

BERSE ROAD, WREXHAM

Green Infrastructure Statement
March 2024

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This document has been produced by Land Studio on behalf of Adra. The contents of the document are intended for submission with a planning application related to the redevelopment proposals at Berse Road, Wrexham. Land Studio has prepared this report in accordance with the instructions of the above-named client for their sole and specific use. Any third parties who may use the information contained herein do so at their own risk.

CONTENTS

BERSE ROAD, WREXHAM: INTRODUCTION		3
Who We Are	4	
Green Infrastructure	5	
BERSE ROAD, WREXHAM: BASELINE ANALYSIS		6
Introduction	7	
Character Areas	8	
Local Character	9	
Designations	10	
Ecological Networks	11	
Local Wildlife Sites & Priority		
Habitats and Species	12	
Access	13	
BERSE ROAD, WREXHAM: PROPOSAL ANALYSIS		14
Building with Nature	15	
Opportunities & Constraints	18	
Masterplan	19	
Ecological Enhancements	20	
Planting Design	21	
Drainage Design	22	
Stepwise Approach	23	
BERSE ROAD, WREXHAM: BIBLIOGRAPHY		24

Hello, we are Land Studio.

Connecting People with Nature

We are a leading, nature led, landscape architecture and engineering design studio based in North Wales and Chester where we work on a wide range of projects from visitor destination sites to education facilities and restoration landscapes. We have created a place where our designers' passion for working with nature can be fully realised within our projects.

The following four values are at the core of our vision, and are aligned with the twelve Building with Nature standards, and are referred to within this statement:



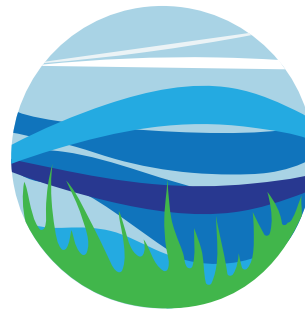
Placemaking

A project should have a narrative, a sense of place and a character defined by the site, its social or physical history and the wider landscape that it inhabits. Placemaking should be a core principle of the design that responds to the brief both for the people using the space and for the wider context, urban or rural.



Biodiversity

How is the project responding to nature and the climate emergency? Are we protecting key habitats? Are we looking to create new or enhanced habitats? What are the unique ecological qualities of the place and how can we incorporate them into our design?



Water Management

All our projects strive to have a fully integrated sustainable drainage system within the wider site design. How is the design responding to site drainage? Does the drainage strategy play an active role in the public realm? Has the design been discussed with the drainage engineer (internally or externally)?



Wellbeing

A key part of our role as designers is to create spaces for people to re-connect with nature. How does the design respond to this ambition? Has the design analysed the needs and requirements of the space for people? Has there been a brief or conversation regarding the end users of the space?

GREEN INFRASTRUCTURE: INTRODUCTION

“Green infrastructure is the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places.”

The Environment (Wales) Act 2016, provides a context for the delivery of multi-functional green infrastructure. Its protection and provision can make a significant contribution to the sustainable management of natural resources, and in particular to protecting, maintaining and enhancing biodiversity and the resilience of ecosystems in terms of the diversity within and connections between ecosystems and the extent and condition of these ecosystems, so that they are better able to resist, recover from and adapt to pressures. This means that the development of green infrastructure is an important way for local authorities to deliver their Section 6 duty.

Section 6 of the Environment Act 2016.

Integrating Green Infrastructure and Development

The quality of the built environment should be enhanced by integrating green infrastructure into development through appropriate site selection and use of creative design. With careful planning and design, informed by an appropriate level of assessment, green infrastructure can embed the benefits of biodiversity and ecosystem services into new development and places, help to overcome the potential for conflicting objectives, and contribute to health and well-being outcomes.

A green infrastructure statement should be submitted with all planning applications. This will be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal.

The green infrastructure statement will be an effective way of demonstrating positive multi-functional outcomes which are appropriate to the site in question and must be used for demonstrating how the step-wise approach has been applied.

Development proposals should be informed by the priorities identified in green infrastructure assessments and locally based planning guidance.

The Building with Nature standards represent good practice and are an effective prompt for developers to improve the quality of their schemes and demonstrate the sustainable management of natural resources. Using these standards in a way which is proportionate to the nature and scale of the development proposed will be a useful way of ensuring appropriate consideration in circumstances where there is an absence of a green infrastructure assessment and planned approach or relevant local or Supplementary Planning Guidance.

Planning Policy Wales Chapter 6 (pg 135).



BERSE ROAD, WREXHAM: **BASELINE ANALYSIS**

01

BERSE ROAD, WREXHAM: INTRODUCTION

This Green Infrastructure Statement has been produced in respect of the proposed development located at the land at Berse Road, Wrexham.

