November 2014

Argyll and Bute Council

Comhairle Earra-Ghàidheal agus Bhòid

Planning & Regulatory Services
Seirbheisean Planaidh is Riaghlaidh
Development Management • Policy
Building Standards
Trading Standards • Environmental Health

Building Standards

Guidance on Soakaway Design (Primarily for Architects & Agents)

CUSTOMER SERVICE EXCELLENCE CSE

Argyll and Bute Council
Comhairle Earra-Ghàidheal agus Bhòid
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Argyll Bute COUNCIL

Introduction

Argyll and Bute Council is the verifying body for Building Warrant applications submitted within the geographical area of Argyll and Bute. The role of the Verifier is to protect the public interest by providing an independent check and, when satisfied, the approval of an application for Building Warrant, and also issue a Notification of Acceptance of the Completion Certificate submitted by the Applicant, Agent or Owner if they are satisfied that the work complies with the relevant Building Warrant and Building Regulations.

It is hoped that the information provided in this Soakaway Design Guidance will assist you to obtain approvals where a soakaway is part of the proposal as quickly and as easily as possible.

Process

Once the ground assessment, trial hole and percolation tests have been undertaken as per the guidance in the technical handbooks, the soakaway should be designed in accordance with the following:

Factors should be considered when assessing the trench depth; frost cover, protection from disturbance, depth of the outlet pipe from the tank, permeability of the subsoil, depth to water table and depth of bedrock.

The area of the trench from a septic tank is calculated as A = P x Vp x 0.25 or A = P x Vp x 0.20 for a tank that has secondary treatment (package treatment plant).

The floor area “A” should be converted to a linear trench based on the width of the trench. Drainage trench widths should be between 0.3 m to 0.9 m. Distribution pipework (non-perforate) should not be counted in the calculation of overall infiltration (perforate) pipework within the trench.

The design of the drainage field should be based on rows of shallow linear infiltration trenches, joined to form interconnecting loops.

On sloping sites, the infiltration pipes should be installed parallel to the contours of the ground.

The area of undisturbed natural ground, i.e. not infill, between trenches should be greater than 1m.

Excavation should not be carried out when the ground is wet.

Excavation of trenches or beds should be carried out very carefully in order to avoid disturbing or compacting the surrounding soil.

The trench should be filled with granular fill material up to the invert level of the pipes. This layer should extend over the entire surface of the trench base. The distribution layer below the pipes should be 0.2m to 0.3m in depth. Trenches should not be excavated deeper than necessary and no deeper than 1 m below ground level.

Perforated pipes, minimum internal diameter 100 mm, should have downward facing holes or slots. Slots in the pipes used should have a minimum equivalent open area of 1 000 mm2 per linear metre and should be laid in trenches with a uniform gradient, not steeper than 1:200, laid at a depth greater than 0.2 m below the surface.

Access or inspection points should be installed at the principal junctions and at the furthest extent of the infiltration pipes. The covers should be visible and installed to prevent the entry of water. All covers should be accessible for maintenance and inspection of the system. The access and inspection points should provide an indication of the extent of the infiltration pipes.

Cover to infiltration pipes should be the diameter of the pipe +0-100mm.

Infiltration pipes should be covered with a suitable geotextile membrane.

Granular fill materials used should be clean shingle, or broken stone graded 16 mm to 32 mm nominal size or gravel sized 20 mm to 50 mm.

All drainage fields should have a margin of 1 m of undisturbed soil from the outer trench; this is considered to be part of the disposal area of the soakaway and where limiting dimensions for siting are derived from.

There should be a minimum distance of 50 m between the drainage field and a well, spring, borehole or other source of water supply intended for human consumption.

No part of the drainage field should be within 5 m of the boundary of the adjoining site.

The base of the trench should have a minimum of 1.2 m of unsaturated soil present above the determined seasonally highest groundwater level.

Where inflow of surface or ground water could reduce the effectiveness of the drainage field, land drains should be installed to divert water away so as not to prejudice the capacity of the system. Rainwater or surface water drainage should not be installed in or around the drainage field.

Drainage fields should not contaminate land drains.

Trenches and beds should be covered and back-filled as soon as possible.

Machinery should not traverse the area after the work has been completed.

Access roads, driveways or paved areas should not be located within the disposal area.