

CITY of ALBUQUERQUE

SEVENTEENTH COUNCIL

COUNCIL BILL NO. F/S(2) O-07-73

ENACTMENT NO. _____

SPONSORED BY: Isaac Benton, Michael Cadigan, Martin Heinrich

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ORDINANCE

2 **AMENDING SECTION 14-1-3(M) ROA 1994 TO ADOPT THE 2006**
3 **INTERNATIONAL ENERGY CONSERVATION CODE; CREATING THE**
4 **ALBUQUERQUE HIGH PERFORMANCE BUILDING ORDINANCE**
5 **ESTABLISHING CERTAIN ENVIRONMENTALLY SENSITIVE PRACTICES IN**
6 **CONSTRUCTION.**
7 **BE IT ORDAINED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF**
8 **ALBUQUERQUE:**

9 **Section 1. SHORT TITLE.** Sections 1 through 3 of this ordinance may be
10 cited as the “Albuquerque High Performance Buildings Ordinance”.

11 **Section 2. Council Findings.**

12 The Council makes the following findings:

13 (1) The green building design and construction standards established in
14 this Chapter are intended to reduce human exposure to noxious materials;
15 conserve energy, both non-renewable and renewable, as well as scarce
16 resources; minimize the ecological impact of building construction; use
17 renewable energy and protect and restore local air, water, flora and fauna.

18 (2) These standards will help use energy, water and materials more
19 efficiently, reduce greenhouse gas emissions and reduce the cost of building
20 operations.

21 (3) The requirements set out in this ordinance set standards that can be
22 achieved with low effort and first cost, while achieving a significantly lower life
23 cycle cost. These requirements establish minimum standards that should be
24 expected in any building.

25 (4) Periodic review and revision of this code will be necessary in order
26 to adopt higher standards of energy efficiency that reflect advancements in

1 technology, construction standards, and public policy. The designated
2 Planning Department code enforcement manager (building official) shall
3 regularly prepare amendments to the International Energy Conservation Code
4 (IECC) for adoption as part of the City's Uniform Administrative Code by the
5 City Council. Amendments shall be submitted for approval consistent with a
6 maintenance schedule that shall also be subject to Council approval.

7 Section 3. A High Performance Building Ordinance is adopted as follows,
8 and shall be incorporated by the Planning Department in revisions to the
9 Uniform Administrative Code of the City of Albuquerque, the Technical Code
10 of the City of Albuquerque and applicable regulations, and manuals:

11 A. Applicability. The provisions of this ordinance shall apply to all new
12 buildings and to the replacement of specific components and systems
13 described herein. Sections D, E, F, J, L, M, and N of this ordinance shall apply
14 to existing buildings undergoing repairs, alterations or rehabilitation when the
15 work area, as defined in the International Existing Building Code, exceeds 50
16 percent of the aggregate area of the building regardless of the costs of
17 repairs, alteration, or rehabilitation, replacement of specific components and
18 systems described herein shall comply with this Ordinance. Exception:
19 Historic buildings as defined in the International Existing Building Code.

20 B. Green Building Certification. The building official shall develop a
21 program for expedited permitting of high-performance buildings that
22 substantially exceed City code standards.

23 C. Documentation of Heating, Ventilating and Air Conditioning (HVAC)
24 Sizing. Documentation verifying the methodology and accuracy of heating
25 and cooling equipment and duct sizing shall be submitted with the mechanical
26 code compliance package. Documentation shall include the following
27 information:

28 (1) Address of permit application, or indication of the model type
29 for bulk reissue plans.

30 (2) Name of individual performing load calculations.

31 (3) Name and version of load calculation software.

(4) Design temperatures (outdoor and indoor) according to the Air Conditioning Contractors of America's (ACCA) Manual J, ACCA Manual N, American Society of Heating, Refrigeration and Air Conditioning Engineers, U.S. Department of Energy standards, or other methodology approved by the City of Albuquerque.

(5) Area of walls, windows, skylights and doors.

(6) Orientation of building, windows and glass doors, infiltration rate, duct loads, internal gains, insulation values, and Solar Heat Gain Coefficient (SHGC) of windows and glass doors.

(7) Heating and cooling load calculations.

(8) Duct sizing according to ACCA Manual D, equipment sizing according to ACCA Manual J and equipment selection according to ACCA Manual S, or other methodologies approved by the City of Albuquerque.

D. HVAC controls. All evaporative coolers installed in newly constructed buildings shall be controllable by thermostat controls. After June 1, 2008, all other heating and air conditioning shall be controllable by automatic setback thermostats.

E. Evaporative coolers shall not use continuous bleed sump dumps.

F. Residential HVAC Equipment. In buildings regulated by the International Residential Code the following equipment standards shall apply:

(1) Forced air heating furnaces shall have minimum 90% Annual Fuel Utilization Efficiency (AFUE) as rated on the manufacturer's label or be Energy Star rated.

(2) Cooling equipment shall have minimum 15 SEER, as rated by the Air-Conditioning and Refrigeration Institute (ARI), or be evaporative coolers.

(3) Heat pumps shall have a minimum heating season performance factor (HSPF) of 8.

(4) The primary source of space heating shall not be electric resistance. Exceptions: a) Buildings that do not use fossil fuels or electricity produced by fossil fuels; b) Where approved by the Green Building Program Manager, electric-resistance heaters may be used as a source of backup heat in buildings with passive-solar collection and storage systems capable of

1 supplying 100 percent of the buildings space heating requirements; c) Where
2 approved by the Green Building Program Manager, electric-resistance heaters
3 may be used as a source of backup heat in portions of buildings with passive-
4 solar collection and storage systems capable of supplying 100 percent of the
5 space heating requirements for the space, provided that such space is
6 separated from the remainder of the building by a thermal envelope that
7 complies with this ordinance.

