Appendix 3: Biodiversity Net Gain Assessment

Introduction

A3.1 A Biodiversity Net Gain (BNG) assessment for the site was completed by Tyler Grange Group Ltd which was informed by the UKHabs survey.

A3.2 The habitats recorded during this survey were assessed with reference to the UK Habitat Classification (Butcher et al., 2020) and the Biodiversity Metric technical supplement (Panks *et al.* 2021) to determine their condition and ecological importance.

A3.3 The Habitat Features Plan **15116/P01A** shows the existing habitats present on site. Retained and created habitats are shown on the Post-development Habitats Map **15116/P11A**.

Mitigation Hierarchy and Good Practice Principles

A3.4 The proposals for the site have been developed with reference to the ecological mitigation hierarchy which is central to the BNG process. This was applied by advising avoidance of damage to the most valuable habitats, then minimising the impact and using mitigation, and finally compensating for a loss of habitat. Advice was provided throughout the project to inform the development and landscape design to adhere to this and to achieve a minimum of + 10% BNG.

A3.5 The CIEEM BNG good practice principles for development (which include the mitigation hierarchy) (Baker et al. 2019[23]) were applied at all stages of the assessment.

Metric Calculation Methodology

A3.6 The BNG assessment of the site has been completed using Natural England's Biodiversity Net Gain (BNG) Metric (The Statutory Biodiversity Metric) which should be looked at in conjunction with this note (**15116_SpringParkP6_StatutoryBiodiversityMetric_R3**).

A3.7 The metric was firstly used to assign numerical values to allow biodiversity units to be calculated for each habitat type based on various attributes. Calculations of biodiversity units for area-based habitats and for linear habitats were carried out separately in separate tabs of the metric. The number of biodiversity units was then compared for pre- and post- development to give an indication of the change in ecological value.

A3.8 Pre-development biodiversity units represent existing baseline conditions of habitats within the Site and were calculated by inputting the following information in the metric:

- Habitat type – taken from UKHab field surveys;
- Habitat area/length – area (ha) and/or length (km) of each habitat was measured on QGIS digital mapping, the urban street tree calculator was used for any standard trees on site;

[23] Baker, J. Hoskin, R. & Butterworth (2019). Biodiversity net gain: Good practice principles for development. A practical guide. Ciria, CIEEM & IEMA

- Habitat distinctiveness – a score based on type of habitat present linked to habitat type and automated in the metric;
- Habitat condition – a score based on specific condition assessment criteria for each habitat type; and
- Strategic significance – whether the site is in an area of local strategy, an ecologically desirable location or not.

A3.9 The Detailed Soft Landscape Plan (**edp7897_d021-H, EDP 2024**) was used to determine attributes of post-development habitats. Post-development biodiversity units represent the completed development and landscaped habitats within the site, including habitats retained, enhanced and created. These were calculated using the same inputs as for pre-development biodiversity units as listed above with the addition of risk multipliers to take into account the likely scale of impact and potential for success of a post-development habitat to be established including:

- Difficulty risk – difficult of creating or enhancing a given habitat; and
- Temporal risk – time required for newly created or enhanced habitats to establish.

A3.10 Habitat metric calculations were undertaken by Aaron McFarland, an experienced field ecologist at Tyler Grange who is a suitably qualified person under the definition of the BS8683:2020.

Limitations

A3.11 The metric uses habitats as a proxy for biodiversity and does not account for other biodiversity enhancements such as species-targeted enhancements like bat and bird boxes. Detail on biodiversity mitigation and enhancement measures to be delivered outside of the BNG are detailed in the main body of this EcIA report and will be included in a Landscape and Ecological Management Plan (LEMP), expected to be conditioned.

A3.12 When mapping and recording habitats, types and conditions were assigned using professional judgement and with reference to the appropriate guidance.

Existing Baseline

A3.13 There is not currently a Wiltshire Local Nature Recovery Network and the Site's habitats are not in any other local strategies or within a National Habitat Network Enhancement Zone. Below, the site has been split to "Northern" and "Southern" sections due to the distinct difference in habitat composition in these areas.

Northern Extent

A3.14 The northern extent of the site primarily comprises sparsely vegetated land; ruderal/ephemeral (elsewhere described as tall ruderal habitat) with developed land; sealed surface (hardstanding), small areas of mixed scrub and broadleaved woodland along the edges.

