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SENATE BILL 5385

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State of Washington

61st Legislature

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By Senators Hargrove, Morton, Rockefeller, Hatfield, and Shin

Read first time 01/21/09. Referred to Committee on Environment, Water & Energy.

1 AN ACT Relating to design of public facilities; amending RCW  
2 39.35.030, 39.35.040, and 39.35.050; and creating a new section.

3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

4 NEW SECTION. **Sec. 1.** The legislature finds that research has  
5 shown the importance of reducing environmental impacts through building  
6 design. The primary focus on building designs has been an attempt to  
7 reduce heating and cooling requirements over the course of a building's  
8 lifetime. However, what has been overlooked are opportunities to  
9 reduce greenhouse gas emissions and other environmental impacts at  
10 earlier stages in the building and construction design process. The  
11 selection of building materials and products, such as using wood and  
12 wood products in the design stage, provides substantial opportunities  
13 to reduce lifetime greenhouse gas emissions. A key component of  
14 life-cycle cost analysis is the energy expended in the manufacturing  
15 and production of the building materials being considered in the  
16 construction of public facilities.

17 **Sec. 2.** RCW 39.35.030 and 2001 c 214 s 16 are each amended to read  
18 as follows:

1 For the purposes of this chapter the following words and phrases  
2 shall have the following meanings unless the context clearly requires  
3 otherwise:

4 (1) "Public agency" means every state office, officer, board,  
5 commission, committee, bureau, department, and all political  
6 subdivisions of the state.

7 (2) "Department" means the state department of general  
8 administration.

9 (3) "Major facility" means any publicly owned or leased building  
10 having twenty-five thousand square feet or more of usable floor space.

11 (4) "Initial cost" means the moneys required for the capital  
12 construction or renovation of a major facility.

13 (5) "Renovation" means additions, alterations, or repairs within  
14 any twelve-month period which exceed fifty percent of the value of a  
15 major facility and which will affect any energy system.

16 (6) "Economic life" means the projected or anticipated useful life  
17 of a major facility as expressed by a term of years.

18 (7) "Embodied energy" means the total amount of fossil fuel energy  
19 consumed to extract raw materials and to manufacture, assemble,  
20 transport, and install the materials in a building. "Embodied energy"  
21 includes the initial collection of the resource, refinement, transport,  
22 product manufacture, packaging, installation, maintenance,  
23 refurbishment, and eventual demolition and disposal or recycling.

24 (8) "Energy management system" means a program, energy efficiency  
25 equipment, technology, device, or other measure including, but not  
26 limited to, a management, educational, or promotional program, smart  
27 appliance, meter reading system that provides energy information  
28 capability, computer software or hardware, communications equipment or  
29 hardware, thermostat or other control equipment, together with related  
30 administrative or operational programs, that allows identification and  
31 management of opportunities for improvement in the efficiency of energy  
32 use, including but not limited to a measure that allows:

33 (a) Energy consumers to obtain information about their energy usage  
34 and the cost of energy in connection with their usage;

35 (b) Interactive communication between energy consumers and their  
36 energy suppliers;

37 (c) Energy consumers to respond to energy price signals and to  
38 manage their purchase and use of energy; or

1 (d) For other kinds of dynamic, demand-side energy management.

2 ((+8)) (9) "Life-cycle cost" means the initial cost and cost of  
3 operation of a major facility over its economic life. This shall be  
4 calculated as the initial cost plus the operation, maintenance, and  
5 energy costs over its economic life, reflecting anticipated increases  
6 in these costs discounted to present value at the current rate for  
7 borrowing public funds, as determined by the office of financial  
8 management. The energy cost projections used shall be those provided  
9 by the department. The department shall update these projections at  
10 least every two years.

11 ((+9)) (10) "Life-cycle cost analysis" includes, but is not  
12 limited to, the following elements:

13 (a) The coordination and positioning of a major facility on its  
14 physical site;

15 (b) The amount of embodied energy used in the building materials of  
16 a major facility;

17 (c) The amount and type of fenestration employed in a major  
18 facility;

19 ((+e)) (d) The amount of insulation incorporated into the design  
20 of a major facility;

21 ((+d)) (e) The variable occupancy and operating conditions of a  
22 major facility; and

23 ((+e)) (f) An energy-consumption analysis of a major facility.

24 ((+10)) (11) "Energy systems" means all utilities, including, but  
25 not limited to, heating, air-conditioning, ventilating, lighting, and  
26 the supplying of domestic hot water.