The document consists of the following parts;

- Part 01 : Baseline Analysis
- Part 02: Proposal Analysis

The site lies approximately 600m to the west of Wrexham and lies to the south of New Broughton. Vehicular access into the site is available from Berse Road while pedestrian access is available from both Berse Road and Stryt y Bydden. The site does not lie within any designation, however key designations located within the study area include listed buildings, scheduled monuments, ancient woodland and a SSSI.

The site is located to the south of New Broughton and lies between Stryt y Bydden and Berse Road, surrounded by residential development to the north and eastern boundaries and agricultural fields to the south and west. The site is not visible from any locations outside of the local viewpoints within 500m of the site, which will be afforded filtered views to the site. Beyond 500m, the site is largely screened by layers of vegetation to field boundaries throughout the study area and will therefore not be visible. This is explored further in Part 03 of this report.

The proposed development includes the construction of 47no. two storey residential buildings, with associated access roads, parking and pumping station. Also proposed to the southern and western perimeter of the site is new parkland/ public open space with an informal walking route through it, joining the existing public footpath. Materials, size and scale of buildings will be sympathetic to the local vernacular.

The site is also listed as a proposed housing allocation in the emerging Wrexham Local Development Plan (Site reference 11 for 25no. dwellings) and its change in landscape and visual characteristics has been accepted in principle by the council.

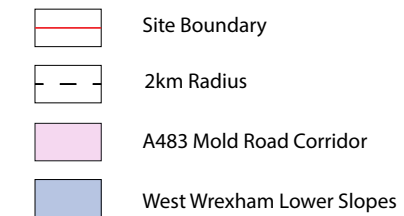
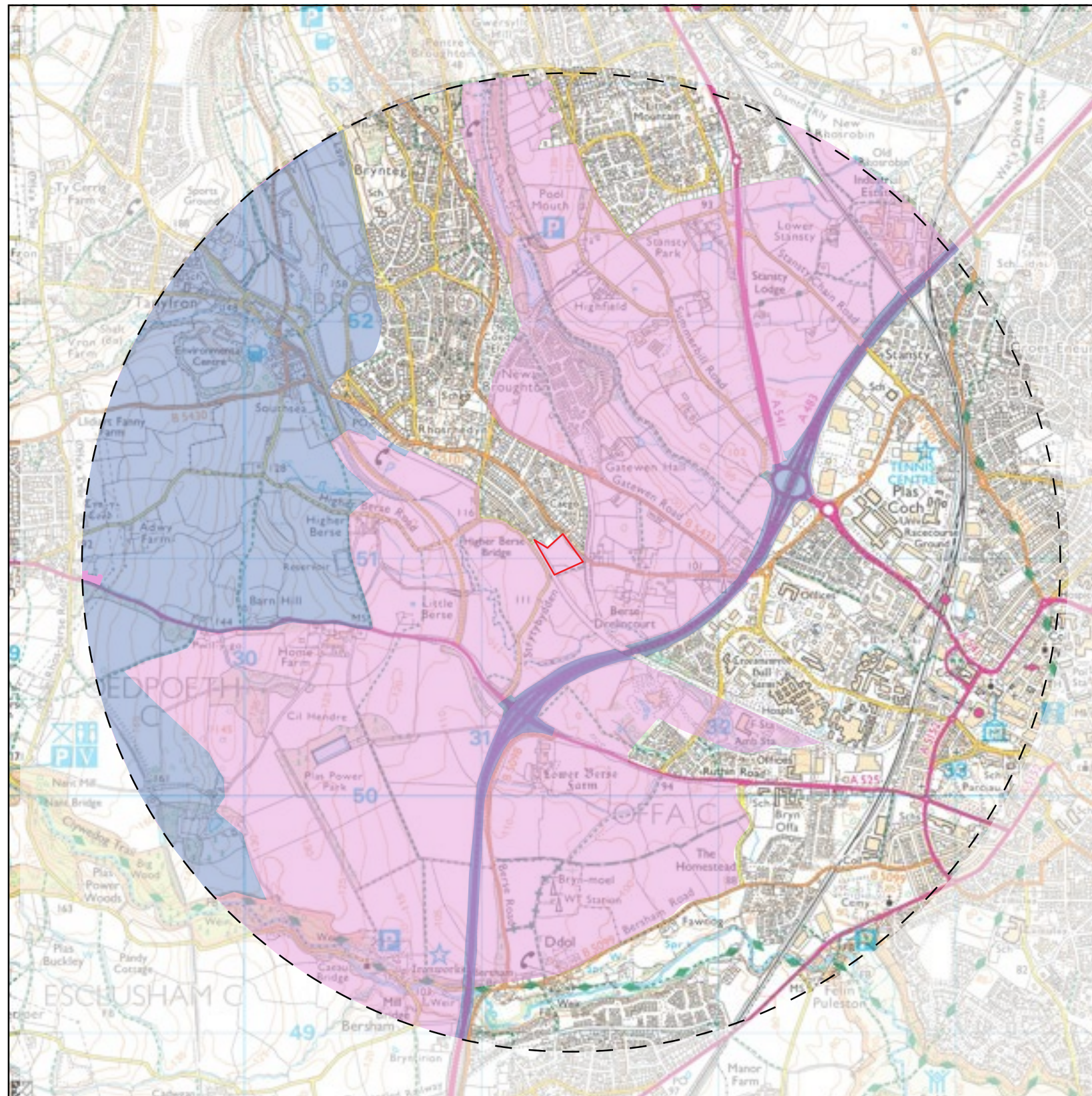
This document provides detail on the points raised above, demonstrating the Green Infrastructure context in which the site sits and identifies the potential influence on Green Infrastructure resulting from the proposed development of the site.



