

Case study: Survey of Radon in State workplaces

National Radon Forum
November 2010

State Claims Agency

- ❑ SCA established under the NTMA Amendment Act, 2000
- ❑ Manage claims
 - Employers Liability (EL)
 - Public Liability (including Clinical Negligence) (PL)
 - 3rd Party Property Damage (PD)
- ❑ Remit covers certain State authorities, including;
 - The State,
 - Ministers, e.g. Agriculture, Defence Forces etc
 - Attorney General,
 - Community and Comprehensive Schools and
 - various other bodies e.g. OPW, Prison Governors listed in the schedule to the Act.

Two Functions

- Claims Management
- Risk Management

SCA Mandate

Management of Claims

- To manage claims so as to ensure that the State's liability in relation to such claims is contained at the lowest achievable level.

Risk Management

- Advise and assist State authorities on measures to be taken to prevent the occurrence, or to reduce the incidence, of claims.
- Ensure that State authorities are fully aware of the measures necessary to address any risks highlighted by their claims' records and by risk evaluations / audits.

Risk Management Strategy

- Identify risks.
- Assess measures in place to counter such risks.
- Assess extent to which authority fulfils its common law and statutory duties. (Litigation Risk)
- Risk advice : advice and assistance but no enforcement function.
- Encourage best practice in the management of risks.

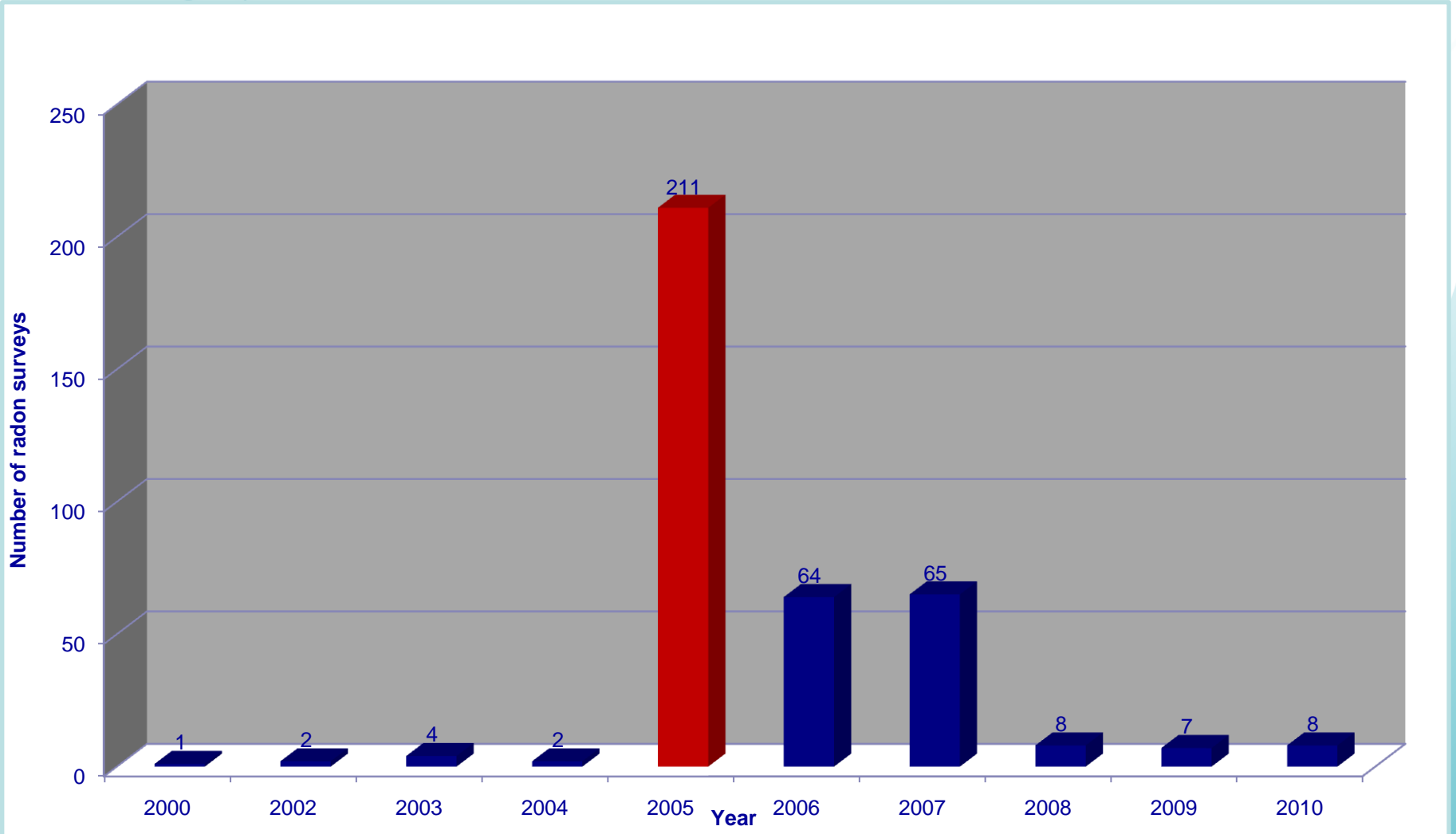
State Authorities and Radon

- ❑ Hosted seminar “Radon Risk in State Buildings” (2004) in conjunction with RPII;
 - risks associated with radon gas;
 - the civil and criminal legal duties of employers;
 - management of radon in State buildings.
- ❑ Formally recommended to all Authorities to *‘initiate a programme of measurement of radon levels in buildings occupied by them’*.
- ❑ In March 2010, a follow up survey was conducted to ascertain SA’s current status with regard to the implementation of the radon management programme.

