

Environmental **Radon** Newsletter

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Reducing radon levels and lung cancer risk to tenants in social housing

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The Health Protection Agency (HPA) works with social landlords to carry out radon measurement and remediation (reduction) programmes. This helps landlords to comply with their duty of care and meet the requirements of the Housing Health and Safety Rating System.

This study represents work with two organisations – Tor Homes (a registered social landlord) and Carrick Housing Ltd (an arms-length management organisation), both based in south west England. However, radon is a concern in many areas of the UK.

Where tests show the annual average radon exposure is at or above the Action Level of 200 Bq m⁻³ or more, HPA recommends that levels should be reduced to as low as reasonably practicable.

Experience gained from working with Tor Homes and Carrick Housing Ltd illustrates the challenges faced in radon testing and remediation of tenanted properties; these have shaped ongoing testing programmes with social landlords.

Strategies to increase co-operation by tenants

• Tenants' names placed on the packs

Any testing programme requires the co-operation of the tenants: adding the name of the tenant to the pack reduces the number of packs thrown

away. For Tor Homes in 2005, only 27% of tests with packs addressed to 'The Occupier' were completed, against 99% of those posted to a named tenant. We now always ask for tenant's names, where known. One hundred percent completion is rare – some tenants may move during the test period, others refused to take part.

• Contact details for the social landlord representative on the front of the pack

Test completion rates increased for Carrick Housing Ltd by 21% in 2007 – householders can check that the pack is genuine and can speak to their local contact if they are concerned about testing.

• The social landlord representative can persuade/assist tenants with testing

When packs are declined, or returned too early, the representative tries to persuade the tenant to have the test. If the tenant is elderly or disabled, they may offer to place and retrieve the detectors for the tenant.

Installing effective remedies within a limited budget

If a high radon level is reported, the social landlord determines the most appropriate remediation for the property, based on the type of ground floor and other factors. The living style of the tenant is also a consideration, plus budget constraints.

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	Total housing stock, rounded	Number in radon Affected Area, rounded	Number measured to end December 2007, rounded	Number identified as at or above Action Level, rounded
Tor Homes, Devon	3,200	1,000	800	30
Carrick Housing Ltd, Cornwall	3,700	3,700	660	110

This newsletter and previous editions can be seen at www.hpa.org.uk

POINTS OF CONTACT

Building Research Establishment (BRE)
Garston, Watford, WD2 7JR
www.bre.co.uk/radon

Radon Survey
Radiation Protection Division,
Health Protection Agency
Chilton, Didcot, OX11 0RQ
Tel 01235 822622
Fax: 01235 833891
www.hpa.org.uk/radiation/radon

Welsh Assembly Government
Housing Division
Cathays Park, Cardiff, CF1 3NQ
Tel: 01222 825219
Fax: 01222 825391

Environment and Heritage Service
Klondyke Building, Cromac Avenue
Gasworks Business Park
Lower Ormeau Road
Belfast BT7 2JA
Tel 02890 569305
Fax 02890 569263

Scottish Executive Development Department
Housing Division I
First Floor East, Victoria Quay
Edinburgh, EH6 6QQ
Tel: 0131 244 5575
Fax: 0131 244 5596

Health and Safety Executive
Health Directorate B6
Rose Court, 2 Southwark Bridge
London, SE1 9HF
Tel: 020 7717 6854
Fax: 020 7717 6717

Radon South West Committee
Secretary: Gerald Hudd
46 Parkfield Drive, Taunton
Somerset TA1 5BU
Tel: 01823 355194
email: GAHudd@Somerset.gov.uk

Derbyshire Radon Steering Group
c/o Environmental Health Department
Derbyshire Dales District Council
Town Hall, Matlock
Derbyshire, DE4 3NN

The Radon Council Limited
PO Box 39, Shepperton
Middlesex, TW17 8AD
Tel: 01932 221212
Fax: 01932 229779

Laboratories validated by HPA for making measurements of radon concentrations in homes are listed at: www.hpa.org.uk/radiation/services/radon/validation.htm

To obtain a report on the requirement for radon protective measures for building sites, go to <http://shop.bgs.ac.uk/Georeports>

To obtain an estimate of the probability that an individual property in England and Wales is above the Action Level for radon, go to www.UKradon.org

Reducing radon levels and lung cancer risk to tenants in social housing, continued

• Sump system

Most effective remediation over a wide range of radon levels. It must be installed under a solid floor or membrane over the soil.