Site Location



BASELINE ANALYSIS: CHARACTER AREAS



The plan on the left illustrates the location of the landscape character areas within the study area, as specified by Natural Resources Wales LANDMAP.

The entire study area sits within the Deeside and Wrexham National Character Area (13). Key characteristics include:

- "A single large river, the Dee, traverses the area. The Dee opens out into a broad estuary with tidal sand and mud flats. A number of minor rivers dissect the landscape, for example, the Alyn and Eitha, and associated streams.
- A broad flat flood plain adjacent to the Dee Estuary – with wide open views to Wirral.
- Narrow, incised, wooded tributary valleys – many running down from the west.
- Mixed pasture and some arable - and farm woodland cover.
- Archaeology - variety of historic sites indicate the former strategic importance of the coastal route and the turbulent history of the Marchlands, including Offa's Dyke and Wat's Dyke. Late Medieval parklands and ecclesiastical / funerary sites.
- Urban settlements - a strongly settled character is apparent in the central and southern parts of the area, with the relatively large, almost linked settlements of Holywell-Connah's Quay-Mold-Wrexham-Ruabon.

BASELINE ANALYSIS: LOCAL CHARACTER



The following landscape character area descriptions should be read in conjunction with the figure on the previous page.

A483 Mold Road Corridor

“The area comprises the hinterland low lying land around Wrexham town and its outlying urban villages, generally rural in nature but often with significant noise from A483, adjacent roads and the railway. The area is generally low lying open farmland with a large open field pattern with well defined hedgerow boundaries. The original rural character has been significantly weakened by urban influences with some pockets of interest. Area is classified as rolling lowland farmland but heavily influenced by the A483, Mold Road. Other roads and rail corridors subdivide the wider area, with pylons, views of housing & industry, mining & quarrying a frequent occurrence. Although relatively fragmented by development the area has not suffered as much visual degradation as the adjacent aspect area, the area is vulnerable to further fragmentation of the remaining rural areas by development and suburbanisation.”

Overall evaluation: Moderate.

West Wrexham Lower Slopes

“This aspect comprises a fragmented area between settlements where there have been many changes to the landscape. Lying on the lower slopes of Ruabon mountain and sloping broadly in a west to east direction the general landform is undulating predominantly open pasture land but also includes a wider range of mixed land-use including the core area of Plas Power estate (sharply defined by boundary stone walls), Plas Power tip near Southsea, parts of Offa’s Dyke and the River Gwenfro valley. Generally the area has a similar character to the adjacent lowland to the east but is clearly physically part of the lower slopes of Ruabon Mountain. Generally the area has been fragmented by settlement and built elements such as pylons and roads but in wider areas has a well defined field system - medium to large scale fields bounded by sparsely vegetated hedgerows with over mature hedgerow trees. Cefn sandstone and red brick are traditional materials with modern materials also commonly found.”

Overall evaluation: Low.

In summary, the A483 Mold Road Corridor character area within which the site lies, highlights the landscape character as one with a varied topography, and multiple urban influences in the form of the A483, electricity pylons, rail corridors, industrial and mining occurrences. The proposed development will not impact the wider character areas mainly because it will be seen in the context of New Broughton and will not be perceived from outside of a 500m radius. The design of the development will be sympathetic to the local vernacular and the landscape will reflect and enhance the local character of the site.



BASELINE ANALYSIS: DESIGNATIONS



- Site boundary
- 2km Radius
- Listed Buildings
- Scheduled Ancient Monuments
- Ancient Woodland
- SSSI

The plan on the left illustrates the location of the statutory landscape and heritage designations present within the study area.

As illustrated, there are four statutory designations within the study area. These include areas of ancient woodland, SSSIs, scheduled monuments as well as listed buildings scattered throughout the study area.

