Somerset Council

Health & Safety Radon HS039

Organisation	Somerset Council
Title	Radon HS039
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Owner	Service Manager, Corporate Health And Safety
Protective Marking	OFFICIAL-Unclassified
Primary Legislation	

Policy Governance

The following table identifies who within Somerset Council is Accountable, Responsible, Informed or Consulted with regards to this policy. The following definitions apply:

- **Responsible** – the person(s) responsible for developing and implementing the policy.
- **Accountable** – the person who has ultimate accountability and authority for the policy.
- **Consulted** – the person(s) or groups to be consulted prior to final policy implementation.
- **Informed** – the person(s) or groups to be informed after policy implementation.

Responsible	Corporate Health and Safety Unit
Accountable	Chief Executive
Consulted	Senior Leadership Team, HR, Unions, Health, Safety and Wellbeing Steering Group (HSWSG)
Informed	All Members, employees, contractors, volunteers, and 3rd parties

Version History

Revision Date	Author	Version	Description of Revision
December 2014	Frances Petty	V01	Final Revision V02
23 June 2017	Iain Hunter	V02	Final Version V03
26 September 2019	Julie Rutter	V03	Final Version V04
28 December 2022	Julie Rutter	V04	Change to supplier for radon monitoring services; change of name for Service Manager SSS

Document Notification

Approval	Name	Date
Service Manager Corporate H&S Officer	Daniel Thomas	**January 2023**
Director of HR	Chris Squire	**January 2023**
Chair of HSWSG	Chris Squire or Deputy	**January 2023**
Service Manager, Somerset Scientific Services	Darren Clark	**January 2023**
Service Manager, Facilities Management	Heidi Boyle	**January 2023**

POLICY ON A PAGE

Somerset Council (SC) will ensure that radon is managed correctly within all SC owned Property and that Premise Managers are aware of the requirements needed to manage radon in areas with elevated radon levels.

In order to comply with the above, this policy provides; the Council's rules that must be followed, the standards to be maintained and signposts to further guidance. It also highlights the risks to users, clients and the Council and the potential consequences of unauthorised access.

This document will be available to: **All Elected Members, Somerset Council Staff, 3rd Party Contractors, Secondees and Volunteers**

Key Messages

- All staff and volunteers to be aware of where radon is located within Somerset and the premises that are likely to be affected by radon.
- All staff and volunteers to be made aware of what monitoring and remediation measures are in place where significant risks to exposure are known.
- That Premise Managers receive awareness training and are competent to meet the requirements of the Radon Policy.

This "policy on a page" is a summary of the detailed policy document please ensure you read, understand and comply with the full policy

Managing the risks from

Radon

This document forms part of Somerset Council's Corporate Health and Safety policy manual, which is available on the H&S Website.

Services and Establishments may supplement this policy with their own specific guidance.

1. Table of Contents

2. Purpose of Policy

Radon is a naturally occurring radioactive gas that, if inhaled in sufficient quantities over a period of time, may cause serious harm to health, specifically an increased risk of lung cancer.

Many parts of Somerset are located in radon affected areas, which are areas where there is an increased likelihood of elevated radon levels being present. Many of our buildings and other premises that we use must therefore be monitored, to identify the potential risks from radon. Where necessary, remediation is carried out to reduce the risk to the health of employees and others who may be present.

Somerset Council is committed to reducing exposure to radon gas that could be inhaled and cause serious harm to health.

3. Responsibilities

3.1 Somerset Council

Somerset Council will

- Ensure that the risk from radon is managed effectively in those premises in which employees, and others to whom a duty of care is owed, are regularly present, by funding a radon management plan and requiring the Health, Safety and Wellbeing Steering Group (HSWSG), on its behalf, to implement and review it on a regular basis.
- Ensure that adequate records relating to the management of the risk from radon are created, maintained and made available to all parties as necessary.

3.2 Directors

Directors will, where they have responsibility for premises, have systems and delegated responsibilities in place to ensure that:

- the cost of all detectors required for the monitoring programme in premises for which they are responsible can be met;
- premises managers are appointed and are competent to meet their responsibilities;
- all employees in those premises have been informed about the risks and how they are being controlled;
- employees have been trained to the appropriate level for their duties;
- tenants are provided with information about the potential risks from radon in properties;
- local control measures are correctly implemented in all premises in which employees are required to work, including those not owned or leased by SCC; and
- when any premise is no longer required, a handover of responsibilities is arranged with Property and FM Services.

