Biodiversity Net Gain Assessment

Atterbury Gardens, Caversham, Reading, RG4 7HW

Hicks Developments LTD

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Industry Guidelines and Standards

This report has been written with due consideration to:

- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management, Construction Industry Research and Information Association & Institute of Environmental Management and Assessment (2019). Biodiversity Net Gain – Good Practice Principles for Development.

Proportionality

> The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.
>
> The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.
>
> (BS 42020, 2013)

Executive Summary

Arbtech Consulting Limited was instructed by Hicks Developments LTD to undertake a Biodiversity Net Gain (BNG) Assessment at Atterbury Gardens, Caversham, Reading, RG4 7HW (hereafter referred to as "the site"). The assessment was required to inform a planning application for the construction of four detached houses (hereafter referred to as "the proposed development").

BNG change summary:

	Habitat (area) units	**Hedgerow (linear) units**
Change in units	**-26.39%**	**19.61%**
Units required for a 10% net gain	0.28 (other neutral grassland or higher distinctiveness habitat)	N/A

The proposed plan results in a -26.39% net loss in habitat units (0.28 habitat unit deficit) and an 18.61% net gain in linear units. This is less than the 10% target of biodiversity net gain for habitat units and more than the 10% target for linear (hedgerow) units. The proposed plans do not satisfy the trading rules for habitat units.

The habitat units currently proposed to be created maximised in terms of their target condition, and alterations to the landscaping proposals are unlikely to yield significant changes to the results, as the proposed development will be made into four private dwellings with private gardens, additional planting and ongoing management cannot be secured for the long term. This limits the habitat types which could be created. It is not anticipated that additional habitat units will be achievable on the site itself.

In order to achieve the required minimum 10% net gain in biodiversity as a result of the proposed development, the provision of off-site compensation requirements may be required to achieve a 10% net gain.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Hicks Developments LTD to undertake a Biodiversity Net Gain (BNG) Assessment at Atterbury Gardens, Caversham, Reading, RG4 7HW (hereafter referred to as "the site"). The assessment was required to inform a planning application for the construction of four detached houses (hereafter referred to as "the proposed development"). A plan showing the proposed development is provided in Appendix 1.

This report should be read in conjunction with the following documents:

- Defra Statutory Biodiversity Metric.
- Preliminary Ecological Appraisal and Roost Assessment of Atterbury Gardens, Caversham, Reading, RG4 7HW.

1.2 Site Location, Geology and Landscape Context

The site is located at National Grid Reference SU 70359 75947 and has an area of approximately 0.16ha comprising hardstanding, grassland, hedgerow, trees and bare ground. It is surrounded by residential dwellings in all directions. The wider landscape comprises the town of Caversham Heights, pockets of woodland (~350m south-west and ~1.3km west) and agricultural fields. The site has slightly acidic, loamy, and clayey soils. A site location plan is provided in Appendix 2.

1.3 BNG Informative

BNG is a specific, measurable outcome of project activities that deliver demonstrable and quantifiable benefits to biodiversity compared to the baseline situation. In order to achieve BNG, a project must be able to demonstrate that it has followed all 10 of the Principles of Biodiversity Net Gain (as outlined in the *British Standard 8683:2021 Process for Designing and Implementing Biodiversity Net Gain*).

The legalised Environment Act 2021 (Commencement No. 6) Regulations 2023 requires developments in England to demonstrate a measurable net gain in biodiversity and sets a target of a minimum of 10% BNG for all developments. It also stipulates that a management plan with a minimum 30-year term, should be adopted to ensure biodiversity net gain can be delivered. The requirement for biodiversity net gain is enshrined within the National Planning Policy Framework (NPPF, 2023).

The DEFRA Statutory Biodiversity Metric is the widely accepted tool used to calculate BNG. It enables the calculation of habitat value pre- and post-development in order to determine the overall change in biodiversity value as a result of the proposed development. The Biodiversity Metric has separate BNG assessments for areas of habitat, hedgerows and watercourses.

