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# INTRODUCTION

#### BACKGROUND CONTEXT

Birmingham City University has a duty under the Natural England and Rural Comminutes Act to conserve and promote biodiversity within property which it owns and manages.

The University is implementing an Environmental Management System (EMS) under the EcoCampus Scheme, with a view to taking a holistic approach to improving its overall environmental performance.

As part of the EMS, the University has stated an objective to: "conserve and promote biodiversity across our campuses".

#### ASSESSMENT OBJECTIVES

In order to work towards the objective stated within the EMS, FPCR Environment and Design LTD were commissioned to undertake a survey of the habitats and species on five properties owned and managed by Birmingham City University and to compile an appraisal of Local and UK Biodiversity Action Plan (BAP) Habitats and Species present within and local to each property.

This document also sets out recommendations on how to conserve and protect existing areas of nature conservation value including UK and Local BAP habitats and species, and ways in which additional habitats and species of value to nature conservation can be created and encouraged to enhance UK and Local BAP targets.





### MOOR LANE SPORTS CENTRE

#### - CITY NORTH CAMPUS

#### SCHOOL OF JEWELLERY

# CITY SOUTH CAMPUS

#### BOURNVILLE CAMPUS

# METHODOLOGY

#### DESK STUDY

The Birmingham Biological and Geological Records Centre; Ecorecord and the Birmingham bat group; Brumbats were consulted regarding any relevant ecological information within the local area of the site.

The Natural England mapping website www.magic.gov.uk was also searched for information regarding the location of statutory nature conservation sites.

#### SITE SURVEY: HABITATS

The sites were surveyed on the 7th and 8th June 2010 using standard Extended Phase 1 Habitat Survey methodology, as recommended by Natural England, to identify specific habitats and features of ecological interest.

Habitats were marked on a base plan and where appropriate, target notes were made. An inspection of the sites for the presence of any invasive weeds present was also carried out. Features such as trees were considered with regard to their ecological value and potential to provide suitable habitats for protected species.

#### SITE SURVEY: SPECIES

During the surveys, observations, identification and signs of any species protected under Part 1 of the Wildlife and Countryside Act 1981 (as amended), the Protection of Badgers Act 1992 and the Conservation (Natural Habitats & c.) Regulations 1994 (as amended) were noted.

Any sightings, evidence of, or suitable habitats for other protected fauna, in particular UK or local Biodiversity Action Plan (BAP) were recorded during site visits.



# CITY NORTH CAMPUS: DESK STUDY

### HABITATS

The River Tame SLINC flows past the site, a short distance to the west, though the the A453 forms a physical habitat barrier between the two. The River, the Tame Valley Canal SLINC and the Wolverhampton - Gravelly Hill Railway form viable wildlife corridors through an otherwise urban environment.

Non designated sites including Perry Park, Perry Hall Playing Fields and Witton sports ground immediately to the east of the site boundary set the site within a relatively low density urban environment with more naturalised habitats than expected for an inner city location.

## SPECIES

A number of bird records within the area were provided through consultation with the ecological database for Birmingham and the Black Country (EcoRecord). This indicated a number of notable species in the vicinity of the site including following species which are either UK or Local BAP species:

- black redstart
- starling
- house sparrow
- dunnock
- turtle dove
- kestrel

Smooth newt, common frog (local BAP species) and hedgehog(UK BAP) are recorded to the north west of the site.

Common pipistrelle and Noctule bats are recorded locally though only one roost location was identified through consultation.

# **DESIGNATED SITES & PROTECTED SPECIES RECORDS**



Hedgehog Badger Black redstart Watervole Common Pipistrelle Kestrel Common frog Smooth newt Common toad



# CITY NORTH CAMPUS: SITE SURVEY

## HABITATS

The faculty buildings were in the west of the site together with associated car parking, seating areas, walkways and roads with landscaped ornamental planting, hedgerows, trees and woodland. Two accommodation complexes also occurred within the site boundary, separated by a new sports facility.

