

Ecological Appraisal

Whitworth Street West

Glenbrook WWS Limited, Maizelands Limited & Arringford Limited

28 January 2025

35663-HML-XX-XX-RP-U-880001

Issue P05



Project Name: Whitworth Street West

Report Name: Ecological Appraisal

Issue Status: Final

Reference: 35663-HML-XX-XX-RP-U-880001

Date of Issue: 28 January 2025

Issue: P05

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Document History:

Issue	Date	Details
P01	17/9/2024	FINAL VERSION
P04.01	17/12/2024	FINAL VERSION INCORPORATING OVERSHADING DISCUSSION
P04	17/12/2024	FINAL VERSION INCORPORATING OVERSHADING DISCUSSION
P05	28/1/2025	FINAL VERSION ADDRESSING LPA COMMENTS REGARDING BATS

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Executive Summary

The Ecological Appraisal provides an assessment of the constraints and opportunities for the site, establishing a baseline through desk-based study, a walkover survey, internal and external inspection of buildings, and identification of enhancement delivery and potential for additional opportunities through review of the architectural and landscaping proposals.

The baseline environment has been established, based on the findings of a desk-study and a walkover survey, including buildings inspections, as part of this appraisal. This ensures ecological features previously identified are considered and an up-to-date assessment of the site is provided to account for any changes that have occurred in the intervening period.

The Ecological Appraisal identifies a range of mitigation measures that should be implemented through the Construction Phase, including the appointment of a Biodiversity Champion and implementation of appropriate ecological training through the site induction and toolbox talk process and the completion and recording of monitoring undertaken on site. Mitigation consideration is also highlighted for the detailed design stages, such as consideration of lighting provision. The appraisal also reviews the landscaping proposals to identify their potential to deliver a biodiversity enhancement to the site and locally, and identifies additional features, *i.e.* bird and invertebrate boxes, recommended to provide additional supporting value for faunal species.

The pre-development habitat was calculated to have a baseline value of 0 habitat units. The proposed development designs will yield a post-construction value of 0.82 habitat units. Owing to the baseline being 0, a net gain percentage cannot be calculated. However, the HQM system enables the HQM Change in Ecological Value Calculator to be employed and credits awarded.

This assessment identifies the 'Outdoor' part of the HQM achievement potential for Phase 2 of the development, which is targeting a 4 star rating *i.e.*:

2.1 - Identifying ecological risks and opportunities: 7 credits achievable of 7 available:

- The HQM Comprehensive route, utilising a "Suitably Qualified Ecologist" (SQE) has been adopted for this scheme;
- Compliance will be, monitored against all relevant UK and EU or International legislation relating to the ecology of the site;
- The SQE has been appointed sufficiently early in the project stage to ensure involvement with site configuration and, where necessary, influence over strategic planning decisions;
- Before the design brief, the SQE has carried out an appropriate level of survey and evaluation for the site and its zone of influence to determine the ecological baseline; and
- Information and data have been collated and shared with the project team to inform the site preparation, design or construction works.

2.2 - Managing impacts on ecology: 9 credits achievable of 9 available:

- The 02 Survey and Evaluation, and 03 Determining Ecological Outcomes criteria within the 2.1 Identifying Ecological Risks and Opportunities issue have been achieved via the comprehensive route.

- Compliance will be, monitored against all relevant UK, EU, and International legislative requirements relating to the ecology of the site.
- Roles and responsibilities have been clearly defined, allocated and implemented to successfully deliver the actions for achieving optimal ecological outcomes agreed in issue 2.1 Identifying Ecological Risks and Opportunities and early enough to influence the concept design and design brief;
- Site preparation and construction works have been planned for and implemented early enough to deliver the actions for achieving optimal ecological outcomes agreed in issue 2.1 Identifying Ecological Risks and Opportunities.
- The project team have liaised and collaborated with representative stakeholders, taking into consideration data collated and shared, and have implemented actions (see the 2.1 Identifying Ecological Risks and Opportunities issue) during site preparation and construction works.
- Negative impacts from site preparation and construction works have been managed according to the mitigation hierarchy and there is no overall loss of ecological value.

2.3 - Ecological change and enhancement: 10 credits achievable of 12 available

- A professional was appointed at an appropriate time to advise on the development and report on enhancing and protecting ecological value, provided in the Environmental Impact Assessment Scoping Report;
- The development will look to implement all of the recommendations identified within this ecological appraisal; and
- Using the BREEAM, CEEQUAL & HQM Change in Ecological Value Calculator (Appendix D), it has been demonstrated that the ecological enhancement opportunities provided as part of the scheme will ensure an increase in on-site habitats of 105%, constituting “Significant net gain” and qualifying for the available “Exemplary Level Credit”.
- It has not been possible to demonstrate the development can achieve greater than or equal to 110% net gain, constituting the “Exceeds net gain” criteria required to achieve an additional 2 credits available.

2.4 - Long-term ecological management and maintenance: 8 credits achievable of 8 available

- The client or contractor has confirmed that compliance is, or will be, monitored against all relevant UK, and EU and International legislation and relating to the ecology of the site;
- Information will be provided to the home occupier detailing the long term ecological management actions and requirements (part of the 11.2 Home Information);
- A management plan is in place for the landscape and ecology accessible to the assessed home that:
 - i. Is appropriate for the type of home and site being assessed (in line with the Methodology section); and
 - ii. Builds on the actions carried out for protecting and enhancing ecology, to ensure that commitments and efforts made during the development to

achieve optimal ecological outcomes, are retained and continued during handover and as far as possible, in-use.

- To help ensure the continued relevance of actions over the period of the Landscape and ecology management plan, formal commitments are in place, as appropriate, for the following to be carried out, comprising:
 - i. Monitoring and reporting of the actions implemented during the project for protecting and enhancing ecology and the outcomes from these actions.
 - ii. Arrangements for the ongoing management of landscape and ecology connected to the project on and, where relevant, off-site.
 - iii. Maintaining the ecological value of the site and its relationship or connection to its zone of influence;
 - iv. Maintaining the site in line with any sustainability linked activities, for example ecosystem benefits;
 - v. Remedial or other management actions are carried out.
 - vi. The landscape and management plan or similar is updated as appropriate to support maintenance of the ecological value of the site.

To ensure the attainment of the above credits, recommendations made in Section 5 and 6 of the appraisal should be fully understood and implemented in the construction phase and continued landscaping and lighting design, including:

- Identification of roles of responsibility of sites clients and contractors relating to the protection on biodiversity (Section 5.3.1);
- Implementation of mitigation measures for species (Section 5.3.3), including:
 - i. avoidance of sensitive timings for birds and protection of active nests, where identified;
 - ii. appropriate checking of future vegetation and building clearance requirements for species; and,
- Actions taken for the protection of biodiversity and site inspections, including condition of installed mitigation, should be recorded and evidenced in a site log (Section 5.3.4);
- The final landscape design should ensure planting schedules incorporate a wide variety of species of known value to wildlife, such as those identified by the Royal Horticultural Society in their Plants for Pollinators resource, and ensure good horticultural practice (Section 6.1);
- Provision of artificial habitat aids for birds to support nesting opportunities in the final site for both targeted species of conservation concern in Manchester and for common species in general (Section 6.2.1);
- Provision of artificial habitat opportunities for invertebrates in the final site within landscaping (Section 6.2.3); and,
- Completion of a formal Landscape and Ecology Management Plan to support mitigation and enhancement delivery through construction and be passed over on completion to

guide the management and maintenance of habitats and artificial habitat aids for long-term benefits.

Consequently, it is concluded that 34 HQM ecological credits are deemed achievable of the 36 available within HQM 2.1, 2.2, 2.3 and 2.4.

1. Introduction

1.1. Background

Hilson Moran has been commissioned to complete an ecological appraisal and BREEAM HQM assessment of the land at 2-4 Whitworth Street West, Manchester, M1 5WY (National Grid Reference SJ 8351 9752). The location of the Site is identified in Figure 1-1.

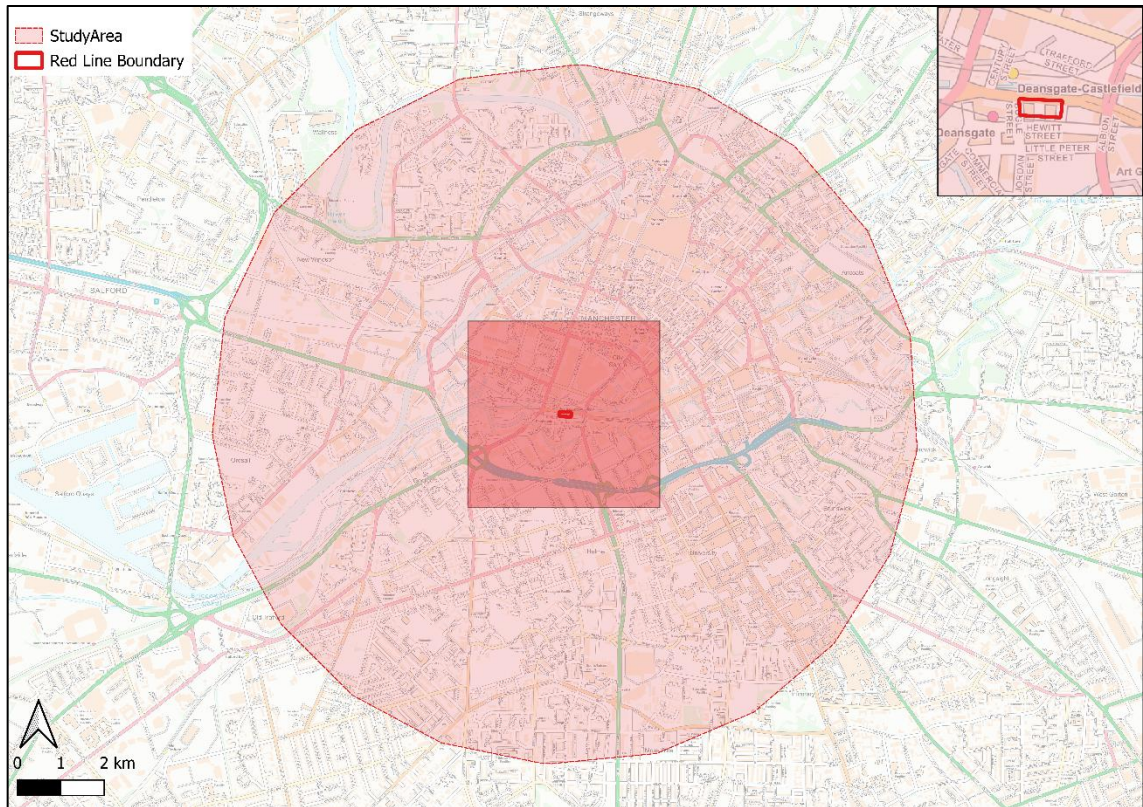


Figure 1-1 Whitworth Street West Site Location (Contains Ordnance Survey data © Crown copyright and database right 2022)

The Site is located at Whitworth Street West (B6469) in Manchester City. Whitworth Street West (B6469) provides the northern boundary and a raised railway line supported on brickwork arches of the Manchester South & Altrincham Railway Viaduct provides the southern boundary of the Site. The site lies between Bugle Street in the west and Cameron Street in the east. Rowendale Street bisects the site passing between number 2 and number 4 Whitworth Street West passing under the Manchester South & Altrincham Railway Viaduct leading to Hewitt Street.

The habitats present on Site are buildings and hardstanding associated with roadways, pavements and peripheral areas plus the interior of the Manchester South & Altrincham Railway Viaduct over Rowendale Street.

1.2. Proposal

The proposal for the Site is for a single phased development which will consist of the demolition of the existing buildings and the construction of a residential development. The building will consist of up to 44 storeys, including supporting residential, amenity and public realm works.

1.3. Purpose

This report has been prepared by Hilson Moran to assess the baseline habitats and condition of the site in relation to ecology and biodiversity. The final development designs have been assessed against statutory biodiversity net gain (BNG) criteria and Home Quality Mark (HQM) accreditation criteria.

An interim report was prepared in July 2024 with a final report prepared in September 2024 following receipt of final landscaping details.

1.4. Structure

Following this introductory section, a brief overview of the relevant legislation and planning policy framework is given in Section 2.0 summarises the methodology applied in the ecological appraisal and Section 4 details the baseline in biodiversity terms based on the findings of the desk-study and field survey, walkover and buildings inspections.

Appendices and references can be found at the end of the document, with document control information included at the front.

1.5. Declaration of Conformity

The appraisal has been carried out by Tanishia Gearing, a Chartered Environmentalist and holds membership of the Chartered Institute of Ecology and Environmental Management (CIEEM) and, as such, is considered to be a suitably qualified ecologist (SQE). The report updates after September 2024 have been carried out by Kristina Lewis, a full member of the CIEEM (MCIEEM). Kristina is also considered to be a SQE.

The field survey and first issue and interim reporting has been carried out by Tanishia Gearing and has been completed in accordance with best practice principles outlined by CIEEM and is an accurate and realistic assessment of site conditions and potential enhancement works. The report complies with the CIEEM Code of Conductⁱ and British Standard 42020ⁱⁱ.

1.6. Disclaimer

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2. Legislative and Policy Context

This report has been prepared with due regard and consideration to applicable legislation and national and local planning policy. Detailed information regarding these documents is provided in Appendix A.

2.1. Legislation

Legislative protection is afforded to a range of sites, habitats and species through a number of national statutes. The principal means by which features of biodiversity interest are protected are:

- The Environment Act 2021ⁱⁱⁱ;
- The Conservation of Habitats and Species Regulations 2017 (as amended)^{iv};
- The Wildlife and Countryside Act 1981 (as amended)^v;
- The Countryside and Rights of Way (CROW) Act 2000^{vi}; and,
- The Natural Environment and Rural Communities (NERC) Act 2006^{vii}.

The various national legislative statutes, including those identified above, provide protection to a range of ecologically significant sites and species. The legislative protection for the different sites and different species varies according to their sensitivity, rarity and the scale at which they are intrinsically valuable. Those of relevance to this assessment including Local Nature Reserve (LNR), breeding birds, bats and plant species. Full details of the legislative protection for these sites and species are listed in Appendix A.

Additional sites of ecological importance can be identified by the local authority, such as Sites of Borough Importance for Nature Conservation, however these are not statutorily protected.

The Environment Act 2021 makes provision for targets, plans and policies for improving the natural environment. Section 98 in Part 6 of the Act makes provision for biodiversity gain to be a condition of planning permission, with Schedule 14 identifying the objective being at least 10 % when comparing the post-development site to the pre-development site.

2.2. Planning Policy

2.3. National

The National Planning Policy Framework (NPPF)^{viii} sets out policies which will apply to the preparation of local plans, and to development management decisions. The framework sets out the Government's economic, environmental and social planning policies for England. Taken together, these policies articulate the Government's vision of sustainable development, which should be interpreted and applied locally to meet local aspirations. The NPPF is supported by planning practice guidance^{ix}, which provides further information on key issues in the implementation of policies identified in the NPPF. Further information on the NPPF and supporting planning practice guidance are given in Appendix A.

2.3.1. Local

The Core Strategy for Manchester is derived from the Manchester Local Development Framework^x, which was adopted in July 2012. It is the key document in Manchester's Local Development Framework covering a period of 15 years from 2012 to 2027. The Core Strategy Vision outlines development goals to be met by 2027.

Divided into three broad sections (Manchester Now, the Local Strategic Context and Objectives), it describes Manchester today and outlines the 2027 Council's vision along with the planning policies which will be used to deliver that vision.

Manchester's Core Strategy was updated following the adoption of Places for Everyone (PfE) Joint Development Plan adopted on 21 March 2024^{xi}. The Addendum to Manchester Core Strategy 2024 lists sections of Core Strategy policies replaced by PfE policies and must be read alongside the Core Strategy.

The following Core Strategy (CS) policies relating to ecology and biodiversity have been partially replaced by Places for Everyone (PfE) policies. Any part of the policy that is not replaced remains part of Manchester's Core Strategy.

The Core Strategy Vision outlines development goals to be met by 2027, these include:

- a successful sustainable and accessible City in the front rank of cities in Europe and the world
- meeting the challenge of climate change at the forefront of environmental initiatives and improvements and continuing to deliver sustainable development and a more effective Green Infrastructure
- a City with an increased and sustainable healthy population and a community which both benefits from and drives the City's productivity upwards
- a City with neighbourhoods where people choose to live all their lives because they offer a wide range of quality housing and an attractive environment where locally distinctive character is conserved and enhanced
- a City with thriving district centres, which have a distinct local character and provide a good range of accessible public services, retail and local facilities
- a City defined by excellence in urban design and environmental quality, where its distinctive historic environment is understood, valued, cared for and its potential fully realised,
- a City where residents and visitors regularly enjoy a network of quality open spaces, parks and river valleys, enriched with biodiversity, which provide recreational routes and opportunities for sport across the City
- an international destination for tourism and culture with the Eastlands area of the Regional Centre a national attraction for sport, leisure and recreation.

The vision is supported by five six spatial objectives (SOs) including SO6. Environment, which aims to:

- Protect and enhance both the natural and built environment of the City and ensure the sustainable use of natural resources, in order to mitigate and adapt to

climate change, support biodiversity and wildlife, improve air, water and land quality, recreational opportunities and provide networks of high quality green infrastructure, ensuring that the City is inclusive and attractive to residents, workers, investors and visitors.

The Core Strategy includes a number of policies of relevance to biodiversity and nature conservation, which are listed below. Any changes or deletions to these policies resulting from the PfE are indicated:

- Policy EN2: Tall Buildings – Unlike most major cities in the UK, Manchester has no height restrictions for buildings. Proposals for tall buildings will be supported where it can be demonstrated that they are of excellent design quality, appropriately located, contribute positively to sustainability and place making as well as bring significant regeneration benefits.
- Policy EN4: Reducing CO2 Emission by Enabling Low and Zero Carbon Development. Deletions replaced by PfE Policy JP-S 2.
- Policy EN8: Adaptation to Climate Change. Deletions replaced by PfE Policies JP-S2, JP-S4 and JP-G8.
- Policy EN9: Green Infrastructure*Policy EN 10: Safeguarding Open Space, Sport and Recreation Facilities
- Policy EN 14: Flood Risk. Deletions replaced by PfE Policy JP-S 4.
- Policy EN15: Biodiversity and Geological Conservation. Last sentence replaced by PfE Policy JP-G8.

*Key features of the Council's Green Infrastructure Strategies:

- 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, Gately 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. 188 12 Objective 6 Environment Manchester City Council Manchester Core Strategy 2012 to 2027
- 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.

Developers will be expected to enhance, restore or create new biodiversity, either on-site or adjacent to the site, with reference to 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 Knutsford Vale.

2.4. Biodiversity Action Plan

2.4.1. National

The UK BAP has been replaced by the Post-2010 Biodiversity Framework^{xii}, which addresses the changes in the strategic thinking of the Convention on Biological Diversity's Strategic Plan for Biodiversity 2011 – 2020. The new Framework includes new priorities for UK-level work for the convention on Biological Diversity and provides a broad structure to enable action across the UK.

