MKA
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Preliminary Ecological Appraisal and Preliminary Roost Assessment

81 Belsize Park Gardens, Belsize Park, London, NW3 4NJ

Site	*81 Belsize Park Gardens, Belsize Park, London, NW3 4NJ*
Project number	*140623*
Client name / Address	*Fine Arts College Ltd, Centre Studios, 41-43 Englands Lane, London, NW3 4YD*

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Declaration of compliance

This Preliminary Ecological Appraisal has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”. The information which we have provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

MKA Ecology Ltd is a CIEEM Registered Practice. This means that MKA Ecology Ltd are formally recognised for high professional standards, working at the forefront of our profession.

Validity of data

Unless stated otherwise the information provided within this report is valid for a maximum period of 24 months from the date of survey. If works at the site have not progressed by this time an updated site visit may be required in order to determine any changes in site composition and ecological constraints.

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1. EXECUTIVE SUMMARY

In April 2023 MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal and Preliminary Roost Assessment of 81 Belsize Park Gardens, Belsize Park, London, NW3 4NJ. The appraisal included a habitat survey, protected species scoping survey and desktop study of protected and notable sites and species in the area. A site visit was undertaken on 25 April 2023. 81 Belsize Park Gardens comprises a four-storey building that was formerly used as a Gym with a small area of hardstanding at the north end of the site. The proposed development is for the refurbishment and remodelling of the building to create education and performing arts facilities for Hampstead Fine Arts College.

The following ecological constraints were identified at the site with recommendations made as follows;

- **Onsite habitats:** There is a single semi-mature cherry tree which is of elevated biodiversity and landscape value in the context of the site. Retain this tree as part of the development. If it is to be removed, it should be replaced within the site boundary with a native tree species;
- **Invasive species:** Butterfly-bush is present onsite. This is listed as a species of concern under the London Invasive Species Initiative (LISI). During development, all instances of these species should be removed from the site and disposed of as controlled waste to prevent further spread in the local area;
- **Breeding birds:** The cherry tree and thick ivy covering the eastern wall of the building provide suitable habitat for nesting birds. All vegetation clearance work should take place between the months of September to February (inclusive) to avoid the nesting bird season. If this is not feasible, clearance should only take place following a nesting bird check by a suitably qualified ornithologist;
- **Roosting bats:** The building (reference B1) was categorised as having low bat roost potential, due to the presence of crevices on the building external and the internal access afforded to roosting bats. This categorisation requires one nocturnal roost survey to be carried out on the building to ascertain whether it currently supports bat roosts and to identify the need/rule out the need for further surveys. Nocturnal bat surveys can be undertaken between May and August, and sub-optimal surveys can be undertaken in September; and
- **Foraging and commuting bats:** Private gardens and mature trees directly adjacent to the site provide good foraging habitat for bats. A sensitive lighting scheme should be produced to minimise impacts of light spill on foraging and roosting bats in this surrounding area.

The proposed performing arts building has the potential to deliver improvements to local biodiversity. A number of biodiversity enhancements have been recommended, including the creation of biodiverse green roofs and green walls; the incorporation of native species into the final planting scheme; the creation of new deadwood and mixed substrate features to support invertebrates; and the installation of bird boxes and bat boxes.

It is recommended that a Biodiversity Net Gain (BNG) assessment is undertaken to ensure that the proposed development is able to demonstrate a 10% increase in biodiversity at the site, in line with the Environment Act (2021). It is also recommended that an Urban Greening Factor (UGF) assessment is undertaken in order to ensure that there is adequate green infrastructure provision at the site. A Landscape and Ecology Management Plan (LEMP) should be produced to ensure the successful establishment and long-term management of newly created habitats.

The inclusion of ecological enhancement features is in line with local and regional planning policy and Biodiversity Action Plans, as well as the National Planning Policy Framework. They will contribute towards a net positive change in biodiversity onsite and ensure a sustainable development that helps to achieve both local and national biodiversity targets.

2. INTRODUCTION

2.1. Aims and scope of Preliminary Ecological Appraisal

In April 2023 MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal and Preliminary Roost Assessment at 81 Belsize Park Gardens, Belsize Park, London, NW3 4NJ by Fine Arts College Ltd, in order to support a planning application for the refurbishment of a former Gym into new educational facilities.

The aims of the Preliminary Ecological Appraisal were to:

- Undertake a desktop study to identify the extent of protected and notable species and habitats within close proximity of the site;
- Prepare a habitat map for the site;
- Identify evidence of protected species/species of conservation concern at the site;
- Assess the potential impacts of the proposed development, using existing plans;
- Detail recommendations for further survey effort where required;
- Detail recommendations for biodiversity enhancements;
- Undertake a Preliminary Roost Assessment to establish the suitability of the buildings and trees for roosting bats, and record any evidence of bat presence; and
- Assess the need for further survey effort, a European Protected Species Licence (EPSL) or mitigation for bats, if required.

2.2. Site description and context

The survey area is shown on the map in Figure 1. Within this report this area is referred to as the site or 81 Belsize Park Gardens, London. The site is located in Belsize Park residential area south of Hampstead (central grid reference: TQ 27375 84637) and falls under the local authority of the London Borough of Camden. The site comprises a four-storey building (reference B1) with a small area of hardstanding at the north end of the site. To the north of the site, there is a triangle of land containing a semi-mature bird cherry tree which does not fall within land ownership but is included within the planning red line boundary, as highlighted in Figure 1. The surrounding area comprises urban residential buildings and urban gardens.

2.3. Proposed development

The proposed development is for the refurbishment and internal remodelling of B1, a former Gym, into new educational and performing arts facilities, as well as the creation of associated access, hard and soft landscaping and associated works.

2.4. Legislation and planning policy

This Preliminary Ecological Appraisal has been undertaken with reference to relevant wildlife legislation and planning policy.

Relevant legislation considered within the scope of this document includes the following:

- The Environment Act 2021;
- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- Natural Environment and Rural Communities (NERC) Act 2006;
- The Countryside and Rights of Way (CRoW) Act 2000;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

Further information is provided in Appendix 1, including levels of protection granted to the species considered in Section 3.3.

In addition to obligations under wildlife legislation, the revised National Planning Policy Framework (NPPF) updated on 20 July 2021 requires planning decisions to contribute to conserving and enhancing the local environment. Further details are provided in Appendix 1.

Given that the Site is located within London, consideration of the London Plan 2021 has also been given. The new London Plan contains a number of policies relating to biodiversity, a brief summary of which are set out below:

- Policy G1 Green infrastructure;
- Policy G5 Urban greening;
- Policy G6 Biodiversity and access to nature;
- Policy G7 Trees and woodlands; and
- Policy G8 Food growing.

Camden Council has produced an adopted Local Plan which contains a single policy relating to biodiversity and habitat conservation (Policy A3).

Camden Council have produced a Biodiversity Action Plan, which identifies regional priority habitats and species (Camden Council, 2017). There is also a Biodiversity Action Plan for Greater London (London Biodiversity Partnership, 2022).

Where relevant these are discussed in further detail in Section 5. Further details are provided in Appendix 1.

3. METHODOLOGIES

This Preliminary Ecological Appraisal has been undertaken in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal, 2nd edition (CIEEM, 2017).

3.1. Desktop study

A data search was conducted for the Site and the surrounding area within 2km. Data was retrieved from the sources listed in Table 1.

Table 1: Sources of data for desktop study

Organisation	Data collected	Date collected
Multi-agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk	Information on local, national and international statutory protected areas.	24/04/23
Greenspace Information for Greater London CIC	Information on protected and notable sites and species within 2km of the site (TQ 27375 84637).	24/04/23
Ordnance Survey maps and aerial photography	Information on habitats and connectivity between the Site and the surrounding landscape	24/04/23
Plantlife Important Plant Areas (IPAs)	Information on important plant areas within 2km of the site.	13/04/2023
Buglife Important Invertebrate Areas (IIAs)	Information on important invertebrate areas within 2km of the site.	13/04/2023

3.2. UK Habitat Classification

Habitats were surveyed using the standardised UK Habitat classification and mapping methodology (UK Habs) (Butcher et al, 2020). Data were recorded onto a Samsung Tablet in a Geographic Information System (GIS), in this instance QField, following a modified UK Habs Colour Mapping Pallet. Dominant plant species were observed and recorded within each habitat type. The plant species nomenclature follows that of Stace (2019).

The DAFOR scale is used to describe the relative abundance of species. The scale is shown in Table 2. It is important to note that where a species is described as rare this description refers to its relative abundance within the site and is not a description of its abundance within the wider landscape.

Therefore, a species with a rare relative abundance within the site may be common within the wider landscape.

Table 2: DAFOR scale

DAFOR code	Relative abundance
D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare

3.3. Protected and notable species scoping survey

As part of the Preliminary Ecological Appraisal, an assessment of the potential for the habitats on site to support protected or notable species was made. This assessment was based on the quality, extent and interconnectivity of suitable habitats, along with the results of the desktop study detailed in Section 3.1. This includes Species of Principal Importance as listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006), and Red and Amber listed Birds of Conservation Concern (BoCC) as per Stanbury *et al*., 2021 (see Appendix 1).

