

Land at 129 Croft Lane, Bury BL9 8QH

UPDATED ECOLOGICAL SURVEY AND ASSESSMENT

August 2023

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CONTENTS

Summary	3
1.0 Introduction	5
1.1 Background and Rationale	5
1.2 Scope of Works.....	5
2.0 Method of Survey	5
2.1 Desktop Study and Data Search	5
2.2 Vegetation and Habitats	6
2.3 Animal Life.....	6
2.4 Survey and Reporting Limitations	8
2.5 Evaluation Methods	8
3.0 Survey Results	9
3.1 Desktop Study and Data Search	9
3.2 Vegetation and Habitats	11
3.3 Animal Life.....	12
4.0 Evaluation and Assessment	13
4.1 Introduction and Description of Proposals.....	13
4.2 Designated Sites for Nature Conservation	13
4.3 Vegetation and Habitats	14
4.4 Protected Species and Other Wildlife.....	15
4.5 Assessment of Impacts.....	15
5.0 Recommendations and Ecological Enhancement	16
5.1 Introduction	16
5.2 Recommendations in Relation to Site Layout and Consideration of Lighting.....	16
5.3 Protection of Existing Features and Wildlife During Construction Phase	17
5.4 Provision of Opportunities for Nesting Birds and Roosting Bats	18
5.5 Enhancement and Management of Retained Habitats and Landscape Planting	19
6.0 Conclusion	20
7.0 References.....	21
8.0 Appendix: Tables and Figures	23
8.1 Plant Species Lists	23
8.2 Photographs.....	26
8.3 Figures	28

List of Tables

Table 2.1: Consideration of Suitability of Foraging and Commuting Habitat for Bats	7
Table 2.2: Important Habitat Characteristics for Reptiles	8
Table 3.1: Designated Sites for Nature Conservation within One Kilometre of the Site	9
Table 3.2: Records of Protected Species Within a 2 Kilometre Radius from the Centre of the Site	10
Table 5.1: Suitable Native Species for Tree and Shrub Planting	20
Table 8.1: Plant Species Composition, Frequency and Abundance for Colonising Vegetation at Former Amenity Verges	23
Table 8.2: Plant Species Composition, Frequency and Abundance for Colonising and Planted Vegetation at South-west corner of Site	24
Table 8.3: Plant Species Composition, Frequency and Abundance for Unmanaged Grassland, Colonising Ruderal Herbs and Bramble Scrub	25
Table 8.4: Photographs	26

List of Figures

Figure 1: Aerial Image of the Site and its Surroundings	28
Figure 2: Phase 1 Habitat and Vegetation Map	29

Document Control

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SUMMARY

Introduction and Scope

- i. This updated ecological survey and assessment presents the ecological, biodiversity and nature conservation status of the land to the north of 129 Croft Lane, Bury BL9 8QH. The assessment was requested in connection with proposals to develop the site to a nursery with associated parking area, forest school and outdoor play area.
- ii. This report presents the results of a desktop study, data search and updated Phase 1 Habitat Survey carried out in June 2023. 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 comprises hard standing and gravel, colonising ruderal herbs and planted vegetation, unmanaged grassland and Bramble scrub.

Results of Survey and Assessment

- iv. The proposals will have no adverse direct or indirect effect on statutory or non-statutory designated sites for nature conservation.
- v. The site lies within the Roch River Valley and Wildlife Links and Corridors designation.
- vi. The habitats within the site do not provide any wildlife corridors or links and lie adjacent to roads and existing development at their northern, eastern, and southern boundaries. As such, it is considered that the habitats within the site do not contribute to the Wildlife Links and Corridors designation and the site does not provide wildlife links either north to south or west to east.
- vii. It is concluded that, provided the proposals are conducted in accordance with recommendations at **Section 5.0** of this report, the proposals will have no adverse effect on the Roch River Valley and Wildlife Links and Corridors designated land.
- viii. None of the habitats within the site are representative of Priority Habitat. No species-rich or semi-natural habitats are present within the site.
- ix. Japanese Knotweed and Indian Balsam, both plant species listed under Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), were detected within the site; recommendations to eradicate the invasive species at the site are presented at **Section 5.3**.
- x. The young trees and shrubs within the site are suitable for use by nesting birds. Measures for the protection of nesting birds are presented at **Section 5.4**.
- xi. No other protected species have been detected.

Recommendations

- xii. 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.
- xiii. 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

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

1.0 INTRODUCTION

1.1 Background and Rationale

- 1.1.1 ERAP (Consultant Ecologists) Ltd was commissioned by Studio KMA to carry out an ecological assessment of 129 Croft Lane, Bury, BL9 8QH (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SD 81278 08587. An aerial image of the site and its surrounding habitats is appended at **Figure 1** (source image: ESRI World Imagery).
- 1.1.2 The survey and assessment was requested in connection with a planning application develop the site to a nursery with associated parking area, forest school and external play area.

1.2 Scope of Works

- 1.2.1 The scope of updated ecological works undertaken in June 2023 comprised:
- An updated desktop study and data search for known ecological information at the site and the local area;
 - An updated 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*), bird species and reptiles;
 - 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 to inform the progression of the site through the planning process or prior to the commencement of any construction 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 Maps: 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 Records Centre (GMLRC);
 - Greater Manchester Biodiversity Action Plan (BAP);
 - Adopted Bury Unitary Development Plan OL5/2 Development in River Valleys* (Bury Council, 1997); and

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 an unobstructed 500 metre radius of the site, and no water bodies or water courses within or adjacent to the site; there has been no requirement to consider great crested newt (*Triturus cristatus*), water vole (*Arvicola amphibius*) or otter (*Lutra lutra*) as part of this assessment.

e. *EN6/4 Wildlife Links and Corridors policies* (Bury Council, 1997).

2.1.2 A summary of the results presented in *2021-324 Land at 129 Croft Lane, Bury BL9 8QH: Updated Ecological Survey and Assessment* (ERAP (Consultant Ecologists) Ltd, 2021), hereafter the '2021 report', are also presented in this report.

2.2 Vegetation and Habitats

2.2.1 An Extended Phase 1 Habitat Survey of the site was carried out by Amy Sharples B.Sc. (Hons) M.Sc. ACIEEM on 7th June 2022. The weather was overcast with a light air (Beaufort scale 1) and an air temperature of 12°C.