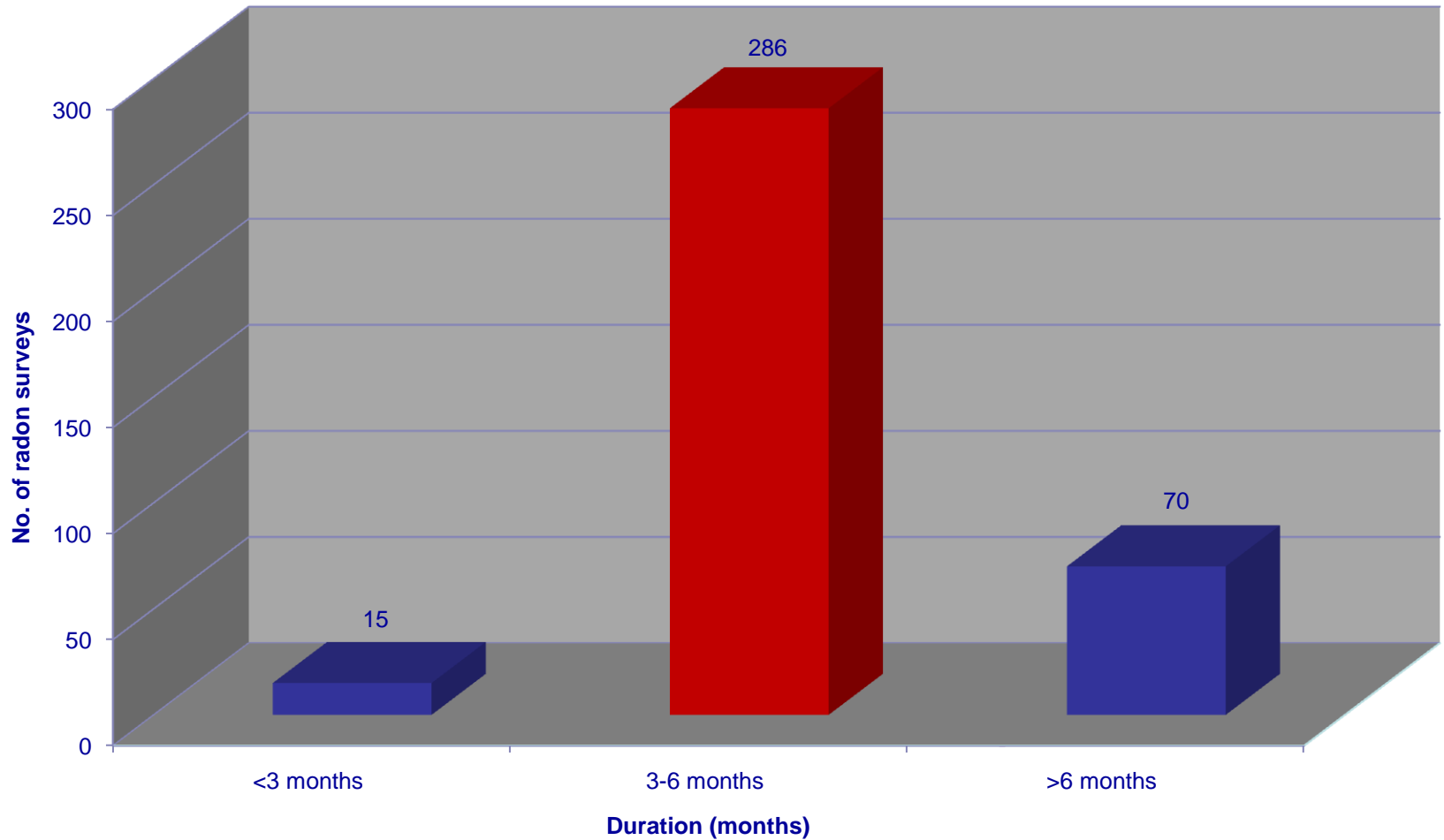
Progress to date

- ❑ 24 of the 29 State authorities sent the questionnaire replied
- ❑ 12 authorities have completed radon testing in all their buildings
- ❑ In total SCA has received radon results from 25 SAs (from the initial project and the follow up questionnaire)
- ❑ Of the 530 locations surveyed 14 (3%) recorded radon concentrations that exceeded the relevant reference levels (Only 1 of these related to a residential dwelling)