#### BUILDINGS

The faculty buildings were in the western part of the site and were multi storey brick built structures, largely with flat roofs. In general they were of mixed construction with large sections of steel framed, glass frontages (right). The accommodation blocks were modern, three to four storey, brick buildings set about courtyards (below, middle). The sports hall was a new building which was being completed at the time of survey. Again this was a modern design, brick built structure with steel and wooden board sections (below, right).







A series of three gate houses (above left) stood on Wellhead Lane, at the perimeter of a derelict area of ephemeral vegetation. The gate houses were disused rendered brick structures built in 1915, which are locally listed. They were in a poor state of repair with sections of roofing material missing and boarded windows. The University also own a number of terraced houses on Oscott Road.

#### **EPHEMERAL VEGETATION**

Two areas of ephemeral vegetation were recorded within disused areas of the site. Formerly areas of hardstanding, these areas had been colonised by short ephemeral species creating a sparse sward of grasses and broadleaved species, which collectively was relatively species diverse. In both areas this habitat was recorded to have structural diversity with associated scrub or scattered trees present.



#### IMPROVED GRASSLAND, HEDGES & ORNAMENTAL PLANTING

Areas of improved grassland were recorded in seating areas and associated with walkways and ornamental planting. A large area of improved grassland was recorded in the north of the site utilised as a recreational facility associated with the sports centre. This grassland comprised low diversity, managed sward of common grassland species. Well maintained, dense hedgerows mainly comprising beech subdivided car parking areas. Ornamental planting was generally recorded at the peripheries of seating areas and walkways comprising of non native species.

#### TREES AND WOODLAND

Semi-mature trees were recorded throughout the site, including the following species: small leaved lime, London plane, Norway maple, Scots pine, wild cherry, rowan, silver birch and common alder. A narrow band of woodland habitat was also recorded between the main car park and the eastern edge of the faculty buildings (Kenrick and Galton Buildings). This habitat differed from clusters of trees in that a typical woodland shrub and ground flora structure was present. No veteran or near veteran trees were recorded.





# CITY NORTH CAMPUS: SITE SURVEY

#### SPECIES

A number of the faculty buildings were recognised as being of low potential to support roosting bats. In general the building materials were well sealed and in good condition, however there were a number of points where there were small gaps, which potentially could be used as occasional roosting sites for a small number of bats. The sports centre and accommodation blocks due to their recent construction and good condition lacked features suitable to supporting roosting bats. The gate houses on Wellhead Lane were recorded to offer moderate potential for roosting bats due to suitable access points (missing roofing material and missing doors and windows) and cavities and voids which provided suitable roosting conditions. The terraced houses on Oscott road were not individually assessed, however the general age and construction of these buildings provides opportunities for roosting bats.

In general, the trees within the site were semi-mature and mature and well maintained, as required for their situation within areas of public open spaces and as such did not offer opportunities for roosting bats. Trees throughout the site were recognised as providing diversity of habitat and vegetation structure.

The trees, scrub, woodland, ornamental planting and hedgerows provide suitable habitats for breeding birds including local and UK BAP species.

The areas of ephemeral vegetation were recognised as providing a diversity of flowering species and potentially more suitable habitat for a broader invertebrate community than other habitats within the site.

### PHASE 1 HABITAT PLAN



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# CITY NORTH CAMPUS: ANALYSIS

#### UK & LOCAL BAP HABITATS

The hedgerows around the car parks are generally beech and therefore comprised at least 80% native species and as such qualified as a UK BAP habitat.

The woodland habitat within the site is considered to fit with the criteria of introduced woodland, listed as a local BAP habitat. Due to its small size and lack of connectivity to other woodland habitat, it's value is limited.

