Biodiversity Net Gain Matrix

For

David James

202 Mansfield Road

Selston

Nottingham

NG16 6BB

Reference: Q13352

Prepared by
ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS
Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

Date: January 2025

Quality Assurance

Client	David James 202 Mansfield Road, Selston, Nottingham, NG16 6BB
Remarks	Version 2
Reference	Q13352
Date	10th January 2025
Principle Author	Hannah Burton [redacted]
Qualifications	QCIEEM, MSci (Hons)
Surveyor	Owen Brown [redacted]
Qualifications	BSc

ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

Contents

1. Introduction 4
2. Site and Surroundings 5
3. Methodology 6
4. Habitat Baseline 8
4.1. Habitat descriptions 8
4.2. Baseline Metric 9
5. Proposed Habitats 10
5.1. Vegetated garden 10
5.2. Developed land; sealed surface 10
5.3. Introduced shrub 10
5.4. Individual trees 10
5.5. Non-native and ornamental hedgerow 10
5.5. Proposed habitats metric 11
6. Achieving a Net Gain in Local Biodiversity 11
7. Conclusion 12
8. Other recommended enhancements 12
Appendix 1 Baseline Habitats Map 13
Appendix 2 Habitat Proposals 14
Appendix 3 Photographs 15

ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

1. Introduction

ProHort Limited have been commissioned by David James to conduct a Biodiversity Net Gain Assessment for 202 Mansfield Road, Selston, Nottingham, NG16 6BB on 19th December 2024.

The Local Planning Authority has requested that a Biodiversity Net Gain (BNG) Assessment is completed to support the planning application. The development includes the construction of a detached residential dwelling with a paved driveway and vegetated garden.

Ashfield District Council requires developments in the area to achieve a net gain in biodiversity, with a minimum of a 10% gain compared to the pre-development value of the Site. A quantitative measure of the base value of a Site for biodiversity, and the value of a Site post-development, is arrived at by using a recognised Biodiversity metric. Biodiversity metrics measure the value of a Site in terms of Biodiversity Units. Biodiversity Units are a proxy measure of biodiversity, arrived at by assessing the type, area and condition of semi-natural habitats on site. A limitation of the use of metrics is that they only measure habitat areas, and do not consider species-specific measures which may nevertheless make meaningful contributions to gains in local biodiversity.

ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

2. Site and Surroundings

The area surveyed was a plot of land at 202 Mansfield Road, Selston, Nottingham, NG16 6BB (grid reference: SK 47117 53622, Figure 1), hereafter referred to as the 'Site'. The Site is east of Commonside and northwest of Rosemaryhill. The plot is part of a residential property. The main house is located directly southwest of the plot. The surrounding area is dominated by residential and commercial properties. Site access is off Mansfield Road.

The woodland to the east of the site is designated as priority habitat deciduous woodland and there are a number of priority deciduous woodland blocks within the surrounding area. The closest designated site is the SSSI Bagthorpe Meadow which is 1km north. The nearest water feature is a small stream located 540 m east.

Figure 1 – Red line boundary of the Site and the surrounding area.
Taken from Bing Maps (© 2024 Microsoft Corporation, © 2024 Maxar, ©CNES (2024) Distribution Airbus DS)

ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

3. Methodology

The pre-development (baseline) and post development (proposed) value of the habitats have been calculated using the DEFRA/Natural England's Statutory Biodiversity Metric calculator. The methodology for determining habitat distinctiveness and condition values, follows the guidelines set out the User Guide and Technical Supplement for Biodiversity Metric.

Site Boundary

The following data sources have been used to define the boundary for the BNG calculation and determine the relevant attributes for BNG (e.g. size, condition and habitat type) for the pre and post-development habitats.

The boundary used for the BNG assessment is the red line application boundary for the project (See Figure 2 for a detailed red line boundary).

Figure 2 – Red line boundary of the Site
Taken from Bing Maps (© 2024 Microsoft Corporation, © 2024 Maxar, ©CNES (2024) Distribution Airbus DS)

ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

Baseline Habitats:

In order to generate the Site baseline habitat data (e.g. habitat type, condition), a phase 1 habitat survey was undertaken, where the Site was systematically walked over and the dominant habitat type in each area recorded. Dominant plant species were noted, as were any that are legally protected (Schedule 8 of the Wildlife and Countryside Act 1981), invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981. Additionally, 5 (1 meter-squared) quadrats were used to determine species richness on any grassland habitats and the other grassland conditions were estimated from a visual inspection of the site.

