

Land at Plot F, Great Jackson Street, Manchester, M15 4AX

**ECOLOGICAL SURVEY AND ASSESSMENT
(including a Licensed Bat Survey)**

October 2021

[ERAP (Consultant Ecologists) Ltd ref: 2020-375]

ERAP (Consultant Ecologists) Ltd
Building N2
Chorley Business and Technology Centre
East Terrace
Euxton Lane
Euxton
Chorley
PR7 6TE

Tel: 01772 750502

mail@erap.co.uk
www.erap.co.uk



CONTENTS

Summary	3
1.0 Introduction	4
1.1 Background and Rationale	4
1.2 Scope of Works.....	4
2.0 Method of Survey.....	4
2.1 Desktop Study and Data Search	4
2.2 Vegetation and Habitats.....	5
2.3 Animal Life	5
2.4 Survey and Reporting Limitations	7
2.5 Evaluation Methods	8
3.0 Survey Results.....	8
3.1 Desktop Study and Data Search	8
3.2 Vegetation and Habitats.....	10
3.3 Animal Life	11
4.0 Evaluation and Assessment.....	12
4.1 Introduction and Description of Proposals.....	12
4.2 Designated Sites for Nature Conservation	12
4.3 Vegetation and Habitats.....	12
4.4 Protected Species and Other Wildlife.....	12
5.0 Recommendations and Ecological Enhancement	13
5.1 Introduction	13
5.2 Protection of Existing Vegetation and Recommendations in Relation to Site Layout.....	13
5.3 Invasive Plant Species	13
5.4 Bats	13
5.5 Birds.....	14
5.6 Landscape Planting.....	16
6.0 Conclusion	17
7.0 References	17
8.0 Appendix: Tables, Photographs and Figures	19
8.1 Plant Species Lists	19
8.2 Photographs.....	20
8.3 Figures.....	23

List of Tables

Table 2.1: Survey Equipment used during Daylight Bat Survey	6
Table 2.2: Consideration of Suitability of Foraging and Commuting Habitat for Bats	7
Table 3.1: Records of Protected Species Within a 1 Kilometre Radius of the Site	9
Table 5.1: Suitable Native Species for Tree and Shrub Planting	16
Table 8.1: Plant Species List for Plot F1	19
Table 8.2: Plant Species List for Plot F2	19
Table 8.3: Plant Species List for Scrub at Western Site Boundary	20

List of Figures

Figure 1: Aerial Image of the Site and its Surrounding Habitats	23
Figure 2: Phase 1 Habitat and Vegetation Map	24

Document Control

Survey Type:	Surveyors ¹	Survey Date(s)
Phase 1 Habitat survey	Brian Robinson B.Sc. (Hons) MCIEEM & Amy Sharples B.Sc. (Hons) M.Sc. ACIEEM	10 th March 2021
Daylight bat survey	Brian Robinson B.Sc. (Hons) MCIEEM	10 th March 2021
Reporting	Personnel	Date
Author	Amy Sharples B.Sc. (Hons) M.Sc. ACIEEM Senior Ecologist and Brian Robinson B.Sc. (Hons) MCIEEM Senior Ecologist	17 th May 2021
Signature(s)		
Checked	Luke Atherton B.Sc. (Hons) M.Sc.	21 st May 2021
Revised and issued	Amy Sharples B.Sc. (Hons) M.Sc. ACIEEM	25 th May 2021
Report issued to	Renaker Build Ltd	
Updated	Version 2: 23 rd July 2021. Updated on availability of draft landscape proposals and arboricultural impact assessment	
Updated	Version 3: 4 th August 2021. Updated to reflect landscape proposals.	
Updated	Version 4: 20 th October 2021. Updated plot names.	
¹ Licence reference number		
Bats		
Brian Robinson Natural England Class Survey Licence (bats, Level 2) Registration Number 2015-13161-CLS-CLS		

SUMMARY

Introduction and Scope

- i. This ecological survey and assessment presents the ecological, biodiversity and nature conservation status of land at Plot F, Great Jackson Street, Manchester, M15 4AX. The assessment was requested in connection with proposals to develop the site to residential buildings.
- ii. This report presents the results of a desktop study, extended Phase 1 Habitat Survey and a licensed bat survey carried out in March 2021. The scope of survey undertaken is appropriate to identify potential ecological constraints, the remit of mitigation required and opportunities for biodiversity associated with the development proposals.
- iii. The site lies within an area of ongoing residential development and comprises one existing building, temporary cabins associated with the existing development site, hard standing with colonising vegetation, scattered trees and scrub.

Results of Survey and Assessment

- iv. The proposals will have no adverse effect on statutory or non-statutory designated sites for nature conservation.
- v. The site contains only common and widespread plant species. None of the habitats within the site are of significant interest in terms of their plant species composition. None of the habitats present are representative of semi-natural habitat. The NVC communities present are typical of the geographical area and conditions present. No Priority Habitats are present within the site.
- vi. Wall Cotoneaster, an invasive species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), was detected. This does not preclude development but it is an offence to cause the spread of this species in the wild. Guidance on the control and management of this species is described at **Section 5.3**.
- vii. The scattered trees and scrub provide habitat suitable for use by nesting birds. Recommendations for the protection of nesting birds is presented at **Section 5.4**.

Recommendations

- viii. The recommendations in **Section 5.0** outline all the mandatory measures and additional actions to be applied to ensure compliance with wildlife legislation, the National Planning Policy Framework (NPPF) and best practice.
- ix. The proposals will secure an opportunity to implement beneficial measures such as habitat creation that will safeguard habitats for wildlife such as birds and bats, with the aim of providing a net gain in biodiversity in accordance with the principles of the NPPF.

Conclusion

- x. It is concluded that the proposals are feasible and acceptable in accordance with ecological considerations and relevant planning policy. Redevelopment at the site will provide an opportunity to secure ecological enhancement for wildlife associated with residential development.

1.0 INTRODUCTION

1.1 Background and Rationale

- 1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned by Renaker Build Ltd to carry out an ecological assessment of land at Plot F, Great Jackson Street, Manchester, M15 4AX (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SJ 8340 9724. An aerial image of the site and its surrounding habitats is appended at **Figure 1** (source image: ESRI World Imagery).
- 1.1.2 The assessment was requested in connection with a planning application to develop the site to residential buildings.

1.2 Scope of Works

- 1.2.1 The scope of ecological works undertaken in March 2021 comprised:
- A desktop study and data search for known ecological information at the site and the local area;
 - An Extended Phase 1 Habitat Survey and assessment;
 - Assessment of the ecological value of the habitats within the site with the use of the National Vegetation Classification (NVC) and the Ratcliffe criteria, as presented in *A Nature Conservation Review* (Ratcliffe, 1977);
 - Survey and assessment of all habitats for relevant statutorily protected species¹ and other wildlife including badger (*Meles meles*), barn owl (*Tyto alba*) and bird species;
 - A licensed daylight bat survey of the buildings and trees;
 - The identification of any potential ecological constraints on the proposals and the specification of the scope of mitigation and ecological enhancement required in accordance with wildlife legislation, planning policy guidance and other relevant guidance; and
 - The identification of any further surveys or precautionary actions that may be required prior to the commencement of any development activities.