Whilst the BAP has been replaced, the UK priority habitat and species continue to be regarded as conservation priorities in the UK Post-2010 Biodiversity Framework^{xiii}.

The UK BAP identifies 65 habitats and 1,150 species that are considered to be of conservation concern.

2.4.2. Local

The Greater Manchester Biodiversity Action Plan^{xiv} provides a strategic focus to ensure species and habitats are understood and considered throughout the decision making process, and directly supports the overall aim of the Manchester City Council's Corporate Plan to shape outstanding environments. The BAP provides a framework to ensure all legislative requirements and regional and national targets for protecting, conserving and enhancing biodiversity are met at a local level.

The document identifies 9 target habitats and 9 target species groups to identify conservation priorities for all ten districts in Greater Manchester, however additional habitats and species are considered through the action plans established.

Habitats

Grasslands
Hedgerows
Lowland Mosslands
Reedbeds and bittern
Ponds and lodges
Canals
Native woodlands
Uplands
Urban managed greenspace

Species

Bats
Black redstart
Farmland Birds
Great crested newts
Hares
Native Black Poplar
Twite
Water Vole
Willow tit

3. Methodology

3.1. British Standard 42020: Biodiversity- Code of Practice for Planning and Development

This ecological appraisal and reporting has been completed in line with, and with reference to, British Standard (BS) 42020: Biodiversity - Code of Practice For Planning and Development^{xv}. BS 42020 was developed to bridge the gap between specific best practice guidelines and professional Codes of Conduct and build upon relevant legislation and policy relating to biodiversity.

BS 42020 provides a framework for the assessment of biodiversity and recommendations for the content and detail of reporting on biodiversity features with the aim of improving standards within the profession. This ecological appraisal, including reporting, has been produced in consideration of and compliance with BS 42020.

3.2. Desk Study

Information regarding local biological records was collected through an online search of information sources and a data request to the local biological records centre, Greater Manchester Local Record Centre (GMLRC). Information requested from GMLRC included statutory and non-statutory designated sites, notable habitats and legally protected and ecologically significant species. To supplement this request, the following web-based resources were used to collate historical biological records and site conditions within the study area:

- Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.defra.gov.uk);
- National Biodiversity Network (NBN) Atlas website (www.nbnatlas.net)^{xvi};
- Aerial imagery from Google Earth;
- UK Biodiversity Action Plan (BAP) website (<http://jncc.defra.gov.uk>);
- Manchester Biodiversity Strategy (<https://democracy.manchester.gov.uk>);
- Greater Manchester Local Record Centre (<https://gmlrc.org/>); and
- Greater Manchester Ecology Unit ([Sites of Biological Importance \(SBI / LWS\) in Greater Manchester - data.gov.uk](https://sitesofbiologicalimportance.sbi.lws.gov.uk))

As species distributions are variable over time, information obtained through the desk study has been restricted to records from 2005 and onwards to ensure records are up-to-date. Any species with no record in the last 16 years are unlikely to remain present within the study area.

3.3. Habitat Appraisal

3.3.1. Habitats and Flora

The habitats present within the field survey have been classified and mapped following the UK Habitat (UKHab) Classification methodology^{xvii}, a comprehensive habitat classification system that was developed to establish a single system that can be used to

identify habitats and provide better coordination between the various existing classifications (e.g. Annex I habitats and BAP priority Habitats). The methodology is well suited to urban areas, with secondary classifications enabling clearer mapping of features of urban greening, and is well suited to application by both remote-sensing observation and walkover surveys, or a combination of both methods.

The UKHab classification is hierarchical, with the professional edition utilised for the appraisal and all habitats and assessments to be taken to Level 4 where possible^{xviii}. Considering the scale of the proposal and the urban context of the site, where habitats are often present at small extent and provide contrast to the surrounding developed land, the fine-scale Minimum Mapping Unit (MMU) of 25m² for area-based habitats and 5m length for linear features has been utilised.

An initial appraisal of the site has been completed by remote sensing, using aerial imagery and existing site photography to establish habitats present on the site in as much detail as possible. As the site is principally urban in nature, many of the habitats are relatively common with a significant proportion of habitats present falling within the u1-built-areas and gardens category. From this, distinction between the Level 4 and, for developed land, Level 5 categories for the majority of the site is relatively straightforward and whilst Level 5 is not required, mapping to this level has been undertaken for urban habitats to provide distinction across the site. However, other habitats present in the survey area, including g-grassland and h3-dense scrub, can only be identified at a high level and require further investigation to identify accurately to Level 4.

Following on from the remote sensing exercise, a walkover survey of the site was carried out to ensure mapping of areas is accurate, establishing species lists for the various habitats and identify semi-natural habitats to Level 4 of the UKHab classification where this was not possible through remote sensing. The walkover survey was carried out on the 25th June 2024 by a suitably qualified ecologist, Tanishia Gearing MRes, CIEEM. The survey was undertaken on a day with fair weather. Vegetation present in the study area was identified in accordance with Blamey *et al*^{xix}.

3.3.2. 'Extended' Species Scoping Survey

The habitat survey described above was 'extended' through the additional recording of specific features indicating the presence, or likely presence, of protected species of fauna or other species of nature conservation significance. This survey method is an established and accepted approach for developing an ecological baseline for a site and is an integral part of both a Preliminary Ecological Appraisal (CIEEM, 2017) and a more comprehensive Ecological Impact Assessment (CIEEM, 2016).

Whilst not a full protected species or botanical survey, the extended habitat survey method enables a suitably experienced ecologist to obtain sufficient understanding of the ecology of a site that it is possible either:

- To confirm the conservation significance of the site and assess the potential for impacts on habitats/species likely to represent a material consideration in planning terms; or
- To ascertain that further surveys of some aspect(s) of the site's ecology will be required before such confirmation can be made.

3.3.3. Bat Inspection Survey

The initial desk-based study indicated that the Site predominantly comprised built development, and therefore there was the potential for the buildings and structures to support roosting habitat for bats. An inspection was therefore required to evaluate the potential suitability of the buildings on Site for bats, and whether further surveys for bats would be required to inform a planning application.

The bat inspection comprised a detailed inspection of the exterior and interior of the buildings to look for features that bats could use for entry/exit and to search for signs of bats, in accordance with methodological survey guidelines produced by the Bat Conservation Trust (BCT)^{xx}.

The objective of the survey was to determine the actual or potential presence of bats and to identify potential emergence points to focus on during emergence surveys were they to be required. The survey included a visual search from ground level and from accessible windows and/or roof tops.

The buildings inspection survey for bats was undertaken by Tanishia Gearing with three years' experience as an ecological consultant.

For each building, structure (or tree), the surveyor assigns a category to each potential roost feature (PRF) according to its potential for supporting bat roosts using the criteria detailed in the BCT survey guidelines and summarised in Table 3-1 below.

Table 3-1 *Guidelines for assessing the potential suitability of proposed development sites for bats (Collins, 2023).*

Suitability	Description of roosting habitats / potential roosting features (PRFs)	Description of commuting and foraging habitat
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation.) A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.	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 (not in a parkland situation) or a patch of scrub.

Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	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.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Site is close to and connected to known roosts.

3.3.4. Limitations

Narrow areas between the buildings and the railway viaduct at ground level could not be accessed.

Access was not gained to Cameron Street and the west of the Site.

Access to the flat roof of 2 Whitworth Street West was not possible.

Due to health and safety reasons and dilapidated condition of suspended ceilings full views of the roofs of 4 Whitworth Street West could not be undertaken.

A full inspection of the railway arch beneath the Manchester South and Altrincham Railway Viaduct along Rowendale Street was not undertaken.

3.4. Assessment Methodology

CIEEM's guidelines on Preliminary Ecological Appraisal^{xxi} identifies that the appraisals should provide an indication of the ecological value of features present following the methodology provided in CIEEM's Guidelines for Ecological Impact Assessment in the UK and Ireland^{xxii}.

For this, it is essential to distinguish between the biodiversity value of a receptor and its legal status. Features of high biodiversity value may not necessarily attract legal protection and vice versa. For example, a viable area of ancient woodland is likely to be of high biodiversity value even if it does not receive any formal statutory designation.

In accordance with the CIEEM guidelines, each biodiversity features should be assessed as valuable, or potentially valuable, based on the following geographic frame of reference;

some examples of ecological receptors that may be potentially valuable at each geographic scale are presented below:

- International – *e.g.* existing or warranting designation as a Special Area of Conservation (SAC) and/or of significant conservation status for Europe;
- National – *e.g.* existing or warranting designation as a Site of Special Scientific Interest (SSSI) and/or of significant conservation status for England;
- Local – *e.g.* existing or warranting designation as a Site of Local Importance for Nature Conservation (SLINC) and/or of significant conservation status within a local context (*e.g.* within 1 km of the proposed scheme);
- Within the immediate survey area only – *e.g.* habitats or species populations of significant conservation status for the site and immediate surrounding lands;
- Negligible - *e.g.* habitats or species whose presence does not contribute to the local biodiversity resource or has negative effects on local biodiversity (*e.g.* invasive species).

3.5. Home Quality Mark Certification

Home Quality Mark (HQM) version 6.0 is an assessment system that allows the sustainability of new homes to be established against a number of criteria, including transport and movement, comfort, energy and outdoors. The new home developments are graded from 1 to 5 depending on the overall scoring across all the criteria.

The outdoors part of the assessment measures credits achieved against the following five criteria of the proposed new homes development:

1. Ecological Risks and Opportunities for the project – 7 credits available
2. Managing Impacts on Ecology – 9 credits available
3. Ecological Change and Enhancements
4. Long Term Ecological Management and Maintenance; and
5. Recreational Space

Details of the “Outdoors” credits applicable to the development are given below.

3.5.1. Identifying Ecological Risks and Opportunities

The aim of these credits is to establish the ecological baseline and Zone of Influence (ZoI) of the site and to identify risks and opportunities for achieving the best ecological outcome for the site. There are a total of 7 credits available for this criteria.

- 1st credit is awarded where evidence is provided to demonstrate that a suitably qualified ecologist (SQE) has been appointed at an early project stage, as to have influence over strategic planning decisions.
- 2nd credit is awarded where evidence is provided that a SQE has carried out the appropriate surveys and evaluation for the site and Zone of Influence (ZoI) to determine ecological baseline.

- 3rd credit is awarded where evidence is provided that information and data are collated and shared within the project team to inform later stages.
- Up to 3 credits are available where evidence includes: (i) collaboration between stakeholders to identify, appraise and agree actions for the project resulting in optimal ecological outcomes in line with the mitigation hierarchy: avoidance and protection, (ii) an SQE was appointed before the design brief or equivalent and appropriate surveys and evaluation have been carried out, and (iii) ecological information and data was collated and shared with the project team to inform the site preparation, design or construction works
- 7th credit is awarded where evidence is provided that the wider site sustainability-related activities and potential benefits to the ecosystem services.

3.5.2. Managing impacts on Ecology

The aim of these credits is to ensure the avoidance, or limit as far as possible, any negative impacts on the site or Zol ecology as a result of the project. There are 9 credits available for this criteria.

- 1st credit is awarded where evidence is provided that clear roles and responsibilities were allocated and implemented successfully, and early enough to influence concept design and design brief.
- 2nd credit is awarded where evidence is provided that the site preparation and construction works have been planned for implemented early, allowing for optimal ecological outcomes.
- 3rd credit is awarded where evidence is provided that the project team have collaborated with stakeholders, considering shared information and data plus implemented relevant actions during the site preparation and construction works.
- 6 credits are available where evidence is provided that negative impacts from the site preparation and construction works have been managed according to the mitigation hierarchy, and **no overall loss** of ecological value has occurred. Or 3 credits are available when the loss of ecological value have been limited as far as possible.

3.5.3. Ecological Change and Enhancement

The aim of these credits is to ensure the enhancement of the ecological value of the site and Zol to support local, regional and national priorities. There are up to 12 credits available for this criteria.

1st credit is available where evidence is provided that at least 75% of the proposed developments footprint is on previously occupied land.

Up to 8 credits are awarded where evidence is provided to demonstrate the change in ecological value:

- 2 credits where the loss of ecology is minimised
- 4 credits where there is no net loss of ecology

- 6 credits where there is net gain of ecology
- 8 credits where net gain is exceeded.

3.5.4. Long Term Ecological Management and Maintenance

The aim of these credits is to ensure the continuation on monitoring, management and maintenance of the site and its ecological features to achieve the intended long term outcomes There are 8 credits available for this criteria.

4 credits are available where evidence is provided of a Landscape and Ecology Management Plan (LEMP) has been developed and made accessible, providing the LEMP is appropriate for the type of site being assessed and builds of the actions previously decided to ensure the optimal ecological outcomes and ensures these are passed over to the tenants.

4 credits are available where evidence is provided that continued actions over the duration of the LEMP are in place, including formal commitments. Including monitoring and reporting of the action implemented, arrangements of ongoing management and maintaining the ecological value of the site and connection to the Zol.

3.5.5. Credit Summary

This section provides a summary of the targeted HQM credits for the proposed development from available credits. These are presented in Table 3-1.

Table 3-2 Home Quality Mark available and targeted credits

Home Quality Mark (HQM) Category	Criteria Type	Criteria Code	Credits Available	Targeted Credits
Identifying ecological risks and opportunities	UK & EU Legislation	2.1-01	Prerequisite	✓
	Survey & Evaluation	2.1-02	3	3
	Ecological Outcome	2.1-03	3	3
	Wider Site Sustainability	2.1-04	1	0
Managing impacts on ecology	Ecological Risks & Opportunities	2.2-01	Prerequisite	✓
	Liaise, implement and data	2.2-02	3	3
	Manage negative impacts	2.2-03B	3 or 6	3
Ecological Change and Enhancement	Previously occupied land	2.3-01	2	2
	Ecological Risk & Opportunities	2.3-02	Prerequisite	✓
	Liaise, implement and data C	2.3-03B	2	2
	Measuring the change (SQE only)	2.3-04	8	6
	Home information	2.4-01	Prerequisite	✓

Home Quality Mark (HQM) Category	Criteria Type	Criteria Code	Credits Available	Targeted Credits
Long-term ecological management and maintenance	Liaison, review, management	2.4-02	Prerequisite	✓
	Management Plan	2.4-03	Prerequisite	✓
	Monitoring and updating	2.4-04	4	4
		2.4-05	4	4

3.6. Limitations

The methods employed for the completion of the ecological assessment are not considered to give rise to any significant limitations, following best practice guidance and utilising up-to-date information.

The absence of desk study records is not relied upon to determine the absence of a particular species. Often, the absence of records is a result of under-recording within the given search area and as such the experience of the ecologist concerned together with a range of additional factors, such as the presence or absence of potential supporting habitat, is used to infer likely presence or absence.

Ecological surveys are limited by factors that affect the presence of plants and animals such as time of year, weather, migration patterns and behaviour. The surveys were undertaken in June and therefore represent a valid sample of ecological evidence present during that season. The report is not designed, nor is it required, to present a complete inventory of flora and fauna or detailed national vegetation classification (NVC) surveys.

The results and recommendations within this report are valid for up to two years from the date of survey, assuming there are no significant changes to the Site or its immediate surroundings.

4. Baseline

4.1. Desk Study

4.1.1. Statutory and Non-Statutory Designated Sites

There are no designated statutory sites of nature conservation importance located at or within 2km of the Site.

Three non-statutory sites, sites of biological importance (SBIs), were reported within a 2km radius of the Site. These are Rochdale Canal - Stott's Lane to Ducie Street Basin designated for standing water (Fw3) habitat located approximately 1.3km east of the Site, River Irwell designated for wintering birds (WB1, WB2, WB5) located approximately 1.5km west of the Site and Ashton Canal (West) designated for standing water (Fw3) habitat located approximately 1.4km east of the Site.

4.1.2. Notable Habitats

The Site does not fall within any designated priority habitat areas. The Site does not have any habitats listed within the Priority Habitat Index within the immediate vicinity, this being within 500m of the Site boundary. There are six areas of priority habitats within the search area, these being deciduous woodland. The closest areas of priority habitat are within Ardwick Green Park and The Meadow approximately 1.55km southeast and northwest, respectively. The study area has areas of deciduous woodland located across the whole area, with all areas being over 1.5km from the Site boundary.

The six areas of deciduous woodland within the study area are:

- Ardwick Green Park approximately 1.55km southeast of the Site;
- The Meadow approximately 1.55km northwest of the Site;
- Hullard Park approximately 1.65 southwest of the Site;
- Peel Park approximately 1.85km northwest of the Site;
- Un-named area of woodland at Alexander Street 1.95km north of the Site; and
- Whitworth Park approximately 2km southeast of the Site.

The Site lies approximately 20m south of the Rochdale Canal, although this section of canal does not form part of any SBI or any other formal designation such as priority habitat indicated on the MAGIC map database.

All notable habitats have been identified within Figure 4-1.

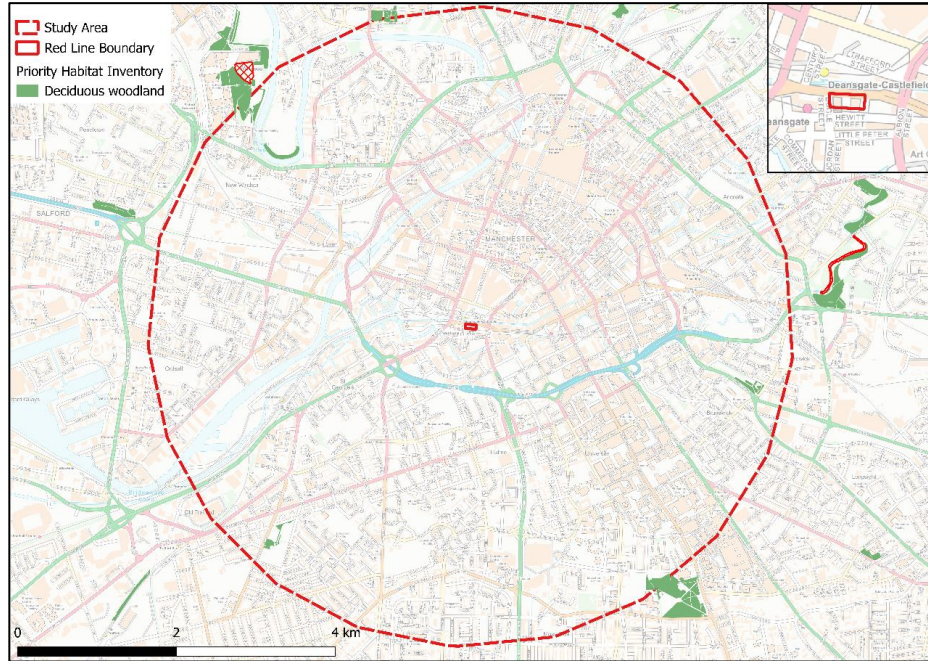


Figure 4-1 UK BAP Priority Habitats Within 2km of the Proposed Development
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4.1.3. Protected and Ecologically Significant Species

Biological Records Centre

The data returned by GMLRC identified the presence of a number of legally protected and ecologically significant species within the study area, however this area incorporates a wide range of habitat types including rivers and canals, parks and gardens, cemeteries as well as urban areas. Consequently, the information provided has been carefully analysed to identify species that are considered likely to be present within the habitats associated with the development Site and surrounding areas, to help understand the species with potential to be utilising the development area.

