VALE of GLAMORGAN
BRO MORGANNWG

BUILDING CONTROL SERVICES
INFORMATION SHEET

RADON SUMP CONSTRUCTION

GUIDANCE NOTES ON PROTECTIVE MEASURES FOR NEW DWELLINGS AND EXTENSIONS

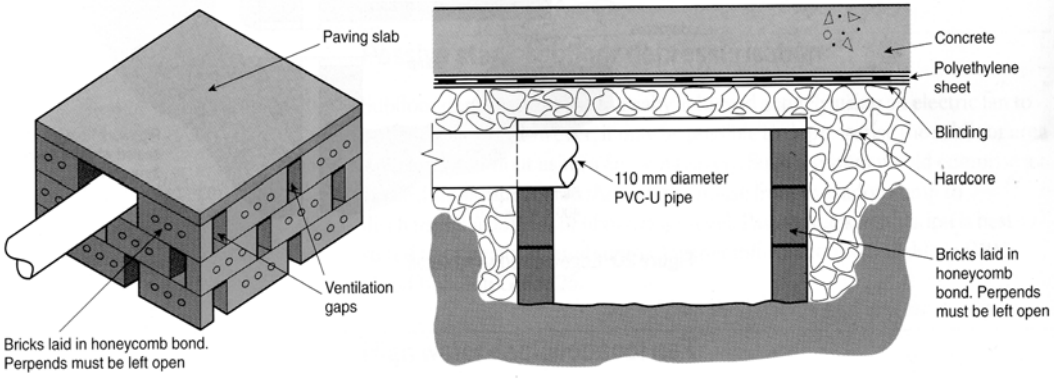
1. SUBFLOOR DEPRESSURISATION.

Where a ground-supported floor is to be constructed and full radon protection measures are required, a radon sump should be provided. This in turn would enable subfloor depressurisation to be introduced should it be required at a later date (subfloor depressurisation involves sucking radon-laden air from beneath the building and discharging it harmlessly into the atmosphere.

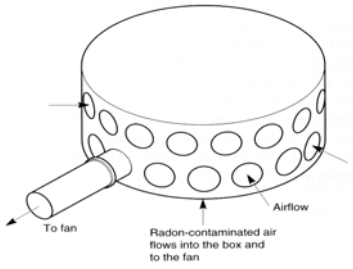
For a typical house a single sump will probably be sufficient (where clean permeable fill has been used, a single sump is likely to have an influence over an area of approximately 250 m^2, or for a distance of 15 m from the sump). If the dwelling is of modest size and of regular shape, an edge-located may be acceptable. Otherwise the sump should be positioned centrally under the house and constructed to ensure that its pipe entry is not blocked when the fill is placed.

2. SUMP CONSTRUCTION

A simple sump can be constructed using bricks laid in a honeycomb bond so as to form a box with external dimensions of 600 x 600 mm around the edge of the pipe . The sump can be covered with a 600 x 600 mm paving slab to provide permanent formwork to support the floor slab. To avoid subsequent collapse when compacting fill around the sump, mortar should be used for horizontal joints. However, **it is essential that all perpends are left open.**

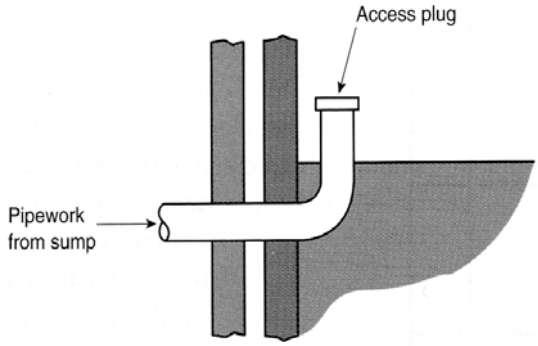


Prefabricated sumps usually of plastics construction are widely available and may be used as an alternative to brick construction.



3. PIPEWORK

Typically the pipe from the sump needs to be 110 mm diameter PVC-U with joints using standard couplings which are sealed and airtight. The pipe should ideally leave the building from the external wall, and be located at the rear of the dwelling or at a re-entrant corner. This requirement is necessary should a fan or passive stack ventilation be required at later date. Until such time that a radon test has been undertaken, the pipe should be capped off just above ground level with an access plug to prevent vermin and rain penetration.



It should be noted that the sump and pipework are only installed as a fallback measure and do not provide any radon removal until such time as a fan is installed or until the sump is connected to a
passive stack system.

4. OTHER POINTS TO CONSIDER WITH SUMPS

It is important to label the capped-off extract pipe so that it can be located in the future and its purpose made clear. A sign (of low visibility) fixed to the adjacent wall would suffice. This should reduce the risk of accidental connection to drainage fittings.

If the subfloor area comprises of several compartments, then sumps may be required for each compartment. These may be to a manifold and a singler fan. However, in most cases there is no need to establish a manifold of pipes. A single sump located alongside the separating wall to allow depressurisation, with a few bricks omitted or pieces of pipe located within the wall to allow depressurisation will suffice.

5.

This information is for guidance purposes only. For further advice on technical and construction requirements in respect of the sites within the Vale of Glamorgan which may be affected by Radon, contact:

Building Control Services,
Directorate of Environmental and Economic Regeneration,
The Vale of Glamorgan Council,
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Barry Docks, Barry, CF63 4RT.

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Local Authority BUILDING CONTROL