Site at Halton, near Chirk ([redacted])

Green Infrastructure Statement

Including an environmental view of waste water issues

Camlad Ecology Ltd.

For

[redacted] / Trevor Mennell Planning

July 2024

Halton Site [redacted]) Green Infrastructure Statement

In this report 'the site' refers to the area of about 0.53ha where a gypsy / traveller permanent site is planned. 'The wider site' refers to land in the 0.67ha enclosure shown on historic maps, plus the approx. 0.07ha enclosure around the existing adjacent bungalow, which first appears on a large scale 1961 map.

1.0 Site History

1.1 Ordnance Survey maps to 1974 show the wider site as a single enclosure of 0.67ha (given as 1.66 acres on old OS maps) existing in its present boundaries but surrounded by an agricultural landscape, with large areas of woodland to the north. A colliery is shown about 200m to the south east, served by a mineral line passing through the location of the existing council road depot, on the far side of the minor road that is still in place. The colliery, Black Park Colliery, closed as a coal mine in 1949, but the colliery site retained some mining related functions until 1968. The mineral line had been lifted by 1961; the bungalow just east of the site first appears on the 1961 1:2,500 map, in a 0.07ha enclosure. This map also shows the site without any separation from the adjacent minor roads by embankments or woodland.

1.2 The A5 / A483 road layout was altered as part of a major scheme in the late 1980's, through to 1991. This shifted the A5 and A483 routes away from Chirk and Ruabon, and completed the Wrexham by-pass, placing the new main roads just north and east of the site itself, with a large traffic island about 60m north east of the site. On the north, west and east sides of the site there are now wide strips of roadside landscape planting on embankments, mostly of native tree and shrub species, about 30 years old. The wider site is now enclosed by roads and roadside planting.

1.3 Google Earth images from 2006 onwards show the site as used for horses (small paddocks, small shelters, heavy poaching, training lead circles). The grassland is consistently thin and poor coloured on these images, compared with nearby sheep grazed fields or the mown airfield opposite the site. The site is level, and at its western end is about 3m above the adjacent minor roads; it no longer follows the slope of the surrounding land. Nothing on earlier mapping indicates that it was raised and levelled before the road building project.

1.4 The Google Earth image from June 2018 shows the general clearance of the site and the earliest formation of caravan bases. Trenches dug around the site, percolation test holes, and hand digging into the embankments around the site all show made ground, of clinker and shaley rock. The unnaturally level site, the made ground, and the recent history all suggest that the site was built up with waste during the main road construction phase. It was probably used as a works compound.

1.5 Given that the site is on made ground, previously used for horse grazing, and shows as heavily grazed thin grassland on earlier Google Earth images, it would not be safe to conclude that the previous habitat was anything other than modified grassland in poor condition.

2.0 Existing and recent habitat

2.1 The majority of the site is now under a compacted stone surface, with little value for biodiversity; this has been the case since before June 2018. There is a belt of thin soil remaining around part of the northern and western margins, against the off-site planted woodland. This has been disturbed and carries grassland and ruderal species typical of this habitat. The vegetated belt is between 3 and 5m wide extending

over about 75m, so amounts to about 300m^2 of ruderal vegetation, with a variety of grasses being locally common as a mosaic. These include perennial ryegrass, smooth meadow grass, false oat grass, Yorkshire fog and a bent grass, as a thin sward. Scattered among these are white clover, red clover, smooth tare, black medic, American willowherb, greater willowherb, lanceolate plantain, meadow buttercup, creeping thistle and spear thistle.

2.2 The hedgerow against the minor road running past the site on its southern side is partly on a bank and is unmanaged and gappy in places. It is mainly of hawthorn with some older stems and may include historic hedgerow remnants. It is not continuous, with a long gap each side of the entrance. The western 32m is similar to the hedgerow planting around the northern and western margins, while the next 40m appears to be an older hedge. Established continuous hedge is then absent from the remaining 55m. This pre-dates current ownership of the site.

2.3 The hedges and trees around the site should not be impacted by the development. They are the result of roadside landscape planting on steep banks, following the re-alignment of the A5 and A483 in the early 1990's. The trees and shrubs should date to about 1995. The planting is very dense, so there is little ground flora. The site is separated from this planting by a strong post, rail and wire mesh fence, with mainly hawthorn planting plus blackthorn, dogwood and dog rose, all unmanaged but in hedgerow form to about 3m high, behind this. The most successful trees in the planted woodland are ash trees, with oak and wild cherry also present.

2.4 The pre-development habitat on site was a thin, heavily grazed grass sward established on made ground, from all the available evidence, possibly over thin imported soil. In today's terms this would have been low distinctiveness habitat in poor condition, with low but actual biodiversity value. Although the loss of this sward post-dates the Environment Act Wales 2016, it pre-dates the publication of the Welsh Government's Guidance document 'Biodiversity and resilience of Ecosystems Duty' in 2020 and the 'Update to Chapter 6' published in October 2023. The loss of this habitat occurred at a time when most people would not have recognised heavily grazed grassland as having biodiversity value.

