Environmental Radon Newsletter

AUTUMN 1997 ISSUE 12

Consultation on Building Regulations Guidance

The Department of the Environment has issued a consultation document on changes to the Approved Document for Part C of the Building Regulations and also to the supporting document, BR 211, Radon: Guidance on protective measures for new dwellings.

This follows the publication of new maps of radon affected areas by NRPB (see Newsletter 8), which identified further areas where radon is a problem. The consultation document takes these areas into account, and also takes the opportunity to update the technical guidance. The main change in this area is the proposal that the detailing of damp-proof membranes in all houses should be improved to serve as a radon barrier as well.

The consultation period has now ended and responses are being evaluated. Final recommendations will take into account the comments received and will be presented to the Building Regulations Advisory Committee which will make recommendations to Ministers on how changes should be implemented.

Prague Conference

A European Conference on Protection Against Radon at Home and at Work was held in the beautiful city of Prague in June. The venue was not chosen just to entice delegates, however: the Czech Republic has one of the worst radon problems in Europe. The conference was followed by a measurement workshop in the nearby town of Pribram, using a laboratory with a radon level of 6000 Bq m^{-3}. Unlike the NRPB radon laboratory, there is no need in Pribram to generate such levels artificially - it comes up out of the ground into this laboratory.

The Czech Republic is one of three countries that take radon so seriously that they have introduced a legal upper limit for radon in houses, the other two being Sweden and Switzerland. In Sweden and the Czech Republic grants are available to support remedial action. In this issue of the Newsletter, Jack Madden reports on the introduction of grants in the Republic of Ireland next year. In the next issue, Alan Blythe will discuss whether radon levels should be included in the UK housing fitness standard.

POINTS OF CONTACT

Building Research Establishment (BRE)
Garston, Watford, WD2 7JR
BRE Radon Hot Line:
Telephone: 01923-664707
Fax: 01923 664010

National Radiological Protection Board
Radon Survey,
Chilton, Didcot, OX11 0RQ
Radon Freephone: 0800 614529.
Fax: 01235 833891

Department of the Environment
Room A518, Romney House
43 Marsham Street,
London, SW1P 3PY
Telephone: 0171 276 8825
Fax: 0171 276 8909

Welsh Office
Housing Division
Cathays Park, Cardiff, CF1 3NQ
Telephone: 01222 825219
Fax: 01222 825391

Environment Service
Department of the Environment for Northern Ireland
Calvert House, 23 Castle Place
Belfast, BT1 1FY
Telephone: 01232 254754
Fax: 01232 254700

Scottish Office Development Department
Housing Division 1
First Floor East, Victoria Quay
Edinburgh, EH6 6QQ
Telephone: 0131 244 0131
Fax: 0131 244 0153

Health and Safety Executive
Health Directorate B6
Rose Court, 2 Southwark Bridge
London, SE1 9HF
Telephone: 0171 717 6854
Fax: 0171 717 6717

Radon South West Committee
Secretary
c/o Environmental Health
Teignbridge District Council
Forde House, Newton Abbott,
Devon, TQ12 4XX

Steering Group on Radon
(Northamptonshire and elsewhere)
c/o Environmental Health Department
Borough Council of Wellingborough
Chess Board House,
20 Sheep Street, Wellingborough,
Northampton, NN8 1BL

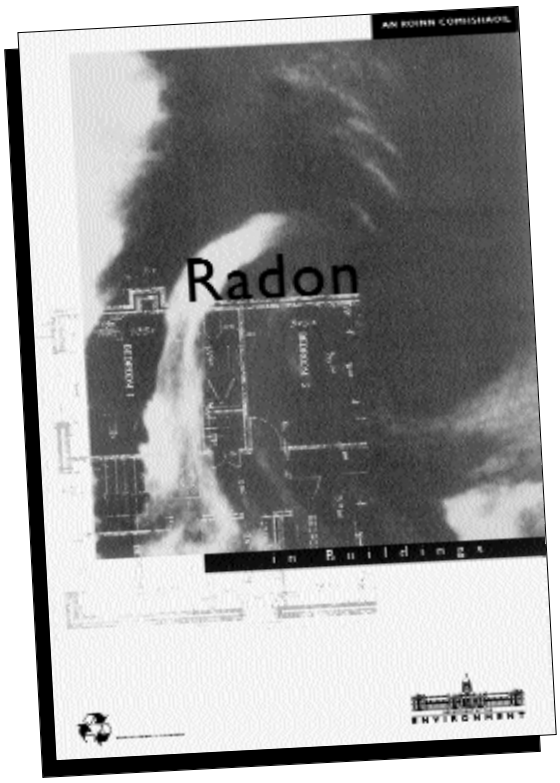
Derbyshire Radon Steering Group
c/o Environmental Health Department
Derbyshire Dales District Council
Town Hall, Matlock,
Derbyshire, DE4 3NN

