Biodiversity Net Gain Assessment

Honley Library, West Avenue, Honley, Holmfirth, HD9 6HF

Friends of Honley Library

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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 Friends of Honley Library to undertake a Biodiversity Net Gain (BNG) Assessment at Honley Library, West Avenue, Honley, Holmfirth, HD9 6HF (hereafter referred to as "the site"). The assessment was required to inform a planning application for the extension of current building on site (hereafter referred to as "the proposed development").

- The baseline area-based habitat value of the site is 1.05 units, comprising 0.07 units of modified grassland, 0.98 units of urban trees, and sealed surfaces (no value).
- The post development area-based habitat value of the site is 1.17 units, comprising the: creation of 0.02 units of intensive green roof, enhancement of 0.17 (units) of modified grassland, and retention of 0.98 units of urban trees.
- This results in a net change in biodiversity **of 11.25% (i.e. a net gain).**
- The baseline linear-based habitat value of the site is 0.06 units of non-native ornamental hedgerows.
- The post development linear-based habitat value of the site is 0.1 units, comprising the: creation of 0.04 units of native hedgerow and retention of 0.06 units of non-native ornamental hedgerow.
- This results in a net change in biodiversity of **65.21% (i.e. a net gain).**
- All trading rules are satisfied and the development is compliant with the latest guidance surrounding the Statutory Biodiversity Metric.

Contents

1.0 Introduction and Context

Arbtech Consulting Limited was instructed by Friends of Honley Library to undertake a Biodiversity Net Gain (BNG) Assessment at Honley Library, West Avenue, Honley, Holmfirth, HD9 6HF (hereafter referred to as "the site"). The assessment was required to inform a planning application for the extension of current building on site (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:

- Statutory DEFRA Biodiversity Metric .
- Preliminary Ecological Appraisal and Preliminary Roost Assessment (PEA/PRA): Honley Library, West Avenue, Honley, Holmfirth, HD9 6HF (Arbtech Consulting Ltd., 2024).

1.1 Site Location, Geology and Landscape Context

The site is located at National Grid Reference SE 13702 11816 and has an area of approximately 0.08ha comprising a building, hard standing, grassland, scattered trees and shrubs. The site is located in the centre of Honley with Honley Ambulance Station to the South. The wider landscape comprises of urban dwelling areas with several amenity parks and mature scattered trees. A site location plan is provided in Appendix 2.

1.2 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) 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 also enshrined within the National Planning Policy Framework (NPPF, 2023). As of 12th February 2024, BNG has become mandatory. Furthermore, BNG is a requirement of Policy 13 of the Holme Valley Neighbourhood Development Plan (adopted in 2021).

The DEFRA Statutory Biodiversity Metric is the latest and final version of the metric 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.

1.3 Scope of this Report

This report assesses the biodiversity value of the site pre-development and outlines the minimum biodiversity units required to achieve a +10% net gain.

2.0 Methodology

2.1 Baseline Biodiversity Value

The baseline BNG Calculation was informed by a PEA/PRA (Arbtech Consulting Ltd., 2024). A baseline habitat plan is provided in Appendix 3.

Habitat Classification

The PEA/PRA classified the habitats on site according to UK Habitat Classification User Manual (UK Habitat Classification Working Group, 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 Table 13 of the Draft Statutory Biodiversity Metric User Guide (Natural England, 2023).

Habitat Condition

Habitat condition was assessed using the relevant condition assessment sheets found in the Draft Statutory Biodiversity Metric User Guide (Natural England, 2023).

Strategic Significance

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

- Ecological value
- Function within the landscape
- Any site or habitat allocations under the Holme Valley Neighbourhood Development Plan (adopted in 2021).

2.2 Post Development Biodiversity Value

The post development BNG Calculation was informed by AHR-HOL-00-DR-A-2001-Proposed Floor Plan - Intermediate Option 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, 2023) and the information provided within the AHR-HOL-00-DR-A-2001-Proposed Floor Plan - Intermediate Option.

