# HOUSE BILL 313

IN THE HOUSE

January 23, 1979		Introduced and referred to Committee on Natural Resources.
February 5, 1979		Committee Recommend bill, as amended.
February 6, 1979		Printed and placed on members' desks.
February 7, 1979		Second reading, do pass.
		On motion, taken from engrossing and referred to Committee on Natural Resources.
February 12, 1979		Intent statement attached.
		Committee recommend bill, do pass.
February 14, 1979		Printed and placed on members' desks.
February 15, 1979		Second reading, do pass.
February 16, 1979		Considered correctly engrossed.
February 17, 1979		Third reading, passed.
I	N THE SENA	TE
February 19, 1979		Introduced and referred to Committee on Natural Resources.
March 20, 1979		Committee recommend bill, not concurred.
I	N THE HOUS	Е
March 21, 1979		Returned from Senate, not concurred.

LC 0990/01

INTRODUCED BY - Munder - 57RX A Vincent 1 2 3 A BILL FOR AN ACT ENTITLED: "AN ACT REQUIRING PERFORMANCE 4 OF A LIFE-CYCLE COST ANALYSIS REFORE ANY STATE AGENCY MAY 5 LEASE OR CONSTRUCT & FACILITY." 6

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BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA: 8 Section 1. Findings and purpose. (1) Operating and 9 maintenance expenditures associated with energy equipment 10 and with energy consumed in state-financed and leased 11 buildings represent a significant cost over the life of a 12 building. Energy conserved by appropriate building design 13 not only reduces the demand for energy but also reduces 14 The costs for building operation. size. design. 15 orientation, and operability of windows; the ratio of 16 ventilating air to air heated or cooled; the level of 17 lighting consonant with space-use requirements; the handling 18 19 of occupancy loads; and the ability to zone off areas not 20 requiring equivalent levels of heating or cooling are but a few of the considerations necessary to conserving energy. 21

22 (2) It is very important that energy-efficient designs 23 provide energy savings over the life of the building 24 structure. Conversely, energy-inefficient designs cause 25 excess and wasteful energy use and high costs over that building's life. With buildings lasting many decades and
 with energy costs escalating rapidly. it is essential that
 the costs of operation and maintenance for energy-using
 equipment be included in all design proposals for state
 buildings.

6 (3) In order that such energy efficiency 7 considerations become a function of building design and also a model for future application in the private sector, it is 8 the policy of the state that buildings constructed and 9 financed by the state be designed and constructed in a 10 manner which will minimize the consumption of energy used in 11 12 the operation and maintenance of such buildings.

Section 2. Definitions. In [sections 1 through 5] the
 following definitions apply:

15 (1) "Facility" means a building or other structure.

16 (2) "Energy performance index or indices (EPI)" means 17 a number describing the energy requirements at the building 18 boundary of a facility, per square foot of floor space or 19 per cubic foot of occupied volume, as appropriate under 20 defined internal and external ambient conditions over an 21 entire seasonal cycle.

(3) "Life-cycle costs" means the cost of owning;
operating; and maintaining the facility over the life of the
structure and may be expressed as an annual cost for each
year of the facility's use.

-2- HB313 INTRODUCED BILL

1 Section 3. Life-cycle cost malysis. Neither the department of administration nor any other state agency may 2 lease or construct a facility, within limits prescribed in 3 this section, without having secured a proper evaluation of 4 life-cycle costs. Furthermore, construction may proceed 5 only upon disclosing, for the famility chosen, the 6 life-cycle costs as determined in fraction 41 and the 1 8 capitalization of the initial construction costs of the building. The life-cycle costs shall be a primary 9 consideration in the selection of a building design. Such 10 analysis is required only for construction of buildings with 11 an area of 5,000 square feet or greater. For leased areas 12 of 20,000 square feet or greater within a given building 13 boundary, a life-cycle analysis shall be performed, and a 14 lease may be entered only where there is a showing that the 15 life-cycle costs are minimal compared to available like 16 facilities. 17

Section 4. Rules for conduct of life-cycle cost 18 analysis. (1) The department of administration shall adopt 19 rules and procedures, including energy conservation 20 21 performance quidelines, for conducting a life-cycle cost 22 analysis of alternative architectural and engineering designs and for developing energy performance indices to 23 evaluate the efficiency of energy utilization for competing 24 designs in the construction of state financed and leased 25

LC 0990/01

1 - facilities. Such rules and procedures shall take effect 270

2 days after July 1+ 1979-

3 (2) Such life-cycle costs shall be the sum of:

4 (a) the reasonably expected fuel costs over the life 5 of the building, as determined by the department, that are 6 required to maintain illumination, power, temperature, 7 humidity, ventilation, and all other energy consuming 8 equipment in a facility; and

9 (b) the reasonable costs of probable maintenance.
 10 including labor and materials, and operation of the
 11 building.

