the ecology partnership

Biodiversity Net-gain Assessment

Land South of Chiswell Green Lane, St Albans, Hertfordshire

The Ecology Partnership, Thorncroft Manor, Thorncroft Drive, Leatherhead, Surrey KT22 8JB

T +44 (0) 1372 364133 E info@ecologypartnership.com W ecologypartnership.com

Contents

1.0 Introduction

1.1 The Ecology Partnership was commissioned by Alban Developments Limited and Alban Peter Pearson, CALA Homes (Chiltern) Ltd and Redington Capital Ltd to undertake a Biodiversity Net-gain Assessment of the currant masterplan for the proposed development of land South of Chiswell Green Lane, St Albans, Hertfordshire.

1.2 Biodiversity Net Gain (BNG) principles are aimed to support both the aspired green infrastructural proposals set to define the created landscape, and support biodiversity and habitat enhancement. BNG principles are set within the Environment Act (2021).

Site Context and Status

1.3 The site comprises four distinct areas of fields separated by mature treelines, with a collection of farm buildings in the north-eastern and north-western corners. Fields in the north of the site are intensively grazed by horses, whilst those in the south are currently unmanaged rank grassland. The site is located to the south-west of Chiswell Green, in the St Albans District of Hertfordshire (TL131042). The site is approximately 14.02ha in size, and is bound by Chiswell Green Lane to the north, residential gardens and a small block of woodland to the east and south-east, and, Miriam Lane and Butterfly World to the west. The wider surrounding area comprises residential areas to the east and, agricultural land to the west. The extent of the site is shown in Figure 1 below:

Figure 1: Approximate location of the red line boundary
Satellite imagery obtained from Google Earth Pro on 11/10/2021

Description of the Proposed Development

1.4 The demolition of existing structures and construction of up to 391 dwellings (Use Class C3), the provision of land for a new 2FE Primary School, open space provision and associated landscaping and new access arrangements.

2.0 Methodology

2.1 In order to identify areas for ecological enhancements, a PEA (Preliminary ecological appraisal) and a condition assessment (an assessment of the quality of the habitats present within the redline boundary) was undertaken on the 15th September 2021, by Matt Pendry, Senior Ecologist, The Ecology Partnership.

2.2 The creation of areas which would support potential net-gain areas are based on the following

- Identification / classification of the on-site baseline habitats;
- Identification of habitats which are of high ecological value;
- Provision of habitat mapping;
- Identification of potential for ecological connectivity;
- Identification of areas which support landscape development;
- Linking biodiversity net gain areas, landscape features in order to identified opportunity areas which support the Nature Recovery Network aspirations;
- Recommendations for species rich, native planting.

2.3 The identification of biodiversity opportunity areas within the red line boundary is provided through the identification of on-site baseline habitats. Once the base line is established, areas where networks of natural and semi natural habitats with high ecological value can be provided are then identified.

2.4 The creation of good quality green infrastructure, supported through biodiversity net gain, would lead to ecosystem resilience and support the principles of the nature recovery network (The Environment Act 2021).

3.0 DEFRA Metric

3.1 The Biodiversity Metric 3.0 is used to calculate biodiversity losses and gains for terrestrial habitats within the application area. This metric underpins the Environment Bill's provisions for mandatory biodiversity net-gain in England.

3.2 The Biodiversity Metric uses habitat as a proxy for wider biodiversity with different habitat types scoring different values according to their relative biodiversity value and dependent on the condition and location of the habitat, to calculate '**biodiversity units**'.

3.3 The condition assessments, see appendix 2, provide further scrutiny of the measured habitats. The condition of habitats is dependent on a number of parameters, and may include aspects of management, the impact of invasive species and nutrient enrichment, which would affect species abundance and specific characterisation of habitat value.

3.4 The site has been assessed in terms of the condition assessment of the baseline. This process was undertaken during the PEA survey and therefore this report should be read in conjunction with the associated PEA.

Site Specific DEFRA Metric Calculations

3.5 The habitats currently present on site have been divided into a number of habitat types. These are shown in Tables 1 and 2 below. These have been detailed in the PEA (The Ecology Partnership, 2021).

