1.5.5 ECOLOGY REPORT

Redcliffe Quarter
St Thomas Street
Bristol

A Preliminary Ecological Appraisal By:

Just MAMMALS Limited
Ecological Consultancy

On Behalf Of:

CGD7 Limited

June 2021

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1 Executive Summary

1.1 Redcliff Quarter, in Bristol, is being re-developed in a multi-phased project. Proposals, in 2015, included the demolition of the majority of a block of buildings, for development off St Thomas Street, in order to provide student accommodation. To support that proposal, and to consider the ecological impacts of the scheme, a Preliminary Ecological Appraisal (also known as an extended Phase 1 habitat survey) was undertaken in July 2015, by two experienced ecologists. Those buildings have since been demolished, and the site currently stands as a vacant compound for the wider area. In order to update the results of the original survey the site was re-appraised in 2020.

1.2 The site contained no natural habitats or natural features, and the initial 2015 survey recorded a small number of plants, all common species, which could colonise and thrive in the harsh urban environment. The site was considered to have low ecological value. The presence of alien invasive plant species was also considered, and none were found.

1.3 An assessment for the presence or potential presence of protected species was considered as part of both surveys. Such assessment will typically include species such as bats, badgers, dormice, otter, reptiles and amphibians. No evidence for the presence of protected species was found. In 2015, the buildings did not contain features that were typically exploited by bats. These buildings have, as noted above, since been demolished, but the dense urban context of the site, with limited green spaces and natural features within the vicinity, means that the potential presence of protected species is likely to be negligible. No further targeted survey effort is recommended.

1.4 During the 2015 survey, birds were noted to be gaining access into the majority of the site and breeding was occurring. Four species of bird were seen or heard inside the buildings, and regular perches inside the buildings were evidenced by bird droppings. Small animal bones around the roof parapet were considered likely to be associated with the activity of feeding seagulls. Several bird species were likely to be making use of the buildings during the nesting season. Guidance was provided concerning the legal status afforded to breeding birds and also recommendations for site enhancements for bird species.

2 Introduction

2.1 An area of land off St. Thomas Street, Bristol is being put forward for re-development. Proposals at the time of the initial survey carried out in 2015 included the demolition of the majority of the block of buildings between St Thomas Street; Three Queens' Lane; and Redcliff Street, to make way for residential, as well as some commercial units, in the proposed Redcliffe Quarter development. At the time of writing this updated report, the buildings have been demolished and the site now exists as a compound for the re-development. Re-survey was carried out in December 2020. The development is located in the heart of the city, in an existing area of offices, and dwellings at National Grid Reference (NGR) ST 5912 7261, at an altitude of approximately 10m Above Ordnance Datum.

2.2 The block was mostly vacant at the time of the 2015 appraisal, with some commercial use still occurring. In order to assess the ecological value of the area, and the potential for protected species to be present, the Just Mammals Consultancy LLP was commissioned to carry out a Preliminary Ecological Appraisal, also known as an extended Phase 1 habitat assessment. The survey, in July 2015, was undertaken by two experienced ecologists. In order to update these results, the site was re-assessed in 2020. The footprint of the 2020 survey site was smaller than that in 2015.

2.3 Features of the site were assessed, and the potential presence of protected species, such as bats, other mammal species, reptiles and amphibians, as well as nesting birds were considered. This report details the findings of the site assessment carried out in 2015 and the updated 2020 assessment. Additionally, it makes recommendations concerning the ecological value of the site as well as the need for further survey work as appropriate.

3 Survey Team Experience

3.1 Surveyor and author of this report was Carola Hoskins. Carola is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and she holds an MSc in Environmental Conservation Management and has practical expertise with bats, birds, botanical assessments, mammalian and reptile surveys. As well as assisting in conservation-based research, she has carried out biodiversity audits and ecological enquiries. Carola holds licences

with Natural Resources Wales for otters, bats, white-clawed crayfish and great crested newts. She has completed a study of water voles. Carola is a Principal Ecologist with Just Mammals Limited.

3.2 Assisting with the survey work in 2015 was Robert Morgan. Rob has ten years' experience with bats, carrying out roost surveys, emergence surveys, ringing of Daubenton's' bat, radio tracking of lesser horseshoes and monitoring of important sites. He has considerable expertise with respect to the analysis of bat sonograms using a variety of software packages. He holds a City and Guilds Level 2 award for working in High Risk Confined Spaces. His expertise also extends to dormice, reptiles and ecological appraisals. Rob holds Natural Resources Wales (NRW) licences for both dormice, barn owls, and bats.