4.1.3.1. Birds

The information provided by GMLRC identified a total of 925 records of birds within the study area, which were classified as being specifically protected and/or ecologically significant, through identification as a Schedule 1 species, BAP priority species, red or amber listed species of conservation concern or a local species of conservation concern. Those species potentially present within the development Site and immediately surrounding habitats, based on proximity, most recent records and typical habitat requirements are identified in Table 4-1.

The most recent record was for a black redstart (*Phoenicurus ochruros*) reported in June 2023. The closest record was for a dunnoek (*Prunella modularis*) reported approximately 100m northwest of the Site.

Table 4-1 Bird Species Associated with Development Site Habitats Identified within the Study Area

Species		Most Recent Record	Closest Record
Arctic Skua	<i>Parasitic jaeger</i>	2015	1.9km southwest
Black Redstart	<i>Phoenicurus ochruros</i>	2023	485m northeast
Bullfinch	<i>Pyrrhula pyrrhula</i>	2020	535m west
Cuckoo	<i>Cuculus canorus</i>	2017	1.3km north
Curlew	<i>Numenius arquata</i>	2020	700m northwest
Dunnoek	<i>Prunella modularis</i>	2022	100m west
Herring Gull	<i>Larus argentatus</i>	2012	625m east
Hobby	<i>Falco subbuteo</i>	2008	1.25km north
House Sparrow	<i>Passer domesticus</i>	2022	455m north
Kingfisher	<i>Alcedo atthis</i>	2022	300m northeast
Lapwing	<i>Vanellus vanellus</i>	2017	725m northeast
Lesser Redpoll	<i>Acanthis cabaret</i>	2012	710m northwest
Linnet	<i>Linaria cannabina</i>	2019	1.25km northwest
Little Ringed Plover	<i>Charadius dubius</i>	2012	1.25km south
Peregrine	<i>Falco peregrinus</i>	2023	105m west
Reed Bunting	<i>Emberiza schoeniclus</i>	2019	1.55km southwest
Skylark	<i>Alauda arvensis</i>	2014	875m northwest
Song Thrush	<i>Turdus philomelos</i>	2022	490m northwest
Spotted Flycatcher	<i>Muscicapa striata</i>	2015	1.25km north
Starling	<i>Sturnus vulgaris</i>	2020	440m northwest
Yellow Wagtail	<i>Motacilla flava</i>	2014	1.35km northeast

4.1.3.2. Bats

GMLRC provided numerous records of bats within the study area. A total of 246 observation records for bat roosts or activities were identified within the study area, being legally protected and/or ecologically significant.

65 records of bat roosts were provided of six species/species groups of bats namely: unidentified bat (*Chiroptera* sp), common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's bat (*Myotis daubentonii*), Myotis species (*Myotis* sp), and soprano pipistrelle

(*Pipistrellus pygmeus*). The closest bat roost records is from approximately 179m southeast for common pipistrelle roosts, including a maternity roost from July 2011.

A summary of all the different bat species/species groups records along with their most recent and closest records is provided in Table 4-2. Table 4-2 Bat Species Associated with Development Site Habitats Identified in the Study Area

Species		Most Recent Record	Closest Record
Bat	<i>Chiroptera sp.</i>	2014	325m east
Brown Long-eared Bat	<i>Auritus plecotus</i>	2013	455m northwest
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	2023	120m southwest
Daubenton's bat	<i>Myotis daubentonii</i>	2009	1.25km northwest
Myotis sp	<i>Myotis sp</i>	2015	1.5km northeast
Noctule	<i>Nyctalus noctula</i>	2022	2km southwest
Pipistrelle Bat species	<i>Pipistrellus sp</i>	2023	230m east
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	2022	600m northeast

4.1.3.3. Other notable species

Records were returned for several other protected species, including bee orchids, white letter hairstreak butterfly, otters and hedgehogs and. The full species list can be seen in Table 4-3 Notable Species Associated with Development Site Habitats Identified in the Study Area. The most recent record was for a hedgehog, recorded in 2022 approximately 1.7km southeast of the Site boundary.

Table 4-3 Notable Species Associated with Development Site Habitats Identified in the Study Area

Species		Most Recent Record	Closest Record
Bee orchid	<i>Ophrys apifera</i>	2022	840m northwest
Cinnabar	<i>Tyria jacobaeae</i>	2022	700m west
Common toad	<i>Bufo bufo</i>	2021	1.7km northwest

Hedgehog	<i>Erinaceus europaeus</i>	2022	460m west
Otter	<i>Lutra lutra</i>	2022	450m west
White letter hairstreak	<i>Satyrrium w-album</i>	2019	1.35 northwest

MAGIC

4.1.3.4. Sites of Special Scientific Interest

A search of the Multi-Agency Geographic Information Centre (MAGIC) database identified that the Site is located within the impact risk zones of two Sites of Special Scientific Interest (SSSIs), these being the Rochdale Canal SSSI located approximately 6.4m northeast of the site and the Hollinwood Branch Canal SSSI located approximately 7.7m northeast of the Site, respectively. The restrictions of these risk zones apply to air pollution and combustion, neither of which are predicted to be implicated within this development.

4.1.3.5. Granted European Protected Species (EPS) Licence Applications

A search of the Multi-Agency Geographic Information Centre (MAGIC) database identified 21 records of Granted European Protected Species (EPS) Licence Applications for bats within 2km of the Site.

The closest is located approximately 180m southeast for:

- EPSM2013-5575 from Licence Start Date 23/05/2013 to Licence End Date 30/09/2016 for impacts to common pipistrelle bats.

The next nearest of Granted European Protected Species (EPS) Licence Applications for bats are located approximately 465m north of the Site for:

- EPSM2012-5061 from Licence Start Date 10/12/2012 to Licence End Date 31/08/2015 for impacting a breeding site of brown long eared bats
- EPSM2012-4767 from Licence Start Date 28/08/2012 to Licence End Date 30/09/2013 for impacting a breeding site of common pipistrelle bats

4.2. Field Survey

4.2.1. Habitats and Flora

The following sections describe the habitats that were identified on Site during the field survey described according to the UKHab classification definitions and following CIEEM best practice guidance. The habitat descriptions should be read in conjunction with the UKHab classification survey map, see Figure 4-2, identifying the area-based habitats, with secondary codes, as identified in Table 4-4.

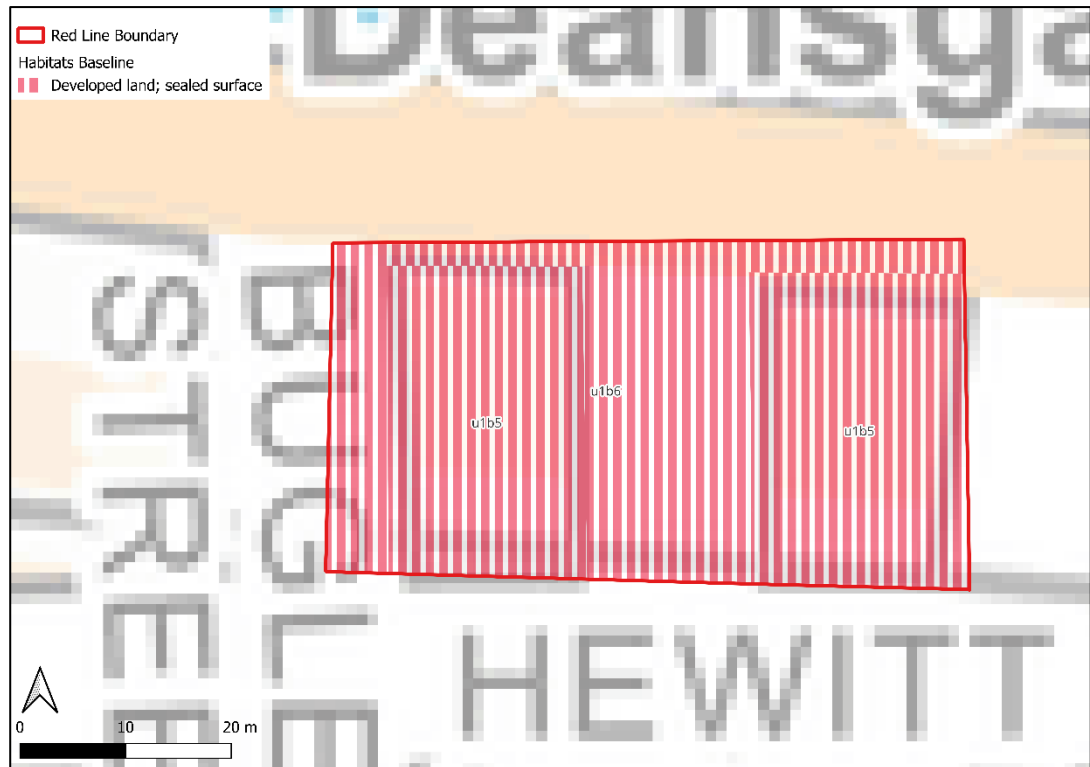


Figure 4-2 UK Habitat Classification Map

Site photographs are included in Appendix B.

Table 4-4 UK Habitat Classification Secondary Codes Identified on Site

Code	Description	Code	Description
u1b5	Buildings	U1b6	Other hardstanding

The Site entirely comprised u1b habitat (developed land; sealed surfaces) with almost the entire Site being u1b5 (buildings) with a small area in the centre of the development being u1b6 (other developed land) associated with Rowendale Street.

4.2.2. Species

Flora

Small areas of growth, namely buddleia (*Buddleja sp.*) were located throughout the Site, however this did not meet minimum mapping. There was evidence of butterfly bush (*Buddleja davidii*) growing from some crevices within the building of Number 2 Whitworth Street West, with specific reference to the aspects along Whitworth Street and Bugle Street. As a result, the Site was deemed to be of **negligible ecological value** with regard to flora.

4.3. Fauna

No fauna was observed during the Site walkover. There was evidence within the eastern most building (Number 4 Whitworth Street West) of nesting birds within the ground floor area and within the stairwell in the east of the Site. It was deemed that the Site had high potential for nesting birds, owing to observation of bird droppings within the southeastern building, with birds nesting in the beams of the pitched roof. Evidence of birds nesting was also seen in the stairwell on the east of the eastern building. Droppings, likely those of brown rat (*Rattus norvegicus*) were also observed. As a result, the Site was deemed to be of **ecological value** in regard to fauna and the presence of nesting birds should be considered throughout the planning and development stage of the project.

4.3.1. Bats

4.3.1.1. External Inspection of Buildings and Structures

The Site comprises two main buildings, which were previously used as commercial properties but were vacant at the time of the walkover survey and buildings inspection. The Site includes the brick arch beneath the Manchester South and Altrincham Railway Viaduct.

Number 2 Whitworth Street West (Wrendal House), the building to the west of the Site, is a four-storey building, constructed in 1909. The main building is primarily constructed of red brick. The roof was primarily flat with three raised areas, felt covered and deemed to have limited potential for bats. The building has a half-basement with four floors above this to the front and five floors to the rear. The flat roof has two further raised sections constructed of brick, one with a mansard type roof and one with a flat felt roof. The raised mansard roofed area at the front/north of the building has lead flashing on the southern gable end. The raised area in the southeast part of the roof has a felt lined roof.

Number 4 Whitworth Street West (Whitworth House), in the east of the Site comprised two types of buildings, with the more northern building constructed of brick and a hipped pitched roof with slate roof tiles. A low brick parapet is present around the top of the building and one brick chimney is present on the southwest pitch of the roof. Some of the roofing materials on the eastern building are loose or cracked, which could provide suitable roosting habitat for bats, however the lack of connectivity to the wider environment and lack of relevant records within the immediate vicinity of the Site, bring the suitability of the building for bats to negligible. In addition, artificial light including from street lighting in the vicinity reduces the suitability of the building for bats.

The adjacent building is a 1.5 storey brick warehouse building with a pitched corrugated roof. The south elevation, opposite the railway viaduct is clad in metal. There are missing bricks and missing mortar on the eastern gable end.

Although there were features of the building Number 4 Whitworth Street West (Whitworth House) and the adjacent warehouse building suitable for bat roosting, it was deemed that the Site had a low potential for roosting bats, owing to the lack of connectivity to the wider environment, lack of foraging resources in and around the Site, the lighting of the areas surrounding the Site, plus the location of several nightclubs emitting noise close to the north of the Site with noise and vibration from the railway to the south of the Site. It is therefore deemed that the Site has low and reduced to negligible potential for bats, and further surveys are not deemed necessary.

The viaduct runs along the rear of the Site. Rowendale Street, passing between Whitworth House and Wrendal House, extends beneath the viaduct. The viaduct arch is constructed primarily of red brick with metal beam supports. The barrel area underneath the viaduct arch, including the section of Rowendale Street is lined in parts with red brick and white glazed brick in the southern section.

4.3.1.2. Internal Inspection

Number 2 Whitworth Street West (Wrendal House)

The building possesses a flat roof and contains disused office areas with some areas in a state of disrepair providing evidence of having been vacant for some time. The roof of the building could not be seen internally. Access to the flat roof was not possible.

Number 4 Whitworth Street West (Whitworth House)

The building contains disused office areas with some areas in very poor, dilapidated condition. The roof of the main building is lined with a suspended ceiling in very poor condition. The roof and roofing materials could not be fully seen or inspected during the internal inspection. In places the suspended ceiling tiles were missing permitting construction materials and condition of the roof to be observed. Furthermore, no bats or obvious evidence of bats such as staining, or droppings were observed internally.

The warehouse building roof is supported on wooden beams lined with plyboard near the apex of the roof. A dilapidated suspended ceiling covers part of the ceiling, and no formal loft space is present. In places the suspended ceiling tiles were missing permitting construction materials and condition of the roof to be observed. Furthermore, no bats or obvious evidence of bats such as staining, or droppings were observed internally.

4.4. Conclusion

The Site entirely comprised hard standing: sealed surfaces, with no additional measurable greening, resulting in the Site being deemed to be of low to negligible ecological value at the time of survey.

There was evidence of birds within the Site, namely the eastern building ground floor area and stairwell in the east of the eastern building. No evidence of nesting birds was observed within the western building. It should be noted that the roof level was not accessible at the time of survey, so any absences of nesting birds are assumed likely absent.

Although there were features of the building suitable for bat roosting, no bats or evidence of bats such as grease staining and droppings were observed internally or externally. It was deemed that the Site had a low potential for roosting bats, owing to the lack of connectivity to the wider environment, lack of foraging resources in and around the Site and the lighting of the areas surrounding the Site, plus the location of several nightclubs emitting noise close to the north of the Site and noise and vibration from the railway to the south of the Site. It is therefore deemed that the Site has low and reduced to negligible potential for bats, and further surveys are not deemed necessary.

The Site is not covered by any statutory, non-statutory site designations or priority habitats. Although the Site lies 20m north of the Rochdale Canal, this section of canal is not covered by any site designations for standing water habitat. The nearest designated sections of the canal network in this part of Manchester are located approximately 1.3km east (Rochdale Canal - Stott's Lane to Ducie Street Basin SBI) and approximately 1.4km west of the Site (Ashton Canal (West) SBI), respectively.

5. Ecological Impacts and Mitigation

The proposed development seeks the demolition of the existing building to deliver a vibrant and considered residential scheme consisting of up to 44 storeys, including the ground floor for commercial use as well as public realm works.

As discussed in Section 4, the Site entirely comprised hard standing: sealed surfaces, with no additional measurable greening, resulting in the Site being deemed to be of low to negligible ecological value at the time of survey. The recommendations have been made in consideration of Clause 10 of BS 42020, on the implementation of development: biodiversity on construction sites.

5.1. Potentially Damaging Activities

5.1.1. Design

The design of the proposed developed has limited implications to the Site's existing biodiversity value, owing to the artificial nature of the existing Site.

The development design does, however, provide a number of opportunities for enhancement associated with the opportunities for net gain in biodiversity through new public realm and landscaping.

5.1.2. Construction

The main potential for impacts associated with the proposed development would occur during the construction phase, with the undertaking of construction activities. The Site pre-development is considered to have low to negligible ecological value.

Site conditions can change between the time of the survey and the construction phase altering the potential to support protected, notable or invasive species. In addition, birds can nest in suitable features at the Site during the bird nesting season during the construction phase. It is recommended that pre-construction checks are undertaken on Site prior to construction for nesting birds and other ecological constraints by a suitably qualified and experienced ecologist. Checks for nesting birds during the construction phase will also be required following best practice.

The Site was deemed to be of low to negligible suitability for bats, owing to the proximity of the Site with a lack of natural or semi-natural habitats and the location of several nightclubs emitting noise and highly lit areas to the north of the Site and noise and vibration from the railway to the south of the Site. There is the potential for pollution, noise, lighting and shading impacts on the non-designated section of the Rochdale Canal located north of the Site during the construction of the proposed 44-storey building. However, with appropriate mitigation the impact of pollution, noise and lighting is considered to be minimal. Shading impacts of the construction of a tall building 40 storeys taller than the existing 3-4 storey building are likely not to be fully mitigated for, however the habitats in this section of canal are not designated and therefore shading will not impact a designated site.

A construction environmental management plan (CEMP) will detail ecological mitigation required during the construction phase following best practice guidelines, including

pollution, noise and lighting and impacts to ecological receptors of flora, fauna such as breeding birds and the nearby undesignated Rochdale Canal habitats. However, with appropriate mitigation considerations, these impacts are considered to be minimal.

Precautions should be made in reference to any faunal species that may move into the Site prior to the commencement of the construction phase or during the construction phase itself.

Although the Site during the construction phase is not considered likely to hold value for supporting faunal species, conditions can change over time and therefore could impact upon protected species that establish homes within the building fabric. However, with appropriate mitigation considerations, the impact of this is considered to be minimal.

5.1.3. Operation

Considering the urban nature of the development Site and level of activity in the surrounding area, adverse impacts upon biodiversity during the operation of the Site are considered unlikely. Shading impacts of the 44-storey building, 40 storeys taller than the existing 3-4 storey building are likely not to be fully mitigated for, however the habitats in this section of canal are not designated and therefore shading will not impact a designated site. Additionally, the ecology baseline at the Site is zero and the proposed development provides an opportunity to improve ecology and biodiversity on the Site through new public realm landscaping. Lighting impacts upon potential biodiversity value associated with the developed Site and their potential use by nocturnal species can be avoided by appropriate lighting establishment during both the construction phase and the operational phase as detailed in Section 5.3. Furthermore, appropriate management of enhancements provided, discussed further in Section 7, will ensure the enhancements continue to benefit biodiversity in the long-term.