Multiple areas of ancient woodland lie throughout the study area, with the nearest located approximately 600m to the south of the site, and the remaining areas to the south west and northern edges of the study area. The Gatewen Marsh SSSI lies to the north west of the study area approximately 600m from the site.

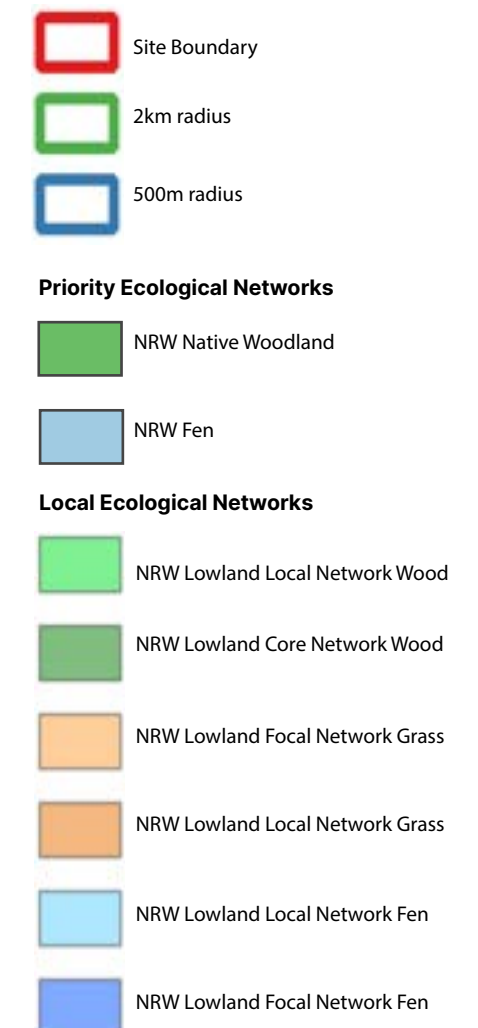
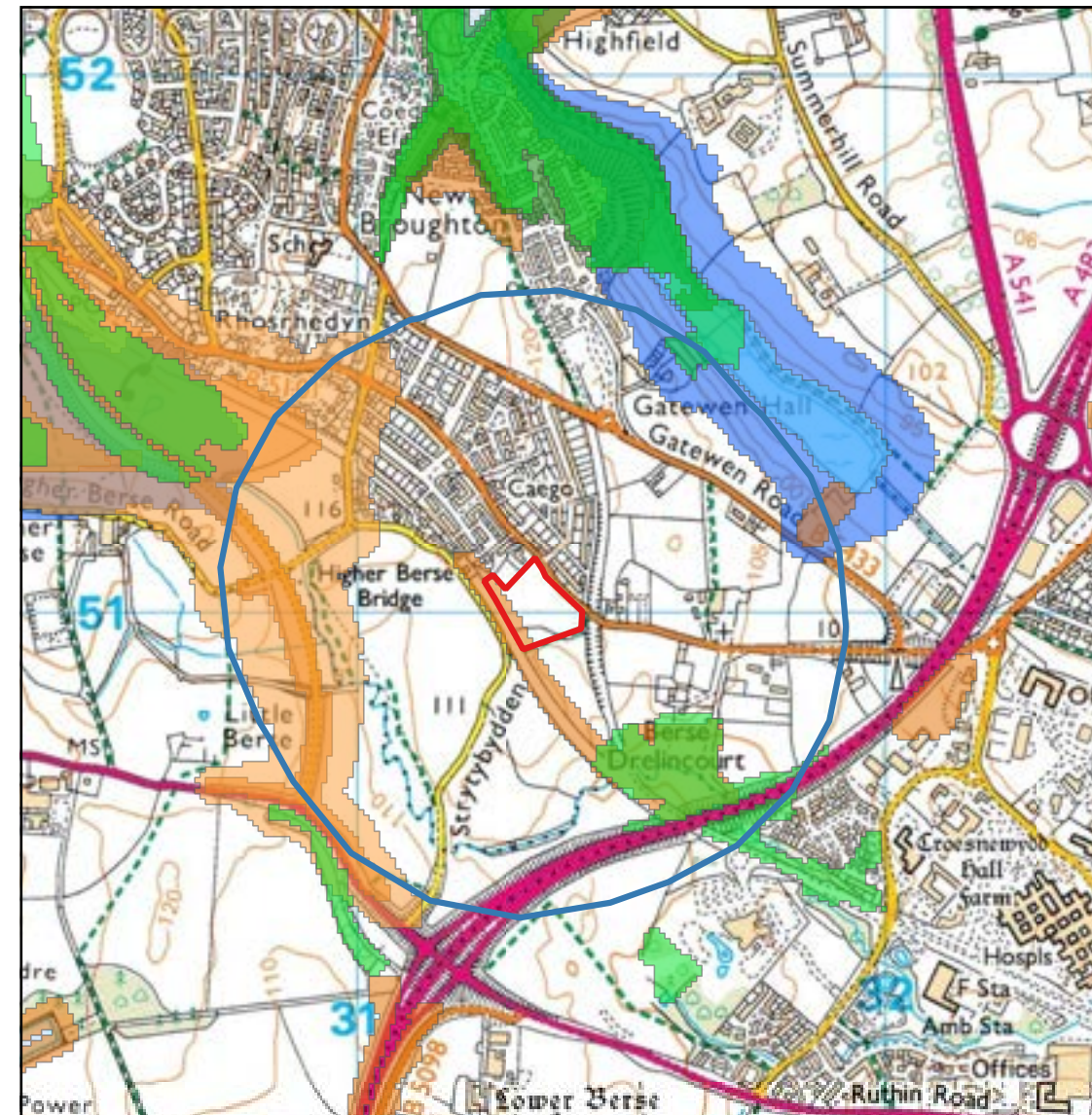
Listed buildings are scattered throughout the study and consist of a variety of categories from farm buildings and churches to residential buildings. Scheduled monuments mainly lie to the east of the study area and comprise earthworks to Wat's Dyke at Crispin Lane.

