

CITY of ALBUQUERQUE

SEVENTEENTH COUNCIL

COUNCIL BILL NO. C/S O-07-73 ENACTMENT NO. _____

SPONSORED BY: Benton, Cadigan, Heinrich

1 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; AMENDING SECTION 9-5-4-2 ROA 1994.
7 BE IT ORDAINED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF
8 ALBUQUERQUE:

9 Section 1. SHORT TITLE. Sections 1 through 5 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 materials; minimize the ecological impact of energy and materials used; 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 the minimum standards that should
24 be expected in any building.

25 Section 3. Section 14-1-3(M) ROA 1994 is amended as follows:

(M) ~~[-The 2003 New Mexico Energy Conservation Code as adopted by the Construction Industries Division of the State of New Mexico with an effective date of July 1, 2004;-]~~[+The City of Albuquerque hereby adopts the 2006 Edition of the International Energy Conservation Code (IECC). All references in the IECC to the International Building Code shall be deemed references to 14.7.2 NMAC, the 2003 New Mexico Commercial Building Code (NMCBC). All references to the International Residential Code shall be deemed references to 14.7.3 NMAC, the 2003 New Mexico Residential Building Code (NMRBC) All references to the International Plumbing Code shall be deemed references to 14.8.2 NMAC, the 2003 New Mexico Plumbing Code (NMPC). All references to the International Mechanical Code shall be deemed references to 14.9.2, the 2003 New Mexico Mechanical Code (NMMC). All references to the IEC or International Electrical Code shall be deemed references to 14.10.4 NMAC, the 2003 New Mexico Electrical Code (NMEC). All references to the International Fuel Gas Code are deemed references to the NMMC or the LP Gas Standards found at 19.15.40 NMAC, and NMSA 1978 70-5-1 et seq. +]

Section 4. A High Performance Building Ordinance is adopted as follows, and shall be incorporated by the Planning Department in revisions to the Uniform Administrative Code, City Amendments to the New Mexico Building Code and other applicable ordinances, regulations, and manuals:

A. Applicability. The provisions of this ordinance shall apply to all new buildings, and existing buildings whose repair, alteration or rehabilitation costs exceed fifty percent of their replacement cost except for historic buildings registered with the State or National historic registries or designated Historic Landmarks in the City of Albuquerque. For purposes of this Section, the building official shall determine the replacement cost of the building or structure and may use the most current building valuation table published by the International Conference of Building Officials. The building official shall also determine the fair market value of any necessary repairs. Regardless of the costs of repairs, alteration, or rehabilitation, any replacement of specific items described herein shall comply with this Ordinance.

B. Priority Plan Check for Green Building Certification.

1 (1) Buildings subject to the Applicability provisions of this
2 ordinance that are registered with the United States Green Building Council
3 for (at minimum) Silver level certification under the Leadership in Energy and
4 Environmental Design Green Building Rating System (LEED), including LEED
5 for Homes (LEED-H), LEED for New Construction (LEED-NC), LEED for
6 Neighborhood Development (LEED-ND) and LEED for Core and Shell (LEED-
7 CS), and those registered for (at minimum) Silver level certification with Build
8 Green New Mexico shall receive priority plan check processing by all City
9 departments.

10 (2) All applicants wishing to receive priority plan check shall
11 submit their project registration and checklist to the City indicating all of the
12 credits they intend to pursue. The application shall also clearly describe the
13 materials, systems and strategies they will use to achieve the credits in the
14 plans submitted to the City for plan check approval.

15 (3) Priority plan check shall consist of expedited prioritization of
16 the submittal by City building code reviewers, moving to the top of any waiting
17 list after any other previously-submitted projects that are already in the active
18 process of review.

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

- 24 (1) Address of permit application.
- 25 (2) Name of individual performing load calculations.
- 26 (3) Name and version of load calculation software.
- 27 (4) Design temperatures (outdoor and indoor) according to the Air
28 Conditioning Contractors of America's (ACCA) Manual J, ACCA Manual N,
29 American Society of Heating, Refrigeration and Air Conditioning Engineers,
30 U.S. Department of Energy standards, or other methodology approved by the
31 City of Albuquerque.
- 32 (5) Area of walls, windows, skylights and doors .

(6) Orientation of 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, including homes, shall be equipped with thermostat controls. All other heating and air conditioning shall be controlled by automatic setback thermostats.

E. HVAC Equipment.

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

(2) All 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) In all residential occupancies with individual units in excess of 400 square feet, the primary source of space heating may not be electric resistance. Exception: Passive solar energy may be the primary space heating source for any residential occupancy if approved by the building official, in which case electric resistance may be used as a backup secondary heat source.

F. Residential Building Leakage.

(1) In buildings regulated by the International Residential Code, except where air lock vestibules are provided at the primary and secondary entries, leakage of the building thermal envelope shall not exceed .35 Air Changes per Hour (ACH) as measured by the blower door test. The testing procedure shall be based on ASTM E779 or ANSI/ASHRAE 136. Testing shall be performed by a certified independent third-party technician approved by

the building official. In projects with at least ten units of the same identical plan type by the same builder, 20 percent of the units may be tested.

Documentation verifying thermal envelope air leakage equal to or less than .35 ACH shall include the following information:

(a) Address of residence, or model type for bulk re-issue master plan designs by a single builder.

(b) Name and company of technician performing testing.

(c) Date of final test.

Exception: building permit applications received prior to one hundred eighty days following the effective date of this ordinance.

