



**Glyndwr
University,
Plas Coch Main
Campus,
Mold Road,
Wrexham**

**Ecological
Appraisal**

Prepared by:
**The Environmental
Dimension
Partnership Ltd**

On behalf of:
DAY Architectural

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Contents

Executive Summary

Section 1	Introduction, Purpose and Context.....	1
Section 2	Methodology (Baseline Investigations)	3
Section 3	Results (Baseline Conditions).....	7
Section 4	Predicted Impacts and Mitigation.....	17
Section 5	Summary and Conclusions	25

Appendices

Appendix EDP 1	Proposed Landscape Masterplan (TPM, dwg ref: 3060 - 103D)
Appendix EDP 2	Habitat Descriptions and Illustrative Photographs

Plan

Plan EDP 1	Phase 1 Habitat Plan (edp4846_d021 01 May 2019 AG/ZH/GY)
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Executive Summary

- S1 The Environmental Dimension Partnership Ltd (EDP) was commissioned by DAY Architectural to undertake an Ecological Appraisal of three buildings within the Plas Coch campus at Wrexham Glyndwr University, to support the proposed redevelopment of the campus.
- S2 The baseline ecological investigations undertaken as part of the Ecological Appraisal included a review of existing survey reports for the campus and an Extended Phase 1 Habitat Survey with a bat roosting inspection of the buildings proposed to be demolished.
- S3 Habitats within the survey area include semi-improved grassland, introduced shrub, scattered trees and hardstanding. All habitats are of less than Local intrinsic ecological value.
- S4 In terms of Protected Species, the Application Site supports a confirmed bird's nest within the scattered trees and is likely to support further assemblages of common breeding birds in the introduced shrub and buildings. A confirmed bee colony is also situated within Building 8. Buildings due for demolition have the potential to support roosting bats with further surveys required to confirm their presence/likely absence.
- S5 Policy for the conservation and enhancement of the natural environment at all levels aims to encourage *"opportunities to incorporate biodiversity improvements in and around developments...especially where this can secure measurable net gains for biodiversity"* (National Planning Policy Framework (NPPF) paragraph 175). Accordingly, a number of mitigation measures are recommended for inclusion into the building design and the landscaping proposals for the Application Site.
- S6 The recommended Ecological Mitigation Strategy for the scheme includes: (1) mitigation measures which should be incorporated at the construction stage, (2) those which should be designed and specified within the landscaping scheme and (3) management measures to ensure that the design vision is achieved in the long term.
- S7 On this basis, EDP considers that the scheme is capable of compliance with relevant legislation and planning policy for the conservation of the natural environment at all levels.

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Section 1

Introduction, Purpose and Context

- 1.1 This Ecological Appraisal has been prepared by EDP on behalf of DAY Architectural (hereafter referred to as 'the Applicant'). This Appraisal considers the ecological implications of the demolition and redevelopment of Building 2 (Student Union), Building 8 (D Block) and Building 9 (The Refectory) of the Plas Coch campus at Glyndwr University, Wrexham (hereafter referred to as the 'Application Site').
- 1.2 EDP is an independent environmental planning consultancy with offices in Cardiff, Cirencester, Cheltenham and Shrewsbury. The practice provides advice to private and public-sector clients throughout the UK in the fields of landscape, ecology, archaeology, cultural heritage, arboriculture, rights of way and masterplanning. Details of the practice can be obtained at our website www.edp-uk.co.uk.

Site Context

- 1.3 The Application Site is centred approximately at Ordnance Survey Grid Reference SJ 327 511. The Local Planning Authority (LPA) is Wrexham County Borough Council. The university campus measures 11 hectares (ha) and is situated in north-west Wrexham. It is bound by residential dwellings and retail/industry parks. Extending north-west, the landscape is agricultural. Buildings 2, 8 and 9 are situated in the centre of the Plas Coch campus.

Development Proposals

- 1.4 The Proposed Development is illustrated in the Landscape Masterplan in **Appendix EDP 1**. A planning application is to be submitted for "*demolition of student union, refectory and other redundant buildings, and redevelopment of academic campus to provide new Learning Gateway Building, Engineering Building, new Sports Hall Extension, redevelopment of Multi-Use Games Area, refurbishment of Social, Learning and Academic Tuition Space, together with new car parking, infrastructure, landscaping and public realm works*" (hereafter referred to as the 'Proposed Development').

Scope of Appraisal

- 1.5 This Ecological Appraisal describes the current ecological interest within and around the Application Site, which has been identified through a review of existing evidence and field-based investigations. It then considers the potential ecological impacts and opportunities for ecological enhancement based on the proposed site layout (incorporating inherent mitigation) in the context of relevant legislation and planning policy. Finally, this Appraisal identifies the necessary additional measures to

avoid, mitigate or provide compensation for potential impacts and the mechanisms for securing such measures.

1.6 The remainder of this report is structured as follows:

- **Section 2** summarises the methodology employed in determining the baseline ecological conditions within and around the Application Site (with further details provided within the Appendices where appropriate);
- **Section 3** summarises the baseline ecological conditions (with further details also provided within the Appendices where appropriate) and identifies and evaluates any pertinent ecological features/receptors;
- **Section 4** considers the potential impacts of the proposal on pertinent ecological features in the context of legislative, planning policy and biodiversity action planning considerations. Recommended mitigation and enhancement measures are provided for the current and possible future planning stages; and
- **Section 5** summarises the inherent and recommended additional mitigation measures and provides the overall conclusions of the Appraisal.

