

General Assembly

**February  
Session, 2002**

**File No. 201**

House Bill No. 5039

*House of Representatives, March 28, 2002*

The Committee on Environment reported through REP. STRATTON of the 17th Dist. , Chairperson of the Committee on the part of the House, that the bill ought to pass.

**AN ACT CONCERNING INDOOR AIR QUALITY IN SCHOOLS.**

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. Subdivision (7) of section 10-282 of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2002*):

(7) "Code violation" means the correction of any condition in an existing building for public school purposes, the total project costs of which exceed ten thousand dollars, and which condition is in violation of the requirements of the State Building, Fire Safety or Public Health Codes, state or federal Occupational, Safety and Health Administration Codes, federal or state accessibility requirements or regulations of the federal Environmental Protection Agency or the state Department of Environmental Protection, state Department of Public Health regulations for radon or federal standards for lead contamination in school drinking water, or the remediation of any documented indoor environmental quality deficiency not specifically covered under such codes based on a determination by an agency having jurisdiction over such matters that the conditions do not meet published industry standards for indoor environmental quality and cannot be remedied through ordinary maintenance, provided the applicant submits documentation that the proposed remedies will be both corrective and preventative.

Sec. 2. (NEW) (*Effective July 1, 2002*) As used in this section, sections 10-282, 10-283 and 10-291 of the general statutes, as amended by this act, and sections 4 and 5 of this act:

(1) "Indoor environmental quality" means the quality of facets of the environment that affect the health of the occupants of school facilities including, but not limited to, air quality, the presence of radon and water quality;

(2) "School activity hours" means the time of day in which students or school personnel occupy school facilities;

(3) "HVAC system" means the equipment, distribution network and terminals that provide, either collectively or individually, the process of heating, ventilation or air conditioning to a building; and

(4) "Bioaerosols" means microbiological airborne particles including, but not limited to, fungi, mold and bacteria.

Sec. 3. Section 10-291 of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2002*):

(a) No school building project for which state assistance is sought shall be undertaken except according to a plan and on a site approved by the [state] Department of Education, the town or regional board of education and by the building committee of such town or district. No such school building project shall be undertaken at an expense exceeding the sum which the town or regional district may appropriate for the project. In the case of a school building project financed in whole or in part by an energy conservation lease purchase agreement, the expense of the project shall not exceed the sum which the town or regional school district approved for the project. In the case of a school building project which is a construction, renovation or replacement of a building to be used for public school purposes, the town or regional board of education and the building committee of such town or district shall include in its application a Phase I environmental site assessment in accordance with the American Society for Testing and Materials Standard E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, or similar subsequent standards. A copy of final plans and specifications for each phase of site development and construction of all school building projects and for each phase thereof including site development shall be filed with the Commissioner of Education subject to the provisions of section 10-292, as amended, before the start of such phase of development or construction shall be begun. A town or regional school district may commence a phase of development or construction before completion of final plans and specifications for the whole project provided a copy of the latest preliminary plan and cost estimate for such project which has been approved by the town or regional board of education and by the building committee shall be submitted with the final plans and specifications for such phase. Any board of education which, prior to the approval of a grant commitment by the General Assembly, commences any portion of a school construction project or causes any such project to be let out for bid, shall not be eligible for a school construction grant until a grant commitment is so approved.

(b) The Department of Education may not approve a school building project plan or site, as applicable, if:

(1) In the case of a school building project that is a construction, renovation or replacement of a building, the Phase I environmental site

assessment indicates that the site cannot, within reasonable expenditures, meet the criteria for residential properties in regulations adopted pursuant to section 22a-133k.

(2) The site is an area of moderate or high radon potential, as indicated in the Department of Environmental Protection's Radon Potential Map, or similar subsequent publications, except where the school building project plan incorporates construction techniques to mitigate radon levels in the air of the facility.

(3) The plans incorporate flat-roof construction that does not have adequate pitch towards drains in order to prevent pooling of water.

(4) In the case of a construction, renovation or replacement of a school building, the plans do not incorporate the Sheet Metal and Air Conditioning Contractors National Association's publication entitled "Indoor Air Quality Guidelines for Occupied Buildings Under Construction" or similar subsequent publications.

Sec. 4. (NEW) (Effective July 1, 2002) (a) For purposes of this section "Standard 62" means the American Society of Heating, Ventilating and Air Conditioning Engineers Standard 62 entitled "Ventilation for Acceptable Indoor Air Quality", as incorporated by the State Building Code adopted under section 29-252 of the general statutes.