Ruderal/ephemeral

A3.15 The ruderal/ephemeral habitat makes up 2.768 ha of the site. This is a low distinctiveness habitat. It has been assessed as being moderate as it passes the relevant habitat condition assessment

criteria 1 and 2 but it fails criteria 3 due to the presence of invasive species (Japanese knotweed and variegated yellow-archangel) within the habitat.

Developed land; sealed surface

A3.16 This habitat comprises the hardstanding which has been left on the footprints of past buildings. It has very low distinctiveness and a condition assessment is not applicable to it.

Mixed scrub

A3.17 There is only a very small area of mixed scrub within the northern section, which is a medium habitat distinctiveness and has been assessed as poor condition. It passed the relevant habitat condition assessment criteria 3 and 4 but failed 1, 2 and 5.

Broadleaved Woodland

A3.18 The redline of the site overlaps with the edges of the broadleaved woodland so that 0.457ha of the habitat are within the site. This is a medium distinctiveness habitat. It has been assessed as moderate condition as it achieves 30 out of a possible 39 points in the relevant condition criteria assessment.

Lines of trees

A3.19 There are two lines of trees within the site, 0.017km and 0.012km in length, along the northern extent, and centre of the site. This is a linear (hedge) habitat of low distinctiveness and are both assessed to be of good condition.

Southern Extent

A3.20 The southern extent of the site is currently an area of public open space under Ark ownership and has an existing footpath running through it. It is predominately comprised of other neutral grassland, and mixed scrub, with urban trees, hedgerows and ruderal habitat also present.

Other neutral grassland

A3.21 Other neutral grassland makes up the majority of the southern area of the site, measuring 1.841ha. This is a habitat of medium distinctiveness and it is assessed as being moderate condition as it passed the relevant condition assessment criteria 1 -3 but failed 4 – 6.

Mixed scrub

A3.22 There are large areas of mixed scrub in the southern area of the site, a habitat of medium distinctiveness. The majority of this (0.759ha total area) is assessed as being moderate condition. All of this passed the relevant habitat condition assessment criteria 4 and 5. A small area at the southern extent passed criterion 3 (absence of invasive non-native species) but failed criteria 1 and 2. However the area in the northeast passed criterion 2 (good age range) but also failed criteria 1 and 2.

A3.23 A smaller area (0.021) of the mixed scrub was assessed as poor condition as it passed the relevant habitat assessment criteria 4 and 5 but failed 1-3.

Ruderal/ephemeral

A3.24 There is a small (0.06ha) area of ruderal/ephemeral habitat in the southern extent of the site, a low distinctiveness habitat. This is assessed as being of poor condition.

Developed land; sealed surface

A3.25 A very small area (0.026ha) of developed land; sealed surface is present where it appears on OS mapping that there was a historically a pond. This habitat is of very low distinctiveness and condition assessment does not apply.

Urban tree

A3.26 There are 20 trees within the southern area, a habitat of medium distinctiveness which, as a whole, has been assessed to be of good condition. On the urban tree calculator in the Biodiversity Metric the trees have been calculated to represent a total area of 0.15ha.

Hedgerow

A3.27 There is one species-rich native hedgerow present, a linear habitat feature which is 0.16km long, along the northern extent of this area. This is a medium distinctiveness habitat and is assessed as good condition.

Proposals

A3.28 The proposals for the Site have been designed so as to reduce ecological impacts where possible, with the existing woodland, which are the habitats of highest ecological importance, to be retained and buffered from the development where possible around the boundaries.

A3.29 Selective tree felling within the woodland will occur under granted permissions for remedial health and safety measures in response to ash dieback (detailed in **edp7897_r008-B-Arboricultural Impact Assessment)**. This is not considered to constitute woodland habitat loss; it will form temporary clearing capable of natural regeneration.

A3.30 The proposals will result in the loss of all of the ruderal/ephemeral vegetation and the hardstanding in the northern extent of the site, which are of negligible ecological importance.

A3.31 Of the retained habitats, it was deemed that enhancing them to a better condition or higher habitat distinctiveness would not be practicably achievable.

A3.32 Creation of additional woodland, tree planting, grassland and a SuDS in the northern extent will retain connectivity of the boundaries of the site and provide replacement and/or new opportunities for wildlife such as bats, birds, badgers, amphibians, invertebrates and small mammals. This is described in more detail below.

Habitat Creation

A3.33 Habitat creation is focused to the edges of the northern extent of the site, a small area in the north east of the site, and the area of current public open space at the southern extent of the site. Post-development habitats have been measured and mapped from the Detailed Soft Landscape Plan (**edp7897_d021-H, EDP 2024**) to be suitable for use in the Biodiversity Metric.