Section 2

Methodology (Baseline Investigations)

- 2.1 This section summarises the methodologies employed in determining the up-to-date baseline ecological conditions within and around the Application Site. The Appraisal has been undertaken by appropriately qualified Ecologists using relevant best practice methodologies wherever possible. Reasons for any departure from best practice methodology are given and normally relate to the timing of EDP's commission and/or the availability of access to parts of the Application Site or wider study area. Full details of the techniques and process adopted are, where appropriate, provided within Appendices to the rear of this report.

Review of Existing Evidence

- 2.2 As part of this report, RPS Planning and Development Ltd conducted a bat roost assessment at the Plas Coch campus during 2017, which included Building 2 (recorded within the RPS report as Building B10). The assessment included a daytime building inspection with follow-up detailed bat emergence and re-entry surveys in September 2018.
- 2.3 Buildings 8 to 9 were not considered during the RPS assessment. All remaining buildings surveyed by RPS are outside the current 2019 red line boundary of the proposed demolition plan. Relevant survey results are provided in **Section 3** of this report for background information.

Extended Phase 1 Habitat Survey

- 2.4 The survey technique adopted for the initial habitat assessment was at a level intermediate between a standard Phase 1 Habitat Survey technique¹, based on habitat mapping and description, and a Phase 2 Survey, based on detailed habitat and species surveys. The survey technique is commonly known as an Extended Phase 1 Habitat Survey. This level of survey does not aim to compile a complete floral and faunal inventory for the Application Site.
- 2.5 The level of survey involves identifying and mapping the principal habitat types and identifying the dominant plant species present in each principal habitat type. In addition, any actual or potential Protected Species or species of principal importance are identified and scoped.
- 2.6 The Extended Phase 1 Habitat Survey of the Application Site was undertaken by a suitably experienced Surveyor on 12 April 2019, during which the weather was cold and

¹ Joint Nature Conservation Council (2004) *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit* (reprinted with minor corrections for original Nature Conservancy Council publication).

dry. Although, April is outside the optimal time for this type of survey, based on the types of habitat present, the time of year is unlikely to influence the conclusions as to the ecological value of habitat recorded. Therefore, this survey was not constrained by the time of year.

Detailed (Phase 2) Surveys

- 2.7 The scope of Phase 2 Surveys undertaken at the Application Site were defined following the initial studies described above (review of existing evidence and Extended Phase 1 Habitat Survey). The surveys 'scoped in' are summarised in turn below and a brief explanation of those potential surveys 'scoped out' is provided thereafter.

Assessment of Buildings for Bat Roost Potential

- 2.8 The review of existing evidence returned records of five species of bat within 2km of the Application Site with three common and widespread species found within the Application Site.
- 2.9 An inspection of Buildings 2, 8 and 9 on site for the presence of, or potential to support, bats was undertaken by an experienced bat licensed Ecologist and an assistant in accordance with best practice guidelines. The visual assessment was undertaken on 12 April 2019. The buildings were searched thoroughly to determine possible entry and exit sites, and the roosting opportunities within the building.
- 2.10 Suitable features for roosting bats include:
- Crevices provided by damaged or missing mortar in brick work/stone and gaps under ridge tiles;
 - Roof spaces;
 - Access holes provided by open eaves, gaps in tiles and brick work;
 - Roosting areas provided by chimney breasts, wooden beams, gable ends, cavity walls and mortice joints; and
 - South facing roof aspects.
- 2.11 Signs of roosting bats include:
- Bat/s roosting *in situ*;
 - Bat droppings within or beneath a feature;
 - Staining around or beneath a feature;

- Oily marks (staining) around roost access points;
- Audible squeaking from the roost;
- Large/regularly used roosts or regularly used sites may produce an odour; and
- Flies around the roost, attracted by the smell of guano.

2.12 Based upon the results of the visual assessment and features/evidence identified as above, the buildings were graded as having negligible, low, medium or high potential to support roosting bats in accordance to standard Bat Conservation Trust (BCT) guidelines².

Limitations

- 2.13 Building inspections can be undertaken at any time of year and were not seasonally constrained. No access was possible into the roof space of Building 2 due to health and safety concerns, therefore, further survey will be required to confirm the presence/likely absence of bats from this building.
- 2.14 Although the RPS bat survey report provides useful background data for informing the proposals for Building 2, it is noted that the bat emergence and re-entry survey was conducted at the end of September 2018. This is outside the recommended² survey period for buildings with low bat roost potential, which should be between May and August.

Surveys Scoped Out

- 2.15 **Table EDP 2.1** summarises other survey types that, while commonly required as part of an Ecological Appraisal for development sites, were not considered necessary/appropriate in this case.

² Collins, J (ed) (2016) Bat Surveys for professional ecologists: Good Practice Guidelines. (3rd edn) Bat Conservation Trust, London.

Table EDP 2.1: Ecology Surveys Scoped Out

Survey Type	Reasons for Scoping Out
Botanical Surveys	Extended Phase 1 Survey information was sufficient to confirm habitat value, with no indication of high value habitat present.
Breeding Bird Survey	The Application Site covers a relatively limited area and based on the types of habitat recorded, is likely to support an assemblage of common and widespread species. The Proposed Development is unlikely to have a significant effect on the assemblage of birds that may be present assuming implementation of precautionary method of working to avoid effects on nesting birds.
Bat Activity Survey	The Application Site covers a relatively small area within an urban environment that provides limited potential for bat foraging activity. The Proposed Development is unlikely to have a significant effect on foraging or commuting behaviour by bats.
Dormouse Survey	No suitable habitat within the Application Site.
Otter and Water Vole Survey	No suitable habitat within the Application Site.
Reptile Survey	No suitable habitat for common reptile species present within the Application Site.
Badger Survey	No evidence of badger activity recorded during the survey therefore, the need for further survey has been scoped out.
Notable Mammals	Lack of evidence for any such species was found during the Extended Phase 1 Habitat Survey and a precautionary method of working is considered sufficient to avoid any potential impacts on species that may be present, such as hedgehog.
Invertebrates	The Application Site covers a relatively limited area and based on the types of habitat recorded, is likely to support an assemblage of common and widespread species. This includes the confirmed honey bee (<i>Apis mellifera</i>) colony within Building 8.

