Appendix C Preliminary Ecological Appraisal



Preliminary Ecological Appraisal

Moorfields Eye Hospital

Camden & Islington Foundation NHS Trust

Project reference: Moorfields Eye Hospital Project number: 60588325

May 2019

Quality information

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1. Executive Summary

AECOM was instructed by the Camden & Islington Foundation NHS Trust to undertake a Preliminary Ecological Appraisal of the proposed Moorfields Eye Hospital development site. The development site (hereafter referred to as 'the site') comprises the northern part of St Pancras Hospital and covers an area of 0.73 hectares (ha) Redevelopment of the site is proposed to accommodate a new integrated facility for Moorfields Eye Hospital and the University College London (UCL) Institute of Ophthalmology.

St Pancras Hospital comprises 14 buildings; Ash House, Bloomsbury Building, Camley Centre, East Wing, Gate House, Huntley Centre, The Jules Thorn Building, North East Building, North Wing, Residence Building, Rivers Crisis House, South Wing, The Well and the West Wing (hereafter referred to as the 'wider hospital site').

The site is bounded by Granary Street to the north and the remainder of St. Pancras Hospital to the south. The Regents Canal runs to the east of the site, with mixed-use residential development situated further east of the canal, such as the Gasholder Park and Urbanest. A construction site is also directly adjacent to the eastern boundary, associated with the 101 Camley Street residential development, which will comprise 4-11 storeys for 121 residential units. The Unite Students residential accommodation and King's Cross Residence are adjacent to the western boundary of the site.

An extended Phase 1 Habitat Survey of the site was undertaken by AECOM on 24 April 2019. The habitats onsite comprise hardstanding, buildings, introduced shrub, scrub and trees. These are shown in Figure 1 (Appendix A). There is ecological connectivity between the site and St Pancras Gardens, 75 m to the south of the site. St Pancras Gardens is a local Nature Conservation Site of Borough Importance Grade 2. In addition, the development site can function as a 'stepping stone' for the movement of species between two other nearby local Nature Conservation sites, St. Pancras Lock (100 m to the north-east) and Camley Street Local Nature Reserve (230 m to the south-east). These sites form part of a wildlife corridor in the local area.

Five buildings on the site were assessed for their suitability to support roosting bats. One building was determined to have moderate potential (Estates and Facilities Building), three buildings have low potential (Bloomsbury, Ash House and Jules Thorn Buildings) and one building has negligible potential (the Post Room and Mortuary) to support roosting bats. As a result of this assessment, further dusk/dawn surveys are required for the buildings that have moderate and low potential for bats.

Suitable habitat for nesting birds is present within the site in the form of trees, scrub and introduced shrub. It is recommended to schedule vegetation clearance out of the core nesting season for birds.

Virginia creeper, an invasive non-native species was recorded during the Phase 1 Habitat Survey. The Virginia creeper provides limited habitat for insects and other invertebrates as well as a food source and roosting for birds. Although listed on Schedule 9 of the Wildlife and Countryside Act (WCA), the hazard posed by the plant is very low, e.g. a risk of damage to built structures. Nevertheless, causing the plant to spread into the wild would contravene the WCA and it is recommended that an Invasive Species Management Plan is produced to manage this species with the site and measures to minimise the risk of spread of this species. Three other invasive non-native plants were identified within the site. Though these are not listed in the WCA, any invasive species that might provide a negative effect should be included in the INNS plan, as recommended by the London Invasive Species Initiative.

Opportunities for ecological enhancement of the site have been proposed in Section 6 to achieve an overall net gain for biodiversity in order to comply with regional and local policies. These opportunities include the provision of living roofs, living walls with climbing plants, planting street trees or installation of planters, use of native species or species with wildlife benefit in a Well-Being Garden for patients and insect hotels, log piles and installation of bat and bird boxes.

2. Introduction

2.1 Overview

AECOM was instructed by the Camden & Islington Foundation NHS Trust to undertake a Preliminary Ecological Appraisal of the proposed Moorfields Eye Hospital development site. The development site (hereafter referred to as 'the site') comprises the northern part of St Pancras Hospital and covers an area of 0.73ha. Redevelopment of the site is proposed to accommodate a new integrated facility for Moorfields Eye Hospital and the University College London (UCL) Institute of Ophthalmology.

St Pancras Hospital comprises 14 buildings; Ash House, Bloomsbury Building, Camley Centre, East Wing, Gate House, Huntley Centre, The Jules Thorn Building, North East Building, North Wing, Residence Building, Rivers Crisis House, South Wing, The Well and the West Wing (hereafter referred to as the 'wider hospital site').

The site is bounded by Granary Street to the north and the remainder of St. Pancras Hospital to the south. The Regents Canal runs to the east of the site, with mixed-use residential development situated further east of the canal, such as the Gasholder Park and Urbanest. A construction site is also directly adjacent to the eastern boundary, associated with the 101 Camley Street residential development, which will comprise 4-11 storeys for 121 residential units. The Unite Students residential accommodation and King's Cross Residence are adjacent to the western boundary of the site. The National Grid Reference for the site is TQ 29689 83612.

An extended Phase 1 Habitat Survey of the site was undertaken by AECOM on 24 April 2019.

2.2 The Site and Historic Condition

The site is currently in use as St Pancras hospital and comprises a complex of buildings. Redevelopment of the site is proposed to accommodate a new integrated facility for Moorfields Eye Hospital and the University College London (UCL) Institute of Ophthalmology. The redevelopment would necessitate demolition of all existing buildings on the old St. Pancras Hospital site and the construction of a new facility. The planning application for the proposed redevelopment is to be submitted in 2020.

2.3 Purpose

The PEA identifies whether there are known or potential ecological receptors (nature conservation designations, and protected and notable habitats and species including scheduled invasive non-native species) that may constrain or influence the design and implementation of the proposed development. The approach applied when undertaking this PEA accords with the Guidelines for Preliminary Ecological Appraisal published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017). The PEA addresses relevant wildlife legislation and planning policy as summarised in Section 3 of this report, and is consistent with the requirements of British Standard 42020:2013 Biodiversity. Code of Practice for Planning and Development.

To inform the PEA, a desk study and an extended Phase 1 Habitat Survey were undertaken by an appropriately experienced ecologist to identify ecological features within the proposed development site and the wider potential zone of influence of the proposed development. The development site was considered as the area within the red line boundary shown in Figure 1 (Appendix A). Additional details are provided in Section 4: Methods.

The purpose of the PEA was to:

- Identify and categorise all habitats present within the site and any areas immediately outside of the site where there may be potential for direct or indirect effects (the "zone of influence");
- Carry out an appraisal of the potential of the habitats recorded to support protected or notable species of fauna and flora including any invasive non-native species;
- Provide advice on any potential ecological constraints and opportunities in the zone of influence of the proposed development, including the identification (where relevant) of any requirements for follow-up habitat and species surveys and/or requirements for ecological mitigation and, where appropriate, opportunities for enhancement; and
- Provide a map showing the location of the identified ecological receptors of relevance.

The report identifies the scope of further ecological work (where necessary) that would be required to support a planning application. High-level recommendations are made on potential options for the avoidance, mitigation or

compensation of the potential impacts of the proposed development (where known) on the identified ecological receptors, and of potential enhancements to the biodiversity and ecosystem services of the site.

2.4 Quality Assurance

All AECOM ecologists follow the Chartered Institute of Ecology and Environmental Management (CIEEM) code of professional conduct when undertaking ecological work and many are Full Members. They are appropriately qualified and will conduct their work using all reasonable skill and care. Many senior AECOM ecologists are also Chartered Environmentalists or Ecologists. All staff members are committed to maintaining our certification to the international standards BS EN ISO 9001:2008 and 14001:2004 and BS OH SAS 18001:2007.

3. Wildlife Legislation and Planning Policy

3.1 Wildlife Legislation

The following wildlife legislation is potentially relevant to the proposed development:

- Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act (WCA) 1981 (as amended);
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006; and
- Animal Welfare Act 2006.

The above legislation has been considered when planning and undertaking this PEA using the methods described in Section 4, when identifying potential constraints to the proposed development, and when making recommendations for further survey, design options and mitigation, as discussed in Section 6. Compliance with legislation may require the attainment of relevant protected species licences prior to implementation of the proposed development.

Further information on the requirements of the above legislation is provided in Appendix C.