(b) Each local or regional board of education that, on or after the date of the adoption of Standard 62, installed or renovated its HVAC system through a school building project grant pursuant to chapter 173 of the general statutes shall ensure that its HVAC system is (1) maintained and operated in accordance with Standard 62, and (2) operated continuously during school activity hours except (A) during scheduled maintenance and emergency repairs, and (B) during periods for which school officials can demonstrate to the local or regional board of education's satisfaction that the quantity of outdoor air supplied by an air supply system that is not mechanically driven meets the Standard 62 requirements for air changes per hour.

(c) Each local or regional board of education that, prior to the date of the adoption of Standard 62, installed or renovated its HVAC system through a school building project grant pursuant to chapter 173 of the general statutes shall ensure that its HVAC system is maintained and operated in accordance with the prevailing maintenance and standards at the time of the installation or renovation of the HVAC system.

Sec. 5. (NEW) (Effective July 1, 2002) Notwithstanding the provisions of section 10-286 of the general statutes, as amended, the Commissioner of Education shall not include the area necessary to support an HVAC system in the calculation of the number of gross square feet per pupil pursuant to said section 10-286.

Sec. 6. Section 10-283 of the general statutes is amended by adding

subsection (d) as follows (*Effective July 1, 2002*):

(NEW) (d) No application for a school building project authorized under subdivision (7) of section 10-282, as amended by this act, for the purpose of remediation of any documented indoor environmental quality deficiency shall be accepted unless the application is accompanied by a report on a review, inspection or evaluation of the following: (1) Radon levels in the water and the air; (2) potential for exposure to bioaerosols; (3) chemical compounds of concern to indoor air quality including, but not limited to, volatile organic compounds; (4) the degree of pest infestation, including, but not limited to, insects and rodents; (5) the degree of pesticide usage; (6) the presence of, and the plans for removal of, any hazardous substances that are contained on the list prepared pursuant to Section 302 of the federal Emergency Planning and Community Right-to-Know Act, 42 USC 9601 et seq. ; (7) ventilation systems; (8) plumbing, including water distribution systems, drainage systems and fixtures; and (9) the use of space, particularly areas designed to be unoccupied.

Sec. 7. Section 10-287 of the general statutes is amended by adding subsection (e) as follows (*Effective July 1, 2002*):

(NEW) (e) For any project to correct indoor air quality deficiencies pursuant to subdivision (7) of section 10-282, as amended by this act, the commissioner may withhold grant approval if the applicant does not provide acceptable evidence that building maintenance staff responsible for such facility are receiving training in all areas of plant operations with specific training relative to indoor air quality.

This act shall take effect as follows:	
Section 1	July 1, 2002
Sec. 2	July 1, 2002
Sec. 3	July 1, 2002
Sec. 4	July 1, 2002
Sec. 5	July 1, 2002
Sec. 6	July 1, 2002
Sec. 7	July 1, 2002

**ED** Joint Favorable C/R

ENV

**ENV** Joint Favorable

The following fiscal impact statement and bill analysis are prepared for the benefit of members of the General Assembly, solely for the purpose of information, summarization, and explanation, and do not represent the intent of the General Assembly or either House thereof for any purpose:  
**OFA Fiscal Note**

**State Impact:**

Fund-Type	Agency Affected
GF - Significant Cost	Department of Education

Note: GF=General Fund

**Municipal Impact:**

Effect	Municipalities
Revenue Gain, Cost	Local and Regional School Districts

**Explanation**

The expansion of the definition of code violations, which are reimbursable by the state, results in a significant cost to the state. This in turn is a revenue gain to local and regional school districts. The number and scope of such projects will determine the eventual cost of this change. It is estimated that such projects will result in a cost as high as \$5.0 million per year over the next seven years. It is expected that once school districts have had these problems rectified that proper maintenance will result in far fewer projects of this type after seven years.

The bill's requirements concerning site assessments are not likely to result in any significant fiscal impact as the State Department of Education already recommends that such assessments be performed and districts have carried them out in the past. Any costs to local and regional school districts or the State Department of Education with regard to these assessments is absorbable within current resources.

The bill specifies that the area needed to support the HVAC system not be calculated in to the gross square footage per student when determining state grants. This specification results in a state cost and thus a revenue gain to local and regional school districts. It is assumed that the area to support HVAC systems is not a significant portion of any total school construction project and thus will not greatly increase state costs.

The bill's requirement that maintenance staff in local and regional school districts be trained in all areas of facility operations may result in a cost to such districts. It is assumed that most staff is currently trained in such operations and any staff needing training can be trained within costs absorbable in local and regional school district budgets.