The biodiversity value of a site should be maximised. However, it may not always be possible to achieve a 10% biodiversity net gain within a site and therefore the Statutory Biodiversity Metric can also account for offsite habitat creation, where land is available. Alternatively, developers can seek to provide an agreed financial contribution to an appropriate third party (such as the Local Authority, the UK Government or another landowner) to deliver the required biodiversity net gain elsewhere on their behalf.

2.0 Methodology

2.1 Baseline Biodiversity Value

The baseline BNG Calculation was informed by Preliminary Ecological Appraisal and Roost Assessment of Atterbury Gardens, Caversham, Reading, RG4 7HW (Arbtech,2024). A baseline habitat plan is provided in Appendix 3.

Habitat Classification

The Preliminary Ecological Appraisal and Roost Assessment of Atterbury Gardens, Caversham, Reading, RG4 7HW classified the habitats on site according to The UK Habitat Classification Habitat Definitions Version 2.0 (The UK Habitat Classification Working Group, July 2023).

Habitat Area/Length

The area or length of each habitat was calculated using qGIS software. In calculating the area or length of each habitat, habitats which occur as two or more isolated parcels across the site were combined, where they were deemed to be of a similar composition and condition. Distinctions were made between habitats to be retained (i.e. left as found in baseline), enhanced (i.e. improved condition) or lost (i.e. destroyed by proposed development).

Areas of scattered trees were calculated using the Tree Helper tool within the Statutory Biodiversity Metric. Class sizes for urban trees are set out in the Statutory Biodiversity Metric User Guide (Natural England, 2024).

Habitat Condition

Habitat condition was assessed using the relevant condition assessment sheets found in the Statutory Biodiversity Metric User Guide (Natural England, 2024).

Strategic Significance

Strategic significance was assigned for each habitat based upon a review of the following:

- Ecological value
- Function within the landscape

2.2 Post-Development Biodiversity Value

The post-development BNG Calculation was informed by 'Proposed Site Plan - drawing no TPO758-01-03C', which is included in Appendix 1. A post-development habitat plan is provided in Appendix 4.

Habitat Classification

Proposed habitats were translated to their equivalents in the UK Habitat Classification using The UK Habitat Classification Habitat Definitions Version 2.0 (The UK Habitat Classification Working Group, July 2023) and the information provided within the 'Proposed Site Plan - drawing no TPO758-01-03C'.

Habitat Area/Length

The area or length of each proposed habitat was calculated using qGIS software. In calculating the area or length of each habitat, habitats which occur as two or more isolated parcels across the site were combined, where they were deemed to be of similar composition and condition. Distinctions were made between habitats to be retained (i.e. left as found in baseline), enhanced (i.e. improved condition) or newly created.

Areas of scattered trees were calculated using the Tree Helper tool within the Statutory Biodiversity Metric. Class sizes for urban trees are set out in the Statutory Biodiversity Metric User Guide (Natural England, 2024).

Habitat Condition

Target habitat condition for each proposed habitat was determined assessed using the Temporal Multipliers Tool and the Enhancement Temporal Multipliers Tool included in the Statutory Biodiversity Metric spreadsheet as well as the relevant condition assessment sheets found in the Statutory Biodiversity Metric User Guide (Natural England, 2024). This is based on the assumption that a 30-year management plan will be adopted for the site.

Strategic Significance

Strategic significance was assigned for each proposed habitat based upon a review of the following:

- Likely ecological value
- Function within the landscape

2.3 Limitations

No limitations were identified.

3.0 Results

3.1 Baseline Habitats

Table 1 details the baseline habitats present within the site along with their area/length, condition and strategic significance. A full condition assessment for each habitat (where relevant) is provided in Appendix 5a.

