GENERAL ASSEMBLY OF NORTH CAROLINA

SESSION 2007

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SENATE BILL 1946*

Commerce, Small Business and Entrepreneurship Committee Substitute Adopted 6/24/08

House Committee Substitute Favorable 7/2/08

Short Title: Codify Energy Efficiency in Public Buildings.	(Public)
Sponsors:	
Referred to:	

May 22, 2008

A BILL TO BE ENTITLED

AN ACT TO CODIFY THE STANDARDS GOVERNING ENERGY EFFICIENCY AND WATER USE FOR MAJOR FACILITY CONSTRUCTION AND RENOVATION PROJECTS INVOLVING STATE, UNIVERSITY, AND COMMUNITY COLLEGE BUILDINGS IN ORDER TO REDUCE THE CONSUMPTION OF ENERGY AND WATER, AS RECOMMENDED BY THE ENVIRONMENTAL REVIEW COMMISSION, AND TO ALLOW THE STATE, THE UNIVERSITY OF NORTH CAROLINA SYSTEM, AND THE NORTH CAROLINA COMMUNITY COLLEGE SYSTEM TO INSTALL PHOTO LUMINESCENT EXIT SIGNS WHEN PERMITTED BY THE STATE BUILDING CODE.

The General Assembly of North Carolina enacts:

SECTION 1. Chapter 143 of the General Statutes is amended by adding a new Article to read:

"Article 8C.

"Performance Standards for Sustainable, Energy-Efficient Public Buildings.

"**§ 143-135.35. Findings; legislative intent.**

The General Assembly finds that public buildings can be built and renovated using sustainable, energy-efficient methods that save money, reduce negative environmental impacts, improve employee and student performance, and make employees and students more productive. The main objectives of sustainable, energy-efficient design are to avoid resource depletion of energy, water, and raw materials; prevent environmental degradation caused by facilities and infrastructure throughout their life cycle; and create buildings that are livable, comfortable, safe, and productive. It is the intent of the General Assembly that State-owned buildings and buildings of The University of North Carolina and the North Carolina Community College System be improved by establishing specific performance standards for sustainable, energy-efficient public

buildings. These performance standards should be based upon recognized, consensus standards that are supported by science and have a demonstrated performance record. The General Assembly also intends, in order to ensure that the economic and environmental objectives of this Article are achieved, that State agencies, The University of North Carolina, and the North Carolina Community College System determine whether the performance standards are met for major facility construction and renovation projects, measure utility and maintenance costs, and verify whether these standards result in savings. Also, it is the intent of the General Assembly to establish a priority to use North Carolina-based resources, building materials, products, industries, manufacturers, and businesses to provide economic development to North Carolina and to meet the objectives of this Article.

"**§ 143-135.36. Definitions.**

As used in this section, the following definitions apply unless the context requires otherwise:

(1) "ASHRAE" means the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

(2) "Commission" means to document and to verify throughout the construction process whether the performance of a building, a component of a building, a system of a building, or a component of a building system meets specified objectives, criteria, and agency project requirements.

(3) "Department" means the Department of Administration.

(4) "Institutions of higher education" means the constituent institutions of The University of North Carolina, the regional institutions as defined in G.S. 115D-2, and the community colleges as defined in G.S. 115D-2.

(5) "Major facility construction project" means a project to construct a building larger than 20,000 gross square feet of occupied or conditioned space, as defined in the North Carolina State Building Code adopted under Article 9 of Chapter 143 of the General Statutes. "Major facility construction project" does not include a project to construct a transmitter building or a pumping station.

(6) "Major facility renovation project" means a project to renovate a building when the cost of the project is greater than fifty percent (50%) of the insurance value of the building prior to the renovation and the renovated portion of the building is larger than 20,000 gross square feet of occupied or conditioned space, as defined in the North Carolina State Building Code. "Major facility renovation project" does not include a project to renovate a transmitter building or a pumping station. "Major facility renovation project" does not include a project to renovate a building having historic, architectural, or cultural significance under Part 4 of Article 2 of Chapter 143B of the General Statutes.