Table 1: Habitat Breakdown – Pre-Development 14.02ha

Habitat	Area (ha)	Condition
Grassland - Other neutral grassland	4	This habitat type was used to describe areas of species-poor grassland in the south of the site. Considered **'poor'** condition
Grassland - Other neutral grassland	1.47	This habitat type was used to describe areas of species-poor grassland in the south-east of the site. This grassland was more naturalistic than the other neutral grassland in the south of the site, with relatively more herbaceous species. Considered **'moderate'** condition
Sparsely vegetated land - Ruderal / ephemeral	0.46	This habitat type was used to describe the field edges and manure heap dominated by nettles and other ruderals associated with nutrient enrichment. Considered **'poor'** condition
Grassland- modified grassland	6.51	This habitat was used to describe the species poor improved grassland, within the northern fields. The grassland within the site supports a low diversity of common and widespread species, being dominated by

		fodder grasses such as perennial rye grass and heavily grazed and trampled by horses. Considered **'Poor'** condition due to the low number of species present, and damage associated with overgrazing
Heathland and shrub – Mixed scrub	0.91	Areas of mixed linear scrub along the field boundaries. Considered **'poor'** condition
Heathland and shrub – Bramble scrub	0.03	Area of bramble scrub along the western boundary of the southern field. Considered **'poor'** condition
Urban – Developed land; sealed surface	0.4	Areas of buildings and hardstanding (largely concrete) primarily in the north west and north-east of the site. Condition not applicable.
Urban – Artificial Unvegetated, Unsealed surface	0.09	Area of shredded rubber used for equestrian training, in the north-west of the site and rubble pile in the centre of the site. Condition not applicable.
Urban – Introduced shrub	0.04	Areas of ornamental non-native shrubs in the north-east of the site. Condition '**poor'** by default.
Total	**14.02**	

Table 2: Linear habitat breakdown – Pre-Development 0.64km

Habitat	**Length (KM)**	**Condition**
Native hedgerow with trees	0.04	Hazel hedgerow in the centre of the site Considered **'good'** condition
Line of tree (Ecologically valuable)	0.67	Hawthorn hedge along the northern and eastern boundary in the central field Considered **'good'** condition
Total	0.71km	

3.6 The habitats proposed – i.e. post development on site - have been estimated from the outline master plan. The plan lacks landscape detail at this stage, with no detail available for the school area, and as such, assumptions of the habitats on site post development have been made and are mapped in appendix 1. The habitats within the school area has been estimated and the breakdown between hardstanding (such as buildings and parking), neutral grassland, and playing field (modified grassland), and has been estimated at an 25:25:50 split.

3.7 The habitat types and areas from the proposal are shown below in Table 3 and Table 4 for the new linear features.

Table 3: Habitat Breakdown – Post Development 14.02ha

Habitat type	ha	Condition
Urban - Vegetated garden	2.99	Assigned condition as '**Poor**' guidance for use of BNG calculator, as management is up to the occupants. This includes turf and planting in front and back gardens
Urban - Developed land; sealed surface	5.86	Area used to describe the houses / hardstanding / parking Considered **'N/A-Other'** condition
Modified grassland	0.88	Area used to describe the **school** playing fields Considered **'poor'** condition
Urban - Developed land; sealed surface	0.44	Area used to describe the **school** buildings / hardstanding / parking Considered **'N/A-Other'** condition
Other neutral grassland	0.44	More naturalistic grassland within the **school** grounds Considered '**moderate'** condition and managed in the LEMP.
Other neutral grassland	0.63	This will be wet meadow mixture, within the SUDS basins. Considered '**moderate'** condition and managed in the LEMP.
Other neutral grassland	0.14	New areas of wildflower grassland buffering the green corridor through the centre of the site. Considered '**moderate'** condition managed in the LEMP
Other neutral grassland	0.44	New areas of flowering lawn in the more recreational areas of the site, not suitable for taller sward grassland. Considered '**Fairly poor'** condition managed in the LEMP
Mixed scrub	0.31	This will be a mixture of native scrub and tree planting to supplement the existing vegetation within the central green corridor. Considered '**good'** condition managed in the LEMP
Urban tree	0.49	A mix of ornamental and native street trees throughout the development. Considered '**moderate'** condition managed in the LEMP
Traditional orchard	0.1	A new area of fruit tree planting in the south of the site to be managed as a traditional orchard. Considered '**good'** condition managed in the LEMP

Table 4: Linear habitat breakdown – Post-Development 0.34km

Habitat	Length (KM)	Condition
Native species rich hedgerow with trees	0.28	New species-rich hedgerow with trees to be planted along northern and southern boundaries of the school Considered **'good'** condition
Total	0.28km	

3.8 The proposed development is removing the majority of the existing grassland habitat on the site and replacing it with largely roads, houses and gardens, as well as green infrastructure of value to wildlife such as new species-rich hedgerows, scrub, wildflower grassland and an orchard. The existing linear habitat features within the site will be largely retained other than small cut-throughs at three key pedestrian access points.

