

**LEARNING AND TEACHING CENTRE
BRUNEL UNIVERSITY
LONDON**

BIRD HAZARD MANAGEMENT PLAN

A Report to: Brunel University

Report No: RT-MME-152957

Date: September 2020



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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	16/09/2020	Tim Hextell MCIEEM (Principal Technical Ecological Consultant)	Colin Bundy MCIEEM (Associate Director)	Tom Docker CEcol MCIEEM (Managing Director)

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client’s brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In July 2020, Brunel University commissioned Middlemarch Environmental Ltd to produce a Bird Hazard Management Plan (BHMP) for a proposed development at Brunel University in Uxbridge, London. As part of the Planning Application (Ref: 532/APP/2018/3375) a decision notice was issued by the London Borough of Hillingdon which requires the submission of a strategy to prevent the roosting and breeding of hazardous bird species. The relevant Condition 23 stated:

'The development shall not commence until details of measures to prevent the roosting and breeding of hazardous bird species on the roof of the building hereby approved have been submitted to and approved in writing by the Local Planning Authority. The measures shall include the following:

- *Site managers to monitor birds on site;*
- *Undertake bird control (using appropriate licenced means) to prevent nesting birds i.e. nest and egg removal;*
- *Ensure that the roof space is not exploited by hazardous birds such as roof nesting gulls; and,*
- *Ascertain the roof is accessible for personnel engaged in bird control activities.*

The measures as approved shall be provided on site, prior to the occupation of the proposed development and thereafter retained on site.

REASON

To avoid endangering the safe operation of aircraft through the attraction of birds in compliance with Policy A6 of the Hillingdon unitary Development Plan.'

This document has been compiled in accordance with BAA Advice Note 8: Safeguarding of Aerodromes, which requires that all potentially hazardous developments within a 13 km radius of aerodrome sites are subject to control measures in order to minimize bird strike risk. It details measures through which the attractiveness of the proposed buildings to birds will be minimized throughout the operational life of the development. The site is located approximately 3 km to the east-north-east of RAF Northolt Airport and 5.2 km north of Heathrow Airport. A site location plan showing the relative location of the proposed development plot and RAF Northolt and Heathrow Airports is provided in Section 4 of this report, Drawing C152957-01.

1.2 SITE LOCATION AND SUMMARY OF PROPOSED DEVELOPMENT

The proposed development site is located within a central area of the Brunel University campus. The site covers an area of approximately 3200 m² and is centred at National Grid Reference TQ 0605 8269.

The proposed development is located within the extensive campus of Brunel University, comprising a wide range of buildings and structures, though generally largescale, modern and multi-storied interspersed with greenspace which is mostly lawned with scattered trees and shrubs. Located less than 50 m east of the proposed development area is the north/south aligned River Pinn which forms a broad green corridor through the university campus and is delineated by a strip of early mature and mature broad-leaved woodland.

The development proposals are to provide a new Learning and Teaching Centre (LTC) at Brunel University London. The proposed LTC will have 7,210 sqm of floor space over seven floors and will include the following facilities:

- Group Study Spaces;
- Informal/Social Learning Spaces;
- Formal Teaching & Learning Spaces;
- Academic Support Space;
- Kitchen and store;
- Catering & Dining Areas; and,
- Toilet Facilities.

In addition, it is proposed that the development will also include a hard-paved terrace at level 5 for external social learning and the opportunity to host small social events. A green sedum roof with photovoltaic panels is provided above level 7.

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Relevant documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
Brunel University Plan Proposed Site Plan	Penoyre & Prasad LLP
North Elevation 15111 - PPA - ZZ- ZZ - DR- A - 30404	Penoyre & Prasad LLP
East Elevation 15111 - PPA - ZZ- ZZ - DR- A - 30403	Penoyre & Prasad LLP
South Elevation 15111 - PPA - ZZ- ZZ - DR- A - 30402	Penoyre & Prasad LLP
West Elevation 15111 - PPA - ZZ- ZZ - DR- A - 30401	Penoyre & Prasad LLP
General Arrangement Hardworks 15111-OOB-SI-SL-DR-L-00110	Oobe

Table 1.1: Documentation Provided by Client

2. BIRD HAZARD RISK OF PROPOSED DEVELOPMENT

2.1 PROXIMITY OF THE SITE TO RAF NORTHOLT AIRPORT

The site is located approximately 3 km to the east-north-east of RAF Northolt Airport and 5.2km north of Heathrow Airport. As such it is considered that any large accumulations of target species could feasibly pose a risk to aerodrome safeguarding at these airports, although this risk is considered to be very low.