8 G. Residential Building Leakage. In all one and two-family dwellings
9 regulated by the International Residential Code, framing inspections shall
10 include a Thermal Bypass inspection as required by Energy Star. The
11 Planning Department shall train building inspectors for this added inspection
12 requirement.

13 H. Duct System Leakage. In all building types, joints in supply ducts
14 and return plenum/ducts shall be properly sealed using foil tape or fabric with
15 water-based mastic. Flexible duct shall be supported horizontally every four
16 feet and vertically every six feet on center maximum. Exception: Existing
17 construction with no modification of or addition to the existing ductwork.

18 I. Building Insulation, thermal barrier, and roof reflectance.

19 (1) In all one and two-family dwellings regulated by the
20 International Residential Code, roofs shall be insulated to at least R-38; walls
21 shall be insulated to at least R-13; framed floors shall be insulated to at least
22 R- 21 if over unheated uninsulated space; floor slabs on grade shall be
23 insulated at their perimeter edges to at least R-5; basement walls shall be
24 insulated to at least R-11.

25 (2) Where the roof of an existing building is being replaced and
26 the roof is a component of the thermal envelope of a building regulated by this
27 ordinance and the R-value of the existing roof insulation is less than 30,
28 insulation shall be added to achieve R-30. Exceptions: a) Reroofing where
29 either the roof sheathing or the roof insulation is not exposed; b) Where the
30 insulation is continuous and is applied entirely above the roof sheathing, R-20
31 shall be allowed; c) Insulation may be tapered to drain to existing scuppers
32 provided the average R-value of the roof insulation complies with this section
33 and the minimum added R-value is 3; d) Where the overall U-value of the entire

1 roof assembly is 0.034 or less. The Planning Department and Family and
2 Community Services Department shall coordinate to jointly create a financial
3 assistance program for elderly and low-income homeowners to assist them in
4 compliance with this provision, to be managed by Family and Community
5 Services.

9 (a) Reflective roof coverings that are Energy Star qualified.

(b) Low slope (2 inches in 12, or less) roof coverings that have an initial solar reflectance of 0.65 or greater as determined by the Cool Roof Rating Council.

(c) Steep slope (greater than 2 inches in 12) roof coverings that have an initial solar reflectance of 0.25 or greater as determined by the Cool Roof Rating Council.

(4) Alternative systems that achieve equivalent thermal performance are allowed if approved by the building official.

20 J. Water Heating.

Gas	
Size (gallons)	EF
40 or less	0.62
50	0.60
65	0.55
75	0.53
Electric	
30 or less	0.95
40	0.94
50	0.92
65	0.90

80 and above	Not allowed
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(2) Electric-resistance water heating. Installation of electric-resistance water heaters is not permitted. Exceptions: a) Tankless electric water heaters until January 1, 2009; b) Where the electricity is provided by an on-site solar photovoltaic system; c) When approved by the Green Building Program Manager as backup for an on-site solar water heating system; d) Water heaters with a maximum capacity of six gallons that are equipped with an insulating blanket that has a minimum R-value of 12; e) The building official may approve electric-resistance water heaters where it is shown that natural gas is not available.

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12 swimming pool water. Exception: Indoor swimming pools that are accessory
13 to occupancies regulated by the International Building Code provided that the
14 building is 30 percent more energy efficient than the same building built to
15 ASHRAE 90.1 – 1999 standards and that the energy used to heat the pool is
16 included in performance-rating calculations complying with Normative
17 Appendix G of ASHRAE 90.1 – 2004.

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18 R-1 Pipe insulation. All hot water distribution and re-circulating system
19 piping shall be thermally insulated between the heater and the end-use
20 fixtures. Until June 1, 2008, pipe insulation shall have a minimum R-value of 2.
21 After June 1, 2008, pipe insulation shall have a minimum R-value of R-4 for
22 piping two inches or less in diameter and a minimum R value of 6 for larger
23 diameter piping.

24

25 laundry ventilation equipment in any residential occupancy shall be Energy
26 Star certified. All such equipment shall be controlled by an occupancy sensor
27 or automatic timer switch.

28

29 be Energy Star certified;

30

31 Freezers

52 *Kemper et al.*

1 **Dishwashers**

2 N. In all residential occupancy types, 70 percent of the light fixtures
3 shall be Energy Star rated, or shall be standard fixtures with T-5, T-6 or T-8
4 fluorescent tubes or screw-in fluorescent bulbs.

5 O. Windows and glass doors. North-, east-, and west-facing window
6 and door glass shall be low-e coated. Exception: unheated greenhouse
7 structures that can be decoupled from the building's conditioned thermal
8 envelope.

9 **Section 4. SEVERABILITY CLAUSE.** If any section, paragraph, sentence,
10 clause, word or phrase of this ordinance is for any reason held to be invalid or
11 unenforceable by any court of competent jurisdiction, such decision shall not
12 affect the validity of the remaining provisions of this ordinance. The Council
13 hereby declares that it would have passed this ordinance and each section,
14 paragraph, sentence, clause, word or phrase thereof irrespective of any
15 provision being declared unconstitutional or otherwise invalid.

16 **Section 5. COMPIILATION.** This ordinance shall be incorporated by the
17 Administration into the Uniform Administrative Code of the City of
18 Albuquerque and Technical Code of the City of Albuquerque and made part of
19 the Revised Ordinances of Albuquerque, New Mexico, 1994.

20 **Section 6. EFFECTIVE DATE.** This ordinance shall take effect ninety
21 days after publication by title and general summary.