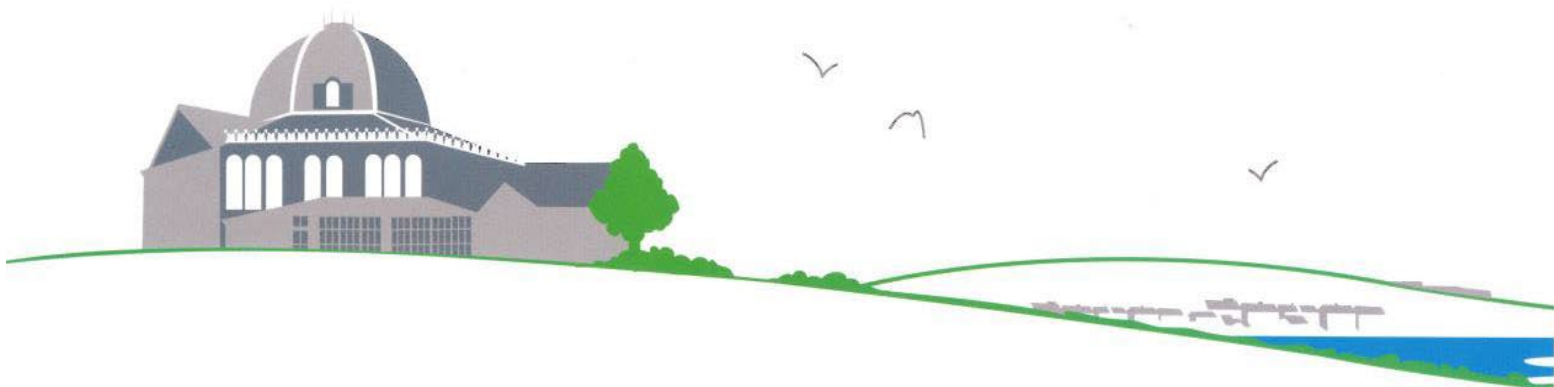




IQ STUDENT ACCOMMODATION

ECHO STREET, MANCHESTER

EXTENDED PHASE 1 HABITAT SURVEY AND ECOLOGICAL IMPACT ASSESSMENT





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This project has been undertaken in accordance with PAA policies and Procedures on quality Assurance

Signed: _____

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1. INTRODUCTION

- 1.1. Penny Anderson Associates Ltd (PAA) was commissioned by IQ Student Accommodation in January 2023 to undertake an extended Phase 1 habitat survey and Ecological Impact Assessment (EclA) on an area of land at Echo Street, Manchester (hereafter referred to as the 'site'). The site is centred on grid reference SJ84679770.
- 1.2. The report has been requested to accompany a planning application for re-development of the site. PAA previously carried out an extended Phase 1 habitat survey and bat inspection of the site in May 2017 (PAA 2017a) with subsequent bat activity surveys (PAA 2017b). The on-site buildings that were the subject of the bat inspections have since been demolished under planning permission reference: 18267/FO/2017 and subsequent amendments.
- 1.3. This report details the results of an updated desk study and Phase 1 Habitat survey and evaluates the results in the context of the proposed re-development of the site, making recommendations for any further survey work as required. The EclA was undertaken in accordance with the best practice methodology detailed by the Chartered Institute of Ecology and Environment Management (CIEEM 2018) and comprised a number of elements:
 - Identification and evaluation of ecological receptors;
 - Assessment of the likely effects of the proposed development on ecology; and
 - Identification of mitigation measures.
- 1.4. The EclA incorporates a Biodiversity Net Gain (BNG) assessment undertaken in accordance with Defra Metric Version 3.1 and with reference to the '*Biodiversity Net Gain – Guidance for Greater Manchester*' report (GMCA 2021) to demonstrate delivery of a minimum on-site 10% biodiversity net gain.

Site Location

- 1.5. Echo Street is an urban city centre site comprising hardstanding and bare ground with small patches of ephemeral/short perennial vegetation and introduced shrub. The wider surrounding land use is primarily urban development comprising roads, offices, and residential buildings.
- 1.6. The site is bound by student residential lots to the north, the A6 and Bainbridge house to the east, a small park and university building to the west, and a railway track to the south. Piccadilly train station is located 100m to the north-east of the site.

Legislative and Policy Context

- 1.7. A range of international and national legislation has been established in the UK to protect important nature conservation sites and priority species. At the international level, European Union (EU) Directives require individual member states to implement their conservation provisions nationally for the benefit of Europe as a whole. These Directives have been transposed into UK law by the Conservation of Habitats and Species Regulations 2017 (amended).
- 1.8. Other international conventions include: the Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979), which requires the maintenance of populations of wild flora and fauna, giving particular protection to endangered and vulnerable species; and the Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979), which requires the protection of migratory species throughout their entire range. The above conventions are implemented in England and Wales via the Wildlife and Countryside Act (WCA), 1981 (as amended) and Countryside and Rights of Way (CROW) Act 2000. This legislation also protects important habitats and sites such as Sites of Special Scientific Interest (SSSI).