2.2.2 A habitat and vegetation map was produced for the site and is appended at **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 On site habitat mapping was assisted via use of GPS technology, using *Unsworth, Croft Lane, Preliminary Site Plan, Dwg. No. UCL-KMA-XX-XX-DR-A-9011 Rev. P1* (Studio KMA, 2021) as a base plan.

2.2.4 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.

2.2.5 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.

2.2.6 Habitats within the site were assessed in accordance with the UK Habitats Classification / UKHab (Butcher, et al., 2020). The UKHab has been designed to function at two scales of minimum mappable unit (MMU): fine scale (25m² or 5 metres length) and large scale (400m² or 20 metres length). It has been considered for the purposes of this survey that the fine scale of 25m² or 5 metres length MMU is appropriate.

2.2.7 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).

2.2.8 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: advice for making planning decisions* (Natural England, 2022).

2.3.3 The following signs of badger activity were searched for:

- a. Sett entrances, e.g. entrances that are normally 25 to 35cm in diameter and shaped like a 'D' on its side;

- b. Large spoil heaps outside sett entrances;
- c. Bedding outside sett entrances;
- d. Badger footprints;
- e. Badger paths;
- f. Latrines;
- g. Badger hairs on fences or bushes;
- h. Scratching posts; and
- i. 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

- 2.3.5 No buildings or mature trees are present within the site; the presence of roosting bats is reasonably discounted.
- 2.3.6 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 2.1**.

Table 2.1: 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

- 2.3.7 Bird species observed and heard during the survey were recorded.
- 2.3.8 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.

Reptile Species

- 2.3.9 The site and its surroundings were assessed in terms of their suitability for use by reptile species using the important characteristics for reptiles outlined in the draft document '*Reptile Mitigation Guidelines*' (Natural England, 2011), and the *Reptile Habitat Management Handbook* (Edgar, et al., 2010). These habitat characteristics are outlined in **Table 2.2**.

Table 2.2: Important Habitat Characteristics for Reptiles

1. Location (in relation to species range)	7. Connectivity to nearby good quality habitat
2. Vegetation Structure	8. Prey abundance
3. Insolation	9. Refuge opportunity
4. Aspect	10. Hibernation habitat potential
5. Topography	11. Disturbance regime
6. Surface geology	12. Egg-laying site potential

Other Wildlife

- 2.3.10 Evidence of other wildlife (including Priority Species) observed whilst on site (but for which specific surveys were not made) was recorded and has been included in this report where it is considered of relevance to the planning application. Habitats have been assessed for their suitability for Priority Species identified in the data search results where this is considered relevant to the application.

2.4 Survey and Reporting Limitations

- 2.4.1 All areas of the site were fully accessible at the time of the survey. No survey limitations were experienced.
- 2.4.2 All measurements within this report are approximate only, and have been either estimated whilst on site or calculated using mapping software (QGIS) or internet-based mapping services such as MAGiC Maps 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, 2021) 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 (Amendment) (EU Exit) Regulations 2019*, 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

Site Allocations

- 3.1.1 The site lies within the River Roch Valley Wildlife Link and Corridor. The suitability of this designation is considered further at **Section 4.2**, with reference to *Adopted Bury Unitary Development Plan OL5/2 Development in River Valleys* (Bury Council, 1997) and *EN6/4 Wildlife Links and Corridors policies* (Bury Council, 1997).

Statutory and Non-statutory Designated Sites for Nature Conservation and SSSI Impact Risk Zones

- 3.1.2 The site has no statutory designation for nature conservation.
- 3.1.3 The site lies within a Site of Scientific Interest (SSSI) Impact Risk Zone for Ashclough SSSI and Nob End SSSI which are situated approximately 5.2 and 6.5 kilometres from the site, respectively, West Pennine Moors SSSI located 8.2 kilometres north-west of the site and the overlapping Rochdale Canal SSSI and Special Area of Conservation (SAC) located 6.9 kilometres east of the site. 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, 2023):

Infrastructure: Airports, helipads and other aviation proposals.

Air pollution: Livestock and poultry units with floorspace greater than 500m², slurry lagoons and digestate stores 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, other incineration / combustion.

- 3.1.4 The proposals do not meet these criteria, therefore further consultation with Natural England is not required.
- 3.1.5 One Local Nature Reserve (i.e. a statutory designated site for nature conservation) and two non-statutory designated sites for nature conservation, called 'Sites of Biological Importance' or 'SBIs' in Greater Manchester, lie within 1 kilometre of the proposed development. Details of each designated site are provided in **Table 3.1**.

Table 3.1: Designated Sites for Nature Conservation within One Kilometre of the Site

Name and Designation	Distance and Direction from Site	Description
Hollins Vale Local Nature Reserve LNR	140 metres to the east	A farmland reserve comprising woodland and wetland which supports a diversity of plant and bird species.
Hollins Vale SBI	200 metres to the east	Surrounds Hollins Brook and adjacent reservoirs and supports a diversity of plant and bird species.
Hollins Plantation SBI	900 metres to the south-east	Comprises deciduous woodland and is part of the Hollins Vale LNR

- 3.1.6 Further consideration on potential impacts of the proposed development to the statutory and non-statutory designated sites within the wider area are considered further at **Section 4.2**.

Priority Habitats Inventory

- 3.1.7 The Priority Habitats Inventory² was checked via MAGiC Maps. No Priority Habitats are identified at the site by the inventory.

Protected and Notable Species

- 3.1.8 GMLRC do not hold records of protected and notable species for the site.
- 3.1.9 Records of protected and notable species for a 2 kilometre radius from the centre of the site are summarised at **Table 3.2**.

