

Preliminary Ecological Appraisal

**Glyndwr University Plas Coch,
Wrexham**

Day Architectural Ltd



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1 Executive Summary

1.1 The Project and Commissioned Work

RPS Planning and Development Ltd (RPS) was instructed by Day Architectural Ltd to carry out a preliminary ecological appraisal comprising of an extended Phase 1 habitat survey of land at the main Plas Coch, Glyndwr University campus in Wrexham.

Proposals for the site are for the demolition of the existing student accommodation and other buildings within the site and construction of new accommodation facilities.

The survey followed best practice methodology and was carried out in May 2017 by experienced ecologists.

1.2 Findings and Recommendations

No notable habitats were recorded in the site but the buildings, trees, hedgerows and shrub/scrub vegetation across the site were considered to provide potential habitat for roosting bats and nesting birds. On this basis, the following recommendations have been made.

Table 1: Summary of recommendations

Notable Ecological Feature	Consideration	Further Surveys Required ¹	Mitigation, Compensation and Enhancement	Optimal Timings
Roosting bats	Potential for roosting bats to be present within main accommodation block within site	Yes; a single dusk emergence or dawn re-entry survey	To be confirmed following results of recommended survey	May – August (September)
Foraging/commuting bats	Potential for foraging/commuting bats to be deterred from using site	No	Installation of sympathetic lighting scheme	During works
Nesting birds	Potential for nesting birds to be encountered during demolition/site clearance	No	All demolition/vegetation clearance (excluding grassland) to be conducted outside of nesting season OR an ecologist to inspect areas to be cleared where this is not possible	October – February (nesting season March to September)
Badgers	Potential for badgers to cross site during construction phase	No	Good-practice working methods (i.e. mammal ladders in excavations)	During works

¹ Please note that all further surveys should be completed before a planning application is submitted

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2 Introduction and Background

2.1 Purpose and Scope of this Report

RPS Planning and Development Ltd (RPS) were commissioned to carry out a preliminary ecological appraisal of land at Glyndwr University, Wrexham to inform planning prior to proposed redevelopment for additional student accommodation. This appraisal was based on a review of the development proposals provided by the client, desk study data (third party information) and a survey of the site. This report pertains to these results only; recommendations included within this report were the professional opinion of an experienced ecologist, based on their personal interpretation of legislation and planning policy.

The study area was defined as shown in the enclosed site plan (Figure 1) and Phase 1 Habitat plan plus a buffer zone extended to include the Zone of Influence (see below) of the proposals (hereafter referred to as the “site”).

2.2 Proposed Site Plans

Current proposals for this site comprise of the addition of four new apartment blocks for on campus, student accommodation. Plans include the demolition of the Goldstein Library and current student bedrooms (B01, B02, B03) in addition to the clearance of scattered trees along the south-western aspect of site and a short intact hedgerow to the west to provide works access and extend the works area. Additionally the south-western and south-eastern roads running adjacent to site will be widened and roundabouts removed to provide access to an inner car parking area situated between the proposed buildings. Note: finalised plans have not been provided and are subject to change. The outline site plan used to inform this assessment has been reproduced at Appendix B.

2.3 Zone of Influence

The term Zone of Influence is used to describe the geographic extent of potential impacts of a proposed development. The Zone was determined by the nature of the development and also in relation to individual species, depending on their habitat requirements, mobility and distances indicated in any best practice guidelines.

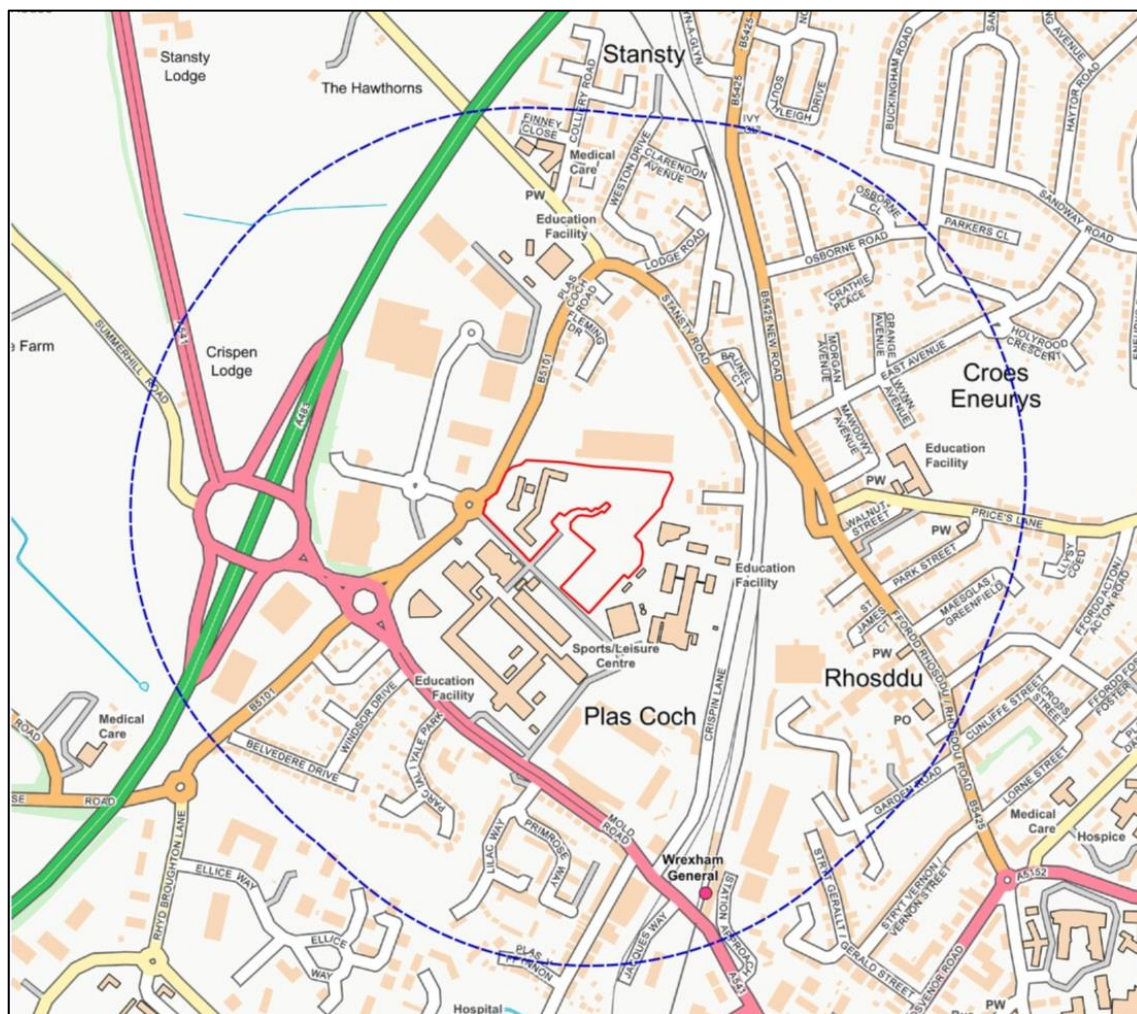
For this site, the Zone of Influence was considered to be land on and immediately adjacent to the site and, specifically in respect of great crested newts *Triturus cristatus*, land within 500m of the site boundary as illustrated on the location plan.

