University College Birmingham Biodiversity Enhancement and Management Plan

June 2024

Date	Author	Reviewed	Revision No.
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Birmingham & Black Country Wildlife Trust

Contents

1.0 Introduction

1.1 Project Overview

1.1.1 This report has been commissioned by University College Birmingham to carry out a UKHAB survey and biodiversity assessment to inform on baseline habitats and conditions. This information will be used to generate a series of potential opportunities and improvements in line with the university's aims and objectives. This will be done for each of the following sites;

- Camden House located at SP 06229 87133
- The Link located at SP 06280 87108
- McIntyre House located at SP 06327 87222
- Moss House Courtyard located at SP 06277 87238
- Moss Court Rockery located at SP 06299 87309
- The Maltings located at SP 06328 86230

1.2 Aims and Objectives

1.2.1 This report aims to provide a comprehensive overview of all habitats present at each specified site, alongside recommendations for improvements that will benefit users and enhance local biodiversity. The report will encompass:

- A detailed desk study for all sites, including statutory and non-statutory sites, protected species records, and invasive species within a 2km radius of each site.
- A UK Habitat Classification Survey (UKHab Survey) for all sites.
- Digital habitat mapping of the surveyed sites.
- A summary of Biodiversity Net Gain (BNG) baseline and uplift assessments for all sites, supported by relevant digital habitat mapping.
- A Management Brief outlining strategies to achieve biodiversity uplift, presented as a series of actions with defined objectives, methods, and timelines.

1.3 Site Information

1.3.1 The land at University College Birmingham comprises approximately 1.35 hectares (ha), located in Birmingham, West Midlands. The extent of the sites being assessed is shown in Appendix 1.

1.3.2 All sites are privately owned by University College Birmingham and are not under any statutory or non-statutory nature designations.

1.3.3 Land use on-site comprises student use as a garden or open space, as a green space within university accommodation, or as a green margin surrounding a commercial or educational building.

1.3.4 Calculation of Biodiversity Net Gain units has been undertaken using the Natural England Biodiversity Metric 4.0, following guidance set out within the *Biodiversity Net Gain: Good Practice Principles for Development*.4

2.0 Methodology

2.1 Desk Study

2.1.1 To determine areas of strategic significance and habitat types in proximity to the site, a desk study was conducted by collating data from the local biological record centre, EcoRecord, including statutory and non-statutory site designations, protected species records, and records of invasive species in the area within 2km of each site.

2.2 Field Methods

2.2.1 Each of the sites was surveyed by Taylor Lewis (Senior Nature Recovery Project Officer) and Sally Clague (Senior River Restoration Officer) on the 6th of June 2024.

2.2.2 A UK Habitat Classification Survey (UKHab Survey) was undertaken at the sites following the UKHab Survey standard methodology[1]. The ecological survey will comprise a walkover of the site mapping habitats within the survey site in accordance with UKHab standard methodology - a nationally recognised method of classifying habitat types. A comprehensive list of plant species occurring at the site will be recorded, including detailed mapping and observations of notable species, invasive non-native species or other features of interest.

2.2.3 A BNG assessment including the calculation of site value in biodiversity units and biodiversity uplift based on management recommendations was conducted using the Statutory metric calculation tool, Statutory biodiversity metric condition assessments, and Statutory biodiversity metric: user guide[2].

[1] Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1

[2] Statutory biodiversity metric tools and guides - GOV.UK (www.gov.uk)

3.0 Results

3.1 Desk study results

3.1.1 Camden House and The Link

Statutory Designated Sites

Table 1: Statutory sites near Camden House and the Link

Site Name	Type	Grid Reference	Area (ha)	Description	Habitats
None within the search area for SACs and SSSIs					
Edgbaston Reservoir	LNR	SP04298678	31.19	Large canal feeder reservoir with narrow fringes of parkland-type woodland, noted for ornithological interest	Standing open water, parkland

Non-statutory Designated Sites

Table 2: Non-statutory sites near Camden House and the Link

Site Name	Type	Grid Reference	Area (ha)	Description	Habitats
Edgbaston Reservoir	Sites of Importance for Nature Conservation (SINCs)	SP043868	30.01	Large canal feeder reservoir with narrow fringes of parkland-type woodland, noted for ornithological interest	Standing open water, plantation woodland
Birmingham and Fazeley Canal	Sites of Local Importance for Nature Conservation (SLINCs)	SP141918	26.73	Canal with diverse aquatic flora and associated verges and embankments of rank grassland, tall herb, and scrub	Canal, neutral grassland, tall herb, scrub
Birmingham Canal	Sites of Local Importance for Nature Conservation (SLINCs)	SP044878	16.21	Linear canal with minimal aquatic vegetation, surrounded by scrub, tall herb, and grassland	Canal, scrub, tall herb, neutral grassland
Digbeth Branch Canal	Sites of Local Importance for Nature	SP081874	3.2	Canal linking Grand Union Canal & Birmingham & Fazeley Canal with narrow	Canal, scrub, tall herb, neutral grassland

	Conservation (SLINCs)			strips of scrub, tall herb, and grassland	
Grand Union Canal	Sites of Local Importance for Nature Conservation (SLINCs)	SP100846	24.18	Canal with sparse aquatic flora and diverse corridor habitats including well-wooded cuttings	Canal, broad-leaved woodland, neutral grassland, tall herb
Rea Valley	Sites of Local Importance for Nature Conservation (SLINCs)	SP060820	35.96	Small main river connecting several important sites in south Birmingham, eventually canalized and flowing through urban areas	Watercourse, wet woodland
Worcester and Birmingham Canal	Sites of Local Importance for Nature Conservation (SLINCs)	SP048841	21.15	Well-used canal with verges and embankments facilitating urban wildlife penetration	Canal

Protected Species

Table 3: Protected species within 2km of Camden House and The Link

Species Name	Common Name	Grid Reference	Designation	Distance from Site (km)	Date
Acanthis flammea	Common redpoll	SP059881	BRed	1.021435	1990-04-12
Accipiter nisus	Eurasian Sparrow hawk	SP057854	BAmb	1.811941	2002-09-25
Accipiter nisus	Eurasian Sparrow hawk	SP067872	BAmb	0.475742	2005-05-05
Accipiter nisus	Eurasian Sparrow hawk	SP05368585	BAmb	1.624786	2006-01-18
Accipiter nisus	Eurasian Sparrow hawk	SP07228789	BAmb	1.17802	2015-04-29

Invasive Species

Table 4: Invasive species within 2km of Camden House and The Link

Species Name	Common Name	Grid Reference	Designation	Distance from Site (km)	Date
Cotoneaster simonsii	Cotoneaster	SP070845	WCA9_Mod	1.855932	2004-11-09

3.1.2 McIntyre House

Statutory Sites

Table 5: Statutory sites near McIntyre House

Site Name	Type	Grid Reference	LPA	Area/Length	Reasons for Designation
Edgbaston Reservoir	Local Nature Reserve (LNR)	SP04298678	Birmingham City Council	31.19 ha	Large canal feeder reservoir with parkland type woodland, noted for ornithological interest.

Non-statutory Sites

Table 6: Non-statutory sites near McIntyre House

Site Name	Type	Grid Reference	LPA	Area/Length	Reasons for Designation
Edgbaston Reservoir	Site of Importance for Nature Conservation (SINC)	SP043868	Birmingham City Council	30.01 ha	Large canal feeder reservoir with narrow fringes of parkland type woodland, noted for ornithological interest.
Birmingham and Fazeley Canal	Site of Local Importance for Nature Conservation (SLINC)	SP141918	Birmingham City Council	26.73 ha	Canal with diverse aquatic flora and associated verges and embankments of grassland, tall herb, and scrub.
Birmingham Canal	Site of Local Importance for Nature Conservation (SLINC)	SP044878	Birmingham City Council	16.21 ha	Linear stretch of canal with limited aquatic vegetation and narrow strips of associated habitats.
Digbeth Branch Canal	Site of Local Importance for Nature Conservation (SLINC)	SP081874	Birmingham City Council	3.2 ha	Canal linking Grand Union Canal and Birmingham & Fazeley Canal with limited aquatic flora and narrow strips of associated habitats.
Grand Union Canal	Site of Local Importance for Nature	SP100846	Birmingham City Council	24.18 ha	Canal with diverse associated corridor habitats including

	Conservation (SLINC)				wooded cuttings and narrow verges.
Rea Valley	Site of Local Importance for Nature Conservation (SLINC)	SP060820	Birmingham City Council	35.96 ha	Small river with a semi-natural corridor connecting important sites in south Birmingham.
Worcester and Birmingham Canal	Site of Local Importance for Nature Conservation (SLINC)	SP048841	Birmingham City Council	21.15 ha	Canal with verges and short embankments allowing flora and fauna to penetrate to the city.

Protected Species

Table 7: Protected species within 2km of McIntyre House

Species Name	Common Name	Grid Reference	Designation	Distance from Site (km)	Date
Acanthis flammea	Common Redpoll	SP059881	BRed	0.976326	1990-04-12
Accipiter nisus	Eurasian Sparrow hawk	SP057854	BAmb	1.926866	2002-09-25
Accipiter nisus	Eurasian Sparrow hawk	SP067872	BAmb	0.373648	2005-05-05
Accipiter nisus	Eurasian Sparrow hawk	SP05368585	BAmb	1.754085	2006-01-18
Accipiter nisus	Eurasian Sparrow hawk	SP07228789	BAmb	1.047002	2015-04-29

Invasive Species

Table 8: Invasive species within 2km of McIntyre House

Species Name	Common Name	Grid Reference	Designation	Distance from Site (km)	Date
Cotoneaster simonsii	Cotoneaster	SP070845	WCA9_Mod	1.855932	2004-11-09

3.1.3 Moss House Courtyard and Rookery

Statutory Sites

Table 9: Statutory sites near Moss House Courtyard and Rookery

Site Name	Type	Grid Reference	LPA	Area/Length	Reasons for Designation
Edgbaston Reservoir	Local Nature Reserve (LNR)	SP04298678	Birmingham City Council	31.19 ha	Large canal feeder reservoir with narrow fringes of parkland type woodland predominantly noted for ornithological interest.