Table 3.2: Records of Protected Species Within a 2 Kilometre Radius from the Centre of the Site

Taxon Group	Species Name and Designations ¹ and Notes
Birds – WCAs1	Kingfisher (<i>Alcedo atthis</i>): WCAs1. 3 records, dated between 2010 and 2019. The closest record is 265 metres to the west of the site, and from 2010.
	Little ringed plover (<i>Charadrius dubius</i>): WCAs1. 3 records, dated between 2005 and 2017. The closest record is 405 metres to the east of the site, and from 2017.
Birds – PS	Bullfinch (<i>Pyrrhula pyrrhula</i>), dunnoek (<i>Prunella modularis</i>), herring gull (<i>Larus argentatus</i>), house sparrow (<i>Passer domesticus</i>), lapwing (<i>Vanellus vanellus</i>), linnet (<i>Linaria cannabina</i>), reed bunting (<i>Emberiza schoeniclus</i>), song thrush (<i>Turdus philomelos</i>) and starling (<i>Sturnus vulgaris</i>).
Bony fish	Brown trout (<i>Salmo trutta</i>): PS. 2 records, both from 2013. The closest record is to the north-west of the site; an accurate estimation of distance of the record to the site cannot be made due to the locational data being less than a six figure grid reference.
Terrestrial mammals	Brown long-eared bat (<i>Plecotus auritus</i>): EPS, WCAs5, PS and GMBAP. 2 records, dated 2017 and 2020. The closest record is 700 metres to the north-east of the site, and from 2017.
	Daubenton's bat (<i>Myotis daubentonii</i>): EPS, WCAs5 and GMBAP. 10 records, dated between 2006 and 2021. The closest record is 355 metres to the north-east of the site, and from 2006.
	Noctule bat (<i>Nyctalus noctula</i>): EPS, WCAs5, PS and GMBAP. 8 records, dated between 2006 and 2020. The closest record is 355 metres to the north-east of the site, and from 2006.
	Whiskered / Brandt's bat (<i>Myotis mystacinus / brandtii</i>): EPS, WCAs5 and GMBAP. 1 record from 2020, located 835 metres to the north-west of the site.
	Common pipistrelle (<i>Pipistrellus pipistrellus</i>): EPS, WCAs5 and GMBAP. 70 records, dated between 1997 and 2022. The closest record is 40 metres to the east of the site, and from 2020.
	Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>): EPS, WCAs5, PS and GMBAP. 3 records, dated between 2006 and 2020. The closest record is 355 metres to the north-east of the site, and from 2006.
	Pipistrelle species (<i>Pipistrellus</i> sp.): EPS, WCAs5 and GMBAP. 76 records, dated between 1990 and 2021. The closest record is 270 metres to the north-west of the site, and from 2002.
	Bat species (<i>Chiroptera</i> sp.): EPS, WCAs5 and GMBAP. 3 records, dated between 2005 and 2013. The closest record is 555 metres to the west of the site, and from 2005.
	Badger (<i>Meles meles</i>): PBA. 2 records, dated 2012 and 2021. The closest record is more than 800 metres from the site.
	Hedgehog (<i>Erinaceus europaeus</i>): PS. 9 records, dated between 2019 and 2021. The closest record is 340 metres to the south-west of the site, and from 2020.
	Water vole (<i>Arvicola terrestris</i>): WCAs5 and PS. 1 record from 2009, located 640 metres to the east of the site.
¹ Key to Designation Codes: EPS = European Protected Species under <i>The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019</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). PS = Priority Species listed under Section 41 of the NERC Act 2006. LBAP = Species listed on the Greater Manchester Biodiversity Action Plan.	

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.

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

2021 Report

- 3.1.11 The 2021 report details that the site is located in a suburban area at the southern extremity of Bury. The site was described in 2021 as comprising a hard-standing car park area, rank grassland, a slope leading towards the River Roch and former amenity grass verges.
- 3.1.12 Japanese Knotweed and Indian Balsam, both invasive species as listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), were present at the site.
- 3.1.13 The River Roch which lies beyond the western site boundary was considered to provide habitat of moderate quality for foraging and commuting bats. Otherwise the presence of protected species was reasonably discounted. No habitats within the site were considered suitable for use by nesting birds and therefore the presence of nesting birds at the site was reasonably discounted.

3.2 Vegetation and Habitats

General Description

- 3.2.1 The approximately 0.21 hectare site is located in a suburban area at the southern extremity of Bury. The site comprises a hard standing car park, gravelled areas with colonising and planted vegetation, unmanaged grassland including a slope leading towards the River Roch, colonising ruderal herbs and Bramble scrub.
- 3.2.2 The northern site boundary is undefined and is adjacent to a garden plot, beyond which are a medical centre and car park. The western boundary is undefined and supports rank grassland and a gravel path, beyond which lies woodland and scrub; the land slopes downwards towards the River Roch, which lies 53 metres beyond the site's western boundary. The southern boundary lies immediately adjacent to a former public house, beyond which lies existing development. The eastern site boundary is defined by temporary post and wire fencing and is associated with Croft Lane, beyond which lies existing housing.
- 3.2.3 A Phase 1 Habitat Survey map is appended at **Figure 2** and can be referred to for all habitat descriptions. Photographs are appended at **Table 8.4**.

Hard Standing

- 3.2.4 A former car park area comprises hard standing with no associated vegetation (**Photo 1**). The hard standing is not characteristic of an NVC community and is described by the UKHab as u1b developed land – sealed surface.

Gravel with Colonising and Planted Vegetation

- 3.2.5 Two small verges of former amenity grassland that have since been gravelled over are associated with the hard standing car park within the site. One area is associated with the pavement at Croft Lane and another is associated with a lamp post in the centre of the car park (**Photos 2 to 4**).
- 3.2.6 The vegetation at the two verges is characterised by very locally abundant Field Horsetail (*Equisetum arvense*) and Cock's-foot (*Dactylis glomerata*) and locally frequent Creeping Thistle (*Cirsium arvense*) and Wavy Bitter-cress (*Cardamine flexuosa*).
- 3.2.7 A third area of gravel occupies land between the former public house and the car park and comprises colonising and planted vegetation.
- 3.2.8 The vegetation is characterised by frequent and very locally abundant Perennial Sow-thistle (*Sonchus arvensis*), frequent and locally abundant Common Ragwort (*Senecio jacobaea*), False Oat-grass (*Arrhenatherum elatius*), Smooth Sow-thistle (*Sonchus oleraceus*) and Lesser Trefoil (*Trifolium dubium*).

with very locally abundant Cypress Spurge (*Euphorbia cyparissias*), Rosebay Willowherb (*Chamerion angustifolium*) and occasional and very locally abundant Colt's-foot (*Tussilago farfara*). Plant species lists are appended at **Tables 8.1** and **8.2**.

- 3.2.9 The vegetation is not characteristic of any NVC community and is described by the UKHab as u1b6 other developed land with secondary code 16 tall-herb.

