



Bennett Street, Manchester Biodiversity Net Gain Baseline Assessment

Kellen Homes Ltd

Report prepared by:
Ecus Ltd.
MIOC Building
Suite 11C
Styal Road
Wythenshawe
Manchester
M22 5WB

0161 302 0280

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Ecus Ltd

Report to: **Kellen Homes Ltd**
1st Floor
103 Dalton Avenue
Birchwood Park
Warrington
WA3 6YF

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Originated By:



Gill West
Assistant Ecologist

Date: 05/07/2022

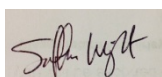
Reviewed By:



Leo Plevin
Senior Consultant
Ecologist

Date: 19/07/2022

Approved By:



Saffra Wright
Technical Director

Date: 21st July 2022

Prepared by:
Ecus Ltd.
MIOC Building
Suite 11C
Styal Road
Wythenshawe
Manchester
M22 5WB

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Executive Summary

Ecus Limited (Ltd) was commissioned by Kellen Homes Ltd in June 2022, to undertake a Biodiversity Net Gain (BNG) baseline assessment of the development of an area of land off Bennett Street, Ardwick, Manchester (central Ordnance Survey National Grid Reference (OSNGR): SJ8620497026, hereafter referred to as the 'Site').

The Site totals approximately 5.1 hectares (ha) and is predominantly comprises hard standing and bare ground/artificial unsealed surface areas, derelict commercial and industrial buildings and grassland and scrub habitats with scattered tall herb throughout.

Proposals for the Site are displayed on the "*Bennett Street Manchester - Site Layout 22-02-22 (003)*" dated February 2022 (Appendix 3), produced by Kellen Homes Ltd and include the construction of highway infrastructure and proposed areas of soft landscaping. Site Layout Plan KH006 A-101 has since been provided and newly calculated areas from this have not been used in the BNG. For the purposes of this assessment the most recent site layout plan is provided in Appendix 4 but areas of habitat creation have been derived from the original site layout plan (Appendix 3) and the overall BNG score is not considered likely to change significantly.

Baseline habitats featured on the Site include grassland – other neutral grassland, heathland and shrub-mixed scrub, artificial unvegetated; unsealed surface and developed land and sealed surface.

Baseline habitat areas have been calculated to have a biodiversity value of 3.32 Habitat Units (HU).

Other than the built areas of the site, post-development habitats within areas of Public Open Space (POS) have not been specifically assigned. It is assumed that proposed areas of POS will contain modified grassland used as amenity open space, linear habitats will be planted with native species to form native hedgerows and that stand-alone trees will be planted with native species.

As no detailed and finalised landscaping design (inclusive of accurate area data) for the Site had been provided at the time of preparation the habitat creation areas are an estimate of the final BNG calculation and should be used to inform the future landscape design. All calculations have been calculated and assessed on the initial site layout shown in Appendix 3.

Post-development, the area-based habitats (as estimated areas from Appendix 3) produced a habitat area net gain of 2.84 HU and a positive net percentage change of +85.66%. Hedgerows are due to be added post-development therefore there is a 100.00% change in HU for hedge creation.

Recommendations

The current proposals result in a +85.66% net change for habitats and a +100.00% net change for hedgerows. The current proposals do deliver the required 10 % net gain on-site. However, whilst the assumed post-development habitats reach 85.66% net gain, the habitats do not satisfy the habitat trading rules (a requirement of Biodiversity metric 3.1). These trading rules require the same broad distinctiveness of habitat or better, for scrub and other neutral grassland. Therefore, including areas of scrub or more diverse grassland habitats at the Site will be required.

In order to help satisfy these trading rules, it is suggested that the areas of proposed POS could incorporate a mix of wildflower grassland, scrub, and woodland. The proposed management of these areas should also aim to increase the condition of these habitats over time.

Areas of amenity grassland required to be created at the site, including road verges, could also be planted with a more species rich grassland seed mix (where rye grass cover will be less than 25%) and subject to relaxed mowing regime whereby areas are left to grow tall in order to meet 'moderate' condition. Long unmown grassland areas incorporated into the final landscape design would create habitat features and provide benefits for wildlife.