Table 1: Baseline Biodiversity Value

Habitat	Area / Length	Description	Condition Assessment	Strategic Significance
Other neutral grassland	0.1481 ha	The majority of the site was managed other neutral grassland (approximately 0.14 ha) with >10% bare ground (~30%), a sward height of 1-6cm and scattered trees. Species composition included Yorkshire fog (A), white clover (A), creeping buttercup (A), perennial ryegrass (F), common nettle (F), ribwort plantain (F), common daisy (O), white dead nettle (O), dandelion (O), common comfrey (O) and silverweed (R). No scrub or bracken was identified within the grassland.	**Poor** The condition assessment was assessed as poor due to the short sward height, intensive management and the amount of bare ground.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Artificial unvegetated unsealed surface	0.0059 ha	A gravel area was present on the northern boundary.	**Condition Assessment N/A** Artificial unvegetated unsealed surface is excluded from habitat condition assessments.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Bare ground	0.0087 ha	A large area of bare ground was present on the north-eastern boundary. Due to the site's management, ~90% of the area was bare ground with small patches of ivy growth.	**Poor** The condition assessment was poor due to the lack of vegetation and invasive species.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Developed land sealed surface	0.0064 ha	Areas of concrete hardstanding were present near the northern and eastern boundaries.	**Condition Assessment N/A** Developed land, sealed surface is excluded from habitat condition assessments.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic

				significance (not part of a habitat corridor or steppingstone).
Individual urban trees	0.0204 ha	There were five trees around the site (G1). G1 is a group of five semi-mature beech trees of small size (approximately 2-3m in height and 20-25cm DBH) with no ecological niches or evidence of human disturbance. There is oversailing vegetation (>20%).	**Moderate** The condition assessment was assessed as moderate due to the lack of ecological niches and age of the tree.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Native hedgerow	0.043 km	Sections of hedgerow (H1 – H4) were present on the western and northern boundaries. - Hedgerow H1 (approximately 25m length x 3m height x 2m wide) was present on the western boundary. The hedgerow had no canopy gaps (<0.5m canopy to base gap), undisturbed vegetation, and invasive species. Species composition included beech (D) and blackthorn (O). The understorey composition was ivy (D), bramble (F) and holly (O). - Hedgerow H4 (approximately 18m length x 5m height x 2m wide) was present on the south-western boundary. The hedgerow had no canopy gaps (<0.5m canopy to base gap), undisturbed vegetation, and invasive species. Species composition included beech (F) and blackthorn (F). The understorey composition was ivy (D) and bramble (O).	**Good** The condition assessment was assessed as good due to the lack of undisturbed vegetation surrounding the hedgerow.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Non-native and ornamental hedgerow	0.033 km	Sections of hedgerow (H1 – H4) were present on the western and northern boundaries. - Hedgerow H2 (approximately 20m length x 3m high x 1m wide) was present in the north-western boundary. Species composition was dominated by cherry laurel. - Hedgerow H3 (approximately 12m length x 3m high x 1m wide) was present in the north-eastern boundary. Species composition was dominated by cherry laurel.	**Poor** The condition assessment for non-native hedgerows is automatically assigned the condition of poor.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).

3.2 Post Development Habitats

Table 2 details the post-development habitats present within the site along with their area/length, condition and strategic significance. An assessment of the anticipated condition for each habitat (where relevant) is provided in Appendix 5b, which is based on the assumption that a 30-year management plan will be implemented for the site. The proposed development will result in the loss of the other neutral grassland and some native hedgerow.

Table 2: Post-Development Biodiversity Value

Habitat	Area / Length	Description	Target Condition	Strategic Significance
Other neutral grassland	0.0254 ha created	As the site layout is rapidly changing, the grassland will be lost due to the machinery movement. So, 0.0254 ha of another neutral grassland will be created to replace the modified grassland using a species-diverse seed mix.	**Good** To achieve the condition assessment of good, the criteria must include a diversity of vascular species, diverse sward height, scrub below 20%, minimal physical damage, bracken cover below 20% and no invasive species.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Artificial unvegetated unsealed surface	0.0298 ha created	New permeable paths and roads surrounding the new buildings will be created.	**Condition Assessment N/A** Artificial unvegetated unsealed surface is excluded from habitat condition assessments.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Developed land sealed surface	0.053 ha created	New buildings will be created for the proposed development.	**Condition Assessment N/A** Developed land and sealed surfaces are excluded from habitat condition assessments.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Vegetated garden	0.0607 ha created	Areas (0.0607 ha) surrounding the dwellings and hardstanding will be created into new vegetated gardens.	**Condition Assessment N/A**	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no