2.0 METHOD OF SURVEY

2.1 Desktop Study and Data Search

- 2.1.1 The following sources of information and ecological records were consulted:
- MAGiC: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;
 - Greater Manchester Local Record Centre (GMLRC); and
 - Greater Manchester Biodiversity Action Plan (BAP).

¹ In accordance with *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact on the Planning System* (Ministry of Housing, Communities & Local Government, 2005) developers should not be required to undertake surveys for protected species unless there is reasonable likelihood of the species being present and affected by the development. In this instance (for example) there are no ponds within 500 metres of the site, and no ditches or watercourses within or in proximity to the site; there has therefore been no requirement to consider great crested newt (*Triturus cristatus*), water vole (*Arvicola amphibius*) or otter (*Lutra lutra*) as part of this assessment.

2.2 Vegetation and Habitats

- 2.2.1 An Extended Phase 1 Habitat Survey of the site was carried out by Brian Robinson B.Sc. (Hons) MCIEEM and Amy Sharples B.Sc. (Hons) M.Sc. ACIEEM on 10th March 2021. The weather was overcast with scattered showers with a gentle breeze (Beaufort scale 3) and an air temperature of 6°C at 9am rising to 17°C in the afternoon. The conditions and time of year were favourable for the ecological survey.
- 2.2.2 A habitat and vegetation map was produced for the site and the immediate surrounding area at a scale of 1:1000 (refer to **Figure 2**). The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC, 2010) with minor adjustments to illustrate and examine the habitats with greater precision.
- 2.2.3 The plant species within the site boundary were determined with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system, where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare, this being a widely used and accepted system employed by ecological surveyors. The terms L = Locally and V = Very were additionally used to describe the plant species distributions with greater precision.
- 2.2.4 Stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and is a reliable framework for nature conservation and land-use planning.
- 2.2.5 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the *Wildlife and Countryside Act 1981* (as amended) and species which are indicators of important and uncommon plant communities. Plant nomenclature follows *New Flora of the British Isles 3rd Edition* (Stace, 2010).
- 2.2.6 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), including Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

2.3 Animal Life

Badger

- 2.3.1 The survey area for badger covered the site (as annotated on **Figure 1**) and extended to accessible land within a radius of 50 metres from the site boundary. Private gardens / land were excluded from the survey.
- 2.3.2 The survey was conducted in accordance with guidance presented within *Badgers and Development* (Natural England, 2007) and *Badgers: surveys and mitigation for development projects* (Natural England, 2015).
- 2.3.3 The following signs of badger activity were searched for:
- Sett entrances, e.g. entrances that are normally 25 to 35cm in diameter and shaped like a 'D' on its side;
 - Large spoil heaps outside sett entrances;
 - Bedding outside sett entrances;
 - Badger footprints;
 - Badger paths;
 - Latrines;
 - Badger hairs on fences or bushes;
 - Scratching posts; and
 - Signs of digging for food.

- 2.3.4 Habitats within and surrounding the site were assessed in terms of their suitability for use by foraging and sheltering badger in accordance with their known habitat preferences as detailed in current guidance and *Badger* (Roper, 2010).

Bat Species

Daylight Survey

Survey Personnel

- 2.3.5 The site was assessed for its suitability to support roosting bats by Brian Robinson, Natural England Class Survey Licence WML CL18 (Bat Survey Level 2), Registration Number 2015-13161-CLS-CLS.
- 2.3.6 The surveyor's qualifications and experience meet the criteria as defined in the *Technical Guidance Series Competencies for Species Survey: Bats* (CIEEM, 2013).

Buildings

- 2.3.7 The survey was carried out in accordance with standard methodology including the *Bat Mitigation Guidelines* (Mitchell-Jones, 2004), the *Bat Workers' Manual 3rd Edition* (Mitchell-Jones & Mcleish, 2004) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed), 2016).
- 2.3.8 An inspection of the external surfaces, walls and roofs of the buildings was carried out to find potential bat roosting habitat or accesses into internal areas where roosts may be present. Searches for evidence of bat presence in the form of droppings, urine stains, feeding signs, grease marks and other evidence were also carried out.
- 2.3.9 The internal survey involved an examination of the accessible internal areas (including roof voids) to find roosting bats or evidence of past use of the buildings by bats such as droppings and prey remains.
- 2.3.10 A list of equipment used is detailed at **Table 2.1**, below:

Table 2.1: Survey Equipment used during Daylight Bat Survey

Ladders
LED Lenser P14 torch
Canon Ixus digital camera
8x20 binoculars
Ridgid Micro Inspection Camera Borescope CA-100

- 2.3.11 The suitability of each building has been assessed in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*, (Collins, J. (ed), 2016), taking into account any presence of gaps suitable for access by bats, features suitable for use by roosting bats within the building (including crevice dwelling species and species which can roost in the open in roof voids), and the suitability of the surrounding habitats for use by foraging and commuting bats.

Trees

- 2.3.12 A preliminary assessment of the trees within the site was conducted to assess their suitability for use by roosting bats, and to inform whether further surveys or precautionary measures were required.
- 2.3.13 Trees were assessed from the ground using binoculars and a high-powered torch. Each tree was searched for the presence of the following features:

Woodpecker holes, rot holes, hazard beams, other vertical or horizontal cracks or splits in stems and branches, partially decayed platey bark, knot holes, man-made holes, tear-outs, cankers in which cavities have developed, other hollows or cavities, including butt-rots, double-leaders forming compression forks with included bark, gaps between overlapping stems or branches, partially detached Ivy (Hedera helix) with stem diameters in excess of 50mm and bat, bird or dormouse (Muscardinus avellanarius) boxes.

2.3.14 Terms used to describe any features present follow (where possible) those outlined and described in *Bat Tree Habitat Key, 2nd Edition* (Andrews, H (ed), 2013) and *Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-care and Ecology Professionals* (BTHK, 2018).

2.3.15 The requirement for further presence / absence surveys at each tree was then considered.

Habitat Assessment for Commuting / Foraging Bats

2.3.16 Habitats within and adjacent to the site were assessed for their value and suitability for commuting and foraging bats in accordance with Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*, (Collins, J. (ed), 2016). Reference has been made to the categories and descriptions / examples, presented at **Table 2.2**, below.

Table 2.2: Consideration of Suitability of Foraging and Commuting Habitat for Bats

Suitability	Commuting Habitat	Foraging Habitat
Negligible	Negligible habitat features on site likely to be used by commuting bats.	Negligible habitat features on site likely to be used by foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat.	Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree or patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.	Habitat that is linked to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape and is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Habitats close to and connected to known roosts.	High-quality habitat that is well-connected to the wider landscape and is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Habitats close to and connected to known roosts.

