Development of Motorway Related Service Area
Land Adjacent to M4 Junction 37, Pyle

Green Infrastructure Statement

(in accordance with Section 6.2.5 of PPW)

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1. Introduction

This statement has been prepared by Michael Haire, who is a Chartered Landscape Architect. It is a simple statement *'proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal'*

2. The Site

The site covers an area of 1.8Ha and is a single improved pasture, roughly triangular in plan, that slopes gently down towards the M4 to the north. It is contained to the south by the A4229 dual carriageway.

The northwestern boundary is contained by an old, hedged lane which now gives access only to the site and to an area of hardstanding to the north that was once a cement works. The site is otherwise contained by dense scrub or woodland that has become established on the slopes that separate the site from the major roads. There is a small group of mature Sycamore trees on the earthwork ramp onto the Ty Tanglwyst Farm bridge at the western end and a distinctive group of mature Alder trees at the eastern end of the site.

The site is isolated, access is currently only possible via a private road and because it is at a higher level than the roads that enclose it, it is not readily visible from the surrounding area. The fences that define the site date from the road construction era and the shape of the field is itself determined in part by the detail of the highway layout.

It is contained to the north by the M4 and its slip road, by the roundabout to the east and by the A4229 to the south. Beyond the M4 to the north there is an extensive area of housing (North Cornelly) and a smaller area of housing (South Cornelly) to the southwest of the site. There are extensive quarries to the east of South Cornelly, the nearest of these being 330m away from the site. The site is otherwise surrounded by farmland, which is predominantly improved pasture.

The wider landscape is limited in its biodiversity interest, being mostly improved pasture, with many woodlands being linear in form and associated with transport routes or property boundaries. The quarries to the south (SINC) Ancient Woodland sites to the north of the quarries (ASNW & RAWS) and the dune systems to the west (SSSI) being acknowledged features.

3. The proposed development

The proposal is to create motorway related services, a filling station and three food outlets arranged in four compartments within the site. These will be accessed from a central roundabout linked to the A4229 to the south via separate 'in' and 'out' roads.

Each compartment will be a self-contained unit with the structures and surfaces required to support the various functions. The new landscape of each will be influenced by the design layout and any existing site characteristics, as well as the need to consider Green Infrastructure, screening, function and management. Refer 'Landscape Concept Statement' 749.01

Drainage considerations mean that large parts of the site will be given over to accommodating runoff. This new, wetland-dominated landscape will link all four parts of the site and will extend to the central roundabout.

The approach to the site will climb through the existing cutting slope. The south-facing rocky slopes this will generate will have visual and biodiversity interest that is similar to the existing scrub-colonised road cutting slopes. This will provide new marginal habitats because of the slopes of different aspect and the variable substrates it will generate.

4. GI Baseline (Refers to Preliminary Ecological Assessment prepared by Acer Ecology and Arboricultural Report prepared by Treescene)

The site boundary is defined by and limited to the field boundary with part of the rocky cutting slope to the south.

The area surveyed by the ecologist includes areas outside the development area, notably the hedged lane to the north and most of the cutting of the A4229. Within the hedged lane, there are log piles and rock piles that are identified as being of value as potential refugia. These features will not be directly affected by the proposals.

Some of the scrub on the road cutting is identified as being of 'medium distinctiveness'. Most of this area is outside the area that will be affected by the development.

The main part of the site is improved pasture and is confirmed to be of very low biodiversity value. The trees at either end of the field will be retained and are of low potential for bats. No notable species or habitats are present. The ecology report identifies the light pollution generated by the adjacent roads and notes that these roads also tend to isolate the site from any potential habitats in the surrounding area particularly as regards mammals (such as dormice).

The Ecologist recommends biodiversity enhancement measures relating to grass swards and trees, with an emphasis on providing shelter and food sources. These recommendations have been followed.

The Ecology survey notes that the Kenfig Sands SSSI lies within 2km to the west (but that it is not affected by the proposal). It also records the presence to the south of the site of SINCs at Cornelly Quarry, Ty Tanglwst Wood and Old Ballas Wood.

5 GI Strategy (refers to proposal drawing 747.01)

Green Infrastructure (GI) is defined by the Town and Country Planning Association as follows:

Green infrastructure is a network of multi-functional green space and other green features, urban and rural, which can deliver quality of life and environmental benefits for communities.

