

# RADON SOLUTIONS IN HOMES

## Improving underfloor ventilation

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This Good Repair Guide offers guidance to builders and homeowners carrying out installation works to increase ventilation under suspended ground floors. It covers the installation of both natural and mechanical (fan-assisted) ventilation to underfloor spaces. Advice is also given on system maintenance and what to do if a system fails to adequately reduce radon levels.

This Good Repair Guide is Part 1 in a 3-Part set and replaces the guidance given in BRE Report BR 270. Parts 2 and 3 cover positive house ventilation and sump systems.

### BACKGROUND

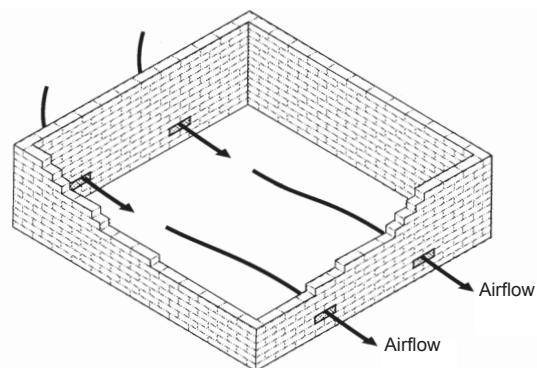
#### Radon

Radon is a naturally occurring radioactive gas that is present in all buildings. Prolonged exposure to high levels causes lung cancer. The Health Protection Agency (HPA) recommends that householders with concentrations above the action level ( $200 \text{ Bq m}^{-3}$ ) should reduce their radon concentrations as far as they can and ideally to below the target level ( $100 \text{ Bq m}^{-3}$ ).

#### Improving underfloor ventilation

If part, or all, of the ground floor is of suspended timber construction, improving underfloor ventilation may be an appropriate method for reducing indoor radon levels. Suspended timber floors should be well ventilated to reduce the risk of timber rot and musty smells. Ideally, there should be vents in the walls on either side of the floor to encourage cross-ventilation and minimise dead areas beneath the floor (Figure 1). Improving underfloor ventilation to reduce radon levels therefore also benefits the floor in other ways.

Locating airbricks on the opposite sides of the underfloor space allows for complete cross ventilation



Poorly located airbricks cause areas of poor ventilation (dead areas)

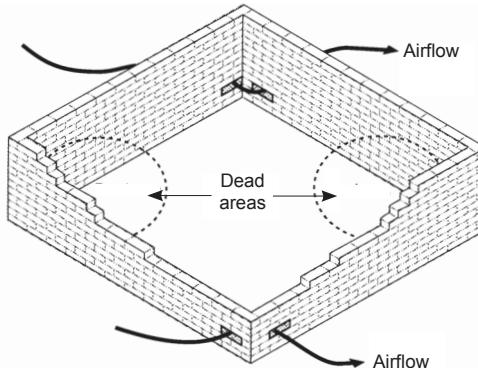


Figure 1: Examples of (a) good ventilation (b) poor ventilation

Improved natural underfloor ventilation is generally effective for radon levels up to  $500 \text{ Bq m}^{-3}$ . It may be effective with higher levels but if not an underfloor fan could be added later. Often with higher levels, mechanical underfloor ventilation (using a fan) or an alternative solution will be required.