- 1.9. At the national level, Biodiversity 2020 (Defra 2011) forms England's national biodiversity strategy. Building on the Natural Environment White Paper¹ published in 2011, this provides a means of delivering the UK's commitments to maintaining and protecting biodiversity. Under Biodiversity 2020, the Priority Species and Habitats referred to are those of 'Principal Importance' for the conservation of biodiversity in England as listed on Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006 (amended).
- 1.10. More recently, the Environment Act 2021 further supports this commitment to, and strengthens the legislation in respect of, maintaining and also enhancing biodiversity in England, and Part 6 Nature and Biodiversity includes the following key areas:
 - Strengthened biodiversity duty for public authorities in England;
 - Biodiversity net gain to ensure developments deliver at least 10% increase in biodiversity;
 - Local Nature Recovery Strategies to support a Nature Recovery Network;
 - Duty upon Local Authorities to consult on street tree felling;
 - Strengthen woodland protection enforcement measures; and
 - Protected Site Strategies and Species Conservation Strategies to support the design and delivery of strategic approaches to deliver better outcomes for nature.
- 1.11. Finally, the National Planning Policy Framework (NPPF 2021) provides guidance for local authorities on the content of the Local Plans and is a material consideration in determining planning applications. Briefly, with an overall focus on sustainable development, the NPPF states that developments should aim to engender positive outcomes for habitats and biodiversity, with a particular focus on the maintenance and creation of ecological networks.
- 1.12. The NPPF identifies the following principals that should be applied by local planning authorities when determining planning applications:
 - a. If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
 - b. Development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSI;
 - c. Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists; and
 - d. Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.
- 1.13. The NPPF states that the planning system should contribute to and enhance the natural environment through a range of actions, including:
 - Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils;

¹ www.gov.uk/government/publications/the-natural-choice-securing-the-value-of-nature

- Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services; and
- Minimising impacts on biodiversity and providing net gains for biodiversity including establishing coherent ecological networks that are more resilient to current and future pressures.

1.14. To protect and enhance biodiversity and geodiversity, plans should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

1.15. At a local level the relevant planning policy in relation to green infrastructure and biodiversity is provided by Manchester's Local Development Framework (Manchester City Council 2021). Policy EN9 'Green Infrastructure' states:

'New development will be expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Where the opportunity arises and in accordance with current Green Infrastructure Strategies the Council will encourage developers to enhance the quality and quantity of green infrastructure, improve the performance of its functions and create and improve linkages to and between areas of green infrastructure. Where the benefits of a proposed development are considered to outweigh the loss of an existing element of green infrastructure, the developer will be required to demonstrate how this loss will be mitigated in terms of quantity, quality, function and future management.'

Key features of Manchester's green infrastructure will include:

- *The continued development of a network of green spaces, water bodies, canals, paths and cycleways, with priority given to those parts of the City where there is an identified existing lack of open space. The Council will seek to protect existing street trees and promote new planting, particularly where this can enhance green links in the urban area.*
- *The continued maintenance and management of the Rivers Mersey and Irwell and their tributaries, for example the River Irk, River Medlock, Chorlton Platt Gore, Gatley Brook, Moston Brook and adjoining land, with regard to their multiple functions including recreation, flood management, and biodiversity.*
- *The provision of new, and improvements to the quality and accessibility of existing green infrastructure assets, to mitigate for any loss of green infrastructure as a result of development such as the Metrolink extension programme.*
- *The encouragement of green roofs, green walls, tree planting and other forms of green infrastructure to allow for the adaption to climate change in heavily urbanised areas.*

New green infrastructure provision should be an exemplar of best practice and innovation in terms of both its design and management'.

1.16. Policy EN15 'Biodiversity and Geological Conservation' states:

'The Council will seek to maintain or enhance sites of biodiversity and geological value throughout the City. Particular consideration will be given to:

- sites with international or national designations for their biodiversity value. Manchester contains one Site of Special Scientific Interest (SSSI) (Cotterill Clough); there is a Special Area of Conservation (SAC) and an SSSI just over the border in Oldham (both on the Rochdale Canal within Oldham);*
- other sites of biodiversity value, including Sites of Biological Importance (SBIs) and Local Nature Reserves (LNRs); Manchester currently has 35 SBIs (including the Rochdale and Ashton Canals) and 7 LNRs; priority habitats found within Manchester, as listed in the Manchester Biodiversity Strategy and included in the Greater Manchester Biodiversity Action Plan (GM BAP);*
- protected and priority species, as listed in the Manchester Biodiversity Strategy and included in the Greater Manchester Biodiversity Action Plan (GM BAP);*
- sites that are recognised for their geological importance;*
- the Council's objective to protect and conserve the City's existing trees and woodlands and the aim for a net increase in trees across the City.*

Developers will be expected to identify and implement reasonable opportunities to enhance, restore or create new biodiversity, either on-site or adjacent to the site, contributing to linkages between valuable or potentially valuable habitat areas where appropriate, with reference to:

- the Manchester Biodiversity Strategy, which provides further details of priority habitats within Manchester and opportunities for biodiversity enhancement including corridors such as the Mersey, Medlock and Irk river valleys, the canals and disused railway lines and areas of managed greenspace particularly in parks;*
- the Green Infrastructure Framework for Greater Manchester, which encompasses an ecological framework that seeks to guide and inform habitat creation and repair, including identifying large 'biodiversity opportunity areas' including the Moston Brook Corridor and Nutsford Vale;*
- the Open Space, Sport & Recreation Study, which identifies areas where there is a deficit of natural and semi-natural greenspace, opportunities for green corridors and other linkages;*
- Manchester's Climate Change Action Plan;*
- the Strategic Flood Risk Assessment (SFRA) for Manchester;*
- the Habitats Regulations Assessment (HRA) for Manchester, which gives detailed consideration to Special Areas of Conservation (SACs), including the Rochdale Canal SAC just outside the district boundary;*
- the River Basin Management Plan for the North West;*
- the Manchester Tree Strategy.*

Any adverse impacts on biodiversity will need to be justified against the wider benefits of the proposal, assessed against other LDF policies. Where adverse impacts are unavoidable, developers will be required to provide appropriate mitigation and/or compensation.