Section 3

Results (Baseline Conditions)

- 3.1 This section summarises the baseline ecological conditions determined through the course of desk-based and field-based investigations described in **Section 2**. In particular, this section identifies and evaluates those ecological features/receptors that lie within the Application Site's potential Zone of Influence and that are pertinent in the context of the Proposed Development. Further technical details are, where appropriate, provided within the Appendices to the rear of this report.
- 3.2 In 2013, the *UK Biodiversity Action Plan (BAP) Priority Habitats and Priority Species* and the *Section 42 Species and Habitats of Principal Importance for Conservation under the Natural Environment and Rural Communities (NERC) Act 2006* were rationalised. This rationalisation occurred under the 'Post - 2010 Biodiversity Framework'. As a result, a new list of Priority Species and Priority Habitats is now in operation at the UK level.
- 3.3 These new lists supersede the former UK BAP and NERC Act Section 41 and 42 habitats and species; they are the new 'Biodiversity Indicators' that are used to monitor the status of biodiversity at the UK level. Each of the four devolved countries of the UK also has a similar list. For Wales, the *Section 42 Species and Habitats of Principal Importance for Conservation under the NERC Act 2006* were rationalised post 2010. Each of the four devolved countries of the UK also has a list. In Wales, priority habitats and species are listed under Section 7 of the *Environment (Wales) Act 2016*.
- 3.4 Within this Ecological Appraisal, where relevant, these species and habitats of national nature conservation priority will, therefore, be referred to as 'Priority Species' and 'Priority Habitats'³, except where indicated otherwise.
- 3.5 Where a particular ecological feature/receptor has been confirmed to be present, or presence is inferred based on habitat suitability, the ecological value or significance of the population or assemblage is assessed on the following geographic scale:
- International importance (ecological features which if impacted, would affect the distribution and/or conservation status of this feature in Europe);
 - National importance (ecological features which if impacted, would affect the distribution and/or conservation status of this feature in Wales);

³ See the following for more detail:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/382483/2a_priority_habitats2a_2014_final.pdf;

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/382951/Technical_Background_Priority_Species_abundance_2014.pdf;

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/382487/4a_Status_of_Priority_Species_2014_final.pdf

- County importance (ecological features which if impacted, would affect the distribution and/or conservation status of this feature in Wrexham County Borough); and
- Local (ecological features that if impacted, would affect the distribution and/or conservation status of this feature in the town of Wrexham and its immediate surroundings).

Review of Existing Evidence

- 3.6 In 2018, RPS Planning and Development Ltd⁴ identified bat presence within 2km of the Application Site. Five species of bats, with the closest being common pipistrelle (*Pipistrellus pipistrellus*), 700m north-east of the Application Site. Other species included soprano pipistrelle (*Pipistrellus pygmaeus*), noctule bat (*Nyctalus noctula*), a species of Myotis bat and brown long-eared bat (*Plecotus auritus*).
- 3.7 Building 2 (described as RPS Building B10) was identified as having low bat roost potential and subjected to a dusk emergence survey and dawn re-entry survey on 24 and 25 September 2019. No bats were recorded as re-entering this building although the surveys were conducted outside the peak bat survey season. An emergence of an unidentified large bat was recorded from the north-western corner of the student halls in the northern region of the campus, adjacent to Plas Coch Road (RPS Building B01, outside the scope of this report). All other activity was recorded as passes from common and soprano pipistrelle and noctule bats.

Habitats

- 3.8 Information on habitats within and around the Application Site were obtained during the Phase 1 Habitat Survey and a desk-based search using MAGIC Map Application⁵.
- 3.9 No indication of the presence of Priority habitats was identified within 500m of the Application Site.
- 3.10 A summary and qualitative assessment of the habitats recorded during the Phase 1 Habitat Survey is provided in **Table EDP 3.1**.

⁴ RPS Planning and Development Ltd (2018) Bat Assessment Report (Document reference: ECO00246)

⁵ Natural England & Landmark Information (undated) MAGIC Map Application. [On-line] Available from: <https://magic.defra.gov.uk/> [Accessed 03 May 2019].

Table EDP 3.1: Summary of Habitats within the Application Site

Habitat or Feature	Distribution within Application Site	Intrinsic Ecological Value
Scattered Trees	Situated within grassland areas.	Less than local , small quantity of mainly young trees.
Poor Semi-improved Neutral Grassland	Small borders to campus building and within campus garden.	Less than local , appears to be subject to regular mowing, with low botanical diversity.
Introduced Shrubs	Present outside campus buildings as an ornamental feature, including <i>Cotoneaster horizontalis</i> .	Less than local , based on low distinctiveness and small area of coverage.
Buildings	Plas Coch - campus buildings – form the majority of the survey area.	Less than local , owing to manmade structures.
Hardstanding and Fences	Roads and parking facilities.	Less than local , owing to manmade structures.