Protected and notable species considered within the protected species scoping survey for 81 Belsize Park Gardens, London include the following:

- Plants and fungi: Jersey cudweed *Gnaphalium luteoalbum*, bluebell *Hyacinthoides non-scripta* and spreading bellflower *Campanula patula.*
- Invertebrates: Stag beetle *Lucanus cervus,* small blue *Cupido minimus* and picture-winged fly, *Dorycera graminu.*
- Fish: European eel *Anguilla anguilla*, river lamprey *Lampetra fluviatilis*, and brown trout *Salmo trutta subsp. fario*.
- Amphibians: Natterjack toad *Epidalea calamita*, great crested newt *Triturus cristatus* and common toad *Bufo bufo*.
- Reptiles: Adder *Vipera berus*, common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix helvetica helvetica*.
- Birds: With special reference to species listed under Schedule 1 of The Wildlife and Countryside Act 1981 (as amended) and Species of Principal Importance.
- Mammals: Badger *Meles meles*, bats (all species), water vole *Arvicola amphibius*, otter *Lutra lutra*, hazel dormouse *Muscardinus avellanarius*, hedgehog *Erinaceus europaeus*, brown hare

Lepus europaeus, harvest mouse *Micromys minutus*, polecat *Mustela putorius* and European beaver *Castor fiber*.

In each case the likelihood of presence of these protected species at the site was classified as being either confirmed, high, moderate, low or negligible.

- **Confirmed**: The species is confirmed on the site during the Preliminary Ecological Appraisal, previous survey effort or recent records.
- **High:** Habitats are available onsite which are highly suitable for this species and there are records within the desktop study. The surrounding areas also provide widespread opportunities for the species which are well connected to the site.
- **Moderate:** Some suitable habitat available on site for the species although not of optimum quality. Species is present with the desktop study.
- **Low:** Some suitable habitat available on site for the species but this is low value and possibly of small scale or with poor connectivity. No, or very few, records returned in the desktop study.
- **Negligible**: No suitable habitat available for the species, or very little poor-quality habitat.

This protected species scoping survey is designed to assess the *potential* for presence or absence of a particular species or species group, and does not constitute a full survey for these species.

3.4. Preliminary Roost Assessment

An internal and external inspection of buildings within the site was undertaken following guidance set out in *Bat Surveys for Professional Ecologists – Good Practice Guidelines (3rd edition)* (Collins, 2016). All buildings within the site were inspected and the locations of these are shown in Figure 1.

The following features were recorded for buildings:

- Location;
- Type;
- Dimensions;
- Age;
- Construction materials; and
- Current use.

Descriptions of potential and actual access points and roosting places were recorded (including height above ground level and aspect), as well as descriptions of evidence of bats found. The following types of evidence of use by bats were recorded:

- Location and number of any live bats;

- Location and number of any bat corpses or skeletons;
- Locations and number of bat droppings;
- Notes on relative freshness, shape and size of bat droppings;
- Location and quantity of any bat feeding remains;
- Location of clean, cobweb-free timbers, crevices and holes;
- Location of characteristic staining from urine and/or grease marks;
- Location and quantity of bat-fly (Nycteribiidae) pupal cases;
- Location of known and potential access points to the roost; and
- Location of the characteristic smell of bats.

Buildings were assessed for their bat roost suitability according to the scheme presented in Collins (2016). These categories are shown in Table 3.

Table 3: Categories to assess roost suitability in buildings (adapted from Collins, 2016)

Roost suitability	Description
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions* and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potential for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

*For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

The guidelines for categorisation of bats in England by distribution and rarity (adapted from Wray *et al*., 2010) are shown in the tables below.

Table 4: Rarity of bat species within England

Rarity within range (England)	Species
Rarest (population under 10,000)	Greater horseshoe bat *Rhinolophus ferrumequinum* Bechstein's bat *Myotis bechsteinii* Alcathoe's bat *Myotis alcathoe* Greater mouse-eared bat *Myotis myotis* Barbastelle *Barbastella barbastellus* Grey long-eared bat *Plecotus austriacus*
Rarer (population 10,000 to 100,000)	Lesser horseshoe bat *Rhinolophus hipposideros* Whiskered bat *Myotis mystacinus* Brandt's bat *Myotis brandtii* Daubenton's bat *Myotis daubentonii* Natterer's bat *Myotis nattereri* Leisler's bat *Nyctalus leisleri* Noctule *Nyctalus noctula* Serotine *Eptesicus serotinus* Nathusius's pipistrelle *Pipistrellus nathusii*
Common (population over 100,000)	Common pipistrelle *Pipistrellus pipistrellus* Soprano pipistrelle *Pipistrellus pygmaeus* Brown long-eared bat *Plecotus auritus*

Table 5: Level of importance of roost type

Geographic frame of reference	Roost type
District, Local or Parish	Feeding perches (common species) Individual bats (common species) Small numbers of non-breeding bats (common species) Mating sites (common species)
County	Maternity sites (common species) Small numbers of hibernating bats (common and rarer species) Feeding perches (rarer/rarest species) Individual bats (rarer/rarest species) Small numbers of non-breeding bats (rarer/rarest species)
Regional	Mating sites (rarer/rarest species) including well-used swarming sites Maternity sites (rarer species) Hibernation sites (rarest species) Significant hibernation sites for rarer/rarest species or all species assemblages

Geographic frame of reference	Roost type
National/UK	Maternity sites (rarest species) Sites meeting SSSI guidelines*
International	SAC sites

*Sites meeting SSSI (Sites of Special Scientific Interest) selection guidelines include Barbastelle maternity roosts and mixed species hibernacula assemblages

3.5. Equipment

The inspection of building was conducted using a variety of equipment including ladders, digital video endoscope, inspection mirrors, binoculars, high-powered torch and a digital camera.

3.6. Surveyor, author and reviewer

The survey was undertaken by Rory Roche ACIEEM, Senior Ecologist at MKA Ecology Limited and Alisa Davies, Graduate Ecologist at MKA Ecology Limited. Rory has seven years' experience within the industry conducting Preliminary Ecological Appraisals and Preliminary Roost Assessments, and holds a Natural England Class 1 bat licence. Alisa is a Qualifying member of CIEEM and is in her first year in the industry. The report has been reviewed by Lydia Ennis ACIEEM, Senior Ecologist at MKA Ecology Ltd. Lydia has six years' experience as an ecologist and holds a Level 4 botanical Field Identification Skills Certificate.

3.7. Date, time and weather conditions

See Table 6 below for details of the date, time and prevailing weather conditions recorded during the site visit for the Preliminary Ecological Appraisal.

Table 6: Date, time and weather conditions of survey visit

Date	Time of survey	Weather conditions*
30/04/23	10.30	Wind: 1W Cloud: 8/8 Temp: 14°C Rain: Light Drizzle

*Wind as per Beaufort Scale / Cloud cover given in Oktas.

3.8. Constraints

A single visit cannot always ascertain the presence or absence of a protected species. However, an assessment is made of the likelihood for protected species to occur based on habitat characteristics

and the ecology of each species. Where there is potential for protected species, additional survey work may be required to ascertain their presence or absence.

Data on species records obtained from local biological records centres are sometimes only available at low spatial resolutions and are constrained by the voluntary nature of the contributions and what has been chosen to be submitted as records. While these records provide a useful indication of species recorded in the local area, in particular protected or notable species, the data is not necessarily an accurate reflection of species assemblages or abundance in the vicinity.

4. RESULTS

4.1. Desktop study

An ecological desktop study was completed for the site and the surrounding 10km for internationally designated sites, and the surrounding 2km for nationally designated sites and species records. Data provided by Greenspace Information for Greater London (GiGL) identified some UK and European protected species, Species and Habitats of Principal Importance (as listed under Section 41 of the NERC Act 2006), and species of conservation concern within 2km of the site. It should be noted that this is not a comprehensive list of the distribution or extent of the local flora and fauna of conservation importance. These species records are discussed in greater detail in the protected species scoping survey section (Section 4.3 below).

Details of internationally designated sites identified within this search are displayed in Table 7 below. These consist of one Special Protection Area (SPA) and Ramsar site.

Table 7: International designated sites within 10km of 81 Belsize Park Gardens, London

Site name	Area (ha)	Distance and direction	Reasons for selection
Lee Valley Ramsar and SPA	451.3	7.9km NE	Designated for internationally important numbers of breeding and wintering wildfowl, especially gadwall *Anas strepera* and shoveler *Anas clypeata*, and for wintering bittern *Botaurus stellaris*.

Details of statutorily designated sites identified as part of the desktop study are displayed in Table 8 below. These consist of three Local Nature Reserves (LNRs).

Table 8: Statutorily designated sites within 2km of 81 Belsize Park Gardens, London

Site name	Area (ha)	Distance and direction	Reasons for selection
Adelaide LNR	0.28	0.4km SE	This site supports areas of good quality neutral grassland, scrub and woodland with a small pond.
Belsize Wood LNR	0.27	0.6km N	This site supports areas of ancient woodland and scrub with a small pond.

Site name	Area (ha)	Distance and direction	Reasons for selection
Adelaide LNR	0.28	0.4km SE	This site supports areas of good quality neutral grassland, scrub and woodland with a small pond.
St John's Wood Church Grounds LNR	1.99	1.6km S	Former burial ground with an area managed as a 'wildlife area', containing meadow and mixed deciduous woodland with a native hedgerow.