Northern Extent

Developed land; sealed surface and Artificial unvegetated; unsealed surface

A3.34 The habitats that will be present at the site post-development will mostly comprise developed land; sealed surface (buildings and hardstanding), which will cover most of the northern extent of the Site (2.349 ha).

A3.35 There will be a small area (0.075ha) of artificial unvegetated; unsealed surface comprising the Public Right of Way (PRoW) footpath running south to north in the east of the site, proposed to be constructed from gravel hogging.

A3.36 These habitats are both of very low distinctiveness and condition assessment is not applicable to them.

Broadleaved woodland

A3.37 There will be 0.5 ha of broadleaved woodland planting along a central area, and the western, and eastern boundaries of the development, a habitat of medium distinctiveness which is expected to achieve a moderate condition.

SuDS

A3.38 A Sustainable Drainage System (SuDS) in the form of an attenuation pond, which is a habitat of low distinctiveness, will be created in the east of the site which is assumed to achieve a moderate condition as it will be fenced off and protected.

Grassland

A3.39 There will be 0.478 ha of other neutral grassland created surrounding the SuDS which is assumed to achieve a poor condition as it will be accessed by the public via a Public Right of Way (PRoW) through that area (assumed to be modified grassland achieving a poor condition).

A3.40 There will also be a small area (0.051) of modified grassland to the north of the proposed development which is expected to be regularly managed for visibility and security and therefore is expected to achieve no more than moderate condition.

Urban Trees and Introduced Shrub

A3.41 Four standalone trees, habitats of medium distinctiveness, of a small size are proposed to be planted in an area of proposed grassland. Using the urban tree calculator in the Biodiversity Metric they are expected to cover an area of 0.016ha.

A3.42 There will also be a small area (0.014 ha) of introduced shrub planting near to the SuDS. Introduced shrub is low habitat distinctiveness and habitat condition assessment is not applicable to this habitat in the Biodiversity Metric.

Southern Extent

Pond (priority habitat)

A3.43 A small pond (0.026ha) will be created to replace the small area of hardstanding in the southern area where there was a historical pond. This is a habitat of high distinctiveness and is proposed to achieve a moderate condition as it will be fenced off to prevent access.

Mixed scrub

A3.44 In addition to fencing, there is proposed to be planting of mixed thorny scrub (0.015ha) around the proposed pond. This is a habitat of medium distinctiveness and is proposed to achieve moderate condition.

Trees

A3.45 Planting of 82 small-sized trees across the whole of the southern area is proposed. The Biodiversity Metric urban tree calculator calculates this to represent an area of 0.3339ha. The trees will be spread out to avoid any significant shading on the existing retained grassland habitat. Trees are a medium distinctiveness habitat and they are proposed to be of moderate condition.

Hedgerow

A3.46 A species-rich hedgerow is proposed to be planted along the northwestern boundary of the southern area and proposed to be of moderate condition.

Management

A3.47 Habitats enhanced and created on the site will be maintained for at least 30 years post development as this is what is required to satisfy the conditions for BNG in the best practice guidelines (CIRIA 2019). This should be secured through an HMMP controlled by a planning condition. The management will be adapted based on monitoring results to ensure the best desired outcomes are achieved.