3.2 National Planning Policy

The National Planning Policy Framework (NPPF) was originally published on 27th March 2012 and detailed the Government's planning policies for England and how these are expected to be applied. The NPFF was then revised on 24th July 2018 and again on 19th February 2019.

The NPPF states the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

The NPPF specifies the obligations that the Local Authorities and the UK Government have regarding statutory designated sites and protected species under the UK and international legislation and how this is to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may, therefore, make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

The NPPF is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.

Further information on the relevant parts of the NPPF is provided in Appendix C.

3.3 Regional Planning Policy

Relevant regional planning policies for the site are detailed in the following documents:

- The Draft London Plan (2018);
- The London Environment Strategy (2018);
- The London Plan Spatial Development Strategy for Greater London (2016);
- London Biodiversity Action Plan (Greenspace Information for Greater London, 2007); and
- The Mayor's Biodiversity Strategy (2002).

Table 1 provides a summary of relevant regional planning policy. For the precise wording of each specific policy please refer to the source document. This planning policy has been considered when assessing potential ecological constraints and opportunities identified by the desk study and field surveys; and, when assessing requirements for further survey, design options and ecological mitigation, as described in Section 6.

Table 1. Summary of Regional Planning Policy

Document	Planning Policy	Purpose
The Draft London Plar (2018)	n Policy G1 Green Infrastructure	London's network of green and open spaces, and green features in the built environment such as green roofs and street trees, should be protected, planned, designed and managed as integrated features of green infrastructure.
	Policy G2 London's Green Belt	The Green Belt should be protected from inappropriate development proposals that would harm the Green Belt should be refused.
	Policy G3 Metropolitan Open Land	Metropolitan Open Land plays an important role in London's green infrastructure – the network of green spaces, features and places around and within urban areas. It should be protected from inappropriate development. Proposals to enhance it will be encouraged.
	Policy G4 Local green and open space	Local green and open spaces should be protected. The creation of new areas of publicly-accessible green and open space should be supported, especially in areas of deficiency in access to public open space. Proposals to enhance green and open space will be encouraged.
	Policy G5 Urban greening	The inclusion of urban greening measures in new development will result in an increase in green cover, and should be integral to planning the layout and design of new buildings and developments. This should be considered from the beginning of the design process. Urban greening covers a wide range of options including, but not limited to, street trees, green roofs, green walls, and rain gardens.
	Policy G6 Biodiversity and access to nature	Development proposals that are adjacent to or near SINCs or green corridors should consider the potential impact of indirect effects to the site, such as noise, shading or lighting. There may also be opportunities for new development to contribute to enhancing the nature conservation value of an adjacent SINC or green corridor by, for example, sympathetic landscaping that provides complementary habitat. London's water spaces make up an important set of habitats in London. Policy SI17 Protecting London's waterways addresses the multi-functional use, protection and development of water spaces, with a particular priority for improving and restoring sections of river. The habitat value of waterways is a key element of their future management
	Policy G7 Trees and woodlands	Trees and woodlands should be protected 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.
The London Environmen Strategy (2018)	t Chapter 5: Green Infrastructure	The Mayor will make London the world's first National Park City through policies and proposals on green infrastructure and the natural environment. Strategic actions include increasing London's green cover, conserving and enhancing wildlife and natural habitats; valuing London's natural capital as an economic asset; encouraging greater participation and involvement by Londoners in the protection and enhancement of the natural environment at the neighbourhood level.
The London Plan - Spatial Developmen Strategy for Greate	 Policy 2.18 Green Infrastructure 	Protection, promotion, expansion and management of the extent and quality of London's network of green infrastructure.
London (2016)	Policy 5.3 Sustainable Design and Construction	Promotion and protection of biodiversity and green infrastructure, for example through the provision of green roofs.

Document	Planning Policy	Purpose
	Policy 5.10 Urban Greening	Integration of green infrastructure, which could include tree planting; green roofs and walls; and soft landscaping.
	Policy 5.11 Green Roofs and Development Site	Incorporation of roof, wall and site planting, especially green roofs and walls where feasible.
	Policy 7.19 Biodiversity and Access to Nature	Ensure a proactive approach to the protection, enhancement, creation, promotion and management of biodiversity in support of the Mayor's Biodiversity Strategy. This means planning for nature from the beginning of the development process and taking opportunities for the positive gains for nature through the layout, design and materials of development proposals and appropriate biodiversity actions plans.
London Biodiversity Action Plan (Greenspace Information for Greater	Protected Species	Habitats and species that are of importance for biodiversity in London. Priority habitats of relevance to the Site are "Parks and urban green spaces", which support biodiversity and provide contact with nature.
London, 2007)		Measures to conserve and enhance biodiversity in London are contained within a document entitled Design of Biodiversity in London, which includes recommendations such as the inclusion of green and brown roofs within new developments.
The Mayor's Biodiversity Strategy (2002)	Chapter 4: Policies and Proposals	Giving priority to the "protection of biodiversity, positive measures to encourage biodiversity action, promoting the management, enhancement and creation of valuable green space, incorporating biodiversity into new development, and access to nature and environmental education".
	Policy 1	Protection, management and enhancement of London's biodiversity. This will be implemented through a no net loss of important wildlife habitat, and a net gain in habitat through enhancement and habitat creation.
	Policy 5	Ensure that opportunities are taken to green the built environment within development proposals.

3.4 Local Planning Policy

Table 2 provides a summary of relevant local planning policies. For the precise wording of each specific policy please refer to the source document. This planning policy has been considered when assessing potential ecological constraints and opportunities identified by the desk study and field surveys; and, when assessing requirements for further survey, design options and ecological mitigation, as described in Section 6.

The local policy for Camden Borough is outlined in Table 2.

Table 2. Summary of Local Planning Policy

Document	Planning Policy	Purpose	
Camden Local Plan (2017)	Protecting Amenity: A3 Biodiversity	The Council will protect and enhance sites of nature conservation and biodiversity. The Council will also protect, and seek to secure additional, trees and vegetation.	
		Policy A3 is intended to support the London Biodiversity Strategy and the Camden Biodiversity Action Plan (BAP) by ensuring Camden's growth is accompanied by a significant enhancement in the borough's biodiversity.	
		The Council aims to maximise opportunities for biodiversity in and around developments in order to deliver a net gain in biodiversity and a range of wider environmental benefits.	
	Design & Heritage D1 Design	Camden's Development Policy DP22 states that: "Schemes must incorporate green and brown roofs and green walls unless it is demonstrated that this is not possible or appropriate. This includes new and existing buildings. Special consideration will be given to historic buildings to ensure architectural and historic features are preserved".	
Camden Planning Guidance (26 March 2018)	Biodiversity	y This guidance is for planning proposals for major and minor developments propos sites where there is biodiversity value. It supports policy A3 - Biodiversity in the Ca Local Plan (2017). This provides more specific advice for smaller proposals and h identify existing biodiversity considerations and incorporate or enhance biodiversity	

Applicants are advised to employ the services of a professional ecological consultant as it may not appear immediately obvious that a protected species is present on a site or will be impacted upon by a proposal. Protected species such as bats, may be found throughout Camden in buildings, or in structures and using features for foraging or commuting.

3.4.1 Camden Biodiversity Action Plan

The London Borough of Camden Biodiversity Action Plan 2013 – 2018 outlines a series of actions to ensure that biodiversity is safeguarded in the borough and that Camden's residents are given opportunities to access the natural environment. It addresses protection for priority habitats such as acid grassland and heathland and provides an action plan for biodiversity and the built environment. Priority species include: peregrine falcon, all bats species, stag beetle and a number of BAP priority butterflies.

4. Methods

4.1 Desk Study

A desk study was carried out for the site and its surroundings to identify any statutory and non-statutory designations, and protected and notable habitats and species and scheduled invasive non-native species potentially relevant to the proposed development.

The desk study was carried out using the data sources and zones of influence detailed in Table 3. Protected and notable habitats and species include those listed under Schedules 1, 5, 8 and 9 of the WCA; Schedules 2 and 5 of the Habitats Regulations; species and habitats of principal importance for nature conservation in England listed under Section 41 (s41) of the NERC Act; and other species that are Nationally Rare, Nationally Scarce or listed in national or local Red Data Lists and Biodiversity Action Plans, and invasive non-native species under the WCA.