Year of Testing

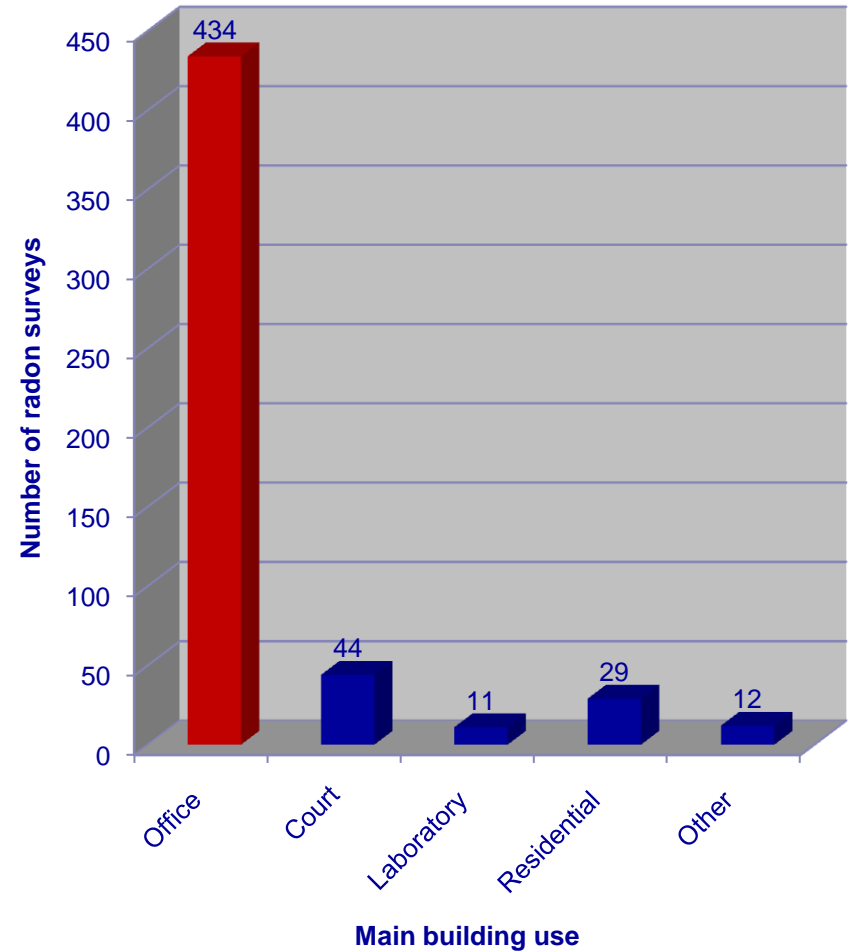


Duration of Testing

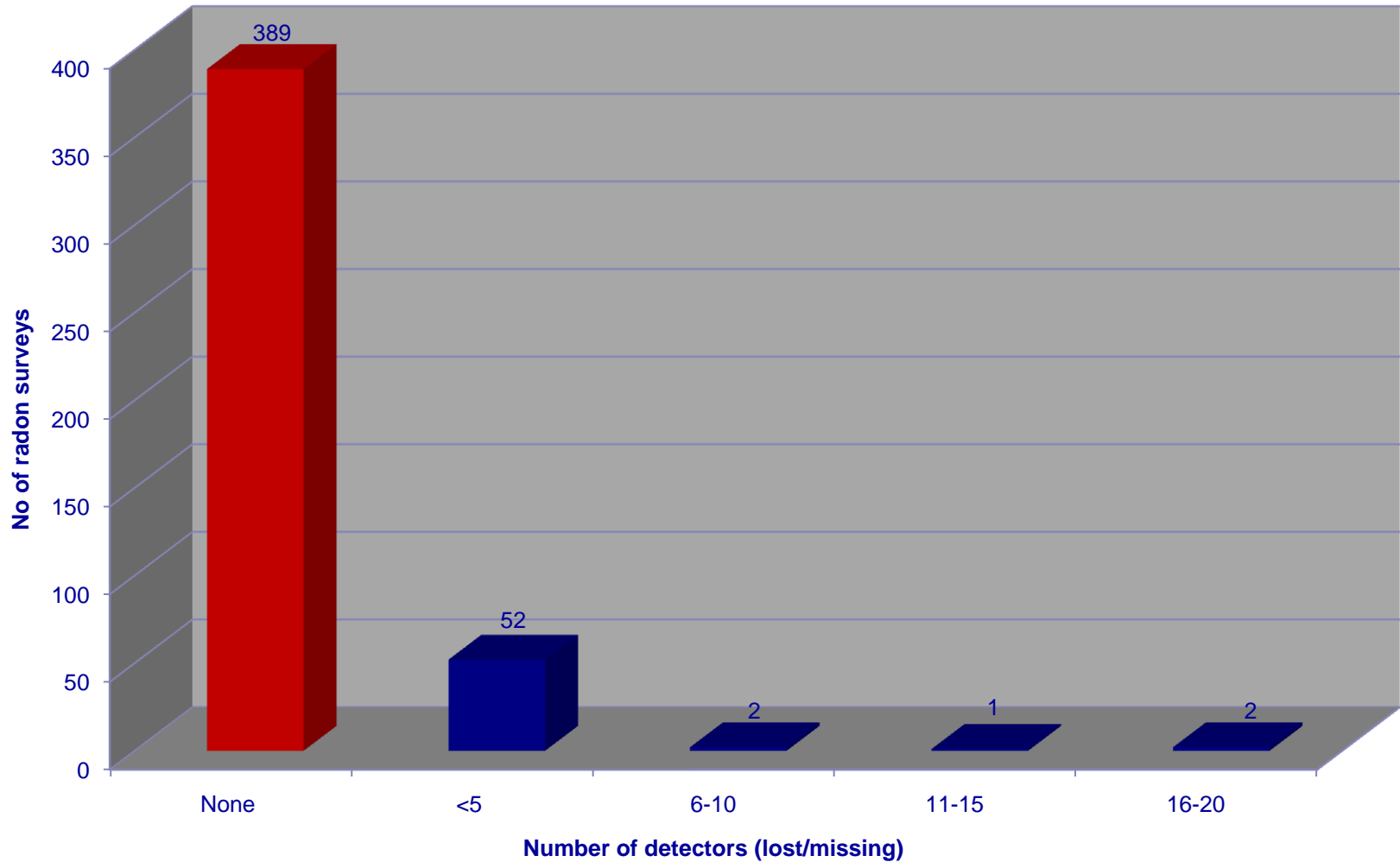


Main Building Use of Locations Surveyed

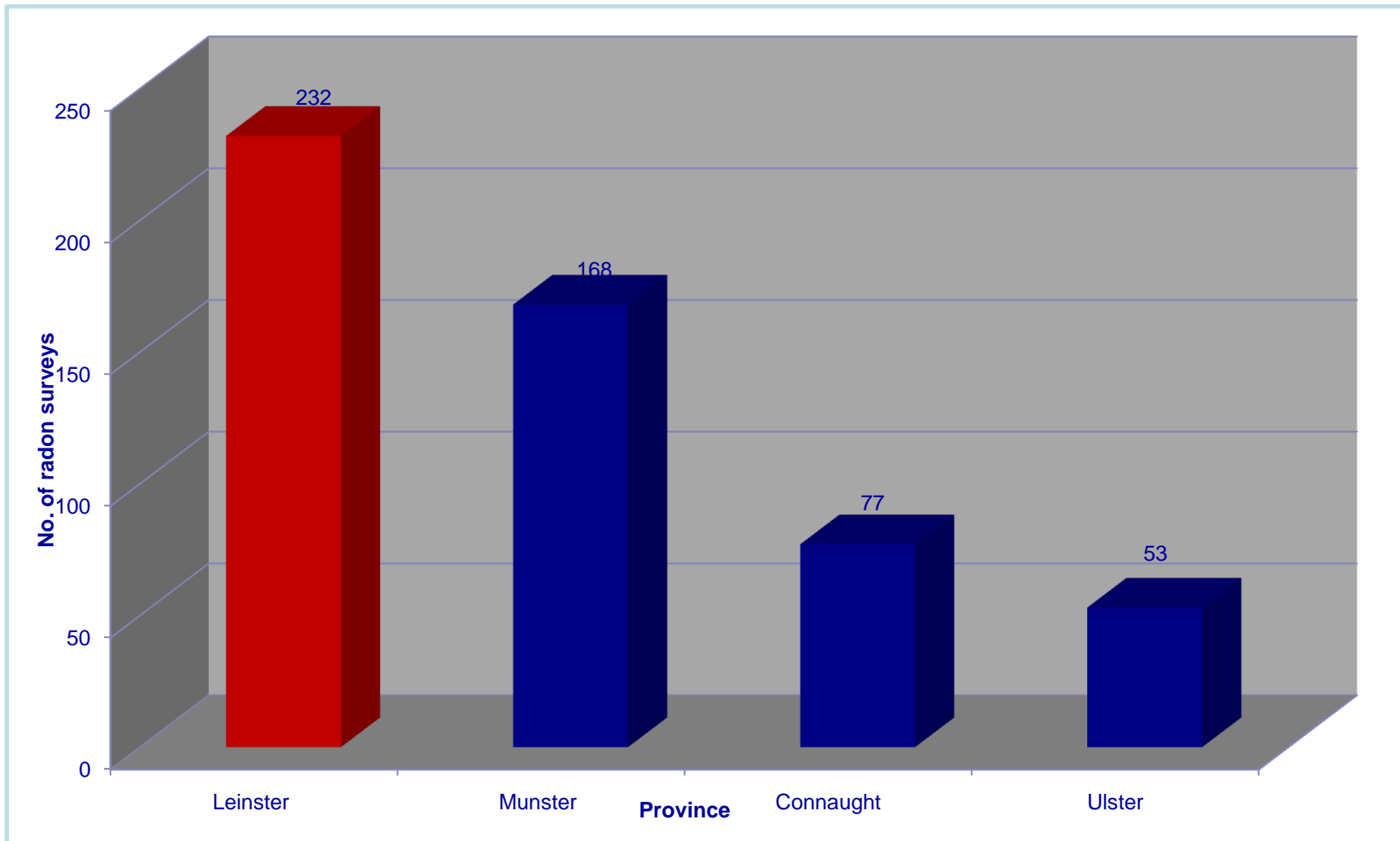
- ❑ 82% of the locations surveyed were offices
- ❑ 8 % were court buildings
- ❑ 2 % were laboratories
- ❑ 5.5 % were residential