1. Introduction

1.1 Background

- 1.1.1 Ecus Limited (Ltd) was commissioned by Kellen Homes Ltd in June 2022, to undertake an initial Biodiversity Net Gain (BNG) baseline assessment of an area of land off Bennett Street, Ardwick, Manchester (central Ordnance Survey National Grid Reference (OSNGR): SJ8620497026, hereafter referred to as the 'Site'). This initial BNG baseline assessment has been carried out in connection with the proposed development of the site to determine the potential change in biodiversity units at the Site post-development. Calculations have been based upon current layout proposals with the aim of informing the finalised landscaping proposals.
- 1.1.2 Ecus Ltd were also commissioned to undertake a Preliminary Ecological Appraisal (PEA) of the Site (Ecus Ltd, 2022, Bennett Street, Manchester, Preliminary Ecological Appraisal, ref 19414). The information gathered as part of the PEA has been used to provide baseline habitat information to inform the BNG baseline assessment.
- 1.1.3 The Site totals approximately 5.1 hectares (ha) and is predominately made up of hard standing and bare ground/artificial unsealed surface areas, derelict commercial and industrial buildings and grassland and scrub habitats with scattered tall herbs throughout.
- 1.1.4 Proposals for the Site are displayed on the "*Bennett Street Manchester - Site Layout 22-02-22 (003)*" dated February 2022, produced by Kellen Homes Ltd and include the construction of 272 residential units and a community centre with associated highways and POS.
- 1.1.5 It is assumed that areas of POS detailed within the site layout plan will contain modified grassland which is traditionally associated with this type of development, linear habitats will be planted with native species to form native hedgerows and that stand-alone trees will be native species.

2. Methodology

2.1 Extended UK Habitat Classification Survey

- 1.1.1 A PEA report has been produced by Ecus in July 2022 including the formulation of a UK Habitat map for the site and assessment of habitats on site in line with the UK Habitat Classification System (UKHab) methodology (UK Habitat Classification Working Group (UKHCWG) 2018). The UK Habitat Classification Survey method aims to characterise habitats and communities present and is not intended to provide a complete list of all plants occurring across the Site.

2.2 Biodiversity Metric Calculations

- 2.2.1 Biodiversity metric calculations provide a numerical score for the current value (in Biodiversity Units (BU)) of the habitats on Site and their likely value post-development in order for the impact of the proposed development to be quantitatively assessed.
- 2.2.2 The BNG used the current metric tool, the '*Biodiversity Metric 3.1 Calculation Tool Beta*' (BM3.1) distributed by Natural England (NE, 2022) in conjunction with the user guide: '*The biodiversity Metric 3.1: Auditing and accounting for biodiversity value: user guide*' (Panks et al., 2022). Habitat measurements have been taken using digital mapping software (QGIS Geographic Information System version 3.20).
- 2.2.3 Using the biodiversity metric tool, habitat values are calculated based on: their area (ha) (or length (km) for linear features such as hedgerows); habitat distinctiveness (includes parameters such as species richness, diversity and rarity); habitat condition; and strategic significance based on importance within the local area, usually identified from local relevant planning policies or documents. This gives individual pre-development Habitat Units (HU) and Hedgerow Units (HeU).
- 2.2.4 The post-development value can then also be calculated for habitats where factors including time to target condition, difficulty of creation/enhancement and any delays to habitat created are also taken into consideration.
- 2.2.5 The unit values of habitat areas and hedgerows are calculated separately and cannot be combined when looking at net loss and net gain across the site. This provides an overall picture of the biodiversity net gain or loss as a result of a development.

2.3 Assumptions

- 2.3.1 All calculations are based upon the removal of grassland and scrub habitat, as detailed in the proposed site layout drawing.
- 2.3.2 Strategic significance has been considered as "Area/compensation not in local strategy / no local strategy" for pre- and post- development habitats following a review of the '*Manchester Biodiversity Strategy 2005- updated 2009*' (soon to be succeeded by Greater Manchester's Nature Recovery Plan 2022).
- 2.3.3 Other than the built areas of the site, post-development habitats within areas of POS have not been specifically assigned. It is assumed that proposed areas of POS will contain modified grassland used as amenity open space, linear habitats will be planted with native species to form native hedgerows and that stand-alone trees will be planted with native species, as no detailed landscaping proposals for the Site have been provided at this stage.
- 2.3.4 This BNG is indicative of the baseline and not a true representation of accurate area measurements. All calculations have been calculated and assessed on the initial site layout shown in Appendix 3. However, it is determined that an accurate assessment and calculations of biodiversity have been made.