			Vegetated gardens are excluded from habitat condition assessments.	evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Individual urban trees	0.0244 ha created	6 x small (moderate condition) trees will be planted for the proposed development. Species should include alder, wild cherry, bird cherry, silver birch, crab apple, dog rose and dogwood.	**Moderate** To achieve to condition of moderate, the criteria must include native species, no canopy gaps, diverse ground flora species and no invasive species.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Individual urban trees	0.0204 ha retained	5 x small (moderate condition) trees retained for the proposed development.	**Moderate**	**Low strategic significance**
Native hedgerow	0.052 km created	Several sections of new hedgerows will be included in the development. Species can include Blackthorne, Hawthorne, Hazel, Ash, and Oak.	**Moderate** To achieve the moderate condition, the criteria must include no gaps, being in a healthy condition, and being over 1.5m in width.	**Low strategic significance** Area/compensation not in local strategy/no local strategy and no evidence to suggest that the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Native hedgerow	0.024 km retained	A section of the native hedgerow will be retained.	**Good**	**Low strategic significance**
Non-native and ornamental hedgerow	0.03 km retained	The non-native hedgerow will be retained.	**Poor**	**Low strategic significance**

3.3 Change in Biodiversity Value of the Site

Full details are provided in the Defra Statutory Biodiversity Metric. The headline results are presented in Appendix 6.

Areas of Habitat

The baseline habitat value of the site is 0.77 units, comprising 0.59 units of other neutral grassland, 0.02 units of bare ground, 0.16 units of individual urban trees and gravel/hardstanding (no unit value).

The post-development habitat value of the site is 0.57 units, comprising the creation of buildings and hardstanding (no value), other neutral grassland (0.21 units), vegetated garden (0.12 units) and individual urban trees (0.07 units) as well as the retention of the individual urban trees (0.16 units).

This results in a net change in biodiversity of -26.39% (i.e. a net loss).

Hedgerows

The site's baseline hedgerow value is 0.29 units, comprising 0.26 units of native hedgerow and 0.03 units of non-native and ornamental hedgerow.

The site's post-development habitat value is 0.35 units, comprising the retention of the native hedgerow (0.14 units) and non-native and ornamental hedgerow (0.03 units) and the creation of new native hedgerow (0.17 units).

This results in a net change in biodiversity of 19.61% (i.e. a net gain).

4.0 Recommendations to Deliver BNG

4.1 Discussion

The proposed plan results in a -26.39% net loss in habitat units (0.28 habitat unit deficit) and an 18.61% net gain in linear units. This is less than the 10% target of biodiversity net gain for habitat units and more than the 10% target for linear (hedgerow) units. The proposed plans do not satisfy the trading rules for habitat units.

The habitat units currently proposed to be created maximised in terms of their target condition, and alterations to the landscaping proposals are unlikely to yield significant changes to the results, as the proposed development will be made into four private dwellings with private gardens, additional planting and ongoing management cannot be secured for the long term. This limits the habitat types which could be created. It is not anticipated that additional habitat units will be achievable on the site itself.

In order to achieve the required minimum 10% net gain in biodiversity as a result of the proposed development, the provision of off-site compensation requirements may be required to achieve a 10% net gain.

4.2 Biodiversity Offsetting

Therefore, there will be a requirement to provide these habitat units through one of the following options:

- Undertaking habitat creation and enhancement in a suitable offsite location in the site's locale. This may be via other land holdings or an agreement with a third-party landowner. The new site would need to be subject to a habitat survey assessment to ascertain its baseline value and a biodiversity net gain strategy drawn up. The new site would also need to be registered on the Biodiversity Net Gain Register at the following link: https://www.gov.uk/guidance/register-a-biodiversity-gain-site
- Purchasing biodiversity units from an existing biodiversity net gain site already registered on the Biodiversity Net Gain Register. This will be via a financial contribution to the relevant third party. Following link for guidance: https://www.gov.uk/guidance/make-off-site-biodiversity-gains-as-a-developer
- Purchasing statutory credits using the credit sales service at the following link: https://www.gov.uk/guidance/statutory-biodiversity-credits. This should be the last resort If neither of the above options are achievable, as these credits are not guaranteed to be within the locale of the development site.