The site lies within a Natural England Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ; Natural England, 2019) related to Hampstead Heath Woods SSSI.

Details of non-statutorily designated sites identified as part of the desktop study are displayed in Table 9 below. These consist of 19 Sites of Importance for Nature Conservation (SINCs). However, due to the extent and nature of the proposed works, it is considered appropriate to only consider those immediately adjacent to or within the site. Accordingly, only non-statutorily designated sites within 1km of the site are set out in Table 6 below. These consist of four SINCs.

Table 9: Non-statutorily designated sites within 1km of 81 Belsize Park Gardens, London

Site name	Area (ha)	Distance and direction	Reasons for selection
Chalk Farm Embankment and Adelaide Local Nature Reserve SINC (Borough Grade I)	0.92	0.4km SE	Adelaide Local Nature Reserve as described in Table 5 above, plus a steep-sided railway embankment supporting dense secondary woodland.
Belsize Wood Local Nature Reserve & Russell Nurseries Woodland Walk SINC (Borough Grade I)	0.7	0.7km N	Belsize Wood Local Nature Reserve as described in Table 5 above, plus lower quality woodland in the northern half which has more public access.
Primrose Hill SINC (Borough grade II)	25.26	0.6km S	This site represents primarily amenity grassland with mature trees, and native hedgerows and shrubberies.
Hampstead Green SINC (Local)	0.24	0.8km NW	This site represents a small area of grassland managed as a wildflower meadow.

81 Belsize Park Gardens, London is immediately surrounded by residential development, with buildings and roads to the north and east of the site and residential gardens to the south. Within 2km, there is large green space to the south at Primrose Hill and Regent's Park, and to the north at Hampstead Heath.

81 Belsize Park Gardens, London does not lie within any Important Plant Areas (IPA) or Important Invertebrate Areas (IIA) although it is close to the Thames Basin Lowlands Important Invertebrate Area (IIA). IPAs and IIAs are nationally or internationally significant places for the conservation of plants and invertebrates, respectively, and the habitats upon which they rely. The site does lie within a B-Line running north between Regent's Park and Hampstead Heath. B-Lines are 'insect pathways' identified by BugLife linking existing habitats to improve pollinator connectivity in the broader landscape and can be used to strategically identify sites for the creation and restoration of flower-rich habitats.

4.2. UK Habitat Classification

The site was found to comprise a building (reference B1) along with small area of hardstanding and one semi-mature cherry tree *Prunus sp.* to the north of the building. More detailed species lists, along with their relative abundance, can be found in Appendix 2. The UK habitat classification survey map is provided in Figure 1 at the end of this section. Descriptions of the habitat types present along with dominant species compositions are provided below.

Developed land; sealed surface - Building (u1b5; neglected 77)
A brick building with a flat roof as well as a shed made from plastic cladding. There is dense ivy growing up a section of the eastern wall and small areas of vegetation on the rooftop alongside areas of shallow standing water.

Developed land; sealed surface (u1b; mature tree 1171, non-permeable paving 1232)
One area of paved hardstanding to the north of the building, including small planting beds containing a single semi-mature cherry tree and two dead shrubs.

Figure 1: UK Habitat Classification map of 81 Belsize Park Gardens, London

Target Notes

Target Note 1: Wall crevice leading to a cavity space (Photograph 6, Appendix 3)

Target Note 2: Thick ivy (Photograph 5, Appendix 3)

Target Note 3: Hole in skylight (Photograph 7, Appendix 3)

Invasive Non-native Species 1: Butterfly-bush (Photograph 3, Appendix 3)

Invasive Non-native Species 2: Virginia creeper - Schedule 9 Wildlife and Countryside Act 1981 (Photograph 4, Appendix 3)

4.3. Protected species scoping survey

Plants and fungi

A number of protected and notable plant species were returned in the data search, including Jersey cudweed *Gnaphalium luteoalbum*, bluebell *Hyacinthoides non-scripta* and spreading bellflower *Campanula patula*. The habitats found on site are not suitable for supporting protected and/or notable plant species and therefore the likelihood of their presence is considered to be **negligible**.

Virginia creeper *Parthenocissus quinquefolia* was identified in location on site (Invasive Non-native Species 1, Figure 1; Photograph 4, Appendix 3) and butterfly-bush *Buddleia davidii* was identified in three locations on site (Invasive Non-native Species 1, Figure 1; Photograph 3, Appendix 3). Virginia creeper is listed on Schedule 9 of the Wildlife and Countryside Act 1981 and both species are listed as species of concern on the London Invasive Species Initiative (LISI, 2019) The presence of invasive non-native plant species on the site is **confirmed**.

Invertebrates

A number of invertebrate records were returned in data search, including a record for stag beetle 225m from the site in 2020. However, there is no suitable habitat on site to support such species of invertebrates and the likelihood of protected or notable species being present at the site is considered to be **negligible**. This species group is not considered further in this report.

Fish

The data search did not return records for protected or notable fish within 2km of the site and there is no suitable habitat on or adjacent to the site to support such species of fish. Therefore, the likelihood of protected or notable species being present at the site is considered to be **negligible**. This species group is not considered further in this report.

Amphibians

Amphibian species including common toad *Bufo bufo*, common frog *Rana temporaria* and great crested newt *Triturus cristatus* were returned on the data search, although these records are over 20 years old. A search of Defra's MAGIC website returned no European Protected Species Licences granted for great crested newt within 2km of the site. There is no suitable terrestrial or aquatic habitat at the site that would hold potential to support amphibians including great crested newt and the likelihood of this species being present within the site boundary is considered to be **negligible**. This species group is not considered further in this report.

Reptiles

Records of grass snake were returned on the data search, which were associated with Hampstead Heath; however, no suitable reptile habitat is present at the site as it is dominated by the buildings and hardstanding. Therefore, the likelihood of reptile species being present at the site is considered to be **negligible**. This species group is not considered further in this report.

Birds

Two species were recorded during the site visit. These species are shown in Table 10 together with their conservation status. It is important to note that this is not a full inventory of species for the site.

Table 10: Bird species recorded during site visit at 81 Belsize Park Gardens, London

Common name	Systematic name	S1 W&CA[1]	BoCC[2] Status	S41 SPI[3]	Local PrSp[4]
Blackbird	*Turdus merula*	-	Green	-	-
Blue tit	*Cyanistes caeruleus*	-	Green	-	-

[1] Schedule 1 of The Wildlife and Countryside Act 1981 (see Appendix 1)
[2] Birds of Conservation Concern (see Appendix 1)
[3] Section 41 (NERC Act 2006) 'Species of Principal Importance' (see Appendix 1)
[4] Local Priority Species

The data search returned several bird species records from within 2km of the site including species listed under Section 41 of the NERC Act (2006) and those listed as Red and Amber of the BoCC list, including swift *Apus apus*, yellowhammer *Emberiza citrinella* and house sparrow *Passer domesticus*.

Habitat for breeding birds is limited at the site; however, the cherry tree and dense ivy on the east building wall (Target Note 3, Figure 1; Photograph 5, Appendix 3) hold potential to support nesting birds. The likelihood of breeding birds being present at the side is considered to be **moderate**. The habitats present at the site are unlikely to support assemblages of protected bird species and therefore the likelihood of the site supporting such species is considered to be **negligible**. This species group is not considered further in this report.

Badgers

A number of records of badger were returned on the data search; however, the habitats present at the site are not suitable for badgers; therefore, the likelihood of badgers being present at the site is considered to be **negligible**. This species is not considered further in this report.

Other mammals

The data search returned records for hedgehog. Neighbouring gardens may provide suitable foraging habitat. However, there is no suitable habitat present on site for hedgehogs, so the likelihood of this species being present on site is **negligible**. This species is not considered further in this report.

4.4. Preliminary Roost Assessment

Data search results

The data search returned 1,091 records from ten species of bat within 2km of the site. These species are listed in Table 11. The data search also returned records for a number of unidentified bats (*Chiroptera, Myotis, Nyctalus, Pipistrellus, Vespertilionidae*). Records were not associated with the site itself. The nearest bat record was of an unknown species 475m to the east of the site. Several bat species recorded are associated with roosts in buildings. Pipistrelle species are commonly found roosting in crevices under roof tiles, lead flashing and behind weather boarding. Brown long-eared bats are commonly found roosting in open void spaces with exposed roof timbers and may hibernate in spaces such as wall cavities.

It should be noted that this is not a comprehensive list of the distribution or extent of the local bat species.

Table 11: Bat species records returned by the data search (2km radius of TQ 27375 84637)

Common name	Systematic name	Section 41 species*	Local Biodiversity Action Plan species
Serotine	*Eptesicus serotinus*	Yes	Yes
Daubenton's bat	*Myotis daubentonii*,	Yes	Yes
Leisler's bat	*Nyctalus leisleri,*	Yes	Yes
Noctule	*Nyctalus noctule*	Yes	Yes
Nathusius's pipistrelle	*Pipistrellus nathusii*	Yes	Yes
Common pipistrelle	*Pipistrellus pipistrellus*	Yes	Yes
Soprano pipistrelle	*Pipistrellus pygmaeus*	Yes	Yes
Brown long-eared bat	*Plecotus auritus.*	Yes	Yes

*Section 41 (species of principal importance for the purpose of conserving biodiversity) under the Natural Environment and Rural Communities Act 2006

A search of Defra's MAGIC website returned eight European Protected Species Licences granted for the destruction of a common pipistrelle and soprano pipistrelle non-breeding roosts within 2km of the site. The licences have been granted south and west of the site, with the nearest license granted 1.1km to the south.