2.4 Site Context and Location

The site comprises approximately 3.28ha area of land situated on the eastern edge of Wrexham, central grid reference SJ32735135. The site comprises Plas Coch Campus with onsite student accommodation buildings and associated amenity playing fields. The adjacent land includes Wrexham Football Club, a housing estate to the east and industrial/commercial development to the west. The location in a local context is illustrated on Figure 1 below.

Aerial imaging available via Google Earth Pro was also reviewed to assess the site in relation to its context in the wider landscape. As illustrated on Figure 2 the site forms part of a mosaic of habitats within a generally urban landscape. Hedgerows and watercourses within the site provide connectivity with habitats on adjacent land; however two main roads (A483 and A541) bound the site to the east and west.

Figure 1: Site location plan (red line denotes site location and dotted blue line illustrates the zone of influence)



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Figure 2: Aerial image of the site and local landscape

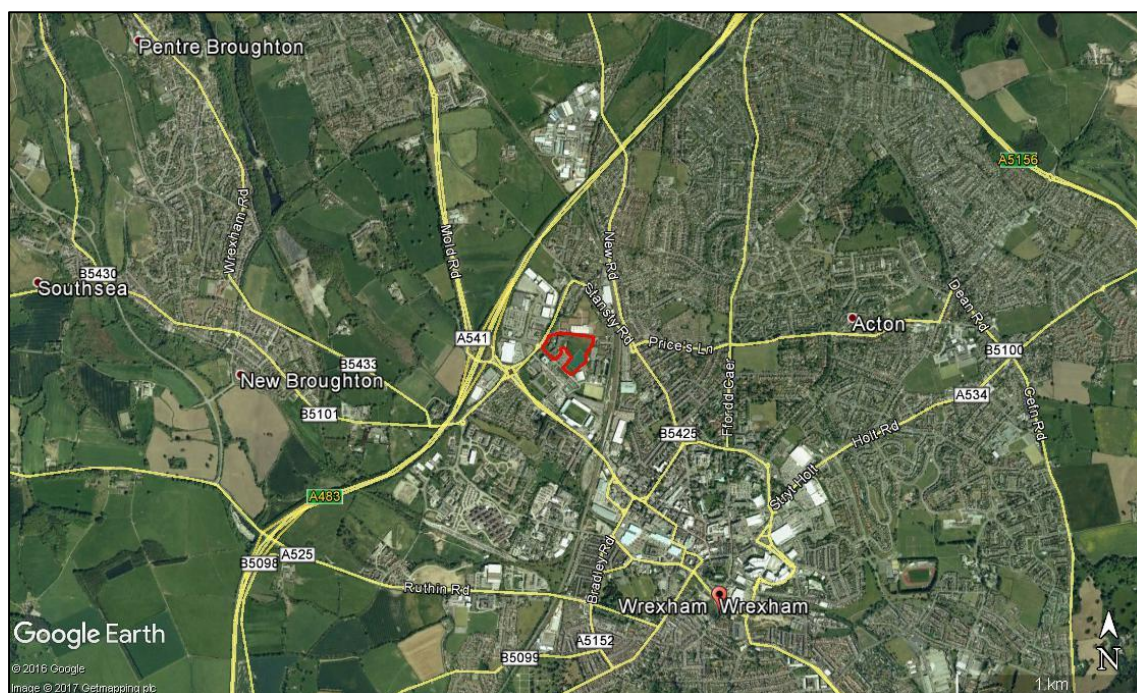


Image reproduced from Google Earth Pro.

2.5 Legislation and Planning Policy

2.5.1 General

Articles of British wildlife and countryside legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) were referred to throughout this report. Their context and application was explained in the relevant sections of this report. The relevant articles of legislation were:

- The National Planning Policy Framework (NPPF, 2012);
- ODPM Circular 06/2005 (retained as Technical Guidance on NPPF 2012);
- Local planning policies (Wrexham City Council);
- The Conservation of Habitats and Species Regulations 2010 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);
- EC Council Directive on the Conservation of Wild Birds 79/409/EEC;
- National Parks and Access to the Countryside Act 1949;
- The Protection of Badgers Act 1992;
- The Countryside and Rights of Way Act 2000;
- The Hedgerow Regulations 1997;
- The Natural Environment and Rural Communities Act 2006;
- Local Biodiversity Action Plan for Wrexham

Under the National Planning Policy Framework 2012 the presence of any protected species was a material planning consideration. The Framework states that impacts arising from development proposals must be avoided where possible or adequately mitigated/ compensated for and that opportunities for ecological enhancement should be sought.

3 Methodology

3.1 Desk Based Assessment

Data regarding statutory and non-statutory designated sites, plus any records of protected or notable species and habitats was obtained from the local ecological records centre and online resources, details of which were provided in Table 2 below.

