
21566 -Dragon Parc - Drainage Strategy Statement – Rev 0

Existing Surface Water

A former factory and industrial Brownfield site, with large areas of impermeable surfacing with wider development areas also including some green spaces all directly adjacent to the river Taff. The site generally falls North to South at approximately 1 in 150 and has the river Taff running down the Eastern boundary. An existing DC/WW combined sewer has been proven to run down the Western boundary and subsequently travel down Stanfield Close with records showing an onsite network which was unable to be traced having been abandoned or demolished. Investigation onsite has discovered 2 existing headwalls indicating historical surface water discharging into the river Taff and is likely most, if not all, suitable surface water runoff from the positively drainage site would have ended up at the same destination.

Proposed Surface Water Drainage

A surface water drainage strategy has been developed that embraces the ethos of CIRIA C753 (The SuDS Manual) and the Statutory SuDS Standards in Wales with initial high-level discussion with the local SAB officer having taken already taken part.

Overland conveyance has been provided wherever possible with pre-treatment for plot drainage being offered through the inclusion of private plot porous drives, Bio-planters, or Swales all within immediate proximity of the dwellings, with adoptable areas of shared drives and roads discharged via porous paving, raingardens or swales. Runoff will be conveyed through the development using a combination of Swales and underground pipe network to a Detention Basin where runoff will be discharged indirectly to the river Taff via a flood alleviation channel at a controlled rate.

With site levels being raised significantly the development will have an engineered plateau formation, as a result infiltration to ground has been discounted at this time with all proposed surface water conveyance, treatment, and storage elements being lined.

The final surface water discharge from the development has been restricted to a runoff rate calculated based on 70% of the site being Brownfield (which will include 30% betterment) and 30% Greenfield (QBar) but is yet to be agreed. Attenuation will be provided throughout the development close to source, in SuDS features including porous paving, bio-planters, raingardens filter drains but will finally be provided within a detention basin in the South sized accordingly with a minimum 300mm freeboard to the crest. The drainage system will be designed to contain flows for storm events up to and including the 100year+30% Climate Change and will include a factor of 10% for Urban Creep with the controlled discharge then routed through the flood elevation channel to the river Taff.

During extreme storm events or as a result of system failure/blockages flood routing will be directed towards green spaces and boundaries ensuring proposed properties are not compromised and exposed to unacceptable flood risk. Due to its isolated location, with the flood elevation channel and river running along all boundaries Quad Consult Ltd believes there is little if any potential risk from exceedance flows on the existing neighbouring residential or industrial sites.

The construction of new access points in both the North and South will be designed to intercept, treat, and attenuate runoff locally and discharge either to adjacent water features or maintain existing highway drainage connections, all of which will be offered for adoption.

Foul Drainage Design

The former factory and industrial site would have had some form of foul drainage system to service either industrial processes or provide toilet facilities for staff. Records do show an onsite system which was likely private but was not able to be traced onsite.

QuadConsult Ltd propose to collect and gravitate all foul flows via a new piped system constructed within the main spine road. This travels North to South through the development and through the new access road in the South, connecting into the adopted DC/WW sewer on Wildwood Rd.

Foul flows from the site are circa 9.26 litres per second based on the 200 units proposed and agreement will need to be reached with DCWW to accept these flows. Capacity checks will need to be undertaken to ensure that the downstream DC/WW treatment plant can cope with the additional flows.

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R-610-Drainage Strategy Statement – Rev0



Consulting Civil & Structural Engineers