Directors will contact the Service Manager of Facilities Management, or the Corporate Health and Safety Unit (CHSU), where they feel that the arrangements are not working satisfactorily, or support is required.

3.3 Premises Managers

Premises Manager will ensure that:

- a record of the radon risk assessment carried out for the property is maintained;
- any local control measures for restricting radon exposures that are deemed necessary as a result of the radon risk assessment are put in place and maintained;
- all staff and others (such as contractors) who need to be aware of the nature and degree of the local risk from radon are suitably briefed;
- whenever maintenance or refurbishment work on premises is being considered,
  - if the property is in a radon affected area that the appropriate radon preventive measures are installed as necessary, and
  - a radon test takes place following completion of the work if required;
- where radon remediation systems are installed, they are checked on at least an annual basis and maintained as necessary; and
- any defect in remediation systems is reported to Property Services and the Service Manager of Facilities Management, and appropriate steps are taken as outlined in section 4.7 of this policy

Premises Managers can direct enquiries which require specialist advice to the radon monitoring contractor via the Facilities Management Service Manager as required.

3.4 Employees

Employees will follow any local guidance or instruction given in relation to radon.

3.5 The Service Manager, Facilities Management

The Service Manager of FM will:

- be responsible for arranging a competent radon contractor who, in addition to providing radon monitoring services, will provide advice across the relevant areas of SC on matters relating to the risk from radon with support provided from either/or the radon contractor and CHSU where required;
- prepare a radon management plan annually for adoption by the HSWSG on behalf of SC;
- ensure that radon measurements are undertaken according to the radon management plan to the appropriate standard;
- maintain records of radon monitoring carried out for all leased and owned SC premises;
- report monitoring results to premises managers;
- provide regular reports on the monitoring programme and the remedial work carried out to maintain the policy, and on situations where the policy has not been implemented effectively, to the HSWSG;

- consult the contracted radon contractor for advice as necessary[1]; and
- liaise with CHSU when changes in the legislation governing radon occur and recommend any changes to this policy.

3.6 Corporate Property

The Corporate Property Service will:

- organise radon survey and remediation work through the assigned competent radon contractor;
- ensure that for all new construction projects an appropriate risk assessment for radon is carried out and that the appropriate radon protective measures are incorporated into new buildings/refurbishments where required;
- be responsible for commissioning an inspection regime of a proportion of construction projects to monitor that the necessary procedures are being followed on sites that they are responsible for;
- ensure that all lessees are provided with relevant material regarding the risk from radon; and
- ensure that, when SC leases or acquires new buildings, it obtains from the landlord the relevant information regarding radon and clarity over the respective management responsibilities.

3.7 Corporate Health and Safety Unit

The CHSU will:

- maintain this policy within the H&S Manual;
- provide training to premises managers on the risks from radon and associated management arrangements they are required to follow through the e-learning platform;
- monitor the local implementation of this policy as part of an internal H&S audit programme; and
- liaise with the Service Manager, Facilities Management as required regarding the development, implementation and review of corporate control measures.

[1] New Ionising Radiations Regulations 2017, which come into force on 1st January 2018, specify certain matters on which an employer must consult an RPA. It is the requirement of the competent radon contractor that they have a Radiation Protection Advisor (RPA) available to provide specific advice as part of their service.

4. Guidance and SC processes for radon risk assessment and management

4.1 Monitoring requirements

4.1.1 Routine monitoring

SC policy is to carry out a programme of routine testing of radon levels in the following of SC properties:

- All properties that are located in any area with a radon potential greater than 1% as shown on the Indicative Radon Atlas for England and Wales and which have ground floor or below ground areas.
- Monitoring of properties will be prioritised based on their radon potential as shown on the Indicative Radon Atlas for England and Wales and approved by Corporate Property on an annual basis

Once monitoring data has been obtained the following programme of re monitoring will be undertaken:

- Where radon levels are found to be significantly less than 300 Bqm^{-3} at the initial measurement, (i.e. below 200 Bqm^{-3}), the period of re-measurement will be of the order of once every 10 years;
- Where radon levels are found to be just below 300 Bqm^{-3} at the initial measurement, (i.e. in the region of 200-300 Bqm^{-3}), re-measurement will be scheduled to be between 7- 10 years;
- Where radon levels are above 300 Bqm^{-3}at the initial measurement and measures have been taken to reduce radon exposures (such as engineered systems or occupancy restrictions), the building will be re-monitored as soon as is practical to confirm that remedial work has been successful then re-measurement 2-3 years after the re-assessment and if this is successful then it will fall into the re-monitored 10 year programme.