Table 2: Consulted resources

Consultee/ resource	Data sought	Search radius from boundary
COFNOD – North Wales Environmental Information Service	Site designations, protected/notable species records	2km
www.magic.gov.uk ²	Statutory Site Designations	2km
	NERC 2006 Habitats of Principal Importance	1km

3.2 Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey of the site was carried out on 10th May 2017. Habitats were described and mapped following standard Phase 1 habitat survey methodology (JNCC, 2010), which categorises habitat type through the identification of individual plant species, botanical community and habitat conditions.

Nomenclature follows Stace (Stace, 2010) for vascular plant species and uses the DAFOR scale for relative abundance (D = dominant, A = abundant, F = frequent, O = occasional and R = rare/infrequent).

3.2.1 Hedgerow Assessments

Hedgerows on site were assessed using the Hedgerow Evaluation and Grading System (HEGS) (Clements & Tofts, 1992). This method of assessment includes noting canopy species composition, associated ground flora and climbers, structure of the hedgerow including height, width and gaps, associated features including number and species of mature trees, banks, ditches and grass verges.

Each hedgerow was given a grade using HEGS with the suffixes '+' and '-', representing the upper and lower limits of each grade respectively. These grades represent a continuum on a scale from 1+ (the highest score and denoting hedges of the greatest nature conservation priority) to 4- (representing the lowest score and hedges of the least nature conservation priority) as follows:

- Grade 1 – High to very high value
- Grade 2 – Moderately high to high value
- Grade 3 – Moderate value
- Grade 4 – Low value

Hedgerows graded 1 or 2 were considered to be a priority for nature conservation.

The hedgerows were also assessed against the Wildlife and Landscape criteria contained within The Hedgerow Regulations 1997 to determine whether they qualified as 'Important Hedgerows' under the Regulations. This was achieved using a methodology in accordance with both the Regulations and DEFRA guidance.

The habitat survey was carried out by Joseph Dance BSc Hons GradCIEEM and Michelle Cullimore-Pike MSc BSc Hons. Both have been professional ecologists for over three years and are appropriately experienced to carry out this type of survey.

² Multi Agency Geographic Information for the Countryside Interactive GIS Map.

3.3 Protected / Notable Species Scoping

The habitats on site were assessed for their suitability to support any legally protected or notable species that may present constraints to the proposed redevelopment. This includes invasive non-native plant species such as Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera*.

Any incidental sightings of individual species or field signs such as footprints, latrines or feeding remains identified during the survey were noted.

In the case of bats, specific quantitative assessment methodologies have been adopted industry wide and details of these were provided below.

3.3.1 Bats

Daytime Bat Assessment

All buildings and trees present on or immediately adjacent to the site were visually inspected and all potentially suitable entry / exit points for bats such as holes and crevices were noted, together with any evidence of bat presence such as droppings or feeding remains.

For reference, individual buildings were numbered B01 – B05. Following standard best practice methodology (Collins, J., 2016), each building and tree was then classified either as confirmed roost or high, medium, low or negligible potential, which informs the need for and survey effort of any nocturnal survey required.

3.3.2 Appraisal Methodology

The overall ecological appraisal was based on the standard best practice methodology provided by the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2013). The assessment identifies sites, habitats, species and other ecological features that were of value based on factors such as legal protection, statutory or local site designations such as Sites of Special Scientific Interest (SSSI) or Local Wildlife Sites (LWS) or inclusion on Red Data Book Lists or Biodiversity Action Plans. Ecological value was considered in the context of international, national, regional or local scale and potential constraints to development were identified on that basis, with recommendations for further more detailed surveys made as appropriate, for example to fully investigate botanical value or to confirm presence / likely absence of a protected species.

The assessment also refers to planning policy guidance (e.g. NPPF) where relevant to relate the value of the site and potential impacts of development to the planning process, identifying constraints and opportunities for ecological enhancement in line with both national and local policy.

3.4 Limitations

3.4.1 Desk Based Assessment

The desk study data was third party controlled data, purchased for the purposes of this report only. RPS cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

3.4.2 Survey

It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

The protected/notable species assessment provides a preliminary view of the likelihood of these species occurring on the site, based on the suitability of the habitat, known distribution of the species in the local area provided in response to our enquiries and any direct evidence on the site. It should not be taken as providing a full and definitive survey of any protected/notable species group.

The entirety of the land within 30m of the site's boundaries could not be accessed due to private ownership so a visual inspection was made of this land, where views permitted.

Daytime Bat Survey

Although many loft hatches were present throughout Building B01, complete access to the roof space was not possible due to the absence of suitable floor boards. A visual inspection was, therefore, made from each of the loft hatches present.

No internal access to Building B03 was possible but given the absence of a roof void, this was not considered to impact upon the validity of the preliminary roost assessment conducted on this building.

3.4.3 Accurate Lifespan of Ecological Data

The majority of ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report were considered accurate for 2 years.

4 Results

4.1 Desk Based Assessment

One statutorily designated site was recorded within the search area identified in Section 3.1, details of which were provided in Table 3 below.

Table 3: Non-Statutory designated sites

Site name	Designation	Location	Brief description
Gatewen Marsh	SSSI ³	540m to W	Southern mesotrophic mire

Four non-statutory sites were identified, details of which were provided in Table 4 below.

Table 4: Non-Statutory designated sites

Site name	Designation	Location	Brief description
Berse Drelincourt (site ref: W335)	LWS ⁴	1.15km to W	Small area with mosaic of semi-natural habitats
Moss Valley (site ref: W311)	LWS	1.2km to NW	Well wooded valley slopes with adjoining grassland
New Broughton Meadow (site ref: W334)	LWS	1.7km to W	Site with variety of semi-natural habitats, including pond and wet alder/willow carr
Erddig Estate (site ref: W317)	LWS	1.8km to S	Woodlands, semi-improved neutral grasslands and marshes

The closest NERC (2006) Habitat of Principal Importance was Broad-leaved Woodland, located 980m from the survey area.

Protected species records were received from COFNOD. A summary of the records considered most relevant to the site and/or proposed development were provided in Table 5.