(7) "Public agency" means every State office, officer, board, department, and commission and institutions of higher education.

"**§ 143-135.37. Energy and water use standards for public major facility construction and renovation projects; verification and reporting of energy and water use.**

(a) Program Established. – The Sustainable Energy-Efficient Buildings Program is established within the Department to be administered by the Department. This program applies to any major facility construction or renovation project of a public agency that is funded in whole or in part from an appropriation in the State capital budget or through a financing contract as defined in G.S. 142-82.

(b) Energy-Efficiency Standard. – For every major facility construction project of a public agency, the building shall be designed and constructed so that the calculated energy consumption is at least thirty percent (30%) less than the energy consumption for the same building as calculated using the energy-efficiency standard in ASHRAE 90.1-2004. For every major facility renovation project of a public agency, the renovated building shall be designed and constructed so that the calculated energy consumption is at least twenty percent (20%) less than the energy consumption for the same renovated building as calculated using the energy-efficiency standard in ASHRAE 90.1-2004. For the purposes of this subsection, any exception or special standard for a specific type of building found in ASHRAE 90.1-2004 is included in the ASHRAE 90.1-2004 standard.

(c) Water Use Standard. – For every major facility construction or renovation project of a public agency, the water system shall be designed and constructed so that the calculated indoor potable water use is at least twenty percent (20%) less than the indoor potable water use for the same building as calculated using the fixture performance requirements related to plumbing under the 2006 North Carolina State Building Code. For every major facility construction project of a public agency, the water system shall be designed and constructed so that the calculated sum of the outdoor potable water use and the harvested stormwater use is at least fifty percent (50%) less than the sum of the outdoor potable water use and the harvested stormwater use for the same building as calculated using the performance requirements related to plumbing under the 2006 North Carolina State Building Code. For every major facility renovation project of a public agency, the Department shall determine on a project-by-project basis what reduced level of outdoor potable use or harvested stormwater use, if any, is a feasible requirement for the project, but the Department shall not require a greater reduction than is required under this subsection for a major facility construction project. To reduce the potable outdoor water use as required under this subsection, landscape materials that are water use efficient and irrigation strategies that include reuse and recycling of the water may be used.

(d) Performance Verification. – In order to be able to verify performance of a building component or an energy or water system component, the construction contract shall include provisions that require each building component and each energy and water system component to be commissioned, and these provisions shall be included at the earliest phase of the construction process as possible and in no case later than the schematic design phase of the project. Such commissioning shall continue through the

initial operation of the building. The project design and construction teams and the public agency shall jointly determine what level of commissioning is appropriate for the size and complexity of the building or its energy and water system components.

(e) Separate Utility Meters. – In order to be able to monitor the initial cost and the continuing costs of the energy and water systems, a separate meter for each electricity, natural gas, fuel oil, and water utility shall be installed at each building undergoing a major facility construction or renovation project. Each meter shall be installed in accordance with the United States Department of Energy guidelines issued under section 103 of the Energy Policy Act of 2005 (Pub. L. 109-58, 119 Stat. 594 (2005)). Starting with the first month of facility operation, the public agency shall compare data obtained from each of these meters by month and by year with the applicable energy-efficiency standard under subsection (b) of this section and the applicable water use standard for the project under subsection (c) of this section and report annually no later than August 1 of each year to the Office of State Construction within the Department. If the average energy use or the average water use over the initial 12-month period of facility operation exceeds the applicable energy-efficiency standard under subsection (b) of this section or exceeds the applicable water use standard under subsection (c) of this section by fifteen percent (15%) or more, the public agency shall investigate the actual energy or water use, determine the cause of the discrepancy, and recommend corrections or modifications to meet the applicable standard.