The gardens and mature trees in the area surrounding the site are likely to hold considerable foraging and commuting value to local bat populations. These features are likely to support locally high invertebrate diversities upon which bats feed. On the site, the mature cherry tree as well as areas of

vegetation and standing water on the roof have the potential to provide some foraging and commuting value. Therefore, the likelihood that the site supports foraging and commuting bats has been assessed to be **low.**

Preliminary Roost Assessment summary

An interior and exterior assessment was carried out on the 81 Belsize Park Gardens, London building (reference B1) to assess the building's potential for supporting bat roosts. The building was categorised as having **low** potential to support roosting bats. No evidence of bats was observed, however, the building contained features with potential to support roosting bats. These included sheltered internal void spaces with roost access through an open skylight and a wall cavity with roost access through an external wall crevice. These could provide potential roosting habitat for void-dwelling species such as brown long-eared bats. Table 12 outlines the results of the Preliminary Roost Assessment. Photographs of the building are displayed in the appendices below (Photographs 1 to 7, Appendix 3).

Table 12: Building roost assessment results

Building	Roost suitability	Description	Bat roost evidence and potential
B1	Low	A four-storey brick building with cavity walls at higher elevation. Brickwork is in good condition. The roof is flat and multi-tiered, with a combination of concrete and felt roof capping with air-conditioning and boiler infrastructure. At the front of the building is flat-roofed shed built from plastic cladding with a bitumen-felt roof. There is also a front extension with a sloped slate-tile roof in good condition.	Whilst no direct evidence of roosting bats was identified during the survey, a number of access points into the building were identified: • Wall crevice leading to a cavity space (Target Note 1, Figure 1; Photograph 6, Appendix 3); • Hole in skylight (Target Note 3, Figure 2; Photograph 7, Appendix 3). Internally, there were void spaces in the disused swimming pool with timber beams which could be accessed via the skylight. (Photograph 8, Appendix 3).

5. ECOLOGICAL CONSTRAINTS, OPPORTUNITIES AND RECOMMENDATIONS

This section outlines key ecological issues for consideration, recommendations for further work and ecological enhancements where appropriate.

5.1. Ecological constraints

Offsite habitats

81 Belsize Park Gardens, London lies within 10km of Lee Valley SPA and Ramsar site. European protected sites (i.e. SACs and SPAs) are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). Under this law, development projects carried out on or in the vicinity of European sites may require a Habitat Regulations Assessment (HRA) to evaluate the impact of the proposed development on the designated site.

The proposed development at 81 Belsize Park Gardens, London is highly unlikely to significantly impact the Lee Valley SPA and Ramsar site. The small scale and nature of the development (remodelling an existing building for public amenity use), and its distance from Lee Valley SPA, means it is unlikely to affect the site. It is highly unlikely a Habitat Regulations Assessment for the proposed development is required.

The site lies within a Natural England Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ; Natural England, 2019) related to Hampstead Heath Woods SSSI. Developments that fall into the below categories require Local Planning Authority (LPA) consultation with Natural England:

- Airports, helipads and other aviation proposals;
- Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction;
- Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t.
- General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

The proposed development does not fall into any of the above categories; LPA consultation is not required.

On-site habitats

The cherry tree at the front of the building is of elevated ecological value in the context of the site. This tree should be retained if possible; should removal be deemed necessary under the design proposals, it should be replaced with a new native tree planting. Camden Local Plan policy A3 states that replacement trees are expected to be provided where there is loss and that developments are expected to incorporate additional trees and vegetation where possible.

Recommendation 1

Retain existing tree where possible. Where removal is deemed necessary, the tree should be replaced with new native planting, in line with local planning policy.

Plants

Virginia creeper was identified on site; this species is listed as invasive on Schedule 9 of the Wildlife and Countryside Act 1981. As such it is an offence to plant or otherwise cause it to grow in the wild.

Butterfly-bush was identified in three locations on site. Whilst this species is not listed on Schedule 9 of the Wildlife and Countryside Act 1981, it is listed as a species of concern on the London Invasive Species Initiative (LISI, 2019) in Priority Category 3, meaning that the species is of high concern, is widespread and requires concerted action to control, as it has the potential to outcompete native flora. Whilst there is no legal obligation to control LISI species, it would be good practice to remove all instances of butterfly-bush from the site, and to dispose of the arisings as controlled waste in order to avoid their spread.

Recommendation 2

Remove all instances of invasive non-native species from the site and dispose of the arisings as controlled waste in order to avoid their spread.

Birds

The cherry tree and dense ivy present on site provide potential breeding habitat for passerine birds. All wild birds, their active nests and eggs are protected under The Wildlife and Countryside Act 1981 (as amended), which makes it an offence deliberately, or recklessly, to kill or injure any wild bird or damage or destroy any active birds' nest or eggs.

As discussed above, it is recommended that the tree on site be retained and protected during the proposed works. Should the removal of the tree, ivy or vegetation in the neighbouring garden be deemed necessary, works should be scheduled outside of breeding bird season. Scheduling vegetation removal works between the months of September and February inclusive (i.e., outside of the bird season) would avoid impacts on breeding birds.

Where vegetation clearance works are required during the breeding bird season (between the months of March and August inclusive), such works can only proceed following the completion of a nesting bird check undertaken by an experienced ornithologist. Any active birds' nest identified during this check must be protected from harm until the nesting attempt is complete. This will require a buffer to be left around the nest, the size of which will depend upon the species involved (as a general rule, this will be 10m in all directions around the nest). Any buffers established as a result of the initial nesting bird check must be subjected to a second check after the original nesting attempt is completed, before such areas can be removed during the breeding bird season.

Recommendation 3

Schedule vegetation clearance works between the months of September and February inclusive to avoid impacts on breeding birds. Where this timing is not feasible, works should be preceded by a nesting bird check.

It is strongly recommended that any potential nesting bird habitat is cleared outside the breeding bird season in order to avoid potentially lengthy delays if nests are found during nesting bird checks.

Bats

Building B1 has been provisionally assessed as having **low** potential for roosting bats, due to the presence of two external access points to internal void spaces.

All bat species are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended). Bats are also Species of Principal Importance listed on Section 41 of the NERC Act (2006). It is an offence to deliberately disturb a bat, damage or destroy a bat roost, intentionally or recklessly disturb a bat at a roost, or obstruct access to a roost.

The proposed development will involve the renovation of the building and, as such, there is a risk that individual bats may be killed, injured or disturbed in their roosts during the works, and that bat roosts will be damaged or destroyed without appropriate mitigation measures.

Further survey effort is required in order to ascertain the presence or likely absence of roosting bats. Best practice guidelines (Collins, 2016) recommend that one nocturnal survey visits be undertaken for buildings with a moderate risk of supporting roosting bats; buildings with a low risk of supporting roosting bats should be subject to a single nocturnal survey. These surveys should be conducted between May and August, with September also possible but sub-optimal.

Recommendation 4

Undertake one nocturnal bat roost survey on building B1 in order to ascertain the presence or likely absence of roosting bats.

Bat roosting behaviour, commuting and foraging activity can additionally be dramatically affected by artificial lighting (BCT, 2018). It is strongly recommended that any proposed exterior lighting is designed and managed appropriately to ensure that the area remains suitable for foraging bats. A sensitive lighting scheme should be developed to allow suitable roosting and foraging areas for bats. This is particularly important on the roof and eastern side to the building where light may spill into the neighbouring garden area. These measures should be secured through a planning condition.

Recommendation 5

Light pollution from any lighting should be minimised both during and after the construction phase. A sensitive lighting scheme should be developed and secured through a planning condition to allow for suitable roosting and foraging areas for bats within the site with maximum use of appropriate luminaries and directed lighting.

5.2. Opportunities for biodiversity enhancement

Following the issue of the National Planning Policy Framework (NPPF; see Appendix 1), all planning decisions should aim to maintain and enhance, restore or add to biodiversity and geological conservation interests. Ecological enhancements should aim to deliver biodiversity gains for the proposed development site. Further, the Environment Act (2021) states that from autumn 2023, almost all developments will have to deliver a demonstrable increase in biodiversity value of at least 10% through Biodiversity Net Gain. In order to address the above legislation, it is recommended that a number of ecologically valuable habitats and features are incorporated into the site design.

Recommendation 6

In line with the NPPF and Environment Act, a number of ecologically valuable habitats and features should be incorporated into the site design so as to deliver biodiversity gains at the site.

Planting of native species or those with a known attraction or benefit to local wildlife is recommended in landscape proposals. This will help to increase native plant species diversity, provide more ecologically valuable habitats, and result in a greater diversity of other dependent taxonomic groups. The Camden Biodiversity Action Plan (2017) emphasises the value of native species and provides recommendations such as lime *Tilia cordata,* bird cherry *Prunus padus* and crab apple *Malus sylvestris* for tree planting; alder buckthorn *Alnus glutinosa,* common elder *Sambucus nigra* and ivy *Hedera helix* for shrubs and climbers; and red valerian *Centranthus ruber*, wild daffodil *Narcissus pseudonarcissus* and foxglove *Digitalis purpurea* as border plants.