Table 5: Summary of protected and notable species records

Species latin name	Species	Most recent record	Closest record to site	Total no. of records	National conservation status	Wrexham LBAP
Amphibians						
<i>Triturus cristatus</i>	Great crested newt	2017	1.1km to NNW	26	Fully protected EPS ⁵ , NERC 2006	✓
<i>Lissotriton vulgaris</i>	Smooth newt	2017	1.3km to N	5	Partially protected under WCA 1981 ⁶	
<i>Lissotriton helveticus</i>	Palmate newt	2017	1.4KM to NNW	2	Partially protected under WCA 1981 ⁷	

³ Site of Special Scientific Interest.

⁴ Local Wildlife Site

⁵ European Protected Species (EPS), protected by the Conservation of Habitats and Species Regulations 2010 (as amended) and the wildlife and countryside act 1981

⁶ Protected from sale and advertising for sale under the Wildlife and Countryside Act 1981 (as amended)

⁷ Protected from sale and advertising for sale under the Wildlife and Countryside Act 1981 (as amended)

Species latin name	Species	Most recent record	Closest record to site	Total no. of records	National conservation status	Wrexham LBAP
Mammals						
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	2015	700m to NNE	10	Fully protected EPS	
<i>Pipistrellus</i> sp.	Pipistrelle bat	2015	700m to NNE	4	Fully protected EPS	
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	2016	700m to NNE	3	Fully protected EPS, NERC 2006	
<i>Meles meles</i>	Badger	2014	> 900m distant	8	PBA ⁸	✓
<i>Nyctalus noctula</i>	Noctule bat	2016	1km to ESE	3	Fully protected EPS, NERC 2006	
<i>Chiroptera</i> sp.	Unidentified bat sp.	2002	1km to SSW	8	Fully protected EPS ⁹	
<i>Myotis</i> sp.	Myotis bat	2016	1.8km to S	1	Fully protected EPS, NERC 2006	
<i>Plecotus auritus</i>	Brown long-eared bat	1999	1.9km to WSW	1	Fully protected EPS, NERC 2006	
Reptiles						
<i>Zootoca vivipara</i>	Common lizard	2010	1.2km to S	2	Partially protected under WCA 1981 ¹⁰ , NERC 2006	
<i>Natrix natrix</i>	Grass snake	1990	1.8km to SSW	3	Partially protected under WCA 1981 ¹¹ , NERC 2006	
<i>Anguis fragilis</i>	Slow worm	1990	1.8km to SSW	2	Partially protected under WCA 1981 ¹² , NERC 2006	

⁸ Protection of Badgers Act 1992

⁹ European Protected Species (EPS), protected by the Conservation of Habitats and Species Regulations 2010 (as amended)

¹⁰ Protected from killing and injury under the Wildlife and Countryside Act 1981 (as amended)

¹¹ Protected from killing and injury under the Wildlife and Countryside Act 1981 (as amended)

¹² Protected from killing and injury under the Wildlife and Countryside Act 1981 (as amended)

4.2 Habitat Survey Results

The site comprised a narrow range of several different habitat types, as described under the individual sub-headings below. No protected, notable or invasive plant species were recorded.

4.2.1 Scattered Broad-leaved Tree

Scattered broad-leaved trees were present across the site. Saplings were planted along the south-western aspect of the site boundary, mature broad-leaf trees were situated along the north-western boundary and broad-leaf trees were scattered amongst the grounds between the site buildings. Species consisted of crack willow *Salix fragilis*, silver birch *Betula pendula*, Prunus sp, field maple *Acer campestre*, rowan *Sorbus sp*, ash *Fraxinus excelsior*, Norway maple *Acer platanoides* and paper bark birch *Betula papyrifera*.

Figure 3: Scattered trees across the site



4.2.2 Amenity Grassland

Amenity grassland was present across much of the site and the grassland was apparently regularly mown. Perennial rye-grass *Lolium perenne* was dominant; with frequent species noted as Yorkshire-fog *Holcus lanatus*, occasional meadow foxtail *Alopecurus pratensis* and false oat-grass *Arrhenatherum elatius* occurred rarely. Forbes included creeping buttercup *Ranunculus repens*, white clover *Trifolium repens*, daisy *Bellis perennis*, dandelion *Taraxacum officinale*, cinquefoil *Potentilla reptans*, ribwort plantain *Plantago lanceolata*, Oxford ragwort *Senecio squalidus*, spear thistle *Cirsium vulgare*, shepherd's purse *Capsella bursa-pastoris*, wood forget me not *Myosotis sylvatica*, broad leaf dock *Rumex obtusifolius*, hogweed *Heracleum sp*.

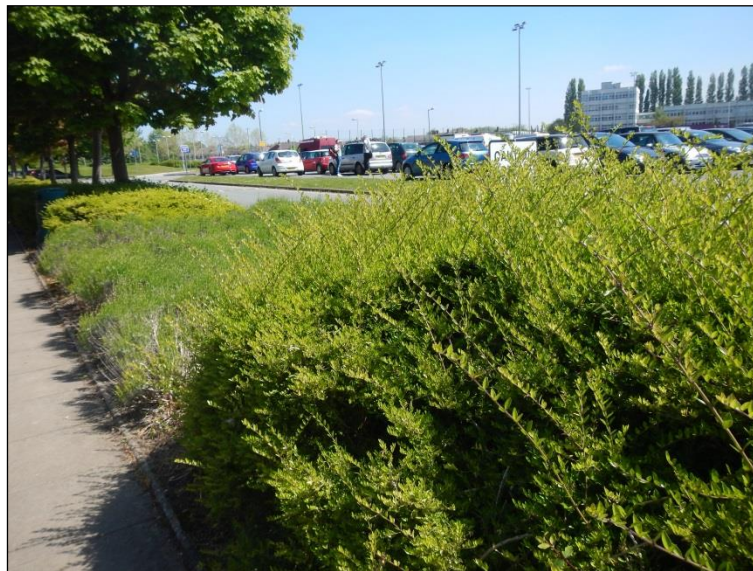
Figure 4: Amenity grassland covered much of the site.



4.2.3 Introduced Shrub

All sections of introduced scrub were classified as ornamental and include the following species: lavender *Lavandula sp*, quince *catoneaster sp*, laurel *Laurus nobilis* and clematis *Clematis spp*.