- 3.11 As noted within **Table EDP 3.1**, the habitats within the Application Site are of **less than local** intrinsic ecological value, however, the buildings require further consideration in relation to their importance in maintaining populations of protected and/or notable species, as discussed further next.
- 3.12 A number of *Cotoneaster* species are listed as being invasive under Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), which requires appropriate controls to be implemented to prevent spread of any species listed on Schedule 9 into the wild. *Cotoneaster horizontalis* is present within one of the introduced shrub borders adjacent to Buildings 8 to 9. Appropriate controls are, therefore, required during removal of this plant to avoid contravention of the relevant legislation.

Protected and/or Notable Species

- 3.13 The likelihood of presence, or confirmed presence, of protected and/or notable wildlife species within the Application Site is summarised below with reference to desk-study records, habitat suitability and detailed surveys where relevant.

- 3.14 Where a particular species or taxonomic group has been confirmed to be present, or presence is inferred based on habitat suitability, the ecological value or significance of the population or assemblage is assessed on the geographical scale described in **paragraph 3.4.**

Breeding Birds

- 3.15 Based on the types of habitat present, the Application Site is unlikely to support an assemblage of breeding bird species of ecological significance. It is considered to have the potential to support common breeding bird species in the scattered trees, introduced shrub and buildings and likely to be of less than Local level value.

Bats

- 3.16 Five species of bats are known within 2km of the Application Site, including one confirmed bat roost for an unidentified species within a building in the wider campus. Previous survey effort by RPS Planning and Development Ltd found Building 2 to have low bat roosting potential.
- 3.17 The Application Site contains three buildings with low potential to support roosting bats as detailed below in **Table EDP 3.2.** None of the trees within the survey area contained features suitable for roosting bats.

Table EDP 3.2: Descriptions and Bat Roost Potential of the Buildings within the Application Site

Building Number	Image Number	Description	Bat Roost Potential
2 Student Union	Images EDP 3.1 and 3.2	Stepped pitched roof covered by bitumen felt with roof void inside (not available at the time of survey). Roof of walkway joins to Building 9. Gaps in brickwork on north-west corner of building near drainpipe, providing a crevice suitable for roosting. High levels of artificial lighting on and around building.	Low

Building Number	Image Number	Description	Bat Roost Potential
8 'D' Block	Image EDP 3.3	Flat roofed brick building (adjoining Building B9) with bitumen felt roof covering. Roofs have small brick parapets around exteriors, with weep holes to the outer faces. Where not used by the colony of honey bees (further details provided in paragraph 3.19), these are suitable roosting features for small numbers of/individual bats. There is the possibility of some internal connection of these holes into the cavity walls. Gaps in concrete lintel above three windows and a wall crevice provide roosting opportunities on the north-eastern aspect for crevice dwelling species. Gaps in mortar along the south-western aspect present roosting potential for bats. High levels of artificial lighting on and around building.	Low
9 Refectory	Images EDP 3.4 and 3.5	Similar flat roofed brick building (adjoining Building 8) with bitumen felt roof covering, with weep holes to the outer face. Possibility of internal connection between these holes into the cavity wall. Crevice dwelling species may roost in the multiple gaps in the brick work on the north-eastern aspect. An additional shallow crevice is located between the wall and lead flashing (north-eastern aspect). A further roosting feature includes a rot hole into the timber soffit. High levels of artificial lighting on and around building.	Low



Image EDP 3.1: Building 2 with external access to loft void on south-eastern aspect



Image EDP 3.2: Building 2 with car parking as viewed on south-western aspect



Image EDP 3.3: Building 9 with 'walkway' to Building 2



Image EDP 3.4: Hole under soffit on Building 9, north-eastern aspect



Image EDP 3.5: Gap in concrete lintel at Building 9, north-eastern aspect

- 3.18 Further bat surveys will be required to confirm the presence (or not) of bat roosts within the buildings and to characterise the roosts (if present) in order to determine the need (or not) for a European Protected Species (EPS) Development licence for bats from Natural Resources Wales. An ecological value for the potential bat population using the Application Site, therefore, cannot be assigned at this time.

Invertebrates

- 3.19 During the Extended Phase 1 Habitat Survey, a honey bee (unconfirmed species) colony was observed within the brickwork and weep holes within Building 8. Discussions with Mr. M. Hamer (discussion 12 April 2019) found the bees to swarm in warmer months through the student garden, adjacent to the above buildings.
- 3.20 Although the colony of honey bees is likely to be of less than Local ecological value, their presence within the campus provides ecological benefits, such as the pollination of the surrounding introduced shrubs and scattered trees.

Summary of Key Issues Arising from Survey Findings

- 3.21 Based on the survey findings described above, the key ecological features/receptors pertinent to the development proposals are as follows:
- Breeding birds – scattered trees, shrub and building habitat are suitable for breeding birds, with the overall assemblage of no more than Local level value;

- Bats – the Application Site contains buildings with low bat roost potential;
- Invertebrates – the Application Site provides confirmed habitat within Buildings 8 and 9 for honey bees; and
- *Cotoneaster horizontalis* presence within the introduced shrubs adjacent to Buildings 8 and 9.