A competent radon monitoring contractor, under the direction of the Facilities Management Service Manager, is contracted to carry out the monitoring programme.

Funding of the monitoring is from a budget and must be agreed by the lead person appointed to manage radon matters within that service

4.1.2 Other monitoring

Special monitoring additional to the routine monitoring programme will be necessary in the following cases:

- Following completion of a new building located in a radon affected area;
- Following significant material changes to a building in a radon affected area, which may include extensions, internal remodelling, or major changes to ventilation or heating systems; and/or
- When a fault is identified or suspected with an existing radon remediation system.

Responsibility for initiating monitoring under these circumstances falls to either the Premises Manager (existing properties) or Corporate Property (new build).

4.2 Relevant action levels

The relevant action levels are as follows:

- For **workplaces**: An annual average radon concentration of 300Bqm^{-3}. This is the threshold at which the Ionising Radiation Regulations 2017 become applicable to the workplace.
- For **residential properties**, an annual average radon concentration of 200Bqm^{-3}. This is the level at which remedial action is recommended for dwellings by The UK Health Security Agency (UKHSA), (formerly Public Health England).
- For a property **which is a combination of residential and workplace** – both the above thresholds shall be considered and action taken if either is exceeded.

4.3 Radon preventive measures in new buildings

The radon potential of the site will be determined by liaising with the competent radon monitoring contractor, who will undertake a risk assessment and advise on whether radon mitigation measures are required. If monitoring results indicate that mitigation measures are required, then part or full radon preventive measures for the new build will then be implemented in line with current building regulations.

4.4 Radon monitoring method

4.4.1 Duration of measurements

Radon levels typically vary considerably over the short term and are sensative to seasonal variations. All SC radon monitoring events will therefore last 3 months, except in exceptional circumstances.

Shorter term measurements may be used where a result is required more quickly, for example to determine whether remediation has been successful. It is the responsibility of the FM Service Manager to liaise with the radon contractor for advice of the necessary monitoring requirements in these specific circumstances.

4.4.2 When to measure

Measurements will ideally be undertaken during the winter months. Radon levels vary significantly due to seasonal temperature variations, and worst-case levels are usually present during winter when there is a greater temperature differential between indoors and outdoors. For monitoring at other times of year, seasonal corrections are required to estimate the annual maximum level for comparison of results to the relevant action level for workplaces. Monitoring during winter means that the correction factor, and therefore the uncertainty of the result, is reduced.

Measurements should usually be made when a building is subject to normal occupancy. Assessment of unoccupied buildings is not desirable as ventilation, heating etc. will be atypical of occupancy and results may not be representative.

For new buildings, measurements should take place as soon as possible following occupancy of the building.

4.4.3 Types of detectors to be used

Typically measurements will be made using passive etch-track detectors sourced from an accredited radon measurement provider and laboratory service.

Short term monitoring will be using either etch-track detectors specifically designed for this purpose, in which case the monitoring period will be between 2-4 weeks, or alternatively using an electronic monitor which can provide a reading over a period of a few hours to a few days.

Radon detectors will be supplied and placed in position by the assigned competent radon monitoring contractor.

4.4.4 Quantity of detectors to be used

Typically the number of detectors needed to adequately monitor a building depends on the overall floor area and the size, number and purpose of rooms. One detector per 150-250sq.m of ground floor or basement area is normally sufficient to provide a representative sample.

However, the number of detectors to be used will be determined by the radon monitoring contractor, as more or less detectors may be required in specific circumstances.