12 (3) The department shall adopt rules for determining
13 life-cycle costs including rules relating to:

14 (a) the orientation and integration of the facility15 with respect to its physical site;

16 (b) the amount and type of glass employed in the17 facility and the directions of exposure;

18 (c) the effect of insulation incorporated into till
19 facility design and the effect on solar utilization of the
20 properties of external surfaces; and

21 (d) the variable occupancy and operating conditions of22 the facility and subportions of the facility.

23 (4) Such rules shall be based on the best currently
24 available methods of analysis, including those of the
25 national bureau of standards, the department of housing and

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urban development, and other federal agencies and
 professional societies and materials developed by the
 department. Provision shall be made for an annual updating
 of rules and standards as required.

5 Section 5. Rules for energy performance indices. The 6 department shall promulgate rules for energy performance 7 indices as defined in [section 2] to audit and evaluate 8 competing design proposals submitted to the state. As 9 experience develops on the energy performance achieved with 10 state building, the indices (EPI) shall serve as a measure 11 of building performance with respect to energy consumption.

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HB 0313/02

## Approved by Committee on Natural Resources

1	HOUSE BILL NO. 313
Z	INTRODUCED BY HUENNEKENS+ AZZARA+ VINCENT
3	
4	A BILL FOR AN ACT ENTITLED: "AN ACT REQUIRING PERFORMANCE
5	OF A LIFE-CYCLE COST ANALYSIS BEFORE ANY STATE AGENCY MAY
6	EEASE-OR CONSTRUCT & FACILITY."
7	
8	BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA:
9	Section 1. Findings and purpose. (1) Operating and
10	maintenance expenditures associated with energy equipment
11	and with energy consumed in state-financed <del>andleased</del>
12	buildings represent a significant cost over the life of a
13	building. Energy conserved by appropriate building design
14	not only reduces the demand for energy but also reduces
15	costs for building operation. The size, design,
16	orientation, and operability of windows; the ratio of
17	ventilating air to air heated or cooled; the level of
18	lighting consonant with space-use requirements; the handling
19	of occupancy loads; and the ability to zone off areas not
20	requiring equivalent levels of heating or cooling are but a
21	few of the considerations necessary to conserving energy.
22	(2) It is very important that energy-efficient designs

23 provide energy savings over the life of the building structure. Conversely, energy-inefficient designs cause 24 25 excess and wasteful energy use and high costs over that

building's life. With buildings lasting many decades and 1 2 with energy costs escalating rapidly, it is essential that 3 the costs of operation and maintenance for energy-using equipment be included in all design proposals for state 4 5 buildings.

(3) In order that such energy efficiency 6 considerations become a function of building design and also 7 a model for future application in the private sector, it is 8 the policy of the state that buildings constructed and 9 10 financed by the state be designed and constructed in a 11 manner which will minimize the consumption of energy used in 12 the operation and maintenance of such buildings.

13 Section 2. Definitions. In [sections 1 through 5] the 14 following definitions apply:

15 (1) "Facility" means a building or other structure. 16 (2) "Energy performance index or indices (EPI)" means 17 a number describing the energy requirements at the building 18 boundary of a facility, per square foot of floor space or per cubic foot of occupied volumer as appropriate under 19 20 defined internal and external ambient conditions over an 21 entire seasonal cycle.

(3) "Life-cycle costs" means the cost of owning. 22 23 operating, and maintaining the facility over the life of the 24 structure and may be expressed as an annual cost for each 25 year of the facility's use.

> -2-HB 313 SECOND READING

1 Section 3. Life-cycle cost analysis. Neither the 2 department of administration nor any other state agency may 3 in the second se 4 this section, without having secured a proper evaluation of life-cycle costs. Furthermore, construction may proceed -5 6 only upon disclosing, for the facility chosen, the 7 life-cycle costs as determined in [section 4] and the 8 capitalization of the initial construction costs of the building. The life-cycle costs shall be a 9 primary consideration in the selection of a building design. Such 10 11 analysis is required only for construction of buildings with 12 an area of 5.000 square feet or greater. For-leased-oreas-of 13 28**y888-square--fect--or-**-greater--within--a--given--building 14 15 tease-way-be-entered-only-where-there-is-s-showing-that--the ++fe-cycle--costs--are--minimol--compared--to-svailable-like 16 17 facilities

