

Dowlais

Biodiversity
and
Green Infrastructure Statement

October 2024

A report by

Colin Hicks BSc (Hons) MCIEEM, Principal Ecologist



Report details

Site name: Dowlais
Site address: Dowlais, Merthy Tydfil, CF48 2TA
Grid reference: SO 07791 08849
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Report author: Colin Hicks BSc (Hons) MCIEEM

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Declaration of compliance

Code of Professional Conduct

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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1. Introduction

1.1. Background

Western Ecology has been commissioned to complete a Biodiversity strategy to align the proposed hydrogen plant with National Policy in relation to Net benefit to Biodiversity (NBB).

1.2 DECCA Framework

A briefing on the approach of NBB in Wales is provided by CIEEM¹ in which they state:

“It puts the emphasis on proactive consideration of biodiversity and wider ecosystem benefits within a placemaking context early in the design process. The aim is that the planning system will encourage the use of high calibre ecological expertise and early discussions with planning teams to design developments on a case-by-case basis that positively impact ecosystem resilience.”

When assessing planning applications, Planning Policy Wales instructs planning authorities to take account of and promote the resilience of ecosystems, in particular the five attributes (DECCA) of ecosystem resilience as follows:

- Diversity: maintaining and enhancing diversity at every scale, including genetic, structural, habitat and between-habitat levels. This supports the complexity of ecosystem functions and interactions that deliver services and benefits².
- Extent: incorporating measures which maintain and increase the area of semi-natural habitat/features and linkages between habitats. In general, smaller ecosystems have reduced capacity to adapt, recover or resist disturbance.
- Condition: The condition of an ecosystem is affected by multiple and complex pressures acting both as short term and longer term types of disturbance. Both direct and wider impacts should be considered, for example avoiding or mitigating pressures such as climate change, pollution, invasive species, land management neglect etc.
- Connectivity: This refers to the links between and within habitats, which may take the form of physical corridors, stepping stones in the landscape, or patches of the same or related vegetation types that together create a network that enables the flow or movement of genes, species and natural resources. Developments should take opportunities to develop functional habitat and ecological networks within and between ecosystems, building on existing connectivity.
- Aspects of ecosystem resilience (adaptability, recovery and resistance): ecosystem resilience is a product of the above four attributes. Adaptability, recovery and resistance to/from a disturbance are defining features of ecosystem resilience.

1.3 Green infrastructure

Taking into account the scale and nature of the proposals, this document also provides details to meet Green Infrastructure Assessment requirements.

¹ CIEEM Briefing: Welsh Government's Approach to Net Benefits for Biodiversity and the DECCA Framework, September 2022

² For clarity, text taken from Government documents is shown in blue font.

2. Methodology to establish ecological baseline

A preliminary ecological appraisal (PEA) has been completed for this site and is reported elsewhere.

The site visit was completed by Chris Ayre BSc (hons) on 17th May 2024.

This survey provides the ecology baseline of the site against which changes associated with development can be assessed.

2.1. Baseline habitats

Baseline habitat descriptions within the application boundary are as follows and are detailed in the preliminary ecological appraisal:

Phase 1 habitat	Description	Ecological value	Area (m ²)
Bare ground	Gravelled hardcore which is bare.	Negligible	50
Ephemeral/short perennial	Other parts of the gravelled hardcore has encroaching vegetation colonising the ground, which grows thicker toward the fence boundaries.	Site	1039
Scattered scrub	On the southern fence boundary and growing around parts of the spoil heap, are patches of low, recently established scrubby vegetation.	Site	NA
Semi-improved neutral grassland	Boundary edges support low grass and forbs, with some ruderal and scrub growing in patches.	Site	778
Spoil	On the east side of the compound is a large spoil heap, consisting of hardcore, gravel and earth. It has been profiled and sloped and has been colonised by grasses, forbs and scrub.	Site	911

2.2 Potential for other protected species

During the preliminary ecological appraisal, potential for the following protected species was noted:

Birds

It is possible that common bird species nest within scrub and trees at the site boundary.

In addition:

Invasive non-native plants

Japanese Knotweed is growing just outside the southern boundary of the site, and it is likely that over time this plant will begin to colonise the development site.

3. Mapping of development and associated habitats

Proposed habitats associated with the redline are shown within Map 1, and Proposed site plan CEL-21011-SP-001 A included here as Appendix 1.

Vegetated habitats lost within the redline

- Ephemeral/short perennial = 1039m²
- Semi-improved neutral grassland = 778m²
- Scattered scrub³ = estimated at 30m²

Vegetated habitats created within the redline

- Tussocky grassland = 144m²

Vegetated habitats enhanced within the redline

- Semi-improved neutral grassland enhanced to tussocky grassland = 580m²

³ This includes small willow 'trees' at the eastern site margin. Following comments from the planning authorities ecologist (02/09/2024) these small scrubby (willow) trees at the eastern margin of the site will be retained and no loss of trees habitat will occur.