Development should wherever possible seek to maintain, enhance or restore existing geology'.

1.17. Of the above Local Plan Policies the most relevant aspects in relation to the proposed development are:

- EN9 – the encouragement of green roofs to allow for the adaptation to climate change in heavily urbanised areas;
- EN15 – developers will be expected to identify and implement reasonable opportunities to enhance biodiversity and provide linkage with other habitats with reference to the Manchester Biodiversity Strategy and the Green Infrastructure Framework for Greater Manchester.

Invasive Species

- 1.18. Certain non-native species that have been introduced into the UK are regarded as being a threat to native biodiversity. Legislative measures have, therefore, been put in place to prevent the spread of these invasive species in the wild.
- 1.19. Under section 14 of the WCA, 1981 (as amended), it is illegal to introduce plants listed under Part II of Schedule 9 of the WCA into the wild or sell these species. Offences include causing the spread of viable plant material or neglecting to contain or appropriately manage non-native species.
- 1.20. Commonly introduced Schedule 9 species include non-native cotoneaster species, specifically, small-leaved cotoneaster² (*Cotoneaster microphylla*) and wall cotoneaster (*C. horizontalis*), Himalayan balsam (*Impatiens glandulifera*) and Japanese knotweed (*Reynoutria japonica*).
- 1.21. Whilst every effort has been made to notify the client of any plant species listed on Schedule 0 of the WCA 1981 (as amended) it should be noted that the Extended Phase 1 habitat survey did not include a specific survey for these species.

² Plant names follow Stace 2019

2. METHODS

Desk Study

- 2.1. A request for details of protected and notable species and locally designated sites within 2km of the centre of the site was made to the Greater Manchester Ecology Unit (GMEU), with data returned in January 2023. Additionally, the Multi-Agency Geographic Information for the Countryside (MAGIC³) website was consulted for details of statutory designated sites and Priority Habitats within 2km of the site and details of European Protected Species (EPS) within a 1km search zone.
- 2.2. It is important to note that the desk study results provide an indication of the species present in and around the site, and do not confirm current presence or absence of any species. Protected species are often under-recorded in county wildlife databases.

Extended Phase 1 Habitat Survey

- 2.3. An extended Phase 1 habitat survey was undertaken by senior ecologist Rob Lamb (ACIEEM⁴) and assistant ecologist Stephen Griffith on 18th January 2023.
- 2.4. The extended Phase 1 habitat survey was undertaken in accordance with the best practice methodology as detailed by CIEEM (2017) and the Joint Nature Conservation Committee (JNCC 2010).
- 2.5. This entailed mapping, describing and collating plant species lists for habitats within the site boundary. The broad habitat types were mapped, with each habitat type coded according to the standard JNCC Phase 1 habitat survey methodology.
- 2.6. Each plant species was assigned abundance codes within each habitat. This was done using the 'DAFOR' scale (where: d = dominant; a = abundant; f = frequent; o = occasional; r = rare), which provides an indication of the relative abundance of each plant species present within a particular habitat. Common names and scientific names according to Stace (2019) are provided in the species list (Appendix 1) but common names only are referred to in the text.
- 2.7. The survey was 'extended' (Institute of Environmental Assessment 1995) to include notes on fauna and habitats which could potentially support protected or notable species. The presence of, or potential for, protected or notable species was noted during the survey.

Limitations

- 2.8. The site was fully accessible at the time of the survey and, given the lack of botanical interest at the site, was carried out at an appropriate time of year for this type of survey, and there were no significant constraints.

³ <https://magic.defra.gov.uk/MagicMap.aspx> (last accessed [24/01/2023])

⁴ Associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

3. RESULTS

Desk Study

- 3.1. The desk study utilised data obtained from GMEU in January 2023, searching within a 2km radius of the site centre. The MAGIC⁵ search engine was also used to obtain additional data on statutory designated site and Priority Habitats, as well as EPS licences within 1km of the site.

Statutory Protected Sites

European Sites

- 3.2. European protected sites include Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar wetland sites, possible SAC, potential SPA and proposed Ramsar sites.
- 3.3. No European protected sites are present within 2km of the site centroid.

Sites of Special Scientific Interest

- 3.4. SSSI represent a selection of this country's best wildlife and geological sites and cover approximately 7% of the terrestrial area of the country (with over 4,000 separate sites in England).
- 3.5. No SSSI are present within 2km of the site centroid.

National and Local Nature Reserves

- 3.6. No national or local nature reserves are present within 2km of the site centroid.

Non-Statutory Protected Sites

- 3.7. Two Sites of Biological Importance (SBI) were identified within the 2km search area:
- Ashton Canal (West) (approximately 360m north-east of site boundary) - The canal is an important wildlife corridor linking Ashton with Manchester via Openshaw and provides an important accessible natural greenspace in an otherwise urban landscape. Both floating water-plantain and grasswrack pondweed (*Potamogeton crumpeus*) are UK Priority Biodiversity Species and have been recorded here; and
 - Rochdale Canal: Stott's Lane to Ducie Street Basin (approximately 390m north of site boundary) - Statutory designations such as the Rochdale Canal SAC and the Rochdale Canal SSSI apply to the Oldham and Rochdale sections only and are, thus, not located within the 2km search area. Floating, emergent and marginal flora occurs along the Manchester section of the canal. This includes occasional emergent stands of bulrush (*Typha latifolia*), common reed (*Phragmites australis*), yellow iris (*Iris pseudacorus*) and purple-loosestrife (*Lythrum salicaria*). Marginal species also include occasional hard rush (*Juncus inflexus*), great willowherb (*Epilobium hirsutum*), hoary willowherb (*Epilobium parviflorum*), gypsywort (*Lycopus europaeus*) and water forget-me-not (*Myosotis scorpioides*). A small harbour connecting the Ashton canal and Rochdale canal, named the New Islington Marina, supports large shoals of perch and roach of various age classes, indicating this is now an important nursery for coarse fish. Water vole (*Arvicola amphibius*) and white-clawed crayfish (*Austropotamobius pallipes*) are known to be present in other sections of the canal.