Unmanaged Grassland, Colonising Ruderal Herbs and Bramble Scrub

- 3.2.10 The unmanaged grassland within the site occupies the northern and western edges of the site, including the western slope that leads to the River Roch (**Photos 5** and **6**).
- 3.2.11 The rank grassland is characterised by constant and frequent False Oat-grass, Cock's-foot and Yorkshire-fog (*Holcus lanatus*), frequent and very locally abundant Mugwort (*Artemisia vulgaris*) and Lesser Burdock (*Arctium minus*), frequent and locally abundant Creeping Thistle, frequent Indian Balsam (*Impatiens glandulifera*) and very locally abundant Japanese Knotweed (*Fallopia japonica*).
- 3.2.12 Vegetation has colonised the northernmost portion of the hard standing car park forming an area of sparse colonising ruderal herbs with vegetation representative of the rank grassland as described above (**Photo 7**).
- 3.2.13 The Bramble scrub occupies the south-westernmost corner of the site and extends outside the boundary (**Photo 8**). The vegetation is characteristic of the unmanaged grassland and has developed into dense scrub with constant and dominant Bramble, occasional and locally frequent Hawthorn (*Crataegus monogyna*) shrubs and a shrub of Garden Privet (*Ligustrum ovalifolium*). A plant species list is appended at **Table 8.3**.
- 3.2.14 The rank grassland and colonising ruderal herbs has similarities to an *MG1 False Oat-grass – Cock's-foot* community of the NVC (Rodwell, 1992) and is described by the UKHab as g3c other neutral grassland with secondary code 16 tall-herb.
- 3.2.15 The Bramble scrub has affinities with the *W24 Bramble – Yorkshire-fog* underscrub community of the NVC (Rodwell, 1992) and is described by the UKHab as h3d Bramble scrub.

Invasive Plant Species

- 3.2.16 Japanese Knotweed (**Photos 14** and **15**) and Indian Balsam, both invasive species as listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), are present at the site. It is an offence to cause the spread of these species in the wild. The presence of the invasive plant species is considered further at **Section 4.3**.

3.3 Animal Life

Badger

- 3.3.1 No setts or signs of badger were detected during the survey.
- 3.3.2 No evidence of badger was observed within the site or its surrounds and the habitats within the site are of poor suitability for use by foraging badger. The presence of badger is reasonably discounted.

Bat Species

Habitat Assessment for Commuting and Foraging Bats

- 3.3.3 The habitats within and immediately surrounding the site are generally of poor suitability for use by foraging or commuting bats; the well-lit hard standing at the site will not support a diversity of invertebrate prey species.

- 3.3.4 The vegetated habitats within the site, habitats in the wider area and within 53 metres of the site (i.e. the River Roch), are considered to have moderate suitability for commuting and foraging bats in accordance with the criteria listed in **Table 2.1**. This is considered further at **Section 4.4**.

Bird Species

- 3.3.5 No birds were observed within the site during the survey.
- 3.3.6 The habitats at the site are of low suitability for use by nesting birds. The young trees and bramble scrub support features suitable for use by nesting passerine (perching) birds.
- 3.3.7 All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) whilst they are breeding. This is considered further at **Section 4.4**, below.

Reptiles

- 3.3.8 The hard standing and vegetated margins within the site provide poor quality habitat for sheltering, basking and hibernating reptiles. The site supports an even topography and the homogenous vegetation supports little variation in its physiognomy.
- 3.3.9 The species-poor habitats within the site are reasonably unlikely to support a large population or a variety of invertebrate prey. The site is not adjacent or linked to any areas of favourable habitat for reptile species, and there are no records of reptile for the site or the wider area. The presence of reptiles within the site is reasonably discounted and no further survey is required.

Other Wildlife

- 3.3.10 The site provides habitats suitable for use by sheltering and foraging hedgehog (*Erinaceus europaeus*), a Priority Species. The suitability of the site for hedgehog is considered at **Section 4.4**.

4.0 EVALUATION AND ASSESSMENT

4.1 Introduction and Description of Proposals

- 4.1.1 In accordance with *Unsworth, Croft Lane, Preliminary Site Plan, Dwg. No. UCL-KMA-XX-XX-DR-A-9011 Rev. P1* (Studio KMA, 2021), hereafter referred to as the 'proposed layout', it is proposed to develop the site to a nursery with associated parking area, forest school and external play area.
- 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**.
- 4.1.3 Impacts upon the habitats within (and surrounding) the site, and upon the protected and notable species associated with the site, are quantified and assessed at **Section 4.5**.

4.2 Designated Sites for Nature Conservation

- 4.2.1 As habitats within the site are not complementary to any of the designated sites for nature conservation in the wider area, and as there are no wildlife corridors connecting the site to these areas, any adverse impact on any statutory or non-statutory designated sites for nature conservation is reasonably discounted.
- 4.2.2 The site lies within the River Valley and Wildlife Links and Corridors designation associated with the River Roch. The site is small in size (0.21 hectare) and comprises habitats such as hard standing, unmanaged grassland, gravel with planted and colonising vegetation and Bramble scrub which are not complementary to the River Valley and Wildlife Links and Corridor designation.

- 4.2.3 Further, the site is bound by existing developments to its north, south and east (comprising a medical centre, former public house and road); the site does not provide (of itself) any links to habitats to its north or south, or west or east.
- 4.2.4 It is considered that the site does not contribute to the wildlife links associated with the River Roch and does not provide any favourable or significant wildlife links across its area.
- 4.2.5 The habitats to the west of the site, comprising a 53 metre wide area of woodland and scrub between the site and the River Roch, will act as wildlife links which are likely to contribute to the overall suitability of the River Roch as a wildlife link and corridor. Suitable measures for the protection of these habitats during the proposed construction period are presented at **Section 5.3**.
- 4.2.6 Whilst it is not considered that the site contributes to the River Valley and Wildlife Links and Corridors designation, the following policy points are relevant to the proposed development of the site:
- 'Within the River Valleys, new buildings or the change of use of existing buildings or the change of use of land will not be permitted. The only exceptions considered acceptable will be those where the development would not lead to the division of the open parts of the valleys into sections and it falls within the terms below: ... that the development represents limited infilling to an established valley settlement or industrial area' (Bury Council, 1997)*
- 4.2.7 It is considered that the proposed development of the site will not lead to the division of the open parts of the valleys and represents limited infilling to an established valley settlement.
- 4.2.8 In relation to EN6/4 – Wildlife Links and Corridors:
- 'The Council will seek to consolidate and, where appropriate, strengthen wildlife links and corridors, and will not permit development which would adversely affect identified areas. In particular, the Council will seek to ensure that new development within or adjacent to identified links or corridors contributes to their effectiveness through the design, landscaping and siting of development proposals and mitigation works, where appropriate.' (Bury Council, 1997).*
- 4.2.9 The habitats within the site do not contribute to the value of the wildlife link and corridor associated with the River Roch.
- 4.2.10 In accordance with proposed layout, an area of undeveloped land which lies in the River Valley and Wildlife Links and Corridors is available for ecological enhancement. Appropriate enhancements will lead to an increase in the biodiversity value of the land in association with the River Valley and Wildlife Links and Corridors designated land; suitable enhancements are recommended at **Section 5.5**.
- 4.2.11 It is concluded that, provided the recommendations present at **Section 5.0** are adhered to, the proposals will have no negative impact upon the River Valley and Wildlife Links and Corridors or any designated sites in the wider area. Further, the recommendations presented in this report will secure ecological enhancements for these areas as a consequence of the proposed development.