4. Step-wise assessment of biodiversity changes

PPW 12 states that Planning authorities must follow a step-wise approach to maintain and enhance biodiversity, build resilient ecological networks and deliver net benefits for biodiversity by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for⁴.

There is no statutory nature conservation site within 2km and the proposed development is not within a non-statutory nature conservation site, nor does it support habitats listed Section 7 of the Environment (Wales) Act 2016 and Local Biodiversity Action Plan priority habitats

Currently the site comprises an area of sparsely vegetated land with limited value for biodiversity. The main features of value are areas of grassland at the margins. These could provide a food resource for occasional passerines and invertebrates.

Avoidance of impacts on biodiversity is not possible and due to the size of the development footprint there will be some unavoidable loss of vegetated habitats at its margins. However, valued habitats will not be impacted.

Minimisation for grassland habitat loss within the development redline was achieved by initial stages site redesign, which allowed creation of vegetated grassland along the eastern boundary as follows:

New grassland habitat

144m² of species rich, tussocky grassland will be created on the eastern boundary of the site for the benefit of pollinators and other invertebrates through sowing with Emorsgate EM2 across the whole of this area (Map 1). In addition, this will maintain connectivity from the vegetated roadside bund going away to the north.

Ground preparation

To prepare the seedbed any natural regeneration of weeds will be removed by shallow cultivation. The ground will then be harrowed to produce a medium tilth, and rolled if necessary to produce a firm surface. Additional topsoil may be required for this area and should be sourced from within the redline, if practicable.

Sowing⁵

The seed will be surface sown in Autumn or Spring and can be applied by machine or broadcast by hand. Do not incorporate or cover the seed, but firm in with a roll, or by treading, to give good soil/seed contact. Sowing rate will be 4gm⁻².

Most of the sown meadow species are perennial and are slow to establish. Soon after sowing there will be a flush of annual weeds, arising from the soil seed bank. These weeds can look unsightly, but they will offer shelter to the sown seedlings, are great for bugs, and they will die before the year is out. Resist cutting the annual

⁴ Planning Policy Wales Edition 12, February 2024 - Para 6.4.11

⁵ Taken from Emorsgate website at: <https://wildseed.co.uk/sowing-2/>

weeds until mid to late summer. Then cut, remove and compost. Early August is a good time. This will reveal the young meadow, which can then be kept short by mowing through to the end of March of the following year.

Dig out any residual perennial weeds such as docks.

Management of grassland areas once established

Grassland will be managed through mowing in late July/August to give the species an opportunity to flower. After flowering in July or August take a 'hay cut': cut back with a scythe, petrol trimmer or tractor mower to c 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.

Any undesired plants (common ragwort, willow, bramble, European Gorse and other woody shrubs) will be spot treated with a suitable herbicide.

Mitigation for grassland habitat loss has been achieved by extending the planning redline to include an area of grassland to the north-east of the developed area. This area will be enhanced to help mitigate the effects associated with habitat loss elsewhere within the site as follows:

Eastern boundary grassland

It is also proposed that a grassland habitat along the eastern boundary of the development to the north and within this application site will be enhanced through treatment of undesirable plants and over-sowing approximately 250-60% of the area with a meadow mix to increase plant diversity. The mix will be Emorsgate EM2.

Ground preparation

This will be achieved by vigorous chain harrowing/raking in the first Autumn or Spring following development to open and damage the sward, exposing soil.

Sowing⁶

The seed will be surface sown in Autumn or Spring and can be applied by machine or broadcast by hand. Do not incorporate or cover the seed, but firm in with a roll, or by treading, to give good soil/seed contact. Sowing rate will be 3gm⁻².

Most of the sown meadow species are perennial and are slow to establish. Soon after sowing there will be a flush of annual weeds, arising from the soil seed bank. These weeds can look unsightly, but they will offer shelter to the sown seedlings, are great for bugs, and they will die before the year is out. Resist cutting the annual weeds until mid to late summer. Then cut, remove and compost. Early August is a good time. This will reveal the young meadow, which can then be kept short by mowing through to the end of March of the following year.

Dig out any residual perennial weeds such as docks.

⁶ Taken from Emorsgate website at: <https://wildseed.co.uk/sowing-2/>

Management of grassland areas once established

Grassland will be managed through mowing in late July/August to give the species an opportunity to flower. After flowering in July or August take a 'hay cut': cut back with a scythe, petrol trimmer or tractor mower to c 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.

Any undesired plants (common ragwort, willow, bramble, European Gorse and other woody shrubs) will be spot treated with a suitable herbicide.