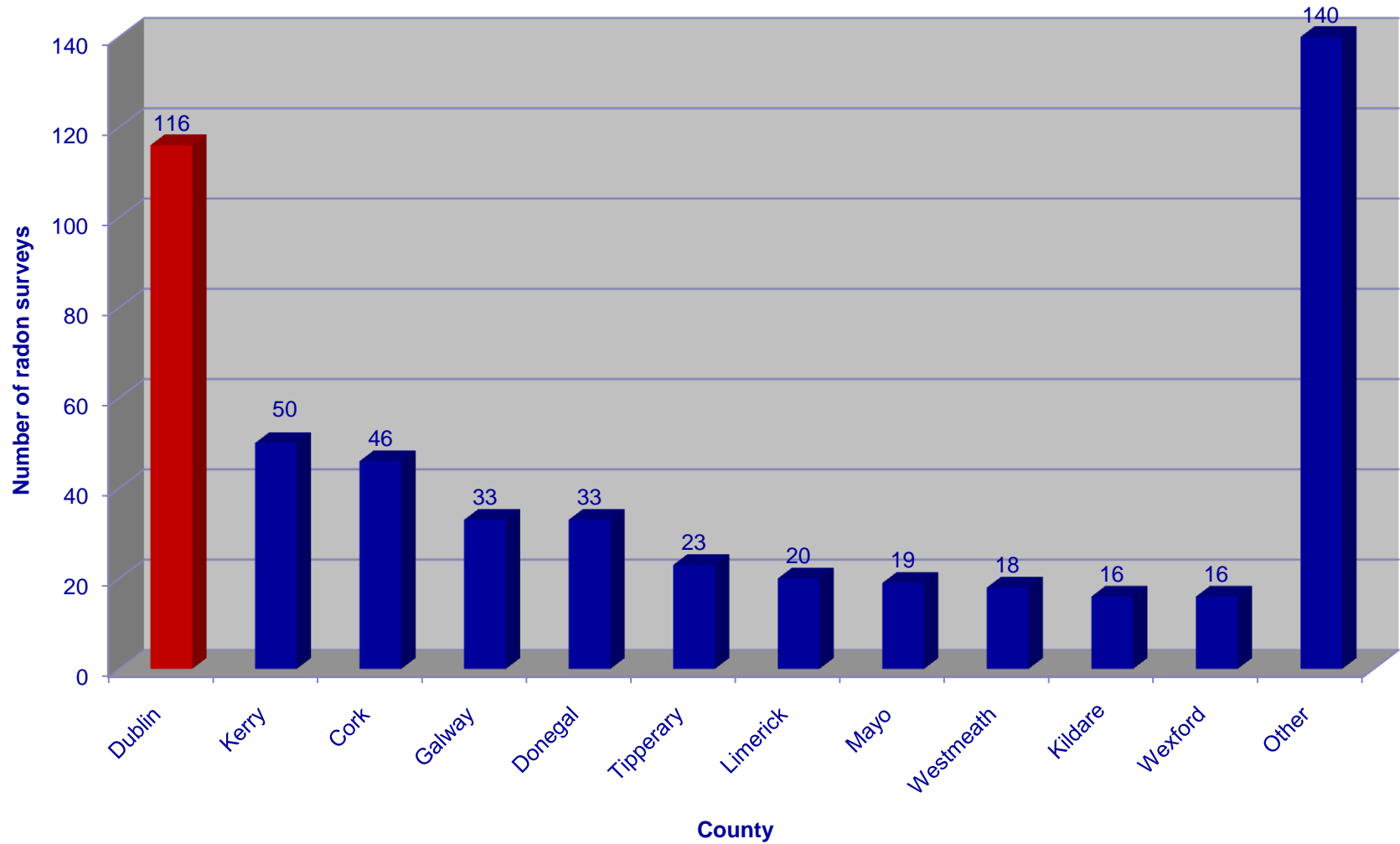
Lost/missing Detectors



Province

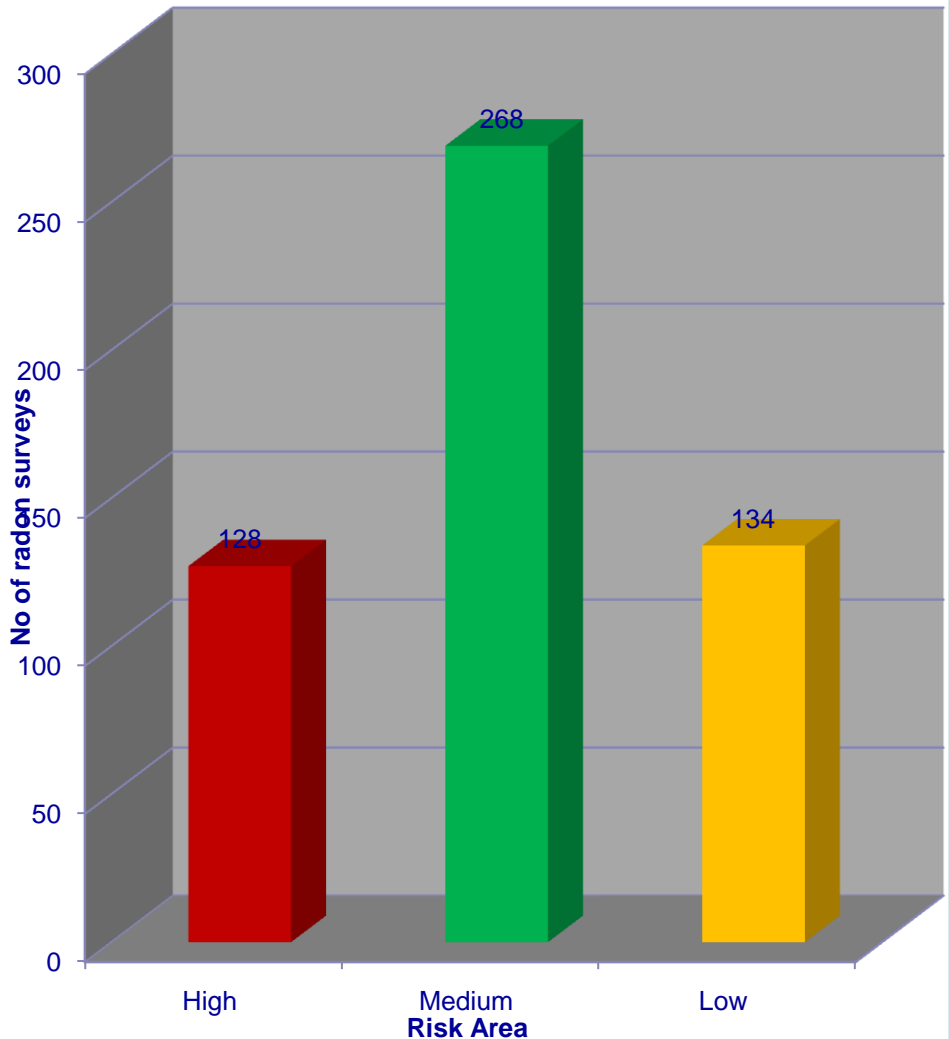


Number of Radon Surveys per County

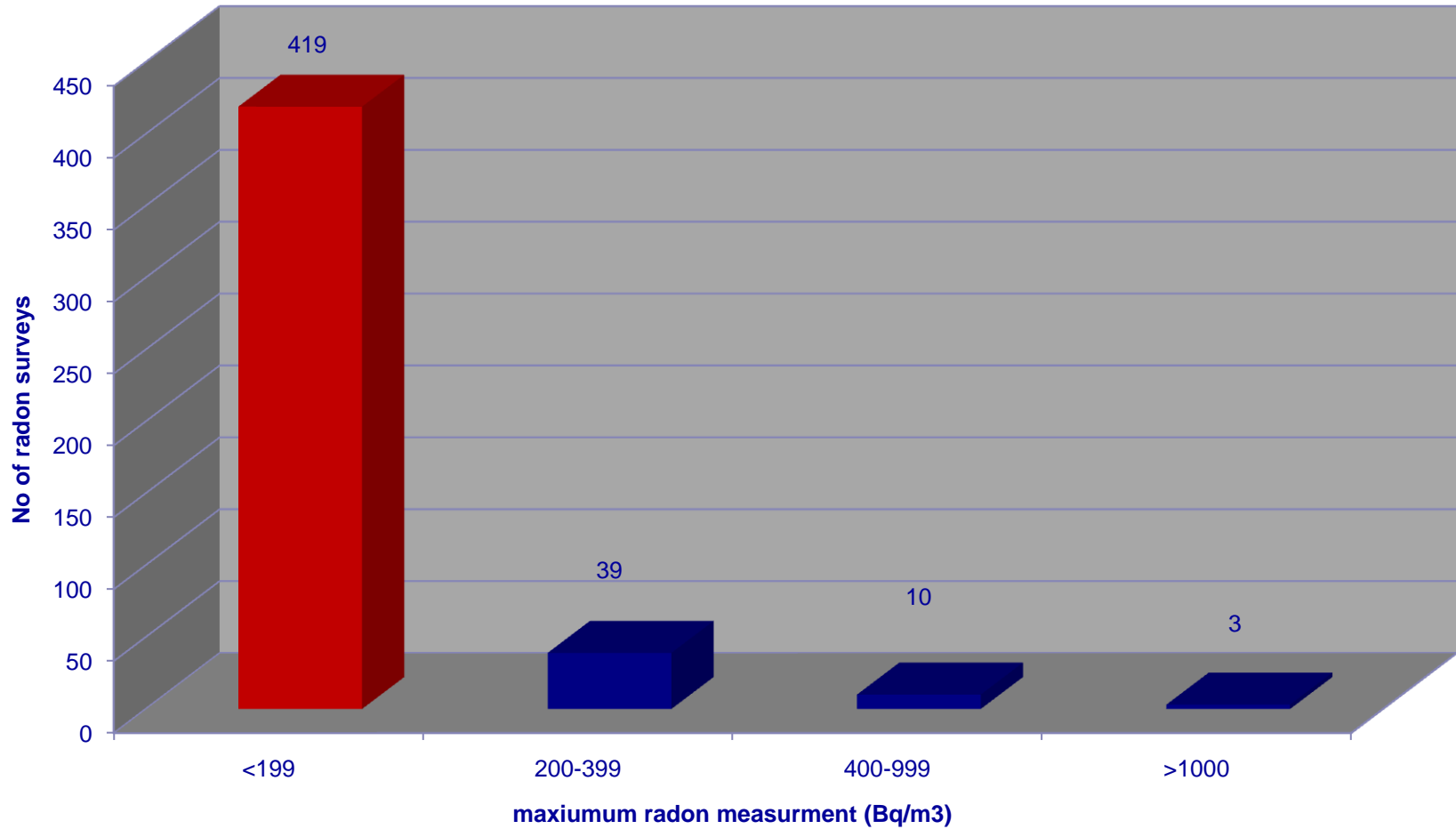


Risk Area

- ❑ Each of the locations surveyed were divided into high, medium or low radon areas depending on their location on the radon map as follows:
 - high radon areas= high risk area;
 - 5%- 20% of residential dwellings estimated to be above the reference level = medium risk area;
 - 1% - 5% and less than 1 % of residential dwellings estimated to be above the reference level =low risk areas.
- ❑ A total of 128 (24%) of the locations surveyed were in high risk areas, 268 (51%) were in medium risk areas and 134 (25%) were located in low risk areas.



