

# 6<sup>th</sup> National Radon Forum

## Report of Proceedings

### Introduction

This document reviews the discussion session of the sixth National Radon Forum held in Dublin on 6<sup>th</sup> November 2008. It does not purport to be a comprehensive report of the day's proceedings.

The theme of the Forum was "How to assess, fix and communicate radon problems" and the speakers were David Pollard (RPII), Michael Cremin (Cork County Council), Dr Mary O'Mahony (HSE), David Fenton (RPII) and Dr Ferid Shannoun (WHO).

The reader is invited to view the agenda and presentations which are available on the Radiological Protection Institute of Ireland's (RPII) [website](#). These presentations together with this report should give the reader a flavour of the topics discussed.

- 1) **Dr James McLaughlin (UCD)** commented that, even though the risk of contracting lung cancer is the highest for smokers exposed to high radon concentrations, the risk for non-smokers exposed to low radon concentrations (or even 200 Bq/m<sup>3</sup>) should not be totally disregarded.  
**Dr Mary O'Mahony (HSE South)** acknowledged this point and also added that the number of cigarettes smoked and the age at which a person started smoking also had to be taken into account when estimating the risk for smokers
- 2) Referring to David Pollard's presentation (RPII) regarding the predictive nature of the radon map, **Dominique Crowley (HSE)** asked what was the real function of the radon maps in advising members of the public on the risk from radon at an individual level. **David Fenton (RPII)** replied that the function of the maps was primarily to be used as a tool to target resources to deal with a potential radon problem in an area. At the individual level, the maps should be only be used as a first step towards assessing the risk from radon but that ultimately, the only way to know for an individual was to measure the house. **Michael Cremin (Cork County Council)** added that from a Local Authority point of view, the map had been the catalyst for the approach they used and that it was very important information to make use of. **David Pollard (RPII)** indicated that throughout the country, the highest radon levels were usually found in High Radon Areas, showing the accuracy of the radon maps in predicting where a problem might be encountered. Maps were also used for implementing the Building Regulations and this aspect is equally important in increasing radon awareness of the public.
- 3) **Robert Lamour (Environment and Heritage Service, Northern Ireland)** asked Dr Mary O'Mahony how they had dealt with the concern of the occupants of high houses when they found one and did they publicise it? Dr O'Mahony said that they did not make individual cases public.
- 4) **Dr Miriam Owens (Dept of Public Health, HSE East)** asked the RPII if there was a database of houses measured in the country and who managed it? **David Fenton (RPII)** said that all the measurements carried out by the RPII (including high results) were kept in a database. Some of the other measuring companies in

the country had offered to give their results to the RPII and usually, local authorities who have implemented a measurement programme have agreed to forward their results to the RPII on completion of measurements. **Dr Tony Colgan (RPII)** added that collecting as many data as possible in a single repository had already been used in the past to assess the effectiveness of remediation techniques and to evaluate radon exposure in workplaces.

- 5) **Neil Hanaphy (Radon Detection Ltd.)** informed the audience of the work achieved by his company in the South East of the country: they have completed measurements and successful remediation of the totality of the building stock of the South Eastern Health Board and encouraged other Health Boards in other parts of the country to do the same.
- 6) **Tim O'Neil (Necoflex Ltd.)** asked Cork County Council if some of the high homes they had identified in their housing stock were equipped with radon protective measures as required by the Building Regulations. **Michael Cremin (Cork County Council)** confirmed that they indeed had identified new homes equipped with a radon barrier with high radon levels.
- 7) **Frank Snowden (Galway City Council)** advised that about a third of the council houses in Galway City are “new”. How long should they wait for measuring radon in these houses? In other words, how long does it take for radon to build up in a building? **David Fenton (RPII)** answered that measurements could be carried out as soon as the house was occupied. **Dr Tony Colgan (RPII)** added that the Building Regulations do not guarantee low levels of radon.
- 8) **Davina Hickey (representing Sean Sherlock TD from north Cork)** suggested that people who bought local authority houses and subsequently found high levels of radon could feel penalised. With that in mind, she asked if there is a grant scheme available for low income people to cover for the cost of measuring and remediating these houses. **Michael Cremin (Cork County Council)** said that Cork County Council had no responsibility in this matter as they would enter in the private householders category. **Gary McGuinn (DEHLG)** added that a Scheme of Housing Aid for Older People was available to assist older people, generally over 60 years, to have necessary repairs or improvements carried out to their homes. Where a suite of works was being grant aided under this scheme, local authorities could also, as part of the package of works, assist with the provision of radon remediation works, where applicable. **Davina Hickey** advised that this Scheme had been suspended in the recent weeks and that consequently, current repair works had to be postponed. She asked if there was any chance for radon to be exempted from this suspension. Gary McGuinn said that to his knowledge, it would not be the case..
- 9) **Sean Nagle (HSE North Cork)** called for the setting up of an “independent radon certificate” for newly built homes. He also asked about temporal variations in radon levels, in particular if once measured these levels could change (yearly variations), as well as public health significance of radon in water. **Dr Tony Colgan (RPII)** said that the risk from radon was directly related to the cumulative average radon concentration and that the best way to obtain a representative value for the annual concentration was to measure radon for a minimum period of 3 months. In relation to radon in the water, **Dr Mary O'Mahony (HSE South)** said that radon was mainly an inhalation hazard. **David Fenton (RPII)** added that radon was only a problem in groundwater supplies and that Cork County Council had recently started assessing radon

concentrations in all their groundwater boreholes. So far the results only indicated low values. **David Pollard (RPII)** reminded the audience about the 2 key problems with radon in water: - water usually acts as a carrier phase for radon and therefore transport it over long distances and – the health risk from ingesting water containing radon is very small. In general, radon is not an issue for public supplies but it can be for water supplied by private wells.