4.3 Vegetation and Habitats

- 4.3.1 Only common and widespread plant species were found. None of the habitats present are representative of semi-natural habitat. The NVC communities present are typical of the geographical area and conditions present.
- 4.3.2 No Priority Habitats are present within the site.

4.3.3 In terms of each habitat's importance in a geographical context³ the unmanaged grassland and Bramble scrub is of 'site' value only, and the colonising vegetation, planted vegetation and hard standing are not considered to hold any importance on a geographical scale.

4.3.4 The presence of Japanese Knotweed and Indian Balsam, both invasive species listed under Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) has been detected within the site. It is considered that the proposals present an opportunity for the eradication of these species as part of the proposed development. Further guidance is presented at **Section 5.3**.

4.4 Protected Species and Other Wildlife

4.4.1 The River Roch which lies beyond the western site boundary provides habitat of moderate quality for foraging and commuting bats. Recommendations relating to the incorporation of habitats for roosting bats at the site are presented at **Section 5.4**.

4.4.2 The young trees and shrubs provide favourable foraging and nesting habitat for the species of birds detected within the site and the wider area via the records search. Consideration of birds (including protection of breeding birds and recommended enhancements for Priority Species) are presented at **Section 5.3** and **5.4**.

4.4.3 The site supports suitable habitat for hedgehog, a Priority Species. Hedgehog have the potential to be harmed during the site strip and construction phases of the development; measures for the protection of hedgehog (and other wildlife) during works are presented at **Section 5.3**.

4.4.4 Otherwise the presence of protected species is reasonably discounted.

4.5 Assessment of Impacts

4.5.1 Inappropriate construction techniques and / or unsupervised dumping or storage of materials within the River Roch Wildlife Corridor could lead to direct negative impacts to the River Roch Wildlife Corridor. Recommendations for the protection of the Wildlife Corridor during the construction phase of the proposed development are presented at **Section 5.3**.

4.5.2 In the absence of suitable precautionary measures and mitigation, the proposed development may, as a consequence of an unsuitable lighting regime, have an adverse impact on the function and integrity of the Wildlife Corridor associated with the River Roch and its associated flora and fauna. Recommendations for the suitable use of lighting at the site are presented at **Section 5.2**.

4.5.3 The proposals present an opportunity to enhance the value of the River Valley and Wildlife Links and Corridors with appropriate management and landscape planting. The proposals also present an opportunity to enhance the wildlife potential of the site for foraging and commuting bats, Priority Species of bird associated with the habitats present within the site and for hedgehog by the planting of native species of trees and shrubs and by incorporating bat boxes and bird boxes into the design of the site.

³ Using the terms presented at Section 4.7 of *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018), i.e. International and European, National, Regional, Local Authority-wide area, River Basin District, Estuarine system / Coastal cell or Local. The term 'site' value is additionally used to highlight ecological features considered to be of importance in the context of the wider site habitats, but which are of negligible value in the context of the local area.

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 Where possible, opportunities to enhance the ecological interest and habitat connectivity and seek gains for wildlife and biodiversity through appropriate landscape planting and habitat creation have been identified. The recommendations aim to meet the requirements of Chapter 15, paragraph 180(d) of the NPPF which states:

'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'.

- 5.1.4 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 an educational setting.

5.2 Recommendations in Relation to Site Layout and Consideration of Lighting

Recommendations in Relation to Site Layout

- 5.2.1 It is recommended that the site layout accommodates the following:
- Maximised green infrastructure and green links through the site with the use of landscape planting and accommodation of trees as stepping stones;
 - Incorporation of features for wildlife such as boxes for roosting bats and nesting birds within the developed areas of the site (refer to **Section 5.4**); and
 - Use of native species in the landscape planting scheme (refer to **Section 5.5**).

Consideration of Lighting

- 5.2.2 Paragraph 185(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.'*
- 5.2.3 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 the River Valley designated land, the Wildlife Links and Corridors designated land, the River Roch, areas of ecological enhancement and any landscape planting, as lighting overspill may deter use by wildlife such as foraging bats.
- 5.2.4 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).

5.3 Protection of Existing Features and Wildlife During Construction Phase

Invasive Plant Species

- 5.3.1 It is an offence under the *Wildlife and Countryside Act 1981* (as amended) to cause the spread of Japanese Knotweed and Indian Balsam in the wild. It is recommended that a specialist contractor is employed for the eradication and control of the Japanese Knotweed and Indian Balsam at the site, and that this is completed under a suitable Invasive Species Management Plan.
- 5.3.2 It is recommended that all areas of Indian Balsam within the site are treated, in particular the area of retained land within the River Valley and Wildlife Links and Corridors.
- 5.3.3 All areas affected by Japanese Knotweed at the site must be treated in accordance with current Environment Agency recommendations.

Protection of Existing Vegetation

- 5.3.4 During the construction phase, temporary protective demarcation fencing will be used to protect any trees, or shrubs to be retained, including those off-site where the root protection zone falls within the site boundary. The fencing must extend outside the canopy of the retained trees and must remain in position until all areas have been developed to ensure protection is provided throughout the construction phase.
- 5.3.5 The fencing will be in accordance with BS5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations* (BSI, 2012).