Recommendation 7

It is recommended that native British species are incorporated within the planting scheme for the final landscaping design in order to enhance the overall value of the site for biodiversity. Species should be selected from recommendations made in the Camden Biodiversity Action Plan.

Green infrastructure should be incorporated into the design scheme. Green infrastructure including green roofs and green walls has become a fundamental part of urban site and building design, creating floral and faunal opportunities in otherwise ecologically featureless areas of hardstanding. It is strongly recommended that all green infrastructure to be created is designed with maximum biodiversity value in mind. Such green infrastructure features have been identified as an opportunity to maximise biodiversity within urban and sub-urban areas within Policies G1 and G5 within the London Plan, as set out in Appendix 1, and Policy A3 of the Camden Local Plan (2017), and so the inclusion of such features would directly address local planning policy targets.

Green roofs can be installed on any flat, or slightly sloping, roof surface and can be beneficial for a wide variety of species. The principle behind a green roof is that it is intentionally planted to some extent. Design specifications should focus upon creating a structurally diverse open mosaic habitat with a variety of substrate types and pollinator-friendly plant species. The provision of a green roof would be an attractive option for both increasing biodiversity and providing an attractive feature within the development. Further details on green roofs in provided in Appendix 5.

Green walls are walls with living plants growing on them, enhancing otherwise featureless areas. The process of allowing and encouraging plants to grow on and up walls allows the natural environment to be extended into urban areas. Green walls that comprise climbers and light weight support structures such as wires and trellis are relatively cheap to develop and maintain. Creating green walls by allowing climbing species to attach themselves to the actual structure of existing walls or fences is also a viable option. Fruit trees such as apples and pears can also be used to form a green wall by training them as espaliers. Further details on green walls in provided in Appendix 5.

Recommendation 8

Include green infrastructure provision within the development designs in order to ensure biodiversity gains for local priority species and biodiversity in general. The provision of green roofs and green walls will address both national and local policy.

Enhanced opportunities for breeding birds should be incorporated into the design scheme. Bird boxes should be mounted on trees and built structures at the site. It is recommended that there is a focus on swift, together with the provision of generalist bird boxes. Examples of suitable boxes are shown in Appendix 4 together with information concerning the correct siting of these enhancement features.

Recommendation 9

A minimum of 4 bird boxes should be installed at the site, to include those targeted towards swifts.

The wider landscape has the potential for use by foraging bats. With this in mind, enhanced opportunities for roosting bats should also be provided at the site through installation of bat boxes. Examples of suitable boxes will be provided following the nocturnal bat roost survey(s) to be undertaken at the site, as this will give an indication of bat community structure and important foraging areas at the site.

Recommendation 10

Provisions should be made for roosting bats at the site post-development. Details on box specifications will be provided following the nocturnal bat roost survey(s).

As set out within the Environment Act (2021), biodiversity gains at the site must demonstrably achieve 10% or more. A Biodiversity Net Gain (BNG) assessment should be undertaken for the proposed development following the methodology set out by Natural England (2023).

Recommendation 11

Undertake a Biodiversity Net Gain (BNG) assessment for the proposed development.

The London Plan also sets out targets for green infrastructure value in new urban developments. Predominantly commercial developments must achieve an Urban Greening Factor (UGF) score of at least 0.3; residential developments must achieve a score of 0.4. It is recommended that a UGF assessment is undertaken for the proposed development so as to satisfy those requirements set out by the London Plan.

Recommendation 12

Undertake an Urban Greening Factor (UGF) assessment for the proposed development.

The Environment Act (2021) states that all Biodiversity Net Gain assessments must be accompanied by an appropriate management plan that covers the next 30 years of site management. This serves to ensure that all proposed habitats achieve the desired ecological value used in net gain calculations. It is recommended that a Landscape and Ecology Management Plan (LEMP) is produced in order to ensure legislative compliance.

Recommendation 13

Produce a Landscape and Ecology Management Plan (LEMP) covering the next 30 years to accompany the Biodiversity Net Gain assessment.

Summary of recommendations

Table 13 below summarises the recommendations made within this report, and specifies the stage of the development at which action is required. Colour coding of cells within the table is as follows:

Key:

No action required for this species group at this stage

Action required (see notes for details)

Level of action required will be determined following the further survey work

Table 13: Summary of recommendations at 81 Belsize Park Gardens, London

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Onsite habitats	Retain mature tree. Incorporate high value green infrastructure habitats into the landscaping scheme.	Protect retained tree.	Protect retained tree.	Native planting and green infrastructure habitat creation.
Bats	Further survey work Develop sensitive lighting scheme.	TBC	TBC Incorporate integrated bat boxes into new building	Bat boxes and native planting

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
	Bat boxes and native planting		Implement sensitive lighting scheme during construction	
Birds	Bird boxes and native planting	No	Timing of works for vegetation removal OR further survey work Incorporate integrated bird boxes into new building	Bird boxes and native planting

Table 14: Summary of further surveys recommended at 81 Belsize Park Gardens, London

Species/species group	Purpose of survey	Survey period (inclusive unless otherwise stated)
Bats (Nocturnal Bat Roost Survey)	Confirm presence/absence and understand species assemblage.	April-Sept

6. CONCLUSIONS

In April 2023, MKA Ecology Ltd undertook a Preliminary Ecological Appraisal and Preliminary Roost Assessment at 81 Belsize Park Gardens, London in order to support a planning application for the remodelling and renovation of the building and associated hardstanding into an education and performing arts facility.

The site is dominated by hardstanding and buildings, with one semi-mature tree and some vegetation on the walls and roof, including dense ivy. The tree is considered to be of elevated ecological value in the context of the site. It is recommended that the tree be retained under the proposals and if this is not possible, to be replaced by a native species.

The potential protected species constraints that were identified in the assessment of the site relate to invasive species, bats and breeding birds. It is strongly recommended that all vegetation clearance at the Site is timed sensitively outside of breeding bird season (i.e., cleared between September and February) in order to avoid potentially lengthy delays if nests are found during nesting bird checks. All instances of invasive plant species should be subject to sensitive removal from the site, with all arisings disposed of as controlled waste. Building B1 will require a single nocturnal bat roost survey in order to ascertain the presence or likely absence of bat roosts; this should take place ideally between May and August, with April and September being suboptimal. While bat roost potential was judged to be low, should bat roosts be identified in the building, further surveys will be required. A sympathetic lighting scheme should be developed to minimise impacts on bat activity at the site post development.

There is potential for the ecological value of the site to be elevated through a number of biodiversity enhancements including planting of native trees and shrubs, creation of green roofs and green walls, and the integration of bird and bat boxes. These features will greatly improve the ecological value of the new development, and address local and national planning policy and legislation. The Environment Act (2021) mandates a demonstrable net gain in biodiversity of at least 10% for all planning permissions granted in England from November 2023. The London Plan requires that predominantly residential developments achieve an Urban Greening Factor (UGF) score of 0.4 and that predominantly commercial developments achieve a UGF score of 0.3. It is recommended that BNG and UGF assessments are undertaken so as to ensure that the development delivers sufficient biodiversity gains and green infrastructure. A LEMP should be produced alongside the BNG assessment so as to ensure the successful creation and long-term management of all habitats to be created at the site.

7. REFERENCES

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8. APPENDICES

8.1. Appendix 1: Relevant wildlife legislation and planning policy

Please note that the following is not an exhaustive list, and is solely intended to cover the most relevant legislation pertaining to species commonly associated with development sites.

Subject	Legislation (England)	Relevant prohibited actions
Amphibians		
Great crested newt *Triturus cristatus* Natterjack toad *Epidalea calamita*	Schedule 2 of Conservation of Habitats and Species Regulations (2017) Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Deliberately capture or kill, or intentionally injure; • Deliberately disturb or recklessly disturb them in a place used for shelter or protection; • Damage or destroy a breeding site or resting place; • Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and • Possess an individual, or any part of it, unless acquired lawfully.
Reptiles		
Common lizard *Zootoca vivipara* Adder *Vipera berus* Slow-worm *Anguis fragilis* Grass snake *Natrix helvetica helvetica*	Part of Sub-section 9(1) of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill or injure individuals of these species (Section 9(1)).