Gain for biodiversity

Currently grassland at site comprises boundary edges with horsetail, bramble, rosebay willowherb, dandelion, oxeye daisy, cowslip, coltsfoot, common ragwort, vetch, timothy, cocks-foot, European gorse, birds foot trefoil, ribwort plantain, sweet vernal grass, corkscrew rush and pendulous rush.

Proposals are to sow Emorsgate EM2 which contains species that are characteristic of traditional meadows across a wide range of soil types. EM2 will include cowslip, oxeye daisy, ribwort plantain already onsite, along with 12 other herbs and 5 grasses. Scrub species will be removed. This will provide more species diverse grassland than is already onsite, with a greater number of herb and grass species. In addition, ongoing management will ensure scrub encroachment does not occur for the period of the operational development.

Habitat creation and management will be funded by the site owners.

4.1. Species specific enhancements

The following enhancements above the current baseline will be included within the development to enhance the site for biodiversity.

Bird boxes

A sparrow terrace will be fitted to the eastern aspect of the amenity cabin (Map 1) to provide habitat for house sparrow, and other nesting birds.

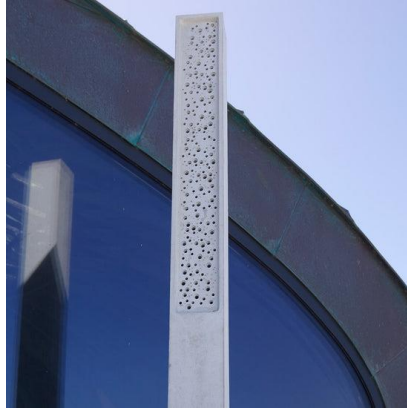
This terrace has been designed to help redress the balance of falling House Sparrow numbers. The current UK population of 6 million pairs is half what it was in 1980 and this is thought to be due to habitat destruction and lack of suitable nesting spaces. Sparrows are social birds and like to nest in company. Each terrace provides ideal nesting opportunities for three families. Made of wood-concrete mix, this terrace is durable, breathable and will last many decades.



Sparrow terrace

Invertebrates

A bee post will be installed in the south-eastern corner of the site.



Bee post

Invasive non-native plants

It is likely that over time Japanese Knotweed will colonise the development site.

A Japanese knotweed management should be developed to avoid its spread into the site and may include vertical root barriers at the site margin.

5. Assessment against BBN requirements

This aligns the project with each of the DECCA attributes as follows:

- Diversity: maintaining and enhancing diversity at every scale, including genetic, structural, habitat and between-habitat levels. This supports the complexity of ecosystem functions and interactions that deliver services and benefits;
 - There is the opportunity to create and maintain a species-rich grassland, whilst bee posts and bird boxes will create and secure habitats for these species which are largely lacking within the site at present.
- Extent: incorporating measures which maintain and increase the area of semi-natural habitat/features and linkages between habitats. In general, smaller ecosystems have reduced capacity to adapt, recover or resist disturbance:
 - It is accepted that due to site extent, overall vegetated habitats areas cannot be increased, whilst allowing development. However, linkage through the site and away to the north and south will be enhanced.
- Condition: The condition of an ecosystem is affected by multiple and complex pressures acting both as short term and longer term types of disturbance. Both direct and wider impacts should be considered, for example avoiding or mitigating pressures such as climate change, pollution, invasive species, land management neglect etc:
 - There is an opportunity to enhance the grassland along the eastern boundary.
 - Control of Japanese Knotweed will ensure future site condition does not deteriorate.
- Connectivity: This refers to the links between and within habitats, which may take the form of physical corridors, stepping stones in the landscape, or patches of the same or related vegetation types that together create a network that enables the flow or movement of genes, species and natural resources. Developments should take opportunities to develop functional habitat and ecological networks within and between ecosystems, building on existing connectivity.
 - A small-scale ecological network will be created with ecologically functional linkage to the north and south.
- Aspects of ecosystem resilience (adaptability, recovery and resistance): ecosystem resilience is a product of the above four attributes. Adaptability, recovery and resistance to/from a disturbance are defining features of ecosystem resilience.

Should this project be permissioned, it would be expected that suitable planning conditions will be required to ensure habitat creation, management and monitoring.

6. Assessment against Green Infrastructure requirements

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

The proposed development will provide connectivity at a small scale between habitats to the north and south, whilst providing areas of grassland managed for their biodiversity value.

This will reverse, and protect against, habitat fragmentation at this site.



Legend

- Target note
- Scrubby trees retained
- Linkage
- Developed areas
- New grassland area
- Existing grassland enhanced

Title: Map 1. Ecological opportunities plan

Project: Dowlais

Checked by: CDH Version: 02
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Appendix 1: Proposed site plan CEL-21011-SP-001 A