Non-Statutory Sites

Table 10: Non-statutory sites near Moss House Courtyard and Rookery

Site Name	Type	Grid Reference	LPA	Area/Length	Reasons for Designation
Edgbaston Reservoir	Site of Importance for Nature Conservation (SINC)	SP043868	Birmingham City Council	30.01 ha	Large canal feeder reservoir with narrow fringes of parkland type woodland predominantly noted for ornithological interest.
Birmingham and Fazeley Canal	Site of Local Importance for Nature Conservation (SLINC)	SP141918	Birmingham City Council	26.73 ha	Canal with relatively diverse aquatic flora and associated verges and embankments of rank grassland tall herb and scrub allows flora and fauna to penetrate to the heart of the city.
Birmingham Canal	Site of Local Importance for Nature Conservation (SLINC)	SP044878	Birmingham City Council	16.21 ha	Linear stretch of canal often in deep cuttings with looping contour Old Line canal running adjacent crossing & joining. Little aquatic vegetation & mostly narrow strips of associated habitat including scrub tall herb & grassland.
Digbeth Branch Canal	Site of Local Importance for	SP081874	Birmingham City Council	3.2 ha	Canal linking Grand Union Canal &

	Nature Conservation (SLINC)				Birmingham & Fazeley Canal. Limited aquatic flora & associated habitats with narrow strips of scrub tall herb & neutral grassland.
Grand Union Canal	Site of Local Importance for Nature Conservation (SLINC)	SP100846	Birmingham City Council	24.18 ha	Canal with relatively diverse associated corridor habitats including well wooded cuttings & narrow verges of grassland & tall herb. Aquatic flora mostly sparse. Towpath brickwork supports typical flora.
Rea Valley	Site of Local Importance for Nature Conservation (SLINC)	SP060820	Birmingham City Council	35.96 ha	Small river rising in Waseley Hills and flowing in a semi-natural corridor connecting several important sites in south Birmingham before becoming canalised and flowing through built-up areas before joining Tame at Gravelly Hill.
Worcester and Birmingham Canal	Site of Local Importance for Nature Conservation (SLINC)	SP048841	Birmingham City Council	21.15 ha	Relatively well-used canal whose associated verges and short embankments allow flora and fauna to penetrate to the heart of the city. The canal forms a connection between a number of key wildlife sites such Vincent Drive and Lifford Reservoir.

Protected Species (from SP01)

Table 11: Protected species within 2km of Moss House Courtyard and Rookery

Species Name	Common Name	Grid Reference	Designation	Distance from Site (km)	Date
Acanthis cabaret	Lesser redpoll	SP04508815	Sect.41, UKBAP	1.975037	2018-10-24
Acanthis flammea	Common Redpoll	SP059881	BRed	0.940836	1990-04-12
Accipiter nisus	Eurasian sparrowhawk	SP057854	BAmb	1.92644	2002-09-25
Accipiter nisus	Eurasian sparrowhawk	SP067872	BAmb	0.424703	2005-05-05
Accipiter nisus	Eurasian sparrowhawk	SP05368585	BAmb	1.738497	2006-01-18

Invasive Species (from SP02)

Table 12: Invasive species within 2km of Moss House Courtyard and Rookery

Species Name	Common Name	Grid Reference	Designation	Distance from Site (km)	Date
Cotoneaster simonsii	Cotoneaster	SP070845	WCA9_Mod	1.855932	2004-11-09

3.1.3 The Maltings

Statutory Sites

Table 13: Statutory sites near The Maltings

Site Name	Type	Grid Reference	LPA	Area/Length	Reasons for Designation
Edgbaston Pool	SSSI	SP054841	Birmingham City Council	15.92 ha	The site has been established long enough to have developed a diverse semi-natural community.
Edgbaston Reservoir	Local Nature Reserve (LNR)	SP04298678	Birmingham City Council	31.19 ha	Large canal feeder reservoir with narrow fringes of parkland type woodland predominantly noted for ornithological interest.

Non-Statutory Sites

Table 14: Non-statutory sites near The Maltings

Site Name	Type	Grid Reference	LPA	Area/Length	Reasons for Designation
Edgbaston Park Golf Course	Site of Importance for Nature Conservation (SINC)	SP057843	Birmingham City Council	39.35 ha	Former grounds of Edgbaston Hall now golf course comprised of improved acid grassland surrounded by planted shelterbelts with scattered clumps of trees.
Edgbaston Reservoir	Site of Importance for Nature Conservation (SINC)	SP043868	Birmingham City Council	30.01 ha	Large canal feeder reservoir with narrow fringes of parkland type woodland predominantly noted for ornithological interest.
The Vale Edgbaston	Site of Importance for Nature Conservation (SINC)	SP053848	Birmingham City Council	4.13 ha	Situated in the grounds of Birmingham University Halls of Residence this is an expanse of parkland. Its most important feature is its lake which although man-made has a semi-natural appearance and attracts a variety of waders.
Beechwood Hotel	Site of Local Importance for Nature Conservation (SLINC)	SP062845	Birmingham City Council	1.38 ha	Site consists of two parts. Eastern area managed as wildlife area with mature planted trees areas of young plantation woodland grassland & small ponds. Larger area to west is ornamental pool & surrounding vegetation

					(no survey information).
Birmingham and Fazeley Canal	Site of Local Importance for Nature Conservation (SLINC)	SP141918	Birmingham City Council	26.73 ha	Canal with relatively diverse aquatic flora and associated verges and embankments of rank grassland tall herb and scrub allows flora and fauna to penetrate to the heart of the city.
Birmingham Botanical Gardens	Site of Local Importance for Nature Conservation (SLINC)	SP049853	Birmingham City Council	2.46 ha	Natural areas within Botanical gardens including woodland pool and a rectangular strip of former allotment plots divided by a series of hedges which is being managed as a nature reserve.
Birmingham Canal	Site of Local Importance for Nature Conservation (SLINC)	SP044878	Birmingham City Council	16.21 ha	Linear stretch of canal often in deep cuttings with looping contour Old Line canal running adjacent crossing & joining. Little aquatic vegetation & mostly narrow strips of associated habitat including scrub tall herb & grassland.
Digbeth Branch Canal	Site of Local Importance for Nature Conservation (SLINC)	SP081874	Birmingham City Council	3.2 ha	Canal linking Grand Union Canal & Birmingham & Fazeley Canal. Limited aquatic flora & associated habitats with narrow strips of scrub tall herb & neutral grassland.
Edgbaston Grove Woodland	Site of Local Importance for Nature Conservation (SLINC)	SP055847	Birmingham City Council	1.03 ha	Parts of the grounds of a former large residence Edgbaston grove comprising two areas of mature plantation woodland &

					a connecting slope of un-mown neutral grassland.
Grand Union Canal	Site of Local Importance for Nature Conservation (SLINC)	SP100846	Birmingham City Council	24.18 ha	Canal with relatively diverse associated corridor habitats including well wooded cuttings & narrow verges of grassland & tall herb. Aquatic flora mostly sparse. Towpath brickwork supports typical flora.
Pond off Edgbaston Park Road	Site of Local Importance for Nature Conservation (SLINC)	SP05018432	Birmingham City Council	0.13 ha	A small former garden pond now dried up and lacking open water but retaining some aquatic floral interest. Parts of former pond are now marshy grassland or damp scrub. Adjacent habitats include a strip of coniferous woodland & unmown grassland.
Rea Valley	Site of Local Importance for Nature Conservation (SLINC)	SP060820	Birmingham City Council	35.96 ha	River rising in Waseley Hills and flowing in a semi-natural corridor connecting several important sites in south Birmingham before becoming canalised and flowing through built-up areas before joining Tame at Gravelly Hill.
Worcester and Birmingham Canal	Site of Local Importance for Nature Conservation (SLINC)	SP048841	Birmingham City Council	21.15 ha	Relatively well-used canal whose associated verges and short embankments allow flora and fauna to penetrate to the heart of the city. The canal forms a connection between a number of key wildlife sites such

					Vincent Drive and Lifford Reservoir.

Protected Species (from SP01)

Table 15: Protected species within 2km of The Maltings

Species Name	Common Name	Grid Reference	Designation	Distance from Site (km)	Date
Bufo bufo	Common Toad	SP049853	LBAP, Sect.41, UKBAP, WCA5/9.5a	1.928	05/08/2002
Erinaceus europaeus	European hedgehog	SP06288414	RLGB.VU, Sect.41, UKBAP	1.87	01/10/2008
Meles meles	European badger	SP06008412	LBAP, PBA	1.90	21/02/2001
Meles meles	European badger	SP05998414	LBAP, PBA	1.92	21/02/2001
Oenanthe oenanthe	Northern wheatear	SP06908419	BAmb	1.96	28/09/2003

Invasive Species (from SP02)

Table 16: Invasive species within 2km of The Maltings

Species Name	Grid Reference	Designation	Distance from Site (km)	Date
Cotoneaster simonsii	SP070845	WCA9_Mod	1.855932	2004-11-09

3.2 Field study results

3.2.1 Camden House

Table 17: UKHAB classifications and condition assessment for Camden House

Habitats		
Broad Habitat Type	**UKHab Code**	**Condition**

Mixed Scrub	**h3h**	**Poor**
Buddleia (Buddlea spp.), Pyracantha (Phycantha spp.), Japanese Spindle (Euonymus japonicus), Winter Jasmine (Jasminum nodiflorum) Rose (Rose spp.), Laurel (Laurus spp.), Mexican Orange Blossom. The scrub comprises of many non-native shrubs and scrubs that indicate poor quality.		
Woodland – Other Woodland – mixed- mainly broadleaved – Line of Trees (Secondary code)	**u1b, 33**	**Poor**
Comprises of four non-native Cherry (Prunus spp.) trees. There is no undisturbed naturally-vegetated strip of at least 6m on both sides to protect the trees, the trees are non-native and do not have natural ecological niches present.		
Hedgerows- Non-native and ornamental hedgerows	**h2b**	**Poor**
Dominated by Japanese Spindle (Euonymus japonicus), with some Winter Jasmine (Jasminum nodiflorum) present. The height and width of the hedge are <1.5m and there is no presence of an herbaceous buffer zone of 1m on either side of the hedge. Clear signs of excessive hedgerow cutting.		

