

RESIDENTIAL DEVELOPMENT AT LIDGETT LANE, PILLEY

SUSTAINABLE URBAN DRAINAGE SYSTEMS (SUDS) MAINTENANCE AND MANAGEMENT PLAN

INTRODUCTION

Avant Homes are proposing to construct 49 residential dwellings with associated parking, landscaping and infrastructure.

This SuDS maintenance and management plan has been developed to address Section 106 obligations, planning conditions and will also provide best practise guidance for the main contractor and sub-contractors working on the residential development.

The strategy focuses on the entire development, but supplementary information is also provided within the temporary drainage strategy which makes provision for the management of run-off throughout the varying stages of the build programme.

SITE INFORMATION

The total site area measures approximately 2.4 hectares and is located on land off Pilley Green/Lidgett Lane, approximately 7miles south of Barnsley Town Centre.

The topography of the site generally falls towards the south-east with levels varying from approximately 158.70m AOD at a high point in the north-west to approximately 139.80m AOD at a low point to the south-east.

As part of the approved Flood Risk Assessment, historic flooding/run-off events were investigated. There is no evidence to suggest there have been any historic incidents and it can be concluded from the Environment Agency flood maps, the site is located within Flood Zone 1, suggesting that the site is not at risk of flooding from fluvial and / or tidal sources. Flooding from pluvial sources can be considered low following the implementation of a suitable surface water scheme. Flood risk to the proposed development from all other sources is considered low.

PROPOSED DRAINAGE STRATEGY

The drainage is to be implemented in accordance with the approved planning application proposals. Peak drainage discharge rates from the site have been confirmed and subsequently agreed with Barnsley Metropolitan Borough Council and Yorkshire Water.

A geo-environmental site assessment has been carried out for the site; it involved an investigation of the current ground conditions and the suitability of the site for infiltration. The site investigation confirmed the presence of groundwater within trial holes and concluded there to be low permeability clays beneath the site. For this reason, together with the steeply sloping gradients of the site, infiltration drainage cannot be considered as a suitable solution for the disposal of surface water.

As part of a recent nearby residential development, Barratt David Wilson installed adoptable drainage apparatus that would also accommodate flows from this application site. Discussions with Barratt David Wilson and Yorkshire Water previously confirmed that the surrounding sewer network has been designed and installed to receive incoming surface water flows at a rate not exceeding 13l/s. The drainage network and attenuation volume from this application has been designed in WinDes MicroDrainage software and has been modelled in accordance with the requirements of Sewers for Adoption and Yorkshire Water. Attenuation volumes have been provided so that no flooding occurs for up to a 1 in 100 year + climate change storm event. The results of the simulation modelling confirm that surface water run-off is to be attenuated in oversized pipework/tanks which will be located within accessible public open space.

The off-site flows will be controlled by the use of a vortex flow control device that will be located within the adoptable drainage systems.

Foul water from the development will also discharge by gravity to the prospectively adoptable foul water sewers within the Barratt David Wilson site.

It is the Developers intention for foul and surface water drainage apparatus on the site to be offered for adoption to Yorkshire Water via a Section 104 Agreement of the Water Industry Act 1991. Therefore, in the long term, ownership and maintenance of the SuDS apparatus will be in accordance with the Water Authority policies. Nonetheless, until responsibility of the adoptable drainage system is transferred across to Yorkshire Water, it will be the developers responsibility to ensure that the system operates functionally, thus ensuring optimum hydraulic performance.

Due to the scale of the development, it is anticipated that the majority of the adoptable drainage network will be operational within approximately 26 weeks from commencement of the construction works on site. The temporary drainage strategy discusses the management and control of excess flows during the build phase in more detail.

As the development progresses towards completion it will be important to continually monitor the ongoing operation and functionality of the SuDS features, giving consideration to the regular day-to-day care, occasional tasks and ongoing remedial work. The primary SuDS features associated with this development are;

1. Flow Control Chambers
2. Underground Storage Tank

This SuDS Maintenance and Management Plan includes details how each of these three SuDS features will be managed and maintained as follows:

1. FLOW CONTROL CHAMBER

The flow control chambers are to be located within close proximity to the adoptable highway networks and will therefore provide 24 hour unrestricted maintenance vehicle access.

The flow control devices will be installed complete with an emergency drain down facility/overflow pipe which can be operated from ground level.

Inspections of the flow control chamber will be undertaken on a 6-monthly basis, following a particularly heavy rainfall period and prior to a forecast heavy rainfall period ensuring water is flowing freely and that the exit route for water is unobstructed. These inspections will ensure functionality of the flow control device and ensure there is no physical damage to the apparatus. Any obstructions and/or silt is to be removed as required.

2. UNDERGROUND STORAGE TANK

The drainage system has been designed with surface water attenuation tanks located within the adoptable highway and public open space areas, thus providing 24 hour unrestricted maintenance vehicle access.

It is a requirement of Yorkshire Water that access points for the attenuation tanks must be suitably sized for man access via a winch and these must be located over the inlet and outlet to the tank.

As with the flow control device, there are to be regular inspections undertaken of the underground storage structures to ensure operational performance and functionality of the tank. Inspections will be undertaken on a 6-monthly basis, following a particularly heavy rainfall period and prior to a forecast heavy rainfall period ensuring water is flowing freely and that the exit route for water is unobstructed.

In order to minimise the risk of any blockages of the proposed drainage networks, all plot purchasers will be provided with literature that will advise customers of their own responsibilities for caring for the drainage systems.

If, for whatever reason, throughout the installation of the drainage system there is a requirement to adjust the SuDS maintenance and management plan, consultation and approval will be sought from the Local Authority.