4 Survey Methodology

4.1 A botanical and habitat survey, and assessment for the presence and potential presence of protected species, was carried out on Tuesday the 7th of July 2015. The site was re-surveyed on Monday the 14th of December 2020. Details of the survey activities and weather conditions, are provided below in Table 1.

4.2 The site was walked over, recording all plant species and features on a custom-made recording sheet. Habitats and notes were drawn onto a map of the survey site and digital camera photographs were taken. A coloured Phase 1 habitat map was produced (see Appendix I), and a list of plant species recorded, which is shown in Appendix II.

4.3 Assessment for the presence or potential presence of protected species, including bats, badgers, dormice, reptiles and amphibians, was undertaken by considering the features of the site. The potential suitability of the site for nesting birds was also considered.

5 Site Description

2015 Survey

5.1 The site comprised the majority of a block of warehouses, offices and shop fronts, with no residential elements, and most buildings were unoccupied. Some of the empty warehouses were being used as an interim carpark. The site as a whole was roughly rectangular in shape. There were a number of buildings, some of which were interconnecting or had complex roof spaces, making it difficult to assess the exact number of building units present, but at least 17 were counted.

5.2 Office space was located mostly at the south-eastern end of the block. A three storied building held office spaces, which was vacant when assessed. This was a brick built, flat-roofed structure. The majority of the remainder of the site was made up of warehouses, which were of varying construction, and with roof structures, in varying states of repair. Some of these were brick buildings, and others of steel construction. The majority of the buildings lacked roof voids. Roofs were found to vary from flat to pitched designs, with coverings of corrugated metal or asbestos. Many of the roofs had skylights to allow for better working conditions, especially in the warehouses. There were openings in all of the buildings, such as broken windows or missing doors.

5.3 A garage and restaurant were the main businesses still operating on site. These were at the south-western and north-eastern ends. There were also a two open areas within the block, which were used for car parking and storage, as well as a short access road to the car parking area. One building, the Pilkington glass site, had a basement, as well as office space above. At the south-eastern corner of the site, water had ponded on the roof of a small section.

5.4 The surroundings comprised the dense development of a major city with residential, office, retail and other commercial buildings. Many of the structures were, and still are relatively modern, pointing to on-going urban regeneration. The main artery of Victoria Street was a short distance to the east. There was very little open green space or tree cover in the area. The water body of the floating harbour, curves around to the east and the north, but this feature is fringed with limited tree lines and green spaces. The River Avon lies some 670m to the south of the site: the Avon Gorge SSSI and Leigh Woods NNR are some 2.6 km to the west. Within a 1km radius of the survey site, there are no sites designated for nature conservation interest.

2020 Survey

5.5 As assessed in 2020, the site now comprises a smaller area (see Figure 2), and is no longer roughly rectangular in shape. The buildings that once stood within the boundaries have since been

demolished and the site now exists as a compound for a building site, with building materials scattered across the site.

6 Survey Constraints

6.1 The initial 2015 survey was conducted in July, which is within the optimum period for vegetation. As the site contained no natural habitats, there were very few plants to identify. It was also not possible to gain access to all sections of all buildings, or to some buildings at all. These are marked on the Phase 1 habitat plan (see Appendix III).

6.2 During the 2015 survey it was difficult to be precise with respect to the materials used for the roof coverings of some of the warehouse sections, due to their height, absence of access, and a failure to get any reasonable view of the roof from a close vantage point.

6.3 The 2020 survey was carried out in December, so outside of the prime survey season, which as there are few botanical species on site did not hinder survey work. The site at the time was however an active building site, and assessed with appropriate precautions for Health and Safety and Covid-19 safeguards.

7 Survey Results

7.1 The original survey was undertaken on Tuesday the 7th of July 2015, by two experienced ecologists. The site was re-surveyed on Monday the 14th of December 2020. Details of the conditions under which appraisals were carried out are given in Table 1 below. Wind speeds given employ the Beaufort scale.