Subject	Legislation (England)	Relevant prohibited actions
Sand lizard *Lacerta agilis* Smooth snake *Coronella austriaca*	Full protection under Section 9 of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Deliberately or intentionally kill, capture (take) or intentionally injure; • Deliberately disturb; • Deliberately take or destroy eggs; • Damage or destroy a breeding site or resting place or intentionally damage a place used for shelter; or • Intentionally obstruct access to a place used for shelter.
Birds		
All wild birds	Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure, or take any wild bird or their eggs or nests.
'Schedule 1' birds	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)	• Disturb any wild bird listed on Schedule 1 whilst it is building a nest or is in, on, or near a nest containing eggs or young; or • Disturb the dependent young of any wild bird listed on Schedule 1.
Mammals		
Bats (all UK species)	Schedule 2 of Conservation of Habitats and Species Regulations (2017)	• Deliberately capture, injure or kill a bat; • Deliberately disturb a bat (disturbance is defined as an action which is likely to: (i) Impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) Impair their ability to hibernate or migrate; or (iii) Affect significantly the local

Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	distribution or abundance of the species); • Damage or destroy a bat roost; • Intentionally or recklessly disturb a bat at a roost; or • Intentionally or recklessly obstruct access to a roost. In this interpretation, a bat roost is "*any structure or place which any wild [bat]...uses for shelter or protection*". Legal opinion is that the roost is protected whether or not the bats are present at the time.
Badger *Meles meles*	Protection of Badgers Act 1992	Under Section 3 of the Act: • Damage a sett or any part of it; • Destroy a sett; • Obstruct access to, or any entrance of, a sett; or • Disturb a badger when it is occupying a sett. A sett is defined legally as any structure or place which displays signs indicating current use by a badger (Natural England 2007).
Hazel dormouse *Muscardinus avellanarius*	Schedule 2 of Conservation of Habitats and Species Regulations (2017)	• Intentionally or deliberately capture or kill, or intentionally injure;

Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Deliberately disturb or intentionally or recklessly disturb them in a place used for shelter or protection; • Damage or destroy a breeding site or resting place; • Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and • Possess an individual, or any part of it, unless acquired lawfully.
Otter *Lutra lutra*	Schedule 2 of Conservation of Habitats and Species Regulations (2017) Section 9(4)(b) and (c) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Deliberately capture, injure or kill an otter; • Deliberately disturb an otter in such a way as to be likely to significantly affect the local distribution or abundance of otters or the ability of any significant group of otters to survive, breed, rear or nurture their young; • Intentionally or recklessly disturb any otter whilst it is occupying a holt; • Damage or destroy or intentionally or recklessly obstruct access to an otter holt.
Water vole *Arvicola amphibius*	Section 9 of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure or take water voles; • Possess or control live or dead water voles or derivatives; • Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection; or • Intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose.

Subject	Legislation (England)	Relevant prohibited actions
Crustaceans		
White-clawed crayfish *Austropotamobius pallipes*	Section 9(1) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure or take white-clawed crayfish by any method.

The Environment Act 2021

The Environment Act 2021, sets out key legislation after the UK's exit from the European Union. With the largest changes to green regulations in decades, the Act includes the establishment of an Office for Environmental Protection, targets on air pollution, water quality and biodiversity, and the enshrinement of the 25 Year Environment Plan in law. The Act also makes provisions for a mandatory 10% net gain in biodiversity for all developments covered by the Town and Country Planning Act and it also introduces a statutory requirement for Local Nature Recovery Strategies.
Full legislation text available at: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

The Conservation of Habitats and Species Regulations 2017 (as amended)

Full legislation text available at: The Conservation of Habitats and Species Regulations 2017 (as amended) (legislation.gov.uk)

The Wildlife and Countryside Act 1981 (as amended)

Full legislation text available at: http://www.legislation.gov.uk/ukpga/1981/69/contents.

Countryside and Rights of Way Act 2000

Full legislation text available at: http://www.legislation.gov.uk/ukpga/2000/37/contents

Protection of Badgers Act 1992

Full legislation text available at: http://www.legislation.gov.uk/ukpga/1992/51/contents

Section 41 of Natural Environments and Rural Communities (NERC) Act 2006

Full legislation text available at: http://www.legislation.gov.uk/ukpga/2006/16/section/41

Many of the species above, along with a host of others not afforded additional protection, are listed on Section 41 of the NERC Act 2006.

Section 41 (S41) of the Natural Environment and Rural Communities (NERC Act 2006) requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 943 species) has been drawn up in consultation with Natural England and draws upon the UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats.

The S41 list should be used to guide decision-makers such as local and regional authorities to have regard to the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006. The duty applies to all local authorities and extends beyond just conserving what is already there, to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

Schedule 9 of Wildlife and Countryside Act 1981 (as amended)

In addition to affording protection to some species, The Wildlife and Countryside Act 1981 (as amended) also names species which are considered invasive and require control. Section 14 of the Act prohibits the introduction into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, Great Britain in a wild state, or any species of animal or plant listed in Schedule 9 to the Act. In the main, Schedule 9 lists non-native species that are already established in the wild, but which continue to pose a conservation threat to native biodiversity and habitats, such that further releases should be regulated.

Wild Mammals (Protection) Act 1996

Full legislation text is available at: http://www.legislation.gov.uk/ukpga/1996/3/contents

Under this legislation it is an offence to cause unnecessary suffering to wild mammals, including by crushing and asphyxiation. It largely deals with issues of animal welfare, and covers all non-domestic mammals including commonly encountered mammals on development sites such as rabbits, foxes and field voles.

Birds of Conservation Concern (BoCC)

This is a quantitative assessment of the status of populations of bird species which regularly occur in the UK, undertaken by the UK's leading bird conservation organisations. It assesses a total of 245 species against a set of objective criteria to place each on one of three lists – Green, Amber and Red – indicating an increasing level of conservation concern. There are currently 70 species on the Red list, 103 on the Amber list and 72 on the Green list. The classifications described have no statutory implications, and are used merely as a tool for assessing scarcity and conservation value of a given species.

National Planning Policy Framework (NPPF)

Full text is available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

The revised NPPF was updated on 20 July 2021 setting out the Government's planning policies for England and the process by which these should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour of

sustainable development, with sustainable development defined as a balance between economic, social and environmental needs.

Policies 174 to 188 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:

- Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;
- Recognise the wider benefits of ecosystem services; and
- Minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

Furthermore, there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also:

"*Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity*".

Local Planning Policy

Given that the Site is located within London, consideration of the policies relating to biodiversity within the London Plan 2021 has also been given. These include policies G1 and G5 to G8, as detailed below:

- Policy G1 Green infrastructure
  - *a) London's network of green and open spaces, and green features in the built environment, should be protected and enhanced. Green infrastructure should be planned, designed and managed in an integrated way to achieve multiple benefits.*
  - *b) Boroughs should prepare green infrastructure strategies that identify opportunities for cross-borough collaboration, ensure green infrastructure is optimised and consider green infrastructure in an integrated way.*
  - *c) Development Plans and area-based strategies should use evidence, including green infrastructure strategies, to:*
    1. *identify key green infrastructure assets, their function and their potential function*
    2. *identify opportunities for addressing environmental and social challenges through strategic green infrastructure interventions.*
  - *d) Development proposals should incorporate appropriate elements of green infrastructure that are integrated into London's wider green infrastructure network.*

- Policy G5 Urban greening
  a) *Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage.*
  b) *Boroughs should develop an Urban Greening Factor (UGF) to identify the appropriate amount of urban greening required in new developments. The UGF should be based on the factors set out in within the London Plan, but tailored to local circumstances. In the interim, the Mayor recommends a target score of 0.4 for developments that are predominately residential, and a target score of 0.3 for predominately commercial development (excluding B2 and B8 uses).*
  c) *Existing green cover retained on site should count towards developments meeting the interim target scores set out in (B) based on the factors set out in the London Plan*

- Policy G6 Biodiversity and access to nature
  a) *Sites of Importance for Nature Conservation (SINCs) should be protected.*
  b) *Boroughs, in developing Development Plans, should:*
     1. *use up-to-date information about the natural environment and the relevant procedures to identify SINCs and ecological corridors to identify coherent ecological networks*
     2. *identify areas of deficiency in access to nature (i.e. areas that are more than 1km walking distance from an accessible Metropolitan or Borough SINC) and seek opportunities to address them*
     3. *support the protection and conservation of priority species and habitats that sit outside the SINC network, and promote opportunities for enhancing them using Biodiversity Action Plans*
     4. *seek opportunities to create other habitats, or features such as artificial nest sites, that are of particular relevance and benefit in an urban context*
     5. *ensure designated sites of European or national nature conservation importance are clearly identified and impacts assessed in accordance with legislative requirements.*
  c) *Where harm to a SINC is unavoidable, and where the benefits of the development proposal clearly outweigh the impacts on biodiversity, the following mitigation hierarchy should be applied to minimise development impacts:*
     1. *avoid damaging the significant ecological features of the site*
     2. *minimise the overall spatial impact and mitigate it by improving the quality or management of the rest of the site*
     3. *deliver off-site compensation of better biodiversity value.*

d) Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information and addressed from the start of the development process.

e) Proposals which reduce deficiencies in access to nature should be considered positively.

- Policy G7 Trees and woodlands

a) London's urban forest and woodlands should be protected and maintained, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest – the area of London under the canopy of trees.

b) In their Development Plans, boroughs should:

1. *protect 'veteran' trees and ancient woodland where these are not already part of a protected site*
2. *identify opportunities for tree planting in strategic locations.*

c) Development proposals should ensure that, wherever possible, existing trees of value are retained. If planning permission is granted that necessitates the removal of trees there should be adequate replacement based on the existing value of the benefits of the trees removed, determined by, for example, i-tree or CAVAT or another appropriate valuation system. The planting of additional trees should generally be included in new developments – particularly large-canopied species which provide a wider range of benefits because of the larger surface area of their canopy.