#### UK & LOCAL BAP SPECIES

Species recorded locally to the site included the following species which are UK and Local BAP species:

		UK BAP Sp.	Local BAP Sp.
Birds:	Dunnock	Yes	
	Starling	Yes	
	Kestrel		Yes
	Turtle dove	Yes	
	House Sparrow	Yes	
	Black redstart		Yes
Mammals:	Hedgehog	Yes	
	Common Pipistrelle	Yes	
	Noctule bat	Yes	Yes
Amphibs:	Smooth newt		Yes
	Common toad	Yes	Yes
	Common frog		Yes

Noctule bat (UK BAP species) sighting records were provided through consultation but no roost records in the area were known of. A common pipistrelle roost was recorded within a kilometre of the site. All bats are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species 2010.

There are suitable habitats for breeding birds on site. All birds are protected whilst breeding under the Wildlife and Countryside Act 1981 (as amended), which protects nests, eggs and young.

### BIODIVERSITY ENHANCEMENT RECOMMENDATIONS

Existing trees, grassland, hedges and ornamental planting are well maintained and heavily managed. Due to the situation of many of these habitats, they need to be maintained for their amenity value. However, it is suggested that areas available within this site, where biodiversity enhancements could be made include the disused areas of ephemeral vegetation, the peripheries of the sports facility and the ornamental planting.

#### EPHEMERAL VEGETATION AREAS

These are currently not accessible to the public and it is appreciated that these areas may be considered for development in the future. However if habitats could be enhanced through pond / wetland habitat creation, such a feature could be incorporated into a future layout. The area denoted as Tn1 has habitat connectivity with the adjacent railway line and enhancements along this adjoining edge would be the most appropriate location. For example a linear ditch / pond with associated wetland plants would diversify the flora, attracting other birds and insects to the area and provide aquatic habitats potentially suitable for amphibians including UK and local BAP species as listed (left). Planting could potentially include species such as purple loostrife Lythrum salicaria, ragged robin Lychnis flos-cuculi, meadowsweet Filipendula ulmaria, yellow flag Iris pseudacorus and hemp agrimony Eupatorium cannabinium.

If any tree surgery or removal within the site were necessary, it is suggested that the material could be recycled to create log piles in these areas to offer habitats for invertebrates and potentially hedgehogs (UK BAP species) too.

#### PERIPHERIES OF SPORTS FACILITY

It is recognised that these areas need to be maintained for recreational purposes, however it is suggested that more flower rich grassland could be introduced at the edge habitats. A typical lowland meadow mix could be introduced to offer nectar sources for insects such as bees and butterflies and a less intensive cutting regime applied to allow flowering species to go to seed, offering a foraging resource for birds also. A knee rail dividing this type of habitat from the central improved amenity grassland would create a tidy appearance and a clearly defined line for management staff.

#### **ORNAMENTAL PLANTING**

The majority of the ornamental planting which exists within the site is structurally suitable for nesting birds, including species such as dunnock which prefer to nest in dense hedgerows and shrubs. However, it is suggested that more native species could be introduced, particularly flowering fruit and nut bearing species which would diversify foraging opportunities for local fauna. For example, lavender was recorded in the borders along the main entrance to the faculty buildings. This is an attractive flowering species for bees, hoverflies etc and could be enhanced further by the introduction of other native species such as honeysuckle *Lonicera sp.*, foxglove *Digitalis purpuria*, cornflower *Centaurea cyanus*, common toadflax *Linaria vulgaris* and vipers bugloss *Echium vulgare*. Shrubby, structural planting could also be enhanced using more native species such as howthorn *Crataegus monogyna*, holly *llex aquifolium*, blackthorn *Prunus spinosa* and dogwood *Cornus sanguinea*.

#### FURTHER SURVEYS & RECOMMENDATIONS

- Due to the undisturbed nature of the ephemeral vegetation and floral diversity, there are opportunities for notable invertebrates. To undertake a full invertebrate survey of these areas would allow any future habitat creation or management of these areas to be more species specific and protect notabel species where necessary.