Figure 5: Introduced shrub spread across site



4.2.4 Species-poor Intact Hedgerow

There was one species poor, intact hedgerow that ran parallel to the north-western site boundary and adjacent to Mold road. The hedgerow dimensions were approximately 1m x 1m and 30m in length, consisting of only Beech *Fagus sp*. See Figure 6.

HEGS Category: 4

Hedgerow Regulations: Not Important

Figure 6: Species poor beech hedgerow ran parallel to the north western site boundary



4.2.5 Wall / Fence

A stone wall adjoined the species poor hedgerow along the north-western aspect of the site boundary. A second wall ran parallel to Mold road where there was a gap to allow access to the Goldstein Library and pre-existing student accommodation (B02 and B03). A combination of post and wire and wooden fences were recorded along grassland boundaries throughout the survey area.

Figure 7: Stone wall adjoined the species poor hedgerow.



4.2.6 Buildings

Five buildings were recorded within the site and for the purposes of reporting were labelled B01 – B05 and a full assessment of these buildings with regards to their potential to support roosting bats is provided in Section 4.3.

4.2.7 Bare Ground

Footpaths ran adjacent to all faces of Building B02 (Goldstein library) and adjoined onto tarmacked surfaces in the western and north-western area. A second tarmacked area was present to the south-east of the site with footpaths around the student accommodation (Fig; 8).

Figure 8: Car park within site



4.2.8 Other Habitat

A hockey pitch consisting of artificial turf was recorded in the far south-east of the site.

Figure 9: Hockey pitch



4.3 Preliminary Protected / Notable Species Assessment

4.3.1 White-clawed Crayfish, Water Vole and Otter

The site contained no suitable habitat for the above species, the surrounding area also lacked suitable habitat to support populations and therefore they will not be adversely impacted by the proposed works and will not be discussed further in this report.

4.3.2 Great Crested Newt (GCN)

No bodies of water with the potential to support breeding GCN were recorded within 500m of the site and the records of GCN returned by desk study were all over 1.1km distant. The habitats on site were considered to be unsuitable for GCN due the site primarily comprising intensively managed amenity grassland, buildings and hardstanding, thus providing very limited sheltering or foraging opportunities. Additionally the A483 and A541 located on either side of the site were considered to pose significant barriers to dispersal into the site.

4.3.3 Reptiles

The majority of the site comprised amenity grassland, hardstanding and buildings, which were considered to provide unsuitable habitat for all species of reptile. Although records of reptiles were returned by desk study, the site is bound by residential, commercial and industrial development (i.e. unsuitable habitat) to all directions and consequently, the likelihood of any reptiles in the local landscape dispersing through these habitats towards the site is considered to be Negligible.

4.3.4 Birds

The areas of introduced shrubs, trees, hedgerows and buildings (most notably flat roof of B02, considered suitable for nesting gulls, including herring gull *Larus argentatus* – listed on the Red List of the Birds of Conservation Concern) across the site were considered to provide potential nesting habitat for a narrow range of birds but the grassland and hardstanding across the site was considered to be entirely unsuitable for all species of nesting birds. No evidence of current nesting activity was recorded across the site, however. No habitat with the potential to support nesting Schedule 1 species was recorded within the site.

A disused likely pigeon/dove nest was noted on Building B01 behind a ventilation pipe.

The grassland across the site was, however, noted to provide suitable foraging habitat for thrushes in particular (i.e. blackbird *Turdus merula* and song thrush *Turdus philomelos* – the latter of which is listed on the Red List of Birds of Conservation Concern).

4.3.5 Badgers

No badger setts were recorded on site, and the flat nature of the site, being dominated by hardstanding and short mown amenity grassland was considered to be unsuitable for sett excavation.

The site was also not considered to provide suitable foraging opportunities, however it could not be ruled out that badger, and other mammals, may occasionally use the site for commuting through (i.e. to the adjacent garden habitats). 8 records of badgers in the area have been recorded between 2002 and 2017, the nearest in over 1km from the site.

4.3.6 Bats

Five buildings (labelled B01 – B05) were recorded in the site and all were assessed for their potential to support roosting bats.

Building 1 (B01)

A large, three-storey multi-pitched red-brick building in use as student accommodation in very good condition externally; a single-storey connection of identical construction connected the two 'wings' of the building. Several areas of treated timber cladding were recorded on each elevation. The roof was covered with concrete tiles which were all in very good condition; a few

ridge tiles were noted to be slightly lifted, along with several instances of missing mortar along the ridge. Wooden soffit boxes were recorded underneath the eaves of the building and wooden fascia boarding also ran along the entire roofline. These features were largely in very good condition but a few small gaps were recorded between the soffit and brickwork and the mesh around the ventilation holes associated with the soffit was noted to be torn/missing in some locations. A small gap in the brickwork of the building was noted directly below the soffit box on the eastern elevation of the building. The lead flashing around the valley joints/tile-brickwork interface was also noted to be in very good condition. A number of ventilation holes were recorded along the ridge of the building's pitch and it could not be confirmed if the mesh covering these holes was intact. Figures 10 and 11 below provide overviews of this building.

Figure 10: Building B01



Figure 11: Building B01 (roof)



A loft void was present across the building and it could be viewed through several different hatches; complete access was not possible due to the absence of floorboards. The loft space was largely in extremely good condition and very well insulated; thus creating a very warm environment. The timbers which supported the roof were all machine-cut and in good condition and many large ventilation/heating pipes and supporting timbers were present throughout the loft space, creating a cluttered flying space for any roosting bats. Bitumastic felt membrane was recorded across the entire roof. Light gaps were noted throughout the loft; mainly from the eaves of the roof from the soffit ventilation gaps but one gap was noted from one of the

ventilation gaps on the ridge of the building (as discussed previously). Figures 12 and 13 below provide photographs of the loft space. Breezeblock firewalls separated the loft voids of each area of the building.

Figure 12: Building B01 (loft space)



Figure 13: Building B01 (loft space)



No evidence of roosting bats was recorded anywhere around this building.

