

Papers

Science commentary: Radon blues

Geoff Watts

The publication of a new collaborative study of the effect of domestic radon on the risk of lung cancer is a reminder that this is a hazard to be taken seriously.¹ Of course, health campaigners will rightly respond that radon gas, the cause of just under a tenth of deaths from lung cancer, is hardly in the same league as tobacco. That said, as a carcinogen worth tackling it does have one great "virtue." Unlike the perilous ingredients in materials that we choose to smoke, the threat posed by radon can be greatly reduced or even eliminated without a painful reliance on willpower or on the exercise of self denial. Unfortunately, the extent to which even the relatively pain-free remedies for dealing with it are actually applied is less than impressive.

The appropriate course of action will depend on the construction of the building and the level of radon to be dispersed. At the lower end of the scale, improving ventilation and sealing cracks in concrete floors may do the trick. With suspended timber floors the aim is to increase the flow of air beneath them—either passively through air bricks or by installing a fan. In houses with a concrete floor and higher radon levels it may be necessary to dig a sump—a small cavity beneath the floor—from which air is extracted, so removing any troublesome gas that might otherwise find its way into house.

Do these arrangements actually work? Passive systems are less effective and, although they have no moving parts to wear out, may still go wrong: airbricks blocked by vegetation, for example. Only a further radon test will reveal if there's been a failure. Active systems are better at removing the gas—but electric extractor fans don't last for ever. The National Radiological Protection Board (NRPB) has demonstrated their value² and also shown that fans reckoned to have a working life of no more five years may actually run for double that.³ So even householders too negligent to examine their extractor fans more than once a year still have much to gain.

One form of negligence that's harder to overcome is a disinclination to do anything at all. A brief review of domestic radon published three years ago by the Parliamentary Office of Science and Technology made gloomy reading.⁴ It reported estimates by NRPB that the gas significantly affects around 100 000 properties in Britain. Of householders whose radon was above the recommended action level (200 Bq/m³), only about 10% were actually tackling the problem. NRPB says it has no reason to believe that the figure has subsequently improved.

Why the poor showing? The Parliamentary Office of Science and Technology identified four factors: a reluctance to do anything if the radon concentration is only slightly above the action level; a tolerance of "natural" radiation as opposed to its equivalent from the nuclear industry; inadequate access to reliable advice; and, of course, simple inertia.

Reflecting on his life's work, a distinguished radiation biologist once regretted that radioactivity was invisible. He'd always wished, he said, that he could paint it blue. Maybe our enthusiasm for home protection would get a boost if the gas percolating up through the floorboards had some equally eye catching colour.

Competing interests: None declared.

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- 2 Naismith SP, Miles JCH, Scivyer C. The influence of house characteristics on the effectiveness of radon remedial measures. *Health Physics* 1998;75:410-6.
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- 4 Parliamentary Office of Science and Technology. Reducing radon risks in the home. www.parliament.uk/post/pn158.pdf (accessed 29 Nov 2004).

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