BASELINE ANALYSIS: ECOLOGICAL NETWORKS

Priority Ecological Networks



Local Ecological Networks



The plan on the left illustrates the location of areas identified by Natural Resources Wales (NRW) as Priority Ecological Networks present within 2km of the proposed site. This includes sections of woodland and fen priority network to the north and east of the proposed site.

The plan on the right illustrates the areas identified by NRW as Local Ecological Networks within 500m of the site. This also identifies the fen and woodland habitat to the northwest as Local Ecological Networks, with an additional area of Woodland network to the south. Local Ecological Network grassland is also identified along the western boundary of the site and in the wider landscape to the west.

One watercourse falls within 500m of the proposed site, Afon Gwenfro lies to the west of the proposed site with a portion of it falling within the woodland and grassland Local Ecological Networks displayed above.

BASELINE ANALYSIS: LOCAL WILDLIFE SITES & HABITAT AND SPECIES OF PRINCIPAL IMPORTANCE



The plan on the left shows two Local Wildlife Sites lie within 500m of the site, New Broughton Meadow to the northwest and Berse Drelincourt to the southeast. New Broughton Meadow is designated due to the presence of a variety of semi-natural habitats. At the centre is a pond with some marginal vegetation. Around this is a wet alder/willow carr which extends into a marshy area with much hairy sedge and lesser water parsnip. The surrounding land is mostly sandy grassland, with a ranker sward to the north-east. The grassland is diverse with such species as goatsbeard, oxeye daisy, common toadflax and bird's-foot trefoil.

Berse Drelincourt contains a mosaic of semi-natural habitats. The best area is a grassland in the western corner; this has common spotted orchid, glaucous sedge and bird's-foot trefoil. There is a thin strip of woodland along a stream which runs through the site. To the south of this is a rank but diverse grassland with some scrub invasion. This borders the old mineral railway which has a good number of species; kidney vetch, oxeye daisy and squirrel's-tail fescue included.

The Phase 1 habitat survey carried out by Etive Ecology identified habitat of principal importance, native hedgerow, along the eastern boundary of the site (Section 3.2 of the Preliminary Ecological Appraisal).

Habitat of principal importance within the local landscape includes fen within Gatewen Marsh SSSI, semi-natural grasslands/marsh and native hedgerows identified with the Local Wildlife Sites and areas of ancient semi-natural woodland.

Additional habitat of principal importance identified within DataMap Wales includes traditional orchard to the southwest and northwest and areas of open mosaic habitat on previously developed land to the north just over 500m from the proposed site.

The Etive Ecology report (Section 3.5) identified the following key ecological features associated with the site.

- Bats; there is Low BRP (Bat Roost Potential) associated with four trees within or immediately adjacent to the application site. There are also good foraging and commuting opportunities present locally. Local Value
- Nesting birds; there is low-moderate potential for nesting birds to use the site during the breeding season. Local Value
- Badger; known to be present locally but no setts were found <30m of the site. Possible foraging use of the site. Local Value

Notable Species; site offers low suitability habitat for invertebrates, but the site boundaries offer good potential to support hedgehog. Local Value.

BASELINE ANALYSIS: ACCESS



- | | |
|--|-------------------------|
| | Site Boundary |
| | 2km Radius |
| | A Roads |
| | B Roads |
| | Roads more than 4m wide |
| | Roads less than 4m wide |
| | Public footpaths |
| | Bridleways |
| | Clyweddog Trail |

The plan on the left illustrates key access routes within the study area. The site is accessed directly from Berse Road.