Bird Species

2.3.17 Bird species observed and heard during the survey were recorded.

2.3.18 Habitats throughout the site and in the immediate surrounding area were assessed for their value to roosting, feeding and nesting birds, as indicated by the amount of shelter, feeding value, woody vegetation structure and species diversity of tree and shrub species in the site.

2.3.19 The presence of any sign of barn owl within the buildings was searched for during the internal inspection conducted on 10th March 2021. All buildings were searched for pellets, faecal splashes and feathers which may indicate use by roosting or nesting barn owl in accordance with *The Barn Owl Conservation Handbook* (Barn Owl Trust, 2012) and *Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment. Developing Best Practice in Survey and Reporting* (Shawyer, 2011).

2.4 Survey and Reporting Limitations

2.4.1 The whole site was accessible and the Phase 1 Habitat survey was conducted under suitable conditions at a favourable time of year.

2.4.2 The survey was completed outside the bat active season, when any field signs of bats may have weathered from the external elevations of the building. Daylight bat inspections can be completed at any time of year, however and it is considered that a reliable assessment of the likely presence or absence of bats has been possible.

- 2.4.3 All measurements within this report are approximate only, and have been estimated whilst on site or calculated using mapping software (QGIS) or internet-based mapping services such as MAGiC and Google Earth.

2.5 Evaluation Methods

- 2.5.1 The habitats, vegetation and animal life were evaluated with reference to standard nature conservation criteria as described in *A Nature Conservation Review* (Ratcliffe, 1977) and *Guidelines for the Selection of Biological SSSIs* (Bainbridge, et al., 2013). These are size (extent), diversity, naturalness, rarity, fragility, typicality, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.
- 2.5.2 Habitats have been assessed to determine whether they meet those described in *UK Biodiversity Action Plan: Priority Habitat Descriptions* (Maddock, A (ed), 2008); these lists are used to help draw up the statutory lists of Priority Habitats, as required under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006*. Where suitable, the ecological value of the habitats present has been assessed using the terms outlined in *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).
- 2.5.3 Government advice on wildlife, as set out in the *National Planning Policy Framework* (Ministry of Housing, Communities and Local Government, 2019) and associated government circulars has been taken into consideration. Legislation relating to protected species, such as those listed under Schedules 1, 5, 6 and 8 of the *Wildlife and Countryside Act 1981* (as amended) and *The Conservation of Habitats and Species Regulations 2017*, is referenced where applicable, and any impacts to protected species are evaluated in accordance with current guidance.
- 2.5.4 The presence of any Priority Species, as listed under Section 41 of the *Natural Environment and Rural Communities (NERC) Act 2006* is noted, and habitats are assessed in terms of their suitability and value for these species. The presence of habitats and/or species listed by the Greater Manchester Biodiversity Action Plans has been taken into account in the evaluation of the site.

3.0 SURVEY RESULTS

3.1 Desktop Study and Data Search

Statutory Designated Sites for Nature Conservation and SSSI Impact Risk Zones

- 3.1.1 The sites do not hold any statutory or non-statutory designation for nature conservation.
- 3.1.2 The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone for the Rochdale Canal SSSI and Special Area of Conservation (SAC) and Hollinwood Branch Canal SSSI. The SSSI Impact Risk Zone requires the Local Planning Authority to consult with Natural England on likely risks from the following development categories (Ordnance Survey, 2021):

- Air pollution: Livestock and poultry units with floorspace greater than 500m² and slurry lagoons greater than 4000m².
- Combustion: General combustion processes greater than 50 megawatt energy input including energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis / gasification, anaerobic digestion, sewage treatment works and other incineration / combustion.

Non-statutory Designated Sites for Nature Conservation

- 3.1.3 The River Irwell Site of Biological Importance (SBI) lies 1.5 kilometres north-west of the site.

Priority Habitats Inventory

- 3.1.4 The Priority Habitats Inventory² was checked via MAGiC Map. No Priority Habitats are noted within or directly adjacent to the site by the Priority Habitats Inventory.

Protected and Notable Species

- 3.1.5 GMLRC hold no records of protected and notable species for the site.
- 3.1.6 Records of protected and notable species for a 1 kilometre radius of the site are summarised at **Table 3.1** below.

Table 3.1: Records of Protected Species Within a 1 Kilometre Radius of the Site

Taxon Group	Species Name and Designations ¹ and Notes
Bird	PS Bullfinch (<i>Pyrrhula pyrrhula</i>), dunnock (<i>Prunella modularis</i>), house sparrow (<i>Passer domesticus</i>), lapwing (<i>Vanellus vanellus</i>), skylark (<i>Alauda arvensis</i>), song thrush (<i>Turdus philomelos</i>) and starling (<i>Sturnus vulgaris</i>) and tree sparrow (<i>Passer montanus</i>). WCAs1 & GMBAP Black redstart (<i>Phoenicurus ochrurus</i>) WCAs1 Kingfisher (<i>Alcedo atthis</i>), little ringed plover (<i>Charadrius dubius</i>) and peregrine (<i>Falco peregrinus</i>).
Insects	PS moth species (unnamed). 5 records, the closest of which is 1 kilometre west of the site.
Plants	Grass-wrack Pondweed (<i>Potamogeton zosteriformis</i>) PS. 230 metres south-west of the site.
Terrestrial mammals	Badger (<i>Meles meles</i>) PBA. Two records of signs of badger more than 800 metres from the site. European hedgehog (<i>Erinaceus europaeus</i>) PS. One record 600 metres south-west of the site. Bat species EPS & GMBAP. 2 records of bat activity, the closest 900 metres north-east of the site. <i>Pipistrelle</i> species EPS, WCAs5 & GMBAP. Two records of roosts and 6 records of bat activity. The closest record of a roost is 630 metres north-west of the site. Common pipistrelle (<i>Pipistrelle pipistrelle</i>) WCAs5, PS & GMBAP. 9 records of roosts and 31 records of bat activity. The closest record of a roost is 280 metres north-east of the site. Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) EPS, WCAs5 PS & GMBAP. One record of a roost and 4 records of bat activity. The closest record of a roost is 850 metres north-west of the site. Daubenton's bat (<i>Myotis daubentonii</i>) EPS, WCAs5 & GMBAP. One record of a roost 850 metres north-west of the site.
¹Key to Designation Codes: EPS = European Protected Species under the <i>Conservation of Habitats and Species Regulations 2017</i>. WCAs1 = Species receives full protection under Schedule 1 of the <i>Wildlife and Countryside Act 1981</i> (as amended). WCAs5 = Species receives full protection under Schedule 5 of the <i>Wildlife and Countryside Act 1981</i> (as amended). PBA = Protection of Badger Act 1992 PS = Priority Species listed under Section 41 of the NERC Act 2006 LBAP = Species listed on the Greater Manchester Biodiversity Action Plan	

- 3.1.7 The presence of these protected and notable species within the wider area has been taken into account throughout this report.

² A spatial dataset that describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance.