Table 1: Summary of Survey Activity and Weather Conditions

Date	Survey Type and Location	Timing	Weather Conditions
07/07/2015	Day time visual inspection, botanical survey and habitat assessment, including protected species assessment (CH, RM)	08.30 – 14.00 hours British Summer Time (BST)	Air temperature: 16°C Cloud cover: 6/8 oktas Wind speed: F1, light air Conditions: Rain
14/12/2020	Day time visual inspection, botanical survey and habitat assessment, including protected species assessment (CH)	10:30 – 11:30 hours Greenwich Mean Time (GMT)	Air temperature: 8°C Cloud cover: 3/8 oktas Wind speed: F1, light air Conditions: Dry
Surveyors	Carola Hoskins, Robert Morgan		

2015 Survey Results

7.2 The site was originally divided into two different zones for recording purposes. Due to the fact that all vegetation present was nestled within the buildings or open areas, and could not be separated from the other habitats in a meaningful way, it was included within these.

Table 2: Summary of Phase 1 Habitat Notes

Habitat	Phase 1 Classification	Description of Area and Typical Species
Type 1	J3.6 Buildings	The majority of the survey site is covered with buildings of varying purposes and roof designs, as outlined above. Some vegetative cover has gained a foothold in crevices, or on the slopes of roofs; Species present include butterfly bush (*Buddleja davidii*), hart's tongue fern (*Asplenium scolopendrium*), and a stonecrop (*Sedum sp.*)
Type 2	J5 Other Habitat: Impermeable Surface	Open areas such as access drives and uncovered car parking areas are present in a number of locations across the site. These are mostly covered in tarmacadam, with some concrete areas also present. A low number of species have colonised gaps and crevices within these areas; Species present include herb-robert (*Geum robertianum*), common ragwort (*Senecio jacobaea*), and smooth sow-thistle (*Sonchus oleraceus*)

7.3 A coloured Phase 1 habitat map was produced (see Appendix III). A total of 12 species of plants were found during the survey. Species present on site are common and wide-spread and the site is therefore considered to be of low ecological interest.

7.4 Ecological assessment included consideration of the presence and potential for protected species to be present on site. No evidence for bats was found. Roof areas were examined and no bat droppings were found around the roofs, on walls or on the floor substrates. No other signs such as the remains of dead bats (including dead juveniles and babies, which might indicate the presence of a maternity site), signs of staining on timbers caused by oil from bat fur, or discarded

fragments of insects, such as moth wings, were found. The roofs did not contain features which bats would typically exploit.

7.5 A lack of natural features on the survey site and the immediate surrounding area results in a lack of shelter, protection and food sources for most other animals. The site did not contain features to support protected species by way of mammals, reptiles or amphibians.

7.6 Several bird species were seen or heard at the site. Herring gulls (*Larus argentatus*), were present on the roof, with nesting likely occurring due to the defensiveness of the birds. Woodpigeon (*Columba palumbus*), were also observed on the roof of the building. Feral pigeons (*Columba livia*) were observed on perches within the roof structures, old pigeon eggs were found within the buildings and an active nest with chicks was observed. Areas with accumulations of bird droppings indicate several areas where the birds regularly roost. House sparrow (*Passer domesticus*), were seen during the survey.

2020 Survey Results

7.7 The update survey in 2020 revealed that the buildings previously present on site had been demolished. The site was now being used as a compound for the development proposals on the wider site, including the area beyond the site to the north.

7.8 Hard-standing is covering the site, a variety of structures are present on site, mostly Portakabins. The site was fenced around the perimeter and divided into sections, such as car parking etc. There were few botanical species on site. Species present included Canadian fleabane (*Erigeron canadensis*), butterfly bush (*Buddleja davidii*), and herb-robert (*Geranium robertianum*). A mound of gravel and earth was present, approximately at the centre of the site.

8 Discussion and Conclusions

2015 Survey

8.1 No evidence was found for the presence of bats, and when the potential of the buildings was assessed, they are considered unlikely to support bat roosts. The roof coverings did not contain the warm micro climates which bats seek out. The roof materials were not those which bats typically exploit, and the gaps, and sheltered locations for bats to roost in, did not exist. The potential of the buildings to be used by bats was assessed to be negligible, and no additional targeted survey effort was recommended.

8.2 The context of the site did not favour the likelihood of the site containing bat roosts as there were very small areas of green spaces or tree lines present. Areas with abundant insect life may exist around the floating harbour water body, at certain times of the year, but good quality foraging habitat for bats is associated with natural areas of grassland, hedges, trees, ponds etc. There was, and still is, extremely little habitat for foraging bats around the site, and no linking or protective corridors of habitat or features for bats to use for flight lines. With high numbers of predatory gulls in the area, the dense urban landscape would be a challenging environment.