3.2.2 The Link

Table 18: UKHAB classifications and condition assessment for The Link

Habitats		
Broad Habitat Type	**UKHab Code**	**Condition**
Mixed Scrub	h3h	Poor
Winter Jasmine (Jasminum nodiflorum) Rose (Rose spp.), Buddleia (Buddleia spp.) The scrub comprises of many non-native shrubs and scrubs that indicate poor quality.		
Urban – Suburban mosaic of developed and natural surface – Commercial premises open space (Secondary Code)	u1d, 816	Poor
Lime tree (Tilia spp.), Silver Birch (Betula pendula), Buddleia (Buddleja spp.), Herb Robert (Geranium robertianum), Ivy (Hedera spp.), Rose (Rosa spp.), Cleavers (Galium aparine), Dandelion (Taraxacum spp.), Common Daisy (Bellis perennis), Red Clover (Trifolium pratense), Ribwort Plantain (Plantago lanceolata), Spindle (Euonymus japonicus), Lesser Trefoil (Trifolium dubium), Fescue (Festuca spp.), Speedwell (Veronica spp.), Pyracantha (Pyracantha spp.), Shiny Geranium (Geranium lucidum), Sycamore (Acer pseudoplatanus), Cherry Tree (Prunus spp.), Cinquefoil (Potentilla spp.), Sow Thistle (Sonchus spp.), Mouse-ear Chickweed (Cerastium spp.), Willow Herb (Epilobium spp.), and Hawkweed (Hieracium spp.) are among the species found in the garden.		

Hedgerows- Non-native and ornamental hedgerows	h2b	Poor
Pyracantha (Pyracantha spp.) and Buddleia (Buddleja spp.) dominate the hedgerow. The width of the hedge is <1.5m and there is no presence of an herbaceous buffer zone of 1m on either side of the hedge.		

3.2.3 McIntyre House

Table 19: UKHAB classifications and condition assessment for McIntyre House

Habitats		
Broad Habitat Type	**UKHab Code**	**Condition**
Urban – Buildings – Biodiverse Green Roof (Secondary code)	u1b5, 87	Poor
The green roof at McIntyre House hosts a diverse range of plant species. Notable flora includes Hawkweed (*Hyracium spp.*), Dandelion (*Taraxacum spp.*), Lady's Bedstraw (*Galium verum*), Willow Herb (*Epilobium spp.*), Self Heal (*Prunella vulgaris*), White Stonecrop (*Sedum album*), Meadow Grass (*Poa spp.*), Ivy (*Hedera spp.*), Red Fescue (*Festuca rubra*), Common Daisy (*Bellis perennis*), Lesser Trefoil (*Trifolium dubium*), Stonecrop (*Sedum spp.*), Common Vetch (*Vicia sativa*), White Clover (*Trifolium repens*), and Thyme-leaved Speedwell (*Veronica serpyllifolia*). This variety contributes to the rooftop habitat's ecological value and aesthetic appeal. The soil on the green roof is shallow.		
Urban – Developed Land-sealed surface	u1b	No condition assessment required
This area comprises paved concrete slabs with three benches, two planters with non-native Cherry trees and a table and chairs.		
Hedgerows- Non-native and ornamental hedgerows	h2b	Poor
Both hedges are made up of Box		
Individual tree – Urban	W~, 200	Poor
Two young non-native Cherry Trees (*Prunus spp.*) They are small, planted in large planters. There are signs of pruning, no vegetation underneath or ecological niches, resulting in poor condition.		

3.2.4 Moss House Courtyard

Table 20: UKHAB classifications and condition assessment for Moss House Courtyard

Habitats		
Broad Habitat Type	**UKHab Code**	**Condition**
Urban – Suburban mosaic of developed and natural surface – Educational	u1d, 814	Poor

premises open space (Secondary Code)		
The area is dominated by paved concrete slabs, with two beds that contain rows of young Field Maple (Acer campestre) trees in good condition, with an understory of Honeysuckle (Lonicera spp.), Gorse (Ulex spp.), Ferns (Pteridium spp.), Fescue (Festuca spp.), Violets (Viola spp.), Mouse-ear Chickweed (Cerastium spp.), and Herb Robert (Geranium robertianum). There is a fence-like structure behind the tree beds. There is a metal smoking area on site with a flat sloped roof and various seating areas.		

3.2.5 Moss House Rockery

Table 21: UKHAB classifications and condition assessment for Moss House Rookery

Habitats		
Broad Habitat Type	**UKHab Code**	**Condition**
Urban- Artificial unvegetated, unsealed surface	u1c	Poor
The area is stony underfoot with <10% vegetation cover and shallow soil. Most likely the remnants of the fairly recent development in the area. The area does not contain different plant species that are beneficial to wildlife. Species found on site are Mouse-Ear Chickweed (Cerastium spp.) and Herb Robert (Geranium robertianum)		

3.2.6 The Maltings

Table 22: UKHAB classifications and condition assessment for The Maltings

Habitats		
Broad Habitat Type	**UKHab Code**	**Condition**
Urban – Suburban mosaic of developed and natural surface – Residential premises open space (Secondary Code)	u1d, 819	Poor

The Maltings garden features Maple (Acer spp.), Ivy (Hedera spp.), Rhododendron (Rhododendron spp.), Lesser Trefoil (Trifolium dubium), Common Daisy (Bellis perennis), Common Garden Moss (Hypnum cupressiforme), Fescue (Festuca spp.), Yorkshire Fog (Holcus lanatus), Ribwort Plantain (Plantago lanceolata), Nipplewort (Lapsana communis), Creeping Buttercup (Ranunculus repens), Dandelion (Taraxacum spp.), Red Clover (Trifolium pratense), Pyracantha (Pyracantha spp.), Silver Birch (Betula pendula), Snowberry (Symphoricarpos albus), Broad-leaved Plantain (Plantago major), Rowan (Sorbus aucuparia), Non-native Mountain Ash (Sorbus commixta), and Guelder Rose (Viburnum opulus).

It has some non-native species which may reducethe gardens value to wildlife, when comparing with native plant speceis and does not have at least four successional communities from the following list (a) annuals; (b) mosses/liverworts; (c) lichen; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower- rich grassland; (h) heathland; (i) pools.

3.3 Biodiversity Net Gain Assessment

3.3.1 The headline results below detail the combined unit uplift for all habitat parcels discussed and mentioned above, if the below management is implemented.

Table 23: Headline results - summary of the overall change in biodiversity units.

Off-site baseline	Habitat units	2.68

	Hedgerow units	0.05
Off-Site post-intervention	Habitat units	2.87
	Hedgerow units	0.06
Total net unit change	Habitat units	0.18
	Hedgerow units	0.01
Total net % change	Habitat units	6.76%
	Hedgerow units	31.98%

4.0 Recommendations and Management

Table 24: Management brief including action to be completed, rationale, methods and management

Management Brief				
Camden House and The Link				
Action		**Objective & Rationale**	**Method**	**Timings**
1	**Mixed scrub control and maintenance**	If left unmanaged, bramble scrub and ornamental scrub from adjacent habitats will begin to become dominant. Therefore, it will need to be managed to limit its extent (but not completely eradicate it).	Patches of bramble and ornamental scrub including Japanese Spindle, Winter Jasmine (Jasminum nudiflorum), Non-native Rose (Rosa spp.), Laurel (Laurus spp.), and Mexican orange blossom (Choisya ternata). should be reduced in the area on a rotational basis to provide a mosaic at different stages of development This should be done utilising hand tools only. No herbicides are to be utilised.	November – March. Repeat at two-year intervals, as required
2	**Mixed Scrub Improvement**	Introduce native species such as honeysuckle (Lonicera periclymenum), hawthorn (Crataegus monogyna), and elder (Sambucus nigra). Native plants are well adapted to local conditions and support a wide range of wildlife, including pollinators and birds. They can replace or supplement non-native species such as Japanese spindle (Euonymus japonicus), winter jasmine (Jasminum nudiflorum), rose (Rosa spp.), laurel (Laurus spp.), and Mexican orange blossom (Choisya ternata). Native species help maintain ecological balance and provide food and habitat for local fauna.	This can be done by introducing native species in to gaps within the scrub being careful not to remove all patches of bare ground. Alternatively, some non-naïve ornamental species may be removed and replaced with established semi-mature native scrubs. The area should be monitored periodically to ensure that non-native species do not become dominant thereby suppressing native species. This should be achieved by periodic cutting of non-native species.	November – March. Repeat at two-year intervals, as required

2	**Development of invertebrate habitat: Deadwood habitat**	Ongoing tree and scrub maintenance works in this Compartment (as described above) represent an opportunity to retain generated woody material and develop habitats that will be of value for invertebrates	As tree safety/ maintenance works are carried out, any large woody arisings (trunks, large branches > 100mm thick) that are generated should be retained on site. Piles of wood (stacked with the largest material at the bottom) should be distributed between sunny and shaded pockets, in order to provide suitable habitat for a range of invertebrate species. Any existing, large deadwood should be collected into piles and distributed in the same manner., wherever practicable.	Following tree maintenance works.
4	**Structural diversification/ underplanting in woody areas**	Tree thinning and scrub management works should aim to create small areas where additional light can reach the ground layer unimpeded. In these more open areas, natural botanical regeneration should be augmented by planting and sowing of a range of native trees, shrubs, bulbs and wildflowers	Plan areas of to be thinned in advance, to create a network of open spacesthroughout. When these works are undertaken, a range of native species should be planted/ sown in these areas.	November – March
5	**Garden enhancements: Rose garden**	Add some diversity to the rose bushes in the garden with Guelder roses and Wild Strawberry. Guelder rose produces berries that attract birds, while wild strawberries offer nectar for pollinators.	Supplement ornamental rose species with Guelder rose (Viburnum opulus) and add wild strawberries (Fragaria vesca) to the borders. These changes will provide more food sources and habitats for wildlife. Guelder rose produces berries that attract birds, while wild strawberries offer nectar for pollinators.	March-May for plug planting
6	**Garden enhancements: grassland areas,**	To increase plant diversity in the area additional species are required. This increases the variety of plants available for pollinators, promoting a diverse and healthy ecosystem. Diverse plant	Power harrow areas to expose and create bare soil areas where seeds can germinate and establish.	September – November for seed sowing

	wild flower creation	species support a wide range of insects, which in turn support wider amounts of fauna, including birds and small mammals	Acquire and spread a wildflower mix (wildflower and grasses) should be acquired (preferably with yellow rattle *Rhinanthus minor* included), mixed with sand (approx. 8 parts sharp sand to 1-part seed mix) and sown at a density of 5g per m^2. Ideally, the wildflower mix will include species such as ox-eye daisy (Leucanthemum vulgare), red campion (Silene dioica), and wild marjoram (Origanum vulgare) which are tolerant of pollution from nearby roads. The mix should then be raked into the soil to minimise the amount that will be taken by birds. If a meadow is not desired for the space, addition of a flowering lawn seed mix (including common birds foot trefoil, selfheal and wild thyme) will also increase food for pollinators whilst still being able to be mown.	Once established the area should be cut in late August and cuttings removed to encourage continued growth and good health.
7	**Hedgerow management**	To increase native biodiversity within the hedgerow honeysuckle and native dog rose should be added at the base of the hedges. Honeysuckle attracts pollinators with its fragrant flowers and provides berries for birds.	Add honeysuckle and dog rose at the base of the hedge following pruning. Monitor the area replace failed plants and manage the extent of non-native plants within the hedgerow.	November – March. Repeat at two-year intervals, as required
8	**Insect Hotel**	Add an insect hotel towards the back wall of the scrub area. Place these structures in sheltered locations to protect them from extreme weather. Ensure a variety of hole sizes (2-10 mm in diameter) and materials to cater to different species. Use bamboo, hollow stems, wood blocks with drilled holes, and bricks with cavities. Securely stack materials within a frame	Create the hotel in Autumn. For the following guidance please see the Wildlife Trust website[3] Regularly inspect and clean the bug hotels to prevent disease and parasite build-up.	No rotational management is required.