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 Table 13 of the Draft Statutory Biodiversity Metric User Guide (Natural England, 2023).

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 Draft Statutory Biodiversity Metric User Guide (Natural England, 2023). 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
- Any site or habitat allocations under the Holme Valley Neighbourhood Development Plan (adopted in 2021).

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

Type	Habitat	Area (ha) / Length (km)	Description	Condition Assessment	Strategic Significance
Area Based	Developed, sealed surface (buildings) [u1b5]	0.0190ha	There is one building on site consisting of the in-use library. The building is a single storey building with a double ridged, hipped roof, constructed with slate tiles and wooden soffits. There is a single chimney stack located on the western elevation of the building. The walls are a mix of render and stonework, with multiple windows on all elevations. There are skylights present on the northern and southern roof structures, in the median of the building. There are two separate loft spaces within the building.	Habitat condition pre-determined as '***N/A***' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
	Developed, sealed surface [u1b]	0.0154ha	The majority of the site consists of developed land, with sealed surfaces including paths around the building and concrete tiles at the entrance to the building, with concrete ramps. There are scattered flowerpots at the entrance to the site with introduced shrubs including primrose, tulips and daffodils.	Habitat condition pre-determined as '***N/A***' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).

	Modified Grassland (g4)	0.0374ha	There is modified grassland on site, which is regularly managed and mown with common grass species present such as meadow grass (d) and perennial rye (o). Other species located within the grassland include creeping buttercup (d), thistle (a), dandelion (f), poppy(o), holly(o), ribwort plantain (r), common groundsel (r), and cotoneaster (r). There were sections of small shrubs with species including holly (d) and privet (d). There are five scattered trees on site. The trees were dominated by holly, with one *Cupressus* sp. Present.	***Poor**: passes 5 of 7 criteria excluding essential criterion A.* Assessed using the 'Grasslands Low Distinctiveness' habitat type condition sheet.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
	Urban Tree (u1 32)	0.1221ha	3 are 'medium sized' with a DBH between 30.0 and 60.0cm and 2 are 'large-sized' with a DBH between 60.0 and 90.0cm. There are five scattered trees on site. The trees were dominated by holly, with one *Cupressus* sp. Present.	***Moderate**: passes 4 of 6 criteria.* Assessed using the 'Individual Trees' habitat type condition sheet.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Linear Based	Non-native, Ornamental Hedgerow [h2b]	0.06km	The site has hedgerow boundaries on the western, northern, and eastern boundary of the site. The hedgerow is dominated by common privet, with holly (o).	Habitat condition pre-determined as '**Poor**' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest 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 an area of modified grassland.

Table 2: Post Development Biodiversity Value

Habitat			Area (ha) / Length (km)	Description	Target Condition	Strategic Significance
Created	Area-Based	Developed, sealed surface (buildings) [u1b5]	0.0068ha	An extension will be added to the existing Library building onsite.	Habitat condition pre-determined as '***N/A***' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
		Developed, sealed surface [u1b]	0.0034ha	Additional paved areas will be added to provide parking spaces and patio areas.	Habitat condition pre-determined as '***N/A***' as detailed within the Statutory Biodiversity Condition Assessment Supplement.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
		Intensive green roof (u1 88)	0.0068ha	An intensive green roof will be planted onto the roof of the library extension. XF 301 Sedum Blanket Extensive Green Roof System: https://www.bauder.co.uk/green-roofs/extensive-green-roofs/lightweight-sedum-low-maintenance-solution/sedum-blanket-system.	***Moderate:*** *passes 3 of 4 criteria.* Assessed using the 'Urban' habitat type condition sheet.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
	Linear-Based	Native hedgerow (h2a)	0.01km	At least 10m of native hedgerow will be planted along the western boundary of the site.	***Good****: no more than 2 failures anticipated and no more than 1 failure in a functional group.*	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of