5.2. Changes in Habitat Extent

As discussed in Section 4.3, the habitats identified in the pre-planning ecological assessment of the development Site is considered to be the most appropriate baseline against which to assess the HQM requirements. The development Site at this time was largely dominated by artificial habitats, comprising buildings and hardstanding.

The development will result in no overall loss of habitats of ecological value; therefore, the proposed development can achieve full credits under HQM 2.3 relating to ecological change and enhancement.

Based on the habitats identified in the planning application, identified in the map in Appendix C, the development Site was identified as supporting 0 habitat units, although it was identified that birds were nesting within the eastern building. The development proposals will require the removal of all existing buildings. This equates to a no overall loss in ecological value. However, when considering the contribution of the landscaping proposals, the development will deliver a positive overall net change in species. This is in line with the terms of HQM 2.3-04 which is targeting a net gain of +105% for the achievement of 6 credits. It has not been possible to confirm that this might increase to achieve +10% for the full 8 credits available. Due to the zero baseline, the development was exempt from BNG. Furthermore, BNG cannot be calculated as a percentage,

however, the HQM system enables the HQM Change in Ecological Value Calculator to be employed and credits awarded.

5.3. Protection of Biodiversity

As the development entirely consists of artificial sealed surfaces, there is no biodiversity to protect within the Site itself.

The mitigation measures identified in this Section provide a precautionary approach to ensure the biodiversity is protected on Site during the construction phases, particularly in the event of any changes in circumstance from the baseline surveys. The approach minimises potential risks to the contractor and construction programme associated with such changes (e.g. the establishment of nesting birds), as well as safeguarding biodiversity features.

5.3.1. General Measures

Ecology can often be seen as a hindrance to development, with the presence of protected species hampering development. However, this is often caused by a lack of awareness of the presence of flora and fauna on Site, the reason for their protection, and the activities that can be lawfully conducted whilst animals in particular are using the Site.

Roles and Responsibilities of Client's and Site Contractors

In line with HQM 2.4 requirements the client and contractors must take full responsibility for ensuring that compliance is monitored against all UK, EU and International regulation and relating to the ecology of the Site.

The project team must liaise and collaborate with representative stakeholders, taking into consideration data collated and shared, to determine and implement the actions made and structures required for the continued implementation of the Landscape and Ecology Management Plan (LEMP) after the construction period is completed.

Lighting

Impacts upon potential biodiversity value associated with the developed Site and their potential use by nocturnal species can be avoided by appropriate lighting establishment during both the construction phase and the operational phase. Any lighting utilised within the development should consider the potential for impact on environmental receptors whilst creating a safe and accessible environment and should follow best practice guidance provided by the Institute of Lighting Professionals (ILP)^{xxiii}. Whilst this is focussed on bats, it will have benefits to all nocturnal species and could include the following:

- All luminaires should lack UV elements when manufactured. Metal halide or fluorescent sources should not be used;
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability;
- A warm white spectrum (ideally < 2,700 Kelvin) should be adopted to reduce blue light component;

- Luminaires should feature peak wavelengths higher than 550 nm to avoid the component of light most disturbing to bats;
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill;
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be used as directed by a lighting professional;
- Column heights should be carefully considered to minimise light spill;
- Only luminaires with an upward light ratio of 0 % and with good optical control should be used;
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt;
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed; and/or,
- Ensure lights are switched off when they are not needed, where appropriate, either through the use of programmable fixtures or by PIR/motion sensor activation.

Inclusion of the above recommendations within the construction and operation phase, in particular ensuring light is directed away from peripheral areas and are switched off overnight, will also ensure impacts in construction are minimised.

5.3.2. Habitats of Ecological Value

5.3.3. Species

The following best practice measures and mitigation options have been identified to minimise or negate the potential adverse effects on biodiversity and have considered the potential for changes in circumstances as a result of species establishing themselves between the survey and commencement of construction activities.

It is recommended that the Biodiversity Champion ensures routine inspections of the Site are carried out to check for signs of the following species. An experienced ecological consultant should be available to provide advice and guidance where necessary.

Breeding Birds

The potential for the presence of breeding birds could comprise a constraint to the development, depending on the construction phase programme. Although the presence of breeding birds has been deemed unlikely, owing to the artificial nature of the Site, this does not completely eradicate the possibility of breeding and/or nesting birds, and therefore mitigation measures should be followed.

If works are scheduled to commence during the bird nesting season (typically March to August inclusive, although weather dependent) the Site should be checked for any nesting birds within areas that are more protected from the weather, such as terraces, prior to the day's construction activities.

In the event that a nest of any bird species is identified within the Site, works within the immediate vicinity must cease and further ecological advice sought. If further assessment by a Suitably Qualified Ecologist (SQE) confirms the nest to be inactive, then works can proceed. However, if the SQE deems the nest to be active, then further consideration will be required as to whether certain activities can be carried out. However, the structure(s) supporting the nest will need to remain until all the young have fledged the nest.

This approach will be subject to a planning condition to ensure that the development does not have a detrimental effect on birds using the Site and the contractor/developer will remain compliant with wildlife legislation.

Bats

The Site is considered to be of low reduced to negligible potential for roosting bats owing to the urban setting of the Site subject to noise, lighting and vibration and the structure of the buildings present being deemed as likely not suitable due to lack of suitably sheltered roosting features. Therefore, consideration to ensure any potential implications, whether that be to roosting bats or commuting bats within the vicinity are mitigated throughout the development and the construction phase.

5.3.4. Recording and Monitoring

HQM 2.4 requirements relating to ecological change and enhancement ask that data collated during assessment should be shared with the project team to inform decisions relating to the Site preparation, design and construction works.

Arrangements are also required for ensuring the ongoing monitoring and reporting of the actions implemented during the project for protecting and enhancing ecology and ensuring positive outcomes from these actions.

This builds on the actions carried out for protecting and enhancing ecology, to ensure that commitments and efforts made during the development to achieve optimal ecological outcomes, are retained and continued during handover and as far as possible when the building is in use.

5.4. Conclusion

The development will result in no net loss of ecological value of the Site and is targeting at least a +105% increase in HQM post-development. Taking habitat enhancement measures into consideration, protection measures have been identified to ensure impacts on biodiversity are avoided or, through mitigation measures, minimised in line with planning policy and legislative requirements.

Consequently, with reference to HQM 2.2 – “*Managing Impacts on Ecology*”:

01 Ecological risks and opportunities for the project

- The 02 Survey and Evaluation, and 03 Determining Ecological Outcomes criteria within the 2.1 Identifying Ecological Risks and Opportunities issue have been achieved via the comprehensive route.
- Compliance will be, monitored against all relevant UK, EU, and International legislative requirements relating to the ecology of the Site.

02 Liaison, implementation and data

- Roles and responsibilities have been clearly defined, allocated and implemented to successfully deliver the actions for achieving optimal ecological outcomes agreed in issue 2.1 Identifying Ecological Risks and Opportunities and early enough to influence the concept design and design brief;
- Site preparation and construction works have been planned for and implemented early enough to deliver the actions for achieving optimal ecological outcomes agreed in issue 2.1 Identifying Ecological Risks and Opportunities.
- The project team have liaised and collaborated with representative stakeholders, taking into consideration data collated and shared, and have implemented actions (see the 2.1 Identifying Ecological Risks and Opportunities issue) during Site preparation and construction works.

03B Comprehensive route, Suitably qualified ecologist

- Negative impacts from Site preparation and construction works have been managed according to the mitigation hierarchy and the development will result in no net loss of ecological value.

Consequently, 9 HQM credits are deemed achievable of the 9 available within HQM 2.2.

Protection measures have been identified to ensure impacts on biodiversity are avoided or, through mitigation measures, minimised in line with planning policy and legislative requirements, see a brief summary of the mitigation hierarchy in Table 5-1 below.

Table 5-1 Mitigation Hierarchy

Hierarchy Level	Mitigation
Avoidance	Development of the urban Site avoids development of greenfield sites or those of higher biodiversity value in the wider area, and associated impacts on habitats. Consideration of best practice guidance in any additional lighting design/provision will avoid impacts on nocturnal species during construction and operation. Recommendations in best practice guidance, provided by the ILP, should be followed.
Protection	If identified to be present, any active bird nests within the development Site should be protected from removal and, depending on the species present, potentially from disturbance until the young have fledged. If assessment by a Suitably Qualified Ecologist (SQE) confirms a bird nest to be inactive, then works can proceed.
Reduction or Limitation of Negative Impacts	The inclusion of best practice measures for construction and appropriate measures for staff awareness (e.g. Site inspection and training of staff) will reduce the likelihood or magnitude of negative effects on biodiversity.
On-Site Compensation	None required.
Enhancement	Enhancements proposed within the development proposal are discussed in full in Section 6, detailing the habitats included within the landscape design. A Landscape and Ecological

Hierarchy Level	Mitigation
	Management Plan should be produced, in line with BS 42020, detailing the management recommendations, constraints and responsible person(s) for the management of biodiversity features

6. Ecological Enhancement

6.1. Habitats

Enhancements of the local environment is proposed as part of the development to deliver a range of benefits locally, including biodiversity and other ecosystem services, such as surface water management and access to nature, complying with the planning policy requirements associated with the provision of a net gain in biodiversity terms.

The proposed development incorporates several ecological enhancements as part of the public realm landscaping. There are areas of biodiverse planting, tree planting, and green gap paving.

Where relevant, recommendations have been made as to the types of plants that should be included, where possible, and a minimum number of plant species for the habitat types identified.

6.1.1. Public Realm

The public realm incorporates all the greening enhancements within the development, with no terrace or roof landscaping. The public realm incorporates several different landscaping areas.

6.1.2. Tree Planting

Both clear-stem tree planting and multi-stem tree planting has been included within the public realm. London plane 'narrow crown' (*Plantanus x hispanica* 'Tremonia') is the clear stem species that will be used across the Site. Three different species of multi-stem trees will be planted, with only one of these being a native species, common aspen (*Populus tremula*). The inclusion of trees within the development will generate niches for invertebrates and birds within the proposed development, as well as increasing the biodiversity of the area including provision of bat foraging habitat.

6.1.3. Rain Garden

Rain gardens are sustainable drainage system, comprised of a shallow depression lined with water-tolerant species, with the aim of filtering runoff from the development. A mixture of species are proposed to be planted within the rain garden area, including native meadowsweet (*Filipendula ulmaria*) and non-natives white marsh marigold (*Caltha palustris*), common solomon's seal (*Polygonatum multiflorum*) and Bowles' golden sedge (*Carex elata* 'Aurea').

The rain garden planting will offer not only drainage benefits, but provide habitat for local flora and fauna, with specific reference to invertebrates and, in turn, provision of bat foraging habitat.

6.1.4. Biodiverse Planting

Recreational areas will be surrounded by biodiverse planting, which will include a plethora of ornamental and native species. Native species include male fern (*Dryopteris*

filix-mas), pendulous sedge (*Carex pendula*) and common bluebell (*Hyacinthoides non-scripta*).

6.1.5. Urban planting

The proposed design includes both reclaimed brick and ground planting, as well as green gap paving. The incorporation of planting within built habitat, will generate mosaic habitats, which creates an abundance of different niches, encouraging a highly biodiverse area.

Green gap paving will include a planting a grass seed mixed, creating a unique modified grassland area, with paving interspersed, generating mosaic-like habitat niches. Together the urban planting habitats will benefit invertebrates thereby, in turn, provide bat foraging habitat.

6.1.6. Change in Habitat Area

The landscaping proposals have been assessed with regards to their ecological value to ascertain the change in value from the pre-development Site to the post-development Site using the BREEAM, CEEQUAL & HQM Change in Ecological Value Calculator (Appendix D). The pre-development baseline was calculated to be 0 habitat units, owing to the complete lack of natural features. Using the HQM 'Change in Ecological Value' Calculator, the proposed designs should achieve 105% post development percentage, constituting "net gain", resulting in the proposed development being eligible for 6 credits under HQM 2.3 – "Ecological Change and Enhancement". The proposed designs for the development will generate an additional 0.82 habitat units, resulting in a net gain and trading rules to be satisfied. However, owing to the baseline being 0 units, a percentage gain cannot be calculated.

The landscape proposals maximise the inclusion of urban greening on the Site, providing a range of habitats that will increase the biodiversity value of the immediate area significantly compared to the existing baseline. The habitats included will provide structure to the habitats present, with various layers to many of the habitats ensuring they provide a functional habitat that can support a range of foraging and sheltering opportunities for faunal species that are further enhanced through the provision of a range of artificial habitats, as described in Section 6.2 below.

A long-term management plan is proposed to be in place for the landscaping across all areas of the Site, and will be in place to ensure habitats continue to provide biodiversity benefits and other ecosystem services (sustainable drainage, health and wellbeing, access to nature) with the management and maintenance of these habitats key to maintaining a high quality environment for the building occupants and local community.

6.2. Species

The following species enhancements are recommended to enhance habitat opportunities for bird, bat and invertebrate species likely to be present within the urban environment and have been made in consideration of the targets contained within the Local BAPs. By linking to the BAP targets, the enhancements associated with the development can help contribute to the improvement of biodiversity opportunities for significant species across a wider area.

6.2.1. Birds

Construction Industry Research and Information Association (CIRIA) guidance identifies that artificial nesting boxes can make an important contribution to providing alternative wildlife refuges, enhancing the biodiversity value of buildings cheaply and easily^{xxiv}. Establishment of species within the boxes is, however, dependent on the provision of the right conditions with the four basic components of habitat required in the locality: food, cover, water and space^{xxv}.

Further value to the enhancements can be achieved by identifying appropriate nest boxes that target species of conservation concern, where possible and suitable. The bird species with an identified presence in the study area that would utilise urban habitats, as informed by the desk study information, include a number of species of conservation concern. Although these do not confer any legislative protection, identification on one of the lists reflects the current status of a bird species as being of conservation value at either the UK or European level.

Table 6.1 Bird Species of Conservation Concern Associated with Urban Habitats

Species		Conservation Status ^{xxvi}	Long-Term Trend ^{xxvii}	Sch 1 Sp?
Lesser redpoll	<i>Acanthis cabaret</i>	Red	Rapid decline	No
Swift	<i>Apus apus</i>	Red	Decline	No
Greenfinch	<i>Chloris chloris</i>	Red	Rapid decline	No
House martin	<i>Delichon urbicum</i>	Red	Rapid decline	No
Lesser spotted woodpecker	<i>Dryobates minor</i>	Red	Rapid decline	No
Little gull	<i>Hydrocoloeus minutus</i>	Green	-	Yes
Mediterranean gull	<i>Ichtyaetus melanocephalus</i>	Amber	-	Yes
Herring gull	<i>Larus argentatus</i>	Red	-	No
Lesser black-backed gull	<i>Larus fuscus</i>	Amber	-	No
Grey wagtail	<i>Motacilla cinerea</i>	Amber	Moderate decline	No
Yellow wagtail	<i>Motacilla flava</i>	Red	Rapid decline	No
Spotted flycatcher	<i>Muscicapa striata</i>	Red	Rapid decline	No
House sparrow	<i>Passer domesticus</i>	Red	Rapid decline	No
Black redstart	<i>Phoenicurus ochruros</i>	Amber	-	Yes

Species		Conservation Status ^{xxvi}	Long-Term Trend ^{xxvii}	Sch 1 Sp?
Dunnock	<i>Prunella modularis</i>	Amber	Moderate decline	No
Firecrest	<i>Regulus ignicapilla</i>	Green	-	Yes
Starling	<i>Sturnus vulgaris</i>	Red	Rapid decline	No
Redwing	<i>Turdus iliacus</i>	Amber	-	Yes
Song thrush	<i>Turdus philomelos</i>	Amber	Rapid decline	No
Fieldfare	<i>Turdus pilaris</i>	Red	-	Yes
Mistle thrush	<i>Turdus viscivorus</i>	Red	Rapid decline	No

The inclusion of the following nest boxes, whilst targeted at specific species, has the potential to improve habitat opportunities for a variety of species. The recommended boxes are made of ‘Woodcrete’ or ‘Woodstone’, an exceedingly durable, rot-proof and breathable natural material. These boxes are also favoured as studies have shown them to result in higher occupation rates than traditional wooden boxes^{xxviii,xxix}. In general, nest boxes should be fixed at least 2 m above ground, floor or roof level and should face somewhere between a north-east and south-east direction. Boxes facing in a north, west, south and south-west direction should be avoided as they will either not get any direct sunlight or will overheat as a result of exposure to too much sunlight, or they will be exposed to prevailing wind conditions.

However, targeted nest boxes may have specific requirements, as discussed below. Information on the appropriate placement of nest boxes is provided in Appendix F. Nest boxes should be positioned to give birds a clear flight path to the entrance and tilted downwards to protect the box from rain ingress. The location should be one that can remain relatively undisturbed during the breeding season (typically March to August inclusive).

Black Redstart

Provision of nest boxes for black redstart has potential to strengthen the location as an important area for the species. However, it is important that the box is installed in a suitable location that is free from disturbance to avoid potentially causing an impact to the species. The Schwegler 2HW, identified in Figure 6-1, is designed for species that nest in cavities or recesses, in particular those that prefer an open, balcony-type entrance. Whilst this open style entrance is typically vulnerable to predators, the 2HW is designed to prevent such attacks.



Figure 6-1 Black Redstart Targeted Nest Box – Schwegler 2HW Nest Box

It is recommended that **1x Schwegler 2HW Nest box** are provided in a suitable location, to be agreed with a Suitably Qualified Ecologist (SQE) prior to installation. The box is designed to be fixed to an outside wall using the galvanised hanger. Provision of this box would be in support of a local BAP species. The bird boxes should be installed at least 3 m from ground level and 1.5 m from the functional floor level and can have any orientation. Alongside black redstart, the nest box provides opportunities for pied wagtail, spotted flycatcher, robin and wren.

General Species

There are a number of general species nest boxes that provide nesting opportunities for a number of more general species. The Vivaro Pro Barcelona Woodstone Open Nest Box provides opportunities for cavity nesting species including, of those identified in Table 6.1, grey wagtail, spotted flycatcher and song thrush along with more general species including wren, robin and blackbird. It is recommended that **3x Vivaro Pro Barcelona Woodstone Open Nest Boxes**, identified in Figure 6.2, are provided within Phase 2 of the proposed development. It is recommended that these are installed at a height of 1.5 m to 3 m, and they should, ideally, be concealed within vegetation.

If a suitable location cannot be found, the 2H Schwegler Robin Box (identified in Figure 6.2), which can be hung among vegetation and suitable for some of these species, could be provided as an alternative.