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Section 4

Predicted Impacts and Mitigation

- 4.1 This section considers the likely impacts of the Landscape Masterplan included as **Appendix EDP 1** on the existing ecological resource. Where impacts cannot be avoided by inherent mitigation alone, additional mitigation or enhancement measures are recommended that, if implemented, would as a minimum enable the Proposed Development to meet legislative and/or planning policy requirements.
- 4.2 The term ‘significant impact’ is taken from the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines⁶ to mean “*An effect that either supports or undermines nature conservation objectives for important ecological resources or features*”.
- 4.3 In accordance with the *Natural Environment and Rural Communities (NERC) Act 2006*, within Wales, Local Planning Authorities (LPA) have a statutory duty to have regard to effects upon biodiversity when exercising their functions; this includes consideration of effects upon ecological features such as designated sites and Principle Habitats/Species when determining planning applications. In accordance with planning policy at all levels, LPAs must also consider whether ‘significant harm’ to biodiversity may occur due to effects upon such ecological features. This, and the statutory protection afforded to certain designated sites and species, is explored in further detail below.
- 4.4 In accordance with this, the Wrexham Unitary Development Plan⁷ provides detailed planning policies to manage and guide development across Wrexham. The Development Plan alongside its Planning Guidance Notes are a material consideration in the determination of planning applications.
- 4.5 Planning Guidance Note No.32 ‘Biodiversity and Development’⁸ contains several policies of relevance to the Proposed Development, which are discussed in turn below.

Habitats

- 4.6 There are several mechanisms through which habitats receive protection within the statutory and non-statutory designated site frameworks. For instance, certain habitats are identified in policies within NPPF⁹. Furthermore, the NPPF states:

⁶ CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal & Marine*, para. 5.24, pg. 34. Chartered Institute of Ecology and Environmental Management, Winchester.

⁷ Wrexham County Borough Council (undated) Wrexham Unitary Development Plan (1996-2011) – Adopted 2005. [Online]. Available from: https://www.wrexham.gov.uk/assets/pdfs/planning/udp/written_statement_e.pdf [Accessed 07 May 2019].

⁸ Wrexham County Borough Council (2011) Local Planning Guidance Note, No. 32: Biodiversity and Development. [Online] Available from: <https://www.wrexham.gov.uk/assets/pdfs/planning/lpg/guide32.pdf> [Accessed 07 May 2019].

⁹ Ministry of Housing, communities and Local Government (February 2019) National Planning Policy Framework. Ministry of Housing, Communities and Local Government, London

“175. when determining planning applications, LPAs should apply the following principles:

- A. If significant harm to biodiversity resulting from a development cannot be avoided (through locating on alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused...;*
- B. Development proposals 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*
- C. Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains in biodiversity”.*

- 4.7 Policy PS2 of the Wrexham Unitary Development Plan identifies that development must not detrimentally affect the quality of the natural environment. Policy PS11 encourages proposals to improve biodiversity value, protect and enhance. Policy EC6 states development within or close to sites of biodiversity interest will only be permitted where development clearly outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum with compensatory measures provided.
- 4.8 Habitats within the Application Site and along the Application Site boundaries have been assessed through an Extended Phase 1 Habitat Survey and comprise buildings and hardstanding with semi-improved grassland and beds of introduced shrub.
- 4.9 The loss of poor semi-improved grassland, scattered trees and introduced shrub is unavoidable during construction works, given the relatively small size of the Application Site and likely demolition and construction footprint. However, given that the majority of the habitats within the Application Site are considered to be of less than Local ecological value and there is scope for habitat creation within soft landscaped areas, no significant loss of biodiversity value is expected. The Landscape Masterplan at **Appendix EDP 1** includes areas of soft landscaping which could comprise the planting of nectar and fruit bearing shrubs and trees. Where existing trees are to be retained, they should be protected in line with arboricultural recommendations.
- 4.10 Specifications for new planting and other habitat creation should be provided with a detailed Soft Landscaping Scheme or similar, to be secured by planning condition. In addition, it is recommended that measures to restore and enhance existing habitats, to ensure successful establishment of new habitats, and to maintain the value of all ecological features in the long-term are detailed within an Ecological Management Plan (EMP) (or similar), again secured by planning condition.

Protected and/or Notable Species

- 4.11 Certain species receive legal protection in the United Kingdom and are commonly known as 'Protected Species'. In reality, the level of protection for different species varies considerably, from protection solely against 'killing and injury' to full protection of the species and their places of refuge. Where pertinent, details of legal protection afforded to species/species-groups are provided below.
- 4.12 In addition to Protected Species, there are other species/species-groups that do not receive legal protection, but which are notable owing to their conservation status as Priority Species or other status as described in **paragraph 4.3**. Details of any actual or Potential Notable Species within the Application Site are identified below.
- 4.13 With respect to planning policy, Protected and Notable Species are afforded policy protection at a National level by the NPPF (paragraph 175) and at a Local level by Policy EC6.
- 4.14 Baseline investigations have identified Protected Species implications for the Application Site relating to breeding birds, bats and invertebrates which are discussed below.

Breeding Birds

- 4.15 All wild birds, their nests and eggs are protected under Part 1 of the *Wildlife and Countryside Act 1981* (as amended). This makes it an offence to:
- Intentionally kill, injure or take any wild bird;
 - Take, damage or destroy the nest of any wild bird while it is in use or being built;
 - Take, damage or destroy the egg of any wild bird; or
 - To have in one's possession, or control, any wild bird (dead or alive) or egg or any part of a wild bird or egg.
- 4.16 In addition, further protection is afforded to those wild bird species listed on Schedule 1, prohibiting any intentional or reckless disturbance to these species while it is nest building, or at a nest containing eggs or young, or to recklessly disturb the dependent young of such a bird. In addition to, or in the absence of, legal protection, certain species are also Priority Species (of principal importance for nature conservation nationally) or other conservation concern (e.g. are the subject of local biodiversity action plan measures).
- 4.17 Most of the nesting bird species potentially using the Application Site are likely to be associated with the scattered trees, introduced shrub and buildings. A confirmed nest was observed adjacent to Building 2 during the Phase 1 Habitat Survey within a birch

(*Betula sp.*) tree with other more common species also likely to use the buildings for nesting.