3.9 The headline results are shown in Figures 2 below:

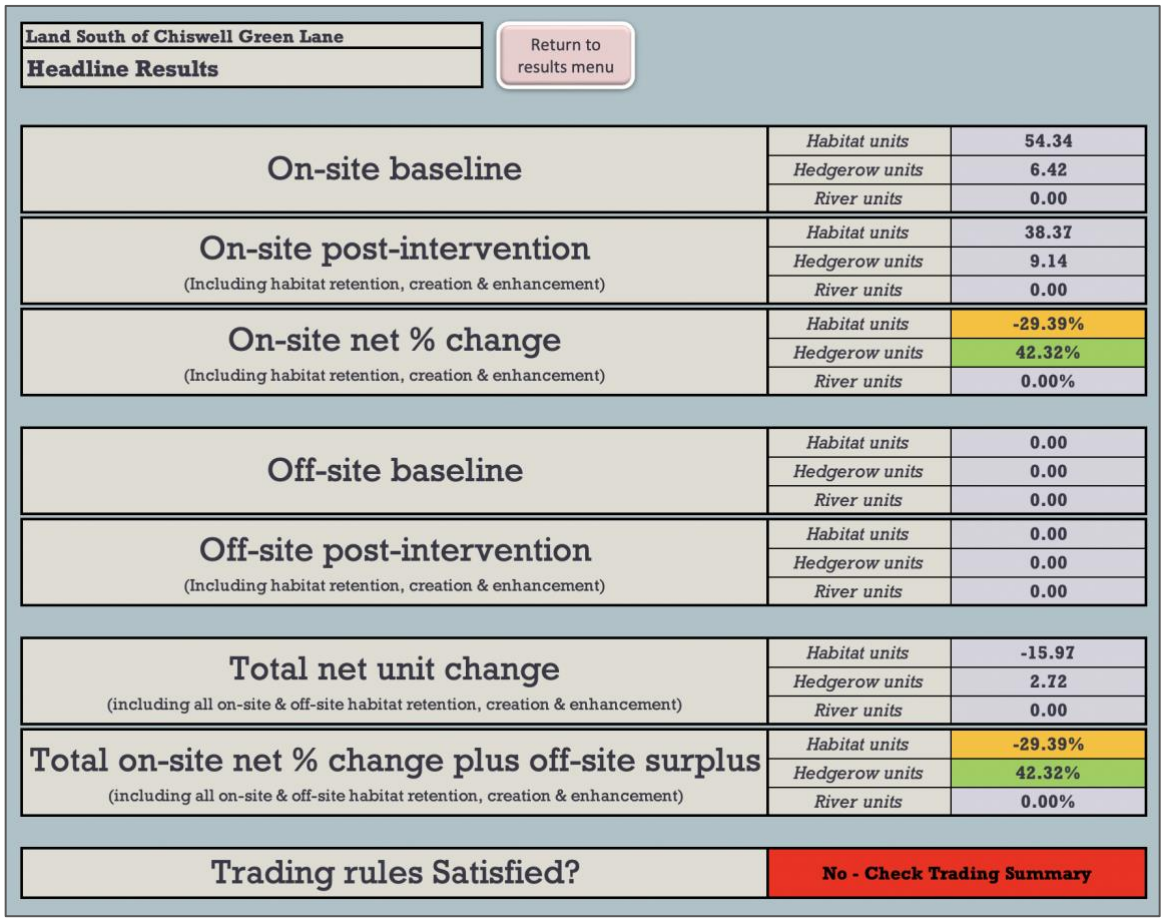

Figure 2. Biodiversity Metric 3.0 – Results Summary

3.10 Initial calculations confirm that a **-27.57%** net-loss in habitat units and a **42.32%** net-gain in hedgerow units, based on the current site layout.

3.11 In order to achieve a 10% net gain, offsite habitat enhancement/creation resulting in an uplift of 21.4 units will be targeted, through liaison with the local planning authority.