The location of the site in relation to RAF Northolt and Heathrow Airports is shown in Drawing C152957-01 in Chapter 4.

2.2 IDENTIFICATION OF RISK SPECIES

The identification of potential risk species for the proposed development has been undertaken based on a data review of bird records held by Greenspace Information for Greater London (GIGL) for the vicinity of the site.

The desk study exercise identified that the majority of bird records held by GIGL for the local area relate to small passerine species and other species that are unlikely to use the site, accumulate in the area in significant numbers or become problematical when nesting. A number of waterfowl and wading bird records were included although these are predominantly related to aquatic habitats located in excess of 1000 m distant from the proposed development area and with many records in excess of 1500 m from the Brunel University site.

The majority of relevant records were considered to originate from a mosaic of wetland habitats associated with the Colne Valley and including several large waterbodies between 4 and 10 ha in extent and which offer optimal habitat for wintering wildfowl. Wildfowl records included duck species such as shoveler (35 occurrences with a peak count of 150), wigeon (119 occurrences with a peak count of 170), gadwall (81 occurrences with a peak count of 50) and pochard (45 occurrences with a peak count of 35). No suitable aquatic habitat for significant numbers of waterbirds is currently located on site, nor is any planned as part of the landscaping scheme for the development. The River Pinn does drain through the site and is situated just to the east of the proposed development area, however it is a tree-lined channel and is therefore considered sub-optimal for flock-forming waterbirds (significant accumulations of waterbirds generally require open conditions on large waterbodies in order to see the approach of potential predators).

Wading bird species were generally confined to low numbers (fewer than 10) and with few occurrences of a number of scarce and uncommon species within the borough including little ringed plover, ringed plover, common snipe, whimbrel, woodcock and redshank. Two species which were more numerous consisted of golden plover and lapwing. Golden plover totaled five occurrences with a peak count of 70 birds, whilst lapwing mustered 32 records with a peak of 800 birds. Closest records for both species emanated from 1.7 km west of the proposed development site (and was assumed to relate to birds along the wide open green spaces and wetland habitats of the Colne Valley, which is known to be a well-watched and recorded location ornithologically). Wading bird species require open wetland habitats and are easily disturbed by human activity. The Brunel University campus is considered to provide no suitable habitat for this species group.

The desk study included records of two gull species, namely lesser black-backed gull *Larus fuscus* and herring gull *Larus argentatus*. The former species mustered a total of 12 records with a peak count of 400 birds. The latter species totaled three occurrences with a maximum count of two individuals. Both species were recorded in excess of 900 m from the proposed development site. Lesser black-backed and herring gulls have established themselves as breeding species in many urban areas and the recording area of the London Natural History Society is no exception (this recording area includes the proposed development area) although the desk study information did not highlight any breeding attempts. The 2017 London Bird Atlas highlighted the presence of both species during the breeding season widely within the recording area with the rooftops of inner London being the core area. Gull species will use flat roofed and sedum-covered buildings in urban settings for both nesting and loafing purposes, although they tend to occur more sparsely in urban environments outside of the breeding season when they congregate near food sources (e.g. landfill sites) and roost on open water (i.e. large lakes and reservoirs generally in excess of 5 ha in extent). It is therefore conceded that large gull species could potentially occur within the area during both the breeding and non-breeding periods.

The desk study data also included records of urban flock-forming species such as starling *Sturnus vulgaris* located 99 m north of the site, with a total of 11 occurrences and maximum flock size of 450 birds. Starlings will take advantage of a variety of features within urban developments for both nesting and loafing/roosting purposes, although starlings favour roosting sites within vegetation, e.g. groups of conifer trees. Starling numbers tend to peak at built-up sites during the breeding season, outside of which they form large flocks and move around to take advantage of feeding resources. The majority of buildings in the local area are considered to be relatively modern and therefore are unlikely to possess features that could be exploited for nesting (modern buildings are generally very well sealed). Starlings generally roost communally outside of the breeding season and may gather in some numbers at favoured locations e.g. reedbed habitats. They will also roost in conifers in urban/suburban areas with areas of Leyland cypress *Cupressocyparis leylandii* a favoured location. It is considered that areas and habitats within 250 m of the proposed development appear to offer no or negligible roosting potential for this species.