- 4.18 It is recommended that site clearance/demolition works should be undertaken outside of the bird breeding season (March to September inclusive). However, in the event that this is not possible, it is recommended that areas for construction works or clearance that provide suitable bird nesting habitat should be checked for signs of nesting (nests or displaying males) by an Ecologist prior to commencement. If evidence of nesting is recorded, works within that particular area shall not proceed until the chicks have fledged, with an appropriate buffer zone implemented around the active nest. 'Toolbox talks' should also be provided to site personnel prior to any habitat clearance works taking place.
- 4.19 The retention of the existing introduced shrub and trees outside of the construction footprint, in addition to the planting of nectar and fruit rich shrubs along with other soft landscaping proposals will provide replacement breeding and foraging habitat available to birds. Any new trees, shrubs and scrub should be managed so that they provide suitable nesting habitat for a range of bird species.
- 4.20 Subject to these recommendations being fulfilled, no significant impacts upon birds are anticipated to arise as a result of the Proposed Development.

Roosting Bats

- 4.21 All species of British bat are listed as European Protected Species (EPS) on Schedule 2 of the Conservation Regulations (Annex IV (a) to the Habitats Directive). This affords them strict protection under the *Conservation of Habitats and Species Regulations 2017*, making it an offence to:
- Deliberately capture, injure or kill a wild animal of an EPS;
 - Deliberately disturb wild animals of an EPS wherever they are occurring, in particular any disturbance that is likely to impair their ability to survive, to breed or reproduce, or in the case of hibernating or migratory species, to hibernate or migrate, or to affect significantly the local distribution or abundance of the species to which they belong;
 - Deliberately take or destroy the young/eggs of a wild animal of an EPS; or
 - Damage or destroy a breeding site or resting place of a wild animal of an EPS.
- 4.22 Additional protection for bats is also afforded under the *Wildlife and Countryside Act 1981* (as amended), making it an offence to intentionally or recklessly disturb bats whilst they are occupying a structure or place that is used for shelter or protection, or to obstruct access to this structure or place.

- 4.23 Buildings 2, 8 and 9 contain features with low potential to support roosting bats. Previous surveys carried out by RPS recorded very low levels of activity within the general campus area. During the 2019 EDP survey, flood and security lights were recorded on all elevations of the survey buildings, which (if operational) would deter all but the most light-tolerant species of bat.
- 4.24 Further surveys are recommended during the bat activity season prior to commencement of works at the Application Site, with the peak survey season running from May to August for buildings with low bat roost potential. One dusk emergence or dawn re-entry survey is needed to confirm likely absence, with additional surveys likely to be required should any presence of roosting bats be recorded during the first survey.
- 4.25 Should roosts be confirmed within the buildings, a European Protected Species (EPS) Development Licence from Natural Resources Wales (NRW) will be required for the proposed works to lawfully commence, in accordance with the *Conservation of Habitats and Species Regulations 2017*.
- 4.26 A licence will require a detailed method statement including all mitigation measures proposed to ensure the avoidance, mitigation and/or compensation for any potential impacts upon bats and their roost sites before such a licence will be granted. In the event that a bat roost is recorded during further surveys, an outline of the mitigation strategy is provided below, though this is subject to change following the results of further surveys should roosts be confirmed. Works to confirmed bat roost features can only commence after a Development Licence has been granted by NRW.

Pre-commencement

- 4.27 Prior to work commencing on the Application Site, contractors will be made aware of the potential presence of bats, their legal protection and of working practices to avoid harming bats. They will be informed that if any bats are found when a licensed bat Ecologist is not in attendance, the bats must not be handled, works must stop in this area and advice must be sought from the licensed bat Ecologist. Provision will be made for interim roosting opportunities during the works.
- 4.28 A copy of the method statement granted as part of the EPS licence will remain on the Application Site at all times.

Timing and Methods of Works

- 4.29 The commencement of works should be timed to avoid the bat hibernation season (November to March inclusive). In the event that a maternity roost is present, works must also be timed to avoid the bat breeding season (May to August inclusive). This will also ensure no contravention of legislation relating to nesting birds.
- 4.30 The timing of works will minimise the likelihood of bats being present. However, precautionary measures will be employed during the works such as ecological watching briefs where areas identified as offering potential to support roosting bats are

soft-stripped by hand under supervision by a licensed bat Ecologist. If any bats are found within areas to be impacted, they will be handled only by the licensed bat Ecologist.

Roosting Provision

- 4.31 Bespoke access points could be provided in any new roof spaces through bat slates and/or bat ridge tiles to provide crevice opportunities and access into roof voids. Gaps left underneath fascia and barge boards of 1.5 – 2cm could also be incorporated to provide additional roosting opportunities, with gaps left in the insulation at the eaves to provide additional access into roof voids. Consideration of landscape connectivity and reduced artificial lighting should be made where possible.
- 4.32 Where bat roost provision within buildings is created, the roof within these areas will be lined with traditional bitumen roofing felt, which provides a suitable surface for bats to grip onto (bats have been known to become entangled in the fibres of some modern breathable membranes) and helps to maintain favourable internal roosting conditions for bats.
- 4.33 In the event that, suitable roof structures are not incorporated within the design of new buildings, it would also be possible to replicate existing potential roost features with the use of bat boxes incorporated within the wall structures of any new buildings. Suitable bat boxes would include the Schwegler 1FR bat tube.
- 4.34 This provision is considered suitable to retain the existing roost potential and provide for the numbers of roosting bats potentially at the Application Site (yet to be determined). It will also provide additional opportunities to support larger numbers of roosting bats than is expected in the long-term. It is also worth noting that additional roost provision can be incorporated within the design of the scheme should this be required following the results of detailed bat surveys.