8.3 Birds were observed and heard on site during the survey, and evidence of breeding was found by way of an active nest with two hatchlings present. House sparrow were seen and this species appears on the red list of the British Trust for Ornithology (BTO) 'Birds of Conservation Concern' reflecting the decline in the population in recent years. Herring gulls have been added as a red list species due to the same reason. Nesting efforts of all wild birds are protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and once a nest is established it is an offence to disturb or destroy the nest. Recommendations were made concerning nesting birds.

2020 Survey

8.4 No habitats of ecological value were present on site at the time of the 2020 appraisal. All buildings on site had been demolished and the site was constantly disturbed. No areas where protected wildlife could shelter were present. Changes from the 2015 survey obviously relate to the buildings having been demolished. No new habitats, including those of ecological value had been created by the demolition.

9 Recommendations

2015 Survey

9.1 When assessing the ecological features of the site against the development proposals, there is the risk that the demolition work will be constrained by the presence of breeding birds. Birds are protected under the provisions of the Wildlife and Countryside Act 1981 (as amended), and active bird nests cannot legally be disturbed or destroyed. If a nest is established the adult birds must have unrestricted access and the nest cannot be moved or destroyed until the chicks have fledged, and the nest is no longer in active use. To avoid active bird nests from disrupting demolition programmes, it is best to plan such work to avoid the nesting season which commences in March and continues to August inclusively.

9.2 If the project timetable is seriously disrupted by delaying the demolition until the end of the bird nesting season, other strategies can be employed, but the application of such schemes may not be practicable or cost effective.

9.3 The buildings can be checked by a suitably qualified ecologist immediately prior to demolition work commencing, but if an active nest is found, then this part of the site must be left intact. The birds must be able to access the nest, and the chicks fledge. If a nest location is discovered and rendered exposed by initial demolition works, then it may be necessary to give the nest site some screening to protect the young birds from predation. This course of action runs the risk of partial demolition being accomplished, but the final phase not being completed until the bird nesting season is concluded.

9.4 Preventative measures can be used. Typically such methods prevent birds having access to nest sites by obstructing features such as openings with netting. Given the height of the warehouse buildings and the number of openings in the roof, this will be very difficult to achieve.

9.5 Falconry can be employed as a deterrent for nesting birds. The frequent presence of hunting birds of prey within the warehouse will discourage birds from their regular perches and nesting locations. However a regular and sustained presence of a falconry handler is needed and a daily sweep of the building is recommended if this approach is to be effective against the risk of nesting birds.

9.6 Bird scaring devices can be used. Within the warehouse section, frequent but irregular loud noises can be used to scare birds. Noise levels must be within approved limits so as not to cause a disturbance to local residents. Although this may be effective in the short term, when used for any sustained period, the birds will become tolerant of the noise and will accept it as a new aspect of their environment. Making use of noises to scare birds away from the interior of the warehouse spaces will not prove effective against seagulls' intent on establishing nest sites around the external parts of the roof structure. Around the parapets and valleys of the roofs, there are sheltered locations which seagulls might use.

9.7 Mitigation is recommended for house sparrows. New homes for these birds can easily be accommodated on the external wall of the new building by attaching sparrow terrace boxes to the tops of walls. A minimum of two terrace nest boxes must be fitted in locations which avoid windows below and which avoid full direct sunlight. Mitigation for other species is not recommended due to the context of the site and the resulting unlikely usage of such features by these species.

2020 Survey

9.8 There are no specific additional enhancements or survey requirements following the 2020 re-survey. However, of the recommendations outlined above, mitigation provision is strongly advised for birds, particularly house sparrow (see paragraph 9.7), as part of the development proposals.