Although waterfowl and wading bird species were prevalent in the desk study no waterbodies are proposed on site and these species groups are not considered to be a risk in respect of the proposed development. The River Pinn is situated 50 m east of the proposed development area and forms a green corridor aligned on a north/south axis through the Brunel University campus. However, the section through the campus is enclosed by trees, shrubs and scrub which limits its value to flock-forming waterbirds and passerine species such as starlings, the latter favouring open areas of short grassland for foraging purposes. The nearest large, open waterbody habitat to the proposed development site is located just over 1.6 km west of the survey area at its closest point and comprises a large open waterbody within greenspace along the Colne Valley. Bird species using this area are considered highly unlikely to utilize the Brunel University campus.

A species which can be problematic in urban locations is feral pigeon. No records of this species were provided in the desk study information received from GIGL. However, this is often a common bird in busy urban areas. It is considered that the area surrounding the proposed development site may provide some suitable habitat.

The proposed development is to be located within a heavily urbanized area dominated by modern buildings/structures associated with university activities with limited, and highly managed green soft landscaping. The latter seemingly comprising 'street' trees and urban shrub beds with pockets of close-mown amenity grassland. Such limited greenspace within highly urbanized areas is only likely to be utilized by a small number of bird species, typically a small number of common passerine species such as dunnoek, robin, wren and blackbird. These species are not considered to be problematic in urban locations, generally occurring in low and well-spaced territories and creating no issues in terms of droppings, aggressive behaviour or spreading disease.

Overall, the majority of bird species considered likely to occur at the proposed development site are not considered to constitute a hazard to either the functionality of the proposed development or aerodrome safeguarding, as they are unlikely to form flocks of significant size. Those urban species considered to provide a potential hazard are limited to the following species/groups:

- Gull species, particularly herring gull and lesser black-backed gull;
- Starlings; and,
- Pigeon species, particularly feral pigeon.

2.3 DEVELOPMENT LAYOUT AND DESIGN

As detailed in Section 1.2, the proposed development will be located within the central area of the Brunel University campus. The site currently comprises a university campus, containing a range of buildings/structures, generally of modern design/materials and multi-storied. The adjacent areas are of a similar design with extensive areas of hardstanding and scattered and highly managed greenspace. The proposed new development will comprise the construction of a new Learning and Teaching Centre (LTC) at Brunel University London. The proposed LTC will have 7,210 sqm of floor space over seven floors. In addition, the development will include hard landscaped areas but no areas of greenspace around the ground level external areas are understood to be part of the current design.

The block will have a roof terrace occupying less than half of the total surface area of the roof space at level 5. This area will be hard paved and provide a space for external social learning and will also provide an

external room from which to host small social events. At level 7 will be an area of photovoltaic panels with sedum roof and gravel borders also incorporated into this space.

It is considered unlikely that the development would be used by gull species. There are no breeding records of these species within the desk study. Interrogation of aerial imagery indicates a significant number of tall buildings in the surrounding area with extensive flat roof areas. Although these roof areas offer potential nesting locations the lack of any desk study information on nesting gulls suggest that they are not present and therefore not an issue. Given the likely presence of human activity on site, including regular monitoring and management of roof areas, which may cause disturbance and dissuade gulls from using the site, together with solar paneling and associated infrastructure it is considered that this bird group is unlikely to nest on site. However, the presence of proposed sedum and graveled areas may offer some potential. The outdoor space at level 5 with some landscaped areas which will be enclosed by a parapet wall is also considered to offer potential gull nesting areas. Although, as this area is intended to be used on a regular basis it is again considered that the risk of gull breeding activity taking place is likely to be low.

The new building is unlikely to be of value to starlings, as it will be tightly sealed and will not offer any suitable nesting sites for this species. There will be no significant landscaping i.e. planting of woody species that may offer potential roosting locations. Nor will there be any additional areas of short amenity grassland/lawned areas, other than already exist in the surrounding area, which could provide feeding areas for this species.