3.12 It should be noted the biodiversity units calculated for the site post-development do not take into consideration enhancement features added such as log piles, bird nesting boxes or bat boxes/tubes, all of which should be installed across the site. It is therefore likely the net biodiversity gain would be higher as a result of these additional measures.

4.0 Planting and Habitats

4.1 Full details of planting and habitat specification will be finalised at the reserved matters stage, however, a high-level summary is provided here:

Flowering lawns

4.2 Newly formed areas of short-sward (amenity) grassland, such as those along the street scene and the POS will be supplemented by integrating a variety of native plant species. Seed composition mixtures, such as Emorsgate Seeds ELI Flowering Lawn Mixture, is considered a suitable recommendation.

4.3 Wildflower seed mixes should be bought from native species stockists and can be tailored according to soil type and shading. These amenity grassland features should support species which will respond to mowing.

Hedgerows and Trees

4.4 New hedgerow planting is recommended along the northern and southern boundaries of the school site to connect existing green corridors. This will help to improve wildlife corridors around the site for species such as badgers, small mammals and birds. It is recommended that native species be used including:

- Hazel (*Corylus avellana*)
- Hawthorn (*Crataegus monogyna*);

- Blackthorn (*Prunus spinosa*);
- Field maple (*Acer campestre*);
- Holly (*Ilex aquifolium*);
- Elder (*Sambucus nigra*);
- Privet (*Ligustrum vulgare*);
- Dog rose (*Rosa canina*);
- Honeysuckle (*Lonicera periclymenum*).

4.5 Any new tree planting within gardens and along the street should use native species where possible. However, it is considered that non-native and cultivars are acceptable within the built environment.

Native Wildlife Grassland Mix

4.6 Areas of grassland around the edges of the site and within the SUDS basins will be managed as a wildflower grassland post-development. This area will be sown with a native wildflower seed mix to increase plant diversity and the nectar resource available to insects throughout the year. This mix should be tailored according to the soil type present.

Native Scrub Mix

4.7 New mix of native scrub species will be planted to supplement existing vegetation along the green corridor. Shrubs planted should include species such as:

- Wayfaring tree (*Viburnum lantana*),
- Sweet briar (*Rosa rubigniosa*),
- Wild privet (*Ligustrum vulgare*),
- Hazel (*Corylus avellana*);
- Hawthorn (*Crataegus monogyna*);
- Blackthorn (*Prunus spinosa*);
- Field maple (*Acer campestre*);
- Holly (*Ilex aquifolium*);
- Elder (*Sambucus nigra*);
- Dog rose (*Rosa canina*);
- Honeysuckle (*Lonicera periclymenum*).

Traditional orchard

4.8 An area in the south of the site will be planted with traditional fruit trees in order to create an orchard. This will be managed in a traditional way to maximise its value for wildlife and ensure it qualifies as a priority habitat. Suitable fruit tree species include traditional varieties of apple, plum, pear, cherry, medlar, quince and walnut.

5.0 Other Enhancements

Gardens

5.1 Whilst gardens will become private property post-development, the initial planting of these areas can be carried out with wildlife in mind. Native trees and shrubs should be planted where possible and information leaflets provided informing new homeowners of the opportunities for wildlife created in and around their homes and what they can do should they wish to create more wildlife-friendly gardens.

5.2 All adjoining garden fences on site could have a 13cm x 13cm hole at the bottom to provide a passageway for hedgehogs to travel between gardens and other habitats on site. Fences and walls are one of the main reasons why hedgehog numbers are declining as the amount of land available to them is reduced. To ensure that new residents do not block these 'highways', small signs can be erected above the hole, such as those produced by the People's Trust for Endangered Species (PTES), informing them of their purpose (Figure 3).

Figure 3: Hedgehog highway sign for fences (hedgehogstreet.org)

Integrated bat features

5.3 It is recommended that integrated bat tubes be incorporated into the structure of a range of new buildings on site, to provide new roosting opportunities for crevice-dwelling species.

5.4 They should be installed into buildings close to known commuting and foraging routes along important linear features, such as the woodland edges and connective tree lines and hedgerows (Figure 4), with dark corridors. Recommended tubes include Schwegler 2FR Bat Tubes and Habibat 001 bat boxes unfaced for render (Figure 5). Both require no maintenance as droppings fall out of the entrance ramp. The added benefit of the Schwegler 2FR tubes is that connecting holes allow several tubes to be placed next to each other to create a larger roost space. These should be placed where they will receive sunlight for most of the day as temperature is an important factor in the success of artificial bat roosts. They should also be placed as close to the eaves or gable apex as possible and not above windows to reduce the risk of cat predation. They should not be placed closed to artificial light sources. A booklet should be created for future home owners informing them of what the tubes are for and the legal protection surrounding bat roosting sites.