4.3 Habitat Management and Monitoring Plan

A 30-year habitat management and monitoring plan is usually required to accompany the Biodiversity Net Gain calculations to ensure that onsite habitat creation/retention and enhancements are delivered.

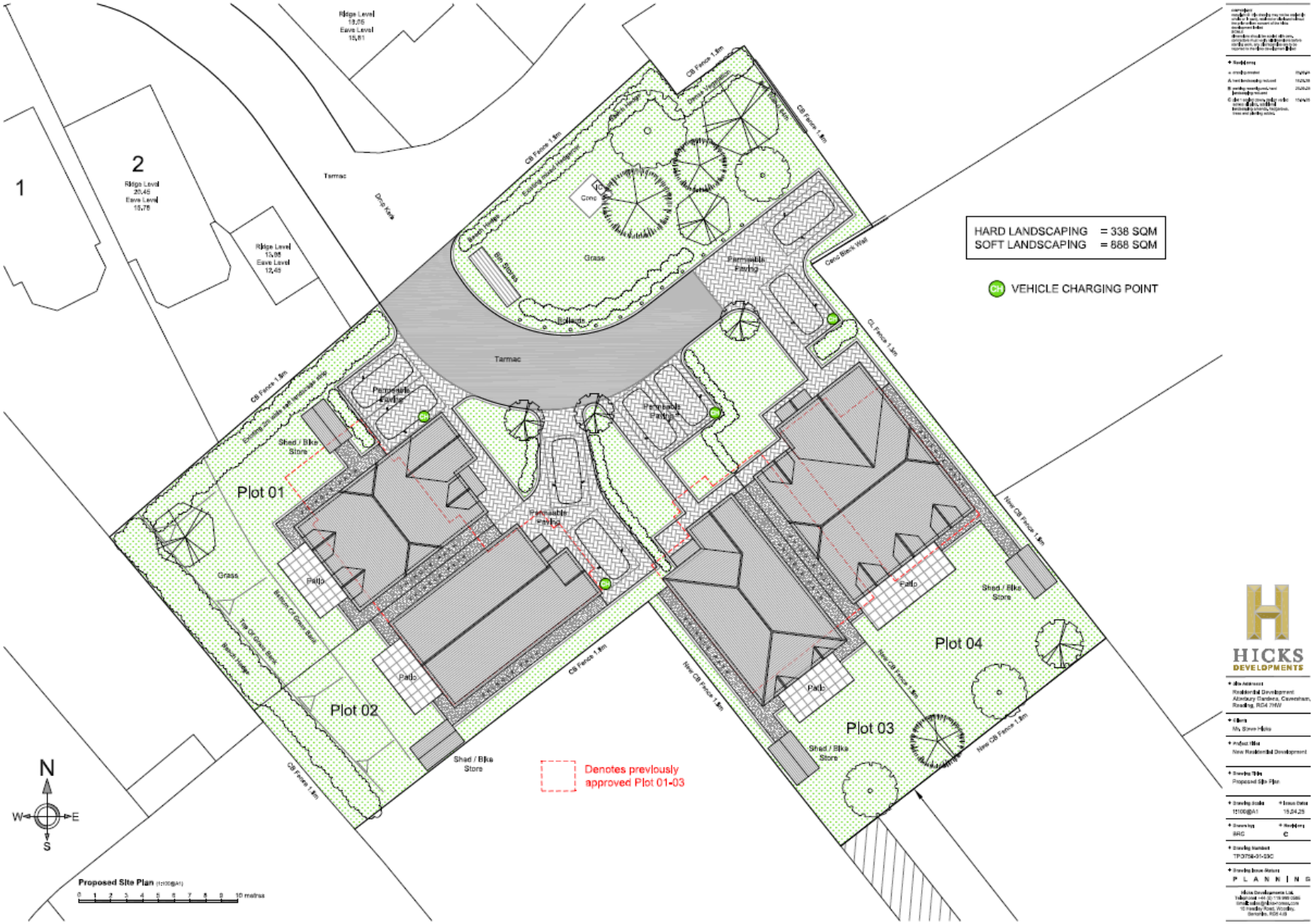
4.4 Biodiversity Net Gain Plan

Once the biodiversity net gain strategy for the site, including offsetting and a habitat management plan (If required), developers are required to complete the standard biodiversity net gain plan template which can be found at the following link: https://www.gov.uk/guidance/submit-a-biodiversity-gain-plan.