[3] The Wildlife Trusts. (n.d.). How to build a bug mansion. Retrieved June 17, 2024, from https://www.wildlifetrusts.org/actions/how-build-bug-mansion

		to create a stable structure. Position bug hotels at different heights and orientations to attract various species.		

McIntyre House				
Note: A preliminary structural assessment should be undertaken to determine if the building can support the additional weight. The university should engage with a structural engineer to evaluate load capacity, considering the saturated weight of rood components both current and suggested. If not already present Install a multi-layered green roof system that includes a waterproof membrane, root barrier, drainage layer, filter fabric, and a growing medium (substrate).				
Action		**Objective & Rationale**	**Method**	**Timings**
1	**Development of invertebrate habitat: Deadwood habitat**	installation of small woody material will develop habitats that will be of value for invertebrates	Piles of wood (stacked with the largest material at the bottom) should be distributed between sunny and shaded pockets of woodland, in order to provide a suitable habitat for a range of invertebrate species. Any existing, large deadwood should be collected into piles and distributed in the same manner., wherever practicable.	Throughout the year
2	**Improving the green roof to be more biodiverse**	Adding diversity at ground level increases the variety of plants available for pollinators, promoting a diverse and healthy ecosystem. Diverse plant species support a wide range of insects, which in turn support higher trophic levels, including birds and small mammals	A number of species can be added to improve the diversity of pollinators and various invertebrates including Asters (Aster alpinus), Gold Sedum (Sedum acre), White Stonecrop (Sedum album), Widow's Cross (Sedum pulchellum), Meadow Saxifrage (Saxifraga granulata), Two-Row Stonecrop (Sedum spurium), Birdsfoot Trefoil (Lotus corniculatus), Houseleek (Sempervivum spp.), Yarrow (Achillea millefolium), Oregano (Origanum vulgare), Thyme (Thymus vulgaris and Thymus serpyllum), Moss spp., Ox-eye Daisy	Sow seeds from September to November, or add plug plants in spring or autumn. Cut the area as appropriate at the end of August and remove cuttings.

			(Leucanthemum vulgare), Viper's Bugloss (Echium vulgare), Red Clover (Trifolium pratense), Blue Spruce Stonecrop (Sedum reflexum), Tasteless Stonecrop (Sedum sexangulare). Combine seeding with plug planting to ensure rapid establishment and long-term sustainability. Implement a mixed approach using both seeding and plug planting, and include fast-germinating annuals to provide resources for invertebrates in the first year	
3	**Add Honeysuckle to Ivy wall**	To increase native biodiversity within the Ivy wall honeysuckle should be added at the base of the hedges. Honeysuckle attracts pollinators with its fragrant flowers and provides berries for birds.	Add honeysuckle at the base of the Ivy wall following pruning. Monitor the area replace failed plants and manage the extent of non-native plants within the hedgerow. Trim the wall manually on a two-year rotation.	November – March. Repeat at two-year intervals, as required
4	**Insect Hotel**	Add an insect hotel in sheltered locations to protect them from extreme weather. Ensure a variety of hole sizes (2-10 mm in diameter) and materials to cater to different species. Use bamboo, hollow stems, wood blocks with drilled holes, and bricks with cavities. Securely stack materials within a frame to create a stable structure. Position bug hotels at different heights and orientations to attract various species.	Create the hotel in Autumn. For the following guidance please see the Wildlife Trust website[4] Regularly inspect and clean the bug hotels to prevent disease and parasite build-up.	No rotational management is required.

[4] The Wildlife Trusts. (n.d.). How to build a bug mansion. Retrieved June 17, 2024, from https://www.wildlifetrusts.org/actions/how-build-bug-mansion

5	**Herb gardens**	Increasing diversity at via planters increases the variety of plants available for pollinators, promoting a diverse and healthy ecosystem. Diverse plant species support a wide range of insects, which in turn support higher trophic levels, including birds and small mammals	Add planters near benches with a diverse range of pollinator suitable plants such as Rosemary (Rosmarinus officinalis), Caraway (Carum carvi), Hyssop (Hyssopus officinalis), English lavender (Lavandula angustifolia), Common sage (Salvia officinalis), Wild thyme (Thymus polytrichus), Fennel (Foeniculum vulgare), Chives (Allium schoenoprasum), Common mint (Mentha spicata), Wild marjoram (Origanum vulgare). Managing an herb garden in a planter involves selecting a properly sized planter with adequate drainage, using high-quality soil mixed with compost, and planting herbs with similar water and light requirements. Adding a rocky layer at the bottom of the planter can improve water retention. Water regularly, ensuring the soil is moist but not waterlogged, and place the planter in a location with 6-8 hours of sunlight daily, rotating it periodically for even light exposure. Over winter a thin layer of bark can be used to help protect the herbs from frost. Inspect for pests regularly and use natural pest control methods if needed.	Plugs should be added in spring. Monitor the area for pests all year round by checking monthly. Water is dependent on soil conditions. If the soil feels dry then water. This will be dependent on weather. In winter water plants less as they will grow more slowly.

6	**Bare ground and Rocky areas**	Designate patches of bare ground and include stones, bricks, rocks, or gravel to create basking spots that warm up quickly, benefiting warmth-loving species such as butterflies, bees, wasps, beetles, and spiders.	Incorporate bare ground and rock areas in areas that receive at least 6 hours of sunlight to allow the area to warm up. This may be achieved on the rocky square area already present within the green roof.	No management is required once put in place.
7	**Bee banks**	Bee banks can provide much-needed nesting habitat for solitary bees and wasps in an urban area where this can be limited.	Construct bee banks. Create sandy mounds, ideally south-facing, to provide nesting sites for solitary bees and wasps. Ensure these banks are not higher than the parapet wall to protect them from wind exposure. Use a mix of sand and soil (preferably loam) to create stable banks. Add small pebbles or gravel to improve drainage. Maintain and monitor the banks to ensure they remain free of invasive vegetation. The ideal ratio is about 70% sand to 30% soil. Shape the banks into mounds or terraces to provide a variety of nesting sites. Water the banks initially to help settle the substrate.	No management is required once put in place.
8	**Creation of a varied topographical structure**	By varying substrate depth and creating areas of bare ground and small mounds you can provide different microclimatic conditions for a range of different species.	Create mounds and indents within the both the grassy and bare ground areas of the roof at a depth or height of around 80mm to 150mm.	Indents may be filled in over time naturally so it is important to monitor these areas and recreate the indent as required.

9	**Water features**	Water features can provide essential hydration for various species and in some cases may act as a breeding habitat for species such as Dragonflies and Damselflies.	Incorporate shallow water bodies or containers to retain rainwater. Use undulations or place shallow plastic containers to create temporary water bodies that can support species requiring wet areas. Use non-toxic, UV-resistant plastic or natural materials like stone or clay. Ensure water features are shallow (no more than 10-15 cm deep) to prevent drowning of smaller invertebrates. Place water features in shaded areas to reduce evaporation and maintain water quality.	No management is required once put in place.

The Moss House Courtyard and Rookery				
Action		**Objective & Rationale**	**Method**	**Timings**
1	**Creation of a green roof on the smoking area**	The creation of green roofs is critical for enhancing urban ecology and sustainability. These vegetated roofs provide essential habitats for wildlife and support pollinators, contributing significantly to urban biodiversity. They mitigate the urban heat island effect through shading and evapotranspiration and manage stormwater by reducing runoff and filtering pollutants. Additionally, green roofs improve air quality by absorbing contaminants and enhance energy efficiency by providing thermal insulation.	Install a multi-layered green roof system with a waterproof membrane, root barrier, drainage layer, filter fabric, and a growing medium (substrate). A local green roofing consultant can advise on this. Confer with a green roof specialist to do the following: 1. **Prepare the Roof:** Clean the smoking shelter roof surface and install the waterproof membrane. 2. **Layer Installation:** Sequentially install the root barrier, drainage layer, and filter fabric. 3. **Add Growing Medium:** Spread the lightweight growing medium evenly. 4. **Plant Vegetation:** Plant the selected species, ensuring good root-soil contact.	September – November for seed sowing Plugs should be added from March to May. Once established the area should be cut in late August and cuttings removed to encourage continued growth and good health.