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

Somerset Radon Campaign Steering Group
c/o Taunton Deane Borough Council
The Deane House, Belvedere Road
Taunton, Somerset, TA1 1HE

New Radon Policies in Ireland

Jack Madden, *Radiological Protection Institute of Ireland*



In April 1997 the Department of Transport, Energy and Communications announced details of a grant scheme to assist householders with the cost of remediation work in houses with high radon concentrations. This was closely followed in June 1997 with the announcement by the Department of Environment that it was intending to amend the relevant technical guidance document in the Irish Building Regulations to incorporate radon protection measures in all new houses in Ireland. These announcements highlight significant developments in the national approach to reducing indoor radon levels in existing houses and to preventing elevated indoor radon levels in future planned houses.

The remediation grant scheme, which is due to start on 1st January 1998, consists of a grant of 50% of the cost of remediation up to a maximum grant of £800 per dwelling. The scheme will apply to both private and local authority dwellings and all householders with a radon level in excess of the National Reference Level of 200 Bq m^{-3} may apply. One million pounds has been allocated to the scheme with an initial outlay of £200,000 in 1998 followed by £400,000 in each of the years 1999 and 2000.The scheme will operate on a 'first come first served' basis.

The proposed amendments to the technical guidance document in the Building Regulations will require that all new houses contain radon protection measures. New houses in identified High Radon Areas (i.e. areas in which 10% or more of houses are predicted to exceed 200 Bq m^{-3}) will require a dual level of protection. Installation of both a sealed membrane of low permeability and a passive sump with outlet will be mandatory during construction.

New houses in all other areas will require only the installation of a passive sump with outlet. This passive sump may be activated by installation of a fan if the radon level in the house at some future date warrants intervention.

These developments place Ireland in the forefront of Europe in requiring that radon protection measures are mandatory for all new dwellings in the country and not just for those in High Radon Areas.

Radon - Our Role

John Hague, *Derbyshire Dales District Council*

The Department of the Environment policy of targeting homes in areas of high risk from radon will, in my view, achieve its aim of identifying a substantially increased number of homes above the radon Action Level. However, the target of persuading the householders to take remedial action is more of a challenge and one in which the role of the local authority is crucial. In my experience people are more responsive to locally based advice than to general advice issued centrally.

How we can help

Local authorities have a dual role: first as a Housing Authority and landlord and second as a Public Health Authority, where it falls to the EHO to raise awareness of the presence and effects of radon. In addition, we also have responsibility for the enforcement of health and safety in the workplace.

Housing

We must ask ourselves:

- have we ensured that our tenants are aware of radon?
- are we aware if any of our tenants have been offered a free test by the NRPB and whether they have responded?
- do we offer discretionary grants for radon remedial work?
- have we made ourselves aware of the trade expertise in providing remedial measures?
- have we made local estate agents, building societies, architects and builders aware of radon and how easy it is to reduce high levels at a reasonable cost?

Grants

We may be involved in offering discretionary grants, though meeting the means test criteria is an obstacle. At the last count only 20 such grants had been offered nationally, of which my authority have approved 5.

I suggest that if we are to make inroads into the target we need the resources to offer grant assistance (not subject to the means test) to encourage householders and to have a 'kick-start' effect in providing remedial measures. This could be a once-only payment similar to the former Homes Insulation Grant to householders, for instance offering 50% of the cost up to a maximum of £500. This, I feel, would be an incentive that would persuade many householders to undertake the work.

Publicity

However, it is unlikely that the above suggestion will be acted on by Government at the moment. So how should we react to the consultation document in the meantime? In a word, publicity. The need for this is shown by the fact that as part of last year's 'targeted' radon survey campaign, 7,600 households in the Dales received an invitation from DoE to have a free measurement, but only 1,600 replied - 6000 did not.

We as local authorities need to make use of maximum publicity in the targeted areas to back up the invitations from DoE. There are various resources available: the DoE has produced new posters that we can use, and issued many leaflets. The NRPB has a set of A3 information panels which we can use:

- average annual dose to UK population,
- how radon enters buildings
- routes of radon ingress
- changing radon levels
- reduction of radon by positive ventilation
- reduction of radon by underfloor extraction
- percentage of homes above 200 Bq m^{-3} in a county
- number of homes found above the Action Level

What I suggest is missing from the above series is:-

- radon is not difficult to remove
- the cost of remedial works is relatively low
- if a fan is installed, the cost of running it continuously is only about £30-£50 a year
- information on contractors providing remedial works
- the positive contribution of radon remedial measures to health

Summary

I feel that we have a prominent role to play in promoting radon awareness and importantly, pointing out how simple it is to reduce radon levels below the Action Level at a relatively low cost. This is the message that we, as local authority officers, can best impart by our local knowledge, by our expertise in dealing with the public, and by the relationship of trust we have with our residents. This relationship needs to be used and developed to encourage our residents most at risk from radon to take the necessary action and thus provide those affected with safer homes.