The main vehicular routes within the study area include the A483 and A525, which runs in a north east to south east and east west orientation respectively. The B5433/ Wrexham Road and B501/ Berse Road lie to the north of the site and run in an east west orientation.

The local road network is generally spread throughout the study area connecting settlements to one another.

The network of public footpaths/ bridleways is spread throughout the study area and create connections between the local road network. A short length of the Clywedog Trail runs through the southern part of the study area in an east west orientation.

There are three public footpaths and some local roads that lie within 500m of the site. While the site may be visible from some locations along these roads, it will be seen in the wider context of the landscape and will therefore have limited impacts. This will be discussed in Part 03 of this document.

BERSE ROAD, WREXHAM: **PROPOSAL ANALYSIS**

02

BUILDING WITH NATURE: THE STANDARDS FRAMEWORK



CORE Standards

Standard 01 - Optimises Multifunctionality and Connectivity

Standard 02 - Positively Responds to the Climate Emergency

Standard 03 - Maximises Environmental Net Gains

Standard 04 - Champions a Context Driven Approach

Standard 05 - Creates Distinctive Places

Standard 06 - Secures Effective Place-keeping



WELLBEING Standards

Standard 07 - Brings Nature Closer to People

Standard 08 - Supports Equitable and Inclusive Places



WATER Standards

Standard 09 - Delivers Climate Resilient Water Management

Standard 10 - Brings Water Closer to People



WILDLIFE Standards

Standard 11 - Delivers Wildlife Enhancement

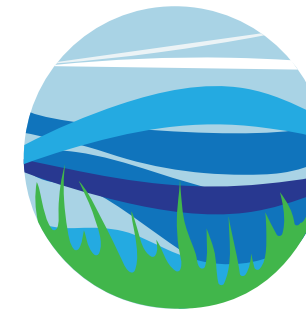
Standard 12 - Underpins Nature's Recovery

Standard 12 - Underpins Nature's Recovery



Hedgerows providing foraging and nesting habitat and corridors for wildlife also form a key role within the built environment as permeable, living boundaries between properties. They can also function as barriers to air pollution and protect soils from erosion.

BUILDING WITH NATURE:



CLIMATE RESILIENCE

CORE Standard

Standard 02 - Positively Responds to the Climate Emergency

LINKED Standards

Standard 09 - Delivers Climate Resilient Water Management

Standard 12 - Underpins Nature's Recovery

The proposal incorporates a number of nature-based solutions that will help to tackle some of the effects of climate change and support Nature's Recovery.

The impact of climate-related hazards such as heatwaves and drought, increased rainfall, surface water run off and flooding, diseases, and storms and high winds can be mitigated through the introduction of the following features:

- Tree planting and hedgerows to provide shade, wind protection, reduce air pollution, prevent soil erosion and reduce flooding
- Pollinator-friendly planting and drought-tolerant meadow mixes
- Permeable paving to all paths and parking areas
- SuDS features including rain gardens, a filter drain, swales and a basin that are dispersed across the site, to create several smaller sub-catchments, with a diversity of features to improve water quality at source and maximise pollution reduction downstream

The development footprint predominantly comprises habitat of the limited ecological value, arable land. With boundary hedgerow features and trees retained (including trees identified with low bat roost potential), bar a small section of hedgerow loss required to make way for access to the site via B5101. Provision of new native hedgerow planting along external boundary and some internal boundaries will mitigate for this loss and strengthen the existing hedgerow provision. As set out in the previous slide, the proposed wildflower meadow, drainage features, hedgerow, tree and shrub planting will strengthen existing connectivity to nearby wildlife sites situated to the north and south adding to the retained habitat along the western peripheries of the proposed development site that are identified as NRW Local Ecological Network.

BRINGS NATURE CLOSER TO PEOPLE

WELLBEING Standard

Standard 07 - Brings Nature Closer to People

LINKED Standard

Standard 10 - Brings Water Closer to People

The existing Public Right of Way that follows the south-eastern boundary of the site is retained and a new footpath connects to it to open up access from the north corner of the site (on Berse Road). This new footpath follows the meadow and is close to the new tree planting and basin, through which the wider landscape to the south can be viewed.

All footpaths within the site connect to this route, providing both residents and the wider community with access to the countryside, and along these routes there are trees, hedgerows and rain gardens planted with pollinator-friendly and seasonal interest species.

The whole site is treated as a SuDS landscape, with the inclusion of rain gardens to the front of properties and permeable paving to paths and parking areas, a filter drain to capture surface water run off from the road, plus a series of swales and a basin to slowly disperse water. The design works with the natural topography of the site, which slopes from east to west.