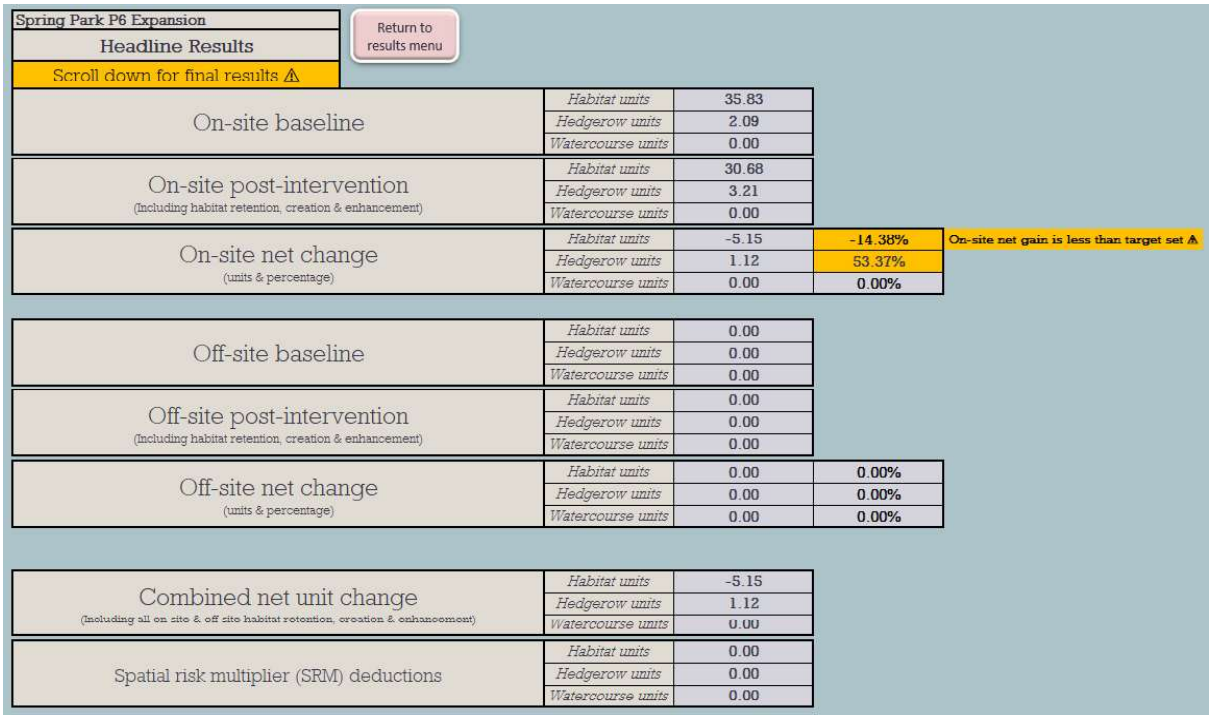
Metric Results

A3.48 The Statutory Biodiversity Metric calculated that the proposed development will result in a total net biodiversity unit change of:

- - 5.15 habitat units equating to -14.38%; and
- + 1.12 hedgerow units equating to + 55.37%.

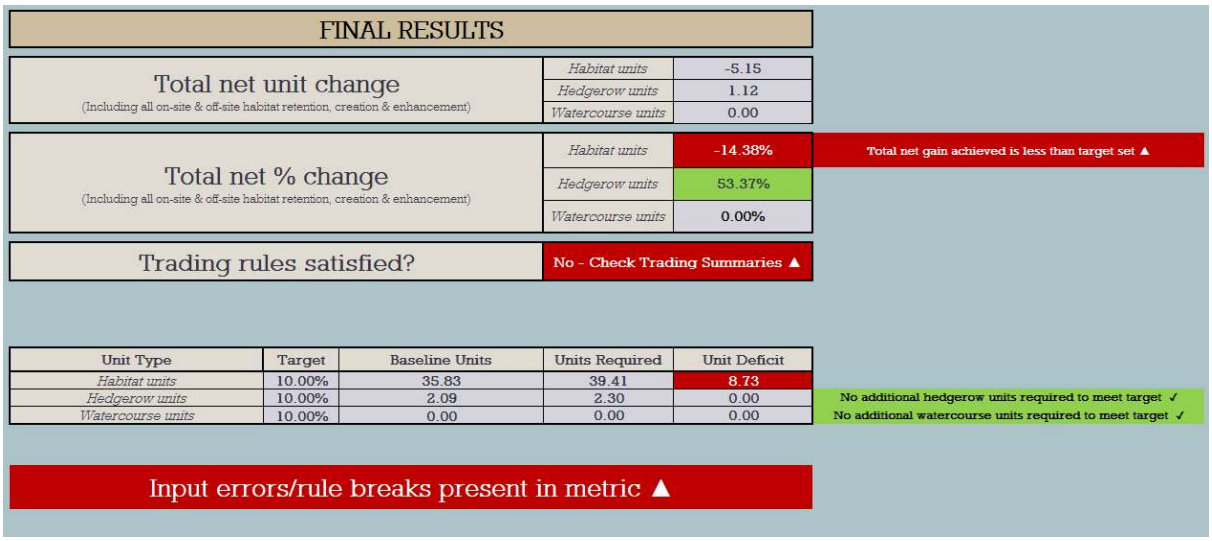
A3.49 The trading rules of the metric are not satisfied due to a deficit in low distinctiveness habitat units due to the loss of ruderal habitats to developed sealed surface land.