- If any trees, shrubs, ornamental planting or hedgerows are to be removed for any reason, this should only be undertaken outside of bird breeding season to avoid disturbance to this group. Equivalent replacement planting should be introduced if possible, using native species such as those listed above.

- If any demolition or roofing works are necessary on any faculty buildings, the gate houses or the pub further guidance from a licenced bat worker should be sought, prior to works to ensure there is nor disturbance to bats.

# CITY SOUTH CAMPUS: DESK STUDY

### HABITATS

The site is located directly adjacent to the Botanical Gardens and the surrounding residential area includes a number of large detached properties with large gardens on tree lined streets, providing a broader habitat diversity than is typical for inner cities.

The northern part of the site is somewhat detached from surrounding habitats as it is surrounded by relatively busy main roads on all sides.

The Worcester and Birmingham Canal SLINC, to the east of the site forms viable wildlife corridors through an otherwise urban environment.

There are a number of designated sites which have open water habitats including Rotton Park Reservoir, Edgbaston Pool and The Vale, which are of value to a range of waders, waterfowl and other birds.

### SPECIES

A number of bird records including the following species which are either UK or Local BAP species are known within the surrounding area:

- black redstart
- starling
- house sparrow
- dunnock
- song thrush
- kestrel
- bullfinch

A breeding barn owl record also exists to the north west of the site and a number of species which are specific to wetland habitats such as pink footed goose, grey wagtail and shelduck, all associated with the surrounding open water habitats.

Several badger sighting records were provided which spanned a number of years suggesting an established territory in the area and possibly a main sett close by.

Common pipistrelle, Daubenton's and Noctule bats are recorded close to the reservoir, and locations of two common pipistrelle roosts are known also in that area.

### DESIGNATED SITES & PROTECTED SPECIES RECORDS



Hedgehog Badger Otter Watervole Common Pipistrelle Common Toad Black redstart Common frog Smooth newt



# CITY SOUTH CAMPUS: SITE SURVEY

### HABITATS

The faculty buildings were situated centrally within the site with a block to the west and a derelict area to the east. To the rear of the faculty buildings was a recently landscaped area with ornamental planting and improved grassland, and car parking. To the south of Westbourne Road were the Ravensbury and Bevan Buildings which were set within formal gardens with an area of semi improved grassland and a mature broadleaved woodland to the south.

#### BUILDINGS

The faculty buildings were a mixture of one and two storey brick buildings (Lime Tree) and multi-storey modern steel and glass structures (Seacole as pictured right). Accommodation blocks were were generally flat roofed, three storey brick and glass structures, some of which were clad with hanging tiles on their frontages (below). The Lodge, a small gate house building (below) was situated next to the main vehicle access to the northern section of the site. Though a historical building, it was well maintained and in good condition. To the south of Westbourne Road Bevan Building was a modern brick and glass structure. Ravensbury (right) was a listed, two storey, brick built, manor house with bay windows and a slate pitched roof. Ravensbury was set within formal gardens (right, below).



#### **GRASSLAND, HEDGES & ORNAMENTAL PLANTING**

Areas of improved grassland were recorded in the northern part of the site, at the frontages of accommodation blocks, car parking and walkways as well as to the rear of Seacole (right), where it has recently been landscaped and the bowling green in the northern corner of the site. This grassland comprised low diversity, managed sward of common grassland species. Ornamental planting was generally found in conjunction with improved grassland areas and comprising of non native species.



#### WATER BODIES

A series of three rectangular water bodies were recorded within the Ravensbury garden. These were concrete sided with duck weed the only floating vegetation recorded. No emergent vegetation was present and no submerged vegetation was visible. These were partially overshaded by the adjacent trees and hedgerows.