"**§ 143-135.38. Use of other standard when standard not practicable.**

When the Department, public agency, and the design team determine that the energy-efficiency standard or the water use standard required under G.S. 143-135.37 is not practicable for a major facility construction or renovation project, then it must be determined by the State Building Commission if the standard is not practicable for the major facility construction or renovation project. If the State Building Commission determines the standard is not practicable for that project, the State Building Commission shall determine which standard is practicable for the design and construction for that major facility construction or renovation project. If a standard required under G.S. 143-135.37 is not followed for that project, the State Building Commission shall report this information and the reasons to the Department within 90 days of its determination.

"**§ 143-135.39. Guidelines for administering the Sustainable Energy-Efficient Buildings Program.**

(a) Policies and Technical Guidelines. – The Department, in consultation with public agencies, shall develop and issue policies and technical guidelines to implement this Article for public agencies. The purpose of these policies and guidelines is to establish procedures and methods for complying with the energy-efficiency standard or the water use standard for major facility construction and renovation projects under G.S. 143-135.37.

(b) Preproposal Conference. – As provided in the request for proposals for construction services, the public agency may hold a preproposal conference for prospective bidders to discuss compliance with, and achievement of, the

energy-efficiency standard or the water use standard required under G.S. 143-135.37 for prospective respondents.

(c) Advisory Committee. – The Department shall create a sustainable, energy-efficient buildings advisory committee comprised of representatives from the design and construction industry involved in public works contracting, personnel from the public agencies responsible for overseeing public works projects, and others at the Department's discretion to provide advice on implementing this Article. Among other duties, the advisory committee shall make recommendations regarding the education and training requirements under subsection (d) of this section, make recommendations regarding specific education and training criteria that are appropriate for the various roles with respect to, and levels of involvement in, a major facility construction or renovation project subject to this Article or the roles regarding the operation and maintenance of the facility, and make recommendations regarding developing a process whereby the Department receives ongoing evaluations and feedback to assist the Department in implementing this Article so as to effectuate the purpose of this Article. Further, the advisory committee may make recommendations to the Department regarding whether it is advisable to strengthen standards for energy efficiency or water use under this Article, whether it is advisable and feasible to add additional criteria to achieve greater sustainability in the construction and renovation of public buildings, or whether it is advisable and feasible to expand the scope of this Article to apply to additional types of publicly financed buildings or to smaller facility projects.

(d) Education and Training Requirements. – The Department shall review the advisory committee's recommendations under subsection (c) of this section regarding education and training. For each of the following, the Department shall develop education and training requirements that are consistent with the purpose of this Article and that are appropriate for the various roles with respect to, and level of involvement in, a major facility construction or renovation project or the roles regarding the operation and maintenance of the facility:

(1) The chief financial officers of public agencies.

(2) For each public agency that is responsible for the payment of the agency's utilities, the facility managers of these public agencies.

(3) The capital project coordinators of public agencies.

(4) Architects.

(5) Mechanical design engineers.

(e) Performance Review. – Annually the Department shall conduct a performance review of the Sustainable Energy-Efficient Buildings Program. The performance review shall include at least all of the following:

(1) Identification of the costs of implementing energy-efficiency and water use standards in the design and construction of major facility construction and renovation projects subject to this Article.

(2) Identification of operating savings attributable to the implementation of energy-efficiency and water use standards, including, but not limited to, savings in utility and maintenance costs.

(3) Identification of any impacts on employee productivity from using energy-efficiency and water use standards.

(4) Evaluation of the effectiveness of the energy-efficiency and water use standards established by this Article.

(5) Whether stricter standards or additional criteria for sustainable buildings should be used other than the standards under G.S. 143-135.37.

(6) Whether the Sustainable Energy-Efficient Buildings Program should be expanded to include additional public agencies, to include additional types of projects, or to include smaller major facility construction or renovation projects.

(7) Any recommendations for any other changes regarding sustainable, energy-efficient building standards that may be supported by the Department's findings.

(f) Report on Performance Review. – Each year, the Department shall include in its consolidated report under subsection (g) of this section a report of its findings under the performance review under subsection (e) of this section.