4.4.5 Detector placement

Detector placement will be determined by the radon monitoring contractor. It is common to place monitors in basements or in lower ground floor rooms and monitoring is not normally required in rooms above ground floor level, except in dwellings where the standard procedure is to monitor in the living room and main bedroom. The annual average radon level is calculated as an occupancy-weighted average of the two results. Additional monitors may be used if there are occupied cellars, or if the dwelling is very large.

In workplaces, detectors are normally distributed throughout occupied ground floor or basement rooms.

4.5 Radon remediation techniques

Radon remediation methods are generally straightforward and relatively inexpensive. It is important to be aware that the HSE would consider such methods, in the context of an organisation on the scale and overall budgetary capacity of SC, to be reasonably practicable. There would therefore be an expectation that such remedial system(s) will be installed wherever a need is identified and within a reasonable timescale.

There are a range of techniques available and the choice of technique will depend upon the level of radon present.

4.5.1 Sub-floor sump

This involves minor building work to excavate a small sump under the floor with pipework to vent outside (usually at roof level). The aim is to draw soil gases into the sump and then vent via the pipe to the atmosphere.

- An **active sump** (with an attached fan to increase the draw) is usually the most effective method and can significantly reduce even very high radon levels.
- A **passive sump** (without fan attached) may be effective at lower radon levels.

4.5.2 Positive pressure ventilation

This brings fresh air into the building, usually from the roof, diluting the radon and possibly also reducing the stack effect and preventing the ingress of radon. This technique can be effective at low to moderate radon levels and works best in single-storey buildings that are reasonably air-tight.

4.5.3 Underfloor ventilation

Improved underfloor ventilation can be effective at lower radon levels where there is a suspended floor and can be very straightforward to achieve by:

- ensuring airbricks are not obstructed;
- possibly replacing older style airbricks which may have small holes with modern, more effective vents;
- ensuring airbricks are present on opposite sides of the building to ensure good cross-flow of air;
- increasing the number of airbricks; and/or
- adding a fan to increase ventilation

4.5.4 Room ventilation

Increasing room ventilation may dilute the radon; however, this **should be approached with caution as it could also make the problem worse**. For example, increased cross-ventilation through high level or upstairs windows can actually increase the stack effect and therefore cause more radon to be drawn into the building. While opening doors and windows may dilute radon levels, this clearly will not be a practical method to be used in wintertime when radon levels are likely to be at their highest.

4.5.5 Other techniques

In existing buildings, sealing floors to prevent radon ingress is difficult to achieve effectively and in isolation is unlikely to be sufficient. However, if carried out in conjunction with one or more of the other techniques outlined above, sealing obvious gaps and cracks may be of some benefit. Sealing loft hatches may have similar benefit.

In-room air filters are unproven with little evidence to support claims of their efficacy and they are not recommended.

4.6 Actions to be taken following radon remediation

Following remediation, re-testing of the radon levels in remediated properties will be undertaken on the following basis:

- As soon as possible after completion of the remediation work – usually the following winter;

- Within 2-3 years following the work; and

Provided results are satisfactory then at approximate 10-year intervals thereafter.

- A basic check and servicing of the proper functioning of any mechanical fan etc. should be carried out on an annual basis.

4.7 Actions to be taken in the event of failure of radon remediation system

As a matter of urgency when a fault is identified the premises manager will:

- Notify Corporate Property to arrange repair of systems;
- Notify the Service Manager, Facilities Management who will advise on necessary measures to be taken. These may include,
  - notification of the incident to the CHSU who will advise whether the Health and Safety Executive (HSE) is to be notified. This is dependent on whether the building has been or will continue to be occupied whilst radon remediation systems are not functioning,
  - access restrictions or limits on duration of occupancy of the affected areas, and
  - instigate continuous monitoring of radon levels by notifying the radon monitoring contractor, at least until repair/replacement of remediation systems are effected and assessment of the doses that are likely to be or have been received by staff and other building occupants; and
- Recording the incident via appropriate Health and Safety incident reporting procedures.

If results indicate the remediation work has been unsatisfactory, the Employer shall notify the HSE if levels exceed an annual average of 300Bqm^{-3}. CHSU will notify the HSE.

4.8 Provision of Information

4.8.1 Employees

Employees must be provided with relevant information concerning any potential risks from radon in the workplace, and any actions which they are required to carry out or instructions they must comply that have been identified as necessary as part of the radon risk assessment.