Data Source	Accessed	Data Obtained
Multi-Agency Geographic Information for the Countryside (MAGIC) website	26/04/19	International statutory designations within 5 km radius (Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar sites) Ancient woodlands and notable habitats Information on habitats and habitat connections (based on aerial photography) relevant to interpretation of planning policy and assessment of habitat connectivity and potential protected and notable species constraints
Greenspace Information for Greater London (GiGL)	Data search dated 09/05/19	Statutory designations within 1 km (Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR) and Local Nature Reserve (LNR)) Non-statutory designations within 1 km (Sites of Importance for Nature Conservation (SINCs)) Protected, priority species and species of concern records within 1 km (records for the last 10 years only) London Invasive Species initiative species within 1 km
Ordnance Survey 1:2500 Pathfinder maps and aerial photography	26/04/19	Information on habitats and habitat connections (based on aerial photography) relevant to interpretation of planning policy and assessment of habitat connectivity and potential protected and notable species constraints
Camden Borough Local Plan Policies Map	26/04/19	Identifies Camden's 280 designated public and private spaces and local nature conservation designations
London Wildlife Trust www.wildlondon.org	26/04/19	Information about Camley Street Local Nature Reserve

Table 3. Desk study data sources and zones of influence

4.2 Field Survey

The field survey comprised a Phase 1 Habitat Survey, an appraisal of the potential suitability of the habitats present within the site to support protected and notable species and an assessment of the connectivity of the site with the surroundings.

4.3 Phase 1 Habitat Survey

A Phase 1 Habitat Survey was undertaken in accordance with the standard survey method (Joint Nature Conservation Committee, 2010). Phase 1 Habitat Survey is a standard method of environmental audit. It involved categorising different habitat types and habitat features within a survey area. The information gained from the survey has been used to determine the likely ecological value of a site, and to direct any more specific survey work, which may need to be carried out prior to the submission of a planning application. The standard Phase 1 Habitat Survey method was "extended" to record target notes on protected, notable and invasive species.

The survey was undertaken on 24 April 2019 by a suitably qualified ecologist who recorded and mapped all habitat types present within the survey area, along with any associated relevant ecological receptors observed. The survey area encompassed all safely accessible parts of the site and adjacent habitats, where access permission had been granted in advance of survey, or this land was visible from within the site boundary or from public rights of way, or other publicly accessible areas.

Where relevant ecological receptors were present, target notes (Appendix B) were recorded and the position of these shown on the Phase 1 Habitat map (Appendix A, Figure 1). Typical and notable plant species were recorded for different habitat types and reflect the conditions at the time of survey. This was not intended to be a detailed inventory of the plant species present in the survey area, as this is not required for the purposes of a Phase 1 Habitat survey.

4.4 Appraisal of Potential Suitability of Habitats to Support Protected and Notable Species

An appraisal was made of the potential suitability of the habitats present to support protected and notable species of plants or animals (as defined in Section 2.1). Field signs, habitat features with potential to support protected species and any sightings or auditory evidence were recorded when encountered, but no detailed surveys were carried out for any particular species.

A note was made of visible instances of invasive non-native plant species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), including Japanese knotweed (*Reynoutria japonica*). Locations of plants or stands of any such invasive non-native plant species found were recorded.

Section 6 of this report identifies further requirements for species surveys based on the results of the habitat survey. These surveys should be completed prior to submission of a planning application as the results are likely to be material for determination of the planning application.

4.5 **Preliminary Roost Assessment**

An inspection of all trees and structures within the boundary of the site was undertaken on 24 April 2019. The survey was conducted in line with the Bat Conservation Trust (BCT) survey guidelines¹.

Close focussing binoculars were used to conduct an external inspection of trees and structures from ground level. All potential access/egress points and features with the potential to support roosting bats (e.g. cracks, crevices) were identified and recorded along with any evidence, which may have indicated the location of roosts, such as:

- Stains around entrance holes (resulting from the deposition of oil secretions in bat fur);
- Scratch marks around entrance holes (resulting from bat claw holds);
- Bat droppings;
- Feeding remains; and
- Odours or noise characteristic of bats.

Where possible, an internal inspection (for bats) was undertaken which involved accessing areas where bats could be present within the buildings. This included roof spaces, roof voids, flat roofs, plant rooms, basements, cellars and rooms with an opening to the outside. A torch was used to illuminate dark spaces. Building access/egress points suitable for bats were noted.

On the basis of the external survey, the overall risk of the trees and buildings to support roosting bats was classified according to the scale outlined in Table 4.

¹ Collins J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London

Table 4. Criteria used to describe bat roost suitability

Habitat Suitability/ Level of Risk	Summer or transitional roost used by non-breeding bats	Maternity Roost	Hibernation Roost
Confirmed	Presence of bats or evidence of bats.	Confirmation of roost status may requ	ire further survey.
High	Feature with multiple roosting opportunities for one or more species of bat. With good connectivity to high-quality foraging habitat	Feature with multiple roosting opportunities for breeding bats (size, temperature). With proximity and connectivity to high-quality foraging habitat.	Large site that offers cool stable conditions with multiple roosting opportunities. With proximity and connectivity to high-quality foraging habitat
Moderate	Feature with some roosting opportunities. With connectivity to moderate or high-quality foraging habitat.	Feature providing some roosting opportunities. With some connectivity and proximity to moderate or high-quality foraging habitat.	Medium sized feature with some roosting opportunities. With some connectivity and proximity to moderate or high-quality foraging habitat.
Low	Feature with a limited number of roosting opportunities. With poor connectivity to foraging habitat.	Feature with a limited number of roosting opportunities for breeding bats. With low proximity and connectivity to low or moderate quality foraging habitat.	Small sized feature or feature which may be subject to disturbance or environmental variations, with a limited number of roosting opportunities. With poor connectivity to foraging habitat.
Negligible	Feature with no or very limited roosting opportunities for bats or where the feature is isolated from foraging habitat.	Feature with no suitable roosting opportunities for breeding bats.	Feature with no suitable roosting opportunities for hibernating bats.

4.6 **Nesting Bird Assessment**

An inspection of all buildings, trees and shrubs within the boundary of the site for nesting birds was also undertaken on the 24 April 2019. Evidence of birds was searched for such as droppings and feathers.

Buildings, trees and vegetation were assessed at ground level using binoculars, where necessary. All features with the potential to support nesting birds (e.g. flat roofs, soffit boxes, dense vegetation, perches, cavities, platforms etc.) were identified and recorded along with any evidence of former nest sites as could be observed at the time of year the survey was undertaken.

4.7 Desk Study and Field survey Limitations

The aim of a desk study is to help characterise the baseline context of a proposed development and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for particular habitats or species does not necessarily mean that the habitats or species do not occur in the study area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the proposed development.

A preliminary roost assessment for bats was carried out from ground level across the site. Internal access to the roof void of the Jules Thorn was gained. Internal access to the roof void of the Estates & Facilities and Bloomsbury buildings was not possible during the site visit due to the risk of asbestos. In addition, internal access was also not possible to the roof void of Ash House as this was sealed shut due to security reasons for the patients within the building. However, the level of survey was sufficient to provide a satisfactory initial roost assessment of the buildings for bats.

While indicative locations of trees are recorded, this does not replace requirements for detailed specialist arboriculture survey to British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction.

If the proposed development has not been commenced within 12 months, it will be necessary to review this PEA including the data search and provide an up-to-date baseline if necessary. The data in the desk study itself are only valid for 12 months.

5. Results

5.1 Nature Conservation Designations

5.1.1 Statutory Designations

There are no internationally recognised statutorily designated sites within 5 km of the site (SAC, SPA, Ramsar sites).

There are no Sites of Special Scientific Interest (SSSIs) or National Nature Reserves (NNRs) within 1 km of the site.

There is one Local Nature Reserve (LNR) within 1 km of the site, Camley Street Nature Park LNR which is 230 m south-east of the site. It is managed by London Wildlife Trust. The LNR is an urban wild space containing a range of habitat examples (scrub, pond, broadleaved woodland, semi-neutral grassland) created on former vacant land. The wildlife interest is of high local educational and social value owing to the severe deficiency of wildlife sites in Greater London.

5.1.2 Non-Statutory Designations

The desk study search returned 10 Sites of Importance to Nature Conservation (SINCs) within 1 km of the site. SINCs are recognised by the Greater London Authority and London borough councils as important wildlife sites. SINCs are classified into three categories: Sites of Metropolitan Importance, Sites of Borough Importance (borough I and borough II) and Sites of Local Importance.