(g) Consolidated Report Required. – The Department shall consolidate the report required under subsection (f) of this section, the report under G.S. 143-135.37(e), the report, if any, from the State Building Commission under G.S. 143-135.38, and the report under G.S. 143-135.40 into one report. No later than October 1 of each year, this consolidated report shall be transmitted to the Chairs of the General Government Appropriations Subcommittees of both the Senate and the House of Representatives, the Environmental Review Commission, and the Joint Legislative Commission on Governmental Operations. The Department shall include any recommendations for administrative or legislative proposals that would better fulfill the legislative intent of this Article.

(h) Authority to Adopt Rules or Architectural or Engineering Standards. – The Department may adopt rules to implement this Article. The Department may adopt architectural or engineering standards as needed to implement this Article.

"**§ 143-135.40. Monitor construction standards and sustainable building standards.**

(a) The Department shall monitor the development of construction standards and sustainable building standards to determine whether there is any standard that the Department determines would better fulfill the intent of the Sustainable Energy-Efficient Buildings Program to achieve sustainable, energy-efficient public buildings than the standards under G.S. 143-135.37, and, if so, whether this Article should be amended to provide for the use of any different standards or the use of any additional standards to address additional aspects of sustainable, energy-efficient buildings. Additional standards monitored shall address consideration of site development, material and resource selection, and indoor environmental quality to enhance the health or productivity of building occupants. Also, the Department shall monitor the development of improved energy-efficiency standards developed by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, the ASHRAE standards, shall monitor whether the State Building Code Council adopts any other

energy-efficiency standards for inclusion in the State Building Code that result in greater energy efficiency and increased energy savings in major facility construction and renovation projects under this Article, and shall monitor other standards for sustainable, energy-efficient buildings that are based upon recognized, consensus standards based on science and demonstrated performance.

(b) Each year, the Department shall report the results of its monitoring under this section, including any recommendations for administrative or legislative proposals."

SECTION 2. G.S. 115D-20 is amended by adding a new subdivision to read:

"(14) To comply with the design and construction requirements regarding energy efficiency and water use in the Sustainable Energy-Efficient Buildings Program under Article 8C of Chapter 143 of the General Statutes."

SECTION 3. Article 6 of Chapter 146 of the General Statutes is amended by adding a new section to read:

"**§ 146-23.2. Purchase of buildings constructed or renovated to a certain energy-efficiency standard.**

(a) A State agency shall not acquire by purchase any building unless the building was designed and constructed to at least the same standards for energy efficiency and water use that the design and construction of a comparable State building was required to meet at the time the building under consideration for purchase was constructed. Further, a State agency shall not acquire by purchase any building that had a major renovation unless the major renovation of the building was designed and constructed to at least the same standards for energy efficiency and water use that the design and construction of a major renovation of a comparable State building was required to meet at the time the building under consideration for purchase was renovated.

(b) This section does not apply to the purchase of a building having historic, architectural, or cultural significance under Part 4 of Article 2 of Chapter 143B of the General Statutes. This section does not apply to buildings that are acquired by devise or bequest."

SECTION 4. The initial report under G.S. 143-135.37(e), the initial report under G.S. 143-135.39(f), and the initial report under G.S. 143-135.40 are due no later than August 1, 2009. The initial consolidated report required under G.S. 143-135.39(g) is due no later than October 1, 2009.

SECTION 5. Section 1 of S.L. 2007-546 is repealed.

SECTION 6. Section 2.1(a)(1) of S.L. 2007-546 reads as rewritten:

"(1) Lighting Systems. – The installation of exit signs that employ light-emitting diode (LED) technology or photo luminescent technology; the replacement of incandescent light bulbs with compact fluorescent light bulbs; and where appropriate, as determined by the Department of Administration, the installation of occupancy sensors or optical sensors."

SECTION 7. This act is effective when it becomes law. Section 1 and Section 2 of this act apply to every major facility construction project, as defined in

G.S. 143-135.36 as enacted in Section 1 of this act, and every major facility renovation project, as defined in G.S. 143-135.36 as enacted in Section 1 of this act, of a public agency, as defined in G.S. 143-135.36 as enacted in Section 1 of this act, that has not entered the schematic design phase prior to the effective date of this act.