Footnote

In view of the comments made in this paper, discussions are currently being held between the NRPB and DoE to provide 'affected' local authorities with a series of publicity panels as mentioned above.

Durable Remedies

Stuart Naismith, *National Radiological Protection Board*

There are various ways to reduce high radon levels in houses, some much more effective than others. If they are to reduce exposure to radon significantly, it is essential that they maintain their effectiveness over many years. To study how durable the measures installed in houses are, a number of them have been remeasured by NRPB every year. Twenty-six of these houses have now been measured for five years or more after remediation, with results shown in Figure 1.

It can be seen from the graph that the effectiveness of the remedial measures remains remarkably consistent over the five year period for all but one of the measures. Natural ventilation of the underfloor void shows the most variation, probably because this method is more affected by ambient conditions, such as wind speed than the other measures. The addition of a fan for underfloor ventilation increases the ventilation rate and hence the overall reduction in radon level, but also greatly reduces the variability of the final radon levels.

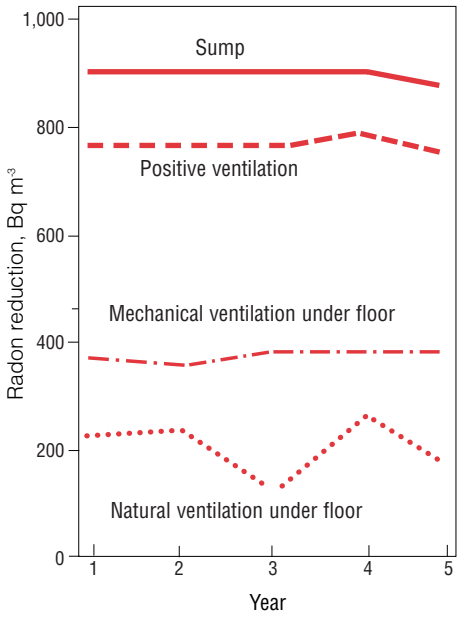
One house with positive ventilation was excluded from the data analysed because the occupier changed. The radon levels in the house showed a large increase in concentration after the change in ownership. The new occupier confirmed that the positive ventilation system was still running, so the reduced effectiveness is probably a result of changes in the way the house is ventilated. For example, this remedial measure can be rendered ineffective if upstairs windows are left open most of the time. The remaining remedial actions are largely unaffected by occupier behaviour.

Although there is a possibility of failure with any remedial action, none of the remedies in this data set were found to have failed when the radon level was remeasured. Eight of the householders reported that they had noticed that a fan had stopped or a filter was blocked, and had repaired the fault themselves before the next radon measurement was due.

One house that was excluded from this analysis because it had not been in the survey for the full five years had a failure when a vent became blocked. When the householder in question was advised of the increase in radon levels he identified the problem and corrected it, and the radon concentration was again reduced to a low level.

These results translate into an average failure rate of 4.0% ± 1.4% per annum where the uncertainty quoted is the standard error on the mean. The rate of failures which were not noticed and corrected by the householder was even lower, at 0.4% ± 0.4% per annum.

Durability of remedial measures



Overall, the results of the study are very encouraging, showing that the remedial measures maintained their effectiveness over five years with a low failure rate. However, they also show that householders need to check their systems regularly to make sure they are still running properly.

Radon Awareness Week in the Southeast of Northern Ireland

The week beginning Monday, 15 September, is Radon Awareness Week in the towns and villages of the radon Affected Area in the southeast of Northern Ireland. A radon exhibition will tour the area in an Information Caravan provided by the Environment and Heritage Service of the Department of the Environment for Northern Ireland. The displays and the leaflet information will cover many aspects of radon in buildings including the risk to health, the easy way to measure radon in the home and simple and effective methods of reducing dangerously high levels. In addition, on Wednesday, 17 September, Newry and Mourne District Council will host a seminar on radon.

Further details of both the seminar and the exhibition are available from Noel Adamson at Newry and Mourne District Council, Monaghan Row, Newry, BT35 8DL. telephone 01693 65411.

This newsletter is prepared for the Chartered Institute of Environmental Health by the National Radiological Protection Board. It is published quarterly as an insert in Environmental Health and distributed by the Royal Environmental Health Institute for Scotland. Any suggestions for topics for future issues should be sent to Jon Miles at NRPB (see address on page 2). The views expressed in the contributions here are not necessarily those of the Chartered Institute of Environmental Health, the Royal Environmental Health Institute for Scotland or the National Radiological Protection Board.