			5. **Initial Watering:** Thoroughly water the plants after installation to help them establish. Add low-maintenance and low-growing plants such as Suitable plants include Biting Stonecrop (Sedum acre), White Stonecrop (Sedum album), Common Houseleek (Sempervivum tectorum), Wild Thyme (Thymus polytrichus), Yarrow (Achillea millefolium), and Rough Hawkbit (Leontodon hispidus). Additionally, incorporating grasses like Sheep's Fescue (Festuca ovina) and Wavy hair grass (Deschampsia flexuosa) can be beneficial. For added biodiversity, consider Primrose (Primula vulgaris) and Herb Robert (Geranium robertianum).	June-August Monitor watering needs, especially during dry spells, and control weeds
2	**Sensory garden**	There is a lot of paved impermeable space within the garden. A method by which biodiversity can be added to these spaces is with planters. The use of native herbs provides opportunities to provide a space for pollinators to use whilst also benefiting garden users. The addition of planters next to the brick pillars of Moss House with suitable UK native herbs is recommended. For suitable species please see the table below. The addition of rock piles in the corners of the planters may provide basking spots that warm up quickly, benefiting warmth-loving species such as butterflies, bees, wasps, beetles, and spiders. Use materials such as limestone, sandstone, or recycled concrete.	Add planters near benches with a diverse range of pollinator suitable plants suchWild Garlic (Allium ursinum), Sweet Cicely (Myrrhis odorata), Lemon Balm (Melissa officinalis), Wood Avens (Geum urbanum), Meadowsweet (Filipendula ulmaria), Thyme (Thymus vulgaris and Thymus serpyllum), Oregano (Origanum vulgare), Rosemary (Rosmarinus officinalis), Caraway (Carum carvi), Hyssop (Hyssopus officinalis), English Lavender (Lavandula angustifolia), Common Sage (Salvia officinalis), Fennel (Foeniculum vulgare), Chives (Allium schoenoprasum), Common Mint (Mentha spicata), and Wild Marjoram (Origanum vulgare). More information on these plants can be found in Appendix 3. Space the plants according to their mature size to ensure they have enough room to grow. After planting, water the plants thoroughly to help them establish. Keep the	Plugs should be added from March to May. Monitor the area for pests from March to August. June-August Monitor watering needs, especially during dry spells, and control weeds

			soil consistently moist, especially during dry periods. Applying mulch around the plants can help retain moisture and suppress weeds Select a properly sized planter with adequate drainage, using high-quality soil mixed with compost, and planting herbs with similar water and light requirements. Adding a rocky layer at the bottom of the planter can improve water retention. Water regularly, ensuring the soil is moist but not waterlogged, and place the planter in a location with 6-8 hours of sunlight daily, rotating it periodically for even light exposure. Over winter a thin layer of bark can be used to help protect the herbs from frost. Inspect for pests regularly and use natural pest control methods if needed.	December-February water plants less as they will grow more slowly.
3	**Creation of a rain garden within the Moss House Courtyard or Rookery**	Rain gardens provide numerous ecological, environmental, and community benefits, making them an invaluable addition to both urban and rural landscapes. They effectively manage stormwater by reducing runoff volume and preventing localized flooding, while improving water quality through the filtration of pollutants. By promoting groundwater recharge and controlling erosion, rain gardens contribute to the sustainability of water resources. They enhance biodiversity by creating habitats for a variety of species, including pollinators, and support climate resilience by mitigating urban heat island effects and sequestering carbon dioxide.	When installing a rain garden, begin by selecting a site where water naturally collects or by directing a downspout to the area. If you are creating a rain garden directly in the ground and not in a free standing planterensuring it is at least 10 feet away from building foundations to prevent water damage. If creating a rain garden in the ground excavate a shallow depression, typically 4-8 inches deep, shaping the garden to have a gradual slope from the edges to the centre to encourage water flow. For soil preparation, improve drainage by mixing the existing soil with compost and sand in a ratio of 50% sand, 25% compost, and 25% native soil. Place a 2-3-inch layer of gravel at the bottom for additional drainage,	**March- May** Clean up any winter debris, refresh mulch, and check for new weed growth. **June - August:** Monitor watering needs, especially during dry spells, and control weeds. **September-November:** Remove

			then add the soil mix on top, filling the depression but leaving space for mulch and plants. An example of planter structure can be found in Appendix C. For planting, select water-tolerant plants for the centre where the most water will collect, and drought-tolerant plants for the edges. Arrange plants based on their water needs, with the most water-tolerant in the lowest part of the garden and more drought-tolerant plants higher up. Apply a 2-3-inch layer of organic mulch, such as shredded hardwood, to retain moisture, suppress weeds, and protect plant roots. Position the garden to receive runoff directly from downspouts or other water sources, and ensure there is an overflow area or pipe to direct excess water away during heavy rains. For maintenance, regularly check for and remove weeds, water plants during dry periods until they are well established, refresh mulch annually, and inspect for soil erosion or compaction. Examples of suitable plants can be found in Appendix 3. Regularly inspect plants for signs of pests or disease.	dead plant material, replenish mulch, and prepare the garden for winter. **December-February:** Minimal care is needed; ensure that overflow areas are clear of obstructions.

The Maltings				
Action		**Objective & Rationale**	**Method**	**Timings**
1	**Garden enhancements: grassland areas**	To increase plant diversity in the area additional species are required. This increases the variety of plants available for pollinators, promoting a diverse and healthy ecosystem. Diverse plant species support a wide range of insects, which in turn support higher trophic levels, including birds and small mammals	Power harrow areas to expose and create bare soil areas where seeds can germinate and establish. Acquire and spread a wildflower mix (wildflower and grasses) should be acquired (preferably with yellow rattle *Rhinanthus minor* included), mixed with sand (approx. 8 parts sharp sand to 1-part seed mix) and sown at a density of 5g per m^2. Ideally, the wildflower mix will include species such as ox-eye daisy (Leucanthemum vulgare), red campion (Silene dioica), and wild marjoram (Origanum vulgare) which are tolerant of pollution from nearby roads. The mix should then be raked into the soil to minimise the amount that will be taken by birds.	September – November for seed sowing Once established the area should be cut in late August and cuttings removed to encourage continued growth and good health.
2	**Woodland and scrub management**	Woodland and scrub enhancement can Enhance biodiversity by creating a layered vegetation structure, offering various habitats and food sources, as well as providing nesting habitats all year round.	Remove overcrowded or unhealthy trees to improve light penetration and reduce competition. Introduce native scrubs such as Dogwood and Holly which provide Provides nesting sites and berries crucial during winter months. These should be managed by period removal. Improve the understory of the wooded areasat ground level by adding shade-tolerant UK native species such as Wild garlic (Allium ursinum), Woodruff (Galium odoratum), Bugle (Ajuga reptans), Hart's tongue fern (Asplenium scolopendrium), Male fern (Dryopteris filix-mas).	October- March for woodland and scrub management every 2 years. September-November for the additional plug plants at ground level.

			Control invasive species through manual removal or selective herbicide use (note herbicide use may require a permit). Maintain deadwood habitats for fungi, insects and small mammals by leaving deadwood on site after management where it is safe to do so.	
3	**Sensory garden**	Increasing diversity at via planters increases the variety of plants available for pollinators, promoting a diverse and healthy ecosystem. Diverse plant species support a wide range of insects, which in turn support higher trophic levels, including birds and small mammals	Add planters near benches with a diverse range of pollinator suitable plants such as Rosemary (Rosmarinus officinalis), Caraway (Carum carvi), Hyssop (Hyssopus officinalis), English lavender (Lavandula angustifolia), Common sage (Salvia officinalis), Wild thyme (Thymus polytrichus), Fennel (Foeniculum vulgare*),* Chives (Allium schoenoprasum*),* Common mint *(*Mentha spicata), Wild marjoram (Origanum vulgare). Managing an herb garden in a planter involves selecting a properly sized planter with adequate drainage, using high-quality soil mixed with compost, and planting herbs with similar water and light requirements. Adding a rocky layer at the bottom of the planter can improve water retention. Water regularly, ensuring the soil is moist but not waterlogged, and place the planter in a location with 6-8 hours of sunlight daily, rotating it periodically for even light exposure. Over winter a thin layer of bark can be used to help protect the herbs from frost.	Plugs should be added in spring. Monitor the area for pests all year round by checking monthly. Water is dependent on soil conditions. If the soil feels dry then water. This will be dependent on weather. In winter water plants less as they will grow more slowly.

			Inspect for pests regularly and use natural pest control methods if needed.	
4	**Grass verges**	To increase plant diversity in the area additional species are required. This increases the variety of plants available for pollinators, promoting a diverse and healthy ecosystem. Diverse plant species support a wide range of insects, which in turn support higher trophic levels, including birds and small mammals.	Power harrow areas to expose and create bare soil areas where seeds can germinate and establish. Acquire and spread a wildflower mix (wildflower and grasses) should be acquired (preferably with yellow rattle *Rhinanthus minor* included), mixed with sand (approx. 8 parts sharp sand to 1-part seed mix) and sown at a density of 5g per m^2. Ideally, the wildflower mix will include species such as ox-eye daisy (Leucanthemum vulgare), red campion (Silene dioica), and wild marjoram (Origanum vulgare) which are tolerant of pollution from nearby roads. The mix should then be raked into the soil to minimise the amount that will be taken by birds.	September – November for seed sowing Once established the area should be cut in late August and cuttings removed to encourage continued growth and good health.

Please note these are only recommendations and do not need to be completed in their entirety.

4.1 Management timing summary

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Woodland and scrub management	✓	✓	✓							✓	✓	✓
Grassland cutting								✓				
Plug planting			✓	✓	✓							
Seed sowing									✓	✓	✓	
Refresh Mulch			✓	✓	✓				✓	✓	✓	
Green roof cutting							✓	✓				
Rain garden maintenance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

5.0 Conclusions

Summary of Findings

The UKHAB survey across Camden House, The Link, McIntyre House, Moss House Courtyard, Moss House Rockery, and The Maltings revealed several habitats predominantly classified under mixed scrub, urban-suburban mosaics, and hedgerows. The condition of the habitats surveyed was generally poor, with many areas dominated by non-native species and lacking the ecological structures necessary for high biodiversity value. For instance, Camden House featured poor-quality mixed scrub and woodland, while The Link also exhibited poor habitat conditions, particularly within its suburban mosaic and hedgerows. McIntyre House and Moss House areas displayed poor conditions in their green roof and artificial surfaces respectively.

Biodiversity Insights

Despite the overall poor conditions, the green roof at McIntyre House hosted a diverse range of plant species, indicating potential for improvement. Additionally, the varied species at The Maltings suggest a baseline for potential ecological enhancement, although non-native species currently reduce their value to wildlife.

There were no significant historical data to compare trends; however, the present conditions suggest a recent decline in habitat quality, likely due to urbanization and insufficient ecological management. No habitats surveyed were of significant conservation status due to their poor condition and predominance of non-native species. However, all sites have potential for improvement and enhancement to support local biodiversity better.

Management Recommendations

The recommendations primarily focus on habitat management and enhancement. Key actions include:

- Controlling and improving mixed scrub and woody areas through rotational management and introduction of native species to provide year-round breeding and feeding habitats.
- Enhancing invertebrate habitats with deadwood, the creation of microhabitats, exposed rocky habitats and insect hotels.
- Developing biodiverse green roofs and sensory gardens.
- Creating rain gardens to improve biodiversity, reducing runoff volume preventing localized flooding, and improving water quality through the filtration of pollutants. By promoting groundwater recharge and controlling erosion, rain gardens contribute to the sustainability of water resources. They also support climate resilience by mitigating urban heat island effects and sequestering carbon dioxide.
- Improving grassland areas to increase plant diversity for various pollinators.

These areas will receive periodic monitoring and maintenance to ensure long-term sustainability and biodiversity support.