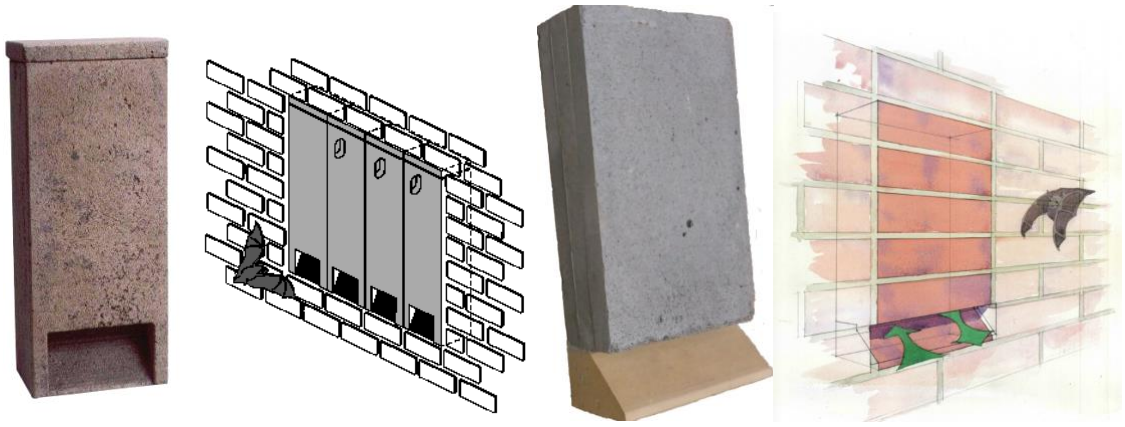

Figure 4: Schwegler 2FR tube (left) and Habibat 001 bat box (right)

5.5 Another type of roost which can be incorporated into certain buildings is a soffit bat box (see figure 5). This caters for crevice-dwelling species such as pipistrelles and certain *Myotis* species such as Natterer's and Whiskered bat. This type of box makes use of an underutilised area of a building and would require no maintenance as droppings would drop through the entrance hole. These should be located on buildings close to linear features and dark corridors and if installed on private buildings, the owners should be made aware of their purpose and legal protection.

Figure 5: Soffit bat box (Wildcare)

Bird Boxes

5.6 Additional nesting opportunities can be installed within existing trees on site, or new buildings including garage areas. Again, hardwearing woodcrete boxes, or similar, are recommended. Figure 6 below gives examples of suitable bird boxes, of which these or similar, could be installed onto the brickwork of the units or into the trees. The box should be positioned on a north or east facing aspect and at least 2m above the ground if possible. These would cater for species such as house sparrows and wagtails and the smaller garden birds.

Figure 6: Examples of suitable bird boxes which could be installed on site – Vivara Pro WoodStone House Sparrow Nest Box (left), Vivara Pro Barcelona WoodStone Open Nest Box (centre) and Vivara Pro Seville 32mm WoodStone Nest Box (right)

6.0 Discussion & Conclusion

6.1 One of the main assets of biodiversity net gain is its focus on landscape multifunctionality, i.e., promoting spatial areas that can serve more than one purpose, such as biodiversity conservation, climate change mitigation, the creation of recreational green spaces and the provision of landscape features / sense of place.

6.2 The concept of ecological networks, and their focus on landscape-scale conservation and the Nature Recovery Network initiatives, is seen as an effective response for biodiversity conservation in fragmented landscapes.

6.3 When applied to a specific site, such as the land south of Chiswell Green Lane, ecological network along the edges of the existing fields, forms a significant landscape and ecological

opportunity area, connecting the woodland and orchard priority habitats adjacent to the east of the site with the wider countryside to the west.

6.4 The current proposals result in an overall biodiversity net-loss of -29.39%. This is primarily due to the overall loss of grassland habitat within the site, particularly the medium distinctiveness grassland in the southern fields.

6.5 The new site will result in net-gains for hedgerows, scrub and traditional orchard habitats, and will feature areas of more species-rich grassland than present on the existing site, including damper areas within the swales. In addition to the street tree planting throughout the site, this will create a more diverse range of habitats within the site than is there currently, potentially attracting a wider range of wildlife to the site.