These non-statutory sites are described in Table 5. The designations are listed in descending order, with those closest to the site listed first.

Site Name and reference number	Designation	Reason(s) for Designation	Relationship to the Site		
Sites of Metropolita	n Importance for Nature C	onservation			
London's Canals M006	Site of Metropolitan Importance for Nature Conservation (SMINC)	St. Pancras Lock is nearby the site to the east and has associated green space on the canal including Camley Street Natural Park.	100 m north east of the site, separated by Granary Street.		
Camley Street Natural Park M095	Site of Metropolitan Importance for Nature Conservation (SMINC)	Created on previously derelict land in 1984, now a diverse park located on the canal water's edge containing many notable plant species and supports birds and bats. A new visitor centre is being constructed at the northern end of the site.	230 m south east of the site separated by over- ground railway.		
Sites of Borough Im	portance for Nature Cons	ervation			
St. Pancras Gardens CaBII07	Site of Borough Importance Grade 2	An old churchyard with mature trees and yew (<i>Taxus baccata</i>) hedges. It is surrounded by old buildings and a church. There are areas managed for wildlife within the churchyard.	75 m south of the site (adjacent to the boundary of the wider hospital site).		
North London Line CaBII06	Site of Borough Importance Grade 2	This site is part of the former King's Cross Goods Yard and connects to the nearby Copenhagen Junction. It is a mostly scrubby site with species including butter-fly bush, silver birch bramble and ivy.	480 m north of the site, separated by railway lines and a large commercial area.		
Copenhagen Junction IsBI12	Site of Borough Importance Grade 1	A railway site with green land parcels containing extensive mosaic of open and wooded habitats, with bracken (<i>Pteridium aquilinum</i>) and tall ruderal plants.	750 m north west of the site, separated by railway lines and a large commercial area.		
Sites of Borough Importance for Nature Conservation					
St Martin's Gardens CaL18	Site of Local Importance	A small urban park with mature trees and planted shrubberies and a wildlife area	550 m east of the site separated by roads and houses.		
Bingfield Park IsL06	Site of Local Importance	A relatively large open space consisting mainly of amenity grassland, and includes the Crumbles Castle Adventure Playground. Trees	750 m east of the site separated by railway lines and a large commercial		

Table 5. Sites with non-statutory designations for nature conservation within 1 km of the site

Site Name and reference number	Designation	Reason(s) for Designation	Relationship to the Site		
		and shrubs provide food and cover for common birds.	area.		
Bemerton Estate - Garden IsL32	Site of Local Importance	Areas of grassland with relatively rich species diversity, and mature scattered trees which provide habitat for nesting birds.	800 m east of the site separated by railway lines and a large commercial area.		
Winton Primary School Garden IsL28	Site of Local Importance	This school garden contains a small pond, scattered trees, and semi-improved neutral grassland.	950 m south east of the site separated by King's Cross railway and underground station and associated infrastructure.		
Rochester Terrace Gardens CaL15	Site of Local Importance	A small public garden with trees and grassland managed for wildflowers.	1 km north east of the site.		

5.2 Phase 1 Habitats

The habitats recorded on the site, their extent and distribution, are shown in Table 6 and Figure 1 (Appendix A). The areas are approximate only. Photographs of the habitats are shown in Appendix D.

Habitat	Brief description	Area (ha)	% of Site area
Hardstanding	Roads and footpaths throughout the hospital site.	0.31	41%
Buildings	Five buildings are present within the survey boundary.	0.34	45%
Introduced shrub	There are areas of introduced shrub throughout the hospital site, including borders, which are regularly managed.	0.03	4%
Amenity grassland	There are two small areas of amenity grassland on-site.	0.05	6%
Scrub	Two discrete areas of overgrown scrub near two buildings.	0.03	3%

Table 6. Habitats present, in descending order based on spatial area occupied

5.2.1 Buildings and hardstanding

There are five buildings on site which in combination with the hardstanding accounts for 86% of the site. The buildings comprise the Jules Thorn building (B1) (with a garden shed and outbuilding), the Estates and Facilities building (incorporating the Camley Centre) (B2), Ash House (B3), the Bloomsbury building (B4) and the Post Room and Mortuary (with various electrical buildings). These are described in more detail in the bat roost potential assessment (Section 5.3.1).

5.2.2 Introduced shrub and climbers

There are managed areas of introduced shrub around all of the buildings except the Estates and Facilities building (B2). The most common plant species are hydrangea, garden privet (*Ligustrum ovalifolium*), cherry laurel (*Prunus laurocerasus*) and garden rose (a *Rosa* species).

Virginia creeper (*Parthenocissus quinquefolia*) was noted growing on the north-east boundary wall of the site by Ash House (B3). The plant growth was 1.5 m tall and about 8 m wide. The growth was thin and the plants were dead and damaged in some areas. The plants provide limited cover for birds or invertebrates. The plant is an invasive non-native species listed on Schedule 9 of the Wildlife and Countryside Act. The location of the plant is shown as Target Note 1 in Figure 1 (Appendix A) and Appendix D (Photos).

5.2.3 Scattered trees

There are two mature cypress (*Cupressus* x *leylandii*) trees in the south-west of the site at a vehicle entrance. There is a large false acacia (*Robinia pseudoacacia*) in the same location and a smaller immature false acacia tree at the Jules Thorn building (B1). There are a small number of semi-mature sycamore (*Acer pseudoplatanus*) trees on-site at the Jules Thorn building (B1) and to the east of Bloomsbury building (B4). There is a mature flowering Japanese Cherry (*Prunus serrulata*) in the courtyard of Ash House (B3).

5.2.4 Amenity grassland

Areas of amenity grassland are located at Ash House (B3) and in the south-west of the site at a vehicle entrance, overall comprising 6% of the site (Figure 1, Appendix A). The most common plant species were: daisy (*Bellis perennis*), dandelion (*Taraxacum officinale*) and yarrow (*Achillea millefolium*).

5.2.5 Scrub

The scrub mainly consisted of buddleia (*Buddleia davidii*) and ivy (*Hedera helix*) near the Jules Thorn and Bloomsbury buildings.

5.2.6 Notable Habitats

There are no notable habitats (i.e. those likely to qualify as habitat of principal importance under Section 41 of the NERC Act, 2006) present within the site.

5.3 **Protected and Notable Species**

5.3.1 Inspection to Assess the Potential of Supporting Roosting Bats – buildings

On the basis of the survey work undertaken of the buildings surveyed within the Site, the assessment of the suitability to support roosting bats is as follows:

- One building (Estates and Facilities Building B2) has been assessed as having moderate suitability for supporting roosting bats;
- Three buildings (Jules Thorn B1, Ash House B3, and the Bloomsbury Building B4) have been assessed as having low suitability for supporting roosting bats; and
- One building (Mortuary and Post Room B5) has been assessed as having negligible suitability for supporting roosting bats.

Further details are contained in Table 7 and photographs are shown in

Table 8. Building reference numbers are shown on Figure 1 (Appendix A).