2.5 Habitat continuity around the site is provided by the planted woodland, which is unfortunately severed from the extensive older woodland to the north by the new A5 route. The south to north minor road on the western margin, which crosses the A5 on a bridge, separates the site from the older woodland to the west. This severance from the northern woodland could have been addressed by 'broad bridging' and other measures at the time of road construction; these methods were already in use elsewhere. The intended development of this site will have no impact on habitat continuity.

3.0 Potential for habitat gain

3.1 The hedge along the southern margin should be strengthened and made continuous, using strictly native hawthorn, hazel, holly and possibly blackthorn and field maple. The use of the non-native origin hawthorn cultivar 'quickthorn' would not add to biodiversity and must be avoided. To enhance the continuity of this hedgeline around the entrance, native trees that make height rapidly, such as birch and wild cherry, should be planted on either side, allowing adequate clearance. Slow release fertiliser tablets should be used with all tree and shrub planting.

3.2 Within the developed site there would be scope for habitat creation around the western end of the site, either as a block about 32m wide and up to 20m deep, about 640m^2,or as a U shaped belt taking in the

western margin and part of the northern and southern margins. This could be 3 to 8m wide and 120m in total length, about 500m^2. The land over the proposed infiltration bed would also be available for grassland, about 280m^2. These areas could be used for diverse meadow-like grassland habitat, with a good variety of herbs, or to create traditional orchard type habitat, with well-spaced planting of traditional fruit varieties on semi-dwarfing stock, set in diverse grassland. This option is most likely to result in good ongoing management and supports a wide variety of pollinators.

3.3 Grassland as meadow or orchard should include yellow rattle and should receive two or three cuts per year, with removal of the cut material. Mowing should take place in April, then in July, allowing the cut material to dry on the ground before raking up, and then again in late September or in October if needed.

3.4 Overall, there is sufficient available ground to create sustainable diverse habitat that could more than compensate for loss of existing vegetation, and the loss of the original area of poor modified grassland. Renovation and extension of the existing hedgerow on the southern side of the site would be a simple gain, with no preceding loss of hedge.

4.0 Waste water disposal issues

4.1 The site is about 1.2km from the River Dee SAC and about 425m from Halton Brook, which enters the River Dee at about 1.5km corridor length from the nearest point to the site. There is a great deal of concern about phosphate levels in the Dee, and new developments should not risk increasing phosphate or nitrate discharge to the river system. It is our view that the river system will be fully protected from any phosphate or nitrate output from the site, for the following reasons:

1. A single waste water treatment plant is proposed, connected by pipework to all static caravans and dayrooms. After treatment this will discharge to a drainage field at the eastern end of the site, further from the Dee and the Halton Brook. This is over permeable made ground, which is over permeable strata that do not interface with the channel of the River Dee.
2. The proposed treatment plant, Clenviro Topas Plus, results in exceptional reduction in phosphate levels through a flow related dosage system and would be the subject of a continuous maintenance and monitoring programme carried out by contractors selected and supported by Clenviro Ltd.
3. Percolation tests have shown very rapid discharge to ground, in the granular made ground of the site. This layer has good capacity (at least 5,000m^3 of made ground) and lies over permeable strata.
4. The underlying bedrock is shown as the Cornbrook Sandstone Formation on British Geological Society mapping. Shaley stone corresponding to this was found during our site surveys, just west of the site.
5. The Cornbrook sandstone is shown as dipping steeply from west to east, under the productive coal measures. There is a downwards west-east fault just north of the site. The River Dee corridor runs over the coal measures, while the sandstone strata pass below the coal measures or are cut off by faulting. Any groundwater movement from the site should be away from the River Dee. The formation in this area is listed as a Secondary A aquifer (Magic website), suitable for local supply only. The only references to possible public supply use relate to the Mardy Water Resource Zone, drawing on a borehole about 8km south west of the site. No private boreholes are shown within 1km of the site, on Severn Trent and Hafren Dyfrdwy mapping.
6. Any spillage or plant failures within the site would be captured by the made ground under the site. Surface drainage down the minor rod is captured by road drains and discharged to a pond at the top of the woodland, just west of the site.

7. The woodland to the south is also over Cornbrook sandstone; there is no sign of seepage or discharge to the surface on the wooded slope below the pond.
8. Any possible flow to the north would be held by the ground formation around the A5 cutting or captured by the A5 drainage provisions. Due to the underlying permeable strata and the original (pre road building) topography this is in any case highly unlikely.
9. The woodland falls towards Halton Brook on about a 1 in 12 slope, 10m fall over 120m. The grassland field below this then falls about 11m in 270m, a 1 in 25 slope, falling slightly away from the minor road. There is no sign of surface water in the lower part of the wood, the field is generally dry, and there was no sign of wet ground at the break of slope where the woodland reaches the field, observed in February 2024 during a very wet period. There is therefore no evidence of surface flow towards Halton Brook from the site.

E J Lomas

Camlad Ecology Ltd

July 28th 2024



Halton Site Habitat plan at 1:1,250

Camlad Ecology Ltd. July 2024