



European Radon Solutions Database

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Existing Buildings

Case Study

Sheet N°

Type

Radon well

Country

Sweden

Illustration



Description

This house was built in 1923 and rebuilt with a second part in 1978. It is located on an esker and therefore is the volume of soil air available for transport into the house very large. The original part of the building consists of a one and a half floor construction with cellar on a concrete slab. The new part is built on a slab on ground. Walls and ceiling in the basement are built of concrete, all other walls of wood.

The ventilation is natural draught and a kitchen fan. Air exhaust fans have been installed in bathroom and toilet. Five outdoor air inlets in basement, one on ground floor.

This house is a demonstration house on the SSI training course about remedial measures. The house was also part of a project carried out in Sweden during 15 years about long term performance of different radon remedial methods. Therefore measurements have been made every third year.

Selection

Radon wells are suitable solutions for radon reduction in houses built on thick layers on soil with high permeability such as eskers. A radon well lowers the air pressure in a large volume of soil and the entire system can be located outdoors. A radon well was dug next to the house. A four-meter deep pipe, 40 cm in diameter was used. The lower part of the bottomless pipe is perforated. In the pipe there is a 160 W fan. The air from the well goes through a pipe and is exhausted 3 meters above ground on the northern side of the house.

Pre-installation Diagnosis

Radon measurement indoor.

Radon reduction achieved

The level before the reduction was 1960 Bq/m³. The control measurement (short term measurement) after the reduction showed 60 Bq/m³, and long term measurements have been done every third year afterwards. In 1997 the level was 40 Bq/m³, in 1991, 1994 and 2000 the levels were below 30 Bq/m³.

Problems

This system gives a need for certain support as there is a fan installed. It also means an increased energy cost for the household to keep the system running. Any specific problems in this case are not known.

System enhancements

The result in this example is perfectly satisfactory. The fan is located under ground, insulated not to make any noise and unless you know of the system installed it is hard to notice.

Further Information

SSI can supply more information.

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