Table 7. Preliminary Roost Assessments of Buildings

Building	Description of building and potential roost features	Bat roost suitability
Jules Thorn – B1	It is a single storey building, built in the 1980s. It is a red brick structure with timber cladding on the walls. The roof has two pitched sections to the east and to the west. The roof structure is wooden rafters overlaid by clay tiles finished with cement fixing on the gable ends. The east roof void was inspected and	Due to the combination of suitable gaps on B1 and the ivy covering, it has low bat roost suitability.
	no signs of bats were seen. The west roof void was inspected and black dust particles were not identified as bat droppings.	suitable gaps and has <u>negligible</u> bat roost suitability.
	There were features suitable for bats including gaps under the timber cladding and gaps under the fascia and soffits. These gaps were present on the southern, northern and eastern elevations. The south eastern corner of the building was covered in ivy.	The small brick outbuilding has large unsuitable gaps in the wall and has negligible bat roost suitability.
	There is a garden at the western elevation containing a shed with a flat bitumen felt roof. Outside the garden fence in the shrubbery, there is small brick outbuilding with a flat bitumen roof and large draughty gaps in the walls where pipework entered.	
Estates and Facilities Building (incorporating the Camley Centre) – B2	This consists of three brick buildings with pitched slate roofs and two chimney stacks, approximate date of construction 1890. The basement contains active offices and is well-lit by security lights on the outside. The first floor contains the Camley Centre and attached to the north is a flat-roof temporary building (consisting of vinyl panels, a metal roof and	Due to the combination of suitable gaps in the wooden fascia boards and the presence of roof voids within B2, it has <u>moderate</u> bat roost suitability.
	PVC windows). At the E&F office there is a second floor with a pitched roof and a roof void. A glass-covered courtyard straddles the brick buildings and the temporary building.	The flat-roof temporary building and glass covered courtyard have negligible bat roost suitability.
	There were features suitable for bats at basement level including access/egress holes in the wall for pipework however most were covered with mesh. There were cracks in the old brick and plasterwork. At roof level, there were gaps underneath the wooden facia on the western, southern and eastern elevations. The slate roof appeared to have no gaps or cracks. A roof vent was elevated above the ridge and was covered with a mesh on the Camley Centre. High up on the eastern elevation gable end, an old airing door leads into the pitched roof of the building but this was inaccessible. The roof void on the second floor of E&F office was inaccessible due to asbestos risk.	
Ash House – B3	This is a two-storey H-block accommodation building built in the 1990s. It has a brick wall, clay tile roof and wooden soffits. There are some minor gaps between the wall and the soffits on the eastern, western and northern elevations. There is a high roof void but this was inaccessible due to security concerns.	As there are suitable gaps in the soffits and presence of roof voids within B3, it has <u>low</u> bat roost suitability.
Bloomsbury Building – B4	This building has a ground floor and a smaller first floor with a flat bitumen roof. It is used as a GP surgery and a Recovery College. The walls are made of brick with some sections covered in cement render and some sections covered in metal cladding, with security lighting present. The guttering is attached to wooden fascia boards on the southern elevation and the first floor offices on the eastern elevation. A roof void was inaccessible due to asbestos risks.	As there are suitable gaps in the soffits and presence of roof voids within B4, it has <u>low</u> bat roost suitability.
Post Room and Mortuary – B5	A series of small ground-floor buildings with flat roofs, red brick walls and transparent skylights. They are situated on the western boundary of the site adjacent to St. Pancras Way. They are in use as the Post Room and Mortuary (including Cold Room, a corridor, bathroom, office). Each of the following rooms has their own door to the outside: electrical room, switch room and generator room.	As the buildings lacked roof voids and had no gaps/cracks suitable for bats, B5 has <u>negligible</u> bat roost suitability.
	The buildings were assessed externally only and internal access was not arranged. Externally, there were no suitable gaps or cracks in brickwork and or where the bitumen roof overlaps the top of the wall.	

Table 8. Photographs of Potential Roost Features on Buildings







5.3.2 Inspection to Assess the Potential of Supporting Roosting Bats – Trees

The broadleaved and coniferous trees on site were inspected for potential bat roost features. The cypress, false acacia, sycamore and flowering cherry trees lacked gaps/cracks or woodpecker holes in the bark and therefore have negligible bat roost suitability.

All other trees within and immediately adjacent to the site were assessed as having negligible suitability for supporting roosting bats, due to an absence of potential roost features.

5.4 Protected and Notable Species Summary

The data search requested from GiGL returned records of protected and notable species and of London invasive species for the last ten years. Table 9 provides a summary of potentially relevant species identified through a combination of desk study and field survey. The table summarises the conservation status of each species and provides comment on their likelihood of presence within the site.

Where species are identified in Table 9 as likely to be present or possible presence, they are likely to represent legal constraints. Further surveys will or may be required to determine their presence or probable absence. Requirements for further survey are identified in Section 6 of this report.

Some other records of protected species or species of concern were returned. However, due to the distance from the site and lack of connectivity due to the conurbation area where the site is located, these records are not included in this table.

Part of London's Canals at St. Pancras Lock SMINC is located 100 m north east of the site and Camley Street LNR is located 230 m south east of the site and supports water-fowl and bats.



Table 9. Protected and notable species relevant or potentially relevant to the site

Nesting Birds Grey Heron (Ardea cinerea) Grey wagtail (Motacilla cinerea) Snipe (Gallinago gallinago) Swift (Apus Apus) House sparrow (Passer domesticus) Starling (Sturnus vulgaris) Song thrush (Turdus philomelos) Dunnock (Prunella modularis)	-	✓	✓	-	~	There are records of common birds associated with waterways within 500 m of the site in the last 10 years. These were likely recorded at St. Pancras Lock. There are records of other common nesting birds from within 1 km of the site. The scrub and trees on-site would be suitable for use by nesting birds. Camley Street LNR and St Pancras Gardens provide ecological connectivity for nesting birds.
Invertebrates Stag Beetle (Lucanus cervus)	-	✓	✓	-	~	Eleven occurrences of stag beetle were returned from the data search, the most recent from 2017 and the closest was 270 m east of the site. These were likely recorded at Camley Street Nature Reserve.
Other mammals Otter (<i>Lutra lutra</i>)	√	√	√	-	✓	One record of an otter was returned 670 m east of the site in 2013. This was likely recorded on the London Canals Network.

Key to symbols: \checkmark = yes, x = no, ? = possibly, see Supporting Comments for further rationale.

Species present on site are those for which recent direct observation or field signs confirmed presence. Species which are possibly present are those for which there is potentially suitable habitat based on the results of the Phase 1 Habitat Survey, or this combined with desk study records.

Legally protected species are those listed under Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended); and, Schedules 2 and 4 of The Conservation of Habitat & Species Regulations 2017 (as amended).

<u>Species of Principal Importance</u> as those listed under Section 41 of the NERC Act. Planning Authorities have a legal duty under Section 40 of the same Act to consider such species when determining planning applications.

Other notable species include native species of conservation concern listed in the LBAP (except species that are also of Principal Importance), those that are Nationally Rare, Scarce or Red Data List, and non-native controlled weed species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

5.4.1 Schedule 1 Birds

Birds that are listed on Schedule 1 of the Wildlife and Countryside Act² 1981 (as amended) have additional protection during the breeding season as do their nests, eggs and dependent young. To disturb these, a special licence must be obtained in advance of works.

Though there are nearby previous records for Schedule 1 birds, it is not likely that peregrines or kingfisher or winter migratory birds would occur on-site or provide a constraint to the development. The site lacks suitable habitat to especially support these Schedule 1 birds.

There are no tall buildings or ledges within the site suitable for nesting pairs of peregrines.

Black redstart (*Phoenicurus ochruros*) is a relatively frequent Schedule 1 bird in London, though there were no records for this bird within 1 km of the site in the past 10 years. The site lacked complex ledges or brownfield habitat suitable for black redstart. The site has suitable other foraging habitat for nesting birds as there are trees, scrub and introduced shrub on-site and good ecological connectivity with other sites nearby.

5.4.2 Invasive Species

Invasive plant species that are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and it is an offence to plant, or otherwise cause to grow listed species in the wild and, if transported off-site, there is a duty of care with regards to the disposal of any part of the plant that may facilitate establishment in the wild and cause environmental harm (as per the Environmental Protection Act 1990).

Virginia creeper (*Parthenocissus quinquefolia*) was found growing on the north-east boundary wall of the site by Ash House (B3). Virginia creeper is listed as an invasive non-native species listed on Schedule 9 of the Wildlife and Countryside Act. The location of the plant is shown as Target Note 1 in Figure 1 (Appendix A).

² http://www.legislation.gov.uk/ukpga/1981/69

Though not listed on Schedule 9, three other invasive non-native plant species were found within the site:

- False acacia (Priority category 4);
- Cherry laurel (Priority category 3); and
- Buddleia, also known as butterfly bush (*Buddleia davidii*) (Priority category 3).

These three species are listed in the London Invasive Species Initiative (LISI) as species of concern (categories 3 and 4) due to the high risk of negative impact on the environment. Priority category 3 species those of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/eradicate. Category 4 species are those which are widespread for which eradication is not feasible but where avoiding spread to other sites may be required.

The desk study from GiGL revealed records of invasive plant species within 1 km of the site. The closest records were for cherry laurel, false acacia, tree-of-Heaven (*Ailanthus altissima*), three-cornered garlic (*Allium triquetrum*) and buddleia (*Buddleia davidii*). However there are no previous records for invasive plant species found on-site. Japanese knotweed (*Reynoutria japonica*) was recorded within St Pancras Gardens 75 m south of the site in 2015.