Figure 6.2 *Open Fronted Nest Boxes – Left: Vivaro Pro Barcelona Woodstone Open Nest Box; Right – Schwegler 2H Robin Box*

Bats

Due to the unfavourable local urban conditions for bats, such as lighting/noise/vibration, no specific measures are recommended for bats. Measures to attract invertebrates, providing suitable prey for bats, such as landscape planting and refuges (see below) will enhance local foraging opportunities for any bat species that may use the area for commuting or foraging.

6.2.2. Invertebrates

Invertebrates are an important and integral component of our environment, providing a number of important ecosystem services including pollination of flowers, recycling of nutrients and provision of resources. The incorporation of habitat aids for invertebrates alongside landscape planting is a relatively cheap and simple enhancement to achieve, often comprising either readily available habitat aids or bespoke features, such as log or rock piles utilising appropriate material that is readily available. Furthermore, the provision of additional habitat opportunities for invertebrate species will have beneficial impacts on the foraging resources for bird, and potentially bat, species.

To increase the potential of landscape enhancements to provide improved opportunities for invertebrates, it is recommended that **at least 2** log/rock pile features are included within the green roof habitat. In addition to these, it is recommended that habitat boxes incorporating at least two different materials should be provided, comprising **1x Schwegler Clay and Reed Insect Nest** and **1x Schwegler Hardwood Insect Nesting Aid** are provided (see Figure 6.3). The insect nests should be positioned within the landscaped areas, ideally placed in a sunny yet sheltered spot.



Figure 6.3 *Invertebrate Targeted Habitat Aids (Left: Schwegler Clay and Reed Insect Nest; Right: Schwegler Hardwood Insect Nesting Aid)*

6.3. Conclusion

The proposed development incorporates rain gardens and biodiverse planting at ground level, as well as tree planting and raised planters, which will significantly enhance the

ecological value of the development sites and benefit the surrounding area. Additional recommendations are presented for consideration in the landscape design and for the provision of artificial habitat aids, that will further this enhancement and aid functionality of the habitat for faunal species. The implementation of the recommended measures will contribute to the enhancement of local urban biodiversity and improve habitat opportunities for both targeted and common species locally. Furthermore, the establishment of a Landscape and Habitat Management Plan, as described in Section 7, will ensure long-term delivery of biodiversity enhancements with the external landscaping pivotal to the attractiveness of the development for residents and the local community, and the artificial habitat aids will link into the wider environment providing benefits beyond the development boundary and allow the Site to provide additional supporting habitat to the environment and a 'stepping stone' habitat from significant areas in the wider environment.

Therefore, in compliance with HQM 2.3 *"Ecological change and enhancement"*:

- A professional was appointed at an appropriate time to advise on the development and report on enhancing and protecting ecological value, provided in the Environmental Impact Assessment Scoping Report;
- The development will implement all of the recommendations identified within this ecological appraisal; and
- Using the BREEAM, CEEQUAL & HQM Change in Ecological Value Calculator (Appendix D), it has been demonstrated that the ecological enhancement opportunities provided as part of the scheme will ensure an increase in on-site habitats of 105%, constituting "net gain" and qualifying for the available "Exemplary Level Credit".

Consequently, 10 HQM credits are deemed achievable of the 12 available within HQM 2.3.

7. Long-Term Recommendations

The following recommendations for long-term management of the Site have been prepared in consideration of BS42020 Clause 11.1 on Post-development management of habitats and species. The recommendations outlined below should be adopted as part of a Landscape and Ecology Management Plan (LEMP), which would satisfy the LE05 mandatory requirement to produce a five-year plan, however it should be noted that the following section do not comprise such a plan in isolation. The following sections have been prepared such that they can be lifted into a LEMP with additions or updates to the text as required to provide detail regarding the final enhancements incorporated and additional detail not available at this time.

Although the landscape provision is subject to further development and may change to that presented, the following has been prepared in the basis of the current landscaping provision to demonstrate the long-term management requirements of the post-development Site. The LEMP will need to be prepared in the basis of the following, incorporating any subsequent changes to design of type.

7.1. Biodiversity Features

7.1.1. On-Site

The development on Whitworth Street West Site will include the provision of several types of landscaping across the Site, including the presence of rain gardens, biodiverse green planting including trees and raised beds.

In addition to the landscape provision, a number of species enhancements will be provided in Phase 2 to increase the value of the Site to breeding birds and invertebrates. The species enhancements should include the following products, or a similar alternative

- 3x Vivaro Pro Barcelona Woodstone Open Nest Boxes, or similar;
- 1x Schwegler 2HW Nest box, or similar;
- 1x Schwegler Clay and Reed Insect Nests; and,
- 1x Schwegler Hardwood Insect Nesting Aids.

The final Landscape and Ecology Management Plan (LEMP) should identify the location of the species enhancements to aid understanding of their location for maintenance and protection purposes.

7.1.2. Surrounding Area

The Site is located within a well-developed part of Manchester, however there are semi-natural areas within the surrounding environment. These include tree lined streets close to the Site.

7.1.3. Benefits to Occupiers and Broader Community

Beneficial effects to the tenants and the broader community will be released through ecosystem services and directly to people as a result of beneficial effects to health and wellbeing through increased access to nature.

7.1.4. Post-Construction Review

Upon completion of the external elements of the construction phase with potential to influence biodiversity, *i.e.* installation of habitat and species enhancements, it is recommended that an ecological review of the developed Site is undertaken. The review should report on the outcomes of the development with particular attention given to the effectiveness of the implementation of the mitigation recommendations and enhancement design, celebrating success and identifying areas for improvement.

The post-construction review will also provide an up-to-date baseline of the Site upon handover to the building owner/tenant for the Landscape and Ecology Management Plan (LEMP).

7.2. Site Management

7.2.1. Aims and Objections

The overall aim of the long-term management of biodiversity is to ‘realise the biodiversity potential of ecological enhancements provided by the completed development, maximising the biodiversity value of the final developed Site and maintaining such value’.

In order to achieve this aim, the following objectives have been set:

- To manage landscaped areas for the benefit of biodiversity whilst maintaining an aesthetically appealing amenity landscaping;
- To maintain a varied food resource for faunal species;
- To ensure artificial aids are maintained in an appropriate condition commensurate to their purpose; and,
- To ensure maintenance activities do not themselves have an adverse impact on biodiversity.

7.2.2. Management Recommendations

7.2.2.1. Habitats

New planting should be conducted by an appropriately qualified and experienced contractor at an appropriate time of year. Preferably, planting should be conducted during cooler months to avoid undue stress caused by higher summer temperatures and low rainfall. Watering should be undertaken for all new planting during the first summer post-planting to ensure a good first season establishment if required.

In order to maintain a diverse mix of species in landscaping areas and aid development, the following management actions, where applicable to the final planting, and best practice guidance should be included:

- Removal of dead vegetation from landscape areas and, where applicable due to planting type, strimming of wildflowers in late autumn, except where seed heads are to be retained for autumn and winter interest, and grasses with the removal of all arisings from the Site;
- Removal of invasive and undesirable species and all saplings;
- Maintenance of a variety of species to provide aesthetic and biodiversity benefits;

- Inspect all drainage infrastructure, including removal of chamber lids, to ensure drainage infrastructure is clear of debris and vegetation are in working order;
- Ensure all flashing and termination bars are in good condition and sealants and mortar pointing are not degraded;
- Removal of any vegetation which has invaded into drainage outlets, inspection chambers, walkways and vegetation barriers;
- The application of fertiliser could help aid establishment and promote growth, with application limited to 80 mg/m² slow-release organic fertiliser if required; and,
- Herbicides and insecticides should be avoided.
- For the remaining vegetation the following tasks are recommended:
 - Plant encroachment – the edges of habitat areas and any areas intended to remain bare should be checked for signs of encroachment beyond the intended area of planting and removed where appropriate. The vegetation should be retained during the maintenance visit and can be used to repair any unintentional bare patches in planting;
 - Monitor plant colour and growth rate:
 - the colour and growth rate of vegetation should be checked as an indicator of the health of the habitat and understanding of the dominance of the habitat by one species;
 - if plants are showing signs of distress despite recent regular rainfall, then the application of fertiliser should be considered;
 - Weeding – any undesirable species or saplings, such as grasses, thistles, nettles and butterfly bush, should be removed manually only, and the subsequent area treated as a bare patch as detailed below;
 - Pruning – management of shrub and herbaceous planting, including pruning and cutting, should be conducted when flowering has completed (i.e. mid-Autumn), and all arisings should be removed from the Site;
 - Repairing bare patches – bare patches could be repaired using vegetation cuttings from surrounding areas of abundant growth during the main growing season of March/April or from late August until the end of September;
 - Irrigation – irrigation is dependent on requirements for visual appearance. If the intention is for maintenance of cover and interest over a prolonged period, then irrigation will assist in this;
 - Herbicides – the use of herbicides should be avoided in order to promote a health invertebrate population to establish in the landscape habitat.

The planting has the potential to offer refuge and resources to bird and invertebrate species, and therefore it is recommended that it is managed appropriately. Any significant management works associated with woody vegetation should avoid the bird breeding season, unless a check has been conducted by an experienced person to ensure no nesting birds are present or likely to be influenced by an activity.

7.2.2.2. Artificial Habitat Aids - Birds

Provided the recommended nest boxes are utilised, these should not require the application of wood preservative and are unlikely to require major repairs during the lifetime of the boxes. Any visual inspections and maintenance should be carried out by a suitably experienced individual in line with the following guidelines:

- Nest boxes should be left untouched during the nesting season (March to August inclusive) to avoid disturbance, and a 5 m buffer zone around each box should ideally remain undisturbed during the nesting season. Inspections when the nest box contains any young would almost certainly cause the parents to desert the nest, and the likely death of the young nestlings;
- The nest boxes should be cleaned out at an appropriate time by hand, with any parasites that have built up over the breeding season killed off with boiling water and any unhatched bird eggs removed;
- The nest boxes should be deloused, if necessary, and a dry short-lived natural based insecticide, such as pyrethrum powder, applied;
- Any ledges under the bird boxes should be cleaned off annually as per the bird boxes;
- Hay could be added in the nest boxes to encourage birds to use the boxes as a winter roost. Sawdust and straw should not be used as these can become hard and unworkable by birds if they get damp;
- The condition of the nest boxes should be checked, including the proper fixing of the boxes where they are surface mounted, with any necessary repairs undertaken prior to the next breeding season.

7.2.2.3. Artificial Habitat Aids - Invertebrates

The artificial features provided for invertebrates within the landscaping will not require significant maintenance during the lifetime of the boxes or the application of wood preservative, provided the recommended habitat aids are provided. However, relatively simple maintenance can help to ensure the habitat aids continue to provide a habitat resource for invertebrate species. They should be inspected annually, during which removable parts should be checked and cleaned by hand to avoid accumulation of dirt and development of bacterial focuses. No preservatives should be used, as these can harm insects using the boxes, and the use of insecticides should be restricted. In the event that removable parts need to be replaced (for example reed elements), the removed material should be retained on Site for a short period to allow any invertebrate species retained within the material to relocate on Site.

7.2.3. Works Schedule

A number of constraints, which should be identified in the final Landscape and Ecology Management Plan, will influence the timing at which maintenance activities can be carried out. The constraints associated with the developed Site are an important consideration in the implementation of management actions, with completion during unsuitable periods potentially damaging the ecological resource and working against the

aims and objectives of the Landscape and Ecology Management Plan. Table 7.1 provides an indicative schedule for the management of biodiversity features for the first 5 years post-construction, although this could be adopted beyond this period and for as long as would be required. Although the schedule identifies appropriate times to implement commonly required management actions, such as weeding of landscape areas, it should be noted that if monitoring of the Site identifies the requirement for immediate action this should be implemented regardless of the schedule but mindful of constraints.

The maintenance schedule provided has been aimed at the maintenance of features for biodiversity potential, and further input may be required from a landscape architect to ensure aesthetic and recreational considerations are incorporated.

Table 7-1 Landscape and Ecology Management Plan Works Schedule

Action	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Landscape Planting												
Weeding												
Litter and debris collection												
Fertiliser application												
Water (subject to weather conditions), if required												
Plant encroachment												
Trimming and pruning												
Plant health check												
Replacement planting												
Artificial Nest Boxes												
Checking and cleaning bird boxes												
Invertebrate feature checking and maintenance												
Notes:	Timescale within which activity should be undertaken.											

The works schedule, in whatever form it is adopted, should be reviewed annually to ensure it remains fit for purpose and that the aim and objectives of the Landscape and Ecology Management Plan are being achieved. If the review suggests the aim and objectives are being missed, then the schedule should be revised accordingly.

7.2.4. Monitoring and Remedial Measures

Monitoring of the Site is an important part of the Landscape and Ecology Management Plan, as this ensures that the management actions implemented are having a positive impact on the biodiversity of the (LEMP). Where actions are not working, or mitigation

measures are ineffective for some reason, remedial measures can then be implemented to reduce such effects.

The following monitoring should be carried out as part of the Plan to measure the success of the management against the aims and objectives of the Plan.

7.2.4.1. Construction

The installation of enhancement measures, including both habitat and artificial habitat aids, should be overseen or inspected by a suitably qualified person to ensure installation is carried out in line with the recommendations and manufacturer guidelines. The habitats installed may require maintenance during the construction period, such as watering in the first few weeks to aid establishment. The record or actions/events kept should be updated to reflect any actions taken to maintain enhancements through the remainder of the construction period, including periodic review of such features to ensure they are in good condition. Where habitats will be in place for a prolonged period prior to handover, the implementation of management actions identified in Section 3 should be undertaken by the Principal Contractor to ensure the habitats remain as planted/installed.

Monitoring visits to review the condition of installed habitats should be increased during periods of extreme weather and importantly during periods of prolonged hot and dry weather and droughts. This will be necessary to ensure the health of the habitat is maintained and management actions, notably watering, can be implemented where necessary before the health of the system is affected.

7.2.4.2. Habitats

Any landscape planting should be monitored for the duration of the Plan to ensure the appropriate species establish and remain present, although the frequency of monitoring could be decreased over time as the habitat establishes.

It is recommended that monitoring is undertaken every other month by an experienced person during the first growing season, to ensure the appropriate species mix establishes and appropriate management actions are implemented. Where necessary, watering of the landscape planting may also be required. In the second growing season monitoring should be undertaken every third month, reducing to a minimum of twice a year during the growing season from the third year. The monitoring should ensure the species present remain in accordance with the intended planting schedule, even if the species present do not fully match (i.e. there may be some losses of species), ensuring a monoculture does not develop.

In the event that monitoring identifies the establishment of an undesirable plant species or community or the failure for some species to establish, remedial actions should be implemented. The remedial measures should include the implementation of management actions to remove undesirable species or increase in management procedures such as watering and, if necessary, may require the provision of new planting to increase the presence of native species.

In addition to this, monitoring visits should also be undertaken in periods of extreme weather and importantly during periods of prolonged hot and dry water and droughts. This will be necessary to ensure the health of the habitat is maintained and management

actions, notably watering, can be implemented where necessary before the health of the system is affected.

7.2.4.3. Artificial Habitat Aids

It is recommended that monitoring of the artificial nesting aids for birds and invertebrates should be undertaken to ascertain whether they are being utilised or if they should be relocated to increase their likelihood of occupation. As a result, it is recommended that an annual monitoring check is undertaken to determine whether the boxes have been in use, and where they are unused measures to attract target species should be considered, if appropriate. The monitoring checks are likely to comprise visual assessments for field signs between April and August, although further detailed inspection between November and February, for bird boxes only, may be necessary during routine maintenance.

7.3. Responsibility

The final Landscape and Ecology Management Plan should identify, by name and role, the person that is responsible for the Plan's implementation. The named person will be responsible for ensuring the Plan is implemented and recommendations are followed, and actions undertaken, but it is not necessary for them to be the person undertaking such actions.

As the Plan is associated with the long-term management post-development, it is likely that the responsible person will be part of the Site management team. However, the Plan should also identify the person responsible for the implementation of ecological enhancements, during the construction period, within the Plan to ensure appropriate actions are undertaken in the construction phase and the document is included in the information handed over upon completion of the building construction works.

As part of the management and maintenance works, it may be appropriate and advisable to contact relevant professional bodies for advice on maintenance of features of biodiversity interest. These may include:

Greater Manchester Ecology Unit, Dukinfield Town Hall, King Street, Dukinfield, SK16 4LA;
Tel: 0163423123; Email: info@gmwildlife.org.uk.

7.4. Reporting

The final Landscape and Ecology Management Plan should be a working document and should be updated when circumstances require. For example, if monitoring identifies that a particular management practice is ineffective or the named responsible person changes, then the Plan should be revised and updated.

The responsible person should also prepare a yearly report to the Site owner, providing a summary of the outcomes of the maintenance and monitoring works that have been carried out and detailing any remedial measures necessary. By providing this information for the annual Site review the aim and objectives of the Plan can be reviewed regarding achievement.

7.5. Delivery Mechanisms

The delivery mechanisms, most important funding across the 5-year Plan period, is an important aspect of the Landscape and Ecology Management Plan, ensuring sufficient resource is made available to deliver a sustainable long-term Plan for the maintenance of biodiversity interest on the Site.

The Landscape and Ecology Management Plan should set out the details for the legal and funding mechanism(s) by which the long-term implementation of the Plan will be secured by the developer with the management body responsible for its delivery. The Plan should also set out, where results from monitoring show that the aim and objectives of the Plan are not being met, how contingencies and/or remedial action will be secured to ensure the development still delivers the fully functioning biodiversity objectives of the approved scheme.

7.6. Credits for HQM 2.4 - Long-term Ecological Management and Maintenance

Consequently, 8 HQM credits are deemed achievable of the 8 available within HQM 2.4 as:

- The client or contractor has confirmed that compliance is, or will be, monitored against all relevant UK, and EU and International legislation and relating to the ecology of the Site;
- Information will be provided to the home occupier detailing the long term ecological management actions and requirements (part of the 11.2 Home Information);
- A management plan is in place for the landscape and ecology accessible to the assessed home that:
 - i. Is appropriate for the type of home and Site being assessed (in line with the Methodology section); and
 - ii. Builds on the actions carried out for protecting and enhancing ecology, to ensure that commitments and efforts made during the development to achieve optimal ecological outcomes, are retained and continued during handover and as far as possible, in-use.
- To help ensure the continued relevance of actions over the period of the Landscape and ecology management plan, formal commitments are in place, as appropriate, for the following to be carried out, comprising:
 - i. Monitoring and reporting of the actions implemented during the project for protecting and enhancing ecology and the outcomes from these actions.
 - ii. Arrangements for the ongoing management of landscape and ecology connected to the project on and, where relevant, off-site.
 - iii. Maintaining the ecological value of the Site and its relationship or connection to its zone of influence;

- iv. Maintaining the Site in line with any sustainability linked activities, for example ecosystem benefits;
- v. Remedial or other management actions are carried out.
- vi. The landscape and management plan or similar is updated as appropriate to support maintenance of the ecological value of the Site.