Lighting

- 4.35 External lighting is to be designed sensitively and, where appropriate, using timers and directional lighting with hood/cowls to ensure that illumination of the buildings does not exceed existing levels. There will be no direct lighting impacting upon any existing or newly created roost access points or retained habitat of value for foraging bats.

Site Visits

- 4.36 There will be site visits undertaken by a licensed bat Ecologist before, during and after works, as required by the EPS bat licence.

Foraging Bats

- 4.37 As detailed in **paragraph 4.12**, soft landscaping features such as planting shrubs which provide fruit and nectar throughout the seasons is recommended as this attracts invertebrates upon which bats feed.

- 4.38 Subject to these recommendations being fulfilled, no significant impacts upon bats are anticipated to arise as a result of the development.

Invertebrates

- 4.39 The removal of honey bees from Building 8 should take place prior to demolition works. Further specialist advice should be sought to ensure bees are moved at the correct time of year using methods that safe within populated areas. Soft landscaping features such as replacement shrubs and trees which are nectar bearing throughout the seasons are recommended. Placement of 'insect hotels' within these areas provide additional sheltering opportunities.

Summary of Predicted Impacts and Principal Mitigation Measures

- 4.40 **Table EDP 4.1** provides a summary of predicted impacts and principal mitigation measures.

Table EDP 4.1: Predicted Impacts and Principal Mitigation Measures

Feature	Inherent Mitigation	Potential Impacts	Additional Mitigation and/or Enhancement
Habitats (grassland, trees and introduced shrub).	Replacement and enhancement.	Some loss and damage during construction.	Habitat creation through shrub and tree planting within the Application Site.
Species (birds, bats, invertebrates).	Replacement and enhancement.	Harm/disturbance and habitat loss during construction.	Further surveys as defined above. Implementation of precautionary method of working; habitat creation.

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Section 5

Summary and Conclusions

- 5.1 This section summarises the ecology strategy for the Proposed Development, in terms of inherent and recommended additional mitigation measures, and then provides the overall conclusions of the Appraisal.

Summary of Ecology Strategy

Pre-commencement Measures

- 5.2 Further survey as described in **Section 4** is required to determine the roost status of the existing buildings prior to commencement of development.

Construction Measures

- 5.3 It is recommended that the following measures are detailed with an Ecological Construction Method Statement (ECMS) secured by a suitably worded pre-commencement condition attached to planning consent:

- Briefing of site personnel with regards to protected and notable species;
- Pre-commencement checks with regards to roosting bats, breeding birds and honey bees;
- Sensitive methods of working with regards to bats, breeding birds and honey bees; and
- Sensitive timing and methods of vegetation clearance with regards to breeding birds.

Detailed Design Measures

- 5.4 It is recommended that the following measures are incorporated within the proposed site layout, to be secured by a suitably worded pre-commencement condition attached to planning consent:

- Provision of bespoke access points for bats within the roof spaces through bat slates and ridge tiles and gaps under barge boards or within exterior walls; and
- Planting of shrubs/trees rich in nectar and fruit for invertebrates and birds.

Restoration, Enhancement and Maintenance Measures

- Management of shrubs/trees for a range of wildlife; and
- Provision of 'insect hotels'.

Overall Conclusions

- 5.5 EDP's review of existing evidence and field-based baseline investigations have demonstrated that the habitats and species present within and around the Application Site do not pose an 'in principle' constraint to the Proposed Development that is the subject of this Appraisal.
- 5.6 However, EDP's surveys have identified Protected Species that will need to be respected and further surveys that are required with regards to roosting bats.
- 5.7 Specific proposals for the avoidance, mitigation and compensation of any predicted impacts are considered in this report and summarised above. These measures include: measures which should be incorporated at the construction stage, those which should be designed and specified within the landscaping scheme, and management measures to ensure that the design vision is achieved in the long term.
- 5.8 On this basis, EDP finds that by virtue of the relatively limited constraint posed by the site's habitats and Protected Species interest, coupled with the scale and scope of the proposed mitigation measures, the scheme is capable of compliance with relevant planning policy for the conservation of the natural environment at all levels.

Appendix EDP 1
Proposed Landscape Masterplan
(TPM, dwg ref: 3060-103D)

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Scale - 1:1000 @A1

Appendix EDP 2

Habitat Descriptions and Illustrative Photographs

- A2.1 The principal habitats within and around the demolition area (Buildings 2, 8 and 9) are described below, with illustrative photographs provided where appropriate. The following should be read in conjunction with **Plan EDP 1**.
- A2.2 The habitat features present within the Application Site include introduced shrub, semi-improved grassland, hardstanding and scattered trees.

Woodland and Scrub

Scattered Trees

- A2.3 Scattered trees including cherry (*Prunus avium*) and silver birch (*Betula pendula*) are situated alongside the car parking, campus buildings and within the student garden. An avenue of poplars (*Populus* sp.) is situated on The Mold Road entrance to the Application Site (in the south).