#### TALL RUDERALS, BARE GROUND AND INVASIVE WEEDS

An area of tall ruderals was recorded at the southern tip of the site. This was an open area dominated by common nettle and creeping thistle. Bare ground was recorded immediately to the rear of Bevan Building, where active management was evident for the removal of invasive weeds, though evidence of Himalayan balsam, was still present. Management had primarily focussed on the eradication of Japanese knotweed, which appeared to have been successful at the time of survey. More Himalayan balsam was recorded at the peripheries of the semi-imprioved grassland south of Ravensbury. The Japanese knotweed treatment programme had been in practice for four years at the time of survey and included Japanese knotweed amongst ornamental planting to the rear of Westmount.

#### HEDGES, TREES AND WOODLAND

Species poor, native hedgerows flanked the bowling green. Species poor, non native hedgerows were also recorded in the Ravensbury garden. A large number of trees were recorded throughout the site, ranging from recently planted young standards, to prominent mature trees. Of particular note were the large beech, oak and horse chestnut trees which stood at the front of the Seacole building (oak pictured below) and the oak and small leaved lime along the eastern boundary of the site (pictured below). These were all prominent trees, in good condition. To the rear of Bevan building, an area of mature broadleaved woodland was recorded with beech, horse chestnut, sycamore and small leaved lime forming the canopy with laurel and holly in the shrub layer. Bluebells were recorded in the ground layer. Bluebells are a local BAP species. This is a semi-natural woodland and therefore a local BAP habitat.





# CITY SOUTH CAMPUS: SITE SURVEY

## SPECIES

The majority of the faculty buildings in the north of the site were modern and in good condition, lacking features suitable to support roosting bats. The adjoining one and two storey brick built structures were also well sealed and exhibited very low potential for bats. The accommodation blocks varied slightly: Oakmount was fronted with hanging tiles (which are notoriously favourable for common pipistrelle to roost) and were considered to offer moderate potential for roosting bats, while others had some minor potential access points and small cavities but structurally did not provide any features suitable for roosting and therefore were of low potential for this group. To the south, Bevan was also well sealed and in a good state of repair with no opportunities for roosting bats. Due to the general age and construction of Ravensbury, opportunities for roosting bats existed at the gable ends and ventilation bricks.

In general, the trees within the site were semi-mature and mature and well maintained, as required for their situation within areas of public open spaces and as such did not offer opportunities for roosting bats. However, some of the large specimens were recorded to have some minor cracks and fissures and were considered to offer low roosting potential.

The trees, scrub, woodland, ornamental planting and hedgerows provide suitable habitats for breeding birds including local and UK BAP species.

A badger sett was recorded to the rear of Ravensbury. Five entrance holes were recorded which burrowed into the mound which formed the semi-improved grassland. Two holes were close to one another with the other three scattered about two of the other sides of the mound. The size and level of evidence of badger activity surrounding the sett suggests it is not a main sett and more likely a subsidiary sett. It is likely that these entrances are all connected by subsurface tunnels and therefore one sett, though it cannot be ruled out that at least one of these holes may not be connected and could represent an annex sett to the rest.



### PHASE 1 HABITAT PLAN



Birmingham City Universit Biodiversity Survey

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# CITY SOUTH CAMPUS: ANALYSIS

## **UK & LOCAL BAP HABITATS**

The hedgerows around the bowling green comprised at least 80% native species and as such qualified as a UK BAP habitat.

The habitat to the rear of Ravensbury includes an area of semi-natural woodland, listed as a local BAP habitat. It is a moderate sized area and in the context of other mature trees and the surrounding large gardens, it is relatively well connected to other semi-natural habitats.