Building 2 (B02)

A large, four-storey red-brick building with a flat felt roof, previously used as a student library but currently disused. A smaller two-storey and single-storey extension of identical construct was noted on the northern aspect of the building. Overall, the building was in very good condition and no gaps in the brickwork or mortar were noted anywhere. Similarly, the lead flashing around the building was in very good condition. Plastic cladding was noted along the roofline of the single-storey extension and it was largely in very good condition; the only place where it had lifted was noted to be occupied by a bee nest at the time of survey. No loft void was present and inspection from a roof hatch noted no other features which could be used by roosting bats. Figures 14 and 15 below provide photos of this building and roof.

Figure 14: Building B02



Figure 15: Building B02 (roof)



No evidence of roosting bats or features which could be used by roosting bats was recorded anywhere around the building.

Building 3 (B03)

A single-storey, modern pre-fabricated building with a flat felt roof. Plastic fascia board encompassed the roofline of the building and this was noted to be well-sealed to the structure and the building in general was in very good condition. No loft void was present and no evidence of roosting bats or features with the potential to support roosting bats was recorded anywhere around the building.

Figure 16: Building B03



Buildings 4 and 5 were small, single-storey outbuildings in use as a security gatehouse and substation. Building 4 was completely covered in dense ivy and offered no potential for roosting bats and Building 5 did not contain any features which could be used by roosting bats. Figure 17 below provides a photograph of Building 4.

Figure 17: Building B04



Bat Foraging Habitat

The site was dominated by hardstanding and managed amenity grassland, features were considered to be of negligible value to foraging/commuting bats. The areas of introduced shrubs and scattered trees/hedgerows across the site were, however, considered to provide suitable foraging/commuting habitat although their value was considered to be low given the small amount. The site is also isolated within a developed landscape so connections to surrounding habitats are also few. Due to the general lack of suitable foraging habitat within the site and separation from suitable adjoining habitat, the site was assessed as providing **Low** value for foraging bats.

5 Evaluation

5.1 Habitats and Botanical Value

5.1.1 Designated Conservation Sites (Statutory and Non-Statutory)

All of the statutory and non-statutory sites identified by desk study are considered to be sufficiently distant from the site to avoid any adverse impacts as a result of the proposed works and there is no recommendation for further mitigation or consideration to this regard.

5.1.2 Scattered Trees

Although not afforded any specific protection, trees offer valuable habitat for a range of other wildlife and all trees within the site should, therefore, be retained wherever possible. Where this is not possible, all trees to be removed should be replaced on a like-for-like basis elsewhere within the developed site.

5.1.3 Hedgerows

All hedgerows consisting predominantly (i.e. 80% or more) of at least one woody UK native species are NERC (2006) Habitats of Principal Importance (including within 2m of the hedgerow). As such, the hedgerow within the site would be considered to be a Habitat of Principal Importance, and would be a material consideration of the planning process.

HEGS and Hedgerow Regulations

The only hedgerow within the site was assessed as Category 4 under HEGS and was, therefore, not considered to be priority for nature conservation. In addition, the hedgerow was not sufficiently species-rich to qualify as 'Important' under the Hedgerow Regulations and there would be no legal constraint regarding its removal.

As the hedgerow is a Habitat of Principal Importance, however, it should be retained in the developed site (as currently proposed) or replaced on a like-for-like basis if this is not possible.

5.2 Protected and Notable Species

5.2.1 Herptiles (Amphibians and Reptiles)

Due to the dominance of unsuitable terrestrial habitats for GCN and reptiles within the site and absence of suitable waterbodies and potential dispersal routes into the site, the likelihood of these species within the site is considered to be exceptionally low. It is therefore considered that there would be no adverse impacts on these species groups as a result of the proposed development and there is no recommendation for further surveys or mitigation to this regard.

5.2.2 Bats

Roosting

Building 1

Building 1 contained the following features which were considered to provide potential roosting opportunities for roosting bats:

- Enclosed loft void (heated), including potential access points through gaps in soffit box and ventilation mesh;
- Gaps in ridge tiles/mortar – crevices directly underneath and/or direct access into loft space
- Gap in brickwork under eaves on east elevation – suitable for either crevice dwellers or direct access into loft space

It should be noted, however, that the number of features that roosting bats could utilise across the building was few and the loft void was largely extremely well-sealed, thus decreasing the likelihood of bat use. The building itself was also in very good condition and the surrounding

habitat was considered to be of **Low** value to bats, further decreasing the likelihood of bat use. Based on the small number of features which could be used by roosting bats and poor quality of the surrounding habitat, the building was assessed as providing **Low** potential to support roosting bats. At present, therefore, there is potential for bats to be roosting in Building 1 and the proposed demolition (or any other works) of this building could destroy a bat roost and/or kill/injure bats, which would be a breach of current legislation. Further surveys will, therefore, be required to establish the presence/likely absence of roosting bats within to further inform the licensing or mitigation requirements for the proposed demolition; see Section 6.

The remaining buildings within the site did not contain any features which may be utilised by roosting bats and they were, therefore, assessed as providing **Negligible** roosting potential and bats are considered likely to be absent from these buildings. No further surveys, licensing or mitigation would be required for the proposed demolition of these buildings.

It should be noted that none of the buildings contained any features which could be utilised by hibernating bats.

Foraging Habitat

The proposals would necessitate the loss of what is currently amenity grassland/introduced shrubs across the site. These habitats represent low quality habitat for bats and their loss would not, therefore, incur any residual adverse impacts on the quality of the site to foraging bats or otherwise affect this species group in this way. As there would be increased lighting associated with the proposed re-development, however, a sympathetic lighting design should be implemented to ensure bats are not deterred from foraging around the site's vegetated boundaries.

5.2.3 Nesting Birds

The following habitats within the site have the potential to be used by nesting birds:

- Hedgerows
- Buildings
- Scattered trees
- Introduced shrub
- Scrub

There is, therefore, a risk that active bird nests may be encountered during any clearance of these habitats. Nesting birds, their nests, eggs and dependent young are fully protected under the Wildlife and Countryside Act 1981, which prohibits their damage or destruction. Recommendations have, therefore, been made in Section 6 of this report to mitigate for this potential impact through the timing of site clearance works.

It should be noted that there would be no constraints regarding the clearance of grassland or hardstanding within the site to this regard.