3. Findings and Evaluation

3.1 Baseline Habitats

- 3.1.1 For this assessment the baseline habitat types and areas have been calculated based on the findings of the 2022 PEA report.
- 3.1.2 The data used to inform the condition assessments for the habitats pre-development and calculations from the DEFRA 3.1 Metric are provided in Appendix 1 and are summarised below.
- 3.1.3 The distinctiveness is automatically calculated within the biodiversity metric tool.
- 3.1.4 The condition of existing habitats has been assessed using information within the '*Biodiversity Metric 3.1: auditing and accounting for biodiversity – Condition Assessment Sheets (Panks et al., 2022)*' and based upon the ecologist's judgement of site habitats (Appendix 1).
- 3.1.5 The ecological connectivity has been set as 'low' for all habitats as the connectivity score within the metric is automated depending on the distinctiveness of the habitats recorded; all habitats were either of very low, low or medium distinctiveness.
- 3.1.6 Strategic significance has been considered as "Area/compensation not in local strategy / no local strategy" for pre- and post- development habitats following a review of the '*Manchester Biodiversity Strategy 2005- updated 2009*'.
- 3.1.7 Baseline habitats featured on the Site include grassland – other neutral grassland, heathland and shrub – mixed scrub, artificial unvegetated; unsealed surface and developed land; sealed surface.
- 3.1.8 The total area has been calculated at approximately 5.1 ha. The habitat type, condition, area and HU are provided within Table 1. Baseline area habitats have a biodiversity value of 3.32 HU (Appendix 2).

Table 1. The Site Baseline area-based habitats, condition and Habitat Units

Habitat Type	Condition	Area (ha)	Habitat Units
Developed land; Sealed surface	N/A	0.95	0.00
Artificial unvegetated; Unsealed surface	N/A	3.32	0.00
Grassland – Other neutral grassland	Poor	0.58	2.34
Heathland and shrub – Mixed scrub	Poor	0.25	0.98
Total Habitat Units			3.32

3.2 Indicative Calculations

- 3.2.1 The following calculations present a version of the biodiversity metric calculations based on the current baseline values and the current '*Bennett Street Manchester - Site Layout 22-02-22 (003)*' (Appendix 3).
- 3.2.2 Calculations within the proposed areas of POS are based on the assumption they will contain modified grassland used as amenity open space, linear habitats will be planted with native species

to form native hedgerows and stand-alone trees will be planted with native species, exact details of habitats within these area are yet to be proposed.

3.2.3 The habitat type, condition, area and HU of the post-development habitats are summarised within Table 2 below (further details presented in Appendices 1 and 2).

Table 2: The Site post development area-based habitats, condition and Habitat Units

Habitat Type	Condition	Area (ha)	Habitat Units
Urban – Developed land; sealed surface	N/A – Other	2.69	0.00
Urban – Vegetated gardens	Condition Assessment- N/A	0.903	1.74
Amenity - Modified grassland	Poor	0.179	0.35
Urban- Urban Tree	Moderate	1.3307	4.07
Total Habitat Units			6.16

3.2.4 The hedgerow type, condition, length and HeU of post-development hedgerows are summarised in Table 3. Post-development, the area-based habitats produced a biodiversity value of 6.16 HU. Post-development, the linear habitats produced a biodiversity value of 2.45 HeU.

Table 3: The Site post development linear habitats, condition and Hedgerow Units

Hedgerow Type	Condition	Length (km)	Hedgerow Units
Native Hedgerow	Moderate	0.353	1.18
Native Hedgerow with trees	Moderate	0.227	1.27
Total Hedgerow Units			2.45

3.2.5 Grey infrastructure i.e. hardstanding road and footpaths, provides a biodiversity value of zero.

3.2.6 Amenity grassland is a habitat that is straight-forward and time-efficient to recreate, however the condition can only be up to moderate value and given the frequent mowing regime of amenity grassland, it is likely that these habitats could be of no more than poor value. Amenity grassland within the development is therefore considered to be of poor condition.

3.2.7 Planted native hedgerows and native hedgerows with trees have been assumed to have a moderate condition based on the likelihood they will be species poor with only a few species present and will be located in areas of well mown amenity grassland making the likelihood of damage and disturbed ground probable. Hedgerows within the development are therefore considered to be of moderate condition.

3.2.8 Urban trees have been assumed to have a moderate condition based on the assumption that they will be native and healthy trees planted.

3.2.9 Based on this there is likely to be a total habitat area net gain of +2.84 HU and a positive net percentage change of +85.66%. Hedgerows are due to be added post-development therefore there is a 100.00% change in HeU (Table 4).