6.6 The layout of the site has sought to retain and protect the central green corridors running though the centre of the site and along the western site boundary. Furthermore, the layout seeks to strengthen the central corridor through additional native scrub, suds and flower-rich grassland concentrated in this area. This will help to support the local ecological network, supporting ambitions as set within the Environment Bill.

6.7 However, ultimately to achieve a measurable net-gain in biodiversity, offsite habitat enhancement/creation will be required, with a focus on creating higher value grassland habitat to compensate and improve upon what is the be lost from the site.

Appendix 1: Proposed site layout and habitats

Figure 1. Habitats pre-construction

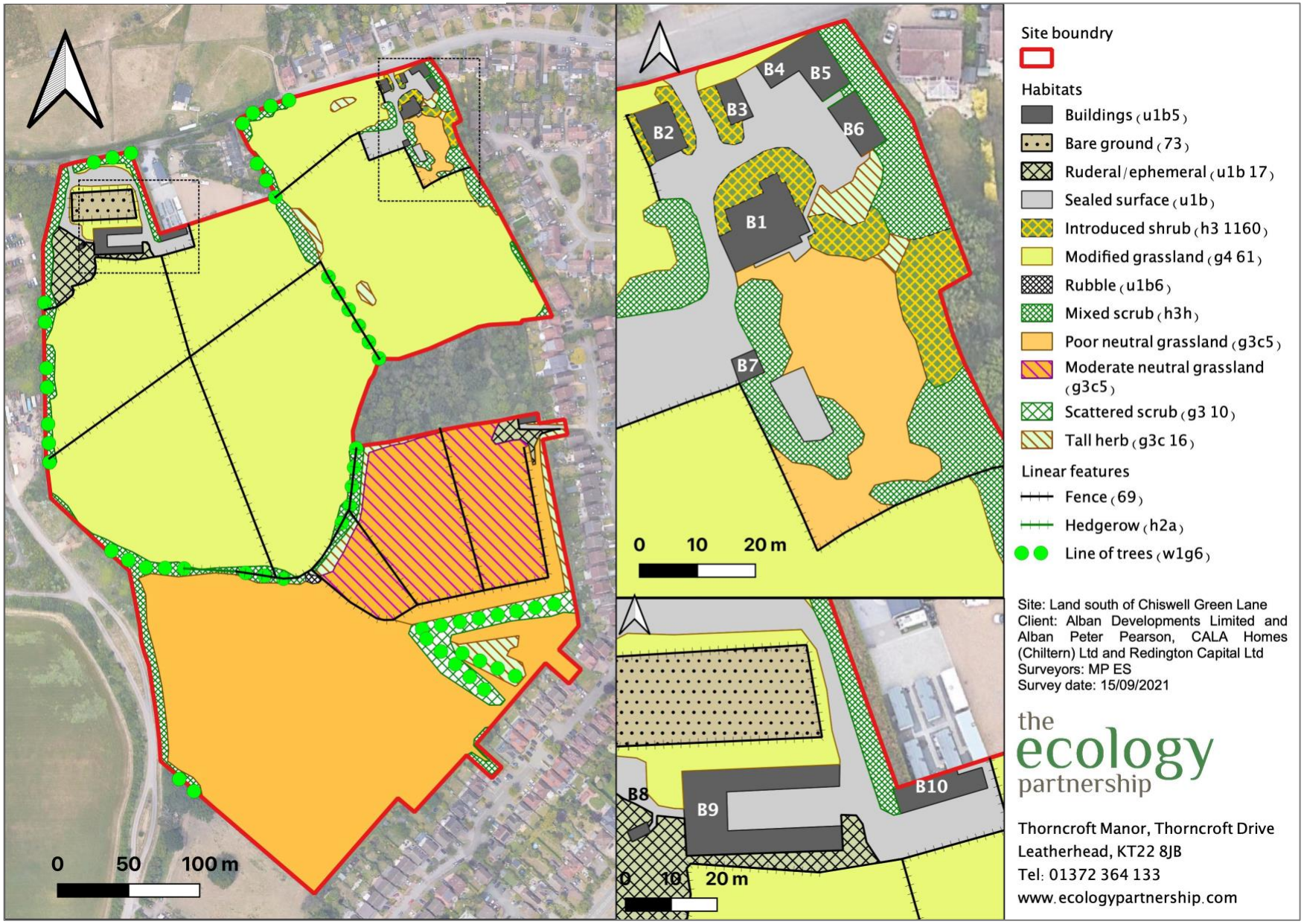

Figure 2. Proposed habitats post construction


0 25 50 m
Key
Site boundary
Proposed habitats
Enhanced scrub
Flowering lawn
Gardens
Buildings/Hardstanding
Meadow
New scrub
Retained scrub
Retained grassland
School area
SUDS
Traditional orchard
Linear habitats
Retained hedgerow
Retained tree lines
New native hedge