27 ((+11)) (12) "Energy-consumption analysis" means the evaluation of  
28 all energy systems and components by demand and type of energy  
29 including the internal energy load imposed on a major facility by its  
30 occupants, equipment, and components, and the external energy load  
31 imposed on a major facility by the climatic conditions of its location.  
32 An energy-consumption analysis of the operation of energy systems of a  
33 major facility shall include, but not be limited to, the following  
34 elements:

35 (a) The comparison of three or more system alternatives, at least  
36 one of which shall include renewable energy systems, and one of which  
37 shall comply at a minimum with the sustainable design guidelines of the

1 United States green building council leadership in energy and  
2 environmental design silver standard or similar design standard as may  
3 be adopted by rule by the department;

4 (b) The simulation of each system over the entire range of  
5 operation of such facility for a year's operating period; and

6 (c) The evaluation of the energy consumption of component equipment  
7 in each system considering the operation of such components at other  
8 than full or rated outputs.

9 The energy-consumption analysis shall be prepared by a professional  
10 engineer or licensed architect who may use computers or such other  
11 methods as are capable of producing predictable results.

12 (~~(12)~~) (13) "Renewable energy systems" means methods of facility  
13 design and construction and types of equipment for the utilization of  
14 renewable energy sources including, but not limited to, hydroelectric  
15 power, active or passive solar space heating or cooling, domestic solar  
16 water heating, windmills, waste heat, biomass and/or refuse-derived  
17 fuels, photovoltaic devices, and geothermal energy.

18 (~~(13)~~) (14) "Cogeneration" means the sequential generation of two  
19 or more forms of energy from a common fuel or energy source. Where  
20 these forms are electricity and thermal energy, then the operating and  
21 efficiency standards established by 18 C.F.R. Sec. 292.205 and the  
22 definitions established by 18 C.F.R. 292.202 (c) through (m) as of July  
23 28, 1991, shall apply.

24 (~~(14)~~) (15) "Selected buildings" means educational, office,  
25 residential care, and correctional facilities that are designed to  
26 comply with the design standards analyzed and recommended by the  
27 department.

28 (~~(15)~~) (16) "Design standards" means the heating, air-  
29 conditioning, ventilating, and renewable resource systems identified,  
30 analyzed, and recommended by the department as providing an efficient  
31 energy system or systems based on the economic life of the selected  
32 buildings.

33 **Sec. 3.** RCW 39.35.040 and 1994 c 242 s 2 are each amended to read  
34 as follows:

35 Whenever a public agency determines that any major facility is to  
36 be constructed or renovated, such agency shall cause to be included in  
37 the design phase of such construction or renovation a provision that

1 requires a life-cycle cost analysis (~~(conforming)~~) that includes the  
2 calculation of the amount of embodied energy used in all building  
3 materials and that conforms with the guidelines developed in RCW  
4 39.35.050 to be prepared for such facility. Such analysis shall be  
5 approved by the agency prior to the commencement of actual construction  
6 or renovation. A public agency may accept the facility design if the  
7 agency is satisfied that the life-cycle cost analysis provides for: An  
8 efficient energy system or systems based on the economic life of the  
9 major facility; and due consideration of low embodied energy building  
10 materials.

11 Nothing in this section prohibits the construction or renovation of  
12 major facilities which utilize renewable energy systems.

13 **Sec. 4.** RCW 39.35.050 and 2001 c 214 s 17 are each amended to read  
14 as follows:

15 The department, in consultation with affected public agencies,  
16 shall develop and issue guidelines for administering this chapter. The  
17 purpose of the guidelines is to define a procedure and method for  
18 performance of life-cycle cost analysis to promote the selection of  
19 low-life-cycle cost alternatives. At a minimum, the guidelines must  
20 contain provisions that:

21 (1) Address energy considerations during the planning phase of the  
22 project;

23 (2) Identify energy components and system alternatives including  
24 energy management systems, renewable energy systems, and cogeneration  
25 applications prior to commencing the energy consumption analysis;

26 (3) Establish a method for calculating the embodied energy used in  
27 building materials for construction of a major facility;

28 (4) Identify simplified methods to assure the lowest life-cycle  
29 cost alternatives for selected buildings with between twenty-five  
30 thousand and one hundred thousand square feet of usable floor area;

31 ~~((+4))~~ (5) Identify simplified methods to ensure low embodied  
32 energy building materials are used in the building design;

33 (6) Establish times during the design process for preparation,  
34 review, and approval or disapproval of the life-cycle cost analysis;

35 ~~((+5))~~ (7) Specify the assumptions to be used for escalation and  
36 inflation rates, equipment service lives, economic building lives, and  
37 maintenance costs;

1           (~~(+6)~~) (8) Determine life-cycle cost analysis format and submittal  
2 requirements to meet the provisions of chapter 201, Laws of 1991;  
3           (~~(+7)~~) (9) Provide for review and approval of life-cycle cost  
4 analysis.

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