

## Drainage field information

### Requirement

To discharge secondary treated domestic sewage effluent into the ground. This is for the 9-person sewage treatment plant and on a site with 33seconds per mm percolation. Using the building regulations H2, part 1.44 formula ( $A_t = p \times V_p \times 0.25$ ), the total floor area of the field required is calculated to be: 74.25m<sup>2</sup>.

### Layout

There will be 6x 10m long parallel trenches, 900mm wide and with 2m undisturbed ground between them. 2x 15.4m long trenches, 700mm wide, will run along the bottom and top connecting up the ends of all the parallel trenches.

An inspection chamber will be installed immediately after the sewage treatment plant but before the drainage field. This is both for sampling the treated effluent and helping to distribute it more evenly into the field. 110mm pipe will take the effluent from the chamber in 3 directions and transfer it to the drainage field, see fig.1 below.

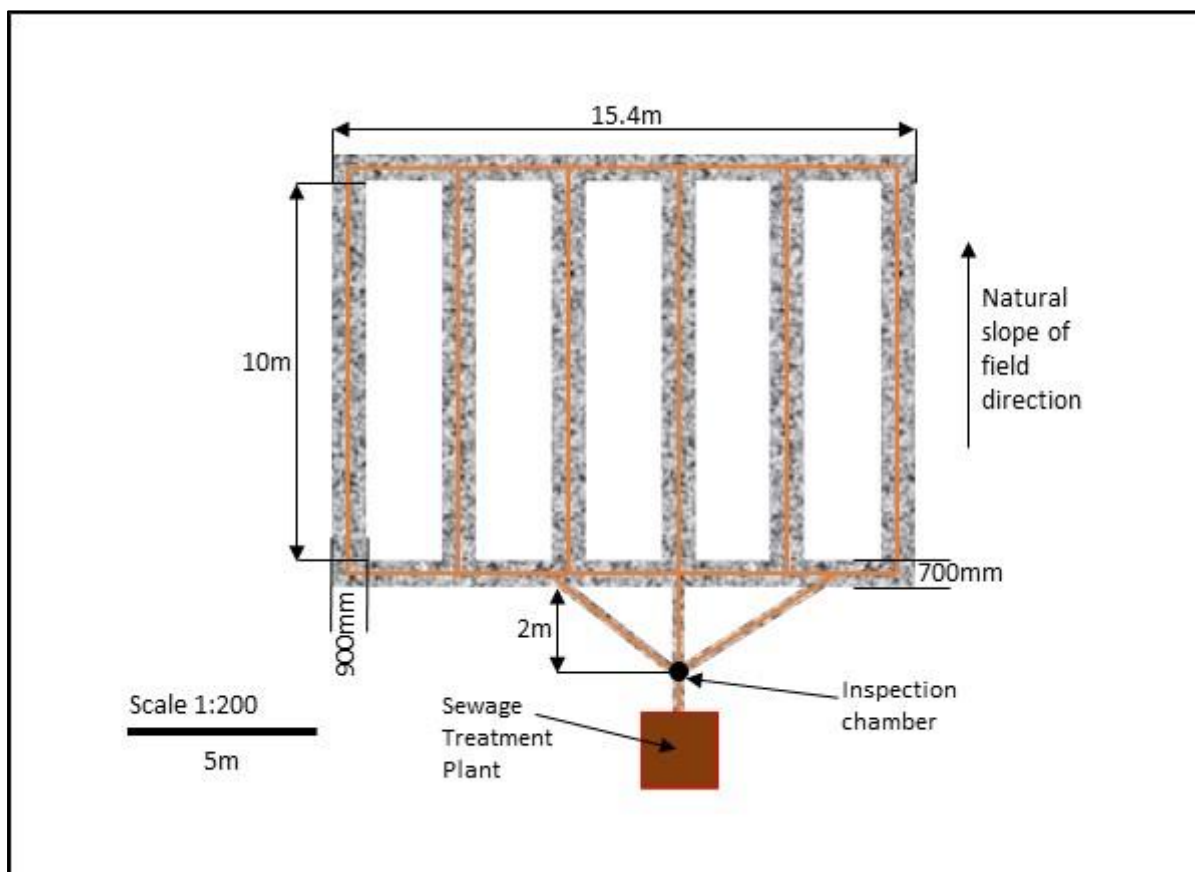


Fig. 1 Drainage field layout

### **Further information**

The total area of the drainage field (part with broken stone) will be 75.56m<sup>2</sup>.

The 3 distribution pipes, taking effluent from the inspection chamber out to the drainage field, will be in 300mm wide trenches but will use the same specification of pipe and stone as the drainage field.

Pipework: 110mm perforated drainage pipe will be used throughout. As fig. 1 shows the pipework will be a continuous loop with no pipe ends. There will be a gradient of no steeper than 1:200 along the pipework

300mm of broken stone graded between 20mm and 50mm will be placed at the bottom of the drainage field trenches before the pipework goes in. Once laid, the pipework will be covered with the same stone to 50mm above the top of the pipe. Geotextile membrane will then be laid above this to stop silt entry into the broken stone. The remainder of the trench will be backfilled with graded top soil from the nursery site and sown with grass seed.

Although there is a natural slope on the drainage field (away from building and the treatment plant), using a 950mm invert on the sewage treatment plant means a 1:200 gradient can be maintained through the pipework. Drainage field pipework will remain in the aerobic layer (no deeper than 1m) and comply with H2, 1.42 (no higher than 500mm).

The drainage field will be constructed in accordance to BS 6297:2007.