

VETOED

ORDINANCE NO. 4735

AN ORDINANCE relating to the King County Building Code; amending Ordinance 3647, Section 6, and K.C.C. 16.04.050 and adopting the "King County Energy Code" effective July 1, 1980.

BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

SECTION 1. Purpose. Adoption and implementation of the King County Energy Code will:

- 1. Promote public awareness of the need for energy conservation.
2. Commit the region to real, practical conservation measures in an area of known cost effectiveness, i.e., built into construction of new developments.
3. Make a significant step towards reduced energy dependence in the future for our community by lowering the growth rate in energy consumption.
4. Establish a record on concerted energy conservation efforts in this region on a cooperative basis, to demonstrate to the State and Federal governments that we will act on our own and should be given credit for it.
5. Promote area-wide consistency in standards to minimize the confusion in the construction industry and to encourage other jurisdictions in their consideration of the Code for possible adoption.

6. Permit alternative methods of meeting Code requirements in order to encourage innovative design and construction techniques.

SECTION 2. Findings. The King County Council hereby finds that:

1. The Energy Conservation Comprehensive Plan Amendment adopted by Ordinance 3649 called for the development of a building code amendment for energy efficiency in new construction.

2. The Council, in Motion 3804, called upon the King County Building Code Advisory and Appeals Board and the County Executive to review the Seattle/King County Code Study, and to recommend

1 a Building Code amendment for Energy Conservation.

2 3. The County participated in the code development process
3 of the Seattle Task Force, and assisted in the analysis of the
4 Code on energy use and economic impacts of the Code.

5 4. Cooperation between Seattle and King County in the code
6 development process and in the adoption of comparable energy codes
7 benefits the construction industry, minimized unneeded duplication
8 of effort and public cost, and encourages adoption by other
9 jurisdictions within the County area.

10 5. The King County Energy Code is the initial effort to
11 establish a comprehensive set of building code standards for
12 new construction. It is anticipated that the Code and the Design
13 and Construction Practices Manual will require updating as
14 new additions and modifications become available at the internation-
15 al, national, state and local levels, particularly in the areas
16 of performance standards, ventilation standards, solar and
17 renewable energy allowances, and delivered energy efficiency
18 considerations.

19 SECTION 3. Supplements adopted amended. Ordinance 3647,
20 Section 6, and K.C.C. 16.04.050 are hereby amended as follows:
21 The King County supplements to the adopted 1976 editions of the
22 Uniform Building Code, Uniform Mechanical Code, Uniform Housing
23 Code, and Uniform Code for the Abatement of Dangerous Buildings,
24 are adopted as part of the Code (††) . "Chapter 53, Thermal
25 Performance (Insulation)" of the "Official King County Supplement
26 to the 1976 Uniform Building Code" is hereby repealed, effective
27 July 1, 1980 and the King County Energy Code attached to this
28 ordinance is hereby adopted, effective July 1, 1980, as part of
29 the code; as such they constitute county regulation for any
30 activity subject to the code.

31 SECTION 4. Inspection and Enforcement.

32 (A) Enforcement. The Manager of the Division of Building
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1 and Land Development is authorized to enforce the provisions of
2 this Chapter and any rules and regulations promulgated thereunder,
3 pursuant to the enforcement and penalty provisions of Title 23
4 of the King County Code.

5 (B) General. All construction or work for which a permit
6 is required shall be subject to inspection by the Manager of the
7 Division of Building and Land Development.

8 (C) Authority. The Manager of the Division of Building
9 and Land Development is authorized and directed to enforce this
10 Chapter. The Manager of the Division of Building and Land Develop-
11 ment is authorized to promulgate, adopt, and issue those rules and
12 regulations necessary to the effective and efficient administration
13 of this Chapter.

14 (D) Plan reviews and inspections. All buildings constructed
15 under the provisions of this Chapter are subject to a final
16 inspection for compliance with this Chapter. The Manager of the
17 Division of Building and Land Development has the authority to
18 establish rules and procedures for accepting at the option of
19 the applicant an affidavit of substantial compliance with this
20 Chapter in lieu of plan reviews and/or inspections.