A3.50 The headline results of the metric are shown in **Figure A.1** and the final results are shown in **Figure A.2**.



Spring Park P6 Expansion				
Headline Results	Return to results menu			
Scroll down for final results ⚠				
On-site baseline	*Habitat units*	35.83		
	Hedgerow units	2.09		
	Watercourse units	0.00		
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	30.68		
	Hedgerow units	3.21		
	Watercourse units	0.00		
On-site net change (units & percentage)	*Habitat units*	-5.15	-14.38%	On-site net gain is less than target set ⚠
	Hedgerow units	1.12	53.37%	
	Watercourse units	0.00	0.00%	
Off-site baseline	*Habitat units*	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site net change (units & percentage)	*Habitat units*	0.00	0.00%	
	Hedgerow units	0.00	0.00%	
	Watercourse units	0.00	0.00%	
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-5.15		
	Hedgerow units	1.12		
	Watercourse units	0.00		
Spatial risk multiplier (SRM) deductions	*Habitat units*	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		

Figure A.1: Screenshot of the Biodiversity Metric Headline Results



FINAL RESULTS			
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-5.15	
	Hedgerow units	1.12	
	Watercourse units	0.00	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-14.38%	Total net gain achieved is less than target set ▲
	Hedgerow units	53.37%	
	Watercourse units	0.00%	
Trading rules satisfied?	No - Check Trading Summaries ▲		

Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	35.83	39.41	8.73	
Hedgerow units	10.00%	2.09	2.30	0.00	No additional hedgerow units required to meet target ✓
Watercourse units	10.00%	0.00	0.00	0.00	No additional watercourse units required to meet target ✓

Input errors/rule breaks present in metric ▲

Figure A.2: Screenshot of the Biodiversity Metric Final Results

A3.51 While habitats of high value have been retained, the area of ruderal habitat lost to facilitate the required scale of development and areas of hardstanding (to facilitate access, maintenance and security requirements) brings about a loss of -5.15 habitat units (14.38%).

A3.52 This is due to developed sealed surface land (the primary habitat created under current proposals) being worth 0 habitat units.

Off-Site Compensation

A3.53 It is not considered practicable or achievable to increase the quantum, distinctiveness, or the condition of habitats created, due to the operational requirements of the proposed development, and the realistic expectations for the successful establishment of selected habitats.

A3.54 Consequently, it is considered that the most appropriate way to compensate for the loss of onsite habitat units is through financial contribution to a local (Inside LPA boundary or NCA of the site) habitat unit provider, with a biodiversity net gain plan conditioned to demonstrate the legal agreements between the applicant and the selected third-party provider, to illustrate how 10% biodiversity net gain is being achieved through off site contribution. 8.73 habitat units would be required through an off site provider for the scheme to achieve a 10% biodiversity net gain.

Conclusion

A3.55 The proposed development has followed the biodiversity net gain hierarchy been sensitively designed overall to avoid ecological impacts by retaining habitats of ecological importance, and the selection of appropriate habitat creation, focussing where possible on habitats of local conservation priority.

A3.56 The proposed development will deliver -14.38% BNG for habitats and + 55.37% BNG for hedgerows. The trading rules for low distinctiveness habitats are not satisfied due to the loss of ruderal habitats to developed sealed surface land.

A3.57 The applicant will make a financial contribution to a third party provider to secure off-site habitat units, to compensate for the deficit in habitat units, and ensure a 10% uplift on baseline habitat values. 8.14 habitat units would be required through an off site provider for the scheme to achieve a 10% biodiversity net gain.

A3.58 Evidence of this agreement, and how it will contribute to a 10% BNG can be conditioned through a Biodiversity Gains Plan, which illustrates how this agreement, in tandem with habitat creation proposals, delivers an uplift in baseline habitat units.

A3.59 The BNG that will be delivered complies with national policy, and existing core policies in the current Wiltshire Council Local Plan.

A3.60 To deliver the BNG as set out in this appendix, habitats will be maintained for at least 30-years post-development. This should is being secured through an HMMP as part of the planning application.

A3.61 The proposals to achieve BNG from the development have been developed with consideration of wider wildlife benefits. The habitat enhancement and creation will increase connectivity across the site and will provide commuting, foraging and refuge opportunities for a variety of wildlife which could potentially use the site such as bats, birds and herptiles. However, further measures to improve biodiversity should be included in the LEMP, such as species-targeted enhancements including hibernacula creation for herptiles using material from trees proposed to be removed and provision of bat and bird boxes.