18 Section 4. Rules for conduct of life-cycle cost 19 analysis. (1) The department of administration shall adopt 20 rules and procedures, including energy conservation performance quidelines, for conducting a life-cycle cost 21 analysis of alternative architectural and engineering 22 designs and for developing energy performance indices to 23 24 evaluate the efficiency of energy utilization for competing 25 designs in the construction of state financed and-leased

1 facilities. COSTS\_DF\_IHESE\_STUDIES\_SHALL\_BECONE\_A\_PORTION\_OF 2 THE SERVICES PERFORMED BY THE CONTRACT ARCHITECT FOR THE DESIGNATED PROJECT UNDER THE STANDARD FEE SCHEDULE 3 ESTABLISHED BY THE DEPARTMENT OF ADMINISTRATION. Such rules 4 and procedures shall take effect 270 days after July 1, 5 6 1979. (2) Such life-cycle costs shall be the sum of: 7 (a) the reasonably expected fuel costs over the life 8 of the building, as determined by the department, that are 9 10 required to maintain illumination, power, temperature, humidity, ventilation, and all other energy consuming 11 12 equipment in a facility; and (b) the reasonable costs of probable maintenance. 13 14 including labor and materials, and operation of the 15 building. (3) The department shall adopt rules for determining 16 17 life-cycle costs including rules relating to: 18 (a) the orientation and integration of the facility 19 with respect to its physical site; 20 (b) the amount and type of glass employed in the 21 facility and the directions of exposure; 22 (c) the effect of insulation incorporated into the 23 facility design and the effect on solar utilization of the properties of external surfaces; and 24

25 (d) the variable occupancy and operating conditions of

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1 the facility and subportions of the facility.

2 (4) Such rules shall be based on the best currently 3 available methods of analysis, including those of the 4 national bureau of standards, the department of housing and 5 urban development, and other federal agencies and 6 professional societies and materials developed by the 7 department. Provision shall be made for an annual updating 8 of rules and standards as required.

9 Section 5. Rules for energy performance indices. The 10 department shall promulgate rules for energy performance 11 indices as defined in [section 2] to audit and evaluate 12 competing design proposals submitted to the state. As 13 experience develops on the energy performance achieved with 14 state building, the indices (EPI) shall serve as a measure 15 of building performance with respect to energy consumption.

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### STATEMENT OF INTENT RE: HB 313

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Because two sections of this bill delegate authority to the Department of Administration to adopt rules necessary to implement life-cycle costing, the House Committee on Natural Resources submits this statement of intent for the purpose of clarity delineating this authority.

9 The purpose of this bill is to encourage 10 energy-efficient designs in state facilities to be constructed and financed in the future. To accomplish this 11 goal, the bill requires that proposed facilities be 12 13 evaluated not just from the perspective of front-end construction costs, but from the perspective of costs of 14 15 operation and maintenance, particularly with respect to energy use, over the expected life of the facility. The bill 16 17 provides, in section 3, that no state agency may construct a 18 facility with an area of 5,000 square feet or greater without having secured a proper avaluation of life-cycle 19 costs. These costs must be disclosed along with the 20 capitalization of the initial construction costs, before 21 construction may proceed. The life-cycle costs must be a 22 23 primary consideration in selection of a building design.

Sections 4 and 5 grant extensive rulemaking authority
 to the department of administration to implement the

1 application of life-cycle costs analyses and energy 2 performance indices. In section 4(1), the committee has 3 added language to clearly instruct the department of 4 administration that the costs of conducting these studies 5 are included in the standard architectural fee schedule 6 established for state facilities. Thus the committee intends 7 that the fiscal impact of the bill be minimized.

8 Costs should be incurred by the department only for 9 developing the standards to be followed by architects 10 submitting designs for state facilities. Section 4 is 11 explicit as to what those standards must include.

12 Section 5 directs the department to adopt rules for 13 energy performance indices to eventually serve as a measure 14 of building performance with respect to energy consumption. 15 It is intended that this would be an ongoing process of 16 evaluation and refinement of those rules as experience with 17 these practices develops.

First adopted by the HOUSE COMMITTEE ON NATURAL
 RESOURCES on February 12, 1979.

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### 46th Legislature

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HB 0313/03

### Approved by Committee on Natural Resources

1	HOUSE BILL NO. 313
2	INTRODUCED BY HUENNEKENS, AZZARA, VINCENT
3	
4	A BILL FOR AN ACT ENTITLED: "AN ACT REQUIRING PERFORMANCE
5	OF A LIFE-CYCLE COST ANALYSIS BEFORE ANY STATE AGENCY MAY
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17	ventilating air to air heated or cooled; the level of
18	lighting consonant with space-use requirements; the handling
19	of occupancy loads; and the ability to zone off areas not
20	requiring equivalent levels of heating or cooling are but a
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(2) It is very important that energy-efficient designs
provide energy savings over the life of the building
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building's life. With buildings lasting many decades and
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21 entire seasonal cycle.