10 References

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Appendix I: Site Location Plans

Figure 1: Site location plan (2015)

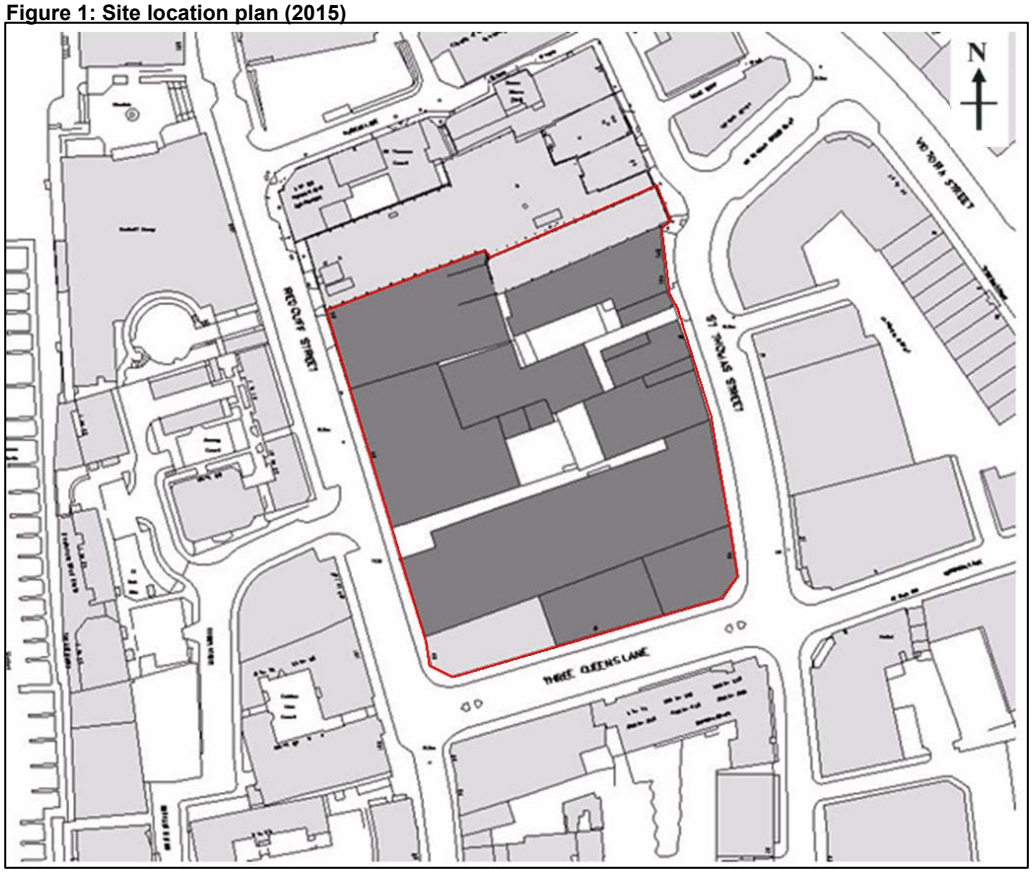
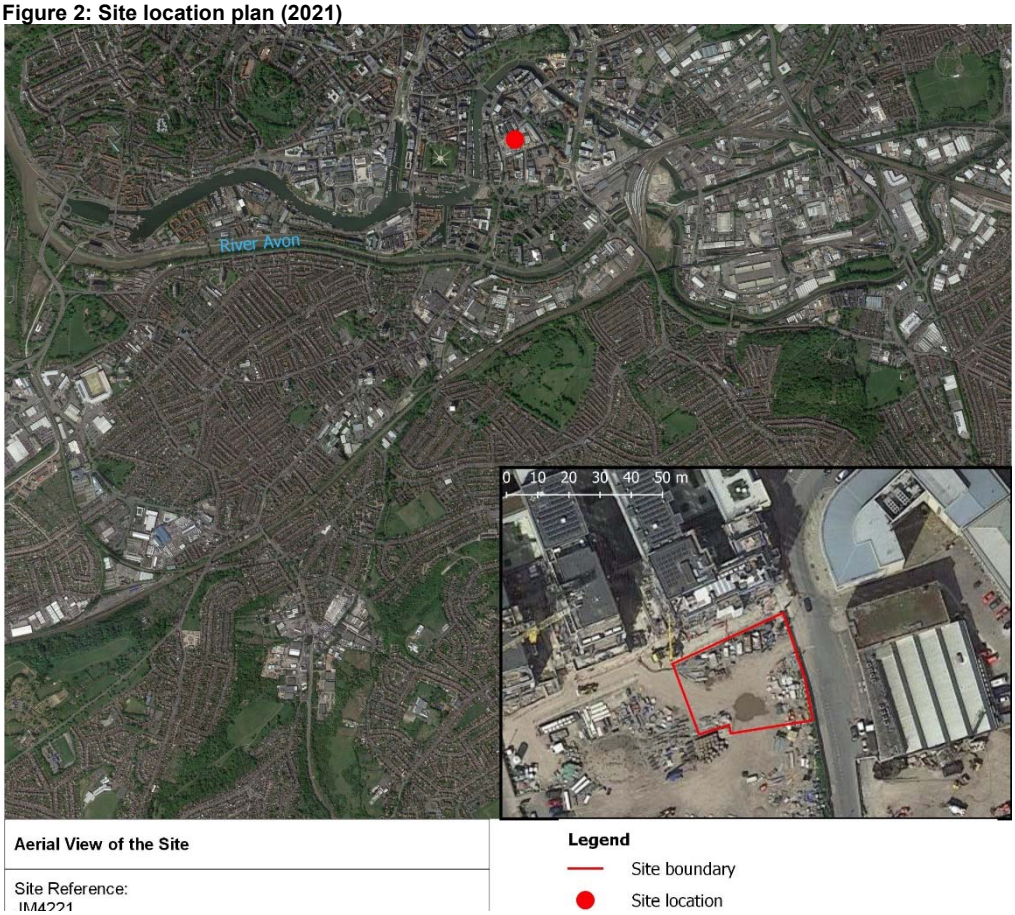