Data Gaps and Limitations

The survey faced limitations such as the absence of long-term data and constraints on assessing certain urban areas. Future surveys should aim to fill these gaps and provide a more comprehensive understanding of habitat conditions over time.

Overall Assessment

The habitats surveyed exhibit significant room for improvement. By implementing the recommended management actions, these areas can be transformed to support a wider range of species, enhancing local biodiversity and ecological health. The detailed management plans provide a clear pathway for improving habitat conditions, and promoting a sustainable urban environment.

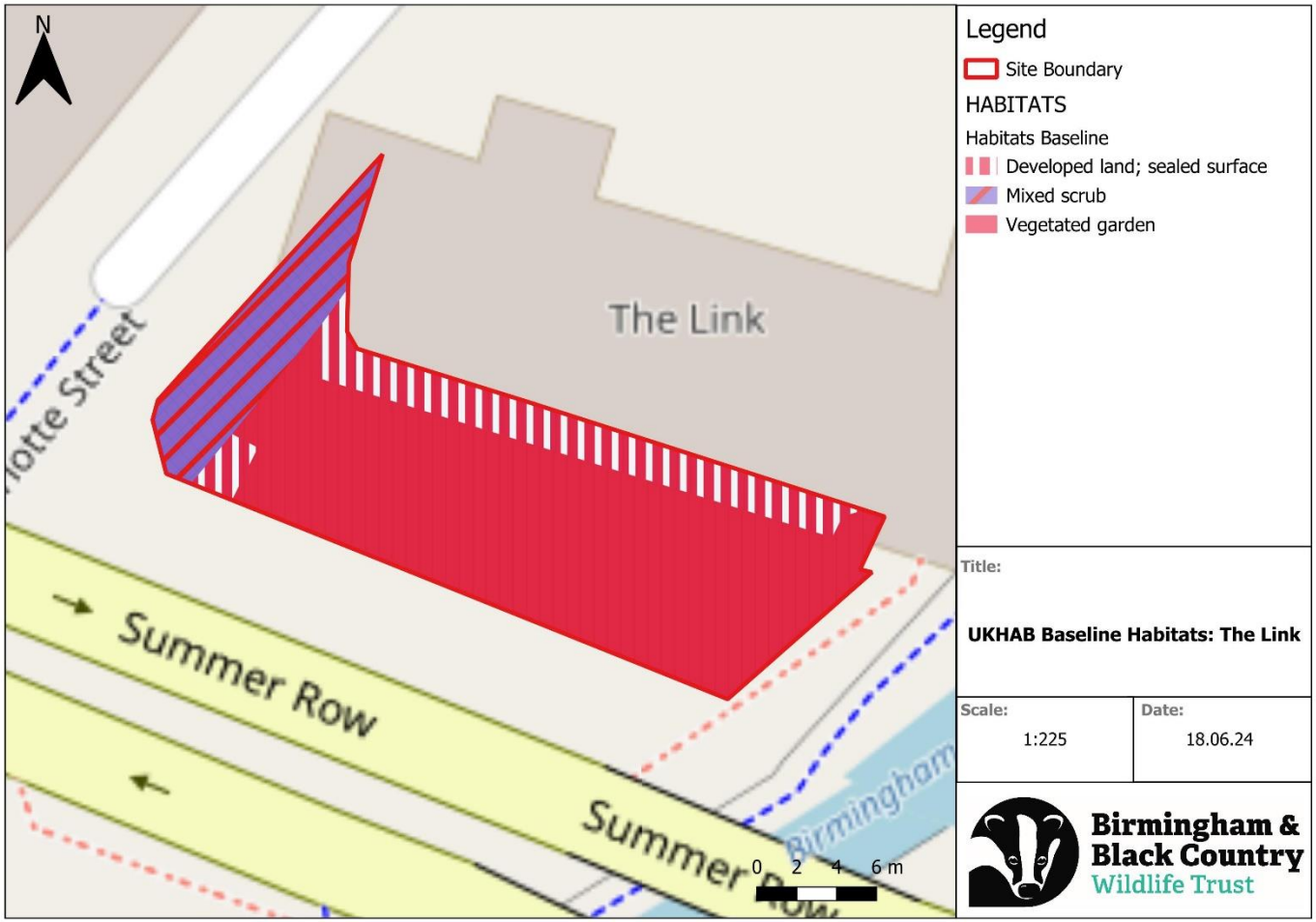
By addressing the identified issues and following the outlined recommendations, there is potential for significant positive changes in habitat quality and biodiversity value across the surveyed sites.