Distribution of Maximum Radon Concentrations



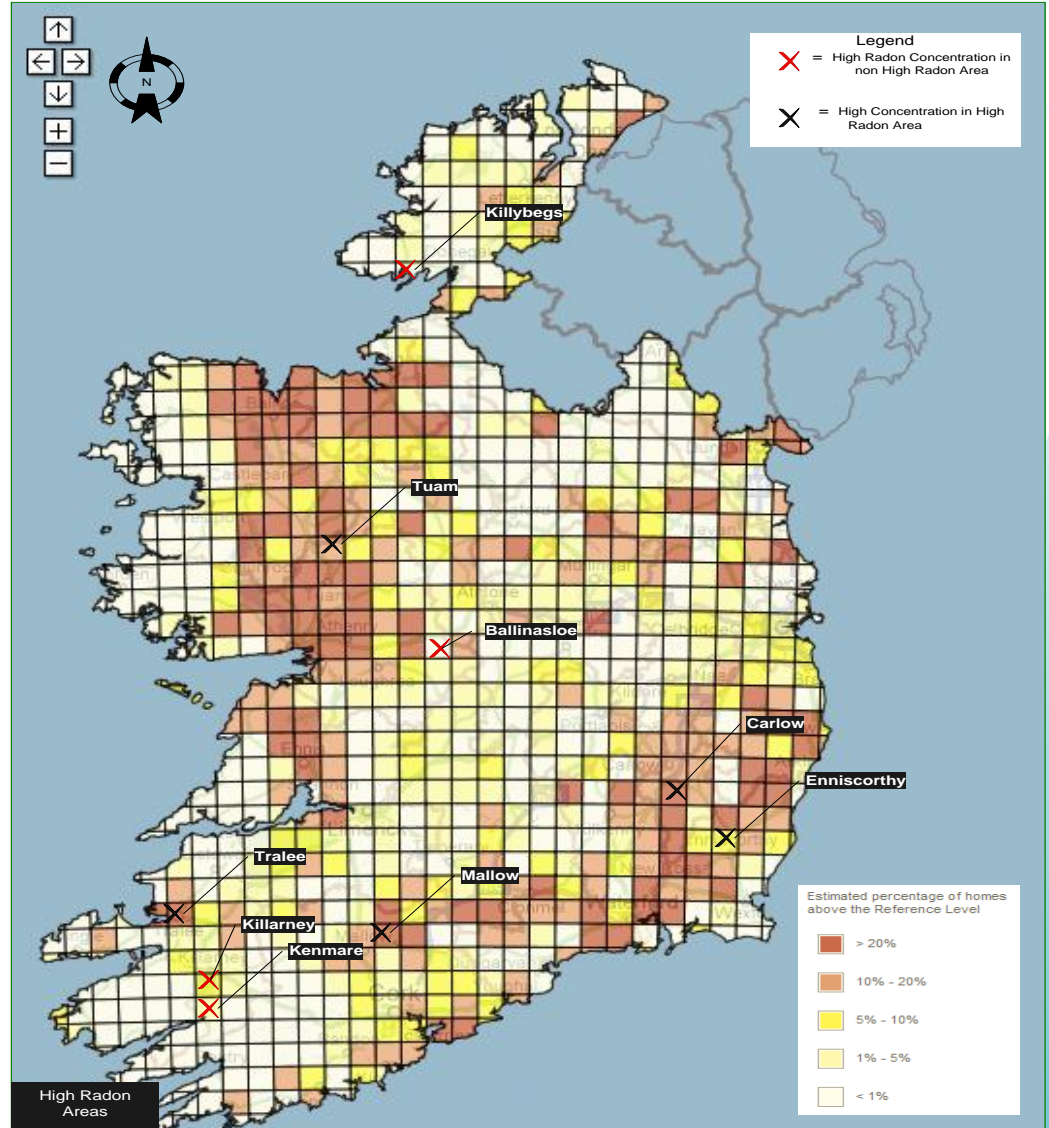
Radon Map

(Indicating the locations where high radon readings were found)

14 locations recorded high radon levels.

Counties;