Green infrastructure is not simply an alternative description for conventional open space. It includes parks, open spaces, playing fields, woodlands – and also street trees, allotments, private gardens, green roofs and walls, sustainable drainage systems (SuDS) and soils. It includes rivers, streams, canals and other water bodies, sometimes called 'blue infrastructure'.

Key features:
The key features of green infrastructure are that it is a network of integrated spaces and features, not just individual elements; and that it is 'multi-functional' – it provides multiple benefits simultaneously.
These can be to:

- *support people's mental and physical health*
- *encourage active travel*
- *cool urban areas during heat waves*
- *attract investment*
- *reduce water run-off during flash flooding*
- *carbon storage*
- *provide sustainable drainage*

The extent to which green infrastructure provides these benefits depends on how it is designed and maintained, and the maturity and health of the elements (such as trees) that form it.

The site is enclosed by 'off site' hedges and tree belts that provide green infrastructure and there are some valuable habitats in the surrounding landscape although these are some distance away. The site is of low biodiversity value and because of the presence of the major roads and the intensive nature of agricultural practice it can be said that it lies within a landscape that has a relatively low level of connectivity.

The proposed subdivision of the site requires various measures to contain and screen the various features, roads, car parks and buildings. Extensive swales and rain gardens in the core of the development (as a result of the SAB regulations) will generate a new range of habitats. This will increase the biodiversity of the site, allowing wildlife to colonise an area that is currently of low value.

This will be complemented by other elements of the proposed development:

5.1 Protect existing features identified in the Ecological Assessment

The tree groups at the eastern and western ends of the site will be retained.
There will inevitably be some disturbance of the rocky cutting slope to the south of the field to allow the construction of the access road. This is likely to be a steep-sided feature and therefore the area that will be disturbed will be limited.

5.2 Reinforce features identified

The hedged lane that encloses the northern boundary of the site is in poor condition, being overgrown and gappy. The proposals include some management of this northern boundary feature and reinforcement of the southern hedge with new native species.

The mixed scrub habitat along the cutting of the A4229 will be affected. New habitats will be created along the margins of the approach roads, including south facing rock cutting and loose rock piles. These will also benefit from some management to keep exotic species under control.

The proposed use of the site will exclude livestock from the small woodland areas and thereby allow regeneration of these small features.

The small area of retained grassland and new marginal grasslands created will be rich in wildflowers and managed to maximise biodiversity, in accordance with the ecologist's recommendations.

5.3 Introduce new habitats

Drainage and rain gardens
The SAB regulations require that large parts of the site are given over to wetland 'swales' and rain gardens in order that runoff from the development is retained on site. This will generate a new range of habitats and will affect the landscape character, including at the main approach and roundabout. This will increase the biodiversity of the site, allowing wildlife to colonise a currently denuded area.

The planting of the swale/rain garden areas will comprise mainly grasses and perennials and will aim to maximise biodiversity offering a protective habitat for birds and small mammals, nectar for insects and bees, and foodplants for moths and butterflies. Areas of native marginal species to include moisture tolerant ferns, grasses and herbaceous plants.

Hedges and ornamental planting
Hedges are proposed within the site to provide containment and separation in locations where there is limited space for wider areas of planting. Within the main part of the site, these will be single species Beech hedges. This is a robust, practical solution that provides a simple visual backdrop, and will provide cover for birds.

Some short lengths of 'native' hedgerow are proposed. These include the repair of the hedge along the lane to the northwest of the site and a new length of hedge at the western end of the site. This will separate the filling station site from a small remnant of field which will be developed for biodiversity. These hedges will comprise native species and will contribute to the Green Infrastructure of the site and wider area by making or repairing connections.

A modest amount of amenity shrub and groundcover planting is proposed in small areas at the margins of pavements and parking areas. These areas will require limited maintenance but will provide a range of heights and textures and will include flowering and berry-bearing species. The food source and structure provided by these features will support birdlife.

Proposed Tree Planting
Trees will provide structure within the space, screening and containing built elements. All the tree species proposed will provide visual interest, shade and will contribute to biodiversity and Green Infrastructure.

6 Conclusion

The proposed scheme with its landscape mitigation measures will increase the biodiversity value of the site, by creating new habitats and improving links between the site and the surrounding landscape.

Green Infrastructure connectivity will be enhanced as a result.