Protection of River Roch

- 5.3.6 The section of the River Roch running adjacent to the site should be protected during the construction and operational phase through implementation of best practice. Mitigation measures will be discussed and agreed with the Environment Agency. In particular, the following Pollution Prevention Guidelines (PPG) will be adhered to:
 - a. PPG1: Basic good environmental practices (Environment Agency, 2013);
 - b. PPG5: Works in, near or over watercourses (Environment Agency, 2014);
 - c. PPG6: Construction and demolition sites (Environment Agency, 2012); and
 - d. PPG7: Operating refuelling sites (Environment Agency, 2011).

Protection of Bat Foraging Habitat During Works; Construction Phase Lighting

- 5.3.7 The measures outlined above will protect the habitats identified as being suitable for use by foraging and commuting bats during the construction phase of the proposed development. To ensure that this habitat is not degraded due to unsuitable lighting, 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 Environmental Management Plan (CEMP) or similar document.

Protection of Nesting Birds

- 5.3.8 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.
- 5.3.9 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.

Protection of Hedgehog and Other Wildlife

5.3.10 Owing to the identified suitability of the habitats surrounding the site for fauna such as hedgehog it is essential that the following best practice and Reasonable Avoidance Measures are applied during the site preparation and construction operations:

- a. Flail the grassland in the site regularly until immediately prior to commencement of works on site;
- b. Ensure all machinery remains within the site boundary;
- c. Cover or infill all trenches / other excavations before nightfall;
- d. If covering is not feasible leave a temporary ramp in all trenches / other excavations in order to allow wildlife to escape;
- e. Raise stored materials (e.g. on pallets) in order to ensure that amphibians / other wildlife such as hedgehog do not shelter in brick piles; and
- f. If sheltering wildlife are detected during works then these must be carefully placed within a clean bucket and immediately transported to suitable sheltered habitat outside the working area of the site.

5.4 Provision of Opportunities for Nesting Birds and Roosting Bats

Enhancing Habitats for Roosting Bats

5.4.1 It is recommended that the development incorporates the installation of one bat access panel at the new building.

5.4.2 The bat access panel should be sited at least 4 metres above ground level, ideally facing or close to areas of landscape planting or existing linear features. The access panels should not be positioned over windows or doorways where bat droppings may become a nuisance. Once the development layout has been finalised, an ecologist should advise on appropriate position for the bat access panel. Suitable bat access panels are available from NHBS Ecology (www.nhbs.com), Wild Care (www.wildcare.co.uk) and / or Greenwood's Ecohabitats (www.greenwoodsecohabitats.co.uk) and are presented **Insert 1**.



Insert 1: Examples of integrated bat access panels and an externally mounted box⁴

Provisions for Nesting Birds

House Sparrow and Starling

5.4.3 House sparrows are associated with suburban areas. Monitoring suggests a severe decline in the UK house sparrow population, estimated as halving in rural areas, and dropping by 60% in towns and cities since the mid-1970's (RSPB, 2018). Starling is a Priority Species also associated with suburban and urban areas.

⁴ Left to right: IBstock Enclosed Bat Box 'c' (left); Habitat Bat Access Panels (centre left and centre right) and Greenwood's Ecohabitats' two crevice bat box (right). Products with a brick face are illustrated, however the Habitat bat access panels can be supplied unfaced to enable the addition of matching material.

- 5.4.4 The installation of one house sparrow terrace nest box and one starling nest box is recommended at the new building. The boxes will not be positioned over windows or doorways where droppings may become a nuisance.
- 5.4.5 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. Such bird boxes are available from the NHBS (www.nhbs.com) or Wild Care (www.wildcare.co.uk). ERAP (Consultant Ecologists) Ltd will advise on the appropriate siting of bird boxes once the development layout has been finalised. Examples of suitable bird boxes are presented at **Insert 2**.



Insert 2: Schwegler 1SP House Sparrow Nesting Terrace and starling nest box

5.5 Enhancement and Management of Retained Habitats and Landscape Planting

Enhancement and Management of Retained Habitats

- 5.5.1 It is recommended that the retained area of land within the River Valley and Wildlife Links and Corridors is brought into active management for biodiversity and to promote the longevity of the habitat. A Habitat Management Plan would be prepared to include the following:
- Specification of the removal / control and safe disposal of invasive species such as Indian Balsam;
 - Planting of low maintenance wildflower grassland;
 - Creation of dead wood habitat piles for colonisation by invertebrates, fungi and small mammals including hedgehog (a Priority Species); and
 - Inclusion of trellis at the plot boundary fences (on the aspect associated with the retained land and not the proposed building) and the planting of climbing plants such as Ivy, *Lonicera*, *Jasminum*, Climbing Hydrangea (*Hydrangea anomala*) etc.
- 5.5.2 It is accepted that the wildflower grassland planted at the slope will not be accessible for maintenance, however the connectivity of the River Valley and Wildlife Links and Corridors designated land will not be affected by an absence of maintenance. It is concluded that an absence of maintenance will allow the wildflower planting to naturally succeed to self-seeded trees and shrubs.

Landscape Planting

- 5.5.3 It is recommended that the landscape planting within the commercial development is composed from native species and species known to be of value for the attraction of wildlife.
- 5.5.4 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**.

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

- 5.5.5 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.
- 5.5.6 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.
- 5.5.7 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 updated ecological appraisal has demonstrated that the proposed development at the site is feasible and acceptable in accordance with ecological considerations and the National Planning Policy Framework.
- 6.2 It is possible to implement reasonable actions for the protection and long-term conservation of fauna such as roosting bats, nesting birds and commuting / foraging bats associated with the site.
- 6.3 Measures to conserve the habitat connectivity through the site are entirely feasible
- 6.4 Development at the site will provide an opportunity to secure ecological enhancement for fauna typically associated with suburban areas such as breeding birds and roosting bats.

