



BRIGHT PLAN CIVILS

Surface Water Drainage Design Summary and Calculations

Project name:	Land at The Burrows, West St, Havant
Project number:	D2023
Client:	Havant Housing Association
Prepared by and date:	Mark Akmenkalns, 15 th October 2021, Rev 1.0
Site address:	Land at The Burrows, West St, Havant
Local Authority:	Havant District Council
Lead Local Flood Authority:	Hampshire County Council
Site area:	0.283Ha
Geology:	A Geotechnical site investigation was undertaken by Soils Ltd, report 17902-MIR-927 November 2019. Made ground and alluvium was encountered within the upper 4m in WS01-WS04. London Clay was inferred to have been encountered in the dynamic probing at some 5.4mbgl. The Lambeth Group was not encountered.
Greenfield run-off rate (Qbar):	1.46l/s (Calculated by HR Wallingford)
Groundwater depth:	Unknown, subject to testing.
Soil infiltration rate:	Infiltration not deemed suitable.
Nearby watercourse:	Yes, the Hermitage Stream lies adjacent part of the west boundary
Nearby surface water sewer:	Yes 2 No. Public Sewers are known within West Street, both of which outfall to the Hermitage Stream.
Proposed method of disposal and reason:	To existing watercourse.
Design storms considered:	1:100 year
Climate change:	50%
Urban creep:	0%
Proposed catchment area:	1,081m ²
Proposed discharge Rate:	2.00l/s (as agreed with EA/LPA)
Flow control method	Induced vortex e.g. Hydrobrake
Volume of storage provided and method:	• 45.6m³ cellular tank (40m², 1200mm deep, 95% voids) • 29.6m³ permeable paving (206m², 450mm sub-base, 32% voids)
Offsite works:	None.

Surface Water Treatment

Treatment:	1.1.1 The use of permeable paving will ensure that run-off from the site receives a level of treatment required by the SuDS manual, with hydrocarbons being filtered by the aggregate and geotextile layers. 1.1.2 In accordance with the CIRIA SuDS Manual C753 regarding methods for managing pollution risks, the risk posed by surface water run-off to the receiving environment depends on the pollution hazard at the site (the source), SuDS treatment techniques (the pathway), and the sensitivity of the environment (the receptor). 1.1.3 The simple index approach considers whether SuDS techniques are appropriate for the site. The states that for SuDS components to deliver adequate treatment, the total pollution mitigation index for each contaminant type should equal or exceed the pollution hazard index. 1.1.4 The SuDS Manual outlines three categories of pollution hazard identification, which vary depending on proposed land use, which are as follows: • Total Suspended Solids (TSS). • Metals (M). • Hydrocarbons (H). 1.1.5 In accordance with C753 Table 26.2, the proposed land uses at the site are categorised as follows: • Residential Roofs and non-trafficked areas – very low/TSS=0.2/M=0.2/H=0.05 • Individual property driveways and low traffic roads – low/TSS=0.5/M=0.4/H=0.4 1.1.6 In accordance with C753 Table 26.3, the values of SuDS Mitigation indices are provided for permeable paving: • Permeable Pavement – TSS=0.7/M=0.6/H=0.7 1.1.7 As the pollution hazard index does not exceed any pollution mitigation index for any contaminant type, the proposed SuDS methods will provide sufficient treatment for the proposed development.
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Foul Water Drainage Design Summary

Number of properties:	20 residential dwellings
Point of discharge:	Upstream of existing foul water manhole (9508) located in adjacent site due west)
Method of discharge:	Natural topography allows for gravity connection to the existing Public Sewer running within the site.
Rate of discharge:	0.93l/s
24hr emergency storage:	N/A
Off-site works:	Connection to existing sewer subject to S106 approval from Southern Water. Recent changes to infrastructure and connection charges (OFWAT Charging Rules) place the onus on the sewerage undertaker to reinforce their network should there no longer be sufficient capacity to serve the new development. Funding for this is provided by revised charging arrangements for infrastructure and connection charges for each dwelling constructed comprising a Network Reinforcement Charge and Site-Specific Charges. The revised charging arrangement (funded by the developer) covers alterations to the Existing Sewer Network and the sewerage undertaker remains responsible for the cost of reinforcing their Strategic Assets.