5.2.4 Badgers

The site was assessed as unsuitable for badger setts but the likelihood of badgers occasionally crossing through the site could not be discounted. There would not, therefore, be any adverse impacts on badger setts as a result of the proposals and no loss of foraging habitat but mitigation has been proposed to protect any badgers or other mammals which may cross through the site during the construction phase of the works.

6 Recommendations

6.1 Further Investigations Required

6.1.1 Bats

In line with the most recent best-practice guidelines for a building with **Low** potential to support roosting bats, **one** dusk emergence or dawn re-entry survey must be conducted on Building B01 in optimal season between May and August/September. A sufficient number of surveyors must be used to ensure all sightlines around the building are covered.

6.2 Mitigation

6.2.1 Nesting Birds

Any demolition or site clearance activities which would affect hedgerows, buildings, trees, shrub or scrub within the site should be timetabled outside of the nesting season (which runs March – September) to avoid any active bird nests which may be present. Where this is not possible, the works should be preceded by a check by an ecologist to determine if any active nests are present. If an active nest is recorded, all works in the area will need to stop and a suitable 'no-work' buffer zone implemented around the nest until all chicks have fledged. RPS can provide further advice in this instance.

6.2.2 Badgers

It was considered likely that mammals (including badger) may cross the site during the construction phase of the works. Therefore, during construction phase the presence of open excavations, pipes and site equipment has the potential to cause harm to animals in the local area. To that end, it is recommended that the following precautions are observed:

- Mammal ladders (such as a plank) or earth ramps to be placed in any open excavations at the end of each day;
- Any open pipework to be capped overnight to prevent larger mammals such as badger from accessing the pipe work and becoming stuck;
- Night work should be avoided where possible, and any flood lighting should face away from the site boundaries; and
- Any chemicals or machinery were to be stored in a secure compound

6.2.3 Bats

Roosting Bats

The results of the bat surveys recommended in section 6.1 to determine presence / likely absence of roosting / foraging bats will inform any need for additional mitigation measures in respect to bats.

Foraging Bats

Bats are nocturnal and adapted to roost and forage in low light conditions, therefore increases in artificial lighting can cause disturbance or disrupt existing flight paths. The points listed below will help to minimise potential impacts from lighting:

- Avoid illumination of retained and newly planted hedgerows;
- Use light sources that emit minimal ultraviolet light and avoid white or blue wavelengths to avoid attracting lots of insects (attracting insects to lamps may reduce their abundance in darker foraging areas favoured by bats);
- Individual lamps should be hooded and directed where needed to avoid unnecessary light spillage;

- Use motion detectors to activate security lamps rather than continual flood lighting and if any CCTV security system was proposed, Infra-Red lighting would be preferential.

To avoid impacts to foraging bats night work should be avoided where possible, if this was not possible, further advice can be provided. This lighting strategy should be revisited upon completion of the additional nocturnal surveys recommended for bats.

Appendix A: References

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Plas Coch Masterplan Potential Redevelopment Phasing

Note: Ongoing Reactive Maintenance on Existing Buildings across all phases.

Phase 1
Release capital value with residential planning applications. Consider revenue loss of student income prior to completion of new student accommodation. (Accommodation to possibly be phased to respond to room demand).

Phase 2
Parking consolidation to allow Phase 1 student and PRS housing to progress. MUGA's ideally re-sited to Colliers Park.

Phase 3
New Showcase Building plus stage 1 IT infrastructure upgrades to existing main building areas and Highways / Access works.

Phase 4
Refurbish existing buildings to include Social Learning spaces.

Phase 5
Consolidate student and staff resources.

Phase 6
New-build Engineering Block.

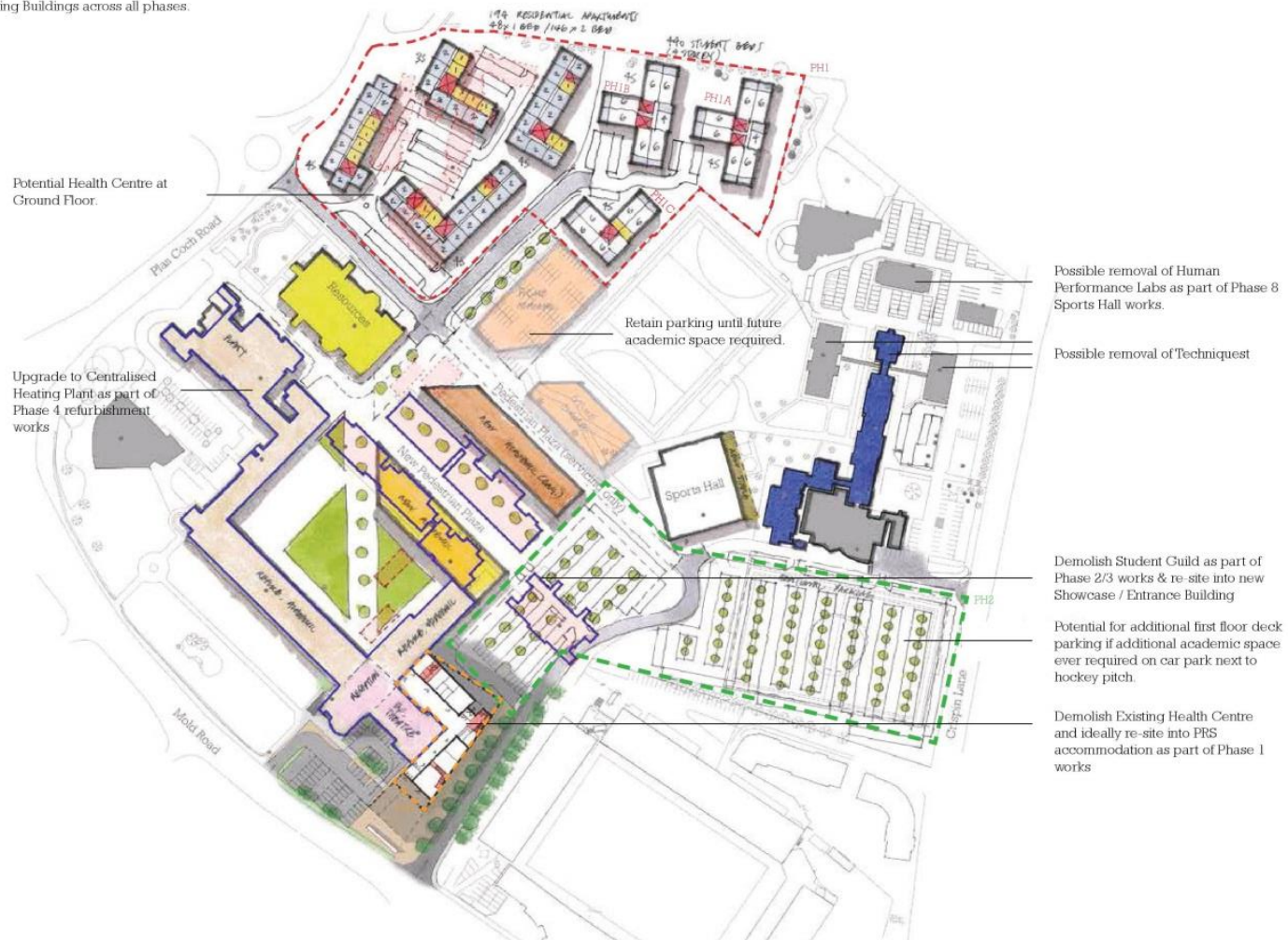
Phase 7
Crispin Lane refurbished.

