

**WATER HOUSE, MILLFIELD LANE
SURFACE WATER DRAINAGE**

The surface water drainage design will be in accordance with the Environmental Agency and Government Guidelines. Rainfall modelling assumptions will be based on the Planning Policy Statement PPS 25, with an appropriate allowance for climate change.

The criteria used will be as follows;

- * 1 in 2 year without surcharge in the surface water drainage system.
- * 1 in 30 years without flooding.
- * 1 in 100 years will be checked to determine what volume of flooding may occur.

The worst case surface water storage retention expected, based upon the Micro Drainage software package for a 1 in 100 year storm return period, will require on-site storage of approximately 15 cubic metres.

On site retention of surface water from roofs and paved areas, with a controlled outfall to the Millfield Lane TWU combined sewer, will be provided to store the difference between a 1 in 30 and a 1 in 100 year storm return, as the PPS 25 Guidelines. It is expected that up to 12 cubic metres of surface water retention will be provided in underground storage vessels with controlled outfall flow devices, to be developed as the detailed design progresses.

Additional surface water attenuation will be available within the construction of the green roof areas.

A system of Fin drains is proposed around the new basement to improve the water flow and to ensure ground water movement is not impeded.

The flow from this system of ground water drainage is proposed to discharge into a shallow cellular soakaway provided with a high level overflow discharging into a gravel filled ditch passing beneath Millfield Lane onto the opposite bank.

This will maintain the natural flow of ground water across the site.

During the Construction Phase a temporary surface water cut-off drainage channel will be provided to capture any surface water running across the work site mainly during heavy rainfall. The outfall drain from the channel will pass through a silt trap sized to accommodate a flow of approximately 12L/S, flow to be determined as detailed design progresses.

A high level outlet drain from the silt separator will discharge to the TWU combined manhole on site. A licence will be sought from TWU for the temporary discharge.

The existing surface water run off from the site is estimated at being 18L/S for a 1 in 100 year storm return period. At present there is no provision for the attenuation of

surface water, all surface water from the roofs and hard standing areas discharges directly into the Millfield Lane TWU combined sewer.

By introducing on site attenuation with controlled outfall flows the estimated surface water run off will be reduced to below 6L/S which gives up to a 60% reduction of flow off site to the TWU sewer.

The proposed strategy for surface water attenuation will greatly reduce the potential risk of flooding to Millfield Lane and of surcharge to the TWU combined sewer.

Variables	Result	Design	Overview 2D	Overview 3D	Vt
Region	England & Wales				
Return_Period (years)	100				
Map	M5-60 (mm)	21.000			
Ratio R	0.435				
		Cv (Summer)	0.75		
		Cv (Winter)	0.84		
		Impermeable Area (ha)	0.045		
		Maximum Allowable Discharge (l/s)	2		
		Infil Coefficient (m/hr)			
		Safety Factor	2		
		Climate Change %	20		
			Apply		
Done					Help

MICRO DRAINAGE

Worst case
 storage estimate
 using micro drainage
 with factoring
 for a 100 year
 return period