Priority Habitats

- 3.8. Many records of Priority Habitat – deciduous woodland are present within the 2km search area. The closest of these records is located 750m south-east of the site boundary.

⁵ Multi Agency Geographic Information for the Countryside

- 3.9. 26 records of priority habitat – open mosaic are present within the 2km search area. The closest of these records is located 740m south-west of the site boundary, at Cambridge Street.

Protected and Notable Species

Granted European Protected Species Application

- 3.10. Records for protected species licences were returned for ten locations within the 1km search area. These were all for Pipistrelle species (*Pipistrellus* sp.) and are displayed in Table 1.

Table 1 Bat European Protected Species Licenses

Species	License to Allow	Date License Granted	Date License Expires	Distance from Site Boundary
Common pipistrelle ⁶	Destruction and damage of a resting place	2019	2021	205m SE
Common pipistrelle	Destruction of a resting place	2021	2022	325m SE
Common pipistrelle and soprano pipistrelle ⁷	Destruction of a resting place	2014	2017	285m NW
Common pipistrelle	Destruction and damage of a resting place	2018	2040	280m NW
Common pipistrelle	Damage of a resting place	2014	2015	880m SE
Common pipistrelle	Destruction of a resting place	2020	2025	850m NW
Common pipistrelle	N/A	2013	2016	950m SW
Common pipistrelle	Destruction of a resting place	2014	2020	930m NE
Common pipistrelle	Destruction of a resting place	2016	2018	970m N
Common pipistrelle	Destruction of a resting place	2013	2015	950m N

Badger

- 3.11. One record for a badger (*Meles meles*) sett was returned from the 2km data search, dating from 2011. This record was located 1.4km from the site boundary. Due to the confidential nature of this information, exact locations cannot be disclosed.
- 3.12. Seventeen other records for badger were also returned from the 2km data search, dating between 2011 and 2014.

⁶ *Pipistrellus pipistrellus*

⁷ *Pipistrellus pygmaeus*

Otter

- 3.13. Three records of otter (*Lutra lutra*) were returned from the 2km data search, dating between 2013 and 2022. The closest of these records is located 1.6km west of the site boundary, at Castlefield canals.

Water Vole

- 3.14. No records for water vole (*Arvicola amphibius*) were returned from the 2km data search.

Bats

- 3.15. A total of 70 records were returned for bat roosts from the 2km data search. These records are displayed in Table 2.
- 3.16. Other records for four species of bat were also returned from the 2km data search, including brown long-eared (*Plecotus auritus*), common pipistrelle, Daubenton's (*Myotis daubentonii*), and soprano pipistrelle.

Table 2 Bat Roost Records

Common Name	Scientific Name	No. of roost records	Closest Record (approximate distance and direction from site boundary)
Bat species	<i>Chiroptera</i> sp.	1	1.8km W
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	48	320m N
Daubenton's	<i>Myotis daubentonii</i>	1	1.8km W
Myotis species	<i>Myotis</i> sp.	1	270m E
Pipistrelle species	<i>Pipistrellus</i> sp.	17	270m E
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	2	320m N

Other Mammals

- 3.17. Seventeen records of hedgehog (*Erinaceus europaeus*) were returned from the 2km data search, dating between 2012 and 2020. The closest of these records was located 420m north-east of the site boundary.

Birds

- 3.18. All nesting birds, their nests and eggs are protected from harm under the WCA, 1981 (as amended). In addition, species listed under Schedule 1 of the WCA are further protected against disturbance when breeding.
- 3.19. A number of bird species are listed under Section 41 in the NERC Act (2006, amended) as species 'of principal importance for the purpose of conserving biodiversity'. These species are often known as the 'S41 species'. There is a legal requirement for a public body to 'have regard to' these species in relation to maintaining biodiversity. The S41 list overlaps somewhat with the UK BAP⁸ species, with national or local targets to maintain and enhance populations.
- 3.20. Furthermore, the Birds of Conservation Concern (BoCC) report lists those bird species that are classed as being of High (Red listed) and Medium (Amber Listed) conservation concern based on population monitoring (Stanbury *et al.* 2021). This Red and Amber classification helps guide

⁸ Biodiversity Action Plan

the assessment of bird species of conservation interest on or near to a site, alongside legislative and policy requirements.

- 3.21. A small number of Schedule 1 species, including black redstart (*Phoenicurus ochruros*), hobby (*Falco subbuteo*) kingfisher (*Alcedo atthis*), little ringed plover (*Charadrius dubius*) and peregrine (*Falco peregrinus*) were recorded within the 2km search area; these records are classed as confidential. All other protected and notable bird species records within the 2km search area are listed in Table 3, along with their respective conservation status.