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8.0 APPENDIX: TABLES AND FIGURES

8.1 Plant Species Lists

Table 8.1: Plant Species Composition, Frequency and Abundance for Colonising Vegetation at Former Amenity Verges

Scientific Name	Common Name	DAFOR	% Cover
<i>Acer campestre</i>	Field Maple sapling	O	<1%
<i>Anthriscus sylvestris</i>	Cow Parsley	LF	<1%
<i>Arrhenatherum elatius</i>	False Oat-grass	O	<1%
<i>Artemisia vulgaris</i>	Mugwort	O	<1%
<i>Bellis perennis</i>	Daisy	O	<1%
<i>Calystegia sepium</i>	Hedge Bindweed	LA	<1%
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	LF	2%
<i>Chamerion angustifolium</i>	Rosebay Willowherb	LA	<1%
<i>Cirsium arvense</i>	Creeping Thistle	LF	5%
<i>Dactylis glomerata</i>	Cock's-foot	VLA	5%
<i>Epilobium hirsutum</i>	Great Willowherb	O	<1%
<i>Epilobium montanum</i>	Broad-leaved Willowherb	O	<1%
<i>Equisetum arvense</i>	Field Horsetail	VLA	10%
<i>Euphorbia cyparissias</i>	Cypress Spurge	O/VLA	1%
<i>Euphorbia cyparissias</i>	Cypress Spurge	O	<1%
<i>Galium aparine</i>	Cleavers	O	<1%
<i>Geranium robertianum</i>	Herb-Robert	VLF	<1%
<i>Heracleum sphondylium</i>	Hogweed	VLA	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	O	<1%
<i>Plantago lanceolata</i>	Ribwort Plantain	O	<1%
<i>Rumex acetosa</i>	Common Sorrel	LA	<1%
<i>Rumex crispus</i>	Curled Dock	VLA	<1%
<i>Senecio jacobaea</i>	Common Ragwort	O/LA	2%
<i>Taraxacum officinale</i> agg.	Dandelion	O	<1%
<i>Trifolium repens</i>	White Clover	O/LF	2%
<i>Urtica dioica</i>	Common Nettle	O	<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 Composition, Frequency and Abundance for Colonising and Planted Vegetation at South-west corner of Site

Scientific Name	Common Name	DAFOR	% Cover
<i>Acer campestre</i>	Field Maple sapling	O	1%
<i>Alchemilla mollis</i>	Garden Lady's-mantle	O/LA	1%
<i>Arrhenatherum elatius</i>	False Oat-grass	F/LA	5%
<i>Betula pendula</i>	Silver Birch sapling	O	<1%
<i>Centranthus ruber</i>	Red Valerian	LA	2%
<i>Cerastium fontanum</i>	Common Mouse-ear	LA	1%
<i>Chamerion angustifolium</i>	Rosebay Willowherb	VLA	2%
<i>Dactylis glomerata</i>	Cock's-foot	LA	2%
<i>Epilobium hirsutum</i>	Great Willowherb	LA	1%
<i>Euphorbia cyparissias</i>	Cypress Spurge	VLA	2%
<i>Geranium</i> sp	Non-native Geranium species	LA	1%
<i>Holcus lanatus</i>	Yorkshire-fog	O/LA	2%
<i>Impatiens glandulifera</i>	Indian Balsam	O/LA	1%
<i>Lapsana communis</i>	Nipplewort	O/LA	1%
<i>Ligustrum ovalifolium</i>	Garden Privet	VLA	2%
<i>Melilotus officinalis</i>	Ribbed Melilot	VLA	2%
<i>Persicaria bistorta</i>	Common Bistort	LF	<1%
<i>Rubus fruticosus</i> agg.	Bramble	LA	2%
<i>Rumex crispus</i>	Curled Dock	O	1%
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O/LA	1%
<i>Senecio jacobaea</i>	Common Ragwort	F/LA	5%
<i>Sonchus arvensis</i>	Perennial Sow-thistle	F/VLA	10%
<i>Sonchus oleraceus</i>	Smooth Sow-thistle	F/LA	10%
<i>Taraxacum officinale</i> agg.	Dandelion	O	1%
<i>Trifolium dubium</i>	Lesser Trefoil	F/LA	2%
<i>Trifolium medium</i>	Zigzag Clover	LA	1%
<i>Tussilago farfara</i>	Colt's-foot	O/VLA	2%
<i>Urtica dioica</i>	Common Nettle	O	<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 Composition, Frequency and Abundance for Unmanaged Grassland, Colonising Ruderal Herbs and Bramble Scrub

Scientific Name	Common Name	DAFOR	% Cover
<i>Alchemilla mollis</i>	Garden Lady's-mantle	O	<1%
<i>Arctium minus</i>	Lesser Burdock	F/VLA	5%
<i>Arrhenatherum elatius</i>	False Oat-grass	F*	30%
<i>Artemisia vulgaris</i>	Mugwort	F/VLA	10%
<i>Betula pendula</i>	Silver Birch sapling	O	<1%
<i>Calystegia sepium</i>	Hedge Bindweed	LA	<1%
<i>Centranthus ruber</i>	Red Valerian	O/LA	1%
<i>Cerastium fontanum</i>	Common Mouse-ear	O	<1%
<i>Chamerion angustifolium</i>	Rosebay Willowherb	VLA	5%
<i>Cirsium arvense</i>	Creeping Thistle	F/LA	15%
<i>Cirsium vulgare</i>	Spear Thistle	VLF	<1%
<i>Crataegus monogyna</i>	Hawthorn	O/LF	<1%
<i>Dactylis glomerata</i>	Cock's-foot	F*	20%
<i>Epilobium hirsutum</i>	Great Willowherb	VLA	<1%
<i>Equisetum arvense</i>	Field Horsetail	O/LA	1%
<i>Fallopia japonica</i>	Japanese Knotweed	VLA	10%
<i>Festuca rubra</i>	Red Fescue	O/VLA	5%
<i>Galium aparine</i>	Cleavers	LF	<1%
<i>Geranium robertianum</i>	Herb-Robert	O	<1%
<i>Heracleum sphondylium</i>	Hogweed	O	<1%
<i>Holcus lanatus</i>	Yorkshire-fog	F*	20%
<i>Impatiens glandulifera</i>	Indian Balsam	F	10%
<i>Juncus effusus</i>	Soft-rush	O	<1%
<i>Lapsana communis</i>	Nipplewort	O	<1%
<i>Lathyrus pratensis</i>	Meadow Vetchling	LF	<1%
<i>Ligustrum ovalifolium</i>	Garden Privet	O/LF	<1%
<i>Lolium perenne</i>	Perennial Rye-grass	O	5%
<i>Medicago lupulina</i>	Black Medick	O/LA	1%
<i>Melilotus officinalis</i>	Ribbed Melilot	O	<1%
<i>Myosotis arvensis</i>	Field Forget-me-not	LF	<1%
<i>Persicaria bistorta</i>	Common Bistort	O	<1%
<i>Phalaris arundinacea</i>	Reed Canary-grass	O/LA	1%
<i>Plantago lanceolata</i>	Ribwort Plantain	LF	<1%
<i>Plantago major</i>	Greater Plantain	O	<1%
<i>Prunella vulgaris</i>	Selfheal	VLF	1%
<i>Prunus</i> sp.	Cherry species sapling	R	<1%
<i>Ranunculus repens</i>	Creeping Buttercup	LA	1%
<i>Rubus fruticosus</i> agg.	Bramble	O/VLA	5%
<i>Rumex acetosa</i>	Common Sorrel	VLF	<1%
<i>Rumex obtusifolius</i>	Broad-leaved Dock	F/LA	10%
<i>Salix cinerea</i>	Grey Willow	O	<1%
<i>Senecio jacobaea</i>	Common Ragwort	F/LA	10%
<i>Sisymbrium officinale</i>	Hedge Mustard	VLF	<1%
<i>Sonchus oleraceus</i>	Smooth Sow-thistle	O	<1%
<i>Stellaria media</i>	Common Chickweed	VLA	<1%
<i>Symphytum officinale</i>	Common Comfrey	O/LA	1%
<i>Taraxacum officinale</i> agg.	Dandelion	LA	<1%
<i>Trifolium dubium</i>	Lesser Trefoil	VLF	1%
<i>Trifolium pratense</i>	Red Clover	O/LA	<1%