Appendix 2: Condition assessments

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)		
UKHab Habitat Type(s): Grassland - Modified grassland (includes amenity grassland)		
Condition Assessment Criteria		**Modified grassland**
1	There must be 6-8 species per m^2. Note - if a grassland has 9 or more species per m^2 it should be classified as a moderate distinctiveness grassland habitat type. **NB - this criterion is non-negotiable for achieving good condition.**	**FAIL** *Typically, 3-4 species/m^2*
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	**FAIL** *95% of sward below 7cm owing to horse grazing*
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	**PASS** *No scrub*
4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	**FAIL** *>5% damage from livestock trampling*
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	**FAIL** *>5% damage from livestock trampling*
6	Cover of bracken less than 20%.	**PASS** *No bracken*
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[1] make up less than 5% of ground cover.	**FAIL** *>5% ground cover made up of thistles, dock, nettles, white clover*
	Condition	**Poor**
Condition Assessment Result		
Good	Passes 6 or 7 of 7 criteria including non-negotiable criterion 7	
Moderate	Passes 4 or 5 of 7 criteria; OR Passes 6 of 7 criteria excluding non-negotiable criterion 7	
Poor	Passes 0, 1, 2 or 3 of 7 criteria	
Notes: Species considered undesirable for this habitat type include: Creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, greater plantain Plantago major, white clover *Trifolium repens*, cow parsley *Anthriscus sylvestris*.		

Condition Sheet: GRASSLAND Habitat Type (medium, high & very high distinctiveness)			
UKHab Habitat Type(s): All other grassland types and tall ruderal (ie. not amenity/modified)			
Condition Assessment Criteria		**Grassland 1**	**Grassland 2**
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.	**FAIL** *Does not closely match any UKHAB definition as has elements of G3 and G4 grassland types.*	**PASS** *Closely matches g3c5 Arrhenatherum neutral grassland type*
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	**FAIL** *Sward height consistent across sward as ungrazed*	**FAIL** *Sward height consistent across sward as ungrazed*
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	**PASS** *Between 1-5% bare ground owing to recent boreholes*	**FAIL** *<1% of sward comprised bare ground*
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	**PASS** *No bracken/scrub*	**PASS** *No bracken/scrub*
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species[1] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	**FAIL** *>5% ground cover made up of white clover and damaged areas for boreholes*	**PASS** *<5% ground cover made up of undesirable species/damage*
	Condition	**Poor**	**Moderate**
Condition Assessment Result			
Good	Passes 5 of 5 criteria		
Moderate	Passes 3 or 4 of 5 criteria		
Poor	Passes 0, 1 or 2 of 5 criteria		
Notes: Species considered undesirable for this habitat type include: Creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, greater plantain Plantago major, white clover *Trifolium repens*, cow parsley *Anthriscus sylvestris*.			

Condition Sheet: SCRUB Habitat Type			
UKHab Habitat Type(s): All forms of scrub			
Condition Assessment Criteria		**Mixed scrub**	**Bramble scrub**
1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).	**PASS** *Typically >3 woody species with no species accounting for over 75%*	**FAIL** *>75% Bramble*
2	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.	**PASS** *Mix of ages*	**PASS** *Mix of ages*
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[1] make up less than 5% of ground cover.	**FAIL** *>5% nettles/thistles/ docks*	**FAIL** *>5% nettles/thistles/ docks*
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).	**PASS** *Taller grass adjacent*	**PASS** *Taller grass adjacent*
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.	**FAIL** *No glades, scrub linear only*	**FAIL** *No glades, scrub linear only*
	Condition	**Moderate**	**Poor**
Condition Assessment Result			
Good	Passes 5 of 5 criteria		
Moderate	Passes 3 or 4 of 5 criteria		
Poor	Passes 0, 1 or 2 of 5 criteria		
Footnote 1 - Species considered undesirable for this habitat type include: creeping thistle *Cirsium arvense*, common nettle *Urtica dioica*, cherry laurel *Prunus laurocerasus*, snowberry *Symphoricarpos* spp., buddleia *Buddleja* spp., cotoneaster *Cotoneaster* spp., Spanish bluebell *Hyacinthoides hispanica* (or hybrids).			