- Policy G8 Food growing

a) In Development Plans, boroughs should:

1. *protect existing allotments and encourage provision of space for urban agriculture, including community gardening, and food growing within new developments and as a meanwhile use on vacant or under-utilised sites*
2. *identify potential sites that could be used for food production.*

Camden Council has produced an adopted Local Plan, which contains one policy specifically relating to biodiversity and habitat conservation:

- Policy A3 – Biodiversity

The Council will protect and enhance sites of nature conservation and biodiversity. We will:

a) designate and protect nature conservation sites and safeguard protected and priority habitats and species;

b) grant permission for development unless it would directly or indirectly result in the loss or harm to a designated nature conservation site or adversely affect the status or population of priority habitats and species;

c) seek the protection of other features with nature conservation value, including gardens, wherever possible;

d) *assess developments against their ability to realise benefits for biodiversity through the layout, design and materials used in the built structure and landscaping elements of a proposed development, proportionate to the scale of development proposed;*
e) *secure improvements to green corridors, particularly where a development scheme is adjacent to an existing corridor;*
f) *seek to improve opportunities to experience nature, in particular where such opportunities are lacking;*
g) *require the demolition and construction phase of development, including the movement of works vehicles, to be planned to avoid disturbance to habitats and species and ecologically sensitive areas, and the spread of invasive species;*
h) *secure management plans, where appropriate, to ensure that nature conservation objectives are met; and*
i) *work with The Royal Parks, The City of London Corporation, the London Wildlife Trust, friends of park groups and local nature conservation groups to protect and improve open spaces and nature conservation in Camden.*

Trees and vegetation

The Council will protect, and seek to secure additional, trees and vegetation. We will:

j) *resist the loss of trees and vegetation of significant amenity, historic, cultural or ecological value including proposals which may threaten the continued wellbeing of such trees and vegetation;*
k) *require trees and vegetation which are to be retained to be satisfactorily protected during the demolition and construction phase of development in line with BS5837:2012 'Trees in relation to Design, Demolition and Construction' and positively integrated as part of the site layout;*
l) *expect replacement trees or vegetation to be provided where the loss of significant trees or vegetation or harm to the wellbeing of these trees and vegetation has been justified in the context of the proposed development;*
m) *expect developments to incorporate additional trees and vegetation wherever possible.*

8.2. Appendix 2: UK Habitat Classification species list

Please note that these lists are intended to be incidental records and do not constitute a full botanical survey of the site. Relative abundance is given using the DAFOR scale. Please see Table 2 for details.

Buildings (u1b5)

Common Name	Systematic Name	Relative abundance
Ivy	*Hedera helix*	Abundant
Herb Robert	*Geranium robertianum*	Occasional
Annual meadow-grass	*Poa annua*	Rare
Corydalis spp.	*Corydalis spp.*	Rare
Hart's-tongue	*Asplenium scolopendirum*	Rare
Willowherb spp.	*Epolobium spp.*	Rare

Developed land; sealed surface (u1b)

Common Name	Systematic Name	Relative abundance
Annual meadowgrass	*Poa annua*	Dominant
Chickweed	*Stellaria media*	Dominant
Groundsel	*Senecio vulgaris*	Occasional
Petty spurge	*Euphorbia peplus*	Occasional
Cherry	*Prunus spp.*	Rare
Thistle spp.	*Cirsium spp.*	Rare
Mexican fleabane	*Erigeron karvinskianus*	Rare
Wood avens	*Geum urbanum*	Rare

8.3. Appendix 3: Site photographs

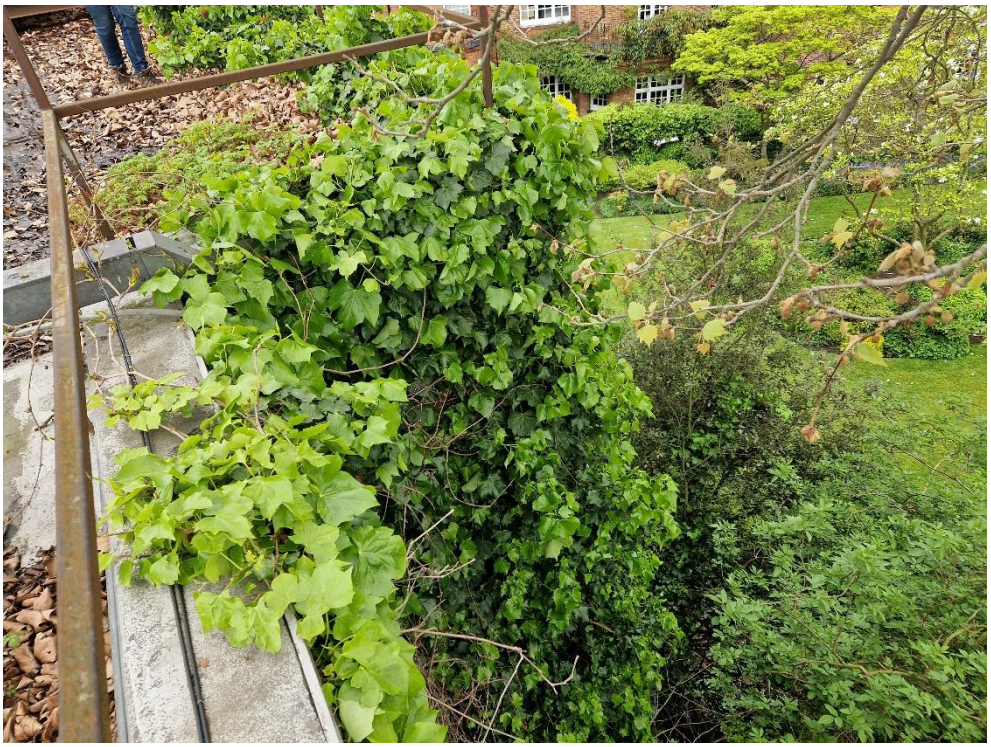
Photograph 1: Hardstanding, Building 1 and semi-mature cherry tree – u1b and u1b5

Photograph 2: Building rooftop, facing north – u1b5

Photograph 3: Butterfly-bush (Invasive Non-native Species 1, Figure 1)

Photograph 4: Virginia creeper (Invasive Non-native Species 2, Figure 1)

Photograph 5: Dense ivy on eastern aspect (Target Note 2, Figure 1)



Photograph 6: Wall crevice leading to a cavity space (Target Note 1, Figure 1)

Photograph 7: Opening in skylight providing potential access point (Target Note 3, Figure 1)

Photograph 8: Internal void spaces accessible by skylight (Target Note 3, Figure 1)

8.4. Appendix 4: Bird and bat box recommendations

Bird box recommendations

A large number of bird boxes are available, designed for the specific needs of individual species. These are normally either designed to be mounted onto trees, external walls or integrated into a building. In general, bird boxes should be mounted out of direct sunlight and prevailing winds, out of reach of predators, with suitable foraging habitat for the subject species close by. Bird boxes should also be left up over winter as they can provide useful roosting sites for birds in bad weather.

Nest boxes should be cleaned at the end of each bird breeding season. All nesting material and other debris should be removed from the box. It should then be scrubbed clean with boiling water to kill any parasites (avoid using any chemicals). Once the box is clean, it should be left to dry out thoroughly. Under the Wildlife and Countryside Act 1981 it is an offence to disturb breeding birds and therefore annual cleaning is best undertaken from October to January when there is no risk of disturbing breeding birds.

Generalist boxes

Boxes to attract garden birds and woodland breeding species such as tits, nuthatch, redstart and pied flycatcher can be placed in gardens, orchards, woodlands and a wide variety of other habitats. The species of birds attracted to the box will depend upon the size of the entrance hole (see table below).

Boxes should be fixed two to five metres up a tree or wall, out of the reach of predators such as domestic cats. Unless there are trees or buildings, which give permanent shelter, it is best facing between north and east.

General		
Example	**Description**	**Picture**
Schwegler No. 1B General Purpose Nest box	www.schwegler-nature.com Suitable for various garden and woodland birds, created with different sized entrance holes to avoid competition between species. Other variations (e.g. 2M) can be free hanging, to deter predators.	

Entrance Hole	Species
26 mm	Blue-, Marsh-, Coal- and Crested Tit, possibly Wren. All other species are prevented from using the nest box due to this smaller entrance hole
32 mm	Great-, Blue-, Marsh-, Coal- and Crested Tit, Redstart, Nuthatch, Pied Flycatcher, Tree and House Sparrows.
Oval	Redstart; also used by species that nest in the diameter 32 mm boxes. However, because more light enters the brood chamber, it is preferred by Redstarts.

Swift boxes

Swifts are colonial nesters and it is important to have several nest sites in one area. It is recommended that most buildings should have between 4 and 10 nest provisions. Swifts also feed almost exclusively on the aerial plankton of flying insects and airborne spiders of small to moderate size, so therefore require habitats which support these invertebrates.

Nest boxes designed for swifts should be installed at least 5m high, around the eaves of the building or under deeply overhanging eaves to allow swifts to drop into the air to forage. The boxes should be positioned away from climbing plants to avoid access for predators such as rodents.

Swifts typically nest in flat spaces within buildings or within a crevice or cavity. The ideal nest box should have an oval or rectangular hole around 30mm (h) x 65mm (w). The internal dimensions of the box should be approximately 400mm (w) x 200mm (d) x 150mm (h).