3.2 Vegetation and Habitats

General Description

- 3.2.1 The approximately 0.8 hectare site is located within an urban area of Manchester, and lies within an existing residential development site. The site comprises one building and temporary cabins associated with the existing development site, hard standing with colonising vegetation, scattered trees and scrub.
- 3.2.2 The northern site boundary lies within the existing development site. The southern and western boundaries are demarcated by fencing associated with the existing development site and lies adjacent to Great Jackson Street. The eastern site boundary is defined by an existing building.
- 3.2.3 In order to describe the site with greater clarity it has been split into three plots, namely Plot F1 and Plot F2. A Phase 1 Habitat Survey map showing each plot location is appended at **Figure 2**, and can be referred to for all habitat descriptions. Photographs are appended at **Section 8.2**.

Hard Standing with Colonising Vegetation

- 3.2.4 The whole Plot F site comprises asphalt, compacted stone and concrete slab hard standing which lies within an existing development site. Very locally abundant colonising ruderal herbs are present at the margins of the hard standing, with scattered trees present at the site boundaries.
- 3.2.5 Scattered trees within Plot F (refer to **Photos 1 and 2**) comprise one Wild Cherry (*Prunus avium*) and one Norway Maple (*Acer platanoides*). Please refer to the *Arboricultural Impact Assessment with Tree Protection Measures, Plot F, Great Jackson Street, Manchester* (Godwins Arboricultural Ltd, 2021) for full details of the tree species within the site.
- 3.2.6 Refer to **Photo 3**. The colonising vegetation in Plot F1 is characterised by occasional Oxford Ragwort (*Senecio squalidus*) with occasional to very locally frequent Yorkshire-fog (*Holcus lanatus*) and very locally frequent Dandelion (*Taraxacum officinale* agg.).
- 3.2.7 Refer to **Photos 4 and 5**. The colonising vegetation in Plot F2 is characterised by occasional Oxford Ragwort with occasional to very locally frequent Yorkshire-fog and very locally frequent Creeping Bent (*Agrostis stolonifera*), Dandelion, Common Chickweed (*Stellaria media*), Common Mouse-ear (*Cerastium fontanum*) and Common Whitlowgrass (*Erophila verna*).
- 3.2.8 The scattered trees and colonising vegetation are not characteristic of any NVC community. Plant species lists are appended at **Table 8.1** and **8.2**.

Scrub

- 3.2.9 Refer to **Photo 6**. The scrub located at the western site boundary and is characterised by locally abundant Norway Maple (*Acer platanoides*), Ash (*Fraxinus excelsior*), Butterfly-bush (*Buddleja davidii*), Goat Willow (*Salix caprea*), Cherry species (*Prunus* sp.) and Bramble (*Rubus fruticosus* agg.).
- 3.2.10 The scrub is not characteristic of an NVC community. A plant species list is appended at **Table 8.3**.

Invasive Plant Species

- 3.2.11 No Japanese Knotweed is present at the site.
- 3.2.12 As illustrated on **Figure 2**, stands of Wall Cotoneaster (*Cotoneaster horizontalis*) were detected at the western site boundary scrub vegetation. This species is listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended); it is an offence to spread or cause its spread in the wild. This is considered further at **Section 4.3** below.

3.3 Animal Life

Badger

- 3.3.1 The habitats within and surrounding the sites are wholly unsuitable for use by badger. No signs of badger were detected within the sites. The presence of badger is reasonably discounted.

Bat Species

Daylight Survey: Buildings

Building 1

- 3.3.2 Refer to **Photos 8 to 11**. Building 1 is a detached warehouse constructed from walls of mortared blockwork with a mortared brick skin to 3 metres with corrugated metal sheeting above. The building supports a pitched roof of corrugated metal sheeting. A single-storey open-front extension is located at the south-eastern elevation of the building constructed from corrugated metal sheeting on a metal frame.
- 3.3.3 Internally the building is open to the roof which is lined with plastic sheeting. The corrugated metal sheeting roofing is supported on metal trusses and purlins. Plastic skylights are present.
- 3.3.4 The building does not support any features suitable for use by either crevice dwelling species such as common pipistrelle (*Pipistrellus pipistrellus*) or species known to roost in the open in voids, such as brown long-eared bats (*Plecotus auritus*).
- 3.3.5 Taking into account the suitability of the surrounding habitats for foraging and commuting bats it is considered that the building is of 'negligible' suitability for use by roosting bats; the presence of roosting bats is reasonably discounted at Building 1.

Building 2 and Metal Storage Containers

- 3.3.6 Refer to **Photos 12 and 13**. Building 2 is a detached 3-storey office block constructed from pre-fabricated metal porta-cabins. No gaps suitable for access by bats were detected at the external elevations of the building, and no features suitable for use by roosting bats were detected at the internal areas of the building.
- 3.3.7 Refer to **Photo 14**. A series of metal storage containers is present to south-east of Building 2. None of the storage containers support any features suitable for access by bats or features suitable for use by roosting bats. The presence of roosting bats is reasonably discounted at the metal storage containers.
- 3.3.8 Taking into account the suitability of the surrounding habitats for foraging and commuting bats it is considered that the building is of 'negligible' suitability for use by roosting bats; the presence of roosting bats is reasonably discounted at Building 2 and the metal storage containers.

Trees

- 3.3.9 None of the trees or shrubs within or adjacent to either site are suitable for use by roosting bats. None support any features suitable for use by roosting bats. The presence of roosting bats within the site is reasonably discounted.

Habitat Assessment for Commuting and Foraging Bats

- 3.3.10 The scrub at the western site boundary is small in size and is isolated within a wider landscape characterised by buildings and hard standing. The habitats within the site are assessed to be of negligible suitability for use by foraging or commuting bats.

Bird Species

- 3.3.11 The buildings and habitats within the site are not suitable for use by barn owl. No evidence of barn owl was detected during the survey.
- 3.3.12 Two magpies (*Pica pica*) were observed on a nest in the area of scrub at the western site boundary, refer to **Figure 2**.
- 3.3.13 The scattered trees and scrub vegetation at the site are suitable for use by passerine (perching) bird species; this is considered further at **Section 4.4** below.

4.0 EVALUATION AND ASSESSMENT

4.1 Introduction and Description of Proposals

- 4.1.1 Please refer to *Plot F, Manchester, Landscape General Arrangements (Draft), Dwg. No. Z1 TPM G710-PL-XX-3851 101* (TPM Landscape, 2021) for the proposed site layout.
- 4.1.2 **Section 4.2** provides an assessment of any impacts of the proposed development on the designated sites for nature conservation present in the wider area. The ecological value of habitats within the site is evaluated at **Section 4.3**, and protected and notable species are considered at **Section 4.4**.

4.2 Designated Sites for Nature Conservation

- 4.2.1 The proposed development at the site will have no impact on any designated sites for nature conservation present in the wider area.

