Pears Building
Planning Condition Response – 2nd August 2016
1415-03-ms

2016/2787- condition 16-

- *SuDS include a green roof (but they haven't included this in the calculations – most likely they are assuming it is fully saturated at point of storm) and two attenuation tanks (above ground holding 120m3 and below ground holding 50m3). I can't see the dimensions of the attenuation tanks on the modelling - they will need to include this.*

  Green roofs haven't been taken into account as they may become saturated and the surface water run-off rate would not be reduced. Therefore, the calculations in Appendix D have taken a conservative approach.

  Dimension of the tank shown in the WinDes output data in Appendix D. Dimensions of the storage tanks to be shown on drawing 1415/(DR)010.

- *Some queries about the Appendix D, Post-Development – WinDes Calculations Surface Water Drainage Network section:*
  - *The 100 year 1 hour and 100-year 30 minute events exceed the 8l/s (50% of existing) discharge rate.*

  The hydro-brake has been designed so that it reduces the surface water run-off to 8 l/s for the 1 in 1 and in 30-year storm events. Due to the pressure in the system during a 1 in 100 + 30% climate change event, more water will be forced through the control and the surface water run-off rate will increase.

  As shown in the WinDes output files in Appendix D, the maximum 1 in 100-year + 30% climate change discharge rate is 9.9 l/s. We agree that this is greater than a 50% betterment of the pre development 1 in 1-year storm, but is actually an 80% betterment of the like for like 1 in 100-year storm event.

  As the reduction for the 1 in 100-yeat event is 80%, we feel that this is acceptable as it will reduce the risk of flooding.

  - *There's only 0.203 ha of impermeable area contributing, out of the 0.261 ha.*

  The impermeable / contributing area of 0.261 ha was an approximated area of the site to establish the post development impact in terms of surface water run-off rates, volumes and flooding. When the drainage network was deigned, the actual contributing area to each of the pipes (shown in Appendix D) was calculated, and this equates to 0.203 ha.

  The area of 0.203 ha is the true contributing area for the below ground drainage network.

- *They have modelled the discharge throttle as a pump for the above ground attenuation tank so that they can maintain a constant discharge of 3.5l/s. In reality they will use an orifice/hydrobrake, this discharge will vary with the head of water behind it. This could cause an artificially small drain down time for the tank or cause it to be slightly too small as the model predicts flows will leave faster than in reality. Could the applicant model this with an orifice/hydrobrake just to ensure the design is appropriate.*

  We agree that an in reality an orifice will be used to reduce the surface water run-off rate.

  However, the above ground drainage network cannot be modelled in the WinDes software, as the surface water network consists of suspended pipes that discharge directly to the attenuation tank.

  We feel that the most suitable and logical way of simulating the flows and required attenuation volume is to be have a mock pump to ensure the discharge rates are not over the 3.5 l/s limit for all storm events.