The information collected during the Site visit was used to baseline any applicable habitats and satellite mapping was used to calculate habitat areas. The areas and conditions of any onsite habitats were inputted into DEFRA/Natural England's Statutory Biodiversity Metric calculator. The metric includes 3 broad categories of habitats and biodiversity units for which scores are calculated differently:

- Area habitats, such as grasslands, woodlands and ponds
- Linear hedgerows and lines of trees
- Linear rivers and ditches

ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

4. Habitat Baseline

4.1. Habitat descriptions

All habitats within the Site are outlined below:

- Suburban mosaic of developed and natural surface – u1d (Secondary codes: 828 Vegetated garden, 846 Flower bed, 847 Introduced shrub, Scattered trees)
- Other developed land – u1b6

1 linear feature was found within the red line boundary of the Site.

- Non-native and ornamental hedgerow – h2b

The location of all baseline habitats can be seen in Appendix 1.

Table 3 – All UKHabs classification descriptions.

Habitat Type	Habitat Description	Flora Species
Suburban mosaic of developed and natural surface – u1d	The majority of the Site is made up of a vegetated garden. This included a well-managed grass lawn, introduced shrubs and flower beds (Photograph 1).	**Abundant**: perennial ryegrass (*Lolium* perenne), sweet woodruff (*Galium odoratum*) **Frequent**: yarrow (*Achillea millefolium*) **Trees and Shrubs:** Japanese aucuba (*Aucuba japonica*), laurestine (*Viburnum tinus*), juniper (*Juniperus communis*), holly (*Ilex aquifolium*), Japanese spindle (*Euonymus japonicus*), Japanese skimmia (*Skimmia japonica*), laurel species (*Laurel sp.*), cotoneaster species (*Cotoneaster sp.*), sycamore (*Acer peudoplatanus*), fir species (*Abies sp.*), prunus species (*Prunus sp.*)
Other developed land – u1b6	There was a paved footpath running along the southern area of the Site (Photograph 2).	-
Non-native and ornamental hedgerow – h2b	There was a hedgerow containing non-native species located along the northern boundary of the Site (Photograph 3).	**Abundant:** garden privet (*Ligustrum ovalifolium*), hawthorn (*Crataegus monogyna*) **Occasional:** ivy (*Hedera helix*), cypress (*Cypressus sp.*) **Rare:** holly

ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

4.2. Baseline Metric

The value of the baseline habitats was calculated using the Statutory Biodiversity Metric and is outlined in Tables 2 and 3 below.

Table 2 – area habitat baseline calculation

Habitat	Notes	Area (m^2)	Habitat Units	Area retained	Area enhanced	Units lost
Vegetated garden		191	0.04	0	0	0.04
Introduced shrub		231	0.05	0	0	0.05
Developed land; sealed surface		9	0	0	0	0
Individual trees	Two small trees in moderate condition, one medium tree in good condition.	244	0.26	244	0	0
Totals		**429**	**0.34**	**244**	**0**	**0.08**

The habitat baseline of 0.34 units must be enhanced by 10% resulting in at least a **0.38** unit baseline post intervention. If this cannot be achieved on Site, then offsite credits will need to be acquired.

Table 3 – linear habitat baseline calculation

Habitat	Notes	Length (m)	Habitat Units	Length retained	Length enhanced	Units lost
Non-native and ornamental hedgerow		23	0.02	23	0	0.02
Totals		**23**	**0.02**	**23**	**0**	**0.02**

The habitat baseline of 0.02 units must be enhanced by 10% resulting in at least a **0.03** unit baseline post intervention. If this cannot be achieved on Site, then offsite credits will need to be acquired.

5. Proposed Habitats

All habitats proposed within the Site are outlined below:

- Vegetated garden
- Developed land; sealed surface
- Introduced shrub
- Individual trees
- Non-native and ornamental hedgerow

The location of these proposed habitats can be seen in Appendix 2.

5.1. Vegetated garden

There will be several areas of vegetated garden to the northwest and southeast of the proposed residential dwelling.

In order to establish a vegetated garden, any existing vegetation will be cut short. A grass seed mix containing a range of species will be distributed around the area. This will then be rolled in to increase likelihood of establishment. This will contain species that can handle heavy management e.g. red clover (*Trifolium pratense*), white clover (*Trifolium repens*), ribwort plantain (*Plantago lanceolata*), yarrow (*Achillea millefolium*), black medick (*Medicago lupulina*), common sorrel (*Rumex acetosa*) and a mix of grass species.