21 SECTION 5. Design and Construction Practices Manual. The
22 King County Executive shall provide for the preparation of a
23 design and construction practices manual to help building con-
24 tractors, individuals building their own residences, professionals
25 involved in building siting, design and construction and other
26 interested persons, such as college students, understand and
27 comply with the code by providing clear instructions and expla-
28 nations of the code's requirements. A draft design and construc-
29 tion practices manual shall be available by April 15, 1980 to
30 involved and interested building design and construction parties,
31 including those of record who testified on the proposed code before
32 the King County Council and its energy committee. The manual
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1 shall be officially delivered to the King County Council by April
2 15, 1980 for review and comment. The Council will have until
3 May 30, 1980 to indicate its recommendations on the draft manual
4 to the County Executive. The County Executive's final version,
5 as may be revised from the draft, shall be complete and available
6 to the public by no later than June 29, 1980.

7 The manual shall include or reference, but not be limited
8 to, the following:

9 (A) A manual format which is convenient to use, well indexed,
10 flexible enough to allow the insertion of revisions and updates,
11 with chapter number and title noted on each chapter page for ease
12 of reference, and full reference on each page as to its revision
13 number and date.

14 (B) A statement of intent as to the conditions for and
15 frequency of manual update.

16 (C) A brief discussion of the key properties of energy,
17 heat, R-values, U-values, first and second laws of thermodynamics
18 and "delivered energy efficiency" (source energy).

19 (D) A definitions section to assist the wide range of in-
20 tended users in understanding the code's application.

21 (E) Data on materials, systems, standard building types,
22 County climate factors and variations, explanation of procedures
23 for calculating heat loss coefficients (U-values), peak and total
24 energy use and inclusion of tables and formulas now in the
25 code.

26 (F) Details of compliance, procedures and information for
27 submitting building plans and specifications.

28 (G) An explanation of the treatment of underground walls in
29 building envelope calculations with allowance for the insulating
30 value of soils.

31 (H) Flexible guidelines to encourage passive solar collection
32 and storage that are equivalent to code standards.

1 (I) Calculation procedures for complying with Section 5305
2 "Building Design by Systems Analysis and Building Utilizing Non-
3 Depletable Energy Sources," the alternative design section of
4 the attached code, including a clarification of the terms "similate"
5 and "simulation" in Subsection 5305.03 (b) "Analysis Procedures."

6 SECTION 6. Consistency with State Standards. The County
7 Executive shall monitor and coordinate with the Washington State
8 Building Code Advisory Council and the appropriate Washington State
9 House and Senate Committees in its adoption of a state-wide thermal
10 efficiency and lighting code in order to present to the King County
11 Council by June 2, 1980 any needed amendments to the King County
12 Energy Code.

13 SECTION 7. Code Revision. The County Executive shall
14 present to the King County Council by no later than December 31,
15 1981 an evaluation of the Energy Code's implementation and
16 make recommendations for needed revisions. The evaluation shall
17 include consideration of adopted County energy conservation
18 policies, the effectiveness of one year's application of the
19 Energy Code, the development and refinement of thermal efficiency
20 standards at the international, national, state and local levels
21 and the increased awareness of the need for achieving better
22 energy utilization efficiencies in King County.

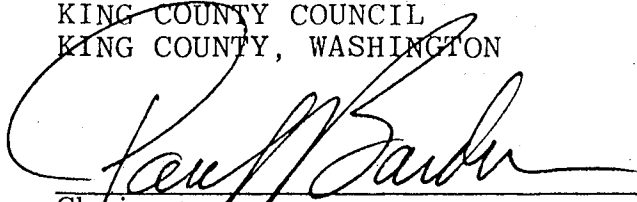
23 SECTION 8. Severability. If any provision of this ordinance
24 or its application to any person or circumstance is held invalid,
25 the remainder of this ordinance or the application of the pro-
26 vision to other persons or circumstances shall not be affected.
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1 SECTION 9. The attached King County Energy Code shall
2 take effect and be in force on July 1, 1980.

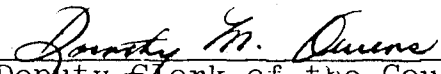
3 INTRODUCED AND READ for the first time this 1st day of
4 October 1, 1979.