5.5 Connectivity and Zone of Influence

The site is located in an urban-dominant environment, surrounded by buildings, over-ground rail lines and roads. The over-ground railway acts as a barrier in the north-eastern area for fauna.

However there is blue and green infrastructure close to the site, within 1 km. The closest green infrastructure, St. Pancras Gardens is 75 m to the south of the site. Similarly, St Pancras Lock (part of London Canals) is located 100 m north-east of the site. Camley Street LNR is located 230 m south east of the site and connects to the canal.

Diverse green areas (such as the Local Sites mentioned in Table 5 and spread within 1 km of the site) could serve as a stepping stones for wildlife and connect the site to more extended green infrastructure, such as North London Line railway embankment (440 m north east) and St. Martin's Gardens (550 m east).

Fauna such as birds and bats, that can fly, have more capacity to move from one site to another and avoid barriers like buildings and roads. Their mobility makes them more able to use borough open spaces as stepping stones and search for sources of food in a wider local area.

The site is well connected to valuable green spaces and waterways within the local area.

5.6 Value of Site

The site is of low ecological value due to the dominance of buildings and hardstanding (86% of site area) and limited green habitat within the site. There are buildings within the site which have with low and moderate suitability for roosting bats, and habitats that provide foraging and breeding habitats (trees, scrub, introduced shrub) for birds and foraging habitats for bats.

6. Identification of Ecological Constraints and Recommendations

6.1 Approach to the Identification of Ecological Constraints

Relevant ecological receptors that may represent constraints to the proposed development, or that provide opportunities to deliver ecological enhancements in accordance with planning policy, are identified in Section 3 of this report and shown in Figure 1 (Appendix A).

The NPPF and local planning policy (summarised in Section 2 of this report) specify requirements for the protection of features of importance for biodiversity. Planning policy is a material consideration when determining planning applications.

Compliance with planning policy requires that the proposed development considers and engages the following mitigation hierarchy where there is potential for impacts on relevant ecological receptors:

- Avoid and protect features where possible;
- Minimise impact by design, method of working or other measures (mitigation) e.g. by enhancing existing features; and
- Compensate for significant residual impacts, e.g. by providing suitable habitats elsewhere (whether in the control of the Camden & Islington NHS Trust or otherwise legally enforceable through planning condition or Section 106 agreement).

This hierarchy requires the highest level to be applied where possible. Only where this cannot reasonably be adopted should lower levels be considered. The rationale for the proposed mitigation and/or compensation should be provided with planning applications, including sufficient detail to show that these measures are feasible and would be provided.

In pursuance of the objective within the NPPF of providing net gain in biodiversity where possible, consideration should be given to the scope for enhancement as part of the proposed development. This should represent biodiversity gain over and above that achieved through mitigation and compensation. Enhancement could be achieved on and/or off the site.

The likelihood of the relevant ecological receptors constraining the proposed development has been assessed with reference to the scale described in Table 10. The higher the importance of the ecological receptor for the conservation of biodiversity at national and local scales, the more likely it is to be a material consideration during determination of the planning submission for the site.

Opportunities for ecological enhancement are not included in Table 10, but are identified in the accompanying appraisal (Section 6 of this report). There may be scope for ecological enhancement where existing habitat features could be improved or enhanced within the proposed development as designed, or with only minor amendment to the design. Ecological enhancement may not be possible where there is little scope to accommodate enhancement within the proposed development, e.g. due to a lack of utilisable space, or where land is required for essential mitigation or in the case of a hospital, potential infection control issues. In this situation consideration could be given to enhancing biodiversity in the vicinity of the site.

Likelihood	Definition				
High	An actual or potential constraint that is subject to relevant legal protection and is likely to be a material consideration in determining the planning application (e.g. statutory nature conservation designations and European/nationally protected species). Further survey likely to be required (as detailed in this report) to support a planning application.				
Medium	An actual or potential constraint that is covered by national or local planning policy and, depending on the level of the potential impact as a result of the proposed development, may be a material consideration in determining the planning application. Further survey may be required (as detailed in this report) to support a planning application.				
Low	Unlikely to be a constraint to development or require further survey prior to submission of a planning application. Mitigation is likely to be covered under Construction Environmental Management Plan (CEMP) or precautionary working method statement (e.g. generic requirements for the management of nesting bird risks).				

Table 10. Scale of Constraint to Development

6.2 Constraints and Requirements for Further Survey: Designations

There are no internationally recognised statutorily designated sites within 5 km of the site (e.g. SAC, SPA, Ramsar sites).

There are ten Sites of Nature Conservation Importance (SINC) and one LNR within 1 km of the site. These include a section of London Canals (St. Pancras Lock) and Camley Street LNR. The other sites are parks and gardens as well as railway embankments with vegetation. The development site is close to St Pancras Gardens SINC which is located 75m south of the site. Species such as bats or birds may access the site as the SINC is nearby.

It is recommended that consultation is sought from Camden Council with respect to St. Pancras Gardens SINC and any concerns that are raised by the council regarding the proposed development should be addressed. The objective of the consultation would be to fill any knowledge gaps identified during the desk study or the client would not be aware of, for example Japanese knotweed in the grounds or specific management actions in the SINC that may be affected by development construction timing etc.

There are opportunities to improve ecological connectivity between the site and the nearby St. Pancras Lock and Camley Street LNR. This could be achieved through ecological enhancements in the new Moorfields Eye Hospital such as living roofs and walls, soft landscaping and a Well-Being Garden.

6.3 **Constraints and Requirements for Further Survey: Habitats**

There are no notable habitats on site that require further survey.

The habitats on-site provide opportunities for nesting birds and vegetation removal should be undertaken outside the core nesting season which extended from March to August.

6.4 **Constraints and Requirements for Further Survey: Species**

6.4.1 Bats

Four buildings on site have features that could provide access or egress points to a potential bat roost.

All bat species and their roosts are legally protected in the UK under the Habitats Regulations, which implements the EC Directive 92/43/EEC (the Habitats Directive). Bats and their roosts are also protected under the WCA 1981 (as amended).

Taken together, the Habitats Regulations and the WCA make it illegal to:

- Deliberately capture or intentionally take a bat;
- Deliberately or intentionally kill or injure a bat;
- Be in possession or control of any live or dead bat or any part of, or anything derived from a bat;
- Damage or destroy a breeding site or resting place of a bat;
- Intentionally or recklessly obstruct access to any place that a bat uses for shelter or protection;
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection; and
- Deliberately disturb bats, in particular any disturbance which is likely to (i) impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or (ii) to affect significantly the local distribution or abundance of the species to which they belong.

A bat roost is defined as any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected regardless of whether or not the bats are present at a specific point in time.

Given the above legislation, the potential presence of bats at a site represents a material consideration in the planning process. Even where planning permission is not required, there is still a legal responsibility placed on

the developer to ensure that a Natural England licence is obtained to cover any works that have the potential to result in an offence under the above legislation.

The Bat Conservation Trust's survey guidelines³ recommend that presence / absence surveys are carried out on buildings that have potential roost features. A summary of recommended surveys and survey effort is shown in Table 11. The surveys should be carried out in summer and autumn 2019 to support the planning application for the proposed development.

Building Presence / absence Seas survey		Season	Number visits	of survey		 Number of surveyors to be present 		
Jules Thorn (B1)	Dusk emergence	Summer		1		2		
Estates and facilities (B2)	Dusk emergence Dawn re-entry	Summer and Autumn		2		3		
Ash House (B3)	Dusk emergence	Summer		1		2		
Bloomsbury (B4)	Dusk emergence	Summer		1		2		

Table 11. Recommended bat surveys and survey effort for the site

6.4.2 Nesting birds

There is habitat suitable on the site (trees, scrub and introduced shrub) for several species of birds that have been shown to be present in the area surrounding the site by the records provided by the GiGL data search.

Birds and their nests are protected by the WCA 1981 (as amended). It is recommended that clearance of shrubs and trees is undertaken (where possible) outside of the period that bird species are likely to be breeding. Although there is no legally defined breeding season, it is widely accepted that removal of suitable habitat should be avoided between the core nesting season which is from March to August.

If any site clearance is due to take place between March and August inclusive, an ecologist will be required to confirm the absence of active bird nests immediately prior to works commencing to avoid a breach of legislation.