The drainage solution positively contribute to a high-quality environment for people, by providing amenity value, opportunities for play and outdoor recreation, and by delivering a safe surface water management system and increasing resilience to climate change.

Additionally for nature, the SuDS features will create new habitats and improve ecological connectivity.

CREATES DISTINCTIVE PLACES

CORE Standard

Standard 05 - Creates Distinctive Places

LINKED Standard

Standard 11 - Delivers Wildlife Enhancement

The proposed landscape design has sought to retain existing features that reflect and enhance landscape character, such as hedgerows, trees and meadow.

The design works with the natural topography to enhance valuable views out of the site and uses the flow of water to create a dynamic SuDS landscape.

On a landscape scale wildlife enhancement is brought about through the strengthening of exiting wildlife corridors/links along the western boundary through provision of meadow, tree and SuDS features that tie in with the wildlife sites to the north and south via the adjacent NRW ecological network areas.

On a local level, proposed hedgerow, tree and meadow habitat provides commuting and stepping stone habitat across the proposed site. The habitat provision will create additional nesting/refuge/roosting and foraging opportunities for a range of faunal species. Nesting and roosting is provided through the addition of bat and bird boxes on proposed building and suitable trees within the site. Refugia for small mammals, amphibians and invertebrates is provided via the provision of hibernacula as part of the proposals.

PROPOSAL ANALYSIS: OPPORTUNITIES AND CONSTRAINTS



Key

- Access points into site
- Public right of way
- Rural character influence
- Urban character influence
- Existing vegetation

The field within which the site sits is generally enclosed by mature planting to the east and south restricting views south and south west. Some recent clearance of the vegetation of the south has since been undertaken, not related to this project.

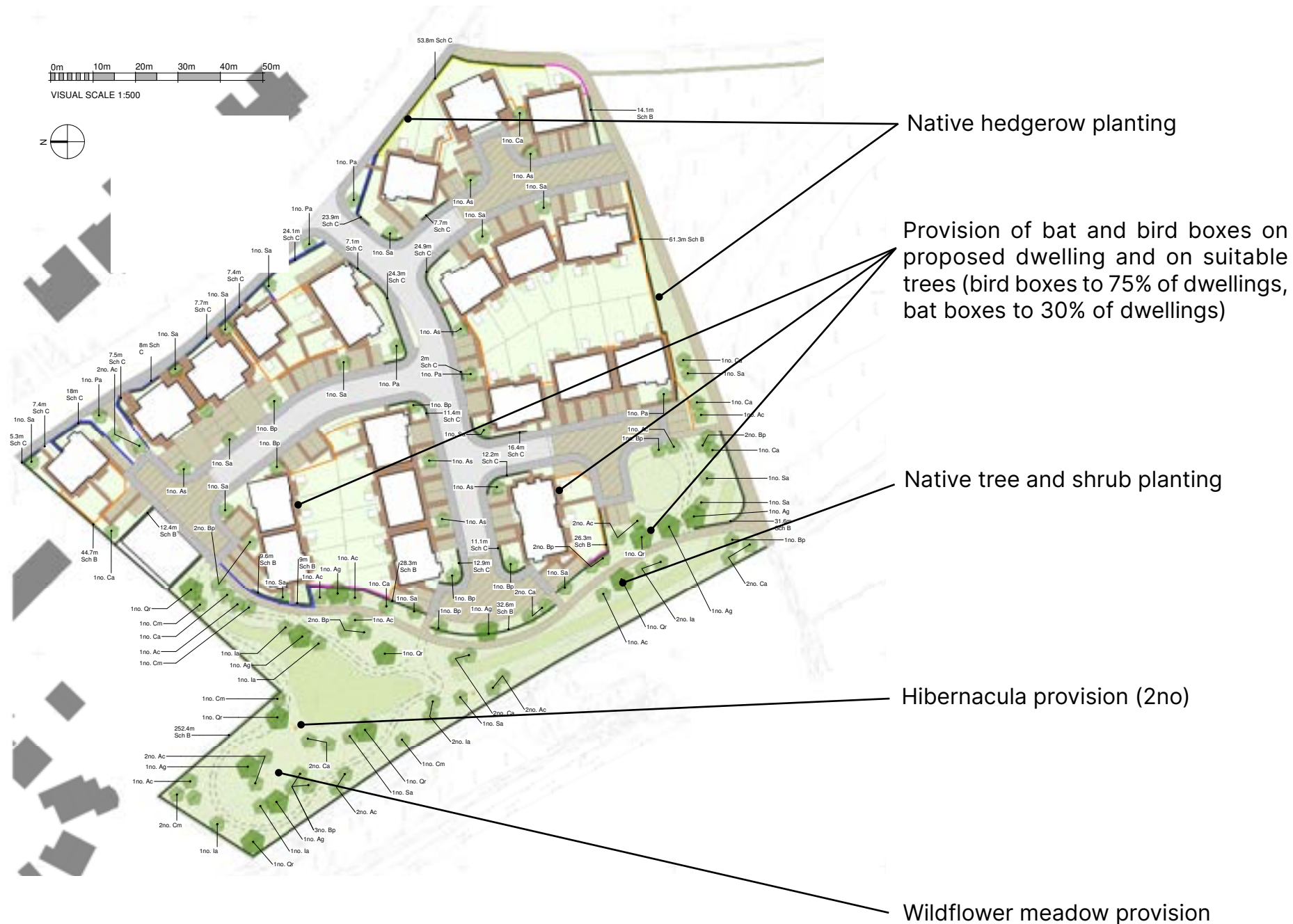
Topography of the site slopes from east to west which creates opportunities for SuDS features to be designed into the site.