5 PASSED this 4th day of February, 1980.

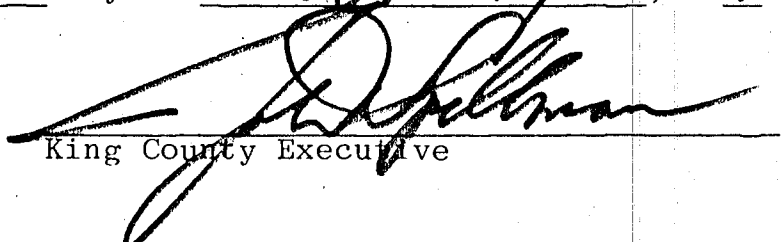
6 KING COUNTY COUNCIL
7 KING COUNTY, WASHINGTON

8 
9 _____
Chairman

10 ATTEST:

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12 
13 Deputy Clerk of the Council

14 **VETOED** APPROVED this 6th day of February, 19 80

15 
16 _____
King County Executive



John D. Spellman

County Executive

King County Courthouse
Seattle, Washington 98104
(206) 344-4040

February 6, 1980

The Honorable Bill Reams
Chairman, King County Council
B U I L D I N G

Re: Ordinance #4735 - King County Energy Code

Dear Councilman Reams:

Attached is Ordinance #4735 which I have vetoed. I have done so with some reluctance since the County is in dire need of a new energy code and the Council has put a good deal of time into its consideration. Nevertheless, because of the emergency, both in terms of protecting our energy supply and protecting future consumers, I have vetoed the ordinance in order to allow all members of the Council to reconsider and vote on the issue. I urge the Council to pass the ordinance with the 100 per cent double-glazing amendments proposed Monday.

Enclosed is a summary sheet of the economic analyses consistently showing the cost-effectiveness of 100 per cent double-glazing, including calculations from the report submitted by the Master Builders.

We have every justification for requiring 100 per cent double-glazing at this time. In addition to cost-effectiveness, the other factors which complete the case for 100 per cent double-glazing are:

1. This area and its utilities need it to obtain maximum use of our increasingly short energy supply. Puget Power particularly is in a tight supply situation for the next 3-5 years, and any cost-effective measures that can stretch the slim margin of existing supplies must be implemented. Puget has requested the authority to require double-glazing and even higher insulation standards in all new electrical heat hookups.
2. All federally funded housing assistance programs require it, including most significantly both FHA and VA mortgage financing for new construction. Proposed federal standards (BEPS) are based on triple-glazing for our type of climate.

99 FEB 6 P 1: 31

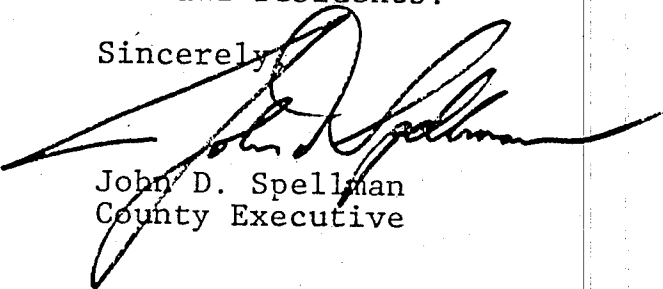
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February 6, 1980

3. The National Association of Homebuilders has recommended double-glazing on a cost-effective basis for the Seattle area since 1977.
4. Most of the major home builders in King County are installing double-glazing exclusively today. Most of the windows manufactured for the Seattle market are double paned.
5. The recently published consumer preference survey, sponsored by the Seattle Master Builders, indicates that 81 per cent of consumers in this area want double-glazing in a new home even if it cost \$1,500 extra--compared to the more typical cost of \$650.
6. And finally, if a buyer was unlucky enough to buy a home with single glazing, current estimates based on actual installations indicate that the cost of retrofitting the prototype house with custom-made storm windows would be \$1,500. For all new double-glazed replacement windows, it would be in the range of \$2,500. There is little doubt that a homebuyer purchasing a house today with single glazing faces that burden sometime in the near future due to the ever-increasing real cost and limited supply of all conventional energy sources.

The action which I urge the Council to take is based upon the persuasively heavy preponderance of evidence. It is not a question of desirability but of necessity to responsibly manage our energy resource for the benefit of all residents.