- 10) **A representative from Kildare County Council** asked Cork County Council about the type of remediation options they had considered to fix the high homes identified in North Cork. Michael Cremin (Cork County Council) said that they had considered installing positive pressurised systems in the attics but that the most effective way was the radon sump. In that regard, the issue of the extra cost of electricity to run the fan came out, and it was decided that the occupiers would pay for it.
- 11) **Robert Doyle (HSE, Environmental Health Officer)** asked the RPII if they had taken the geology or the levels of uranium, radium or gamma radiation in the ground into consideration when producing the radon map. **David Pollard (RPII)** said no, that the map was solely based on measurements carried out over a year in houses selected randomly. He also said that the type of rocks and the permeability were probably more important than the uranium or radium concentrations in the ground. **Dr Tony Colgan (RPII)** added that limestone with karstic features appeared to be at particular risk from radon not because of the amount of uranium in the ground but because of the radium and the radon being transported over long distances towards these areas. **David Fenton (RPII)** repeated the advice that the only way to know if a house had a radon problem was to have a radon measurement made, not by looking at the local geology.
- 12) To confirm the above point, **Dr Rowland Jones (HSENI)** gave the example of a school they had studied in Northern Ireland. The main part of the school had been built in the 1930s with a solid floor and sub floor ventilation. The radon levels in this part of the school were low ( $75 \text{ Bq/m}^3$ ). A new extension had subsequently been added, with solid floor and no sub floor ventilation and the radon levels were over  $1800 \text{ Bq/m}^3$  in this part. Dr Jones also made a comment in relation to the issue of the cost to maintain a fan-assisted sump (extra electricity cost) as raised by Michael Cremin, and confirmed that some people simply turned the fan off to save money. **Michael Cremin (CCC)** said that the only way to avoid this problem was not to give householders the possibility of turning the fan on or off, by connecting the fan directly to the electricity supply to avoid this.
- 13) **Tim O'Neil (Necoflex Ltd.)** asked the DEHLG if 10 years after the introduction of the Building Regulations we were any closer to have a Code of Practice covering the installation of new building protective measures. As **Sarah Neary (DEHLG-Building Standards)** had just left the Forum, Gary McGuinn (DEHLG) offered to relay the query directly to her. **David Pollard (RPII)** felt it was important to say that the Technical Guidance Document C (TGD-C) pointed out that new houses should be measured once occupied, and even though the success rate of radon barriers could be improved with a Code of Practice, it would only reduce the probability of having a radon problem. He also said that the Irish Agreement Board certification for radon barriers included provisions to ensure their proper installation and that a Code of Practice would not add much more to this. **Tim O'Neil** agreed that follow-up testing was crucial but re-emphasized the fact that radon barriers could be very effective if installed

properly and that the absence of a Code of Practice was disappointing. The issue was how the barriers were installed. He also said that site inspections were not frequent enough. **Dr Tony Colgan (RPII)** said that in Scandinavia, radon barriers were not recommended because they could not guarantee they would work or be 100% effective. He also raised the issue of the extra cost of radon barriers and asked if, when all these points were taken into account barriers could still be considered effective. **Tracey Hayes (Necoflex)** said that radon testing of newly built homes as recommended by the TGD-C should be made mandatory. By doing so, results would indicate when the barrier is failing and on the long term, it would improve public awareness and workmanship standards.

- 14) **Eamon Smith (DEHLG-Building Standards)** asked Cork County Council officials about the results of the post-remediation tests in the North Cork council houses that had been remediated so far. **Michael Cremin (CCC)** said they were not yet available as they were still on-going. Eamon Smith then asked if CCC had looked at correlating the high levels found with house types, house age and construction types. **David Pollard (RPII)** said that because so many different factors could influence the radon concentrations in any given building, it would probably be difficult to pin point at a single one of them.
- 15) **Davina Hickey** asked how Ireland compared to other EU countries in terms of raising radon awareness. **Dr Ferid Shannoun (WHO)** said that the multi-agency approach used recently in Cork to address the health risk from radon showed that Ireland was in tune with the type of best practice recommended by the most recent WHO International Radon Project and in that regard could be considered as one of the most advanced country. **Dr Ann McGarry (RPII)** said that when the RPII started working on the radon issue, they thought it could be fixed easily. It turns out that it is not. Today, and as the Cork case showed, we know that progress can be made if everyone involved is committed to work together. Can we learn from other countries? Probably, but as the evidence shows, Ireland is already up there. However, it is fair to say that there is no easy solution to the radon problem. **Dr Tony Colgan (RPII)** added that some countries such as France had asked us for our advice in tackling the radon problem but also said that everybody had a role to play.