(3) "Life-cycle costs" means the cost of owning.
operating, and maintaining the facility over the life of the
structure and may be expressed as an annual cost for each
year of the facility's use.

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SECOND READING

4 ESTABLISHED BY THE DEPARIMENT DE ADMINISTRATION. Such rules

5 and procedures shall take effect 270 days after July 1. 6 1979.

7 (2) Such life-cycle costs shall be the sum of:

8 (a) the reasonably expected fuel costs over the life
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18 (a) the orientation and integration of the facility

- 19 with respect to its physical site;
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- 21 facility and the directions of exposure;
- 22 (c) the effect of insulation incorporated into the
- 23 facility design and the effect on solar utilization of the
- 24 properties of external surfaces; and
- 25 (d) the variable occupancy and operating conditions of

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Section 3. Life-cycle cost analysis. Neither the 1 department of administration nor any other state agency may 2 lease-or construct a facility, within limits prescribed in 3 this section, without having secured a proper evaluation of 4 life-cycle costs. Furthermore, construction may proceed 5 only upon disclosing, for the facility chosen, the 6 life-cycle costs as determined in [section 4] and the 7 capitalization of the initial construction costs of the 8 9 building. The life-cycle costs shall be a primary 10 consideration in the selection of a building design. Such 11 analysis is required only for construction of buildings with 12 an area of 5,000 square feet or greater. For-leased-oreas-of 20y000-square--feat--ar--greater--within--a--given--building 13 boundaryy--a--++fe-eye+a--anatysts-shatt-be-performedy-and-a 14 15 teose-may-be-entered-onty-where-there-is-a-showing-thet--the 16 +ife-cycle--costs--are--sinimel--compared--to-available-like facilities. 17

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### HB 0313/03

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2 (4) Such rules shall be based on the best currently 3 available methods of analysis, including those of the 4 national bureau of standards, the department of housing and 5 urban development, and other federal agencies and 6 professional societies and materials developed by the 7 department. Provision shall be made for an annual updating 8 of rules and standards as required.

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### STATEMENT OF INTENT RE: HB 313

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Because two sections of this bill delegate authority to the Department of Administration to adopt rules necessary to implement life-cycle costing. the House Committee on Natural Resources submits this statement of intent for the purpose of clarity delineating this authority.

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18 First adopted by the HOUSE COMMITTEE ON NATURAL 19 RESOURCES on February 12, 1979.

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HOUSE BILL NO. 313 1 INTRODUCED BY HUENNEKENS, AZZARA, VINCENT 2 3 A BILL FOR AN ACT ENTITLED: "AN ACT REQUIRING PERFORMANCE 4 OF A LIFE-CYCLE COST ANALYSIS BEFORE ANY STATE AGENCY MAY 5 **LEASE-OR CONSTRUCT A FACILITY.**\* 6 7 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA: 8 Section 1. Findings and purpose. (1) Operating and 9 maintenance expenditures associated with energy equipment 10 and with energy consumed in state-financed and-leased 11 buildings represent a significant cost over the life of a 12 building. Energy conserved by appropriate building design

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> -2-**HB 313** THIRD READING

HB 313

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1 facilities. COSTS OF THESE STUDIES SHALL BECOME A PORTION OF 2 THE SERVICES PERFORMED BY THE CONTRACT ARCHITECT FOR THE 3 DESIGNATED PROJECT UNDER THE STANDARD FEE SCHEDULE ESTABLISHED BY THE DEPARTMENT OF ADMINISTRATION. Such rules 4 and procedures shall take effect 270 days after July 1, 5 1979. 6 7 (2) Such life-cycle costs shall be the sum of: R (a) the reasonably expected fuel costs over the life 9 of the building, as determined by the department, that are required to maintain illumination, power, temperature, 10 humidity, ventilation, and all other energy consuming 11 12 equipment in a facility; and (b) the reasonable costs of probable maintenance. 13 including labor and materials, and operation of the 14 15 building. (3) The department shall adopt rules for determining 16 17 life-cycle costs including rules relating to: 18 (a) the orientation and integration of the facility 19 with respect to its physical site; 20 (b) the amount and type of glass employed in the 21 facility and the directions of exposure; (c) the effect of insulation incorporated into the 22

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2 (4) Such rules shall be based on the best currently 3 available methods of analysis, including those of the 4 national bureau of standards, the department of housing and 5 urban development, and other federal agencies and 6 professional societies and materials developed by the 7 department. Provision shall be made for an annual updating 8 of rules and standards as required.

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