- Kerry
- Cork
- Carlow
- Galway
- Donegal
- Wexford
- Westmeath



Distribution of Maximum Radon Concentrations by County

❑ Mallow -
1,770Bq/m³

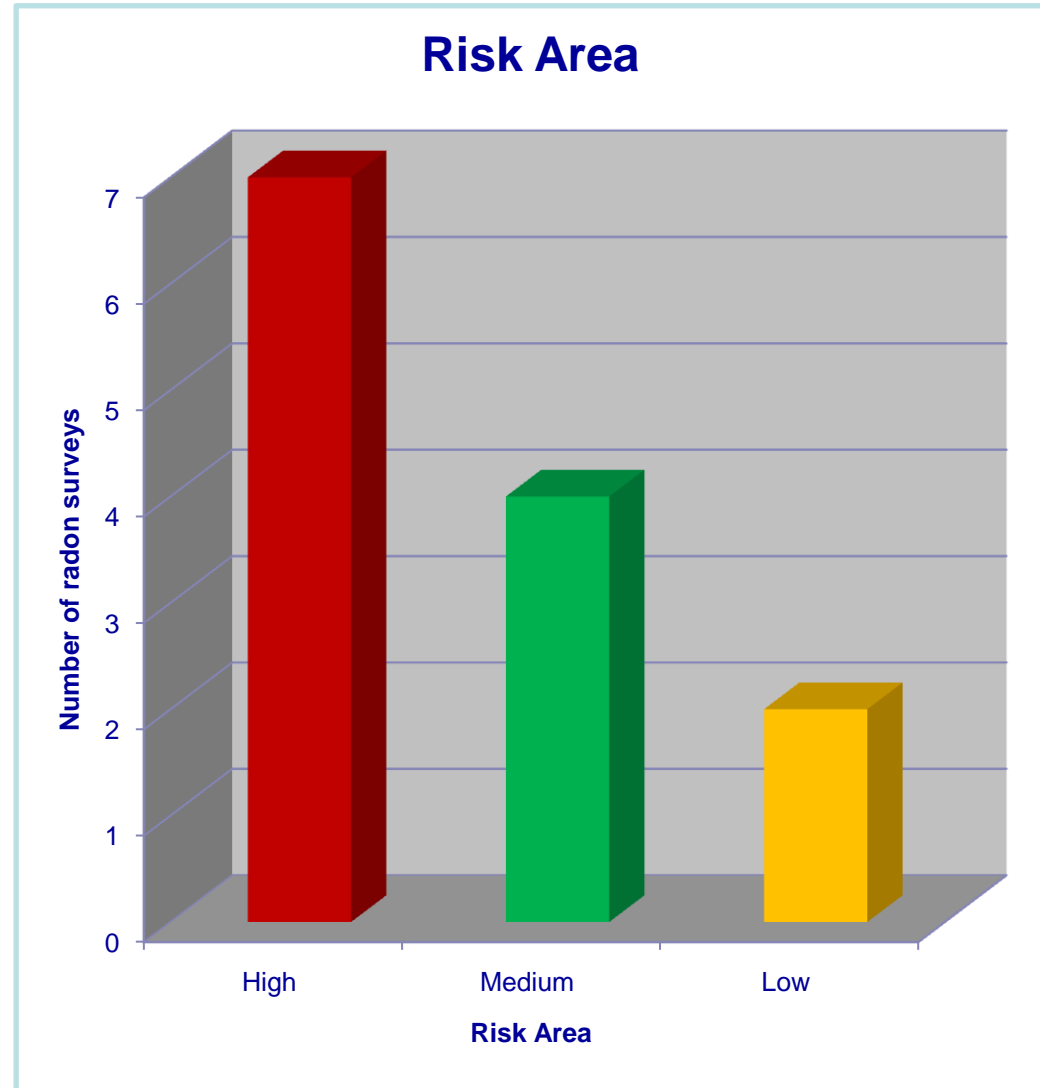
❑ Kenmare –
1,445 Bq/m³

❑ Tralee – 1,098
Bq/m³

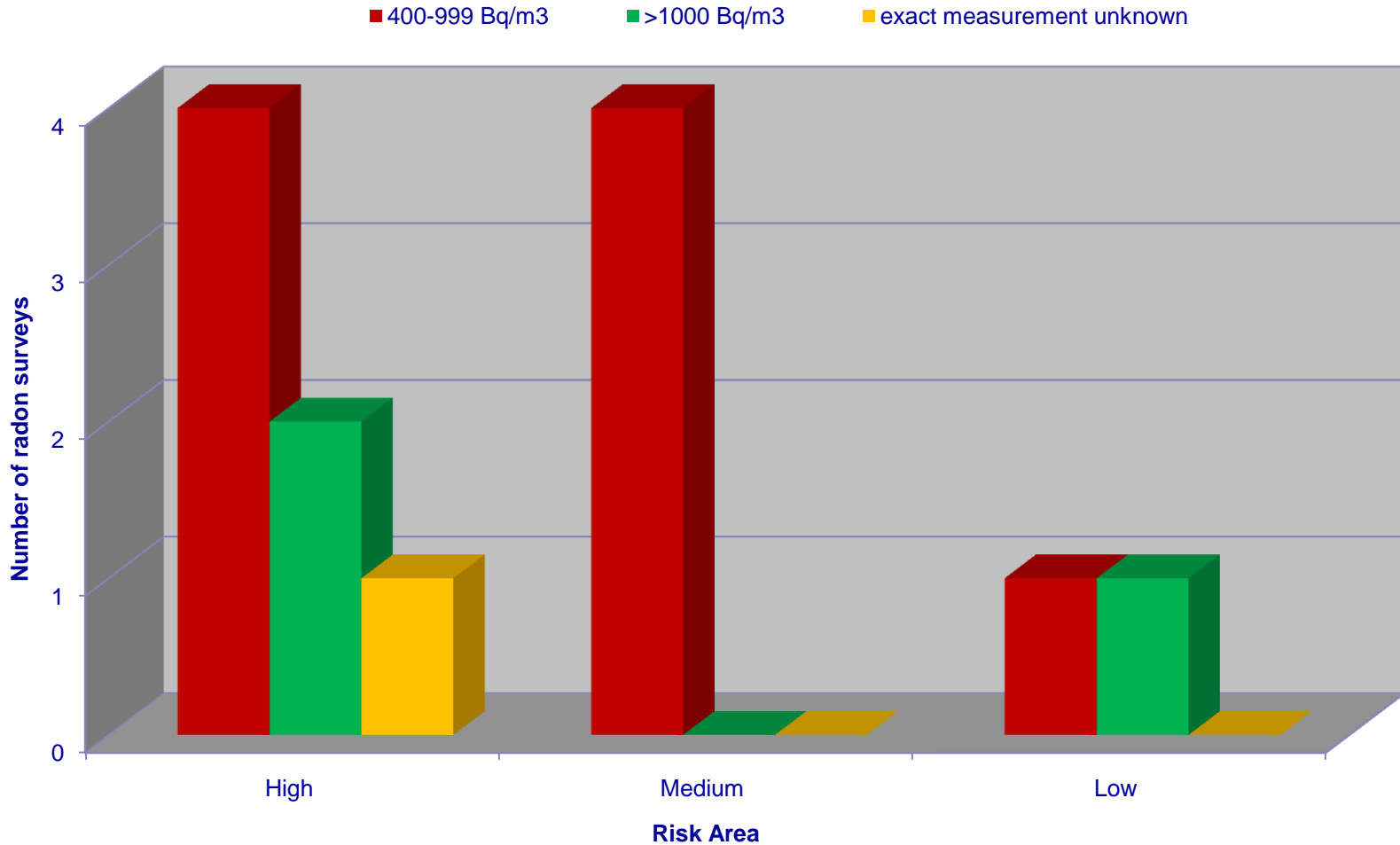
County	No of locations with radon levels in one or more rooms within the stated values					Total	Maximum Concentrations Bq/m ³
	<199	200-399	400-999	>1000	Unknown		
Carlow	6	0	1	0	1	8	666
Cavan	7	0	0	0	2	9	171
Cork	36	6	0	1	3	46	1,770
Clare	8	3	0	0	3	14	365
Dublin	99	1	0	0	16	116	256
Donegal	30	1	1	0	1	33	670
Galway	26	2	2	0	3	33	488
Kerry	34	8	4	2	2	50	1,445
Kildare	12	2	0	0	2	16	353
Kilkenny	7	1	0	0	0	8	232
Laois	9	0	0	0	1	10	79
Limerick	19	0	0	0	1	20	189
Leitrim	4	1	0	0	0	5	220
Longford	3	0	0	0	0	3	58
Louth	7	1	0	0	3	11	219
