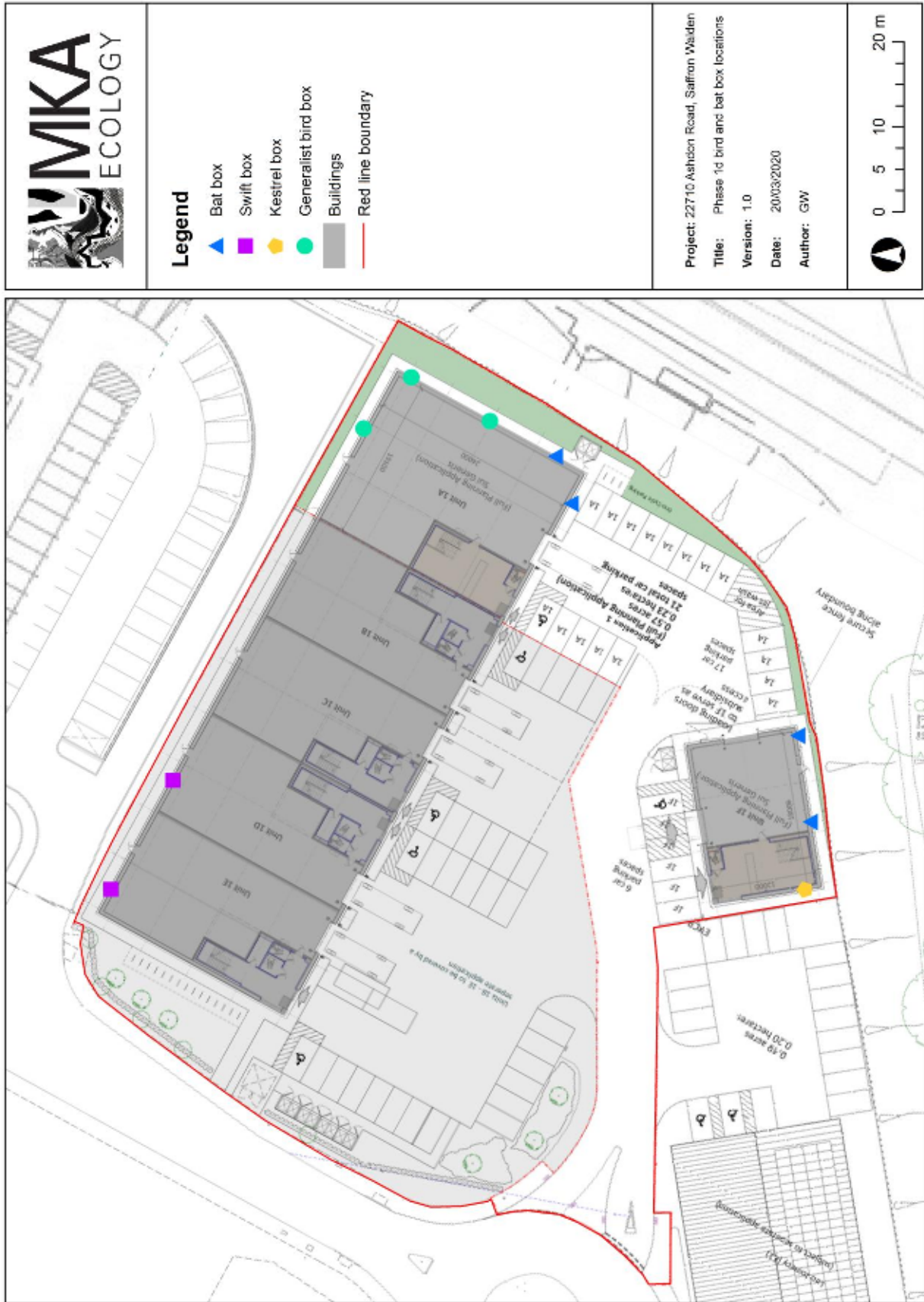



Figure 6: Bird and bat box locations for Phase 1d

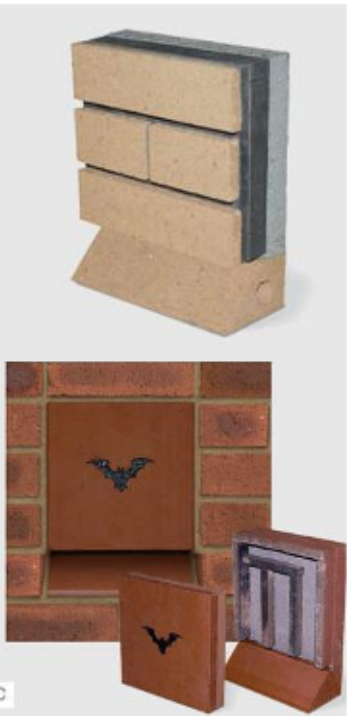







Appendix 2: Bat box recommendations (applicable to Phase 1b, 2 and 4 only)

A wide variety of bat boxes are available to suit a variety of species and design requirements. Bat boxes can be mounted externally on buildings or built directly into the wall structure. Bat boxes are simple to incorporate into building designs or mount on trees in surrounding habitat. Free-standing boxes are also available, mounted on poles.

Access to any bat roosting features should not be lit and should also be at a reasonable height to avoid predation (at least 2m if possible). The access should also be reasonably close to features such as trees, green space and hedgerows in order to provide immediate cover for bats leaving the roost. When mounting boxes on trees it is often more effective to mount three boxes to a trees. All three boxes should be at the same height but facing in different directions, usually south-east, south and south-west. This provides different conditions for the bats throughout the day. Boxes on trees should be mounted as high as possible (c 4 -5 m).

