Technical Note

Project:	P23-599 Dewsbury Riverside		
Subject:	Technical Note – Drainage Strategy		
Prepared by:	Cameron Beggs – Senior Project Engineer	**Date:**	20 May 2024
Authorised by:	Dave Bathurst – Regional Director	**Status:**	S2 - Information
Document Ref:	23599-RLL-24-XX-TN-C-0001	**Revision:**	P01

1 Surface Water Drainage Strategy

1.1 Design Principles

The surface water drainage strategy has been prepared in line with Kirklees Council Guidance, the Design and Construction Guidance (DCG) and best practice.

Refer to plan 23599-RLL-23-XX-DR-C-1030 for the Drainage Strategy Plan.

1.2 Outfall - Hierarchy of SuDS

Infiltration has been ruled out as a feasible method of discharge due to evidence suggesting poor existing infiltration rates. The Soilscapes dataset indicates existing soil types with 'impeded drainage' that drain to 'stream network' and the British Geological Survey (BGS) dataset indicates underlying geology is formed of mudstone, siltstone and sandstone.

There are no watercourses within or near the site. The River Calder is located approximately 200m to the north of the site but is bisected by a railway line in a significant cutting. It is therefore not feasible to achieve a new surface water drainage connection to the river.

It is therefore proposed to discharge surface water flows to the existing Yorkshire Water surface water sewer located approximately 100m east of the site along Ravensthorpe Road.

Discussions with Yorkshire Water would be required to confirm the capacity of the proposed outfall point.

1.3 Runoff Rate

The surface water discharge from the site will be restricted to the greenfield runoff rate for the site. Based on guidance in the West Yorkshire Combined Authority (WYCA) SuDS Guidance document this is calculated based on a rate of 5l/s/ha.

The total proposed impermeable development area has been calculated as 2.96ha and therefore the discharge from the site during the 1 in 100 plus climate change allowance event will not exceed 14.8l/s.

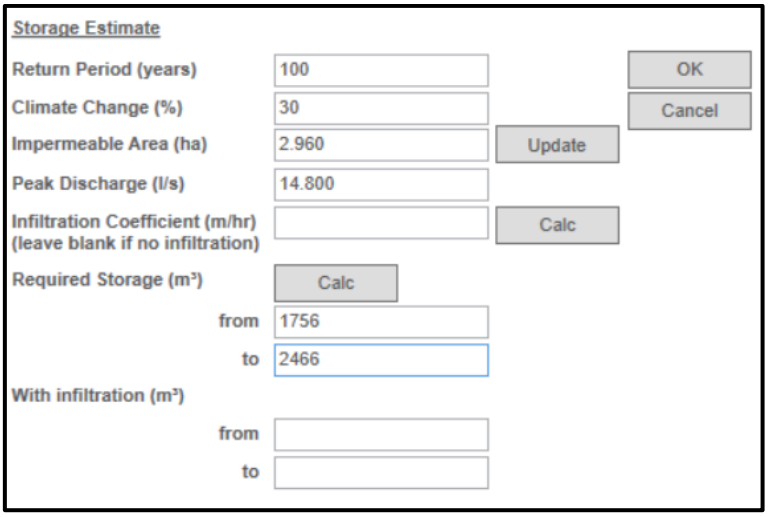
1.4 Attenuation requirements

The surface water drainage network will be designed to achieve no flooding in the 1 in 30 year storm event and no flooding of buildings or critical infrastructure in the 1 in 100 year plus climate change allowance storm event.

A climate change allowance of 30% has been used for the 1 in 100 year rainfall event as per the WYCA SuDS Guidance. No urban creep allowance has been provided.

Surface water flows will be restricted on site through the provision of approximately 2150cu.m of attenuation volume in the form of 4no. attenuation basins.

This has been assessed through the use of the quick storage estimate tool within PDS Flow. Refer to the figure below for PDS Flow results.



The average required attenuation has been distributed across the 4 no. attenuation basins proportional to the catchment draining to them.

The basins are designed with a maximum design depth of either 0.9m or 1.2m, 0.3m freeboard, a 2m wide maintenance path at the top of embankment and 1 in 3 side slopes.

A forebay, low-flow channel and exceedance spillway should be included in the basin designs.

1.5 Water Quality

Flows from the site are considered to be residential in nature. In line with the SuDS Manual (Ciria 753) guidance flows are likely to result in a low pollution index. The proposed treatment train of all flows passing through at least one attenuation basin, and associated forebay and low flow channel. Based on C753 guidance this will provide the recommended treatment for runoff from residential developments.

2 Foul Water Drainage Strategy

2.1 Design Principles

The foul water drainage strategy has been developed in line with best practice.

The foul water drainage network will be designed to meet self-cleansing requirements.

Refer to plan 23599-RLL-23-XX-DR-C-1030 for the Drainage Strategy Plan.

2.2 Outfall

Sewer records indicate that an existing combined Yorkshire Water sewer is located along Ravensthorpe road. It is therefore proposed to that the onsite foul water sewer network discharges into the existing combined sewer.

Discussions with Yorkshire Water would be required to confirm the capacity of the proposed outfall point.

3 Conclusion

The drainage strategy developed is considered to be consistent with WYCA guidance and best practice.