• Positive ventilation system

Generally cheaper, but only effective over a limited range of radon levels. This method needs access to the loft space and householders cannot leave their windows open.

• Underfloor ventilation

Used with suspended or block and beam flooring. There must be a through-flow of air from one side of the property to the other. It is the cheapest method and at its most effective when the radon concentration is just above the Action Level.

Combined remedial results for Tor Homes and Carrick Housing, 2006-2007	Success rate (all remediation types)
After initial remediation	80% at or below the Action Level
Remaining 20% of properties, initially unsuccessful, after further remediation	72% at or below the Action Level

Remediation has been successful for 94% of these properties within two attempts.

The remaining 6% of properties need more remediation to bring the result to at or below the Action Level. This can be achieved by simply increasing the fan speed or changing the direction of airflow in a sump, or may require an alternative method to be used.

Factors affecting the success rate of remediation

- **Quality** of installation.
- **Suitability** of method used for the property construction, radon level and tenant living style.
- **Tenant co-operation.** Sometimes tenants switch off the equipment, usually due to concerns about noise or running costs.

It is very useful if local representatives explain to tenants that for sump systems and positive ventilation to be effective, the fan must not be switched off and where underfloor ventilation is used, the vents must not be blocked up; the equipment has been installed to benefit their health.

UK Radon Forum

The UK Radon Forum will be held on Monday, 23rd February 2009, at the Health Protection Agency's training centre at Chilton, Oxfordshire. The event is an opportunity to discuss recent developments in radon issues throughout the UK. For further details see the HPA website or contact Nicky Stopps of the HPA radon team (radon@hpa.org.uk).

Radon dataset for England and Wales

Daryl Dixon, Health Protection Agency, daryl.dixon@hpa.org.uk

A new dataset and accompanying Atlas of radon Affected Areas in England and Wales, based on a new mapping procedure, were published in November 2007 jointly by the Health Protection Agency (HPA) and the British Geological Survey (BGS)*. The dataset provides definitive information on radon Affected Areas for property owners, employers and housing authorities who need to know or advise on the potential for radon exposure, for example, during property conveyance.

A new HPA website, www.UKradon.org.uk, allows for searching on individual addresses, and is used widely by environmental search providers, by many local government Councils and increasingly by consultants and other service companies. The definitive dataset is also available under license through BGS, for moderately large users such as local government Councils to use in Geographical Information Systems (GISs).

Councils have an important local public health role, including dealing with the risks of radon. A recent analysis of service demand showed that

- about 90 Councils had obtained a radon GIS licence
- about 50 Councils expressed interest in a GIS license
- over 200 Councils had not contacted HPA or BGS

Although the uneven distribution of indoor radon across the country means that many Councils will have relatively little need for radon data, other councils

have extensive radon Affected Areas and receive significant numbers of enquiries about radon, including some on the extent of Affected Areas. All Councils have to answer the question of whether a property is in a radon Affected Area when it is asked on the CON29 property conveyance form.

Interestingly, some of the Councils which have not yet licensed the dataset are in the counties most affected by radon. This raises a question about how they are responding to the CON29 question and whether the new dataset services meet customer needs. Although the CON29 question seems quite explicit, it may be that some Councils are providing a general answer, simply noting that there are elevated radon levels in the vicinity of a specified property and advising the enquirer where to obtain a definitive answer.