5.0 Bibliography

- Arbtech (2024). Preliminary Ecological Appraisal and Roost Assessment of Atterbury Gardens, Caversham, Reading, RG4 7HW.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.
- CIEEM-CIRIA-IEMA (2019) Biodiversity Net Gain – Good Practice Principles for Development.
- Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey a technique for environmental audit. http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf
- Natural England (2024). The Statutory Biodiversity Metric.
- Natural England (2024). The Statutory Biodiversity Metric User Guide.
- The UK Habitat Classification Habitat Definitions Version 2.0 (The UK Habitat Classification Working Group, July 2023)

Appendix 1: Proposed Development Plan



Appendix 2: Site Location Plan

Appendix 3: Baseline Habitat Plan

Appendix 4: Post Development Habitat Plan

Appendix 5a: Habitat Condition Assessment Sheets - Baseline

Other neutral grassland; assessed using the 'Grassland medium, high and very high distinctiveness' habitat condition assessment sheet:

Condition Assessment Criteria		Criterion passed (Yes or No)
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description).[1] **Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**	Y
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	N
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[2].	N
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	Y

E	Combined cover of species indicative of suboptimal condition[3] 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. If any invasive non-native plant species[4] (as listed on Schedule 9 of WCA[5]) are present, this criterion is automatically failed.	N
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 3 and 5 cannot contribute towards this count). **Note - this criterion is essential for achieving Good condition for non-acid grassland types only.**	SLIGHTLY ACIDIC
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		Y
Number of criteria passed		2
Condition Assessment Result	**Condition Assessment Score**	**Score Achieved ×/✓**
Acid grassland types (Result out of 5 criteria)		
Passes 5 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	
Passes 2 or fewer criteria	Poor (1)	X

Native hedgerow; assessed using the 'Hedgerow' habitat condition assessment sheet:

Core groups - applicable to all hedgerow types

A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Y	Y	
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	Y	Y	

B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	Y	Y	
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	Y	Y	
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	N	N	

C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	Y	Y	
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website[4], as well as the BSBI website[5] where the 'Online Atlas of the British and Irish Flora'[6] contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website[7].	Y	Y	
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgerow cutting).	Y	Y	

E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient[8]), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	N/A	N/A	
E2.	Tree health	At least 95% of hedgerow 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.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	N/A	N/A	

Condition categories for hedgerows without trees

Category	Category Requirements	Metric Score
Good	No more than 2 failures in total; **AND** No more than 1 failure in any functional group.	3
Moderate	No more than 4 failures in total; **AND** <u>Does not fail both attributes</u> in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate condition).	2

Poor	Fails a total of more than 4 attributes; **OR** Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1
Score achieved:		GOOD

Individual urban trees; assessed using the 'Individual trees' habitat condition assessment sheet:

Condition Assessment Criteria		**Criterion passed (Yes or No)**
A	The tree is a native species (or at least 70% within the block are native species).	Y
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Y
C	The tree is mature (or more than 50% within the block are mature)[1].	N
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Y
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N

F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
Number of criteria passed		4
Condition Assessment Result (out of 6 criteria)	**Condition Assessment Score**	**Score Achieved ×/✓**
Passes 5 or 6 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	X
Passes 2 or fewer criteria	Poor (1)	

Bare ground; assessed using the 'Urban' habitat condition assessment sheet:

Condition Assessment Criteria		**Criterion passed (Yes or No)**
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	N
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	N

