

Surface Water Drainage Design Philosophy

The total area associated with the existing Village Bakery site measures some 7,225 square metres the extent of which is, in the main, impervious surfacing, comprising roofs, car parks and access roads.

The existing surface water drainage system caters for the runoff generated by the whole of the development site with surface water discharges being directed into a cellular below ground storage tank. Surface Water runoff from the tank to the public sewer system is restricted to a peak flow rate of 7 litres/second by means of a vortex flow control device sited in a manhole chamber. (Refer to the attached existing drainage layout drawing)

The total area of cellular storage equates to 431.25 square metres, which at a depth of 1 metre provides a storage volume of 410 cubic metres, (not 431 cubic metres as stipulated on the attached drainage drawing)

We have modeled the existing storage facility using the Microdrainage software program and can confirm that the total storage volume required, including an additional 20% to cater for climatic change, is 366 cubic metres with an outflow of 6.6 litres/second. However if we apply a 30% addition for climatic change the storage volume required only increases to 401 cubic metres with an outflow rate of 6.9 litres/second which is some 9 cubic metres less than the volume currently provided within the existinn system. (refer to attached Microdrainage calculations for both storm events) It should also be noted that the attached calculations take no account of the additional storage volume within manholes and the pipework system and as such the storage volume can be considered as a conservative figure.

It can therefore be concluded that the volume of storage provided on site is more than adequate for the village bakery site.

The new development proposals do not increase the impermeable area, in fact the area is slightly reduced due to the introduction of some landscaped features along the boundary fence line. As a result there will be no increase in the surface water flows leaving the site as the new building structure is simply being constructed over an existing area of positively drained hardstanding.