<i>Trifolium repens</i>	White Clover	LA	<1%
<i>Tripleurospermum inodorum</i>	Scentless Mayweed	VLF	<1%
<i>Tussilago farfara</i>	Colt's-foot	O/VLA	2%
<i>Urtica dioica</i>	Common Nettle	LA	<1%
<i>Vicia sepium</i>	Bush Vetch	O/LA	2%

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

Table 8.4: Photographs



Photo 1: Hard standing



Photo 2: Gravel with colonising vegetation



Photo 3: Gravel with colonising vegetation



Photo 4: Gravel with planted vegetation



Photo 5: Unmanaged grassland



Photo 6: Unmanaged grassland



Photo 7: Colonising ruderal vegetation



Photo 8: Bramble scrub

8.3 Figures

Figure 1: Aerial Image of the Site and its Surroundings

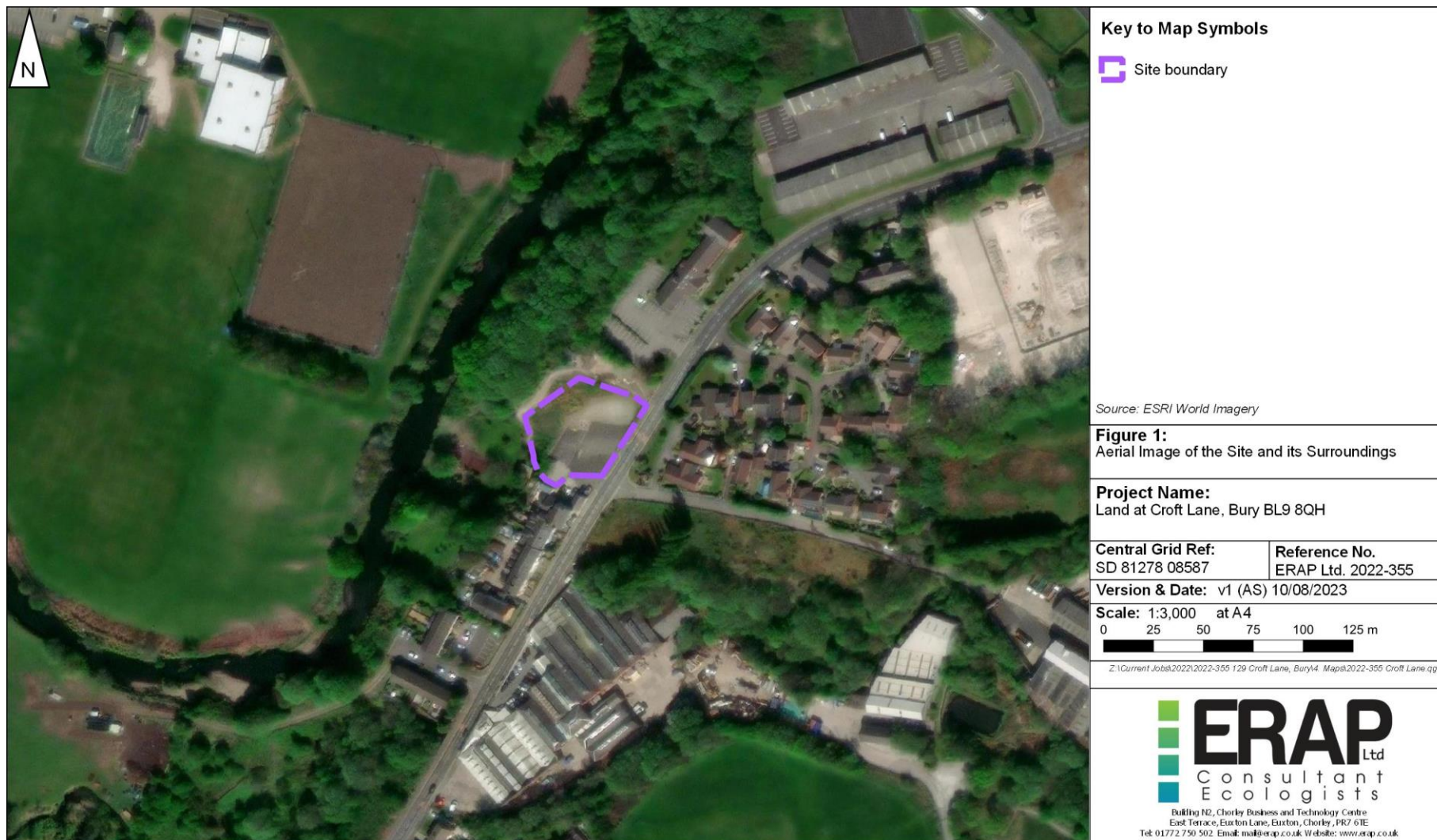


Figure 2: Phase 1 Habitat and Vegetation Map