Mayo	14	4	0	0	1	19	307
Meath	3	1	0	0	2	6	244
Monaghan	11	0	0	0	0	11	129
Roscommon	4	1	0	0	2	7	85
Offaly	7	2	0	0	1	10	267
Sligo	9	2	0	0	2	13	375
Tipperary	20	0	0	0	3	23	195
Wexford	12	1	1	0	2	16	415
Westmeath	11	2	1	0	4	18	497
Waterford	12	0	0	0	2	14	140
Wicklow	9	0	0	0	2	11	160
Total	419	39	10	3	59	530	

High Radon Results

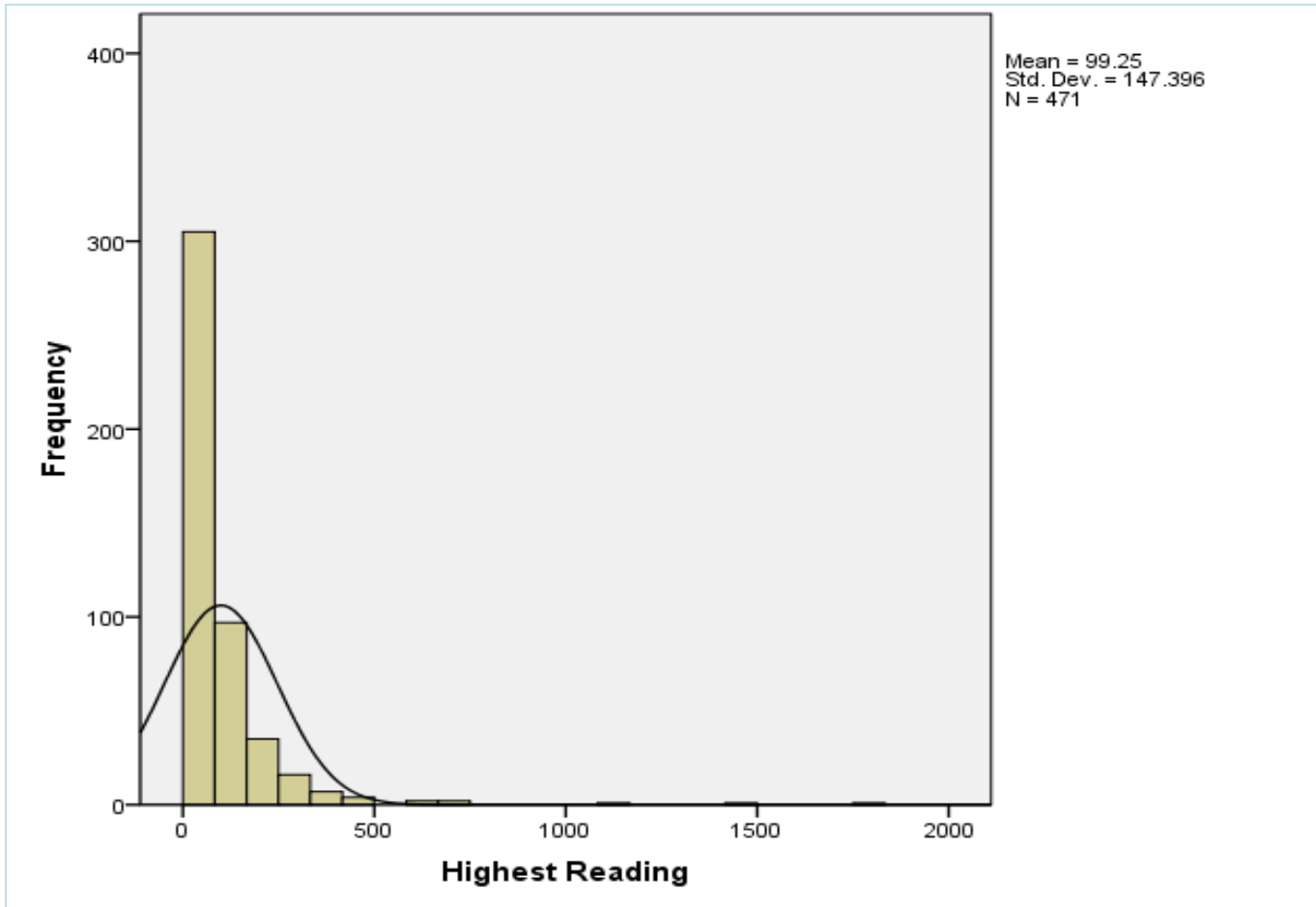
- ❑ SHWW Act, 2005, -the HSA require that workplaces in ground floor and basement levels in high radon areas have radon measurements carried out.
- ❑ High radon results:
 - 7 High Radon Areas
 - 6 Non High Radon Areas
 - 1 unknown specific location
- ❑ SCA recommended that all buildings are tested even those located in low radon areas.
- ❑ Why? Its cost effective. A radon sump costs a fraction of what a possible claim could cost.



