

**Surface Water Drainage Proposal For Single Storey Dwelling
At
Down Park Place, Turners Hill Road, Crawley Down
West Sussex**

Rainwater from roofs shall be drained to a below ground piped system conveying runoff to a 2000 litre rainwater harvesting tank. This stored volume may be used for garden irrigation during periods of dry weather, however a more complex system can also use stored rainwater for flushing within internal toilets.

When modelling a surface water system containing a rainwater harvesting tank, it is prudent to make the assumption that the tank is full when the design event (1 in 100 year plus climate change) occurs. The system is designed to overflow to the garden area where detailing of the surface levels allows the runoff to be contained in a specified area within the site, to form a bioretention basin, and then allowed to discharge at a very slow rate into the ditch running along the northern boundary. A garden landscaping design can be prepared to specify plant species within the area where water is intended to be stored during extreme events which are not affected by very rare events of inundation.

Although the soils are assumed to have zero capacity for infiltration in the hydraulic modelling, in reality this is not the case and where there are areas planted with mature trees, it is likely that the tree roots provide a pathway for transpiration to occur during frequent rainfall events.