Table 3 Bird Species of Principal Importance

Common Name	Scientific Name	Amber ⁹ Listed	Red Listed	Section 41 Priority Species ¹⁰
Bullfinch	<i>Pyrrhula pyrrhula</i>	x		x
Cuckoo	<i>Cuculus canorus</i>		x	x
Curlew	<i>Numenius arquata</i>		x	x
Dunnock	<i>Prunella modularis</i>	x		x
Greenfinch	<i>Carduelis chloris</i>		x	
Herring gull	<i>Larus argentatus</i>		x	x
House martin	<i>Delichon urbicum</i>		x	
House Sparrow	<i>Passer domesticus</i>		x	x
Lapwing	<i>Vanellus vanellus</i>		x	x
Lesser redpoll	<i>Acanthis caberet</i>			x
Linnet	<i>Linaria cannabina</i>		x	x
Mistle thrush	<i>Turdus viscivorus</i>		x	
Skylark	<i>Alauda arvensis</i>		x	x
Song thrush	<i>Turdus philomelos</i>	x		x
Spotted flycatcher	<i>Muscicapa striata</i>		x	x
Starling	<i>Sturnus vulgaris</i>		x	x
Tree sparrow	<i>Passer montanus</i>		x	x
Woodcock	<i>Scolopax rusticola</i>		x	
Yellow wagtail	<i>Motacilla flava</i>		x	x

Amphibians

- 3.22. No records for amphibians were returned from the 2km data search.
- 3.23. The River Medlock is located 230m south-east of the site before continuing below ground. This river is unlikely to provide suitable habitat for GCN and is separated from the site with no habitat

⁹ The UK's birds can be split in to three categories of conservation importance - red, amber and green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green.

¹⁰ Species of Principal Importance under Section 41 of the NERC Act 2006.

connectivity. There are no other waterbodies present within the search area that would provide suitable habitat for amphibians. This is supported by the lack of records for the area.

Reptiles

- 3.24. No records for reptiles were returned from the 2km data search.

Invertebrates

- 3.25. Fifteen records of cinnabar moth (*Tyria jacobaeae*) were returned from the 2km data search, dating between 2012 and 2019. The closest of these records is located 500m north of the site boundary.
- 3.26. One record of white-letter hairstreak (*Satyrrium w-album*) was returned from the 2km data search, dating from 2019. This record is located 1.5km north-east of the site boundary.

White-clawed Crayfish and Notable Fish

- 3.27. No records for white-clawed crayfish or notable fish species were returned from the 2km data search.

Notable Plant Species

- 3.28. Five records for bee orchid (*Ophrys apifera*) were returned from the 2km data search, dating between 2016 and 2022. The closest of these records is located 170m north-east of the site boundary.
- 3.29. One record of floating water plantain (*Luronium natans*) was returned from the 2km data search, dating from 2001. This record is located 1.1km north-east of the site boundary.

Phase 1 Habitat Survey

- 3.30. Figure 1 presents the habitat map of the site. Botanical species lists for the habitats on-site are presented in Appendix 1, with illustrative photographs in Appendix 2.

Main Habitats Present

- 3.31. The site is dominated by hardstanding with small patches of ephemeral/short perennial vegetation scattered across the site (Figure 1). Introduced shrub lines the southern site boundary, with small sections also present to the north-west of site. Fencing borders the site on all sides and no buildings are present on-site.

Hardstanding and Bare Ground

- 3.32. The site is dominated by hardstanding and bare ground (including concrete and asphalt). These areas host very little vegetation; either due to recent use (for example heavy machinery) or because of the relatively intact nature of the hardstanding (Photograph 1). The site boundary extends onto Echo Street to the east and Granby row to the north.

Introduced Shrub

- 3.33. Stands of butterfly-bush (*Buddleja davidii*) were locally abundant across the entire southern site boundary (Photograph 2). Small patches were also present at the site boundary fencing to the north-west of the site and a single patch was present within the centre of the site.

Ephemeral/Short Perennial Grassland

- 3.34. Small patches of ephemeral/short perennial vegetation are present throughout the site (Photograph 3). All species present were common, widespread and typical of urban city centre sites. They included frequent willowherb species, with occasional annual meadow-grass,

Yorkshire-fog, common ragwort, perennial sow-thistle and moss species. Rarely occurring species recorded on-site include ribwort plantain, groundsel, and aster species.

Invasive Non-Native Species

- 3.35. No invasive non-native plant species (as listed on Schedule 9 of the WCA, 1981 (as amended)) were recorded on-site.

Protected Species

- 3.36. The site is isolated from any larger areas of natural or semi-natural habitat.
- 3.37. The suitability of the site for black redstarts is considered to be very limited due to the dominance of intact hardstanding and lack of suitable features for foraging and nesting.
- 3.38. Due to the lack of shelter or suitable habitat for protected species, it was concluded that the only species relevant to this assessment are foraging bats.

Bats

- 3.39. The site contains no potential tree roost sites for bats as there are no mature or larger trees on or adjacent to the site. There are no buildings on the site for bats to potentially roost in.
- 3.40. The hardstanding provides no significant foraging habitat for bats. Street lighting, together with the lack of vegetation and connectivity to other semi-natural habitats, significantly diminishes its potential for bat foraging.
- 3.41. The GMEU data search revealed that the site is 270m from the closest known bat roost, belonging to a *Myotis* species, dating from 2015, situated on Fairfield Street.
- 3.42. Thus, development of the site is unlikely to significantly impact upon the local population of bats due to the lack of any suitable roost features, lack of foraging habitat and lack of connectivity with other nearby suitable habitats or roost sites.

4. DISCUSSION AND EVALUATION

Designated Sites

- 4.1. The site contains no statutory nature conservation sites, and none are within 2km of the site, with those situated further afield considered unlikely to be impacted by the proposed development.
- 4.2. Non-statutory sites are of a sufficient distance to site, the nearest being 360m north west and with no habitat connectivity to the site, that they are unlikely to be impacted by the proposed development.