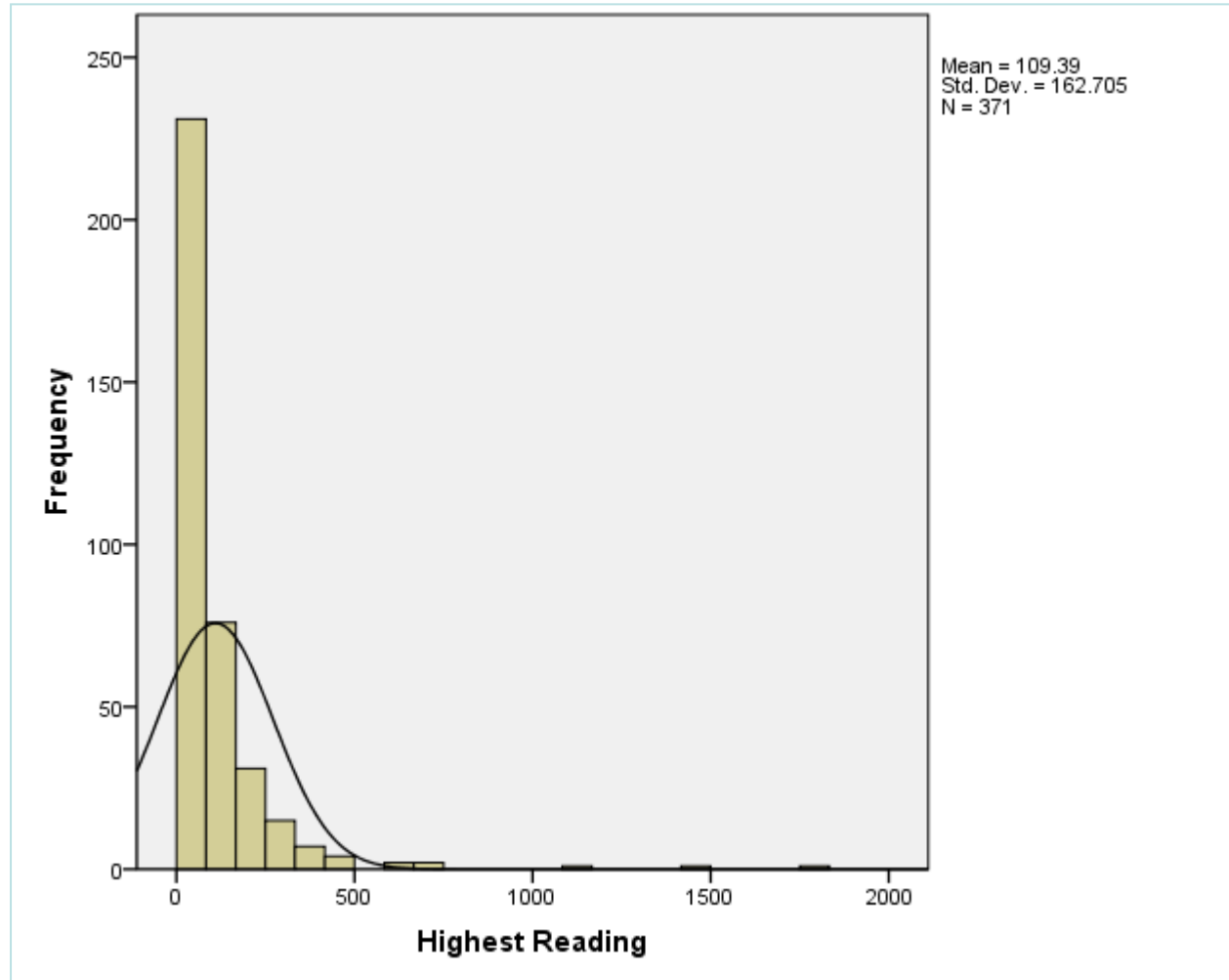
High Radon Results- Distribution of Maximum Radon Concentrations by Risk Area



Log Normal Distribution of Maximum Radon Concentrations



Log normal Distribution of Maximum Radon Concentrations (Excludes Dublin)



Findings

- ❑ Validation of radon results:
 - Review revealed that information on some buildings had not been returned.
- ❑ Quality control:
 - Placement of detectors;
 - Residential dwellings -1 radon measurement was conducted;
 - Lost/missing detectors;
 - Radon reports issued are missing information such as the measurement period and the exact address of the building assessed.
- ❑ Substantial geographical variation in indoor radon levels, 4Bq/m^3 (Tipp.) – $1,770\text{ Bq/m}^3$ (Mallow).
- ❑ Buildings in low radon areas had radon concentrations that exceeded the reference levels and vice versa.

Next Steps

- Any State authority who has not replied to the questionnaire should to do.
- State authorities should initiate radon measurement programmes in any outstanding buildings.
- State authorities should also re-test rooms/areas where detectors were not returned for processing.
- Remediation works – send in results.
- Devise a radon policy (Safety Statement)
 - radon testing
 - radon remediation & re-testing
 - radon barriers on new builds