Key access points into the site include the main vehicular entrance along Berse Road, with a pedestrian access point near the bridge. Another pedestrian access point lies to the southern corner of the site leading to Stryt y Bydden. A public right of way connects both of these pedestrian access points and lies to the south of the site. There is an opportunity to retain this public right of way and incorporate it into the proposed development.

The site has a mixed character, with more rural influences from the south and south west, while the north of the site is influenced by the urban conurbation of Caego and New Broughton.

- Groups of tree planting in informal area creating a woodland characteristic

PROPOSAL ANALYSIS: ECOLOGICAL ENHANCEMENTS



The following pages explore design principles that have informed the landscape masterplan. These design principles include:

- Ecology
- Planting
- Drainage SuDS Features

The illustration to the left identifies the key habitat provisions and enhancement measures incorporated into the scheme design. And the below summarises the proposed ecological enhancements.

The proposed wildflower meadow, hedgerow, tree and shrub planting will strengthen existing connectivity to Berse Drelincourt and New Broughton Meadow wildlife sites and also strengthen the existing connectivity for faunal dispersal and foraging potential in the local area, it also links in with NRW woodland and grassland Local Ecological Networks.

Provision of trees, shrub and hedgerows will strengthen and increase bird and bat foraging opportunities and the addition of bat and bird boxes will increase the roosting and nesting availability on site.

Provision of wildflower meadow, hedgerow, tree and shrub planting and hibernacula will provide foraging, commuting and refuge habitat for amphibian, small mammals and invertebrates.

Once established, the native hedgerow habitat will be considered priority habitat.

[illegible]

This then transitions into a more informal character with hedge species changing to a native mix, and trees planted in small groups surrounded by swathes of wildflower meadow.

PROPOSAL ANALYSIS: DRAINAGE DESIGN



Drainage within the proposed development will include SuDS features located to the central road and the south western area.

SuDS features will include permeable paving interlinked with small rain gardens to the central road and will follow the natural topography of the site.

To the south/ south west of the site will be dry swales and basins that will not only be useful as SuDS features but will also benefit local biodiversity.

These features will be occasionally inundated with water and will be managed as a wet meadow, corresponding with the adjacent grassland Local Ecological Network and the semi-natural marshy and grassland habitat identified in New Broughton Meadow wildlife site to the north of the site.



PROPOSAL ANALYSIS: STEP-WISE APPROACH



The development footprint predominantly comprises habitat of limited ecological value, arable land. With boundary hedgerow features (priority habitat) and trees retained (including trees identified with low bat roost potential), bar a small section of hedgerow loss required to make way for access. Provision of new native hedgerow planting along external boundary and some internal boundaries will mitigate for this loss and strengthen the existing local hedgerow provision.

On a local level, proposed habitat provides commuting and stepping stone habitat across the site through provision of wildflower meadow, hedgerow, tree and tree planting alongside naturalistic drainage features. It is considered that the sites functionality to provide foraging and commuting habitat for local fauna will be enhanced as a result of the proposals. Additional nesting and roosting habitat is provided through provision of bat and bird boxes. Refugia for small mammals, amphibians and invertebrates is provided via the provision of hibernacula as part of the proposals.

On a more landscape scale, the proposed wildflower meadow, drainage features, and planting will strengthen existing connectivity to nearby wildlife sites situated to the north and south and add to the retained habitat along the western peripheries of the proposed development site that are identified as NRW grassland Local Ecological Network.

Generally speaking, new areas of planting and sustainable drainage features provide habitats for wildlife and ecosystem services such as water and air quality and control and carbon sequestration, helping to contribute to climate mitigation and adaptation. Hedgerow and tree planting can also function as barriers to air pollution and protect soils from erosion.

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