To ensure the attainment of the above credits, recommendations made in Section 5 and 6 of the appraisal should be fully understood and implemented in the construction phase and continued landscaping and lighting design, including:

- Identification of roles of responsibility of Site's clients and contractors relating to the protection on biodiversity (Section 5.3.1);
- Appropriate consideration to the establishment of lighting through construction and operation to minimise impacts on nocturnal species, *e.g.* bats, and should follow best practice guidance provided by the Institute of Lighting Professionals. Lighting should be directed away from peripheral areas, switched off for a period overnight and avoid illumination of the identified potential roost feature in the mature tree;
- Ensure protection measures are fully in line with BS 5837, and record evidence of implementation (Section 5.3.2);
- Implementation of mitigation measures for species (Section 5.3.3), including:
 - avoidance of sensitive timings for birds and protection of active nests, where identified;
 - appropriate checking of future vegetation and building clearance requirements for species; and,
- Actions taken for the protection of biodiversity and Site inspections, including condition of installed mitigation, should be recorded and evidenced in a Site log (Section 5.3.4);
- The final landscape design should ensure planting schedules incorporate a wide variety of species of known value to wildlife, such as those identified by the Royal Horticultural Society in their Plants for Pollinators resource, and ensure good horticultural practice (Section 6);
- Provision of artificial habitat aids for birds to support nesting opportunities in the final Site for both targeted species of conservation concern in Greater Manchester and for common species in general (Section 6.2.1);
- Provision of artificial habitat opportunities for invertebrates in the final Site within landscaping (Section 6.2.2); and,
- Completion of a formal Landscape and Ecology Management Plan to support mitigation and enhancement delivery through construction and be passed over on completion to guide the management and maintenance of habitats and artificial habitat aids for long-term benefits.

8. Summary and Conclusion

8.1. Baseline

At the time of the baseline survey, the development Site was dominated by artificial sealed surfaces, with the footprint of the development being almost entirely buildings of three to four storeys in height. Although it is thought that there was an area of scrub within the inaccessible area to the south of the Site, this was not within the minimum mapping unit, so it can therefore be deemed that there was no landscaping present around the Site at the time of survey. Evidence of nesting birds was recorded at the Site. No evidence of bats was recorded at the Site. The Site is located in a densely urbanised area, with some tree lined streets in the vicinity of the Site. The Rochdale Canal lies 20m north of the Site, although does not benefit from any nature conservation designations along this section. Similarly, no records of protected or notable species of aquatic flora or fauna associated with the canal habitat were returned during the desk study and data search.

8.2. Impacts and Mitigation

The development at Whitworth Street West has limited potential for adverse effects on local biodiversity. All demolition works and clearance works of the Site should be conducted outside of the bird nesting season, February to August inclusive, which should ensure that the demolition will not remove any active nests. Pre-commencement checks of the Site during the construction phase should be conducted daily as to ensure birds have not moved into the Site, if this is the case all works should cease and further advice should be sought from a qualified ecologist.

During demolition stages, cavities within walls and ceiling spaces should be checked by a suitably qualified bat licensed ecologist acting as an ecological clerk of works (ECoW) to confirm the absence of bats within the space. Prior to any works, the bat ecologist will provide a toolbox talk, following the template in Table A6.2 of the Bat Conservation Trusts Bat Mitigation Guidelines 2023^{xxx} to all workers prior to demolition. As a precautionary measure the tiled parts of the roof will be removed by hand under a suitably qualified and licensed bat ecologist's watching brief. All tiles, together with any roofing felt which may be used by roosting bats will be carefully removed by hand. Where possible, the tiles will be prised up rather than hammered. If bats or evidence of bats is discovered at any point during works, work must cease immediately, and Natural England be contacted for advice. The bat ecologist will be on Site for the entirety of the roof strip and demolition.

It is likely that shading of the canal will impact the habitats around the proposed development. Currently the habitats present are hardstanding, buildings and roads, with some tree lines and the Rochdale Canal likely impacted by overshadowing. However, the canal does not benefit from designations along this section and therefore there will be no impacts to a designated site. The development will result in the addition of semi-natural habitat to the Site.

Appropriate mitigation measures, in line with BS 42020, have been identified to ensure biodiversity is considered throughout the development and ensure any potential risk to

programme and biodiversity is minimised throughout. These include appropriate measures and consideration of lighting implications on the Site and consideration of the potential change in condition of potential features on the suite to ensure any subsequent changes are identified.

8.3. Long-Term Management

Recommendations for the long-term management of the final Site have been provided in accordance with BS 42020, which will ensure the biodiversity enhancement continues to provide benefits for a minimum of five-years post-construction. The information provided should be used to create a Landscape and Ecology Management Plan that can be provided to the building management body and sets out the responsibility and delivery mechanisms. The latter two of these will require additional information to be fully compliant with BS 42020.

A Landscape and Ecology Management Plan could also be used to help the main Contractor through the construction phase, setting out the enhancement measures to be provided (including maintenance measures that are required to ensure habitat enhancements installed are maintained in a good condition up to handover).

8.4. Enhancement

Enhancements of the development Site are proposed through the inclusion of a variety of landscaping elements including the provision of rain gardens, biodiverse planting supporting trees and raised beds across the ground level areas.

The final development Site will provide foraging resources for invertebrates and birds and will enhance the habitat in the urban fabric locally.

8.5. Certification

This assessment identifies the 'Outdoor' part of the HQM achievement potential for Phase 2 of the development, which is targeting a 4 star rating *i.e.*:

- *2.1 - Identifying ecological risks and opportunities: 7 credits achievable* of 7 available:
 - The HQM Comprehensive route, utilising a "Suitably Qualified Ecologist" (SQE) has been adopted for this scheme;
 - Compliance will be, monitored against all relevant UK and EU or International legislation relating to the ecology of the Site;
 - The SQE has been appointed sufficiently early in the project stage to ensure involvement with Site configuration and, where necessary, influence over strategic planning decisions;
 - Before the design brief, the SQE has carried out an appropriate level of survey and evaluation for the Site and its zone of influence to determine the ecological baseline; and
 - Information and data have been collated and shared with the project team to inform the Site preparation, design or construction works.

- **2.2 - Managing impacts on ecology: 9 credits achievable** of 9 available:
 - The 02 Survey and Evaluation, and 03 Determining Ecological Outcomes criteria within the 2.1 Identifying Ecological Risks and Opportunities issue have been achieved via the comprehensive route.
 - Compliance will be, monitored against all relevant UK, EU, and International legislative requirements relating to the ecology of the Site.
 - Roles and responsibilities have been clearly defined, allocated and implemented to successfully deliver the actions for achieving optimal ecological outcomes agreed in issue 2.1 Identifying Ecological Risks and Opportunities and early enough to influence the concept design and design brief;
 - Site preparation and construction works have been planned for and implemented early enough to deliver the actions for achieving optimal ecological outcomes agreed in issue 2.1 Identifying Ecological Risks and Opportunities.
 - The project team have liaised and collaborated with representative stakeholders, taking into consideration data collated and shared, and have implemented actions (see the 2.1 Identifying Ecological Risks and Opportunities issue) during Site preparation and construction works.
 - Negative impacts from Site preparation and construction works have been managed according to the mitigation hierarchy and there is no overall loss of ecological value.
- **2.3 - Ecological change and enhancement: 10 credits achievable** of 12 available
 - A professional was appointed at an appropriate time to advise on the development and report on enhancing and protecting ecological value, provided in the Environmental Impact Assessment Scoping Report;
 - The development will look to implement all of the recommendations identified within this ecological appraisal; and
 - Using the BREEAM, CEEQUAL & HQM Change in Ecological Value Calculator (Appendix D), it has been demonstrated that the ecological enhancement opportunities provided as part of the scheme will ensure an increase in on-site habitats of 105%, constituting “*Significant net gain*” and qualifying for the available “*Exemplary Level Credit*”.
 - It has not been possible to demonstrate the development can achieve greater than or equal to 110% net gain, constituting the “*Exceeds net gain*” criteria required to achieve an additional 2 credits available.
- **2.4 - Long-term ecological management and maintenance: 8 credits achievable** of 8 available

- The client or contractor has confirmed that compliance is, or will be, monitored against all relevant UK, and EU and International legislation and relating to the ecology of the Site;
- Information will be provided to the home occupier detailing the long term ecological management actions and requirements (part of the 11.2 Home Information);
- A management plan is in place for the landscape and ecology accessible to the assessed home that:
 - iii. Is appropriate for the type of home and Site being assessed (in line with the Methodology section); and
 - iv. Builds on the actions carried out for protecting and enhancing ecology, to ensure that commitments and efforts made during the development to achieve optimal ecological outcomes, are retained and continued during handover and as far as possible, in-use.
- To help ensure the continued relevance of actions over the period of the Landscape and ecology management plan, formal commitments are in place, as appropriate, for the following to be carried out, comprising:
 - i. Monitoring and reporting of the actions implemented during the project for protecting and enhancing ecology and the outcomes from these actions.
 - ii. Arrangements for the ongoing management of landscape and ecology connected to the project on and, where relevant, off-Site.
 - iii. Maintaining the ecological value of the Site and its relationship or connection to its zone of influence;
 - iv. Maintaining the Site in line with any sustainability linked activities, for example ecosystem benefits;
 - v. Remedial or other management actions are carried out.
 - vi. The landscape and management plan or similar is updated as appropriate to support maintenance of the ecological value of the Site.

To ensure the attainment of the above credits, recommendations made in Section 5 and 6 of the appraisal should be fully understood and implemented in the construction phase and continued landscaping and lighting design, including:

- Identification of roles of responsibility of Site's clients and contractors relating to the protection on biodiversity (Section 5.3.1);
- Implementation of mitigation measures for species (Section 5.3.3), including:
 - avoidance of sensitive timings for birds and protection of active nests, where identified;

- appropriate checking of future vegetation and building clearance requirements for species; and,
- Actions taken for the protection of biodiversity and Site inspections, including condition of installed mitigation, should be recorded and evidenced in a Site log (Section 5.3.4);
- The final landscape design should ensure planting schedules incorporate a wide variety of species of known value to wildlife, such as those identified by the Royal Horticultural Society in their Plants for Pollinators resource, and ensure good horticultural practice (Section 6.1);
- Provision of artificial habitat aids for birds to support nesting opportunities in the final Site for both targeted species of conservation concern in Manchester and for common species in general (Section 6.2.1);
- Provision of artificial habitat opportunities for invertebrates in the final Site within landscaping (Section 6.2.3); and,
- Completion of a formal Landscape and Ecology Management Plan to support mitigation and enhancement delivery through construction and be passed over on completion to guide the management and maintenance of habitats and artificial habitat aids for long-term benefits.

Consequently, it is concluded that 34 HQM ecological credits are deemed achievable of the 36 available within HQM 2.1, 2.2, 2.3 and 2.4.

Appendix A Legislative and Planning Context

A.1 Legislative Framework

A.1.1 Environment Act 2021

The Environment Act 2021 makes provision for targets, plans and policies for improving the natural environment. Part 6 of the Act deals with nature and biodiversity, principally setting out the requirement for biodiversity net gain in planning but also including requirements relating to local nature recovery strategies and conservation.

Section 98 of the Act makes provision for biodiversity gain to be a condition of planning permission, with Schedule 14 identifying the objective being at least 10 % when comparing the post-development Site to the pre-development Site. Schedule 14 also identifies the methodology by which this is established and the process by which offsite biodiversity gains can be delivered.

The Act incorporates a transition period for biodiversity net gain of 2 years between its Royal Assent and enforcement of the requirement, bringing the mandatory net gain requirement in place in late 2023.

A.1.2 Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended), which consolidate the Conservation of Habitats and Species Regulations 2010 and subsequent amending instruments, is the main legislation governing the protection of biodiversity and is derived from European Council Directive 92/43/EEC (otherwise known as the Habitats Directive). These Regulations provide protection for sites, habitats and species that are of conservation importance at the European or international level. The Regulations provide the framework for the designation and protection of 'European sites', including Special Protection Areas (SPAs) and Special Areas of Conservation (SACs). The Regulations also provide legislative protection to species, identified as 'European Protected Species' (EPS) within Schedule 2 of the Regulations.

The Conservation of Habitats and Species Regulations 2017 are amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which ensures the continuity of the legislation following the departure of the UK from the European Union.

A.1.3 Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) comprises the principal means of protecting wildlife in the UK, including the identification and protection of Sites of Special Scientific Interest (SSSIs), and provides the mechanism by which a number of international directives are implemented in the UK.

A.1.4 Countryside and Rights of Way (CROW) Act 2000

The Countryside and Rights of Way (CROW) Act 2000 strengthens the Wildlife and Countryside Act 1981 (as amended) in relation to the protection of SSSIs and threatened species.

A.1.5 Natural Environment and Rural Communities (NERC) Act 2000

The Natural Environment and Rural Communities (NERC) Act 2006 places an obligation on public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity.

A.2 Statutory Protected Sites and Species

A.2.1 Sites

Statutory protection for sites of ecological importance or value has derived from various international conventions, European Directives and national legislation. The designations for protected sites in the UK include:

- Special Area of Conservation (SAC) – designated under the European Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, targeting particulate habitats (listed on Annex I) and/or species (listed on Annex II) identified as being of European Importance;
- Special Protection Area (SPA) – designated under the European Council Directive on the Conservation of Wild Birds for the protection of wild birds and their habitats (including particularly rare and vulnerable species listed in Annex I of the Directive, and migratory species);
- Ramsar – listed under the Convention on Wetlands of International Importance for the protection of internationally important wetland habitat, especially as waterfowl habitat. Although not directly legislated, through the NPPF the government expects them to be given the same level of protection as SACs and SPAs;
- Site of Special Scientific Interest (SSSI – notified under the Wildlife and Countryside Act 1981 (as amended) or the National Parks and Access to the Countryside Act 1914, as being of special nature conservation interest for its plant or animal communities, habitats, geological or landform features;
- National Nature Reserve (NNR) – designated under the Wildlife and Countryside Act 1981 (as amended) as a nationally important nature reserve on account of its habitat, flora or fauna interest;
- Local Nature Reserve (LNR) – established by Local Authorities under s21 of the National Parks and Access to the Countryside Act 1914 as a locally important nature reserve on account of its habitat, flora or fauna interest.

A.2.2 Species

The following summarises the legislative protection afforded to species identified as potentially present within the field survey area.

Flora

All wild plants are protected under Schedule 13 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to uproot a plant, defined as to ‘*dig up or otherwise remove the plant from the land on which it is growing*’, without permission from the landowner or occupier. A number of higher and lower plants receive additional protection under Schedule 8 of the Act, which makes it an offence to intentionally pick, uproot, destroy or trade in these plants.

Schedule 9 of the Act identifies invasive plant species and makes it an offence to plant these species or otherwise cause them to grow in the wild. The protection has been strengthened through the inclusion of a new schedule, as a result of Section 23 of the Infrastructure Act 2015, which enables environmental authorities to require works to be undertaken to remove or prevent their establishment. Any material containing Japanese knotweed (*Fallopia japonica*), or giant hogweed (*Heracleum mantegazzianum*) is identified as ‘controlled waste’ under the Environmental Protection Act 1990 and must be disposed of appropriately.

Birds

All wild birds in England and Wales are protected under Part 1 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird, or take, damage or destroy the nest (whilst being built or in use) or its eggs. Additional protection is afforded to species listed in Schedule 1 of the Act from disturbance whilst it is building a nest, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Furthermore, provisions under Section 10, Part 1, of the Conservation of Habitats and Species Regulations 2017 require local planning authorities to have regard to *'the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the UK'* in the exercising of their functions. As a result, it is important to consider any habitat loss as a result of development and opportunities for the provision of habitats.

European Protected Species

All European Protected Species (EPS) in England and Wales are fully protected through inclusion within the Conservation of Habitats and Species Regulations 2017 (as amended). Under this legislation it is an offence to deliberately capture, injure or kill individuals of any native EPS. It is also a strict liability offence to damage or destroy sites or places which EPS use as a breeding site or resting place. EPS are also protected under the Regulations from deliberate disturbance which is likely to:

- a) impair its ability:
 - i. to survive, breed or reproduce, or to rear or nurture their young; or,
 - ii. in the case of animals of a hibernating or migratory species to hibernate or migrate; or,
- b) to affect significantly the local distribution or abundance of the species to which they belong.

It may be possible to apply for a licence from Natural England to allow activities that would otherwise be an offence under these Regulations. However, it is an offence to breach a condition imposed by any such licence.

All EPS are also partially protected in England and Wales through their inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation, it is an offence to intentionally or recklessly disturb a bat whilst it is using a place of rest or shelter.

EPS potentially present within the masterplan site and immediately surrounding areas include all species of bats.

A.3 Planning Policy

A.3.1 National Planning Policy

National planning policy guidance in relation to ecology and nature conservation is provided through the National Planning Policy Framework (NPPF), with planning practice guidance provided by the Ministry of Housing, Communities and Local Government. The conservation and enhancement of the natural environment is a key strategic policy in the NPPF, and Chapter 15 of the NPPF sets out the Government's planning policies on this. Paragraph 180 states that *'Planning policies and decisions should contribute to and enhance the natural and local environment by:*

- (a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*

(b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

- *(d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*

The NPPF also states in Paragraph 181 that: *‘Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.’*

Paragraph 186 of the NPPF identifies a number of principles that should be applied by local planning authorities in the determination of planning applications, which include:

- 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 Site of Special Scientific Interest (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 Sites of Special Scientific Interest ;*
- 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’.*

Planning practice guidance provided by the Ministry of Housing, Communities and Local Government includes further guidance on biodiversity, ecosystems and green infrastructure within the planning process. Paragraph 018 (Reference ID 8-018-20190721) identifies that information on biodiversity impacts and opportunities should inform all stages of development, with planning applications requiring an ecological survey where the type and location of development are such that the impact on biodiversity may be significant and existing information is lacking or inadequate. The guidance also identified that detailed species surveys should only be required by local planning authorities where clearly justified, for example if there is a reasonable likelihood of a protected species being present and affected by the development.

A.3.3 Local Planning Policy

The Core Strategy for Manchester is derived from the Manchester Local Development Framework, which was adopted in July 2012.

It is the key document in Manchester's Local Development Framework covering a period of 15 years from 2012 to 2027. The Core Strategy Vision outlines development goals to be met by 2027.

Divided into three broad sections (Manchester Now, the Local Strategic Context and Objectives), it describes Manchester today and outlines the 2027 Council's vision along with the planning policies which will be used to deliver that vision.

Manchester's Core Strategy was updated following the adoption of Places for Everyone (PfE) Joint Development Plan adopted on 21 March 2024^{xxxi}. The Addendum to Manchester Core Strategy 2024 lists sections of Core Strategy policies replaced by PfE policies and must be read alongside the Core Strategy.

The following Core Strategy (CS) policies relating to ecology and biodiversity have been partially replaced by Places for Everyone (PfE) policies. Any part of the policy that is not replaced remains part of Manchester's Core Strategy.