					Assessed using the 'Hedgerow' habitat type condition sheet.	medium strategic significance (not part of a habitat corridor or steppingstone).
Enhanced	Area-Based	Modified grassland (g4)	0.0272ha	The existing modified grassland will be enhanced to a moderate condition other neutral grassland (g3c). See landscaping section for more details.	***Moderate:*** *Passes 5 of 6 criteria, including essential criterion A but not additional criterion F.* Assessed using the 'Grasslands Low Distinctiveness' habitat type condition sheet.	Low Strategic Significance Area/compensation not in local strategy/no local strategy and no evidence to suggest the habitat is of medium strategic significance (not part of a habitat corridor or steppingstone).
Retained	Area-Based	Developed, sealed surface (buildings) [u1b5]	0.0190ha (entire)	See Table 1.		
		Developed, sealed surface [u1b]	0.0154ha (entire)	See Table 1.		
		Urban Tree (u1 32)	0.1221ha (entire)	See Table 1.		
	Linear-Based	Non-native, Ornamental Hedgerow [h2b]	0.06km (entire)	See Table 1.		

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.

Area-Based Habitat Units

The baseline area-based habitat value of the site is 1.05 units, comprising 0.07 units of modified grassland, 0.98 units of urban trees, and sealed surfaces (no value).

The post development area-based habitat value of the site is 1.17 units, comprising the:

- creation of 0.02 units of intensive green roof.
- enhancement of 0.17 (units) of modified grassland into other neutral grassland.
- retention of 0.98 units of urban trees.

This results in a net change in biodiversity of 11.25% (i.e. a net gain).

Linear-Based Habitat Units

The baseline linear-based habitat value of the site is 0.06 units of non-native ornamental hedgerows.

The post development linear-based habitat value of the site is 0.1 units, comprising the:

- creation of 0.04 units of native hedgerow.
- retention of 0.06 units of non-native ornamental hedgerow.

This results in a net change in biodiversity of 65.21% (i.e. a net gain).

4.0 Recommendations to Deliver BNG

4.1 Discussion

The current landscaping proposal generates a net gain of area-based habitat units (11.25%) and a net gain of linear-based habitat units (65.21%). As such, the proposed development is compliant with upcoming legislation (Environment Act 2021) and current planning policies (National: National Planning Policy Framework, 2023; Local: Holme Valley Neighbourhood Development Plan, adopted in 2021)) as a minimum biodiversity net gain of +10% was not achieved for both area- and linear-based habitat units.

All trading conditions have been satisfied.

A Biodiversity Net Gain (BNG) Management Plan must be produced for the site. This should include recommendations for the implementation, management, and monitoring of the site for at least 30 years to ensure that biodiversity net gain is delivered.

4.2 Landscaping

In order to enhance a modified grassland into an other neutral grassland, the species mix will need to change to meet the following criteria:

1. >20% cover of broadleaved herbs and sedges.
2. >8 species per m^2.
3. ≥1 grass species not generally sown for intensive agricultural production is at least abundant.
4. Cover of ryegrasses and white clover <30%.

An example species mix to incorporate is presented below:

Species	Cover
Festuca rubra	20%
Holcus lanatus	15%
Arrhenatherum elatius	15%
Dactylis glomerata	10%
Primula veris	5%
Lotus corniculatus	5%
Vicia sativa	5%
Rhinanthus minor	5%

Achillea millefolium	5%
Daucus carota	5%
Trifolium pratense	5%
Potentilla reptens	2.5%
Scabiosa columbaria	2.5%

It is also important to take note that:

- It is essential that grasses make up 60-70% of the grassland area and native wildflower's the remaining 40-30%. Wildflower species will ideally be favoured by pollinators.
- Do a first cut of the grassland in mid to late summer, remove the arisings and compost. Grassland can then be mown to a short sward until March the following year.
- The grassland should not be cut from spring through to late July/August to give the sown species an opportunity to flower.
- A site manager will need to ensure that the proposed planting scheme is adhered to.

