



GROUND FLOOR

From Section 7E in the NRW Guidance Document Part 6.5 the area calculation is
For a Sewage Treatment Plant
VP (percolation value) x P (number of inhabitants) x 0.20 = surface area(m2)

20x 6 x 0.20 = 24m2

Note VP=20 based on using washed sand laid to 700mm thickness as an attenuation layer.

PERCOLATION TESTING AND SOAKAWAY DESIGN BY CERi ENVIRONMENTAL CONSULTING LTD

Percolation testing was carried out in the exposed shales on the site. The bedrock is exposed around the extension area and it is likely that this will be present in the area which could be used to construct a soakaway. From the evidence that water gradually disappears on site after heavy rain this would suggest that the site is well drained and probably underlain with the mudstone, which can be seen around the base for the extension and under the block wall adjacent to the extension. The shales from the River Severn are likely to be present in the area of the extension and the River Severn. The unconsolidated zone will be approximately 5-10m below ground surface which would leave an unsaturated zone below the canal base level and below the clay lining of the canal itself. Effluent will therefore take the path of least resistance flowing downwards through the shales and not into the canal.

The VP of 2.5 is well below the value of 15 needed to form a drainage field, using the natural ground alone. This leaves the option of installing a bed of washed medium coarse sand 700mm thick on a permeable geotextile below the drainage pipes and bedding. This would enable the use of the minimum area using a value of VP=20, which equates to 24m2. This is the approach in the NRW Guidance document for Environmental Permit Application in Section 6.4. An impermeable barrier will be installed along the boundary adjacent to the canal using an impermeable membrane on the face to the base of the excavation to the level of the top of the drainage media for the pipes. This will ensure that effluent is kept in the area of the drainage field.

To maintain a closed drainage network and maintaining the 2m separation required by building regulations some of the pipes are to be left unperforated as shown on the drawing. This will ensure that the sand layer is used effectively and the soakaway area is fully utilised.

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Alterations to The Malt House, Garthmyl

Soakaway Plan scale: 1/50 date: August 2018 893/17/ 19