Condition Sheet: URBAN - NON PRIORITY Habitat Type		
UKHab Habitat Type(s): Sparsely vegetated land - Ruderal/ephemeral; Urban – Allotments/Bioswale/Cemeteries and churchyards/Open mosaic habitats on previously developed land(OMH)/Rain garden/SUDs/bare ground/all green walls and roofs		
Condition Assessment Criteria		**Ruderal/ephemeral**
1	Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.	**FAIL** *Single ecotone*
2	There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native, or non-native but beneficial to wildlife. NB - To achieve GOOD condition, criterion 2 must be satisfied by native species only (rather than non-natives beneficial to wildlife).	**FAIL** *Dominated by common nettle*
3	Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area. NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	**PASS** No invasive species
4a	OMH only: The site shows spatial variation, forming a mosaic of at least four early successional communities (a) to (h) PLUS bare substrate AND pools. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland.	n/a
4b	SUDs/Bioswales only: The water table is at or near the surface throughout the year. This could be open water or saturation of soil at the surface.	n/a
	Condition	**Poor**

Condition Assessment Result		
Good	Passes 3 of 3 core criteria; AND Meets the requirements for good condition within criteria 2 and 3	Passes 3 of 3 core criteria; AND Meets the requirements for good condition within criteria 2 and 3; AND Passes additional criterion 4a or 4b
Moderate	Passes 2 of 3 core criteria; OR Passes 3 of 3 core criteria but does not meet the requirements for good condition within criteria 2 and 3	Passes 2 of 3 of 4 criteria; OR Passes 4 of 4 criteria but does not meet the requirements for good condition within criteria 2 and 3
Poor	Passes 0 or 1 of 3 core criteria	Passes 0 or 1 of 4 criteria

Condition Assessment Criteria	
Hedgerows	**H1**
Height >1.5 m average along length	✓
Width >1.5 m average along length	✓
Vertical gap Gap between ground and base of canopy <0.5 m for >90% of length	✓
Horizontal gaps Gaps make up <10% of total length and No canopy gaps >5 m	✓
Undisturbed perennial vegetation >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length	✓
Undesirable species Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	×
Invasive species >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	✓
Damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities	✓
Criteria failed	**1**
Condition (G = good; M = moderate; P = poor)	**G**

Condition Assessment Result	
Good	No more than 2 failures in total; AND No more than 1 in any functional group.
Moderate	No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition).
Poor	Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).

Condition Sheet: LINE OF TREES Habitat Type		
Condition Assessment Criteria		**TL1**
1	More than 70% of trees are native species.	**PASS** *Trees largely pedunculate oak and ash.*
2	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	**FAIL** *Some notable gaps in the canopy*
3	Includes one or more mature[1] or veteran[2] tree.	**PASS** *Numerous mature trees.*
4	There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other anthropogenic operations.	**FAIL** *Northern fields are heavily grazed by horse and southern field are mown.*
5	At least 95% of the trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	**PASS** *>95% trees appear healthy*
	Condition	**Moderate**
Condition Assessment Result		
Good	Passes 5 of 5 criteria	
Moderate	Passes 3 or 4 of 5 criteria	
Poor	Passes 0, 1 or 2 of 5 criteria	

Footnote 1 - A mature tree in this context is one that is at least 2/3 expected fully mature height for the species.

Footnote 2 -Veteran trees can be classified if they have four out of the five following features:

1. Rot sites associated with wounds which are decaying >400 cm^2;
2. Holes and water pockets in the trunk and mature crown >5 cm diameter;
3. Dead branches or stems >15 cm diameter;
4. Any hollowing in the trunk or major limbs;
5. Fruit bodies of fungi known to cause wood decay.

The Ecology Partnership

Thorncroft Manor

Thorncroft Drive

Leatherhead

KT22 8JB

Tel: 01372 364 133

www.ecologypartnership.com

Approved: Alexia Tamblyn MA (Oxon) MSc CEcol CEnv MCIEEM FRGS

Date: 10/03/2022