Bat box	Description	Picture
Schwegler Bat Tube 1FR	This can be installed on external walls and can be set flush with a rendered surface, therefore only leaving the entrance hole visible. www.schwegler-nature.com	

Bat box	Description	Picture
<p>Enclosed Bat Box B & C</p>	<p>Designed specifically for Pipistrelle bats and can be easily incorporated into the outer walls of a new build or during renovation works. www.ibstock.com</p>	
<p>Forticrete Bat Box</p>	<p>Designed specifically for Pipistrelle bats and can be easily incorporated into the outer walls of a new build or during renovation works. www.ibstock.com</p>	
<p>Schwegler Bat Box 1FQ</p>	<p>This box is suitable for all types of bats that inhabit buildings and can be fixed externally to outside walls. www.schwegler-nature.com</p>	


Bat box	Description	Picture
Schwegler Bat Box 1FF	<p>Suitable for hanging in inaccessible places such as trees as it does not require cleaning.</p> <p>www.schwegler-nature.com</p>	
Schwegler General Purpose Bat Box 2F	<p>This box is a good all round standard box which is suitable for hanging on trees. It can be particularly successful for Pipistrelle and Long-eared bats.</p>	
Herpetosure Four Seasons Free-standing Bat Box	<p>http://www.herpetosure.com/solutions/bat-solutions</p> <p>Made with varying levels of insulation allowing bats to move between the galleries, depending on ambient temperatures. Set on a heavy gauge steel pedestal that is hinged for ease of maintenance.</p>	

Appendix 3: Bird box recommendations (applicable to Phase 1b, 2 and 4 only)

Boxes should be fixed two to five metres up a tree or wall, out of the reach of predators such as domestic cats. Unless there are trees or buildings, which give permanent shelter, it is best facing between north and east, thus avoiding strong sunlight and the wettest winds.


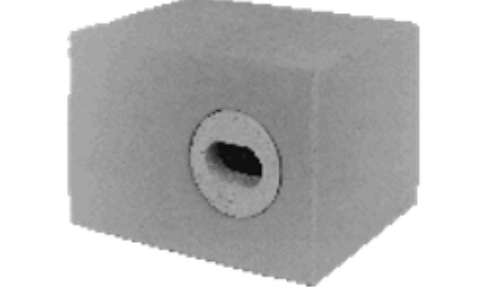

House Sparrow

Nest boxes can be provided to encourage this species to breed at the site. Nest boxes for this species should have a hole approximately 32mm in diameter and the box itself should be approximately 350mm (h) x 150mm (w) x 150mm (d). The box can be incorporated into the building or attached the outside of the building. Ideally the structure should be at the soffit/eaves level or at least 2m high. The boxes should be positioned away from too much direct sunlight preferably on an eastern aspect. The species nests in loose colonies of around 10-20 pairs and as they do not defend a territory boxes can be placed as close as 20-30cm apart.

Bird box	Description	Picture
Schwegler Sparrow Terrace 1SP	A multiple nest site for this species which can be mounted into or on the external surface of the wall (www.schwegler-nature.com)	

Swifts


This species will nest in flat spaces within buildings and usually within a crevice or cavity. As with all boxes, nesting provisions should be installed out of direct sunlight and higher up (at least 5m) around the eaves of the building, perhaps under deeply overhanging eaves. Swifts nest colonially and it is important to have several nest sites in one area, it is recommended that most buildings should have at least four nest provisions. More information about nesting swifts can be found at www.swift-conservation.org.

Bird box	Description	Picture
<p>Ibstock Swift Box</p>	<p>www.lbstock.com</p> <p>This Swift brick can be built into a wall on new buildings.</p>	
<p>Schwegler Swift Box Type 25</p>	<p>www.schwegler-nature.com</p> <p>This brick design can be built into the wall of the new development and the external surface, excluding the hole, can be rendered to match the surrounding wall.</p>	
<p>Schwegler Swift Box Number 18</p>	<p>www.schwegler-nature.com</p> <p>This Swift Box No. 18 is ideally suited for creating Swift colonies under overhanging eaves.</p>	

Kestrel

Kestrels are falcons that usually eat voles, mice and beetles, although town kestrels live mostly on small birds. Farmers and foresters welcome kestrels because of their preference for field mice in rural areas, and as such nest boxes would be well placed in rural developments. Kestrels nest in tree holes, on cliff ledges or on buildings. The box should be large and solid, of 19mm or 22mm or 9mm exterior ply, with a perch across the entrance made from a small branch. It can be fixed directly to the

side of a tree or in a large fork, at least 6m high, or on top of a tall, secure pole. It must be free from disturbance, in an area where nobody will interfere with the young birds. The entrance must have a wide, open space for good visibility and easy access for the birds, with several 5 mm drainage holes in the floor.

Bird box	Description	Picture
Schwegler Kestrel Box No 28.	www.schwegler-nature.com Can be fixed directly to the side of a tree or in a large fork, at least 6m high, or on top of a tall, secure pole.	

Generalist boxes

The species of birds attracted to the box will depend upon the size of the entrance hole:

Entrance hole 32 mm: Great-, Blue-, Marsh-, Coal- and Crested Tit, Redstart, Nuthatch, Pied Flycatcher, Tree and House Sparrows.

Entrance hole 26 mm: Blue-, Marsh-, Coal- and Crested Tit, possibly Wren. All other species are prevented from using the nest box due to this smaller entrance hole

Bird box	Description	Picture
Schwegler General Purpose Nest Box 1B	Suitable for various garden bird and woodland species www.schwegler-nature.com	