### **UK & LOCAL BAP SPECIES**

Species recorded locally to the site included the following species which are UK and Local BAP species:

		UK BAP Sp.	Local BAP Sp.
Birds: Black redstart			Yes
	Dunnock	Yes	
	Starling	Yes	
	Kestrel		Yes
	Song thrush	Yes	Yes
	House sparrow	Yes	
	Bullfinch	Yes	
Mammals:	Hedgehog	Yes	
	Common pipistrelle	2	Yes
	Daubenton's bat		Yes
	Noctule bat	Yes	Yes
Amphibs:	Common toad	Yes	Yes
	Common frog		Yes
	Smooth newt		Yes
Plants:	Bluebell		Yes

A badger sett (probable subsidiary) was recorded to the rear of Ravensbury building. Badgers are protected under the Protection of Badgers Act 1992.

### **BIODIVERSITY ENHANCEMENT** RECOMMENDATIONS

This site is merited for the number of trees, including several mature, prominent trees and the semi-natural woodland habitat to the rear of Ravensbury. Bluebells (Local BAP species) and badgers are notable records within this site. The focus for protection and preservation at this site should focus on these habitats.

Also a number of buildings offer roosting opportunities for bats, though no roosts are known of within the site. The tree canopy coverage across the site provides a number of possible foraging and flight paths for bats. Three species of bat are recorded locally. All bats are local BAP species.

The area of hard standing in the east of the site, where former accommodation buildings have been removed, offers opportunities for biodiversity features to be built into any future development within this area. For example, ornamental planting should use native flowering species as described on page 7 of this document. In keeping with the rest of this campus it is suggested that more trees are planted and in particular fruit and nut bearing species such as hazel Corylus avellana, crab apple Malus sylvestris and wild cherry Prunus avium should be considered within the landscaping scheme. Shrub species with dense vegetation growth would also serve as enhancement of nesting opportunities for UK BAP bird species including dunnock, song thrush and bullfinch.

A number of large trees are present which would provide ideal locations for erecting species specific bird and bat boxes to enhance nesting and roosting opportunities for these groups, including local and UK BAP species as follows:

a)Schwegler 2H Open fronted bird box: Suitable for black redstarts. Position on buildings in secluded, sheltered spots, north or east facing. b)Schwegler Sparrow Terrace: Suitable for house sparrows. Position on building beneath an eave or ledge, north or east facing.

c)Starling nest box: Tree or wall mounted in undisturbed, north or east facing location.

d) Schwegler No.28 Nest box: Suitable for kestrel. Position on individual trees at the edge of woods, facing north or east with clear flight paths to the box.

e)1FF Bat Box: Suitable for common pipistrelle and noctule bats to be mounted north or east facing on building or tree.

Further advice on the number and precise location for bat and bird boxes can be provided on request. It is also suggested that any future building construction in the east of the site could also consider incorporating bat bricks / bat boxes within the material of the building. These sort of products are now available in a variety of designs, depending on the style of the building.

#### FURTHER SURVEY & RECOMMENDATIONS

- If any trees, shrubs, ornamental planting or hedgerows are to be removed for any reason, this should only be undertaken outside of bird breeding season to avoid disturbance to this group. Equivalent replacement planting should be introduced if possible, using native species such as those listed above.

- If any demolition or roofing works are necessary on any of the accommodation block, The Lodge, Ravensbury or buildings similar to Lime Tree building, further guidance from a licenced bat worker should be sought, prior to works to ensure there is no disturbance to roosting bats.

- The semi-natural woodland to the rear of Ravensbury should be managed to the existing standard, with minimal disturbance in order to preserve the bluebell ground flora and protect the resident badgers. Monitoring of mature trees is also encouraged within the Universities legal Duty of Care agreement. Whereby any tree surgery is required under this agreement, it may be necessary to consult a licenced bat worker to ensure no disturbance to roosting bats.

- The continuation of the invasive weed eradication programme is encouraged with sensitivity in proximity to the badger sett and bluebells. Any glyphosate treatment for Japanese knotweed should be applied early in the morning (to allow drying time prior to nocturnal badger activity) and avoid spring (when bluebells are present vegetatively). It is suggested that Himalayan balsam would be best dealt with by repeat cutting prior to flowering over a number of years until the seed bank is exhausted.