4.3 Post Development

A Biodiversity Net Gain (BNG) Management Plan must be produced for the site. This should include recommendations for the implementation, management, and monitoring of the site for at least 30 years.

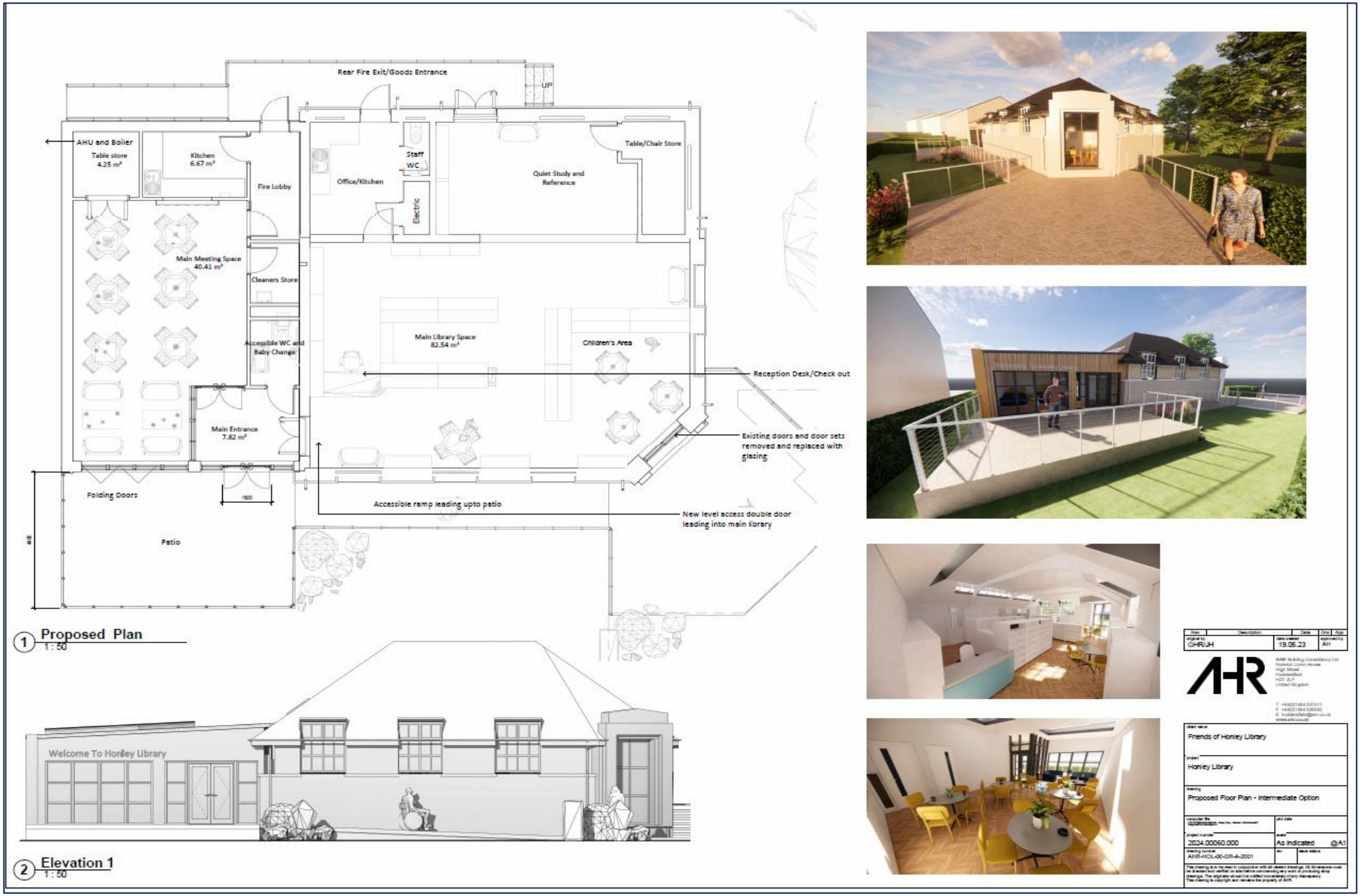
4.4 Design statement

This report contains recommendations on measures for achieving BNG. These recommendations do not constitute a design for BNG. In submitting these recommendations, Arbtech Consulting has no Design Liability associated with these recommendations for BNG. The strategy sets out the criteria which the landscape team can use to design the creation and management of the site.

5.0 Bibliography

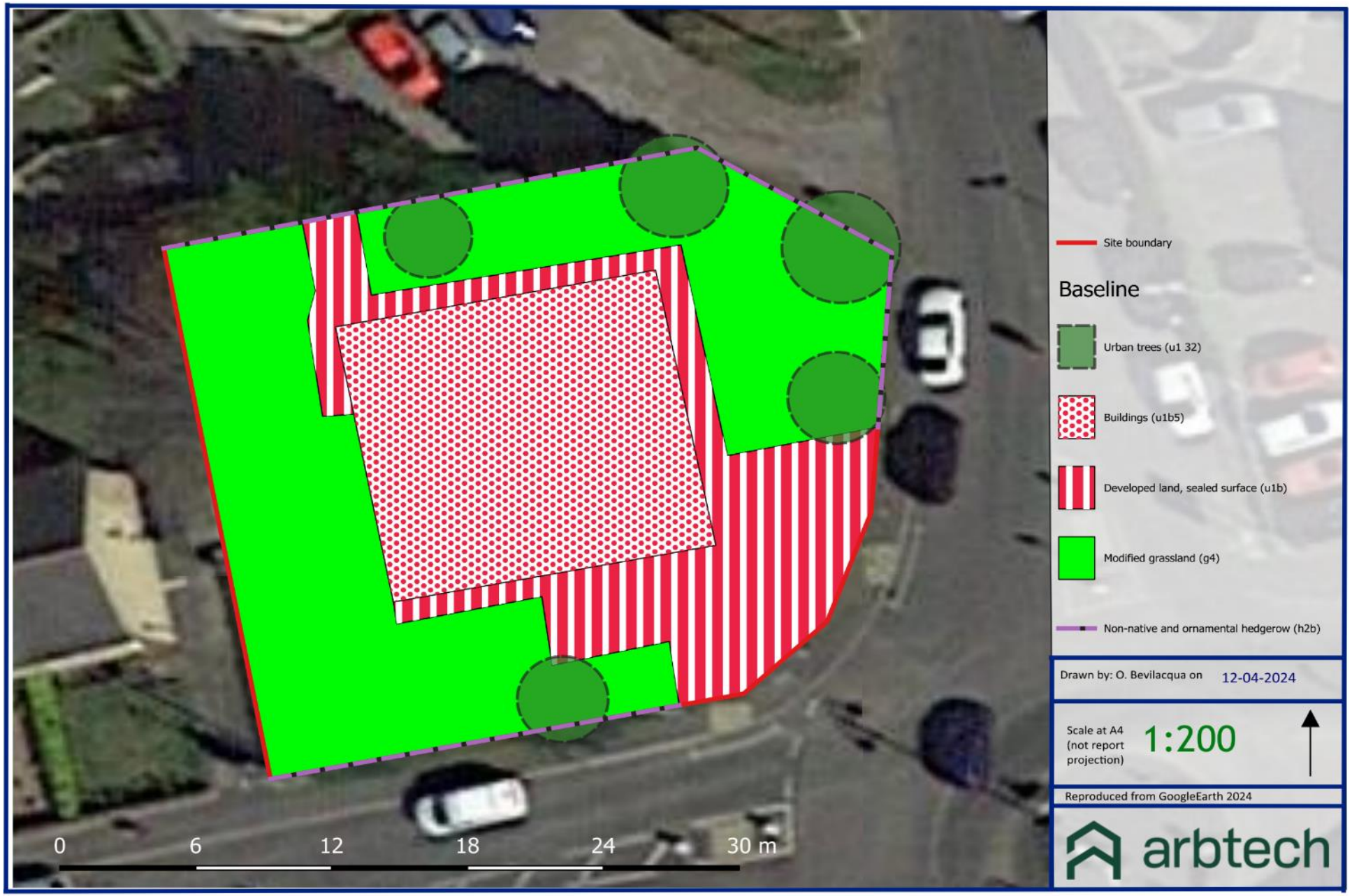
- Arbtech Consulting Ltd. (2024). Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA): Honley Library, West Avenue, Honley, Holmfirth, HD9 6HF.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.
- CIEEM-CIRIA-IEMA (2019) Biodiversity Net Gain – Good Practice Principles for Development.
- Holme Valley Neighbourhood Development Plan (adopted in 2021). https://www.kirklees.gov.uk/beta/planning-policy/pdf/holme-valley-NDP-made-plan.pdf
- 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
- National Planning Policy Framework (2023). https://www.gov.uk/government/publications/national-planning-policy-framework--2
- Natural England (2023). The Draft Statutory Biodiversity Metric User Guide (November 2023). https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides
- Natural England (2023). The Statutory Biodiversity Metric (November 2023). https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides
- UK Habitat Classification Working Group (2023). UK Habitat Classification – Habitat Definitions V2.0.