External window ledges areas proposed for the building have the potential to attract loafing and roosting/nesting feral pigeons – the only species considered likely to use such spaces. However, this is also considered to be highly unlikely. A key factor in the presence of feral pigeons tends to be the increased food supply that is a consequence of human habitation, therefore the potential occurrence of this species cannot be entirely ruled out. However, it is understood that the existing bin enclosure associated with the Maria Grey Hall located 20 m to the north will be the designated refuse location for the LTC centre. This secured facility is therefore unlikely to offer any foraging potential for this species. The area surrounding the new block will be subject to hard landscaping and will have no areas of greenspace. An absence of short lawned areas will result in no areas where feral pigeons may gather. It is also understood that users of the facility will be made aware of their responsibilities in relation to good housekeeping and therefore there will be no enticements for feral pigeons to congregate to feed.

2.4 PROPOSED LANDSCAPING

It is understood that the proposed development will not include any new surrounding/adjacent areas of greenspace/soft landscaping areas. Some existing 'greenspace' is present within a 100 m radius of the proposed development area. However, this area is wholly outside of the development plot. Aerial imagery indicates that this comprises a scattered 'street/landscaping' trees to 10 m in height that are subject to frequent management. Some adjacent pockets of low clipped shrubs are also present. It is considered that this very limited areas of highly managed vegetation within a significantly urban environment is unlikely to attract birds in any number. It may attract some common passerine species associated with urban and urban fringe environments, typically species such as dunnoek *Prunella modularis*, blackbird *Turdus merula* and house sparrow *Passer domesticus*, although the likelihood of bird species occurring is considered very low. If any were to occur it is deemed that numbers would be very small and only apply to the occasional breeding pair of general passerine species unlikely to create any problems e.g. accumulations of droppings.

It is understood that there are proposals for some minor landscaping works on Level 5 which will provide a space for external social learning and will also provide an external room from which to host small social events. This area will be hard paved with some formal urban landscaping. It is considered that the activities proposed for this area and the small scale of landscaping associated with it are unlikely to provide any habitats that can be utilised by flock-forming bird species. Frequent human disturbance on this level will also deter its use by bird species.

Reference to mapped data indicates the presence of small pockets of greenspace within a 250 m radius of the proposed development site. Larger and more significant large areas of greenspace within the surrounding area, included Uxbridge and Hillingdon Cemeteries located approximately 300 m east and the River Pinn and Manor Farm Pastures situated 285 m south of the proposed location of the new Learning and Teaching Centre. These habitats are considered to be of greater value to foraging and roosting birds than

the proposed development site and the university campus in general. There are also a number of school grounds, sports pitches and recreational grounds within the local vicinity which may provide much more suitable habitat for birds than that within proximity to the proposed development.

2.5 SUMMARY OF BIRD HAZARD RISK

The overall level of bird risk posed by the new development is considered to be very low. Although the development could feasibly be used by gull species and feral pigeons for nesting, roosting and loafing purposes, there are no breeding records of gull species within the desk study, and the structure is unlikely to be used for breeding purposes due to the levels of disturbance arising from ongoing human activity. A key factor in the presence of feral pigeons tends to be the increased food supply that is a consequence of human habitation, therefore the potential occurrence of this species cannot be ruled out. One factor which can lead to concentrations of feral pigeons is provision of a reliable and regular food resource. However, it is noted that bin areas will be undercover and/or fitted with lids and therefore the prospect of foraging resources of birds is considered to be low. It is understood that users of the site will also be requested to adhere to high levels of good housekeeping which will also ensure possible food resources for birds are kept to an absolute minimum.

Although the risk is perceived to be low, it is recognised that some residual risk remains. It is therefore necessary to manage the risk in accordance with the best practice guidance detailed by BAA. Risk management techniques to be adopted at the development site are detailed in Chapter 3.

3. PROPOSED MEASURES TO MINIMISE BIRD RISK

As the level of bird hazard risk is considered to be low, no in-situ deterrent methods are proposed at the construction stage. Measures such as the installation of bird netting and bird spikes on flat roofs are not considered to be proportional to the level of risk perceived. It is proposed that the bird hazard risk will be controlled through ongoing monitoring of the site, with remedial action taken as and when required.