4.3 Vegetation and Habitats

- 4.3.1 The site contains only common and widespread plant species. None of the habitats within the site are of significant interest in terms of their plant species composition. None of the habitats present are representative of semi-natural habitat. The NVC communities present are typical of the geographical area and conditions present. No Priority Habitats are present within the site.
- 4.3.2 The presence of Wall Cotoneaster, an invasive species listed under Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) has been detected at the scrub within the site. It is considered that the proposals present an opportunity for the eradication of this species. Further guidance is presented at **Section 5.3** of this report.

4.4 Protected Species and Other Wildlife

- 4.4.1 Recommendations to enhance habitats for foraging bats at the site are presented at **Section 5.4**.
- 4.4.2 The trees and scrub are suitable for use by nesting birds, and a magpie nest was detected at the scrub during the survey, refer to **Figure 2**. Consideration of nesting birds (including protection of breeding birds and recommended enhancements for Priority Species) is presented at **Section 5.5** of this report.
- 4.4.3 Otherwise the presence or protected or notable species is reasonably discounted at the site.

5.0 RECOMMENDATIONS AND ECOLOGICAL ENHANCEMENT

5.1 Introduction

- 5.1.1 These recommendations aim to ensure that the development is implemented in accordance with relevant wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF), local planning policy and best practice.
- 5.1.2 The recommendations address the potential impacts identified in **Section 4.0** and are appropriate and proportionate.
- 5.1.3 In accordance with Chapter 15, paragraph 175 point 'd' of the NPPF, when determining planning applications, local planning authorities should encourage opportunities to incorporate biodiversity improvements in and around developments, especially where this can secure measurable net gains for biodiversity.
- 5.1.4 Where possible, opportunities to enhance the ecological interest and habitat connectivity and seek biodiversity gain through appropriate landscape planting and habitat creation have been identified.
- 5.1.5 All recommendations are appropriate to the geographical area, the habitats in the wider area, the wildlife present in the local area (and likely to use the site post-construction) and take into consideration the end use of the site as a residential development.

5.2 Protection of Existing Vegetation and Recommendations in Relation to Site Layout

Protection of Trees and Shrubs

- 5.2.1 No on site trees will be retained by the development. One area of off-site trees will be retained (refer to *Arboricultural Impact Assessment with Tree Protection Measures, Plot F, Great Jackson Street, Manchester* (Godwins Arboricultural Ltd, 2021) and is currently protected by existing fencing.
- 5.2.2 The existing fencing must be in accordance with BS5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations* (BSI, 2012). If the existing fencing does not meet these requirements, additional protective fencing which meets the requirements must be installed for the duration of the development works.

5.3 Invasive Plant Species

- 5.3.1 It is an offence under the *Wildlife and Countryside Act 1981* (as amended) to cause the spread of Wall Cotoneaster in the wild. It is concluded that the preparation of an Invasive Species Management Plan is not necessary in this case.
- 5.3.2 It is recommended that the Wall Cotoneaster is grubbed out by the roots during site clearance and disposed of either by burying on site or removal to a suitable tip.

5.4 Bats

Lighting

- 5.4.1 Paragraph 180, bullet point 'c' in Chapter 15 (conserving and enhancing the natural environment) of the NPPF states that development should:

'limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.'

Construction Phase

- 5.4.2 Any lighting to be used at the site during construction should be directional and screened where possible, this specification should be included within a Construction Environment Management Plan (CEMP), or similar.

Development Lighting Design

- 5.4.3 The lighting scheme to be implemented at the developed site must involve the use of appropriate products and screening, where necessary, to ensure no excessive artificial lighting shines over any retained area of scrub and any landscape planting, as lighting overspill may deter use by wildlife such as foraging bats.
- 5.4.4 The lighting scheme will be designed with reference to current guidance, namely:
- Guidance Note 8: Bats and Artificial Lighting in the UK* (Institution of Lighting Professionals & Bat Conservation Trust, 2018); and
 - Bats and lighting: Overview of current evidence and mitigation guidance* (Stone, 2014).

5.5 Birds

Protection

- 5.5.1 All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) while they are breeding. It is advised that any works such as vegetation clearance that will affect habitats suitable for use by nesting birds are scheduled to commence outside the bird nesting season. Commencement of works in the nesting season must be informed by a pre-works nesting bird survey, carried out by a suitably experienced ecologist. The bird breeding season typically extends between March to August inclusive (Natural England, 2015).
- 5.5.2 If breeding birds are detected the ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. This may involve cordoning off an area of the site until the young birds have fledged.

Enhancing Habitats for Nesting Birds

General and Swift Bird Boxes

- 5.5.3 The installation of two general bird nest boxes and two swift nest boxes is recommended at the proposed new buildings.
- 5.5.4 The boxes will not be positioned over windows or doorways where droppings may become a nuisance. RSPB advice states that boxes should ideally be sited facing north to east, to avoid exposure to direct sunlight, which may cause overheating of chicks in the nest. Suitable bird nest boxes are available from NHBS Ecology (www.nhbs.com) or Wild Care (www.wildcare.co.uk) and an example is presented at **Insert 1**:



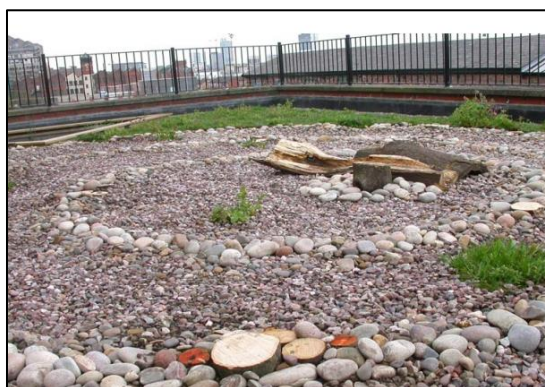
Insert 1: Schwegler 1MR Avianex and swift nest box

Black Redstart

- 5.5.5 If flat roofs are proposed at the new development at the sites, the opportunity to create suitable habitats for use by black redstart (*Phoenicurus ochruros*), a GM BAP Priority Species, should be taken.
- 5.5.6 The species action plan states that 'Records held from 1992 to 2007 show that black redstarts have bred or attempted to breed within the Piccadilly Basin area of central Greater Manchester every year except 2003. The total city population is unknown, but may be as low as 2 to 3 pairs.' (Greater Manchester Biodiversity Project, 2008).
- 5.5.7 The inclusion of feeding and nesting habitat onto any proposed areas of flat roof at the proposed development will enhance the ecological value of the sites.

Habitat for Feeding Black Redstart

- 5.5.8 To boost the availability of invertebrate food for black redstart it is recommended that a section of the roof is covered with a mixed sized aggregate to a varied depth of between 0.05 and 0.2 metres.
- 5.5.9 The aggregate pieces should range in size from 0.10 to 0.15 metres diameter. The aggregate must cover a minimum area of 30m² to be effective.
- 5.5.10 **Insert 3** shows an example of a more extensive aggregate covered roof as an example. The aggregate will be colonised by small plants and will attract invertebrates for foraging black redstart and their young.