6.0 Appendix

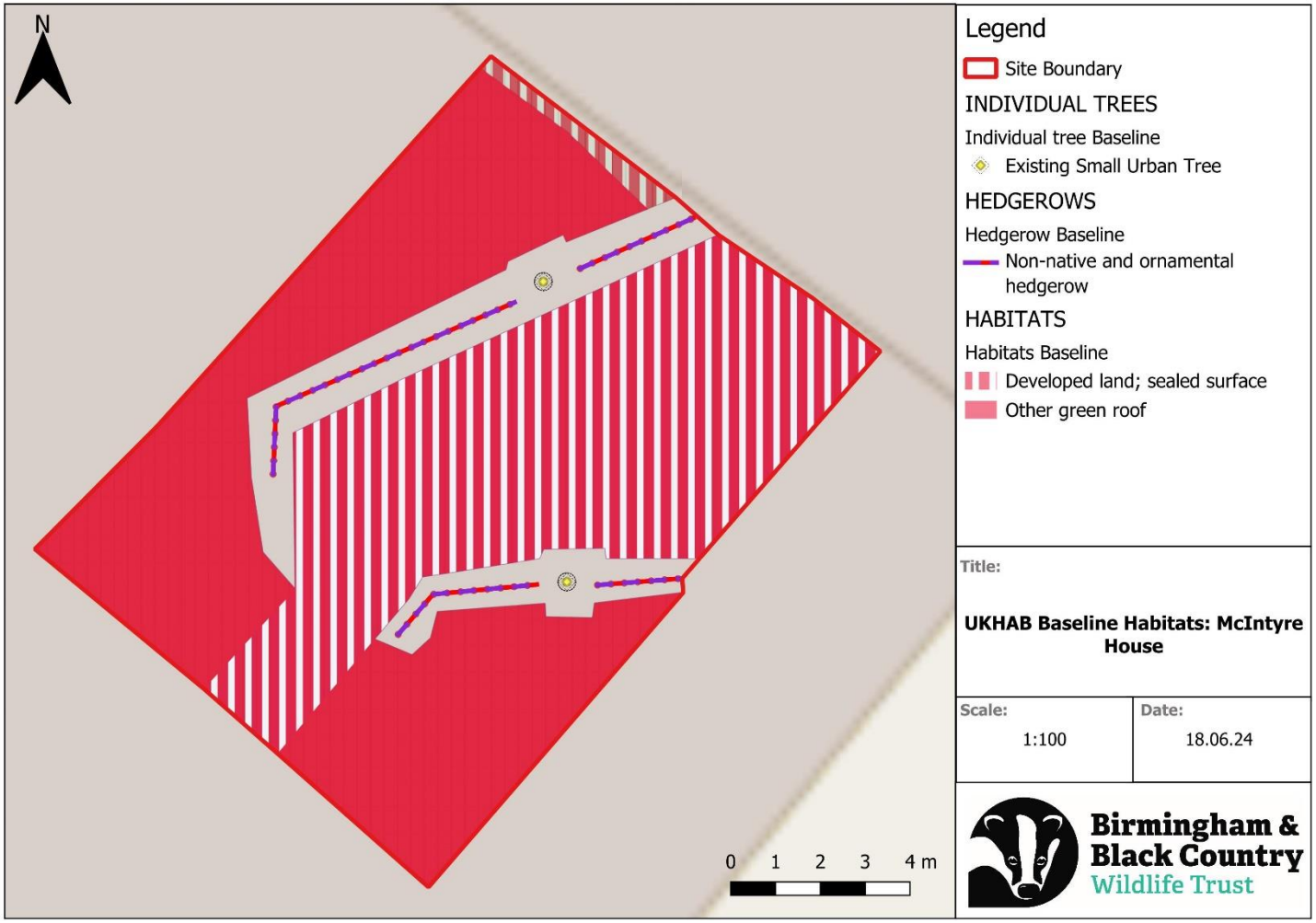
Appendix 1: UKHAB maps of each site

Appendix 1A: Camden House Baseline Habitats

Appendix 1B: The Link Baseline Habitats

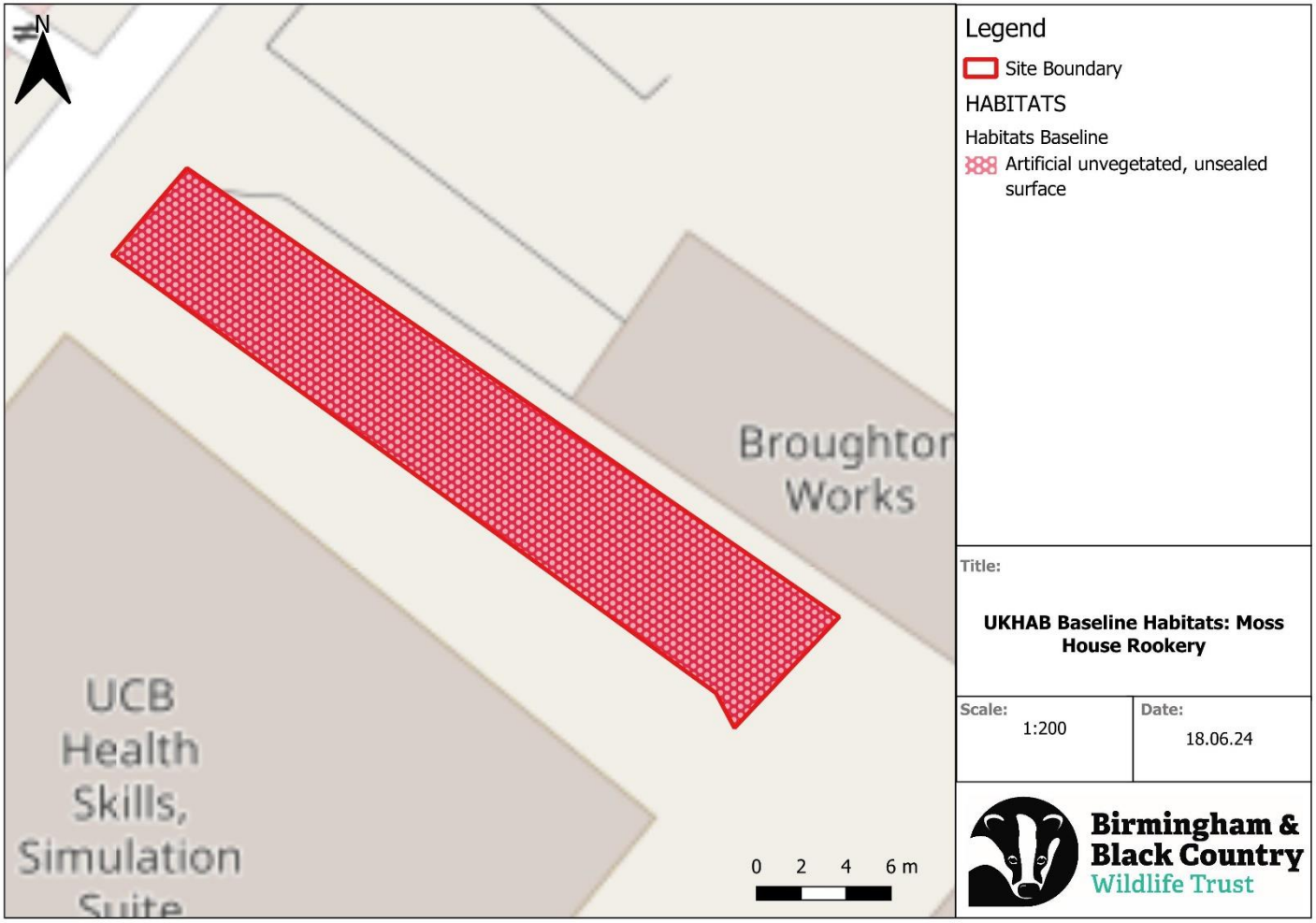


Appendix 1C: McIntyre House Baseline Habitats

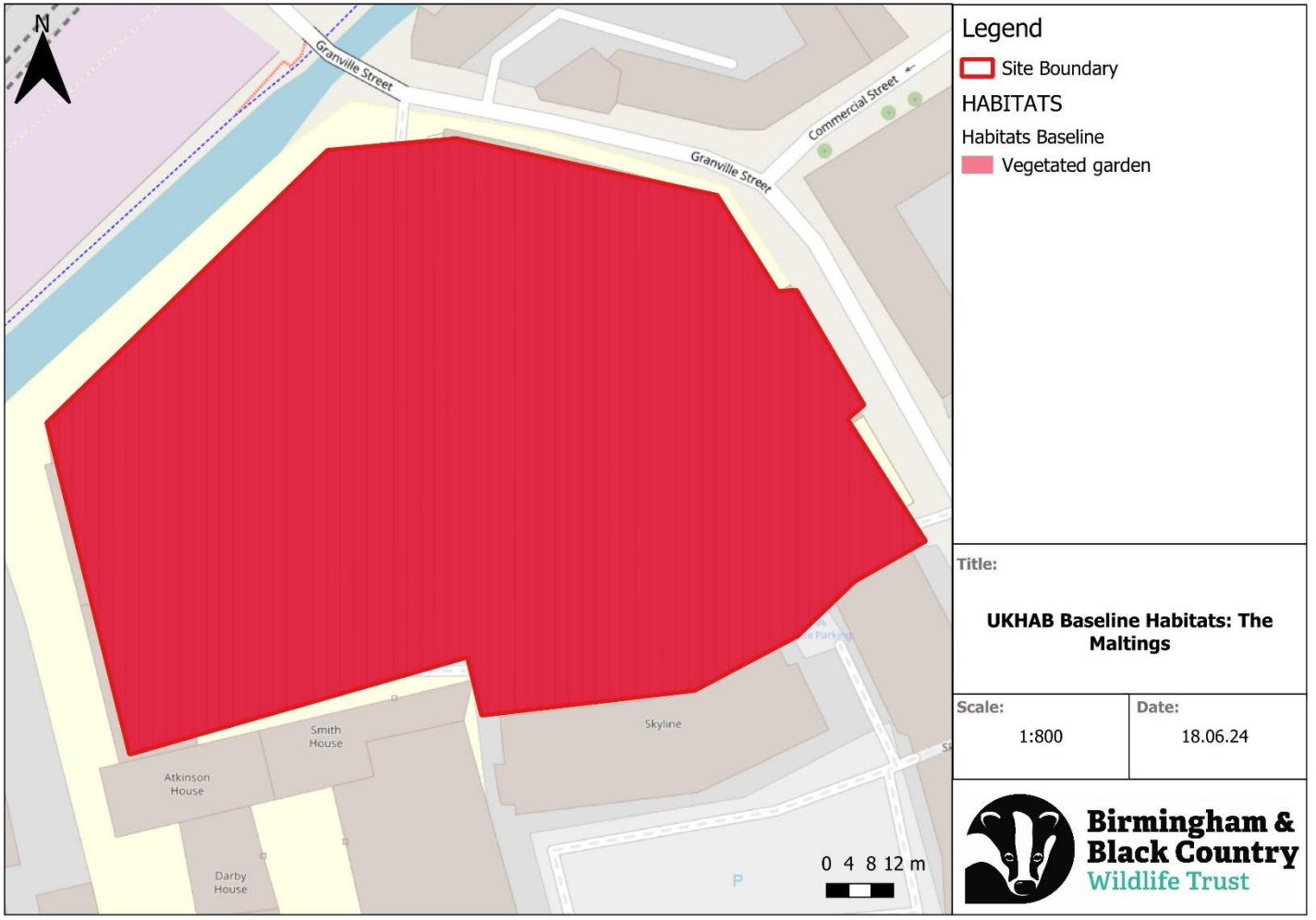


Appendix 1D: Moss House Courtyard Baseline Habitats

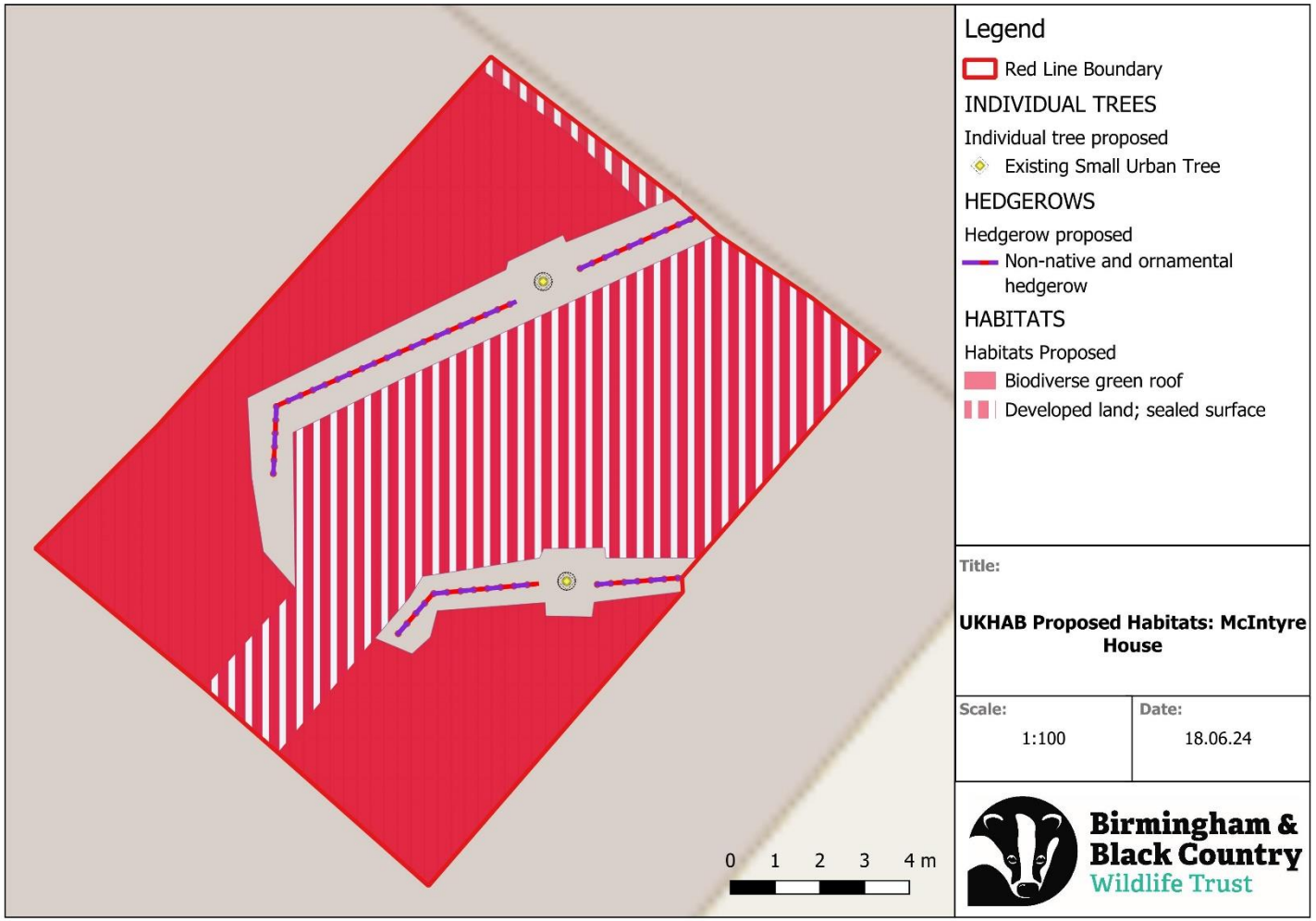
Appendix 1E: Moss House Rookery Baseline Habitats



