

1.0 INTRODUCTION

The proposal is to erect a new dwelling on land at Barwise Road, Arlecdon.

2.0 HISTORY OF THE SITE

The land is currently in agricultural use.

3.0 ENVIRONMENTAL IMPACT OF THE PROPOSAL

The application submitted for consideration is for the provision of a surface water soakaway system in connection with the erection of new dwelling, with a roof area on plan of 16m x 10.7m and 12.5 x 4.3m and a pitch of 38deg.

Therefore the rainfall calculation would be: $171.2 + 52.25 = 223.45$ say 224sqm

Rainfall taken from table 1 to Part H of the Building Regulations gives a coefficient of 0.014.

Rainfall for this calculation would be $224 \times 0.014 \times 1.5 = 4.704$ say 4.7

A trial pit was excavated to determine the water table, in the area of the proposed soakaways, to a depth of 2m and approx 1mx1m in area. This was left overnight and there was approx 100mm of water in the holes next morning.

The proposed soakaway is to be installed 1500mm to base of granular fill, below finished ground level and on the above basis, the water table is below the lower level of the proposed irrigation system.

The percolation test was undertaken during the period 8th-10th, October, 2019. Weather conditions were dry and overcast, however there had been moderate rainfall over a few days previous.

In line with the requirements for the percolation test, 3 holes were excavated in the area of the soakaways, on Friday, 21st, February last. These were taken down an initial 600mm to the line of the proposed soakaway system and a further 250mm excavated through light brown stoney clay soil to a loose stoney clay sub strata.

The holes were cleaned out and a marker inserted at the 300mm level. The excavation was not making any ground water and water was added into the trial holes to the 300mm depth and left overnight.

The site was revisited in late morning on the following day and the water had soaked away completely from all 3 trial holes.

The 3 holes were again topped up to the 300mm markers and the following results were observed:

Hole 1, Water drained from hole completely in 6000 seconds

Hole 2, " " " " " " 5500 seconds

Hole 3, " " " " " " 6500 seconds

Take above figures and divide each by the depth of water (150mm) to find the time to drop 1mm.

$$\frac{6000}{300} + \frac{5500}{300} + \frac{6500}{300} = 60$$

The average of the above being $\frac{60}{3} = 20$

Therefore the area of the soakaway system required is:

Area 1

$$A = 4.7 \times 20 \times 0.25 = 23.5 \text{ sq.m soakaway}$$

Therefore 4 No soakaways with a surface area of 2 x 3.0 m will be acceptable.

4.0 THE SYSTEM

It is proposed to install 100mm upvc underground drains from dwelling, laid to fall as per the plan, on granular bed and surround. 450mm diam pvcu access chambers, with patent cast iron covers, as indicated, discharging to underground soakaway system, minimum 5m from dwelling. Soakaway pits to have a surface area of 2 x 2.25m and be 1m in depth from invert of pipe. Place geotextile membrane between pipe and granular soakaway, to stop any ground contamination of the system.

5.0 CONCLUSION

Overall the installation of the system will provide for dispersal of rainwater from the new development and in accordance with Part H of the Building Regulations.

Ken Thompson
Coniston Consultants Ltd
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