Insert 3: Example of aggregate placed on city roof for the attraction of Black Redstart

Installation of Two Black Redstart Boxes

- 5.5.11 Two Schwegler 2HW nest boxes will be installed on a north-facing wall within the roofing area. These nest boxes are recommended in the GM BAP for black redstart.
- 5.5.12 The model of box is shown at **Insert 4**, below.



Insert 4: Suitable bird boxes for black redstart

5.5.13 Suitable boxes can be purchased from www.nhbs.com.

Management and Maintenance

5.5.14 The black redstart nest boxes are to be checked annually in September/October. Old nest material and other debris will be removed and any damaged or fallen boxes to be repaired/reinstated.

5.6 Landscape Planting

5.6.1 It is recommended that the landscape planting within the residential site is composed from native species and species known to be of value for the attraction of wildlife. In accordance with landscape proposals new tree planting, hedgerow planting and ornamental shrub planting is proposed.

5.6.2 It is recommended that trees which support blossom and fruit which will attract insects are incorporated into the landscape planting. Suitable species are presented at **Table 5.1**, below.

Table 5.1: Suitable Native Species for Tree and Shrub Planting

Scientific Name	Common Name	Scientific Name	Common Name
<i>Acer campestre</i>	Field Maple	<i>Prunus spinosa</i>	Blackthorn
<i>Corylus avellana</i>	Hazel	<i>Rosa arvensis</i>	Field Rose
<i>Crataegus monogyna</i>	Hawthorn	<i>Rosa canina</i>	Dog-rose
<i>Ilex aquifolium</i>	Holly	<i>Sambucus nigra</i>	Elder
<i>Malus sylvestris</i>	Crab Apple	<i>Sorbus aucuparia</i>	Rowan
<i>Prunus avium</i>	Wild Cherry	<i>Ulmus glabra</i>	Wych Elm
<i>Prunus padus</i>	Bird Cherry	<i>Viburnum opulus</i>	Gelder Rose

5.6.3 The understorey and ground cover planting design should be prepared to optimise the attraction of invertebrates such as feeding bumblebees and butterflies. Where possible the use of native species should be maximised but where necessary non-native species known to be attractive to invertebrates should be used.

5.6.4 Planting schemes that include flowering species such as *Viburnum*, *Ceanothus*, *Hebe*, *Lavandula*, *Lonicera*, *Potentilla*, *Rosmarinus* and *Vinca* can maximise opportunities for feeding invertebrates and for the attraction of foraging bats and birds.

5.6.5 For further plants suitable for the attraction of pollinators please refer to the *Perfect for Pollinators Plant List* (Royal Horticultural Society, 2012). It is recommended that the selection of plant species at the site ensures that a variety of flowering species are available throughout the year.

6.0 CONCLUSION

- 6.1 This ecological assessment has demonstrated that development at the site is feasible and acceptable in accordance with ecological considerations and the National Planning Policy Framework.
- 6.1.2 It is possible to implement reasonable actions for the protection and long-term conservation of fauna such as nesting birds associated with the habitats surrounding the sites.
- 6.1.3 Development at the sites will provide an opportunity to secure ecological enhancement for fauna typically associated with urban areas such as breeding birds.

7.0 REFERENCES

- Andrews, H (ed), 2013. *Bat Tree Habitat Key, 3rd Edition*. Bridgewater: AEcol Ltd.
- Bainbridge, I. et al., 2013. *Guidelines for the Selection of Biological SSSIs*. Peterborough: Joint Nature Conservancy Council.
- Barn Owl Trust, 2012. *Barn Owl Conservation Handbook*. Exeter: Pelagic Publishing.
- Bat Conservation Trust, 2014. *Artificial Lighting and Wildlife: Interim Guidance: Recommendations to help minimise the impact of artificial lighting*. [Online]
Available at: http://www.bats.org.uk/pages/bats_and_lighting.html
- BSI, 2012. *Trees in relation to design, demolition and construction. Recommendations*. London: BSI Standards Limited.
- BTHK, 2018. *Bat Roosts in Trees - A Guide to Identification and Assessment for Tree-Care and Ecology Professionals*, Exeter: Pelagic Publishing.
- CIEEM, 2013. *Technical Guidance Series Competencies for Species: Bats*. Winchester: Chartered Institute of Ecology and Environmental Management.
- CIEEM, 2016. *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd Edition*. Winchester: Chartered Institute of Ecology and Environmental Management.
- CIEEM, 2018. *Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*, Winchester: Chartered Institute of Ecology and Environmental Management.
- Collins, J. (ed), 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. London: The Bat Conservation Trust.
- Eaton, M. A. et al., 2015. Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man. *British Birds*, Issue 108, pp. 708-746.
- Edwards, J., Knight, M. & Crosher, I. E., 2020. *National Habitat Network Maps V2*, Peterborough: Natural England.
- Godwins Arboricultural Ltd, 2021. *Arboricultural Impact Assessment with Tree Protection Measures, Plot F, Great Jackson Street, Manchester*, s.l.: Godwins Arboricultural Ltd.
- Great Britain, 1981. *Wildlife and Countryside Act*. London: H.M.S.O.
- Great Britain, 2006. *Natural Environment and Rural Communities Act*. London: H.M.S.O.
- Great Britain, 2017. *The Conservation of Habitats and Species Regulations*. London: H.M.S.O.
- Greater Manchester Biodiversity Project, 2008. *Make Room for Black Redstarts: A Species Action Plan for Greater Manchester*, Manchester: Greater Manchester Biodiversity Project.
- Institution of Lighting Professionals & Bat Conservation Trust, 2018. *Guidance Note 8: Bats and Artificial Lighting in the UK*. [Online]
Available at: <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>
[Accessed 03 March 2021].
- JNCC, 2010. *Handbook for Phase 1 Habitat Survey: A technique for Environmental Audit*. Peterborough: NCC.
- Maddock, A (ed), 2008. *UK Biodiversity Action Plan: Priority Habitat Descriptions*. [Online]
Available at: <http://jncc.defra.gov.uk/page-5718>
- Marchant, J., 1983. *Common Birds Census Instructions*. Tring: BTO.