Figure 2: Site location plan (2021)



Appendix II: Site Photographs

2015 Site Visit

Plate 1: Buildings along St Thomas Street

Plate 2: South-eastern end of site

Plate 3: Inside building at south-eastern corner

Plate 4: Open car parking area in centre of site

Plate 5: View from eastern end of site across roofs

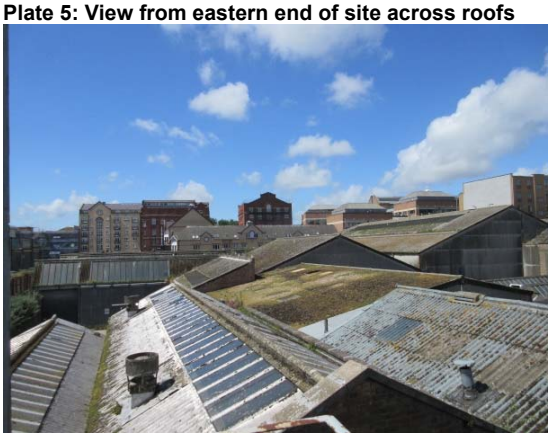


Plate 6: Pilkington warehouse

Plate 7: Office space along eastern side of site

Plate 8: Standing water at south-eastern end of site

Plate 9: Pigeon hatchlings

Plate 10: Inside Pilkington warehouse

Plate 11: Car parking area along western side

Plate 12: Feral pigeon nesting

Plate 13: Internal space of north-western warehouse

Plate 14: Western side of block

Plate 15: Southern side of block

Plate 16: North-western side of block

2020 Survey Update

Plate 17: View of site from western end

Plate 18: View across site

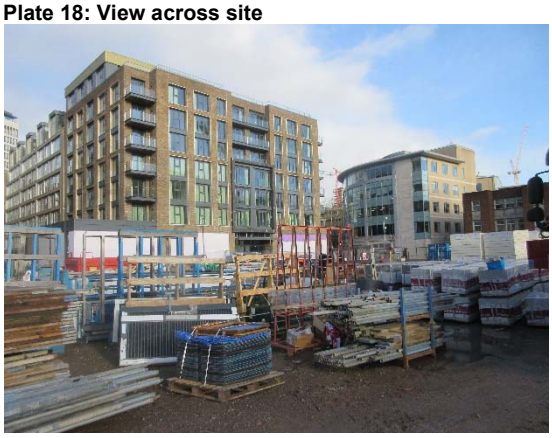
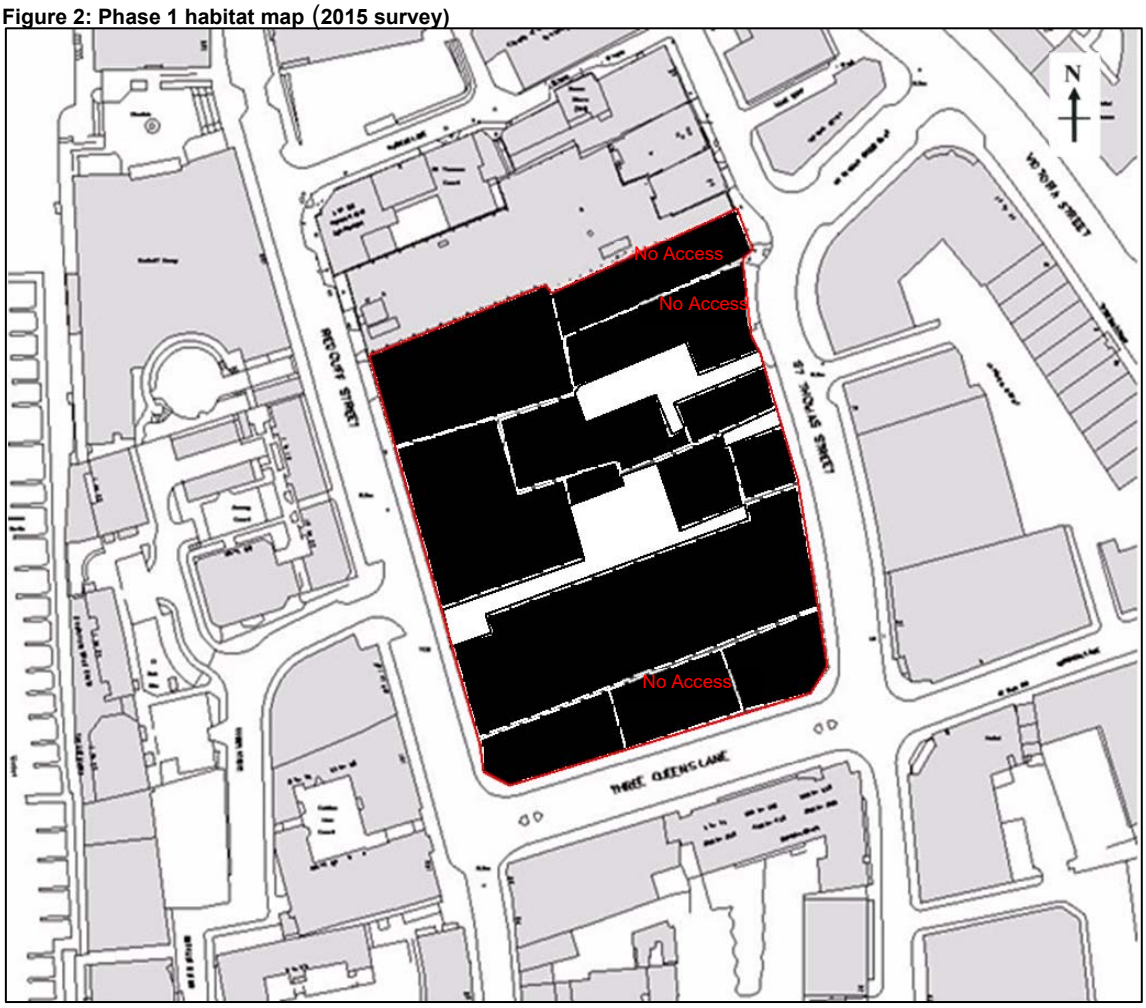


Plate 19: View of site to the north-east

Plate 20: View of site from southern end

Appendix III: Phase 1 Habitat Map

Figure 2: Phase 1 habitat map (2015 survey)



Legend

J5 Other habitat: Tarmacadam surfaces

Site_Boundary

J3.6 Buildings No Access

Appendix IV: List of Recorded Species

Table 3: List of Recorded Species (2015 Survey)

Common Name	Scientific Name	1	2
Buddleia	*Buddleja davidii*	●	●
Dock, broad-leaved	*Rumex obtusifolius*		●
Fern, a	-	●	
Fern, Hart's-tongue	*Asplenium scolopendrium*	●	
Unidentified plant	-	●	
Herb-Robert	*Geranium robertianum*	●	●
Plantain, greater	*Plantago major*		●
Ragwort, common	*Senecio jacobaea*		●
Rye-grass, perennial	*Lolium perenne*		●
Stonecrop, a	*Sedum sp.*	●	
Sow-thistle, smooth	*Sonchus oleraceus*	●	●
Traveller's-Joy	*Clematis sp.*	●	
Fauna			
House sparrow	*Passer domesticus*		
Feral pigeon	*Columba livia*		
Woodpigeon	*Columba palumbus*		
Herring gull	*Larus argentatus*		

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This document is valid for a period of two years from January 2021.

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Clients include government departments, local and regional authorities, development agencies, commercial and industrial enterprises as well as statutory nature conservation organisations, wildlife trusts and other charitable bodies.

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