Swifts can be attracted to areas that they have not previously colonised using ‘swift response calls’. Audio CDs are available for this purpose and are available on the Schwegler website (www.schwegler-nature.com).

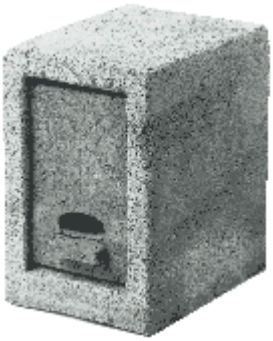
Swift		
Example	**Description**	**Picture**
Triple Genesis Swift Nest Box	https://www.wildcare.co.uk/ It can be mounted on an external wall to provide three swift nesting sites.	
Swift box model 30	http://actionforswifts.blogspot.com/p/diy-swift-box-designs.html This box is suitable for any location as it has a double thickness, waterproof roof (made of uPVC). The 30° sloping roof should deter predators.	
Schwegler Swift and Bat Box 1MF	www.schwegler-nature.com This box contains two nesting chambers for Swifts, each with its own entrance, allowing two pairs to breed. In addition, a recess in the rear panel creates a space between the wall of the building and box, making it ideal for bats that inhabit buildings, such as the Pipistrelle.	

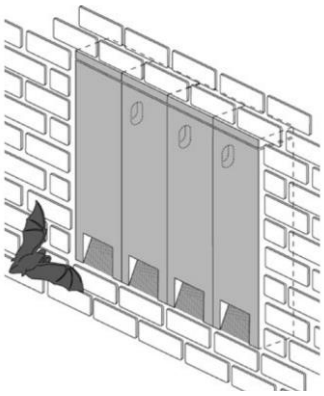
Bat box recommendations

A wide range of bat boxes are available to suit a variety of species and design requirements. Bat boxes can be mounted externally on buildings, built directly into the wall structure or mounted on trees (dependent on box design).

Boxes are more likely to be inhabited if they are located where bats feed and it may help to place the box close to features such as tree lines or hedgerows, which bats are known to use for navigation and can provide immediate cover for bats leaving the roost. Boxes should be placed in areas sheltered from strong winds and are exposed to the sun for part of the day. Access to any bat roosting features should not be lit and should also be at a reasonable height to avoid predation (at least 2m if possible, preferably 4-5m).

Example	Description	Picture
Schwegler General Purpose Bat Box 2F	www.schwegler-nature.com Height: 33 cm Weight: approx. 3.8 kg External diameter: 16 cm Installation: Hanging A general purpose box, suitable for all species.	
Schwegler General Purpose Bat Box 2F with Double Front Panel	www.schwegler-nature.com Height 33 cm Weight: approx. 4.1 kg External diameter: 16 cm Installation: Hanging This box is suitable for crevice dwellers, such as Nathusius´ pipistrelle, Daubenton`s bat and common pipistrelle.	

Example	Description	Picture
Schwegler 1FF	www.schwegler-nature.com Dimensions: 14(d) x 27(w) x 43(h) cm Weight: 9.9 kg Installation: Hanging This box is suitable for crevice dwellers, such as Nathusius´ pipistrelle, Daubenton`s bat and common pipistrelle. This box minimises temperature fluctuations in spring and autumn and is self-cleaning.	
Schwegler 1FQ	www.schwegler-nature.com Dimensions: 60(h) x 35(w) x 9(d) cm Weight: 15.8kg Installation: Attached to most external brick, timber or concrete walls at least 3m high. Can also be placed inside roof space This box is ideal for all types of bats that inhabit buildings. The box is weather-resistant and is also temperature controlled and self-cleaning. The front panel of the box can also be painted during manufacture, to match an existing colour.	
Brick Box Type 27	www.schwegler-nature.com Dimensions: 26.5(h) x 18(w) x 24(d) cm Weight: 9.5kg Installation: Can be flush with outside wall and rendered or covered so only the entrance hole is visible. This box is ideal for all types of bats that inhabit buildings.	

Example	Description	Picture
Schwegler 2FR	www.schwegler-nature.com Dimensions: 47(h) x 20(w) x 12.5(d) Weight: 9.8kg Installation: Can be installed on external walls – either flush or beneath a rendered surface in concrete and, during renovation work, under wooden panelling or in building cavities. Several tubes should be installed together (recommended three). This box is ideal for all types of bats that inhabit buildings. By installing boxes side by side a colony roosts can be created with any size requirement. This box has three different environmental partitions inside, attracting different species. The box is self-cleaning.	 
Schwegler 1WI	www.schwegler-nature.com Dimensions: 55(h) x 35(w) x 9.5(d) cm Weight: 15kg Installation: Attached to most types of external brick, timber or concrete walls. It can be installed flush-mounted and rendered over or simply against the wall. It should be installed at a height of at least 3m. This box typically attracts building-inhabiting bat species like pipistrelles or serotine bat. This box is weather-resistant and designed for both winter hibernation and larger colonies in summer, including nursery roosts.	

Example	Description	Picture
Schwegler 1MF (Swift and Bat)	www.schwegler-nature.com Dimensions: 46(h) x 43(w) x 22.5(d) cm. Weight: approx. 24 kg Installation: The box can be hung against any types of wall of any type of building, between 6-7m above ground level. This box is designed for nesting swifts, however the recess in the rear panel creates a space between the wall of the building and the box, making it ideal for bats that inhabit building, such as common pipistrelle. Whilst the box may require cleaning, the back recess for bats requires no maintenance.	

8.5. Appendix 5: Green infrastructure recommendations

Green roofs

It is recommended that any new buildings are designed to include green roofs, with such features being sown with drought tolerant specimens that would rely on rainwater topped up by incidental watering by facilities, unless an inbuilt irrigation system could be incorporated. Examples of green shelters and cycle stores are shown in Figures 1 to 2 below.

Figure 1. Example of green roofed cycle store
http://greenroofshelters.co.uk/

Figure 2. Example of green roofed shelter
http://greenroofshelters.co.uk/

By choosing a good mix of drought-tolerant foodplants, as well as some bare ground, green roofs can be very cheap and extremely effective in boosting biodiversity. The key is to connect their functionality with the landscaping across the rest of the site. The green roofed areas are also suitable for ground-nesting pollinators along with a suite of supplementary pollen, nectar and foliage provision that wouldn't compete with the more robust planting at ground level, comprising a mix of sedums with a mix of annual/biennial species in order to ensure a self-sustaining pattern of bare ground and seasonal cover. Such species could comprise Viper's Bugloss *Echium vulgare*, Common Centaury *Centaurium erythraea*, Yellow Rattle *Rhinanthus minor*, Mignonette *Reseda sp*. and Borage *Borago officinalis*, along with some low-growing hardy species such as Dog Violet *Viola riviniana* and Germander Speedwell *Veronica chamaedrys*.

Green walls

It is recommended that a green wall system be installed within the site. Green walls are walls with vegetation growing on them, enhancing otherwise featureless areas of bare wall. They may be natural, such as brick or stone-built walls which have been naturally colonized by lichens, mosses, ferns and flowering plants or they can be large scale engineered green walls. The process of allowing and

encouraging plants to grow on and up walls allows the natural environment to be extended into urban areas.

Green walls can provide a food source for invertebrates on which, in turn, other invertebrates and birds may feed. They also provide breeding and nesting habitat for invertebrates, birds (including house sparrow, a London biodiversity action plan priority species) and possibly bats and are ideal for including artificial animal breeding structures such as nest boxes or bat roosting boxes. Green walls can mimic natural rock faces of cliff and rock slopes and provide resting and feeding places for birds, invertebrates and even small mammals. Climbers provide nesting habitat for birds such as wrens, blackbirds, song thrushes and house sparrows. The combination of green walls with green roofs provides a route for wildlife between habitats at ground and roof level.

Green walls that comprise climbers and light weight support structures such as wires and trellis are relatively cheap to develop and maintain. The installation of trellises and wires on walls can aid vegetation growth and limit direct contact between the wall and plants. However, creating green walls by allowing climbing species to attach themselves to the actual structure of existing walls is also a viable option. Fruits trees such as apples and pears can also be used to form a green wall by training them as espaliers.

Careful choice of species and the orientation of these walls will increase the potential of a living wall to harbour other forms of wildlife. For north facing walls, the shade and relative cold offered in these positions, along with the potential for dry soil caused by the wall's 'rain shadow', requires careful consideration of shade tolerant species, such as ivy *Hedera Helix* and hydrangea *Hydrangea sp*. to ensure success. Creating green walls from climbing species such as ivy and hydrangea is often a cheap and simple process, as these species naturally cling to existing wall structures with small roots. Ivy is also a valuable food source for innumerable invertebrates which feed on its leaves, flowers and nectar, and it also provides valuable over-wintering and hibernation habitat.

Engineered green walls, or ‘vertical gardening’, provide an opportunity for impressive visual impact whilst providing a living vertical habitat with biodiversity value. They may be either designed as a large structure attached to a wall containing a variety of planted species and an irrigation system which provides the plants with water and nutrients, or as a hanging wall at the top of a building where plants are allowed to hang down from suspended planters, entailing no direct contact between the plants and the wall. Whilst providing impressive displays many engineered green walls comprise mainly non-native plants and can be expensive to maintain and as such their inclusion needs careful consideration.

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