Table 4: Summary of Biodiversity Net Gain Calculations

	Baseline Units	Proposed Units	Change in Units	% Change in Units
Habitat Units (HU)	3.32	6.16	+2.84	+85.66%
Hedgerow Units (HeU)	0.00	2.45	+2.45	+100.00%

4. Discussion and Recommendations

- 4.1.1 The current layout plans and assumed amenity habitats and native hedgerow result in a net gain of habitat units on Site.
- 4.1.2 Within the current Site layout, the majority of the Site is made up of developed land; sealed surface and artificial unvegetated, unsealed surface, which are considered to be of negligible value to nature conservation and do not provide any HU. These areas will be replaced with developed land; sealed surface incorporating residential units and built linear features, however there will be a large proportion of vegetated gardens provided and POS areas proposed for the site are likely to be covered by amenity grassland which has helped to gain habitat units albeit are of marginal beneficial to biodiversity.
- 4.1.3 The current proposals result in a +85.66% net change for habitats and a +100.00% net change for hedgerows. The current proposals do deliver the required 10 % net gain on-site. However, whilst the assumed post-development habitats reach a 85.66% net gain, the habitats do not satisfy the habitat trading rules which require the same broad distinctness of habitat or better, for scrub and other neutral grassland. Therefore, creation scrub and diverse wildflower grassland areas is recommended and will be required to fulfil the trading rules criteria.
- 4.1.4 In order to help satisfy these trading rules, it is suggested that the areas of amenity open space proposed could incorporate a mix of wildflower grassland, scrub, and woodland. The proposed management of these areas should also aim to increase the condition of these habitats over time.
- 4.1.5 Areas of amenity grassland required to be created at the site, including road verges, could also be planted with a more species rich wildflower grassland mix (where rye grass cover will be less than 25%) and subject to relaxed mowing regime whereby areas are left to grow tall in order to meet 'moderate' condition. Long unmown grassland areas incorporated into the final landscape design would create habitat features and provide benefits for wildlife.

5. References

Manchester City Council (2005) '*Manchester Biodiversity Strategy 2005 document*'.

Ecus (2022) *Bennett Street, Manchester*, Preliminary Ecological Appraisal ref: 19414, Ecus Ltd, Manchester

Panks, S., White, N., Newsome, A., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Scott, S.J., Heaven, M., Scott, S.H., Treweek, J., Butcher, B. and Stone, S. (2021). Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide. Natural England. <http://publications.naturalengland.org.uk/publication/6049804846366720>; Accessed 05/07/2022.

The UK Habitat Classification Working Group (UKHCWG). (2018). 'UK Habitat Classification User manual'. Ecountability Ltd, Kentisbeare.

Appendix 1. Biodiversity Metric Condition Assessments

Baseline Habitats

Table 1. Condition Assessment of Other neutral grassland

Habitat	Grassland – Other neutral grassland		
Habitat Description	Other neutral grassland and scattered tall herb vegetation.		
Area	0.58 ha		
Distinctiveness	Medium		
Condition Table	Grassland Medium & High		
Condition Assessment	Assessment Criteria	Site Condition	Pass/Fail
	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.	This habitat matches the definition of other neutral grassland as detailed within the UKHab definitions.	Pass
	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Grassland has been left unmanaged and does not contain any areas of grassland with a sward height below 7cm	Fail
	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Areas of bare ground were observed	Fail
	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	There is scrub present within these areas of grassland, particularly bramble.	Fail
	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species ¹ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging	No invasive non-native species were observed.	Pass

	management activities) accounts for less than 5% of total area.		
Result	Poor – Passes 0, 1 or 2 of 5 criteria		

Table 2. Condition Assessment of Heathland and Shrub – Mixed scrub

Habitat	Heathland and Shrub – Mixed scrub		
Habitat Description	Scattered and dense scrub with tall herb.		
Area	0.24 ha		
Distinctiveness	Medium		
Condition Table	Scrub		
Condition Assessment	Assessment Criteria	Site Condition	Pass/Fail
	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).	The areas of scrub on site are not representative of a habitat listed within the UKHab descriptions. Bramble dominated >75% of the total area of scrub on site.	Fail
	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.	There is a uniform age of all scrub present across the site	Fail
	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species ¹ make up less than 5% of ground cover.	Cotoneaster is present in some areas of scrub.	Fail
	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).	Tall grasses are present at the edge of scrub habitats.	Pass
	There are clearings, glades or rides present within the scrub, providing sheltered edges.	The scrub is dense and continuous with no clearings, glades or rides	Fail
Result	Poor - Passes 0, 1 or 2 of 5 criteria		