Habitats

- 4.3. The habitats and plant species recorded within the site are widespread and common throughout Greater Manchester and the UK. None of the plant species recorded within the site are either Nationally Scarce or Nationally Rare (Hill *et al.* 2004) or of any other conservation significance (Cheffings and Farrell 2005, as amended; Stroh *et al.* 2014). Priority Habitats within 2km of the site were limited, with the closest an area of open mosaic habitat 740m from site. The habitats are assessed as being of negligible ecological value.

Protected and Notable Species

- 4.4. The site provides no significant area of foraging habitat and is unlikely to be used by foraging bats. No potential roost features were identified on the site. The proposed development is, therefore, predicted to have a negligible impact on the conservation status of bats within the local area and Greater Manchester
- 4.5. The site is considered to provide a relatively limited foraging resource for local populations of birds. The site is unlikely, therefore, to form a key part of the foraging habitat for any local populations of bird such as black redstart.
- 4.6. There is no significant habitat suitable for nesting birds on-site. The patches of butterfly-bush are currently unlikely to provide a suitable nesting habitat due to the sparse and open character of the vegetation which does not provide sufficient cover or shelter for nesting birds, however, if shrub/scrub areas continue to develop on-site over time, these should be inspected by an Ecologist prior to removal if being removed within the nesting season (March to August inclusive).
- 4.7. The site is assessed as being of low value for protected and notable species.

5. IMPACTS, MITIGATION AND ENHANCEMENT

- 5.1. This section of the report describes the likely effects of the proposed development at the construction stage and operational stage of the development and identifies mitigation measures to avoid any adverse impacts. Ecological enhancement measures are also identified that will make a contribution to the action for City and District Centres in the Manchester Biodiversity Strategy, namely *'Encourage wildlife-friendly development and regeneration schemes integrating nature based-solutions'*.

Designated Sites

- 5.2. No impacts are predicted in relation to any statutory and non-statutory site due to distance and lack of habitat connectivity.

Habitats

- 5.3. The habitats to be lost within the site are widespread and common throughout Manchester and the UK and are of negligible ecological value in their own right, comprising hardstanding and bare ground, patches of buddleia and small patches of ephemeral/short perennial vegetation. No mitigation is required at the construction stage.
- 5.4. At the operational stage of the development, new habitats will be provided. The new habitats have been designed to provide a significant ecological enhancement and a BNG metric has been used to quantify the change in habitat value before and after development. Habitats at the post-development stage will comprise:
- Sedum roofs (638m²);
 - Biodiverse green roofs (222m²); and
 - Raised planters (109m²).
- 5.5. PAA has provided input to the design of these features to maximise their ecological value. The sedum roof will be located in areas which will have some shading from photovoltaic (PV) cells where a more biodiverse roof would be unlikely to thrive. However, the PV cells will also provide some sheltered pockets of habitat on an otherwise exposed roof surface.
- 5.6. To reflect the fact that the sedum roof is unlikely to develop a very rich flora or significant structural diversity, the post-development condition of this habitat has been entered as 'fairly poor' in the Defra Metric BNG calculator.
- 5.7. The biodiverse green roof will be created in areas which are not shaded by the PV cells and will be seeded with a diverse wildflower and grass seed mix of 40+ species to provide a nectar rich food source for invertebrates. This habitat is expected to host a diverse range of native species and provide structural diversity and is entered into the Defra Metric BNG calculator as 'good' condition.
- 5.8. The ground level planters will be in raised beds to prevent trampling and will be planted with native or wildlife friendly shade tolerant species. The condition is expected to be 'fairly poor' due to a lack of species diversity and structure. The raised beds will cover a relatively small area, so the main ecological enhancement is focused on the biodiverse green roofs.
- 5.9. The sedum roofs and biodiverse green roofs will be managed in perpetuity to safeguard their nature conservation value.
- 5.10. The Defra Metric Version 3.1 calculator tool is provided separately to this report at Appendix 3 and demonstrates a significant net gain of 559.71% in habitat units.
- 5.11. The inclusion of sedum roofs and biodiverse green roofs will also provide ecological stepping-stones within this very urban part of Manchester, creating habitat linkage with other areas of

nearby green space comprising Vimto Park to the east and Altrincham Road greenspace alongside the A6 to the west.

Protected and Notable Species

- 5.12. The only protected species that may be affected at the construction phase of development are common and widespread urban bird species that may use the small patches of buddleia scrub for nesting. Mitigation is proposed (see below) to avoid harm to nesting birds.
- 5.13. At the post development stage, the creation of sedum roofs and biodiverse green roofs is expected to provide habitat for invertebrates, foraging opportunities for birds (potentially including black redstart) and foraging opportunities for bats.
- 5.14. Artificial bird nesting boxes, integrated bat roost features, bee bricks and bug hotels will be installed in or near the sedum roof and biodiverse green roof areas. These will comprise:
- 9no. starling boxes (3 per building);
 - 9no. house sparrow terraces (3 terraces per building);
 - 9no. black redstart nest cavities (3 per building);
 - 12no. bat boxes suitable for common pipistrelle roosting (4 per building);
 - 12no. bee bricks (4 per building); and
 - 12no. bug hotels (4 per building).

Mitigation

- 5.15. Ideally, vegetation clearance should be conducted outside of the bird nesting season. If clearance of the buddleia scrub is to be undertaken during the active bird nesting season (1st March to 31st August inclusive) then an ecologist should undertake a check of the area for nesting birds prior to vegetation clearance commencing. Vegetation should be removed within 48 hours following a nesting bird check.

