Eco-Healthy Child Care® explains that radon is the leading cause of lung cancer among non-smokers. Radon is the leading environmental cause of cancer in America, claiming approximately 20,000 lives annually. Any building can have a radon problem. Radon gets into a building by moving up through the ground and then through cracks and holes in the foundation. Buildings can trap radon, which can lead to harmful concentrations indoors. It is imperative that each child care facility test their building for radon to be sure that children and staff are safe.

http://www.cehn.org/ehcc

Many early learning programs found in Pennsylvania locate infants and toddler programming in the lower levels or basements of buildings where radon may have the highest concentration. Much of Pennsylvania has been designated by the Environmental Protection Agency (EPA) as a “Zone 1”, which means that counties have a predicted average indoor radon screening level of 4 pCi/L (picocuries per liter) or higher. The action level is 4pCi/L.

http://www.epa.gov/radon/zonemap.html

Pennsylvania Department of Public Welfare
Child Care Licensing Regulations

Pennsylvania Recommendations

Preventing radon exposure is important. Pennsylvania does not require that early learning programs be tested or remediated for radon. OCDEL strongly encourages all programs to have their facilities tested and remediated if necessary.

PA Department of Environmental Protection recommends that facilities or homes are initially tested for radon by using short-term testing procedures. If the test results are between 4 –10 pCi/L (picocuries per liter), programs are encouraged to conduct follow-up testing using either short or long-term testing procedures. If the results are greater than 10 pCi/L (picocuries per liter) conduct a short-term test to get results quickly. All programs whose test results were at or above 4 pCi/L (picocuries per liter) should remediate their facilities by referencing the recommendations of the Pennsylvania Department of Environmental Protection’s (DEP) Office of Radiation Prevention, Radon Division.

Pennsylvania DEP requires that all testers, mitigators, and labs be certified by the Commonwealth. Pennsylvania requires by law that all radon remediation contractors be certified by the Commonwealth. For more information contact the PA DEP:
Phone: (717) 783-3594 or 1-(800)-23-RADON
Fax: (717) 783-8965

http://www.dep.state.pa.us/brp/radon_division/Radon_Homepage.htm


OCDEL also encourages programs to refer to Eco-Healthy Child Care® and the following Caring for Our Children: National Health and Safety Performance Standards (Third Edition, 2011) for best practices for the prevention of radon exposure.

Standard 5.1.1.7
Use of Basements and Below Grade Areas
Finished basements or areas that are partially below grade may be used for children who independently ambulate and who are two years of age or older, if the space is in compliance with applicable building and fire codes. Environmental health factors may be reviewed with county or city public health departments.

RATIONALE: Basement and partially below grade areas can be quite habitable and should be usable as long as building, fire safety (1), and environmental quality is satisfactory.

COMMENTS: To “independently ambulate” means that children are able to walk from place to place with or without the use of assistive devices.

TYPE OF FACILITY: Center; Large Family Child Care Home; Small Family Child Care Home

Standard 5.2.1.1
Fresh Air
As much fresh outdoor air as possible should be provided in rooms occupied by children. Windows should be opened whenever weather and the outdoor air quality permits or when children are out of the room (1). When windows are not kept open, rooms should be ventilated, as specified in Standards 5.2.1.1-5.2.1.6. The specified rates at which outdoor air must be supplied to each room within the facility range from fifteen to sixty cubic feet per minute per person (cfm/p). The rate depends on the activities that normally occur in that room.

RATIONALE: The health and well-being of both the staff and the children can be greatly affected by indoor air quality. The air people breathe inside a building is contaminated with organisms shared among occupants and sometimes the indoor air is more polluted than the outdoor air. Young children may be affected more than adults by air pollution. Air quality significantly impacts people’s health. The health impacts from exposure to air pollution (indoor and outdoor) can include: decreased lung function, asthma, bronchitis, emphysema, and even some types of cancer. Children are particularly vulnerable to air pollution because their lungs are still developing and they breathe more air per pound of body weight than adults do. Indoor air pollution is often greater than outdoor levels of air pollution due to a general lack of adequate air filtration and ventilation (4). The presence of dirt, moisture, and warmth encourages the growth of mold and other contaminants, which can trigger allergic reactions and asthma (2). Children who spend long hours breathing contaminated or polluted indoor air are more likely to develop respiratory problems, allergies, and asthma (3-5).