The HPA is keen to ensure that suitable and accurate information is readily available to all who need it. Caution is required in using the

Indicative Radon Atlas to advise on Affected Areas. The Indicative Atlas shows the worst case for each 1-km grid square of the map, which means that between map result for a particular location may differ from that provided by the definitive data. There might be a need, therefore, for standard advice on procedures to be adopted where Councils do not give a definitive response to Affected Area enquiries.

The HPA is seeking feedback on how current services meet users' needs, particularly in high radon areas, and considering the scope for further development or services. The HPA is writing to Councils about this, and including short questionnaire, (see overleaf), to provide feedback. The HPA would welcome any additional responses prompted by this article. The questionnaire can be photocopied and returned to the HPA (Daryl Dixon, Radon Survey, HPA, Chilton, Didcot, Oxon OX11 0RQ) or can be provided electronically by sending an email entitled 'Radon questionnaire' to daryl.dixon@hpa.org.uk.

* Indicative atlas of radon in England and Wales. Miles JCH, Appleton JD, Rees DM, Green BMR, Adlam KAM, Myers AH, 2007. HPA-RPD-033. Available on www.hpa.org.uk.

Radon intercomparison workshop

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In order to carry out large surveys of indoor radon, there is only one practicable method: to use passive integrating radon detectors. The issue of measurement quality is crucial, as it underpins the whole radon program, whether that is determining which homes and workplaces exceed radon reference levels, or mapping radon-prone areas.

One way to maintain quality control is to take part in an intercomparison, in which a group of laboratories all measure the same parameter (in this case radon) and then compare their results against all those laboratories which took part.

The Health Protection Agency (HPA), and before them the National Radiological Protection Board, have been organising intercomparisons of passive radon detectors since 1982.

These have been carried out on an annual basis since 1997.

In these exercises, participants are invited to send in sets of detectors which are randomised, given a range of radon exposures and then returned to the participants. Results for each detector are then sent by participants to the HPA and the results analysed. Participants are not told of the actual exposures until all results have been received at the HPA. The value of

these exercises is that it allows the participants to compare against the HPA 'standard' value, and also to compare their results against all the other laboratories which took part. Participation in these exercises is popular and those taking part have come from all over the world.

A workshop is being held on 24 and 25 June 2009 at HPA Chilton for participants to discuss the programme so far, how they would like to see the intercomparisons develop in the future and to discuss issues of quality control in radon measurement and how this can be improved. Those wishing to take part should email me at the address above.

Radon dataset questionnaire

1. How many enquiries about radon does your Council receive?

- One a month
- One a week
- More (specify)
- Don't know

2. Where is the main contact within the Council on radon?

- Environmental Health
- Building Control
- Land charges
- Other (specify)
- Don't know

3. Where in the Council would you refer a CON29 enquiry?

- Environmental Health
- Building Control
- Land charges
- Other (specify)
- Don't know

4. Do you think the Council needs to use the Radon GIS dataset or www.UKradon.org to answer the CON29 question?

- Yes
- No
- Don't know

5. Which of the following does the Council use to advise on radon Affected Areas?

- Radon GIS dataset
- www.UKradon.org
- Indicative Atlas of Radon in England and Wales
- Other (specify)

6. Do you or your close colleagues use any of the following resources on radon?

	Never	Occasionally	Frequently
Radon GIS dataset			
Indicative Atlas of Radon			
www.Ukradon.org			
HPA literature on radon			
Other information source (specify)			

7. Do you have a copy of the Indicative Atlas of Radon in England and Wales, issued in 2007?

- Yes
- No

8. Do you have a copy of an earlier radon atlas?

- Yes
- No

9. What other resource or service on radon do you think your Council would like?

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10. Please add any comments about radon topics or services

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Name:

Position:

Council:

Please return questionnaire to Daryl Dixon, Radon Survey, HPA, Chilton, Didcot, Oxon OX11 0RQ or by email entitled "Radon questionnaire" to daryl.dixon@hpa.org.uk.

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