6. SUMMARY AND CONCLUSIONS

- 6.1. A desk study and Extended Phase 1 habitat survey were completed in 2023 to record the baseline conditions at the site. There are virtually no ecological constraints due to the lack of semi-natural habitat on site and lack of features for protected or notable species. There will be no impact on designated sites due to distance from the site and lack of any habitat connectivity.
- 6.2. There is some limited potential for common and widespread urban bird species to use small patches of buddleia scrub for nesting. Any risk of disturbance to nesting birds will be avoided by either clearing vegetation outside of the bird nesting season or checking for nesting birds prior to clearance.
- 6.3. The proposed development will incorporate sedum roofs and biodiverse green roofs, the latter with diverse native planting to provide habitat for invertebrates and foraging resource for bird and bat species. The sedum and biodiverse green roofs will be managed in perpetuity to safeguard their nature conservation value.
- 6.4. A BNG assessment has been completed using the Defra Metric Version 3.1 (copy provided as Appendix 3, separately to this report) which demonstrate a significant net gain of 559.71% habitat units.
- 6.5. In addition to the above, artificial bird nesting boxes, bat roost features, bee bricks and bug hotels will be included on each building.
- 6.6. Overall, the proposed development would have no significant adverse ecological effects and will result in a large net gain in biodiversity value.
- 6.7. The proposals are considered to be compliant with the Manchester Local Plan Policy EN9 'Green Infrastructure' and Policy EN15 'Biodiversity and Geological Conservation' by virtue of the following:
 - The development will contribute to green infrastructure by incorporating sedum roofs and biodiverse green roofs;
 - The development will deliver a net gain in biodiversity that substantially exceeds 10% net gain;
 - Providing ecological enhancement and improved linkage with other nearby green space; and.
 - The proposed have been developed with reference to the Manchester Biodiversity Strategy and GMCA Infrastructure Framework.

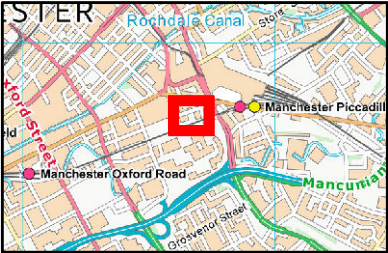
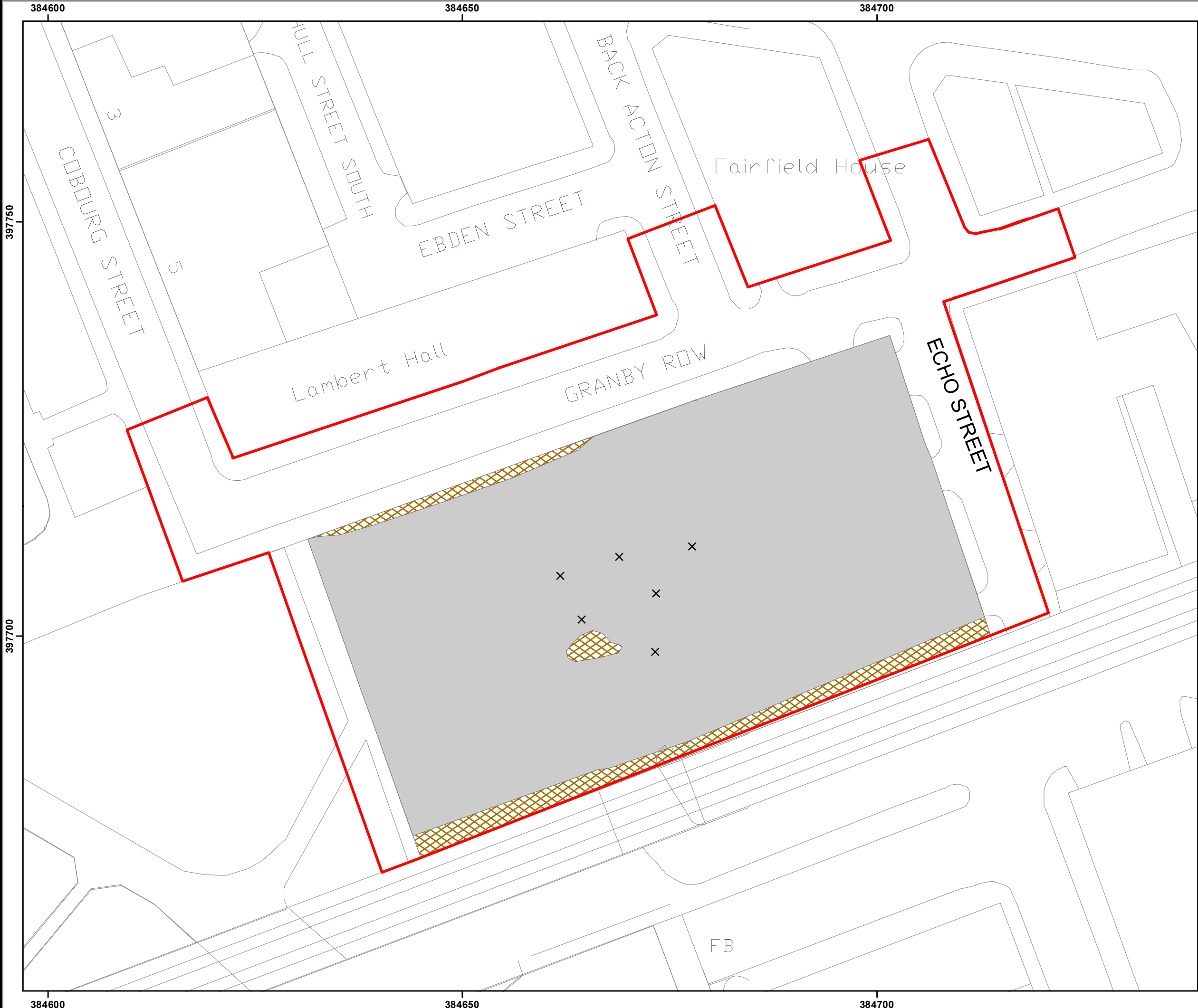
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8. ABBREVIATIONS