Sincerely,



John D. Spellman
County Executive

JDS:b

Enclosures

Ordinance #4735

Attachment A - Summary of Cost Effectiveness Analyses of
100 Per Cent Double-Glazing

Attachment B - Glazing Requirements of Current Draft State
Energy Code

KING COUNTY ENERGY CODE
COST EFFECTIVENESS OF 100% DOUBLE GLAZING

SOURCE	CONSERVATION PACKAGE		INITIAL COST DIFFERENCE	ECONOMIC IMPACT ON HOMEOWNER Payback (yr.) Return (%) Benefit:Cost	COMMENTS
	Double Glazing	Insulation			
John Graham Analysis for Seattle/King County Energy Code	50%	Existing	\$700	6.3 yr. 22.1%	348 sq. ft. of glass 15% of wall area \$4.17/sq. ft.
Seattle	50%	Existing	\$700	5.7 yr. 19.8%	
Seattle	100%	Existing	\$1,450	5.9 yr. 19.6%	
Ben Notkin Report for the Seattle Master Builders	100%	C:R-19 W:R-11 F:R-19	\$365	5.5 yr. No fuel escalation	Average for House #1 Meriwether results at 18.8% over the average of actual heating bills shown 195 sq. ft. of glass 12% of wall area \$1.87/sq. ft.
Staff Update of the John Graham Analysis (using ½ of estimated energy saving)	100%	Existing	\$650	2.2 yr. Elec. 3.6 yr. Gas	348 sq. ft. of glass 15% of wall area \$1.87/sq. ft. (Notkin Report) Announced fuel escalation rates
Mathematical Sciences North- west Report to the State Energy Office (HB98 compared to Eugene Model Standards)	100%	C:R-38 W:R-19	(\$1,260) (\$780) Total	3.3 yr.	Reduction of window area from 14.5% to 9.6% of wall area Lower difference in total cost includes a \$480 saving in heating equipment
Fair Electric Rates Now (FERN) Analysis of Ben Notkin Report (House #1 here only)	100%	C:R-30 W:R-11 F:R-19	(\$507)	4:1	195 sq. ft. of glass 12% of wall area \$1.87/sq. ft. 4727 D.D. Extra ceiling insulation cost included
Analysis for Oregon Energy Code	100%	C:R-19 W:R-11 F:R-11	\$335	5.2 yr.	192 sq. ft. of glass 16% of wall area \$1.74/sq. ft. 4800 D.D.
1979 Oregon Energy Code Analysis	100%	Existing	\$421	4:1	348 sq. ft. of glass 15% of wall area \$1.21/sq. ft. 4800 D.D.
Lawrence Berkeley Laboratory Analysis for the Federal Building Energy Performance Standards	100% Triple Glazing	C:R-38 W:R-19 F:R-19	(\$1,051)	2.3:1 Elec. 1.1:1 Gas	Portland area National fuel pricing Assumes base of: C:R-19 W:R-11 F:R- 7 Double Glazing Prototype house B:C based on last cost effective option recommended -- triple glazing

DRAFT STATE ENERGY CODE STANDARDS FOR WALL SECTIONS
A. Component Performance Approach - Wall Sections

TABLE 4-1

WALLS

Detached One and Two Family Dwellings Type R-1 and R-3
 All Other Residential Buildings, 3 Stories or Less

Degree Days	$U_o = \text{BTU/H FT}^2\text{F}$	Concrete or Masonry $U_o = \text{BTU/H FT}^2\text{F}$
< 5101	0.20	0.25
5101-5900	0.19	0.24
5901-6800	0.18	0.23
6801-7700	0.16	0.21
7701-7800	0.15	0.20
> 7800	0.13	0.18

B. Prescriptive Approach (Residential)

OPAQUE WALLS

TABLE 6-1*

Minimum Allowed "R" for Ceiling and Walls

Flat Roof Decks/Ceilings (1)

<u>Degree Days</u>	<u>R = F H FT²/BTU</u>	
(Less Than) < 5900	R-19	(Installed R)
5901-7500	R-24	"
(Over) > 7500	R-30	"

Walls (2)

(Less Than) < 5100	R-11	(Installed R)
5101-5900	R-11	"
5901-6800	R-15	"
6801-7700	R-19	"
7701-8700	R-19	"
(Over) > 8700	R-19	"

WINDOWS

TABLE 6-3

Maximum Percentage of Gross Exterior
Wall Area in Glazing

DEGREE DAYS	PERCENTAGE OF GLAZING REQUIRED TO BE SPECIAL GLAZING			
	0%	50%	75%	90%
(Less Than) < 5100	11%	15%	19%	22%
5100- 5900	10%	14%	17%	20%
5901- 6800	11%	15%	19%	21%
6801- 7700	10%	14%	17%	19%
7701- 8700	9%	12%	15%	17%
OVER 8700	7%	10%	12%	14%