Although insulation of a building is important in reducing heating or cooling costs, it is unwise to try to seal the building completely. Air circulation is essential to clear infectious disease agents, odors, and toxic substances in the air. Levels of carbon dioxide are an indicator of the quality of ventilation (6). Air circulation can be adjusted by a properly installed and adjusted heating, ventilation, air conditioning, and cooling (HVAC) system as well as by using fans and open windows.

COMMENTS: For further information on air quality and on ventilation standards related to type of room use, contact the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), the U.S. Environmental Protection Agency (EPA) Public Information Center, the American Gas Association (AGA), the Edison Electric Institute (EEI), the American Lung Association (ALA), the U.S. Consumer Product Safety Commission (CPSC), and the Safe Building Alliance (SBA).

For child care, ANSI/ASHRAE 62.1-2007 calls for 10 cfm/person plus 0.18 cfm/sq.ft. of space. ANSI/ASHRAE 62-1989 or ASHRAE Standard 55-2007 is information on Thermal Environmental Conditions for Human Occupancy. Qualified engineers can ensure heating, ventilation, air conditioning (HVAC) systems are functioning properly and that applicable standards are being met. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Website (http://www.ashrae.org) includes the qualifications required of its members and the location of the local ASHRAE chapter. The contractor who services the child care HVAC system should provide evidence of successful completion of ASHRAE or comparable courses. Caregivers/teachers should understand enough about codes and standards to be sure the facility’s building is a healthful place to be.

Indoor air quality is important to children who have asthma. A checklist from the National Heart, Lung and Blood Institute, How Asthma Friendly is your Child Care Setting? (available at http://www.nhlbi.nih.gov/health/public/lung/asthma/chc_chk.pdf), can help caregivers/teachers create a more asthma-friendly environment.

TYPE OF FACILITY: Center; Large Family Child Care Home; Small Family Child Care Home

http://nrckids.org/CFOC3/HTMLVersion/
STANDARD 5.2.9.4
Radon Concentrations
Radon concentrations inside a home or building used for child care must be less than four picocuries per liter (pCi/L). All facilities must be tested for the presence of radon, according to U.S. Environmental Protection Agency (EPA) testing protocols for long-term testing (i.e., greater than ninety days in duration using alpha-track or electret test devices).

RATIONALE: Radon is a colorless, odorless, radioactive gas that occurs naturally. It can be found in soil, water, building materials, and natural gas. Radon from the soil is the main cause of radon problems. Radon typically moves up through the ground to the air above and into a home or building through cracks and other holes in the foundation. Radon can get trapped inside the home or building where it can build up. In a small number of homes, the building materials can give off radon but the materials themselves rarely cause problems by themselves. If radon is present in the water supply, most of the risk is related to radon released into the air when water is used for showering or other household purposes (1). When radon gas is inhaled, it can damage lung tissue and lead to lung cancer. Radon levels can be easily measured to determine if acceptable levels have been exceeded. There is no known safe level of radon so there can always be some risk. The risk can be reduced by lowering the levels of radon in the home or building. Fixing buildings to reduce radon exposure may entail sealing cracks in the foundation or ventilating the area under the foundation.

COMMENTS: The average indoor radon level is estimated to be about 1.3 picocuries per liter of air, and about 0.4 picocuries per liter is normally found in the outside air. Most homes today can be reduced to two picocuries per liter or below (1). Common test kits include: charcoal canisters, e-perm, alpha track detectors, and charcoal liquid scintillation devices. For more information on EPA and American Association of Radon Scientists and Technologists’ (AARST) testing protocols, see http://www.aarst.org. For material and information on radon, contact the EPA or PA DEP, Radon Division at 1-(800)-23-RADON.
https://www.dep.state.pa.us/brp/Radon_Division/Radon_Homepage.htm

TYPE OF FACILITY: Center; Large Family Child Care Home; Small Family Child Care Home

Model Child Care Health Policies: ECELS/Healthy Child Care Pennsylvania, PA Chapter of the American Academy of Pediatrics, is accessible on the ECELS website at:
www.ecels-healthychildcarepa.org

http://nrckids.org/CFOC3/HTMLVersion/