C	Invasive non-native plant species (listed on Schedule 9 of WCA[1]) and others which are to the detriment of native wildlife (using professional judgement)[2] cover less than 5% of the total vegetated area[3]. **Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).**	Y
Essential criteria relevant for habitat type achieved (Yes or No)	**Y**	
Number of criteria passed	**1**	
Condition Assessment Result	**Condition Assessment Score**	**Score Achieved ×/✓**
Results for habitats requiring assessment of **3 core criteria** only **(all listed urban habitats except Open mosaic habitat on previously developed land, Bioswale, SuDS and Green roofs)**:		
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C.	Good (3)	
• Passes 2 of 3 core criteria; OR • Passes 3 of 3 core criteria but does not meet the requirements	Moderate (2)	

for Good condition within criterion C.		
• Passes 0 or 1 of 3 core criteria.	Poor (1)	X

Appendix 5b: Habitat Condition Assessment Sheets - Proposed

Other neutral grassland; assessed using the 'Grassland medium, high and very high distinctiveness' habitat condition assessment sheet:

Condition Assessment Criteria		Criterion passed (Yes or No)
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description).[1] **Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**	Y
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Y
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[2].	Y
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	Y

E	Combined cover of species indicative of suboptimal condition[3] 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. If any invasive non-native plant species[4] (as listed on Schedule 9 of WCA[5]) are present, this criterion is automatically failed.	Y
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 3 and 5 cannot contribute towards this count). **Note - this criterion is essential for achieving Good condition for non-acid grassland types only.**	SLIGHTLY ACIDIC
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		Y
Number of criteria passed		3
Condition Assessment Result	**Condition Assessment Score**	**Score Achieved ×/✓**
Acid grassland types (Result out of 5 criteria)		
Passes 5 criteria	Good (3)	X
Passes 3 or 4 criteria	Moderate (2)	
Passes 2 or fewer criteria	Poor (1)	

Individual trees; assessed using the 'Individual trees' habitat condition assessment sheet:

Condition Assessment Criteria	Criterion passed

		(Yes or No)
A	The tree is a native species (or at least 70% within the block are native species).	Y
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Y
C	The tree is mature (or more than 50% within the block are mature)[1].	N
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	N
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
Number of criteria passed		3
Condition Assessment Result (out of 6 criteria)	**Condition Assessment Score**	**Score Achieved ×/✓**
Passes 5 or 6 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	X

Passes 2 or fewer criteria	Poor (1)	

Native hedgerow; assessed using the 'Hedgerow' habitat condition assessment sheet:

Attributes and functional groupings (A, B, C, D and E)		Criteria - the minimum requirements for 'favourable condition'	Criteria description	Criterion passed (Yes or No)
Core groups - applicable to all hedgerow types				
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	N
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	Y

B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	N
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	Y
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	N

C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	Y
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website[4], as well as the BSBI website[5] where the 'Online Atlas of the British and Irish Flora'[6] contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website[7].	Y
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgerow cutting).	N
Condition categories for hedgerows without trees				
Category		**Category Requirements**	**Metric Score**	
Good		No more than 2 failures in total; **AND** No more than 1 failure in any functional group.	3	

Moderate	No more than 4 failures in total; **AND** Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate condition).	2		
Poor	Fails a total of more than 4 attributes; **OR** Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1		
Score achieved:		Moderate		

Appendix 6: Headline BNG Results

The Defra Statutory Biodiversity Metric is provided as a separate excel spreadsheet.

Atterbury Gardens, Caversham, Reading

Headline Results

Return to results menu

Scroll down for final results ⚠

On-site baseline	Habitat units	0.77		
	Hedgerow units	0.29		
	Watercourse units	0.00		
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.57		
	Hedgerow units	0.35		
	Watercourse units	0.00		
On-site net change (units & percentage)	Habitat units	-0.20	-26.39%	On-site net gain is less than target net ▲
	Hedgerow units	0.06	19.61%	
	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	-0.20		
	Hedgerow units	0.06		
	Watercourse units	0.00		
Spatial risk multiplier (SRM) deductions	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
FINAL RESULTS				
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	-0.20		
	Hedgerow units	0.06		
	Watercourse units	0.00		
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	-26.39%	Total net gain achieved is less than target net ▲	
	Hedgerow units	19.61%		
	Watercourse units	0.00%		
Trading rules satisfied?	No - Check Trading Summaries ▲			