**OLR Bill Analysis**

HB 5039

**AN ACT CONCERNING INDOOR AIR QUALITY IN SCHOOLS**

**SUMMARY:**

This bill adds specific school construction project grant provisions to remedy indoor environmental air quality problems for school districts building new facilities or renovating or replacing existing facilities. Specifically, it requires districts to conduct site assessments and include comprehensive reports of their schools' indoor environmental conditions in their grant applications. It allows the education commissioner to disapprove applications if the construction plans do not adequately address existing environmental air quality problems or protect against future ones. The bill also imposes new requirements for operating and maintaining school heating, ventilation, and air conditioning (HVAC) systems.

EFFECTIVE DATE: July 1, 2002

**SCHOOL CONSTRUCTION PROJECTS*****Code Violations***

The bill expands the definition of a code violation for school construction purposes to include remedying indoor environmental air quality problems not covered under existing codes. It requires the applicable agency to determine whether the conditions meet published industry standards for indoor environmental quality and that the school cannot fix the problem through ordinary maintenance. It also requires the applicant to submit documentation that the proposed remedies will be both corrective and preventive. The bill defines "indoor environmental quality" as the quality of the environmental components affecting a school facility's occupants' health, including (1) air quality, (2) presence of radon, and (3) water quality.

***Site Assessments***

If a school building project is a new building, or a renovation or replacement of an existing building, the bill requires the school board and town building committee to conduct a Phase I environmental site assessment in accordance with the American Society for Testing and Materials Standard E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, which looks for contaminants.

***Applications***

The bill requires school building project applications for remedying code violations to include a review, inspection, or evaluation report on:

1. radon levels in the water and air;
2. potential for exposure to "bioaerosols" (microbiological airborne particles, including fungi, mold, and bacteria);
3. chemical compounds affecting indoor air quality, including volatile organic compounds;
4. the degree of pest infestation, including insects and rodents;

5. the degree of pesticide usage;
6. the presence, and plans for removal, of hazardous substances on the federal Emergency Planning and Community Right-to-Know Act list, which includes hydrochloric acid, chlorine, and ammonia;
7. ventilation systems;
8. plumbing, including water distribution systems, drainage systems, and fixtures; and
9. the use of space, particularly areas designed to be unoccupied.

#### ***Grounds for Disapproval***

The bill prohibits the State Department of Education from approving a school construction project if the:

1. Phase I environmental assessment for a new building, renovation, or replacement building indicates the site cannot meet the regulatory criteria the Department of Environmental Protection (DEP) has adopted for residential properties;
2. site is an area of moderate or high radon potential as indicated on DEP maps, unless appropriate steps are taken to reduce radon levels in the air;
3. plans call for a flat roof, without adequate pitch to prevent water collection; or
4. plans do not incorporate the Sheet Metal and Air Conditioning Contractors National Association's "Indoor Environmental Air Quality Guidelines for Occupied Buildings Under Construction" or similar publications.

The bill also allows the commissioner to withhold grant approval if an applicant does not provide acceptable evidence that its building maintenance staff is receiving training in all areas of facility operations, with specific training in indoor air quality.

#### **HVAC SYSTEMS**

The bill requires schools that have installed or renovated HVAC systems through a school building construction grant to maintain and operate them in accordance with the American Society of Heating, Ventilating, and Air Conditioning Engineers' (ASHRAE) Standard 62, "Ventilation for Acceptable Indoor Air Quality," which the state building code incorporates. It defines an "HVAC system" as the equipment, distribution network, and terminals that provide, separately or together, a building's heating, ventilation, or air conditioning processes. The system must operate continuously during school activity hours except during (1) scheduled maintenance and emergency repairs and (2) times when school officials can demonstrate to the school board that the amount of outdoor air supplied by a passive system meets the ASHRAE standard for number of air changes per hour. The bill defines "school activity hours" as the time of day when students or school personnel occupy school facilities.

The bill requires school districts that installed or renovated their HVAC systems through school building project grants before the state building code adopted Standard 62 to maintain and operate their systems in accordance with the maintenance standards in effect when the systems were installed or renovated. It specifies that the education commissioner not include the area needed to support the HVAC system when calculating the number of gross square feet per student for school building project grants.

**BACKGROUND**

***Related Bill***

Substitute sHB 5707, An Act Concerning Indoor Environmental Air Quality in Schools, which the Environment Committee reported favorably, contains many provisions similar to those in this bill. But, it also requires school districts to implement the federal Environmental Protection Agency's "Tools for Schools" program and creates a separate category of building projects to address leaking water and bioaerosols.

**COMMITTEE ACTION**

Education Committee

Joint Favorable Change of Reference

Yea 31    Nay 0

Environment Committee

Joint Favorable Report

Yea 28    Nay 0