Post-development Habitats

Table 3. Condition Assessment of Grassland – Modified Grassland

Habitat	Grassland – Modified Grassland		
Habitat Description	Amenity grassland		
Area	0.179 ha		
Distinctiveness	Low		
Condition Table	Grassland Low		
Condition Assessment	Assessment Criteria	Site Condition	Pass/Fail
	There must be 6-8 species per m ² . Note - if a grassland has 9 or more species per m ² it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving good condition.	Likely to be species poor.	Fail
	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Likely to have a mowing regime so the sward height would be <7cm throughout.	Fail
	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.	Not likely to have scrub species present.	Pass
	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	Due to the likely mowing regime the grassland will likely show signs of damage caused by machinery which will likely account for >5% of the total area.	Fail
	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Areas of bare ground >5% are unlikely.	Pass
	Cover of bracken less than 20%.	No scrub likely to be present.	Pass

	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species ¹ make up less than 5% of ground cover.	INNS likely to be absent.	Pass
Result	Poor - Passes 0, 1, 2 or 3 of 7 criteria or 4, 5 or 6 of criteria but failing criterion 1.		

Table 4. Condition Assessment of Native Hedgerow with trees

Habitat	Native Hedgerow with trees			
Habitat Description	Native species hedgerow with trees			
Area	0.227Km			
Distinctiveness	Medium			
Condition Table	Hedgerows and line of trees			
Condition Assessment	Attributes and functional groupings (A, B, C & D)	Assessment Criteria (the minimum requirements for 'favourable condition')	Site Condition	Pass/Fail
	A1. Height	>1.5 m average along length	Newly planted so unlikely to be >1.5 m.	Fail
	A2. Width	>1.5 m average along length	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).	Pass
	B1. Gap – hedge base	Gap between ground and base of canopy 90% of length (unless 'line of trees')	Gap between ground and base of hedgerow canopy is likely to be <0.5m.	Pass
	B2. Gap - hedge canopy continuity	Gaps make up <10% of total length No canopy gaps >5m	No gaps likely present in the hedgerow.	Pass
	C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for	Hedgerows in areas of well mown amenity grassland.	Fail

		>90% of length measured from outer edge of hedgerow, and is present on one side of the hedge (at least)		
	C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	Nettle, cleavers <i>Galium aparine</i> and docks are likely to make up <20% of species present at the hedgerows base.	Pass
	D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Hedgerow and undisturbed ground is likely free of invasive non-native and neophyte species	Pass
	D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Hedgerows in areas of well mown amenity grassland.	Fail
	E1. Tree age	At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	Young trees likely present throughout the hedgerow.	Fail
	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.	Newly planted so trees likely to be in a healthy condition	Pass
Result		Moderate - No more than 4 failures in total; AND does not fail both attributes in more than one functional group.		

Table 5. Condition Assessment of Native Hedgerow

Habitat	Native Hedgerow
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Habitat Description	Native species hedgerows			
Area	0.353Km			
Distinctiveness	Low			
Condition Table	Hedgerows and line of trees			
Condition Assessment	Attributes and functional groupings (A, B, C & D)	Assessment Criteria (the minimum requirements for 'favourable condition')	Site Condition	Pass/Fail
	A1. Height	>1.5 m average along length	Newly planted so unlikely to be >1.5 m.	Fail
	A2. Width	>1.5 m average along length	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).	Pass
	B1. Gap – hedge base	Gap between ground and base of canopy 90% of length (unless 'line of trees')	Gap between ground and base of hedgerow canopy is likely to be <0.5m.	Pass
	B2. Gap - hedge canopy continuity	Gaps make up <10% of total length No canopy gaps >5m	No gaps likely present in the hedgerow.	Pass
	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)	Hedgerows in areas of well mown amenity grassland.	Fail
	C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	Nettle, cleavers <i>Galium aparine</i> and docks are likely to make up <20% of species present at the hedgerows base.	Pass
	D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free	Hedgerow and undisturbed ground is	Pass

		of invasive non-native and neophyte species	likely free of invasive non-native and neophyte species	
	D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Hedgerows in areas of well mown amenity grassland.	Fail
Result		Moderate - No more than 3 failures in total; AND does not fail both attributes in more than one functional group.		

Table 6. Condition Assessment of Urban Trees.