BAP	Biodiversity Action Plan(s)
BoCC	Birds of Conservation Concern
CIEEM	Chartered Institute of Ecology and Environmental Management
CRoW	Countryside and Rights of Way
EPS	European Protected Species
EU	European Union
GMEU	Greater Manchester Ecology Unit
JNCC	Joint Nature Conservation Committee
MAGIC	Multi Agency Geographic Information for the Countryside
NERC	National Environment and Rural Communities
NPPF	National Planning Policy Framework
PAA	Penny Anderson Associates Ltd
PV	Photovoltaic
SAC	Special Area(s) of Conservation
SPA	Special Protection Area(s)
SSSI	Site(s) of Special Scientific Interest
WCA	Wildlife and Countryside Act

FIGURE



Legend

- Assessment area
- Phase 1 Habitats**
 - J1.4, Introduced shrub
 - J5, Hardstanding
 - x J1.3, Ephemeral/short perennial



British National Grid
Projection: Transverse Mercator
False Easting: 400000.000000
False Northing: 100000.000000
Central Meridian: -2.000000
Scale Factor: 0.999601
Latitude Of Origin: 49.000000

ISO A3

0 2.5 5 10 15 Metres



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Project Name
Echo Street, Manchester

Discipline
Ecology

Title:
**PRELIMINARY
ECOLOGICAL
APPRAISAL MAP**

Scale 1:434	Drawing No. Figure 1
Drawn By CC	Originator SG
Grid Ref. 384,668 397,716	Date 23/01/2023
	Revision 1.0

APPENDICES

APPENDIX 1

Botanical Species List

Appendix 1 Botanical Species List

Common Name	Scientific Name	DAFOR
Woody Species		
Butterfly-bush	<i>Buddleja davidii</i>	la
Herbs and Grasses		
Annual meadow-grass	<i>Poa annua</i>	o
Aster species	<i>Aster</i> sp.	r
Common ragwort	<i>Jacobaea vulgaris</i>	o
Groundsel	<i>Senecio vulgaris</i>	r
Moss species	<i>Bryum</i> sp.	o
Perennial sow-thistle	<i>Sonchus arvensis</i>	o
Ribwort plantain	<i>Plantago lanceolata</i>	r
Willowherb species	<i>Epilobium</i> sp.(annual)	f
Yorkshire-fog	<i>Holcus lanatus</i>	o

KEY

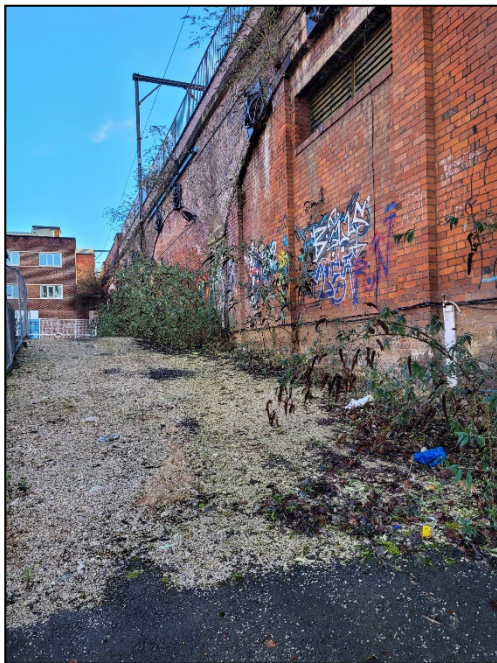
- d - Dominant
- a - Abundant
- f - Frequent
- o - Occasional
- r - Rare
- l - Locally

APPENDIX 2

Photographs



Photograph 1
Hardstanding and bare
ground



Photograph 2
Butterfly-bush at southern
site boundary



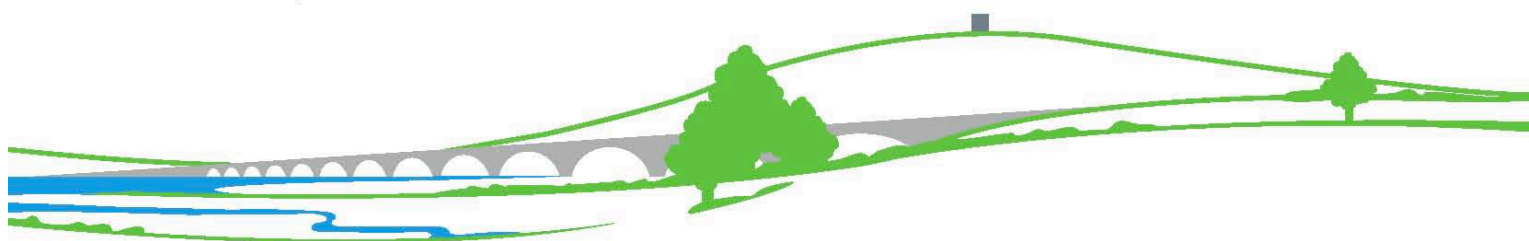
Photograph 3
Small patches of ephemeral /
short perennial vegetation

APPENDIX 3

Defra Metric Calculator Tool

(Provided Separately)

Penny Anderson
Associates Ltd
CONSULTANT ECOLOGISTS



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