4.8.2 Managers

Managers must consider the level of detail required by employees on the presence of radon and ensure that the appropriate information is communicated to employees.

4.8.3 Tenants of SC Premises

Tenants should be provided with information on the radon risk assessment for the property concerned, including details of the results of monitoring where relevant. Where remediation measures are installed, the tenant will be given basic information about those measures.

4.8.4 Contractors

Contractors must be provided with information relating to the type, and location of remediation systems in areas where they are asked to work to prevent those systems being adversely affected.

4.8.5 Commercial Lessees

Commercial lessees will be provided with relevant information concerning radon within their premises. This information will include details of the monitoring undertaken, results and presence of any remediation systems if present.

4.9 Empty, Derelict or Abandoned Premises

Corporate Property, SC, will take responsibility for the management of all premises that fall into this category. Regarding the control of radon risks, no specific control measures are required as long as buildings remain unoccupied. Records of monitoring and any remediation measures installed must be retained and made available to potential occupiers/purchasers of such properties.

4.10 Leased / Rented Property and Property for Purchase or Disposal

Property acquired on a Full Repairing Lease is to be treated as a Somerset Council owned property.

Where a new property is acquired in a radon affected area, monitoring should be carried out at the earliest opportunity following occupancy of the building.

In Somerset Council-owned property let as follows:

- on Full Repairing Lease - all work is to be the tenant's responsibility.
- on other types of Lease – the property is to be treated as Somerset Council-owned property.

The presence of radon will wherever possible be determined before entering into a lease or committing to a purchase.

If the presence of radon is known it must be brought to the attention of the tenants.

Prospective purchasers of any Somerset Council owned property must be provided with relevant radon results on request.

APPENDIX 1: Scope of the appointment of the Radiation Contractor

Under the Ionising Radiations Regulations 2017, an appointed Radiation Protection Adviser (RPA) is required to provide advice on matters where the workplace exceeds annual average radon levels of 300 Bq/m3. Their duties are provided in Regulation 14 of the Approved Code of Practice (ACoP) L121 “Work With Ionising Radiation”.

Regulation 14

The RPA will advise on other matters to ensure observance of the regulations and this will normally include:

a) The radiation risk assessment required by regulation 8;
b) The designation of controlled and supervised areas as required by regulation 17, except where there is good reason to consider that such areas are not required, for example based on advice from the supplier of the radiation sources or written guidance from an authoritative body;
c) The handling of various investigations required by the Regulations;
d) The drawing up of contingency plans required by regulation 13;
e) The dose assessment and recording required by regulation 22.

It is the responsibility of the approved radon contractor to ensure that they have suitably qualified radon protection advisors available to meet their legal obligations and provide advice on radon matters, including risk assessments, testing, design, and mitigation.

APPENDIX 2: Governance Arrangements

Policy Compliance

If any employee is found to have breached this policy, they may be subject to Somerset Council’s disciplinary procedure.

Where it is considered that a criminal offence has potentially been committed, the Council will consider the need to refer the matter to the police.

If you do not understand the implications of this policy or how it may apply to you, seek advice from the Information Governance Team.

Review and Revision

This policy will be reviewed as it is deemed appropriate, but no less frequently than every 36 months.

Policy review will be undertaken by rolling programme established by the CHSU and agreed by the HSWSG

References

The following Somerset Council policy documents are directly relevant to this policy, and are referenced within this document:

HS 002 Responsibilities Policy

Links and contacts

Internal contacts

Heidi Boyle
Service Manager, Facilities Management.

Faccilities Management, County Hall TA1 4DY
Tel: 01823 355524 Email: heidi.boyle@somerset.gov.uk

Daniel Thomas
Service Manager
Corporate Health and Safety Unit,
County Hall,Taunton TA1 4DY.
Tel: 01823 355089 Email: chsu@somerset.gov.uk

The Estates Team
Corporate Property,
County Hall, Taunton. TA1 4DY.

Email: estates@somerset.gov.uk

External links

Health and Safety Executive radon guidance:
www.hse.gov.uk/radiation/ionising/radon.htm

The Ionising Radiation Regulations (IRR) 2017 Approved code of Practice and Guidance (http://www.hse.gov.uk/pubns/books/l121.htm)

Public Heath England radon guidance:
www.ukradon.org