- Ministry of Housing, Communities & Local Government, 2005. *Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within The Planning System*, London: Office of the Deputy Prime Minister.
- Ministry of Housing, Communities and Local Government, 2019. *National Planning Policy Framework*. London: H.M.S.O.
- Mitchell-Jones, A., 2004. *Bat Mitigation Guidelines*. Peterborough: English Nature.
- Mitchell-Jones, A. J. & Mcleish, A. P., 2004. *Bat Workers' Manual, 3rd Edition*. Peterborough: Joint Nature Conservation Committee.
- Natural England, 2007. *Badgers and Development*, Peterborough: Natural England.
- Natural England, 2015. *Badgers: Surveys and mitigation for development projects*. [Online]
Available at: <https://www.gov.uk/guidance/badgers-surveys-and-mitigation-for-development-projects>
[Accessed 3 March 2021].
- Natural England, 2015. *Wild birds: surveys and mitigation for development projects*. [Online]
Available at: <https://www.gov.uk/guidance/wild-birds-surveys-and-mitigation-for-development-projects>
[Accessed 04 March 2021].
- Ordnance Survey, 2021. *Site Check Report Centroid Grid Ref: SJ83449724*. [Online]
Available at: <http://magic.defra.gov.uk/magicmap.aspx>
[Accessed 28 April 2021].
- Ratcliffe, D. A., 1977. *A Nature Conservation Review*. Cambridge: Cambridge University Press.
- Roper, T., 2010. *Badger (Collins New Naturalist Library, Book 114)*. Glasgow: Harper Collins.
- Royal Horticultural Society, 2012. *Perfect for Pollinators, Garden Plants*. [Online]
Available at: <https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/encourage-wildlife-to-your-garden/plants-for-pollinators>
- Shawyer, C., 2011. *Barn Owl Tyto alba Survey Methodology and Techniques for use in Ecological Assessment. Developing Best Practice in Survey and Reporting*, Winchester: IEEM.
- Stace, C. A., 2010. *New Flora of the British Isles 3rd Edition*. Cambridge: Cambridge University Press.
- Stone, E. L., 2014. *Bats and Lighting: Overview of current evidence and mitigation guidance*. Bristol: University of Bristol.
- TPM Landscape, 2021. *Plot F, Manchester, Landscape General Arrangements (Draft), Dwg. No. Z1 TPM G710-PL-XX-3851 101*, Manchester: TPM Landscape.

8.0 APPENDIX: TABLES, PHOTOGRAPHS AND FIGURES

8.1 Plant Species Lists

Table 8.1: Plant Species List for Plot F1

Scientific Name	Common Name	DAFOR ¹	Cover
<i>Agrostis stolonifera</i>	Creeping Bent	R	<1%
<i>Artemisia vulgaris</i>	Mugwort	R	<1%
<i>Betula pendula</i>	Silver Birch	VLA	<1%
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	R	<1%
<i>Cornus sanguinea</i>	Dogwood	VLF	<1%
<i>Cotoneaster horizontalis</i>	Wall Cotoneaster	VLF	<1%
<i>Euonymus fortunei</i>	Fortune's Spindle	R	<1%
<i>Galium aparine</i>	Cleavers	VLF	<1%
<i>Geranium robertianum</i>	Herb-Robert	R	<1%
<i>Hedera helix</i>	Ivy	R	<1%
<i>Heracleum sphondylium</i>	Hogweed	R	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	O/VLF	<1%
<i>Prunus laurocerasus</i>	Cherry Laurel	R	<1%
<i>Prunus spinosa</i>	Blackthorn	VLA	<1%
<i>Rubus fruticosus</i> agg.	Bramble	VLA	<1%
<i>Rumex obtusifolius</i>	Broad-leaved Dock	R	<1%
<i>Sambucus nigra</i>	Elder	VLF	<1%
<i>Senecio squalidus</i>	Oxford Ragwort	O	<1%
<i>Sonchus oleraceus</i>	Smooth Sow-thistle	R	<1%
<i>Sorbus aucuparia</i>	Rowan	VLF	<1%
<i>Taraxacum officinale</i> agg.	Dandelion	VLF	<1%

¹**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

Table 8.2: Plant Species List for Plot F2

Scientific Name	Common Name	DAFOR ¹	Cover
<i>Agrostis stolonifera</i>	Creeping Bent	VLF	<1%
<i>Bellis perennis</i>	Daisy	R	<1%
<i>Buddleja davidii</i>	Butterfly-bush	R	<1%
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	R	<1%
<i>Cerastium fontanum</i>	Common Mouse-ear	VLF	<1%
<i>Conyza canadensis</i>	Canadian Fleabane	R	<1%
<i>Dactylis glomerata</i>	Cock's-foot	R	<1%
<i>Epilobium hirsutum</i>	Great Willowherb	R	<1%
<i>Epilobium montanum</i>	Broad-leaved Willowherb	R	<1%
<i>Erophila verna</i>	Common Whitlowgrass	VLF	<1%
<i>Festuca rubra</i>	Red Fescue	R	<1%
<i>Geranium robertianum</i>	Herb-Robert	R	<1%
<i>Heracleum sphondylium</i>	Hogweed	R	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	O/VLF	<1%
<i>Poa annua</i>	Annual Meadow-grass	R	<1%
<i>Rosa</i> sp.	Rose sp.	R	<1%
<i>Sagina procumbens</i>	Procumbent Pearlwort	R	<1%
<i>Senecio squalidus</i>	Oxford Ragwort	O	<1%
<i>Senecio vulgaris</i>	Groundsel	R	<1%
<i>Stellaria media</i>	Common Chickweed	VLF	<1%
<i>Tanacetum parthenium</i>	Feverfew	R	<1%
<i>Taraxacum officinale</i> agg.	Dandelion	VLF	<1%
<i>Trifolium repens</i>	White Clover	R	<1%
<i>Tussilago farfara</i>	Colt's-foot	R	<1%
<i>Urtica dioica</i>	Common Nettle	R	<1%

¹**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

Table 8.3: Plant Species List for Scrub at Western Site Boundary

Scientific Name	Common Name	DAFOR ¹	Cover
<i>Acer platanoides</i>	Norway Maple	LA	20%
<i>Agrostis stolonifera</i>	Creeping Bent	VLF	<1%
<i>Buddleja davidii</i>	Butterfly-bush	LA	10%
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	VLF	<1%
<i>Epilobium montanum</i>	Broad-leaved Willowherb	VLF	<1%
<i>Fraxinus excelsior</i>	Ash	LA	20%
<i>Geranium robertianum</i>	Herb-Robert	R	<1%
<i>Geum urbanum</i>	Wood Avens	VLF	<1%
<i>Hedera helix</i>	Ivy	LA	10%
<i>Heracleum sphondylium</i>	Hogweed	R	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	LA	5%
<i>Prunus</i> sp.	Cherry sp.	LA	10%
<i>Rubus fruticosus</i> agg.	Bramble	LA	15%
<i>Salix caprea</i>	Goat Willow	LA	10%
<i>Senecio vulgaris</i>	Groundsel	VLF	<1%
<i>Taraxacum officinale</i> agg.	Dandelion	VLF	<1%
<i>Tussilago farfara</i>	Colt's-foot	R	<1%