Phase 8
Sports Hall spectator seating and possible Human Performance Lab.

Phase 9
Possible new build academic space.

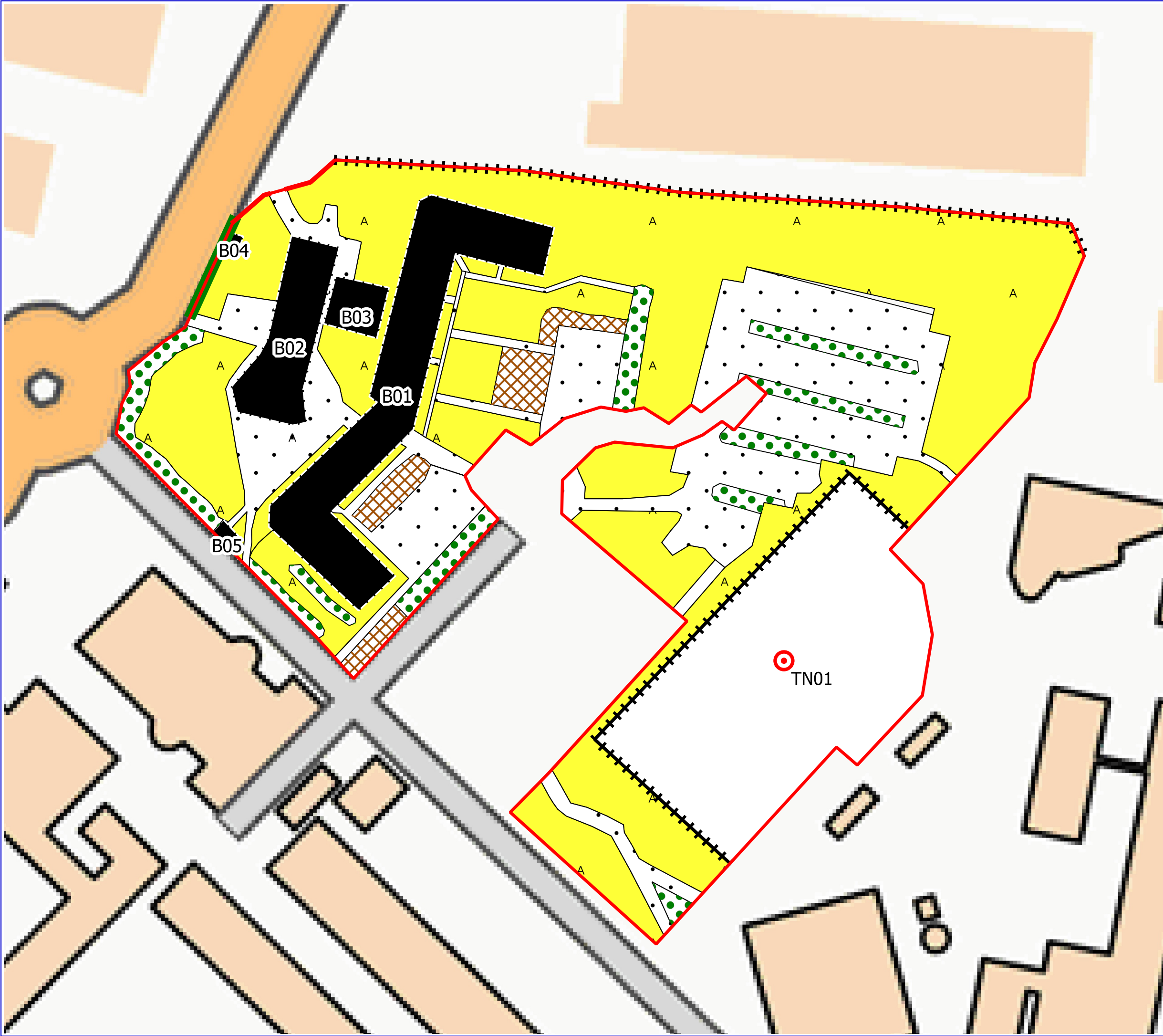
Phase 10
Landscaping works across campus.

Phase 11
Additional future new build academic space.



Site Reviews - Wrexham Glyndwr University





Legend

- Site Boundary
- Phase 1 Habitat - Target Note
- Phase 1 Habitat - Line
- J2.1.2 - Intact hedge - species-poor
- J2.4 - Fence
- J2.5 - Wall
- Phase 1 Habitat - Area
 - A3.1 - Broad-leaved scattered trees
 - J1.2 - Amenity grassland
 - J1.4 - Introduced shrub
 - J3.6 - Buildings
 - J4 - Bare ground
 - J5 - Other habitat (Artificial Turf)

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Drawing title Appendix C: Phase 1 Habitat Plan				
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