If a nest is discovered, clearance or other construction works should be stopped immediately within a species specific exclusion zone, for most birds a general 5m exclusion zone around the nest will suffice. The exclusion zone will be demarcated appropriately. The nest will subsequently be monitored, typically on a weekly basis, by a suitably qualified ecologist. Once it is confirmed that all chicks have flown and ceased to return to the nest, and that no other nests are in use within the exclusion zone, the vegetation can be removed.

6.4.3 Invasive Species

Virginia creeper was found growing on the north-east boundary wall of the site by Ash House (B3). The Virginia creeper was providing limited habitat for insects and other invertebrates as well as a food source and roosting for birds. Although listed on Schedule 9 of the WCA 1981 (as amended), the hazard posed by the plant is very low, e.g. risk of damage to built structures. Nevertheless causing the plant to spread into the wild would contravene the WCA.

Three other invasive non-native plants were found on the site which are listed by the London Invasive Species Initiative (LISI) as Priority category 3 (buddleia and cherry laurel) and Priority category 4 (false-acacia). For category 3 species, the LISI recommend that such species require concerted, coordinated and extensive action to control/eradicate. Category 4 species are those for which eradication is not feasible [in London] but where avoiding spread to other sites may be required. Additionally, as false-acacia ages it becomes a hazard due to its propensity to drop limbs causing damage to property and injury to people.

In order to manage these species appropriately it is recommended that an Invasive Species Management Plan is produced to deal with all four plants. This follows guidance from the GB Non-Native Species Secretariat, the Environment Agency and the Property Care Association. The Invasive Species Management Plan would detail the method for removal of the plants and the biosecurity measures that would be needed, and the provision of which can be secured by a planning condition attached to any future planning submission.

³ Collins J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

6.5 Summary of Ecological Constraints and Recommendations for Further Survey

Table 12 and Table 13 summarise the ecological constraints and recommendations for the proposed Moorfields Eye Hospital site.

Table 12. Summary appraisal of features of ecological constraints and recommended further action

		Further Requirements, Including Potential Mitigation Requirements	Driver	when is Action Likely to be Required				
Receptor	Scale of Constraint			To Inform Design	Before Planning Application	Pre-construction Onwards		
Designated Sites	Low	Consultation with Camden Council regarding nature conservation with respect to St Pancras Gardens and the development site.	Local policy					
Bats	High	Emergence/re-entry bat surveys, between May and August/September following the Bat Conservation Trust's survey guidelines.	Legislation	✓	✓	-		
Nesting birds	High	Scheduling of works that may affect birds outside of nesting bird season (March to August). Or undertaking a nesting bird check by a suitably qualified ecologist immediately prior to works commencing if the works cannot be completed outside the nesting bird season.	Legislation	-	-	V		
Invasive species	Medium	Production of Invasive Species Management Plan for Virginia creeper and three other invasive species identified under the LISI.	Legislation	-	-	✓		

Table 13. Requirements for further survey

				Wh	When required				
Survey	Season	Method	Why required	To Inform Design	Before Planning Application	Pre-construction Onwards			
Bats	May - September	Emergence/re-entry bat surveys on four buildings following the Bat Conservation Trust's survey guidelines.	Compliance with Legislation	✓	✓	-			

7. **Opportunities for Ecological Enhancements**

Section 40 of the Natural Environment and Rural Communities Act (2006), places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity. A key purpose of this duty is to contributing to commitments made by Government as part of the Biodiversity 2020: A strategy for England's wildlife and ecosystem services. Provision and maintenance of a coherent and resilient ecological network is a key element of the Biodiversity 2020 document, and wildlife corridors are important in achieving this. The new Moorfields Eye Hospital development should contribute to the aims of the London Environment Strategy and Camden's Biodiversity Action Plan for the borough. The built environment provides significant opportunities for urban greening and enhancing biodiversity. Camden requires that developers consider biodiversity in their proposals and contribute to an overall biodiversity enhancement. The main opportunities for providing biodiversity enhancements in the built environment suggested by the Camden Biodiversity Action Plan⁴ are:

- Living roofs and walls;
- Biodiversity enhancing landscaping;
- Installation of artificial nesting and roosting sites;
- Sustainable drainage systems (SuDS);and
- Trees.

Planting with wildflowers and native species is recommended. Lists of suitable species are found in the Camden Biodiversity Advice Note: Living Roofs and Walls and the Camden Biodiversity Advice Note: Landscaping Schemes and Species Features.

Additionally, the London Environment Strategy recognises London's natural capital (green space, air, water, wildlife) as providing services, such as flood protection or cleaner air, that benefit the wellbeing of Londoners and the city's economy. Natural capital is a valuable asset that must be managed sustainably to maintain and improve these benefits. The London Environment Strategy includes the specific aim to improve biodiversity and ecological resilience.

Opportunities to create green infrastructure within the development whilst also ensuring that high standards of hygiene are maintained will be discussed with the Camden & Islington Foundation NHS Trust and the project design team. Examples of the types of measures that may be considered comprise the following:

- The creation of a green roof with wildflower meadow species and / or ornamental plants. Diverse topography is recommended to provide diversity of habitats for wildlife and accumulation of rainwater for use by birds for drinking or taking a bath. The green roof would require long-term management and maintenance following the landscape architect's, ecologist and contractor's specifications.
- The creation of a living wall by planting of climbing plants. This will require long-term maintenance following the landscape architect's and contractor's specifications.
- Creation of garden terraces with vegetation. Vegetation will require long-term management and maintenance following the landscape architects' specifications.
- Creation of areas of soft landscaping planted with wildflowers and native species having a Well-Being theme for hospital patients. Long-term management and maintenance will be needed for plant species.
- Planting street trees and planters. Long-term management and maintenance will be needed.

The provision of new green infrastructure within the proposed development will have multiple and diverse benefits, which include to:

- Increase green infrastructure for wildlife;
- Act as a stepping stone, enabling wildlife to move between core areas such as between St Pancras Gardens SINC, St Pancras Lock SINC and Camley Street LNR;

⁴ https://www.camden.gov.uk/documents/20142/2205931/Camden+Biodiversity+action+plan.pdf/ab6c69bc-3769-3719-5481-a7fbc22555ce

- Support air and water quality regulation, flood regulation, local climate regulation and pollination through additional appropriate planting;
- Add value to the site as a cultural service (increase of aesthetic, spiritual values, health and well-being benefits especially for the patients accessing the hospital); and
- Contribute to noise mitigation by green screening through additional planting.

Further ecological enhancements at the proposed development, which will be reviewed in conjunction with the Camden & Islington Foundation NHS Trust and the project design team, could include:

- Choosing UK native species, species of benefit to biodiversity and plant sources from local or UK provenance;
- Choosing plant nectar and pollen-rich plants for the new landscaping scheme to provide foraging habitats for insects and pollinators, that at the same time are source of food for birds and bats;
- Adding new insect hotels or bee bricks on the green roof or walls close to green infrastructure created in the development site. Low level of maintenance needed. Insect hotels will require annual checks and replacement when needed;
- Creation of dead wood piles targeting stag beetles, a notable species. Low level of maintenance needed. Wood piles will require annual checks and replacement when needed;
- Installation of bat tubes or bat bricks built-in buildings and adding plants to attract invertebrates to benefit bats within the green infrastructure. Low level of maintenance needed depending on the material chosen. Replacement if required. Inputs from a licenced bat ecologist may be necessary if the tube/brick requires maintenance or removal/replacement; and
- Installation of bird boxes on buildings and/or trees, targeting species like house sparrow, black redstart and swifts. Low level of maintenance needed depending on the material chosen. Annual cleaning is recommended outside of the breeding season.

In order to integrate these valuable features into the design of the proposed development it is recommended that a Landscape and Ecological Management Plan is prepared which takes account of the ecological enhancements. This would need to be developed in conjunction with the Camden & Islington Foundation NHS Trust and the project design team.

8. Conclusions

The proposed development of the new Moorfields Eye Hospital has the potential to support nesting birds and bats and the existing site has been identified to contain invasive plant species. The following measures are recommended:

- Consultation with Camden Council regarding nature conservation with respect to St Pancras Gardens SINC and the development site;
- Dusk/dawn surveys are required on four of the existing buildings as they have moderate and low potential to support roosting bats;
- A nesting bird check is required before vegetation removal during site clearance (if occurring within nesting bird season, March to August inclusive); and
- Virginia creeper (and three other invasive species identified under the LISI) found on the site will require management under an Invasive Species Management Plan.