Appendix 1F: The Maltings Baseline Habitats



Appendix 1G: McIntyre House Proposed Habitats



Appendix 1H: Moss House Rookery Proposed Habitats

Appendix 2: Photos of sites

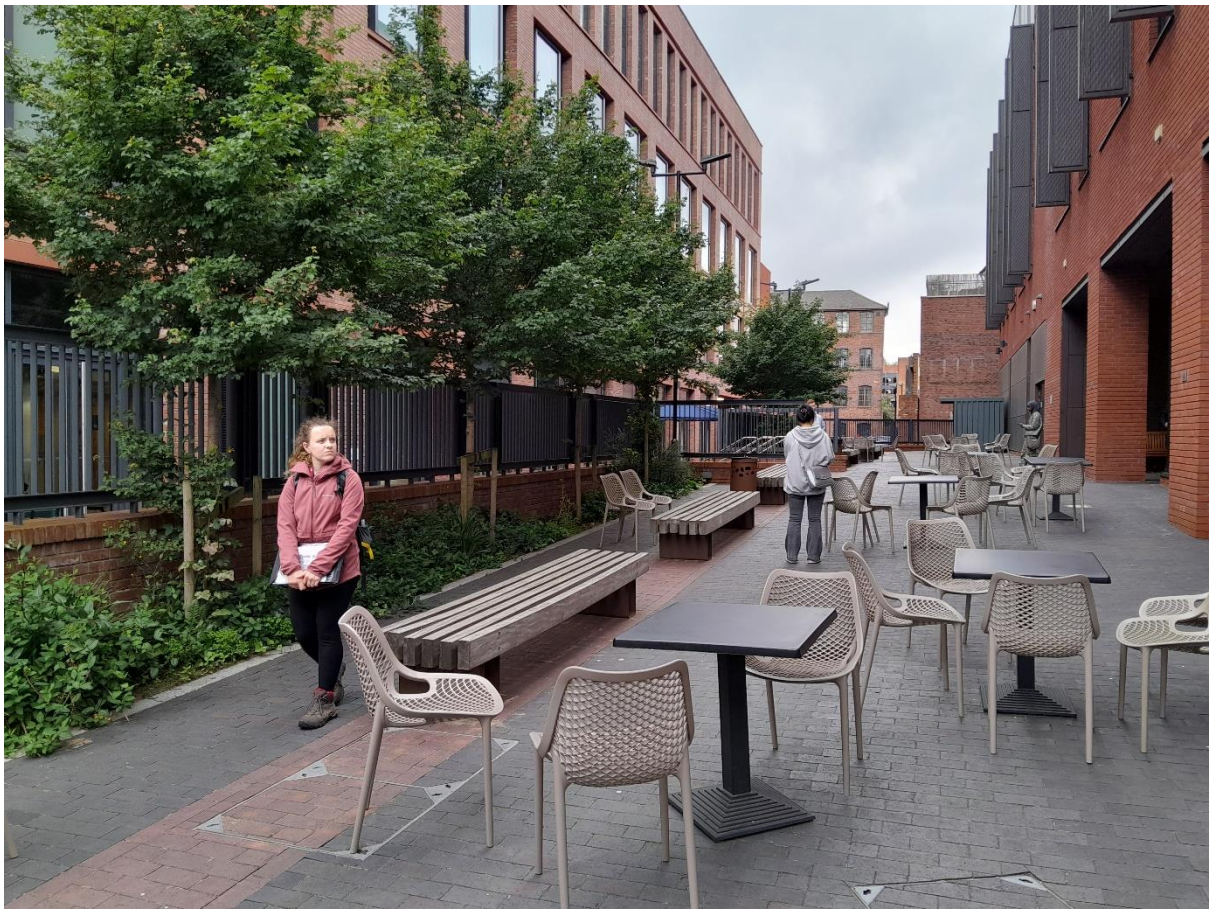
Appendix 2A: Mixed scrub at Camden House

Appendix 2B: Mixed scrub at Camden House

Appendix 2C: Garden and Non-native Ornamental Hedgerow at The Link

Appendix 2D: Rose garden borders at The Link

Appendix 2E: Moss House Courtyard showing smoking area at far end, building pillars and woody area with line of trees



Appendix 2F: Potential rain garden area at Moss House Rookery

Appendix 2G: Potential rain garden area at Moss House Rookery

Appendix 2H: Grassland areas at The Maltings

Appendix 2I: Mixed scrub at The Maltings

Appendix 2J: Woodland and scrub areas at The Maltings

Appendix 2H: Potential herb garden at The Maltings

Appendix 3: Examples of plants for sensory and rain gardens

Appendix 3A: Examples of plants suitable for a sensory garden including shade preference and required soil conditions

Plant	Description	Shade Preference	Soil Conditions
Sweet Woodruff (Galium odoratum)	Sweet-scented leaves and small, white flowers.	Full to partial shade	Moist, well-drained soil
Wild Garlic (Allium ursinum)	Broad leaves with a strong garlic scent, and star-shaped white flowers.	Partial to full shade	Moist, fertile soil
Sweet Cicely (Myrrhis odorata)	Fern-like leaves with a sweet aniseed flavor, and white flowers.	Partial shade	Moist, well-drained soil
Lemon Balm (Melissa officinalis)	Lemon-scented leaves, with small white flowers.	Partial shade	Moist, well-drained soil
Wood Avens (Geum urbanum)	Leaves have a slight clove scent when crushed, with yellow flowers.	Partial to full shade	Moist, well-drained soil
Meadowsweet (Filipendula ulmaria)	Sweetly fragrant leaves and creamy-white flower clusters.	Partial shade	Moist soil
Thyme (Thymus vulgaris and Thymus serpyllum)	Aromatic leaves with small, pink to purple flowers.	Full to partial shade	Well-drained soil
Oregano (Origanum vulgare)	Aromatic leaves with small, white to pink flowers.	Full to partial shade	Well-drained soil
Rosemary (Rosmarinus officinalis)	Woody shrub with needle-like leaves and blue flowers.	Full sun	Well-drained soil
Caraway (Carum carvi)	Finely divided leaves and small white flowers.	Full sun	Moist, well-drained soil
Hyssop (Hyssopus officinalis)	Aromatic leaves and blue to purple flowers.	Full sun	Well-drained soil
English Lavender (Lavandula angustifolia)	Aromatic leaves and purple flowers.	Full sun	Well-drained soil
Common Sage (Salvia officinalis)	Aromatic leaves and purple flowers.	Full sun	Well-drained soil
Fennel (Foeniculum vulgare)	Feathery leaves and yellow flower umbels.	Full sun	Well-drained soil
Chives (Allium schoenoprasum)	Grass-like leaves and purple flower heads.	Full sun	Moist, well-drained soil
Common Mint (Mentha spicata)	Aromatic leaves and small white to purple flowers.	Partial shade	Moist soil
Wild Marjoram (Origanum vulgare)	Aromatic leaves with small, white to pink flowers.	Full to partial shade	Well-drained soil

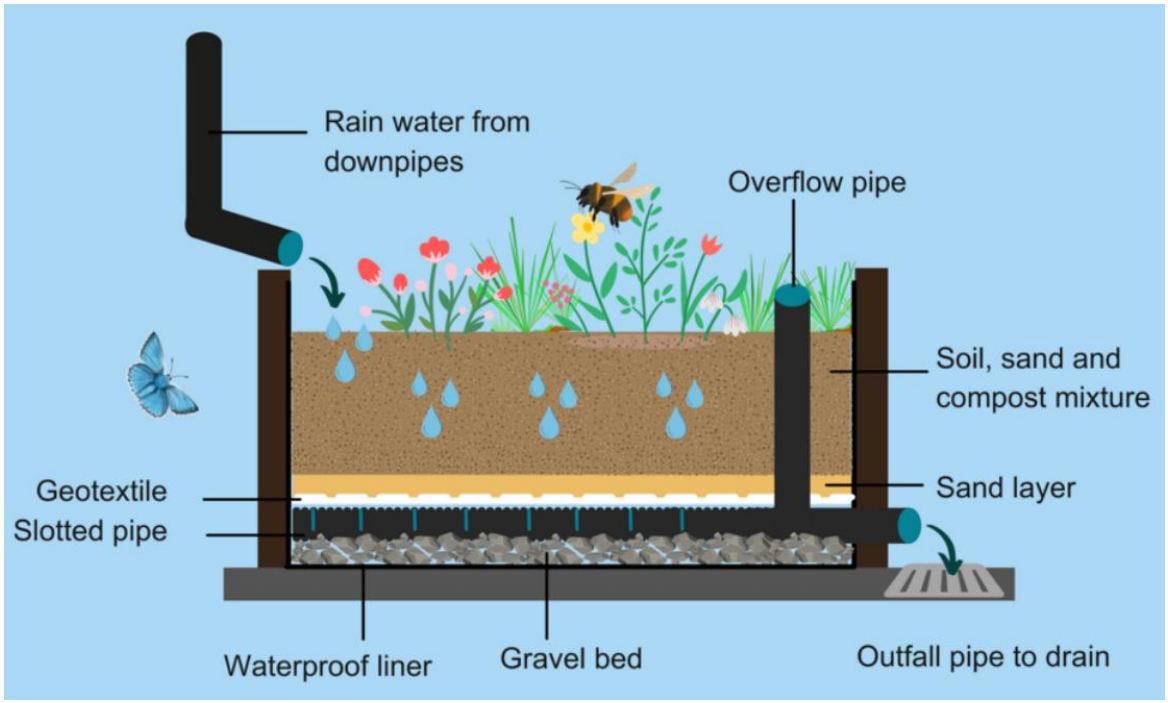
Appendix 3B: Examples of plants suitable for a rain garden including shade preference and required soil conditions

Plant Type	Plant Name	Description	Shade Preference	Soil Conditions
Ferns	Male Fern (Dryopteris filix-mas)	Hardy with arching fronds	Full Shade	Moist
	Lady Fern (Athyrium filix-femina)	Delicate, feathery fronds	Full Shade	Moist
Grasses and Sedges	Pendulous Sedge (Carex pendula)	Tall, arching grass	Partial Shade	Moist
	Tufted Hair Grass (Deschampsia cespitosa)	Clumping grass with airy flower heads	Partial Shade	Moist
Flowering Plants	Primrose (Primula vulgaris)	Early spring flowers in pale yellow	Partial Shade	Moist
	Wood Anemone (Anemone nemorosa)	Star-shaped white flowers	Full Shade	Moist
	Red Campion (Silene dioica)	Bright pink flowers	Partial Shade	Moist
	Bluebell (Hyacinthoides non-scripta)	Iconic blue flowers	Full Shade	Moist
Groundcovers	Lesser Celandine (Ficaria verna)	Bright yellow flowers, heart-shaped leaves	Full Shade	Moist
	Wood Sorrel (Oxalis acetosella)	Delicate white flowers, heart-shaped leaves	Full Shade	Moist
Shrubs	Guelder Rose (Viburnum opulus)	White flowers followed by red berries	Partial Shade	Moist

For more information and guidance please see Gloucestershire Wildlife Trust. (2022)[5]

[5] Gloucestershire Wildlife Trust. (2022). *UK Rain Garden Guide*. Retrieved from https://www.gloucestershirewildlifetrust.co.uk/sites/default/files/2022-02/UKRainGardenGuide.pdf

Appendix 3: Diagram of rain garden in a planter



Appendix 5: Diagram providing an example of a rain garden structure[3]