

Project no: 03233

Below Ground Drainage Preliminary Design Statement

Surface Water

A ground investigation has been undertaken and a layer of granular River Terrace Deposits has been identified on the at a depth of around 1.8m below existing ground level. Soil infiltration testing was undertaken using a falling head method in two of the window samples and this confirmed that infiltration should be feasible on this site.

The following test results were obtained:

Exploratory Hole	Infiltration Rate	Infiltration Rate
	(ltr/sec) Test No 1	(ltr/sec) Test No 2
WS1	0.106	0.0585
WS2	0.156	N/A

Based on the above results it is envisaged that soakaways will be an acceptable solution for the proposed new teaching block. This is also backed up by some historic below ground drainage information, which shows some old soakaways, in close proximity to the proposed site.

An area to the south of the proposed building has been identified as a possible location for a new soakaway. Further testing will be undertaken using British Research Association (BRE) guidance document 365 to ascertain an accurate infiltration rate for the River Terrace Deposits. This is a more accurate method, which is accepted by Building Control and Statutory Authorities.

A soakaway will therefore be constructed to accommodate surface water run-off. The soakaway will be designed to cater for the 1:100+40% storm in accordance with current guidelines.

The soakaway will be formed using plastic cellular storage crates which provide greater free area for storing and dissipating water. The crates will need to be designed to cope with vehicles as the proposed location will be underneath the access route for emergency fire trucks. The soakaway will be sited a minimum of 5m away from buildings in accordance with the requirements set out in the building regulations.

Foul Drainage

Foul Water drainage will connect to the existing on-site manhole. Currently it is envisaged that a manhole on the western side of the site, near the existing car park will be used and due to the distance from the proposed building to the existing manhole, a pumped connection will be required. This will involve installing a pump manhole chamber with duty and standby pumps and 24-hour storage, near the building and then running a small diameter flexible rising main pipe under the ground to a new discharge chamber, adjacent to the proposed connection manhole. The new chamber will then backdrop into the existing manhole.

A CCTV survey of this existing foul drainage has been undertaken and the system is in good condition.

Further investigation is underway on site to try and identify a manhole that is closer to the proposed building, which would potentially make the foul connection easier and save cost. Once a final connection point is established, a capacity check will be undertaken on the existing pipework, although this should not be an issue due to the low flow rates in the foul system and the small amount of additional flow being added to this section of the existing system.