Ecological enhancements are required for new development in Camden and the most suitable suggestions for the new Moorfield Eye Hospital are as follows, these will be reviewed in conjunction with the Camden & Islington Foundation NHS Trust and the project design team:

- A green roof with wildflower meadow species and / or ornamental plants;
- A living wall with climbing plants;
- Creation of garden terraces with vegetation;
- Creation of areas of soft landscaping planted with wildflowers and native species having a Well-Being theme for hospital patients;
- Planting of trees; and
- Addition of insect hotels log piles / bat / bird boxes.

In order to deliver ecological enhancements in line with local policy in Camden and the London Environment Strategy, it is recommended that a Landscape and Ecology Management Plan is prepared in conjunction with the Camden & Islington Foundation NHS Trust and the project design team.

Appendix A Phase 1 Habitat Survey

Figure 1. Phase 1 Habitat Survey map



Appendix B Target notes

Target Note 1. Location of Virginia Creeper.

Target Note 2. Area of overgrown scrub and outbuilding near Jules Thorn building.

Appendix C Wildlife Legislation

The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018 and the Conservation of Habitats & Species Regulations 2017 (as amended)

The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018 came into force on 28th December 2018. They amend the Conservation of Habitats and Species Regulations 2017, the Neighbourhood Planning (General) Regulations 2012, the Town and Country Planning (Permission in Principle) Order 2017 and the Town and Country Planning (Brownfield Land Register) Regulations 2017.

The Conservation of Habitats and Species Regulations 2017 consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The Regulations came into force on 30th October 1994. In Scotland the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the 1994 Regulations. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European sites.

Under the Regulations, competent authorities i.e. any Minister, Government department, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the EC Habitats Directive.

The Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I and II of the Habitats Directive respectively) to the European Commission. Once the Commission and EU Member States have agreed that the sites submitted are worthy of designation, they are identified as sites of Community Importance (SCIs). The EU Member States must then designate these sites as Special Areas of Conservation (SACs) within six years. The Regulations also require the compilation and maintenance of a register of European sites, to include SACs and Special Protection Areas (SPAs) classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). These sites form a network of sites termed Natura 2000 sites.

The Regulations enable the country agencies to enter into management agreements on land within or adjacent to a European site, in order to secure its conservation. If the agency is unable to conclude such an agreement, or if an agreement is breached, it may acquire the interest in the land compulsorily. The agency may also use its powers to make byelaws to protect European sites. The Regulations also provide for the control of potentially damaging operations, whereby consent from the country agency may only be granted once it has been shown through Appropriate Assessment that the proposed operation will not adversely affect the integrity of the site. When considering potentially damaging operations, the country agencies apply the 'precautionary principle' i.e. consent cannot be given unless it is ascertained that there will be no adverse effect on the integrity of the site.

In instances where damage could occur, the appropriate Minister may, if necessary, make special nature conservation orders, prohibiting any person from carrying out the operation. However, an operation may proceed where it is or forms part of a plan or project with no alternative solutions, which must be carried out for reasons of overriding public interest. In such instances the Secretary of State must secure compensation to ensure the overall integrity of the Natura 2000 system. The country agencies are required to review consents previously granted under the Wildlife and Countryside Act 1981 for land within a European site, and may modify or withdraw those that are incompatible with the conservation objectives of the site.

The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

The Regulations make special provisions for the protection of European marine sites, requiring the country agencies to advise other authorities of the conservation objectives for a site, and also of the operations which may affect its integrity. The Regulations also enable the establishment of management schemes and byelaws by the relevant authorities and country agencies respectively, for the management and protection of European marine sites.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981(WCA) (as amended) is the major domestic legal instrument for wildlife protection in the UK, and is the primary means by which the following are implemented:

- The Convention on the Conservation of European Wildlife and Natural Habitats ('the Bern Convention'); and
- The Council Directive 79/409/EEC on the Conservation of Wild birds (the 'Bird Directive').

Wild Birds

The WCA makes it an offence (with exception to species listed in Schedule 2) to intentionally:

- Kill, injure, or take any wild bird;
- Take, damage or destroy the nest of any wild bird while that nest is in use or being built (also [take, damage or destroy the nest of a wild bird included in Schedule ZA1] under the Natural Environment and Rural Communities Act 2006); or
- Take or destroy an egg of any wild bird.

Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young. The Secretary of State may also designate Areas of Special Protection (subject to exceptions) to provide further protection to birds. The WCA also prohibits certain methods of killing, injuring, or taking birds, restricts the sale and possession of captive bred birds, and sets standards for keeping birds in captivity.

Other Animals

The WCA makes it an offence (subject to exceptions) to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The WCA also prohibits certain methods of killing, injuring, or taking wild animals.

Flora, Fungi and Lichens

The WCA makes it an offence (subject to exceptions) to intentionally) pick, uproot or destroy:

- Any wild plant listed in Schedule 8; or
- Unless an authorised person, to intentionally uproot any wild plant not included in Schedule 8;
- To sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Non-native Species

The WCA contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9 in England and Wales. It also provides a mechanism making any of the above offences legal through the granting of licences by the appropriate authorities.

Countryside and Rights of Way (CRoW) Act 2000

The Countryside and Rights of Way (CRoW) Act 2000 applies to England and Wales only. Part III of the Act deals specifically with wildlife protection and nature conservation.

The CRoW Act places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.

Schedule 9 of the CRoW Act amends the SSSI provisions of the Wildlife and Countryside Act 1981, including increased powers for their protection and management of SSSIs. The provisions extend powers for entering into management agreements; place a duty on public bodies to further the conservation and enhancement of SSSIs; increase penalties on conviction where the provisions are breached; and include an offence whereby third parties can be convicted for damaging SSSIs.

Schedule 12 of the CRoW Act amends the species provisions of the WCA 1981 (as amended), strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable', include an offence of reckless disturbance, confer greater powers to police and wildlife inspectors for entering premises and obtaining wildlife tissue samples for DNA analysis, and enable heavier penalties on conviction of wildlife offences.

Natural Environment and Rural Communities (NERC) Act 2006

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 41 (S41) of the Act required the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list was drawn up in consultation with Natural England, as required by the NERC Act.

The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that were identified as requiring action in the (now withdrawn) UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. They include terrestrial habitats such as upland hay meadows to lowland mixed deciduous woodland, and freshwater and marine habitats such as ponds and subtidal sands and gravels.

There are 943 species of principal importance included on the S41 list. These are the species found in England which were identified as requiring action under the (now withdrawn) UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. In addition, the hen harrier has also been included on the list because without continued conservation action it is unlikely that the hen harrier population will increase from its current very low levels in England.

National Planning Policy Framework (NPPF)

The latest version of the NPPF was published in February 2019, relevant sections of the NPPF are as follows:

Section 15 of the NPPF relates specifically to 'Conserving and Enhancing the Natural Environment'. Paragraph 170 states that '*Planning policies and decisions should contribute to and enhance the natural and local environment by:*

- protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- preventing new and existing development from contributing to, being put at unacceptable risk from, or being
 adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.
 Development should, wherever possible, help to improve local environmental conditions such as air and
 water quality, taking into account relevant information such as river basin management plans; and
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.'

Paragraph 171 states that 'Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green

infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.'

Paragraph 174 states that 'To protect and enhance biodiversity and geodiversity, plans should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- 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.'

Paragraph 175 states that 'When determining planning application, local planning authorities should apply the following principles:

- if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an
 adverse effect on it (either individually or in combination with other developments), should not normally be
 permitted. The only exception is where the benefits of the development in the location proposed clearly
 outweigh both its likely impact on the features of the site that make it of special scientific interest, and any
 broader impacts on the national network of Sites of Special Scientific Interest;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported; while
 opportunities to incorporate biodiversity improvements in and around developments should be encouraged,
 especially where this can secure measurable net gains for biodiversity.'

Paragraph 176 states that 'The following should be given the same protection as habitats sites:

- potential Special Protection Areas and possible Special Areas of Conservation;
- listed or proposed Ramsar sites; and
- sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites. '

Paragraph 177 states that 'The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.'

Appendix D Photographs of the site







