



Radon Prevention in New Buildings - What the Public Needs to know

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Radon is RADIOACTIVE

- Naturally occurring
- Radioactive – uranium decay in rocks & soils
- Permeates upwards from underlying soil
- **Accumulates** – in enclosed spaces
- Can not predict accurately in house levels at pre-construction stage – VENTILATION
- Radiological Protection Institute of Ireland RPII
- Radon Measurement – RPII Website
- National Grid 10kmx10km



COMMUNICATION

public

Appreciate the
dangers of Radon

- Avoid being **SENATIONAL**



INFORMATION

Available Information

T.G.D 'C'

RPII Publications & Surveys

DoE



PUBLICATIONS

- DoE - Radon in Existing Buildings : Corrective Options – Remedial
- TGD 'C' – Technical
- Radon levels in Domestic Dwellings built post 1997 – Pilot Study,
Ennis Co. Clare
- RPII Website



INDICATORS

- Encourage public to test home for Radon
- Simple and inexpensive process



TEST for RADON

- Approved protocol
- Reliable professional
- RPII Website



PREVENTION

- What are preventative measures
- Cost Implications new build & retrofit



Remediation

- Remediation options available
- Attach extractor fan
- Mini sumps – localised area

REGULATION

Requirements

- Building Control Act 1990
- Section 3 Building Regulations
- Provisions for securing the Health, Safety and Welfare of:
 - Persons in or about buildings
 - Persons who may be affected by buildings or by matters connected with buildings

REGULATION

Requirements

- ❑ As detailed in TGD 'C'
- ❑ Sump & pipework
- ❑ High Radon Areas **BARRIER**



PIPE SEALS

- Where pipes go through walls of buildings provide seal caps to prevent ingress of water & rodents
- Pipe terminals clearly marked



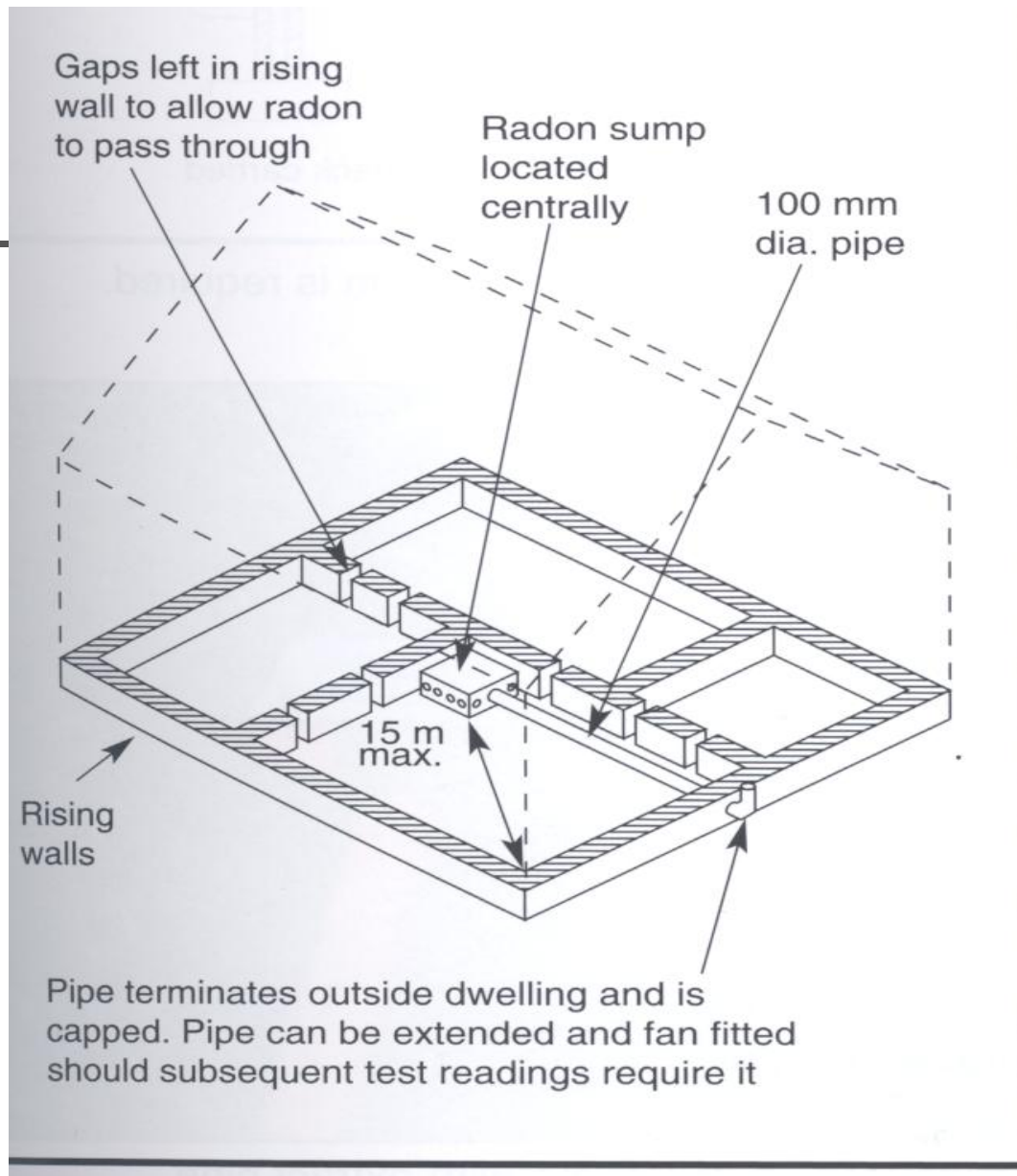
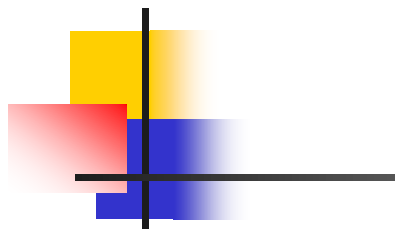
SUMPS

- Means of attaining air pressure equilibrium between soil and dwelling
- Prevention of radon laden air entering building = f(workmanship;hardcore)
- Guideline = 1 sump per 250 m²
- Larger buildings = 500 – 1000 m²



HARDCORE & SUMP operation

- Clean
- 'Gas Permeable' following compaction
- 250m² or 15m linear influence
- Rising walls - Free airways –gap 12500mm²/m run





BARRIER Protection

- Barrier required in TGD 'C'
- Distinguish between:
 - What Barrier is for
 - What DPM is not for
- Membranes suitable for barrier use detailed in TGD



REQUIREMENTS

- Material suitable for its intended use
- Fitness of membrane established by independent certification by an approved body - AIB
- Low Density Polyethylene min perform levels
- Table 3



INSTALLATION Issues

- Incorrect materials
- Inadequate lapping
- Inadequate joint detailing
- Inadequate Sealing



CONCLUSION

- Building Control
- Design Stage
 - provide adequate **details**
- Construction Stage controlled
 - Proper **supervision**
 - Quality **Hardcore**
 - Protect **Membrane**
 - **Seal** points of entry
- Footbridges & underpasses