3.1 BUILDING DESIGN

The proposed structure should be constructed in such a manner that all flat roofed areas are safely accessible (it is understood that the roof spaces will have easily reachable access points and will require frequent inspections of the solar panels and associated structures to be undertaken). This will allow ongoing monitoring of the use of the site for hazardous bird species, as outlined in Section 3.3. It is understood that although the roof areas will largely be of a flat design, Level 5 will provide a frequently used outdoor space and Level 7 will be utilized for solar PV panels. However, it is envisaged that the terraced area will be subject to frequent use and is therefore highly likely to deter any bird activity in these areas by 'undesirable target species'.

3.2 HOUSE KEEPING

As previously discussed in Section 2.2, some species of bird may be attracted to particular areas / developments by the presence of readily available food supplies emanating from human activity. Gulls and pigeon species tend to be the main target species which are attracted into areas by the presence of discarded food items. It is understood that the designated refuse area for the LTC facility will be within an already established enclosed refuse bin enclosure located to the north of the proposed development area within the Maria Grey Hall situated 20 m to the north and will be emptied on a regular basis. In addition, and if appropriate, a regular regime of street cleaning should be incorporated into site management. Notice signs should be installed at appropriate locations emphasizing the requirement to place any discarded food items in bins or removed from site. In addition, this signage should forbid feeding of local wildlife.

3.3 MONITORING

The site should be subject to regular inspections in order to monitor activity of the hazardous species identified in Section 2.1. These inspections can be undertaken by a nominated party to be appointed by the managing agent of the development.

The frequency of inspections will be highest during the breeding season in order to allow any active nests to be identified and removed under licence (see Section 3.4) if required. The monitoring visits will consist of a visual assessment of the flat roofed areas, checking for the presence of active nests and noting general site usage of the flat roofs by any species deemed to be species likely to create a nuisance or be 'hazardous' species. A general site walkover will be undertaken in order to identify other features that may be in use by hazardous species, such as window recesses. The party responsible for monitoring the site will keep a log of dates, times and findings of visits, which will be made available to the local authority or BAA Airfield Operations staff upon request.

The following programme of monitoring is proposed:

- Weekly site inspections during the gull breeding season, generally accepted to run from March to July inclusive;
- Monthly checks outside the breeding season (August through February inclusive).

The frequency of inspections will be subject to amendment as bird activity dictates. Any modifications will be agreed with the local authority/BAA Airfield Operations as appropriate.

3.4 NEST REMOVAL

Should any active gull/feral pigeon nests be identified on any of the flat roofed sections of the buildings they will be removed in order to prevent a successful breeding attempt. Nest/egg removal will be undertaken by an experienced pest control consultant to be appointed by the managing agent for the site post-development.

Any nest or egg removal that is required will be undertaken in accordance with the appropriate licence, to be obtained from Natural England or relevant statutory bodies. Licenses will be obtained prior to any nest removal works taking place.

3.5 BIRD DISPERSAL METHODS

Due to the minimal bird hazard risk perceived it is proposed that hazardous species will be dispersed manually by the party responsible for inspecting the site, using a handheld bird scaring device if required.

Bird dispersal will be undertaken at the request of BAA Airfield Operations and MOD/RAF Northolt staff if required.

Should large numbers of hazardous bird species be identified on site and require dispersal, BAA Airfield Operations staff will be contacted prior to any dispersal taking place.