5.2. Developed land; sealed surface

It is proposed that a 2 storey detached residential dwelling will be constructed on the Site. There will also be a paved driveway in the southeast of the Site, and the access point on the northeast boundary of the Site will be a paved track. There will also be paved walkways surrounding the dwelling.

5.3. Introduced shrub

It is proposed that several shrub species are planted throughout the garden. In order to establish shrubs, the existing vegetation must be cut short and shrub saplings planted. Shrub species should be selected based on the soil type of the area. The saplings should be spaced out to provide space for each shrub to mature. Examples of shrubs to plant are rhododendron, hydrangea, azalea and barberry.

5.4. Individual trees

The three individual trees on the Site will be retained.

5.5. Non-native and ornamental hedgerow

In order to achieve the obligatory 10% uplift in biodiversity of linear habitats, it is proposed that a length of non-native and ornamental hedgerow is planted on the southwest area of the Site.

In order to plant a hedgerow, the existing vegetation will be cut short and hedgerow saplings will be planted. Examples of species to include are garden privet, cherry laurel (*Prunus laurocerasus*), hawthorn, holly and cypress species.

5.5. Proposed habitats metric

Table 4 – area habitat baseline calculation

Habitat	Notes	Area (m^2)	Habitat Units Delivered
On-site habitat creation	.		
Vegetated garden	Tarmac track access to arena	149	0.03
Developed land; sealed surface	New detached residential dwelling with paved driveway and walkway areas.	312.6	0
Introduced shrub		30.2	0.01
Totals		**429**	**0.04**

If all area habitats and conditions are met post intervention, then a **14.45%** decrease in biodiversity will occur. In order to achieve the obligatory 10% biodiversity uplift, at least 0.09 credits will need to be purchased offsite.

Table 5 – linear habitat baseline calculation

Habitat	Notes	Length (m)	Habitat Units Delivered
On-site habitat creation	.		
Non-native and ornamental hedgerow	To be planted on the southwest boundary	13	0.01
Totals		**13**	**0.01**

If all area habitats and conditions are met post intervention, then a **54.54%** uplift in biodiversity will be achieved.

6. Achieving a Net Gain in Local Biodiversity

Under the mandatory BNG regime, habitats determined by the LPA to constitute "significant on-site enhancements" must be retained, appropriately managed, monitored and reported on for a minimum of 30-years following completion of development, and this requirement must be legally secured by condition or S106 agreement.

The application needs to be supported by clear, site-specific proposals e.g. details of long-term management and monitoring, a draft long-term management plan (Habitat Management and Monitoring Plan [HMMP]) - set out “initial” habitat creation and enhancement works and to demonstrate that appropriate management will be delivered so the predicted target conditions are achieved. In addition to long-term management of these habitats, appropriate long-term management of retained habitats is required to ensure they do not decline / deteriorate in condition.

7. Conclusion

The development will not result in a measurable loss to local biodiversity. Due to the construction of a new residential dwelling, there will be a total loss of 14.45% of area habitats. In order to achieve the obligatory 10% uplift of biodiversity of area habitats, at least 0.09 biodiversity credits will need to be acquired off Site. Non-native and ornamental hedgerow will be planted in order to create a 54.54% uplift in biodiversity of linear habitats.

8. Other recommended enhancements

Enhancements for bats and birds are recommended due to the proximity of the Site to a number of priority woodland parcels. It is likely bats and birds will use the site for commuting and foraging. It is proposed that 1 of bat box for crevice dwelling species or 1 bird box is installed on the new residential dwelling. Green and Blue Bee Bricks should be used within the brick walls of the dwelling. This species intervention would enhance local biodiversity.

ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

Appendix 1 Baseline Habitats Map

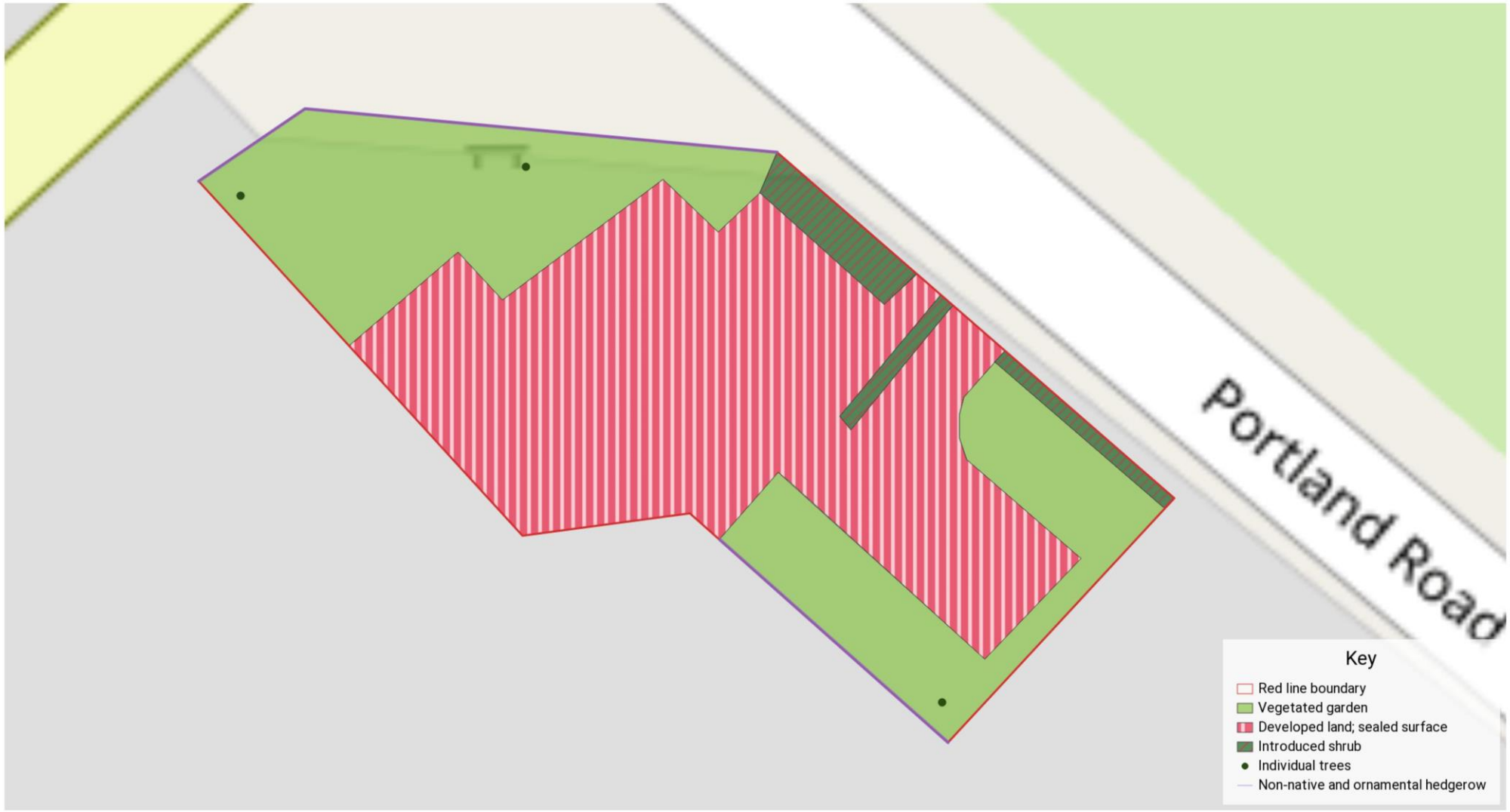
Produced on Land App, Dec 18, 2024.

Land App

5 m
Scale 1:214 (at A4)

N

Appendix 2 Habitat Proposals



Produced on Land App, Jan 10, 2025.

Land App

5 m
Scale 1:199 (at A4)

N

Appendix 3 Photographs

Photograph 1 – The vegetated garden (lawn) and introduced shrubs throughout the Site.

Photograph 2 – Part of the paved footpath in the southern area of the Site.

ProHort Limited
Unit 16 Sutherland Institute,
Lightwood Road
Longton
Stoke-on-Trent
ST3 4HY

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

Photograph 3 – The non-native hedgerow present on the northern boundary.

Photograph 4 – T1, a sycamore tree located in the northeast corner of the Site.

ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk

Photograph 5 – T2, a fir species located on the northern boundary.

Photograph 6 – T3, a prunus species located on the southern boundary.

ProHort Limited
Annalea House
218 Grindley Lane
Blythe Bridge
Stoke-on-Trent
ST11 9JS

Telephone: 01782 479479
Email: info@prohort.co.uk
Website: www.prohort.co.uk