The Core Strategy includes a number of policies of relevance to this assessment, which include the following.

Policy EN 2: Tall Buildings

Tall buildings are defined as buildings which are substantially taller than their neighbourhoods and/or which significantly change the skyline. Proposals for tall buildings will be supported where it can be demonstrated that they

- Are of excellent design quality,
- Are appropriately located,
- Contribute positively to sustainability,
- Contribute positively to place making, for example as a landmark, by terminating a view, or by signposting a facility of significance, and
- Will bring significant regeneration benefits.

A fundamental design objective will be to ensure that tall buildings complement the City's key existing building assets and make a positive contribution to the evolution of a unique, attractive and distinctive Manchester, including to its skyline and approach views. Suitable locations will include sites within and immediately adjacent to the City Centre with particular encouragement given to non-conservation areas and sites which can easily be served by public transport nodes.

Elsewhere within Manchester tall building development will only be supported where, in addition to the requirements listed above, it can be shown to play a positive role in a coordinated place-making approach to a wider area. Suitable locations are likely to relate to existing district centres. The height of tall buildings in such locations should relate more to the local, rather than the City Centre, urban context.

By their very size tall buildings can have a significant impact on the local environment and its micro-climate. It is therefore expected that this impact be modelled and that submissions for tall buildings also include appropriate measures to create an attractive, pedestrian friendly local environment.

It will be necessary for the applicant/developer to demonstrate that proposals for tall buildings are viable and deliverable.

Policy EN 4: Reducing CO2 Emissions by Enabling Low and Zero Carbon Development.

- Deletions replaced by PfE Policy JP-S 2. The Council will seek to reduce fuel poverty and decouple growth in the economy, growth in CO2 emissions, and rising fossil fuel prices, through the following actions: Wherever possible new development and retrofit projects, including energy generation plant, must be located and designed in a manner that allows advantage to be taken of opportunities for low and zero carbon energy supplies.

- Where possible new development and retrofit projects will be used as a mechanism to help improve energy efficiency and provide low and zero carbon energy supplies to existing buildings.
- Where appropriate new development and retrofit projects will be required to connect to and/or make contributions to low or zero carbon energy schemes and/or to incorporate provision to enable future connection to any existing / potential decentralised energy schemes.
- The use of building materials with low embodied carbon in new development and refurbishment schemes.

Policy EN 8: Adaptation to Climate Change. Deletions replaced by PfE Policies JP-S2, JP-S4 and JP-G8.

All new development will be expected to be adaptable to climate change in terms of the design, layout, siting and function of both buildings and associated external spaces. In achieving developments which are adaptable to climate change developers should have regard to the following, although this is not an exhaustive list:

- Reduction in urban heat island effect through the use of Green Infrastructure such as green roofs, green walls, increased tree cover and waterways
- The need to control overheating of buildings through passive design.

Developers will be permitted to use green infrastructure elements such as green roofs, green walls, street trees and waterways to contribute to compliance with CO2 mitigation under Policy EN6, subject to sufficient evidence to quantify their contribution to compliance.

Policy EN 9: Green Infrastructure

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.

Policy EN 10: Safeguarding Open Space, Sport and Recreation Facilities

The Council will seek to retain and improve existing open spaces, sport and recreation facilities to the standards set out above and provide a network of diverse, multi-functional open spaces.

Proposals will be supported that:

- improve the quality and quantity of accessible open space, sport and recreation in the local area provide innovative solutions to improving the network of existing open spaces, increase accessibility to green corridors, and enhance biodiversity improve access to open space for disabled people

Proposals on existing open spaces and sport and recreation facilities will only be permitted where:

- Equivalent or better replacement open space, sport or recreation facilities will be provided in the local area; or
- The site has been demonstrated to be surplus for its current open space, sport or recreation function and the City wide standards set out above are maintained, and it could not fulfil other unsatisfied open space, sport or recreation needs, and a proposed replacement will remedy a deficiency in another type of open space, sport or recreation facility in the local area; or The development will be ancillary to the open space, sport or recreation facility and complement the use or character.

Policy EN 14: Flood Risk. Deletions replaced by PfE Policy JP-S 4

- In line with the risk-based sequential approach contained within PPS25, development should be directed away from sites at the greatest risk of flooding, and towards sites with little or no risk of flooding; this should take account of all sources of flooding identified in the Manchester-Salford-Trafford Strategic Flood Risk Assessment (SFRA).
- In addition to the requirements for site-specific Flood Risk Assessments (FRAs) set out in PPS25, an appropriate FRA will also be required for all development proposals, including changes of use, on sites greater than 0.5ha within Critical Drainage Areas (CDAs) and Canal Hazard Zones identified in the SFRA.
- In CDAs, evidence to justify the surface water run-off approach / rates will be required.
- The City of Manchester contains many sections of rivers which are culverted or 'hidden'; where these are indicated in the SFRA beneath the proposed development site, further investigation will be required and the development proposal should take this into account; where feasible and appropriate development should seek to open up culverted/hidden rivers to reduce the associated flood risk and danger of collapse, taking advantage of opportunities to enhance biodiversity and Green Infrastructure.

Policy EN 15: Biodiversity and Geological Conservation. Last sentence replaced by PfE Policy JP-G8

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) (Cotteril 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.

A.4 Biodiversity Action Plans

A.4.1 UK Biodiversity Action Plan

The UK BAP has been replaced by the Post-2010 Biodiversity Framework, which addresses the changes in the strategic thinking of the Convention on Biological Diversity's Strategic Plan for Biodiversity 2011-2020. The new Framework includes new priorities for UK-level work for the

Convention on Biological Diversity and provides a broad structure to enable action across the UK. Whilst the UK BAP has been replaced, the UK BAP priority habitats and species continue to be regarded as conservation priorities in the UK Post-2010 Biodiversity Framework.

The UK BAP identifies 65 habitats and 1,150 species that are considered to be of conservation concern.

Although a number of the species present within the study area are included in the UK BAP, only common pipistrelle and song thrush have been included in a Species Action Plan.

Common Pipistrelle

Although it remains the most abundant and widespread bat species in the UK, the pipistrelle is thought to have undergone a significant decline in numbers. Estimates from the National Bat Colony Survey suggest a population decline of approximately 70% between 1978 and 1993. Factors identified as causing loss or decline of the species population include:

- A reduction in insect prey abundance, due to high intensity farming practice and inappropriate riparian management;
- Loss of insect-rich feeding habitats and flyways, due to loss of wetlands, hedgerows and other suitable prey habitats;
- Loss of winter roosting sites in buildings and old trees;
- Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

The Species Action Plan identifies the objectives and targets as the maintenance of existing populations and range of pipistrelle, and restoration of populations to pre-1970 numbers.

Song Thrush

Although a common and widespread species, song thrush are declining throughout the UK as a result of changes in food supply and availability of nest sites as a result of changes in farming practice, predation by corvids and foxes and competition with blackbirds. The aims of the Species Action Plan are to halt the decline in numbers by 2000, maintain the range and population levels of the species and, where possible, restore them to that of the 1970 estimate, and identify and implement priority research in order to formulate future conservation action.

A.4.3 Local Biodiversity Action Plan

The Greater Manchester BAP provides a strategic focus to ensure species and habitats are understood and considered throughout the decision making process, and directly supports the overall aim of the Manchester City Council's Corporate Plan to shape outstanding environments. The BAP provides a framework to ensure all legislative requirements and regional and national targets for protecting, conserving and enhancing biodiversity are met at a local level.

The document identifies 8 target habitats and 8 target species to identify conservation priorities for all ten districts in Greater Manchester, however additional habitats and species are considered through the action plans established. Those of potential relevance to this ecological assessment are discussed below.

Grasslands

This plan for the conservation of important grassland habitats in Greater Manchester has resulted from a review of three separate Habitat Action Plans included in the current Biodiversity Action Plan for Greater Manchester, published in 2003. These Action Plans were for:

- Unimproved neutral grassland
- Acid grassland
- Marshy grassland

This new Habitat Action Plan has incorporated all these habitat types into one plan because, after review, it was considered that the threats and actions needed to conserve these grassland types were similar across Greater Manchester. A fourth grassland category, grassland of high ecological value on previously developed land, has now been included in the plan because of the increased recognition of the value of this habitat type for biodiversity and because this grassland type is regarded as highly threatened.

Hedgerows

Hedgerows are an intrinsic part of the farmed landscape and provide shelter and food for many species of farmland birds, insects and mammals and also provide important corridors for wildlife movement across the landscape. The particular mix of shrub and tree species in a hedgerow, which reflects both the age of the hedgerow and local management customs, contributes to local landscape character distinctiveness.

The latest estimate for hedgerow extent in Greater Manchester is 3,293 km this represents approximately 0.6% of the England total and 6.4% of the estimated extent for the North West region. In Greater Manchester few hedgerows qualified as UK priority habitats under the ancient/species rich definition, two are known in Stockport and some in Trafford. However, even species-poor hedgerows provide important feeding, breeding and resting sites for a variety of birds, mammals and invertebrates. Uptake statistics from the first 2 years of Environmental Stewardship in Greater Manchester show there are approximately 70 agreements, which include options for management of Hedgerows covering length of almost 247 km.

Lowland mosslands

The mossland within Greater Manchester has been significantly altered and all the remnant sites are cutover examples of the habitat. The Manchester mosslands either support secondary semi-natural vegetation or are currently bare peat sites as a result of current extraction. Due to the rate of loss of the habitat and its increased rarity, all uncultivated examples that have the potential to be restored (whether they are vegetated or not) are to be considered as important and a key part of the regions critical environmental capital.

Reedbeds and bittern

Nationally the largest reedbeds are found in river floodplains and low lying coastal areas such as estuaries but can occur wherever water levels seasonally fluctuate and/or are no more than a metre in depth, such as lake margins, ditches and slow flowing rivers. In Greater Manchester the largest reedbeds are associated with waterbodies created by mining subsidence known locally as Flashes.

There are 700 invertebrate species in the UK associated with reedbed. Some 40 of these are entirely dependent upon them, several of which occur in Greater Manchester.

The Bittern is confined almost entirely to wetlands dominated by reeds, where it feeds on fish, amphibians and other small water animals. The bird re-colonised the UK after extinction last century but has declined steadily as a breeding species in the last 30 years. The decline is due to direct habitat loss and habitat degradation through lack of appropriate management and eutrophication.

In recent years there has been an increase in the number of Bitterns over-wintering in the UK and within the north west of England.

Ponds and lodges

Ponds for the purpose of the UK BAP priority habitat classification are defined as permanent and seasonal standing water bodies from 1m² up to 2 ha in extent, which meet one or more of the following criteria:

- Ponds that meet criteria under Annex 1 of the Habitats Directive.
- Ponds with important species such as Red Data Book species, BAP species, species on Schedule 5 and 8 of the Wildlife and Countryside Act, Habitats Directive Annex II species, a Nationally Scarce wetland plant species, or three Nationally Scarce aquatic invertebrate species.
- Ponds with exceptional species assemblages or large populations of key species such as amphibians and dragonflies, or exceptionally rich sites for plants or invertebrates (supporting 30 or more wetland plant species or 50 or more aquatic macroinvertebrate species).
- Ponds of high ecological quality, as defined by Pond Conservation's Predictive System for Multimetrics (PSYM).
- Other ponds important because of their age, rarity of type or landscape context.

In Greater Manchester all ponds and lodges are considered of value and this action plan therefore covers all such features not just those covered by the UK BAP definition.

Canals

Canals are inland waterways constructed to meet the transport needs of the Industrial Revolution in the 18th and 19th centuries. At the time when canals were built, they were of a similar importance and influence to our modern day motorways. Today, many aspects of canals such as water filled channels, cuttings, embankments and bridges have an important role to play in the conservation of both biodiversity and landscapes. Many canals differ from natural watercourses because of their range of habitats, as well as their controlled levels and slow flows, although not all canals are now in use for boat traffic. The canal corridor forms a linear mosaic of habitats including woodland and scrub offsites, hedgerows, flower rich towpath verges and diverse emergent 'reed' fringes. The corridor helps link habitats fragmented by urbanisation and uniquely forms a wetland corridor between river catchments.

There are approximately 4000 miles of canals in the UK. In UK Biodiversity Action Plan terms, canals are included within the broad habitat of Standing Open Waters and Canals; within this category they are recognised as an individual habitat type. There are presently three canals of national importance in Greater Manchester; Hollinwood Branch Canal SSSI, Huddersfield Narrow Canal SSSI and Rochdale Canal SSSI. All three are part of a national network of designated areas.

Native woodlands

This plan has resulted from a review of two separate Habitat Action Plans included in the current Biodiversity Action Plan for Greater Manchester, published in 2003. These Action Plans were for:

- Lowland Broadleaved Woodland

- Upland Oak Woodland

This new Habitat Action Plan has incorporated both habitat types into one plan because, after review, it was considered that the threats and actions needed to conserve these woodland types were similar across Greater Manchester. The Plan also now includes wet woodland, which was not previously covered in the Greater Manchester Biodiversity Action Plan, as this is identified as one of the UK's biodiversity habitats.

Lowland broadleaved woodland is classified as a scarce habitat within Greater Manchester and is thought to cover approximately 2.5% of the land area of Greater Manchester. Within Greater Manchester the total coverage of upland oak wood is unknown and has experienced a long decline as woodlands have been clear felled, or have fallen into poor condition through over grazing and as a result of recreational pressures. The remaining areas of upland oak woodland are also fragmented, existing in small, isolated blocks on the edge of urban areas often surrounded by plantation or secondary woodland.

Urban managed greenspace

This category includes amenity grassland (i.e. intensively managed and regularly mown grassland), private gardens, allotments, town parks of many types, planted shrubberies, playing fields, golf courses, grounds of buildings, churchyards and cemeteries. These areas are all managed to some degree for their particular purpose; however, they can still be important reservoirs for wildlife in urban settings.

In addition, they provide green breaks in development and contribute to the health and well-being of local people. Their proximity to schools and housing make them an ideal resource for learning about the natural world. In addition to the grassland that dominates these sites, remnants of a diverse range of semi-natural habitats including woods, scrub or ponds are often found within their boundaries or next to them. These may have been in existence for many years - providing well-established continuity of biodiversity. They can also act as sanctuaries for biodiversity as outside of the managed areas they often receive relatively little human interference.

Bats

Nine of the bat species found in the UK have been recorded in Greater Manchester. Bats have one baby each year and females gather together during the summer in warm, clean, draft free maternity roosts to give birth. The young are generally born in June and are dependent on their mothers for approximately six weeks. When the youngsters are able to hunt independently the summer maternity colony is dispersed. In autumn male bats roost singularly and are visited by small numbers of females in order to mate. The females then store the sperm inside their bodies until spring, when they become pregnant. Bats hibernate during the winter in cool, humid places with stable conditions. Therefore, they require different sites for summer and winter roosting.

In the UK, all species of bat are insectivorous, and the adults will feed wherever insects occur. They particularly favour woodlands, their edges and the rides within them, hedges, unimproved pasture/parkland, sheltered gardens and areas where there is standing or flowing water, usually with native shrubs and trees adjacent. Bats follow linear landscape features such as lines of trees, hedges and waterways in order to commute from their roost sites to their feeding grounds. They also use these features to navigate between feeding areas and alternative roosts. Bats use a range of feeding sites over the course of a night and concentrate on different feeding sites on different nights according to the weather conditions and insect availability.

Black redstart

The Black Redstart (*Phoenicurus ochruros*) is a small member of the Thrush family (Turdidae), similar in size and shape to Robin (*Erithacus rubecula*). In breeding plumage the male is dusky slate grey with a black face and an off white wing panel. The most striking plumage feature is the bright chestnut rump and tail. The name 'Redstart' comes from the Saxon red *steort*, which means red tail. The adult female is grey brown with the rump and tail less chestnut than the male. The species breeds in a range of habitats from maritime to montane all characterised by sparse vegetation and rocky, craggy terrain. Forests, meadows and areas of dense vegetation of any height are avoided. The frequency and convenience of nest sites in walls or roofs of buildings has led to the evolution of a close commensalism with man, with populations now present in many large cities in mainland Europe. The presence of waste patches colonised by weed species, with many bare disturbed areas of soil, and an ample supply of song posts and cavities for nest building provides an ideal habitat for this species. The Black Redstart is notable amongst small ground feeding passerines by its preference for high song posts, often at 20 metres or more on open perches, natural or artificial but avoiding trees and shrubs (Cramp 1988).

Great nested newts

The great crested newt (*Triturus cristatus*) is the largest of the three British native newt species, reaching a maximum length of 15cm for males and 17cm for females¹. It has a dark, often black warty skin speckled with tiny white spots and an orange or yellow belly with black blotches. During the breeding season in spring, the males develop a high wavy crest along their backs.

Great crested newts are considered to be common but declining in Greater Manchester. The exact population of the species in the county is unknown, as are the locations of all ponds that support newts. Some areas such as Wigan, Bury, Bolton and parts of Salford have been well studied and surveyed. Elsewhere knowledge is more limited. It is believed that Greater Manchester has a high concentration of great crested newt ponds that could be significant in national terms. Great crested newts are believed to breed in all districts of Greater Manchester. Particularly high concentrations of great crested newts are found in Wigan, and the border between Salford and Bolton.

Hares

Two species of hare occur in Greater Manchester Brown Hare (*Lepus europeus*) and Mountain Hare (*Lepus timidus*).

Brown Hares are generally found in farmland areas, where they live entirely above ground. They are larger than rabbits, with longer limbs, and black-tipped ears that are equal in length to the head. The tail is held down when running, showing its black upper surface. Their fur is often described as being a "warm-coloured brown" with orange–yellow fur on the face, throat and flanks. It is believed that the Romans introduced them to Britain. They are mainly nocturnal, foraging at dusk and dawn. They require extensive areas of open grassland and are typically associated with agricultural land including semi-natural grasslands, pasture and springsown arable. Their main food is tender grass shoots, including cereal crops. They require tall vegetation as cover particularly during the breeding season. Breeding takes place between February and September. Females can rear three to four litters a year. Foxes are the main predators, especially of young. Adult hares normally live between 3 and 4 years.

Mountain Hares are indigenous to Britain, although those in Greater Manchester are descendants from animals released in Victoria time for hunting. In Britain they are associated with heather

moorland. They are smaller than Brown Hares with a more rounded shape and shorter ears and legs. In summer, they have a grey/black coat, and in winter they are partly or completely white.

Native black poplar

Native black poplars (*Populus nigra* subsp *betulifolia*) in the wild are usually found in wet areas and floodplains, typically alongside streams and rivers. They are characterised by their large, often leaning and ungainly appearance with massively arching, downcurved branches and heavily burred trunks. In the past they have been frequently pollarded, but this practice has since lapsed. In the spring, the male and female trees produce red and green catkins respectively. Although generally neater in appearance, hybrid black poplars are often mistaken for the now rare native black poplar.