Appendix 1: Proposed Development Plan

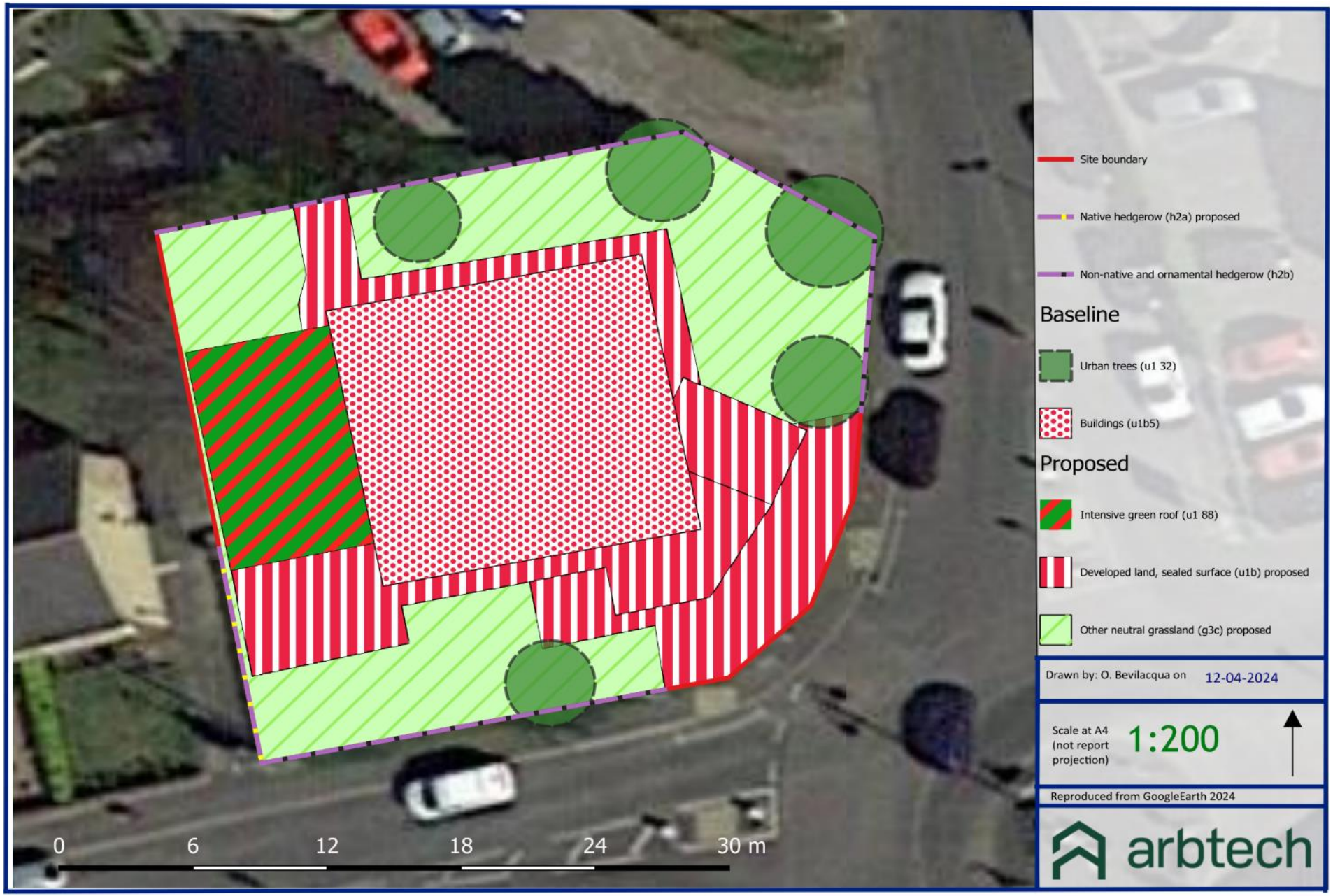


Appendix 2: Site Location Plan

Appendix 3: Baseline Habitat Plan



Appendix 4: Post Development Habitat Plan



Appendix 5a: Habitat Condition Assessment Sheets - Baseline

Modified Grassland; assessed using 'Grasslands Low Distinctiveness' habitat type condition sheet:

Condition Assessment Criteria:		Condition Achieved (Y/N)	Notes/Justification
A	There must be 6-8 vascular plant species per m^2, including at least 2 forbs. **NB - this criterion is essential for achieving moderate condition.**	N	Fewer than 6 vascular plant species per m^2.
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 vertebrates and invertebrates to live and breed.	N	Regularly mown, uniform sward height present.
C	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.	Y	No scattered scrub present (less than 20% coverage).
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y	Physical damage present in less than 5% of total grassland area.
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).	Y	Bare ground cover between 1% and 10%.
F	Cover of bracken less than 20%.	Y	No bracken observed (less than 20% coverage).
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).	Y	Absence of invasive species.
		Essential criterion 1 achieved (Y/N)	N
		Number of criteria passed	5

Condition Assessment Result	**Condition Assessment Score**	**Score Achieved ×/✓**
Passes 6 or 7 of 7 criteria including passing essential criterion 1	Good (3)	
Passes 4 or 5 of 7 criteria including passing essential criterion 1	Moderate (2)	
Passes 0, 1, 2 or 3 of 7 criteria; OR 4, 5 or 6 of criteria but failing criterion 1	Poor (1)	✓

Urban Trees; assessed using 'Individual Trees' habitat type condition sheet:

Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
A	The tree is a native species (or more than 70% within the block are native species).	Y	More than 70% of trees on site are native (4no. native, 1no. non-native).
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	All trees are individual trees and thus automatically pass this criterion.
C	The tree is mature (or more than 50% within the block are mature).	N	Less than 50% mature trees on site.
D	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Y	Little to no evidence of adverse anthropogenic impacts; all trees have retained >75% of their expected canopy.
E	Natural Ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N	None observed.
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	More than 20% of the tree canopy area has vegetation underneath.
		Number of criteria passed	4

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓
Passes 5 or 6 of 6 criteria	Good (3)	
Passes 3 or 4 of 6 criteria	Moderate (2)	✓
Passes 0, 1 or 2 of 6 criteria	Poor (1)	