Grassland

Species Poor Semi-Improved Grassland

- A2.4 Small borders of semi-improved grassland are situated alongside the car parks and around the buildings. This includes meadow grass (*Poa* sp.), cock's foot (*Dactylis glomerata*), perennial ryegrass (*Lolium perenne*), nettle (*Urtica dioica*), clover (*Trifolium* sp.), dandelion (*Taraxacum officinale* agg.) and speedwell (*Veronica* sp.). An additional area of semi-improved grassland is situated within the student garden with the same composition. This area is located west of Building 8 and 9 as shown in **Image EDP A2.1**.



Image EDP A2.1: Building 8 (right) with semi-improved grassland and scattered trees in the student garden (left)

Introduced Shrub

- A2.5 Ornamental planting alongside the campus buildings includes species such as cotoneaster, *Skimmia* and lavender (*Lavandula*) species. Introduced shrub is also present within the student garden.

Buildings/Hardstanding

- A2.6 There are three buildings within the Application Site and are labelled in **Plan EDP 1**. Associated hardstanding pavement and road networks are located adjacent to the buildings.

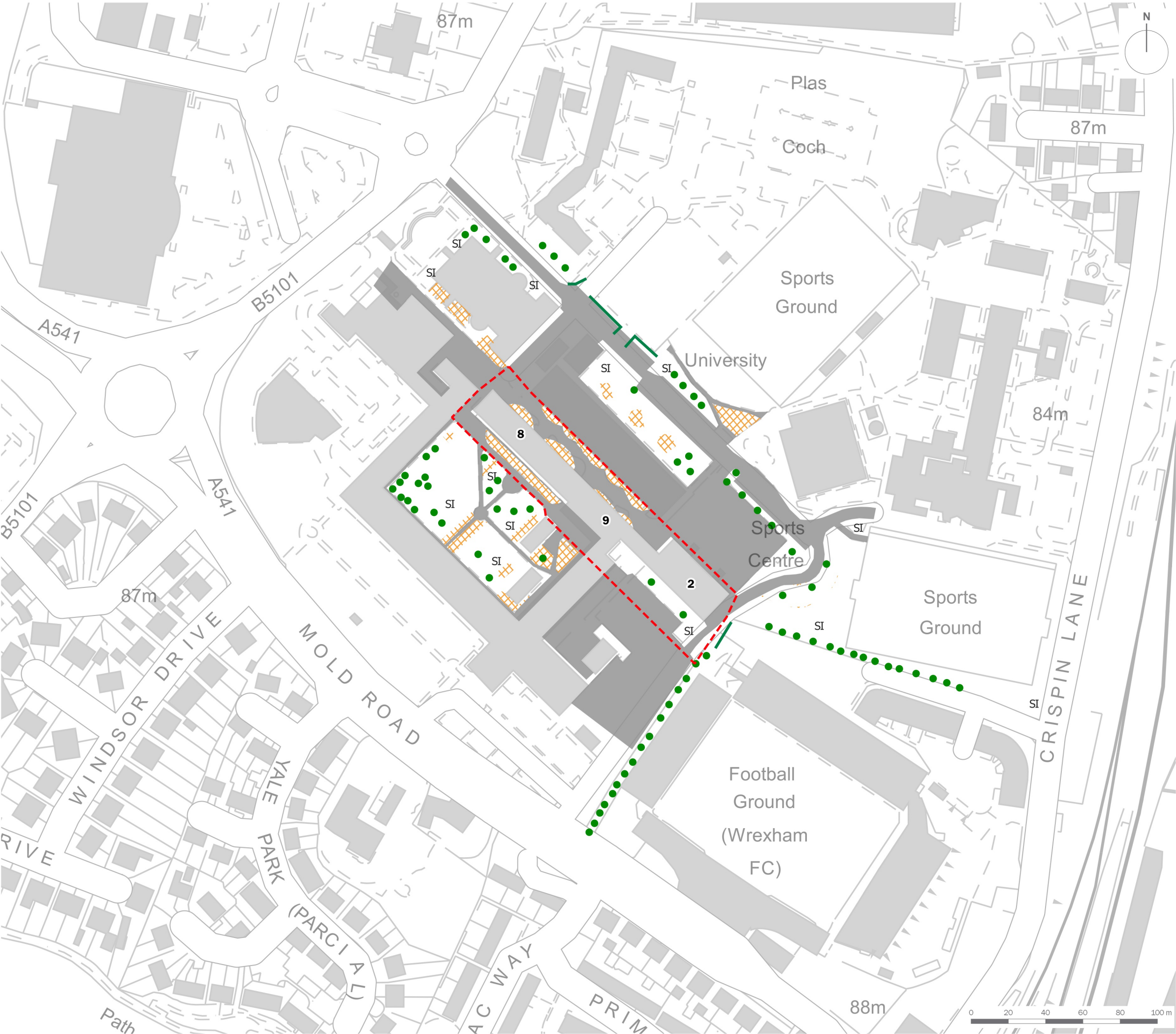


Image EDP A2.2: Buildings 8 and 9 (left) with ornamental shrubs and hardstanding road

Plan

Plan EDP 1 Phase 1 Habitat Plan
(edp4846_d021 01 May 2019 AG/ZH/GY)

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-  Survey Area
-  Scattered Trees (Broad-leaved)
-  Intact Species-poor Hedgerow
-  Introduced Shrub
-  SI Poor Semi-improved Grassland
-  Hardstanding
-  Building
-  Building Number

client			
DAY Architectural			
project title			
Wrexham Glyndwr University			
drawing title			
Plan EDP 1 – Phase 1 Habitat Plan			
date	01 MAY 2019	drawn by	AG
drawing number	edp4846_d021	checked	ZH
scale	1:2,000 @ A3	QA	GY



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