In Greater Manchester the tree's tolerance to industrial pollution has meant that it was widely planted as an urban tree (known as the 'Manchester Poplar') in the late nineteenth and early twentieth century and until recently survived almost anywhere. The largest specimen in Greater Manchester is up to 25m high and just over 1m in diameter at breast height.

A virulent disease, diagnosed as poplar scab *Venturia populina*, has infected a majority of Greater Manchester's native black poplar and the current trend is that once infected, the tree will die within 5 years. An action plan is needed for native black poplars because of their national rarity and the fact that although planted, Greater Manchester has the highest concentration of native black poplar in the United Kingdom. This coupled with the fact that poplar scab is decimating this internationally important population means urgent attention is required.

Twite

Twite (*Carduelis flavirostris*) is a small dark brown finch. In breeding plumage, the male has a bright pink rump, warm buff face, and white wing panel. The female is similar but lacks the pink rump and the face and wing panel are usually less bright. Open moorland is favoured for nesting, and birds in the South Pennines show a strong selection for nesting in old growth Bracken beds, often in old quarries or steep cloughs close to the moorland edge, and often near reservoirs. Mature Heather is also frequently used, and birds will also nest amongst Bilberry, Cotton Grass, rush tussocks and beneath stones and boulders. The predominant factor that prevents Twite from selecting an area as a potential nest site is the prevalence of upland grasses, such as *Nardus* and *Molinia*.

Water vole

The water vole (*Arvicola terrestris*) is the largest of the British vole species weighing between 225-310g. Although often mistaken for rats, they are significantly different: a rich brown shaggy coat, a blunt nose, short furry tail and small ears are just some of the differences.

Water vole populations are widespread and locally common in Greater Manchester, although populations are often fragmented and susceptible to local extinctions. The records mostly indicate that water vole populations across the 10 boroughs are relatively sporadic and isolated. There are exceptions: robust populations exist in and around the areas between Wigan and Pennington Flashes; throughout the streams and ditch network of the Mosslands in the east of the Trafford and Salford borough and in the headwaters and tributaries of the Roch, Irwell and Tame. The challenge for the BAP is to enable these populations to expand.

Willow tit

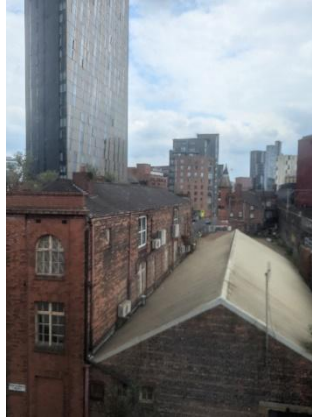
Willow Tit (*Poecile montanus*) is a brown, black-capped Tit with white cheeks and a bullnecked appearance, and both sexes are similar. It was not described as a separate species until 1900, and prior to this all brownplumaged Tits were considered to be Marsh Tit *Poecile palustris*. British Willow Tit is of the endemic race *kleinschmidtii*.

In the UK the favoured habitat is damp, early successional woodland, particularly patches of Elder, Alder and Birch scrub, and riparian woodlands often at the edges of wetlands. They will also nest in urban areas, especially in marginal scrub around gravel pits and flashes. In Europe the southern montane population inhabits mainly conifer forest, while populations at lower levels inhabit similar scrub and damp woodland habitat as British breeders.

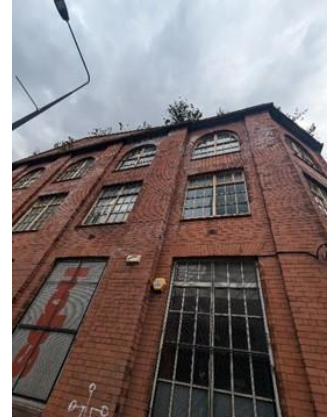
Appendix B Site Photographs



Photograph 1: Northern aspect of western building at 2 Whitworth Street West.



Photograph 2: Two rooftops present on the eastern buildings at 4 Whitworth Street West, including pitched slate tiles to north and corrugated roof to south.



Photograph 3: Northern aspect of the eastern building at 4 Whitworth Street West.



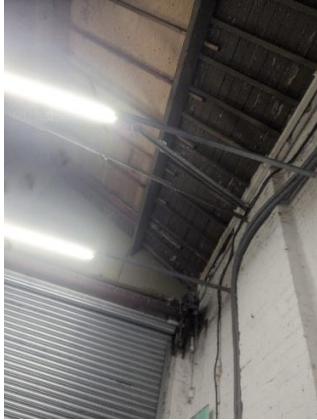
Photograph 4: Evidence of nesting birds within the southeast building at 4 Whitworth Street West.



Photograph 5: Butterfly bush growing from northern aspect of western building.



Photograph 6: Eastern most boundary of the Site facing south along Cameron Street.



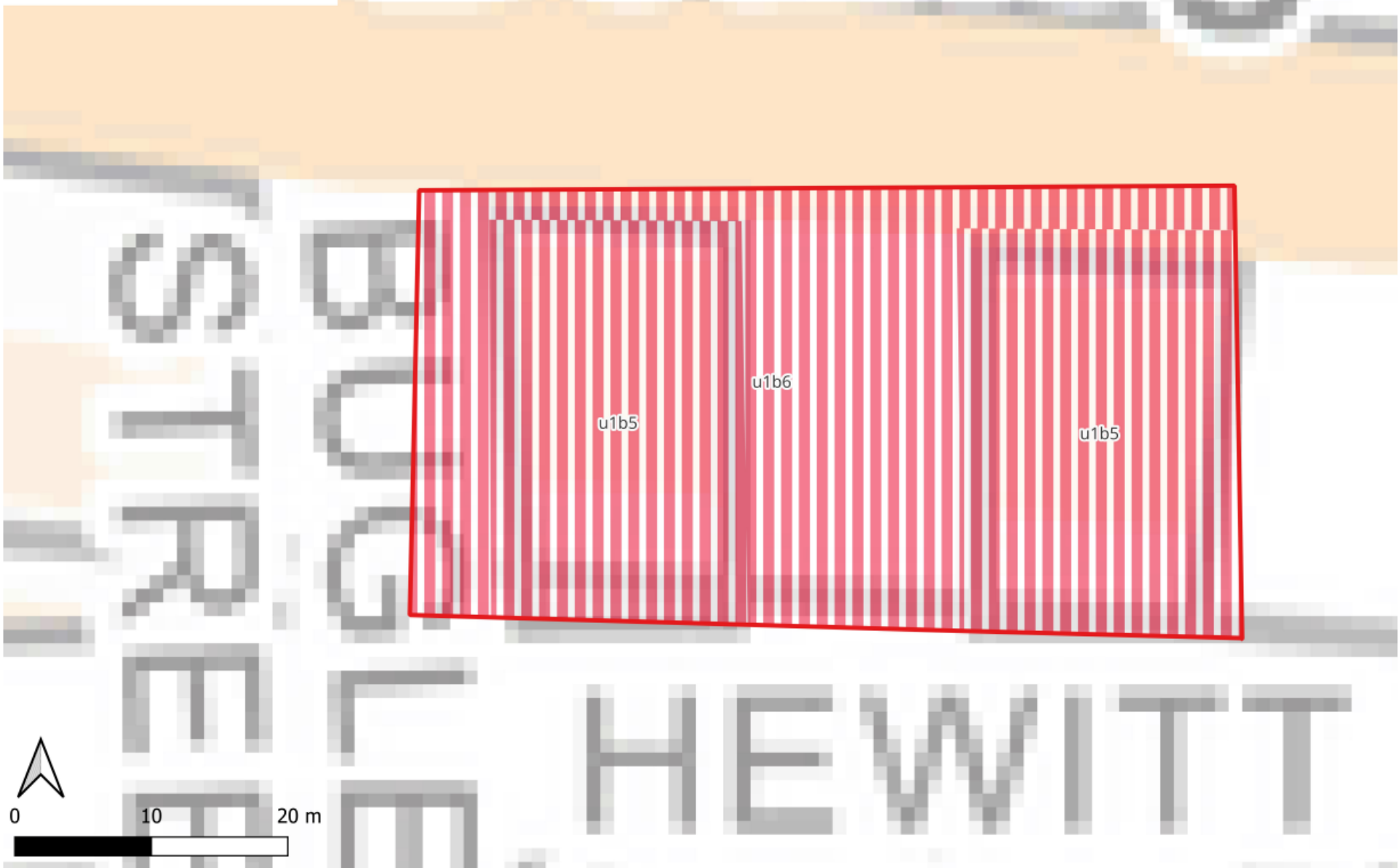
Photograph 7: Ceiling of the southern building of 4 Whitworth Street West, including pitched wood and board lining the corrugated roof.



Photograph 8: Internal view of collapsed ceiling tiles on the top floor of the northern building at 4 Whitworth Street West.

Appendix C - Pre-Planning Habitat Map

- Red Line Boundary
- Habitats Baseline
- Developed land; sealed surface



Appendix D - Ecological Value Calculator

NB: All assessment details below must be completed before result will be given		
1 Site Name	Whitworth Street	
2 Development Footprint Area	6442	
3 Unit of Area	Square Metres	Note: Must be applied consistently throughout the assessment
4 Have statutory obligations been met?	Yes	
5 Is Area Based Habitat Pre Development Biodiversity Unit score 0?	Yes	
6 If 5 is "Yes", what percentage of Development Footprint does habitat created, that's distinctiveness is not 0, cover?	19.00%	
7 Are any Linear (Watercourse) Habitats present Pre Development?	No	
8 If yes, are all habitats present in "Good" condition Pre Development and remain untouched throughout development?	N/A	Note: If 7 and 8 are both "Yes", or 7 is "No" then Linear (Watercourse) habitats can be filtered out for the purpose of credit award
9 Can Linear (Watercourse) Habitats be filtered out?	Yes	
10 If applicable, should Linear (Watercourse) Habitats be filtered out?	Yes	Check this cell before selecting from the drop down menu, 10, below. Note: No should only be selected where new habitat is created and reward is sought for this creation. It is automatically filtered if none of the specified habitat is present Pre or Post Development.
11 Are any Linear (Foliage) Habitats present Pre Development?	No	
12 If yes, are all habitats present in "Good" condition Pre Development and remain untouched throughout development?	N/A	Note: If 11 and 12 are both "Yes", or 11 is "No" then Linear (Watercourse) habitats can be filtered out for the purpose of credit award
13 Can Linear (Foliage) Habitats be filtered out?	Yes	
14 If applicable, should Linear (Foliage) Habitats be filtered out?	Yes	Check this cell before selecting from the drop down menu, 14, below. Note: No should only be selected where new habitat is created and reward is sought for this creation. It is automatically filtered if none of the specified habitat is present Pre or Post Development

	Area Based Habitats	Linear (Watercourse) Habitats	Linear (Foliage) Habitats
Pre Development	0	0	0
Post Development	3489	0	0
Post Development % of Pre Development	105%	Filtered for purpose of credit award	Filtered for purpose of credit award

Total Post Development % of Pre Development (Lowest Score)	105%	Net Gain
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Cells that are white with a black border require the user to input information, either by selecting from the available options or entering the required data.

Cells that are light grey (with/without black border) contain information for the user and/or automated calculation. They do not require the user to input or select data.

Headline Results

Scroll down for final results ▲

Return to results menu

On-site baseline	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.82		
	Hedgerow units	0.00		
	Watercourse units	0.00		
On-site net change (units & percentage)	Habitat units	0.82	N/A	
	Hedgerow units	0.00	0.00%	
	Watercourse units	0.00	0.00%	
Zero baseline units - % cannot be calculated				
Off-site baseline	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site net change (units & percentage)	Habitat units	0.00	0.00%	
	Hedgerow units	0.00	0.00%	
	Watercourse units	0.00	0.00%	
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.82		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Spatial risk multiplier (SRM) deductions	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
FINAL RESULTS				
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.82		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	N/A	0 baseline units - % cannot be calculated	
	Hedgerow units	0.00%		
	Watercourse units	0.00%		
Trading rules satisfied?	Yes ✓			
Area created must match area lost for both onsite and offsite ▲				
Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	0.00	0.00	0.00
Hedgerow units	10.00%	0.00	0.00	0.00
Watercourse units	10.00%	0.00	0.00	0.00
No additional area habitat units required to meet target ✓				
No additional hedgerow units required to meet target ✓				
No additional watercourse units required to meet target ✓				

Appendix E - Stake Holder Communications

Tanishia Gearing

From: Tanishia Gearing
Sent: 03 September 2024 14:17
To: Jamie Sutton; Daniel Roberts; Dom Wintie; Simon Tugby; oliver.kingshott@layer.studio; Paul Crowther; mollie.taylor@sheppardrobson.com
Cc: Jerry Rees
Subject: Whitworth Street HQM Meeting Minutes

Hi all,

Thank you for attending the meeting on Friday 30th August regarding the ecology of 2-4 Whitworth Street. Please see the minutes below with **HM** addressing some of the queries.

- Discussion of baseline
 - o Lack of greening within site baseline
 - **Site is exempt from net gain targets owing to baseline value of 0**
 - o Presence of nesting birds and impacts on the construction
 - **Demolition must be performed outside of bird nesting season and with Ecological Clerk of Works (ECOW) present.**
- Enhancements and Landscaping plans
 - o No specific target owing to exemption from BNG
 - o Landscaping in public realm only
 - **Suggestion of more native species to be included but the existing designs would suffice**
 - o Bird box recommendations
 - **Discussed the inclusion of artificial habitat aids within the public realm planting**
 - **Currently the recommended enhancements are:**
 - o 3x Vivaro Pro Barcelona Woodstone Open Nest Boxes, or similar;
 - o 1x Schwegler 2HW Nest box, or similar;
 - o 1x Schwegler Clay and Reed Insect Nests; and,
 - o 1x Schwegler Hardwood Insect Nesting Aids.
- HQM Requirements
 - o Existing landscaping
 - **Achieves 105% in HQM calculator, meaning eligible for 6 credits**
 - o Further clarity on roles and responsibilities
 - **Wording relating to roles and responsibilities to be generic at this point and further refined within Landscape and Ecological Management plan (Layer Studio)**
 - **Wording is included within the PEA which is due to be issued imminently. Areas of focus:**
 - o Section 5.3.1
 - o Section 7
 - o Section 8
 - **Discussed that specifics will identified at a later stage.**

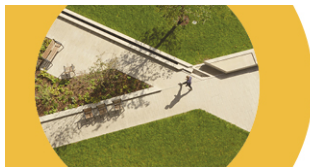
If anyone has any queries, please let me know.

Thanks,

Tanishia

Tanishia Gearing | MRes, BSc, CIEEM
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Tanishia Gearing

From: Tanishia Gearing
Sent: 30 July 2024 11:02
To: Chatfield, Jennifer
Cc: Jerry Rees
Subject: Whitworth Interim
Attachments: 35663-HML-XX-XX-RP-U-880001_01_Ecological Appraisal Interim .pdf

Categories: Filed by Newforma

Hi Jennifer,

Please find attached the interim Whitworth Street including the baseline information only, as we are waiting on landscape information to complete the full report.

Thanks

Tanishia

Tanishia Gearing | MRes, BSc, CIEEM
Consultant

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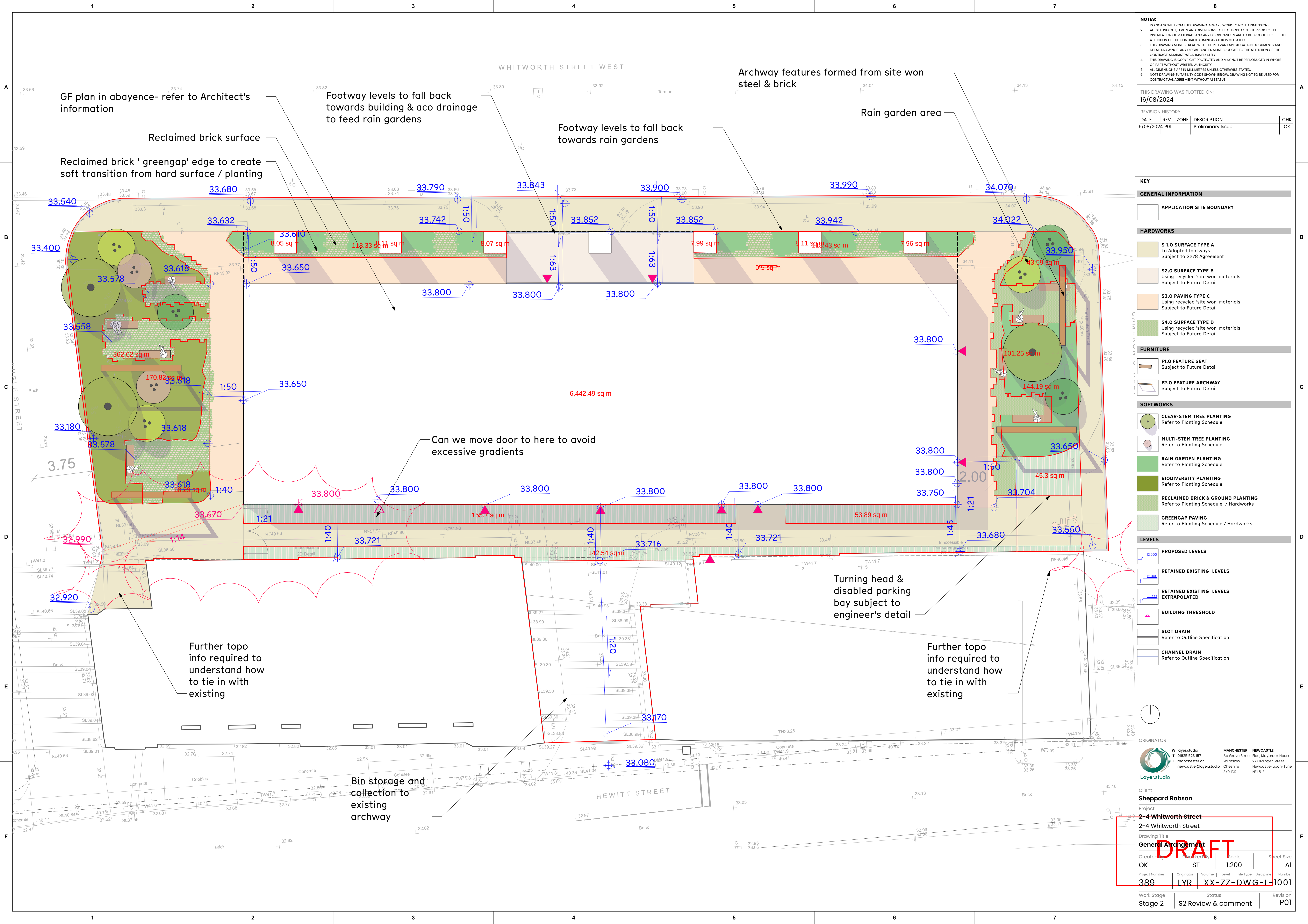


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Appendix F - Landscape Proposal



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