Appendix 5b: Habitat Condition Assessment Sheets – Proposed

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

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
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	See planting specification in Landscaping section.
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	At least 20% of the sward will be greater than 7cm and 20% less than 7cm.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[2].	Y	Minimal bare ground present.
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	Y	No bracken or scrub present.
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	No damage or invasives expected.
Additional Criterion - must be assessed for all non-acid grassland types			
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.**	N	Expected <10 vascular plants per m^2.
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		N	
Number of criteria passed		5	

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓	
Non-acid grassland types (Result out of 6 criteria)			
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)		
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)	✓	
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)		

Native Hedgerow; assessed using 'Hedgerow' habitat type condition sheet:

Hedgerow favourable condition attributes				
Attributes and functional groupings (A, B, C, D & E)	**Criteria (the minimum requirements for 'favourable condition'**	**Description**	Condition Achieved (Y/N)	Notes/Justification
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 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	Hedgerow averages >1.5m in height.
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 (e.g. blackthorn suckers) are only included in the width estimate when they >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	Hedgerow averages >1.5m in width.
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	Gap between ground and base of canopy is <0.5m for more than 90% of length.
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).	Y	No gaps will be expected.

			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).		
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 hedge (at least)	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedge. Undisturbed ground should be present for at least 90% of the hedgerow length, greater than 1m in width and must be present along at least one side of the hedge. This criterion recognises the value of the hedge 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.	Y	At least one side of the hedge has >1m of undisturbed ground with perennial herbaceous vegetation for >90% of length.
C2.	Undesirable 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, should not exceed the 20% cover threshold.	N	Expected >20% nutrient enrichment species present.
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and recently introduced species	Recently introduced species refer to plant that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives.	Y	No invasives observed.
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 (e.g. excessive hedge cutting).	Y	>90% of hedgerow and understorey is free of damage caused by human activities.
E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient), 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	There is not one mature, ancient, or veteran tree present per 20-50m of the hedgerow.

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.	Y	No evidence of adverse impacts on tree health.

Condition categories for hedgerows with trees		
Category	**Maximum number of attributes that can fail to meet 'favourable condition' criteria in Table TS1-2**	**Weighting (score)**
Good	No more than 2 failures in total; **AND** No more than 1 failure in any functional group.	3
Moderate	No more than 5 failures in total; **AND** Does not fail both attributes in more than one functional group (e.g., fails attributes A1, A2, B1, C2 and E1 = Moderate condition).	2
Poor	Fails a total of more than 5 attributes; **OR** Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 and B2 = Poor condition).	1
Score achieved:	Good	

Intensive Green Roof; assessed using the 'Urban' habitat type condition sheet:

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - must be assessed for **all urban habitat types**:			
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	Species proposed are capable of providing varied vegetation structure.
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.	Y	Species proposed includes different species that flower at different times of the year.
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	Absence of non-native plant species in species list. Management plan addresses removal of invasives if found colonizing green roof.
Additional Criterion – must be assessed for **intensive green roofs** only:			
F	The roof has a minimum of 50% native and non-native wildflowers.	Y	Species proposed expected to have at least 50% native wildflowers.
		Essential criteria relevant for habitat type achieved (Yes or No)	Y
		Number of criteria passed	3

Condition Assessment Result	Condition Assessment Score	Score Achieved ×/✓
Results for **Green roofs** (requiring assessment of 4 criteria only - core criteria plus additional criterion specified for habitat type):		
▪ Passes all 3 core criteria; AND ▪ Meets the requirements for Good condition within criterion C; AND ▪ Passes additional criterion relevant to specific habitat type (F or G).	Good (3)	
▪ Passes 2 or 3 of 4 criteria; OR ▪ Passes 4 of 4 criteria but does not meet the requirements for Good condition within criterion C.	Moderate (2)	✓
▪ Passes 0 or 1 of 4 criteria.	Poor (1)	

Appendix 6: Headline BNG Results

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