3.6 REMEDIAL ACTION

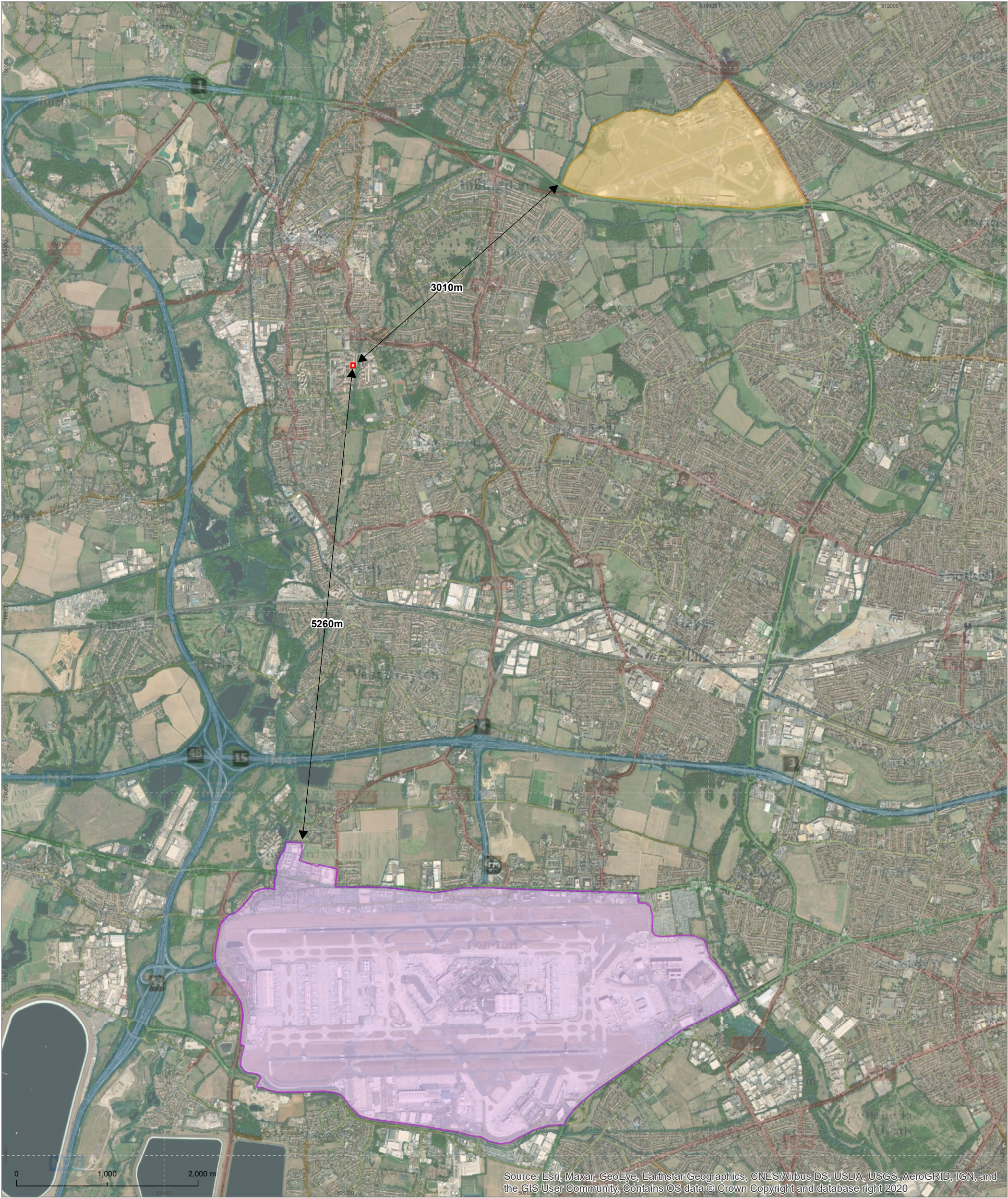
Should the ongoing inspections indicate that hazardous bird species are using the site in significant numbers (this is considered highly unlikely due to small scale of the proposed development) remedial action will be taken to deter them. This remedial action will be dictated by the type and numbers of birds occurring on site, but may include:

- Installation of bird spikes on roof parapets, window recesses and balconies;
- Use of dummy raptor bird scaring devices; or,
- Netting of roofs (only likely to be required in extreme circumstances).

Any remedial action required will be the responsibility of the managing agent of the site.

4. DRAWINGS

Location of Site in Relation to RAF Northolt and Heathrow Airports



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Contains OS data © Crown Copyright and database right 2020

Legend

- Site boundary
- Heathrow Airport
- RAF Northholt

Project	
Former John Crank Building, Brunel University	
Drawing	
Bird Hazard Plan	
Client	
Brunel University	
Drawing Number	Revision
C152957-01	00
Scale @ A3	Date
1:40,000	September 2020
Approved By	Drawn By
TH	VO

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