Habitat Description	Urban Trees		
Area	1.3307 ha		
Distinctiveness	Medium		
Condition Table	Urban Trees		
Condition Assessment	Assessment Criteria	Site Condition	Pass/Fail
	The tree is a native species (or more than 70% within the block are native species).	Assumed likely native species will be planted.	Pass
	The tree canopy is predominantly continuous, with gaps in canopy cover making up 5 m wide (individual trees automatically pass this criterion).	Individual trees.	Pass
	The tree is mature or veteran (or more than 50% within the block are mature or veteran).	Likely young trees will be planted.	Fail
	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	Tree health likely to be good and likely no current regular pruning regime as trees are still young.	Pass

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	current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.		
	Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark.	Trees likely to be newly planted young trees.	Fail
	More than 20% of the tree canopy area is oversailing vegetation beneath.	Trees likely to be newly planted young trees.	Fail
Result	Moderate- Passes 3 or 4 of 6 criteria		

Appendix 2. Biodiversity Metric Calculations Summary

Baseline Habitat Calculation

Bennett Street																			
A-1 Site Habitat Baseline																			
Condense / Show Columns				Condense / Show Rows															
Main Menu				Instructions															
Habitats and areas				Distinctiveness		Condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value						
Ref	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic Significance multiplier		Total habitat units	Area retained	Area enhanced	Biodiversity units retained	Biodiversity units enhanced	Area habitat lost	Units lost	
1	Urban	Developed land; sealed surface	0.347	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00			0.00	0.00	0.35	0.00	
2	Urban	Artificial unvegetated, unsealed surface	3.323	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00			0.00	0.00	3.32	0.00	
3	Grassland	Other neutral grassland	0.584	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat	2.34			0.00	0.00	0.58	2.34	
4	Heathland and shrub	Mixed scrub	0.245	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat	0.98			0.00	0.00	0.25	0.98	
5																			
6																			
7																			
8																			
9																			
Total habitat area			5.10									3.32			0.00	0.00	0.00	0.00	
														0.00	0.00	0.00	0.00	5.10	3.32
														Total area lost (excluding area of Urban trees and Green walls)		5.10			

Assumed Post-development Habitat Creation

Bennett Street										
A-2 Site Habitat Creation										
Condense / Show Columns			Condense / Show Rows							
Main Menu			Instructions							
Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness		Condition		Strategic significance			Standard time to target condition/year
			Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	
Urban	Developed land; sealed surface	2.69	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0
Urban	Vegetated garden	0.903	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1
Grassland	Modified grassland	0.179	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1
Urban	Urban Tree	1.3307	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	27
Total habitat area		5.10								
Site Area (Excluding area of Urban trees and Green walls)		3.77								

Post development/ post intervention habitats										
Temporal multiplier						Difficulty multipliers				Habitat units delivered
Standard time to target condition/year	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/year	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	
0			Standard time to target condition applied	0	1.000	Low	Standard difficulty applied	Medium	0.67	0.00
1			Standard time to target condition applied	1	0.965	Low	Standard difficulty applied	Low	1	1.74
1			Standard time to target condition applied	1	0.965	Low	Standard difficulty applied	Low	1	0.35
27			Standard time to target condition applied	27	0.382	Low	Standard difficulty applied	Low	1	4.07
									Total Units	6.16

Assumed Post-development Hedgerow Calculation

B-2 Site Hedge Creation										
Condense / Show Columns				Condense / Show Rows						
Main Menu				Instructions						
		Proposed habitats		Habitat distinctiveness		Habitat condition		Strategic significance		
Baseline ref	New hedge number	Habitat type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier
52	52	Native Hedgerow	0.002	Low	2	Moderate	2	Areal/compensation not in local strategy/ no local strategy	Low Strategic Significance	1
53	53	Native Hedgerow	0.0035	Low	2	Moderate	2	Areal/compensation not in local strategy/ no local strategy	Low Strategic Significance	1
54										
55										
56										
57										
58										
			0.58							

Temporal multiplier						Difficulty risk multipliers				Hedge units delivered
Standard Time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	
5			Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	0.01
5			Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	0.01
										2.45

Appendix 3. Site Layout Plan KH/BSM/CSL/01 (areas used for BNG baseline calculation)



Appendix 4. Site Layout Plan KH006 A-101 (latest site layout but not¹ used for BNG calculation)

¹ The changes between the Layout plans are not considered to significantly alter the headline BNG results presented within this report due to the differences in landscape /habitat creation proposals being minimal.

Bennett Street, Manchester
Biodiversity Net Gain Baseline Assessment