¹**Key to DAFOR:** D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species

8.2 Photographs

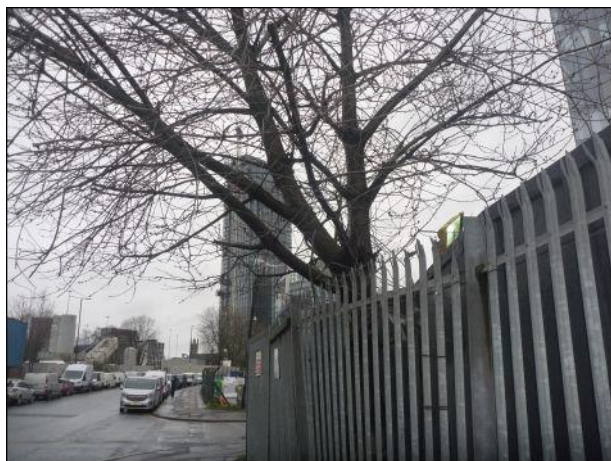


Photo 1: Tree at Plot F2



Photo 2: Tree at Plot F2



Photo 3: Hard standing at Plot F1



Photo 4: Hard standing at Plot F2

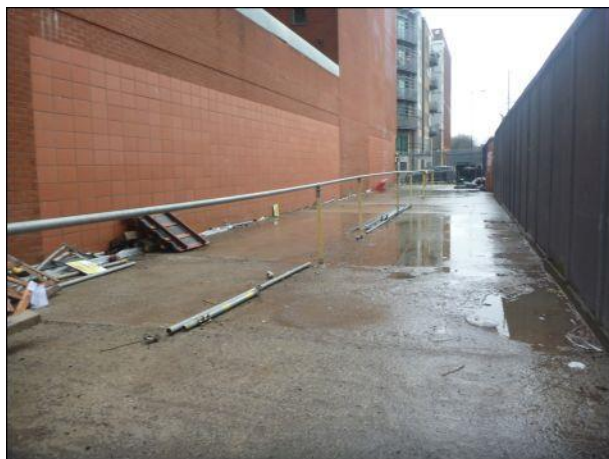


Photo 5: Hard standing at Plot F2



Photo 6: Colonising vegetation at Plot F2



Photo 7: Scrub



Photo 8: Building 1, south-eastern elevation



Photo 9: Building 1, south-western elevation



Photo 10: Single-storey extension at Building 1



Photo 11: Building 1, internal area



Photo 12: Building 2, south-western and south-eastern elevations

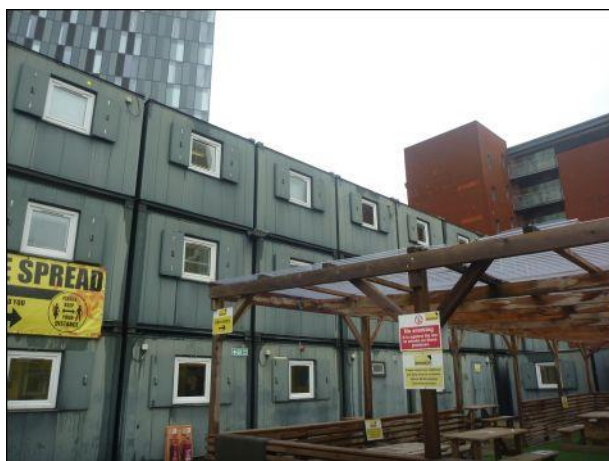


Photo 13: Building 2, south-eastern elevations



Photo 14: Metal storage containers

8.3 Figures

Figure 1: Aerial Image of the Site and its Surrounding Habitats

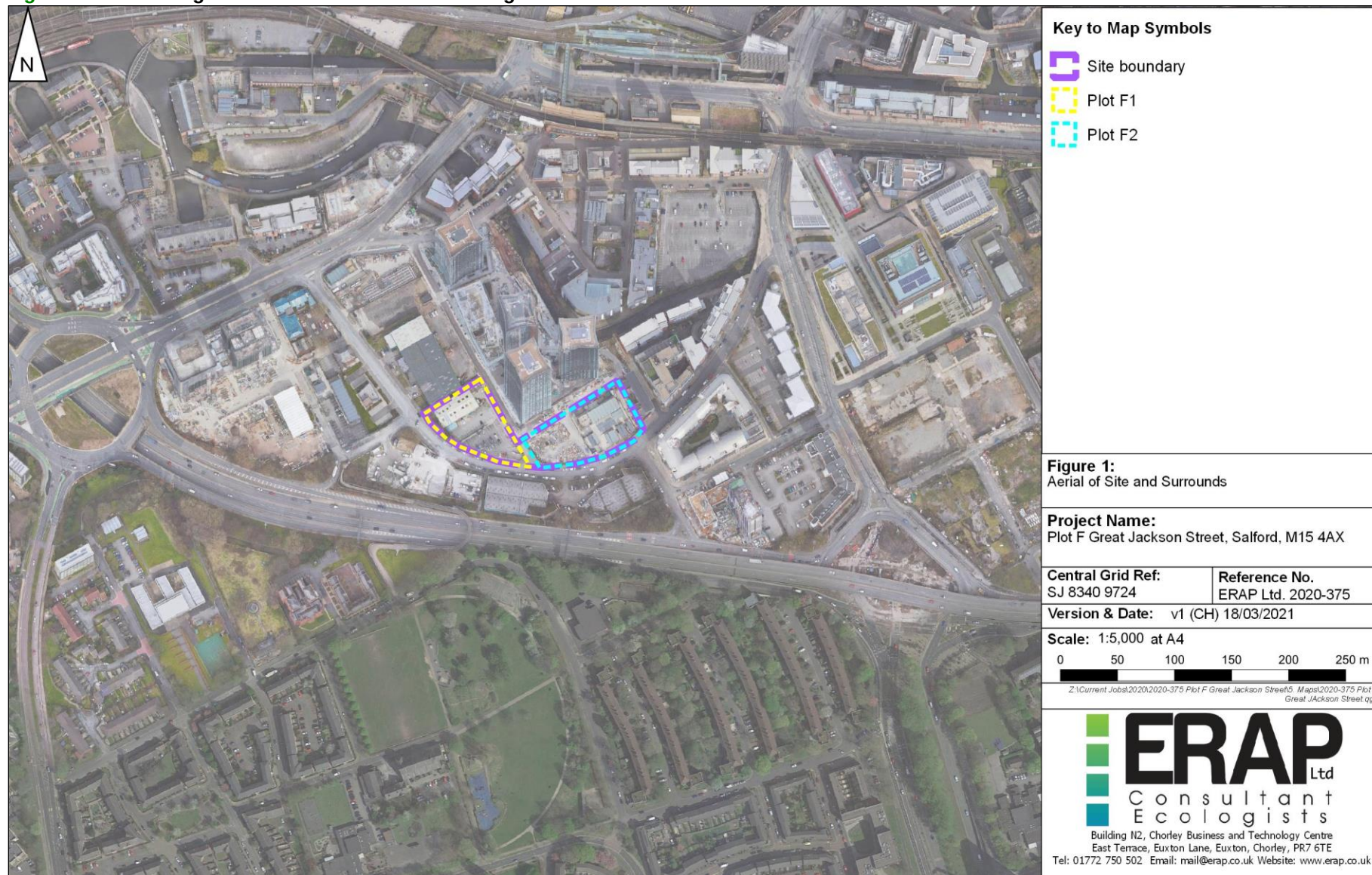


Figure 2: Phase 1 Habitat and Vegetation Map