(2) Framing inspections shall include a Thermal Bypass inspection as required by Energy Star. The Planning Department shall train building inspectors for this added inspection requirement.

G. Duct System Leakage. Leakage of supply ducts and return plenum/ducts shall be properly sealed using foil tape or fabric with water-based mastic, so as not to exceed 6 cubic feet per minute per 100 square feet of floor space. Flexible duct shall be supported horizontally every four feet and vertically every eight feet on center maximum. Exception: Existing construction with no modification of or addition to the existing ductwork.

H. Duct Insulation. Supply and return ducts shall be insulated to a minimum of R-8. Ducts in floor trusses shall be insulated to minimum of R-6. Exceptions: (1) Ducts or portions thereof located within the building thermal envelope; (2) Supply and return ducts can be insulated to a minimum of R-6 if the efficiency of the cooling equipment is upgraded to SEER-15.

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

(1) In all one and two-family dwellings regulated by the International Residential Code, roofs shall be insulated to at least R-38; walls shall be insulated to at least R-13; framed floors shall be insulated to at least R-22 if over unheated uninsulated space; floor slabs on grade shall be insulated at their perimeter edges to at least R-5.5; basement walls shall be insulated to at least R-11. Alternative insulation systems that achieve equivalent thermal performance are allowed if approved by the building official.

(2) The replacement of existing low-slope (2;12 or less) membrane roofs that require removal of the existing roof membrane, including projects otherwise exempted per Section 4.A., shall require applicant verification of the existing roof insulation values and augmentation, if needed, to at least R-30.

(3) A roof radiant barrier with an emittance of 0.05 or less as tested in accordance with ASTM C-1371 or ASTM E-408 is required. The barrier shall be installed according to the manufacturer's specifications.

Exceptions:

(a) Roofs covered with clay or concrete tile having a solar reflectance of 0.4 or greater.

(b) Roofs covered with other materials having a solar reflectance of 0.5 or greater.

(c) Houses with sealed attics.

(d) Houses with mechanical equipment and all ductwork located wholly within the conditioned space.

(e) Existing construction where there is no modification to the roof framing.

(4) Low-slope roof surfaces shall have a minimum reflectance of 0.7 or a minimum Solar Reflective Index (SRI) of 78, corresponding to ASTM E903-96, 1918-97 or 1549-04. Exception: vegetated "green" roofs.

J. Water Heating.

(1) All water heaters shall be Energy Star certified, or have a minimum energy factor (EF) equal to or greater than those listed in the following table, or be a solar or on-demand type water heater, also called "tankless" water heater. Exception: water heaters of 30 gallon capacity or less with an added insulation blanket of minimum R-12.

Gas	
Size (gallons)	EF
30 or less	0.64
40	0.62
50	0.60
65	0.58
75	0.56

Electric	
30 or less	0.95
40	0.94
50	0.92
65	0.90
80 and above	Not allowed

(2) Hot water recirculating pump systems with temperature-operating controls or equivalent technology shall be installed in all non-exempt construction and renovations. Exception: hot water systems with a maximum pipe length of 20 feet from the heater to the most distant point of use.

(3) Electric resistance water heating. Residential occupancy buildings with 11 or fewer units having natural gas service located within the adjacent right-of-way shall not use electric resistance water heating as the primary source for hot water.

Residential occupancy buildings with 11 or fewer units not having natural gas service located within the adjacent right-of-way or multifamily buildings containing 12 or more units may install electric resistance water heaters having a minimum EF as per Section 4.J(1) above in conjunction with a preprogrammed water heater timer in lieu of gas fired water heating. The timer shall be preprogrammed to turn the water heater off between the hours of 3:00 p.m. and 7:00 p.m. from June 1 to September 30 and from 12:00 a.m. to 4:00 a.m. throughout the year. The timer shall have an override capable of restoring power to the water heater for one hour when activated.

(4) Solar collectors shall be the primary source to heat swimming pool water and to preheat industrial process water, including but not limited to, car washes and laundries.

K. Pipe Insulation. All hot water distribution and recirculating system piping shall be thermally insulated between the heater and the end-use fixtures. Pipe insulation shall have R-value equal to R-4 for piping two inches or less in diameter and R-6 for larger piping.

L. Exhaust Ventilation Systems. Newly installed restroom, bathroom or laundry ventilation equipment in any residential occupancy shall be Energy Star certified and controlled by an automatic timer switch.

1 **M. The following, when installed by the builder in a new building, shall**
2 **be Energy Star certified:**

3 **Clothes Washers**

4 **Freezers**

5 **Refrigerators**

6 **Dishwashers**

7 **N. Light Fixtures in all residential occupancies shall be Energy star**
8 **rated. Exceptions: T-5, T-6 or T-8 fluorescent tubes and standard fixtures with**
9 **standard medium-base screw-in compact fluorescent bulbs).**

10 **O. Windows and glass doors. North-, east-, and west-facing window**
11 **and door glass shall be low-e coated. All glass facing within 15 degrees of**
12 **south shall have calculated overhangs or awnings as required to provide**
13 **shading of minimum 90 percent of the glass surface area at noon on June 20.**
14 **All glass facing within 30 degrees of west shall be shaded by a minimum of 90**
15 **percent at 3 p.m. on June 20, utilizing vegetation, awnings or shading**
16 **structures, or have a maximum solar heat gain coefficient of 30 percent.**
17 **Vegetation used for such purpose shall provide the required shading at a**
18 **maturity of three full growing seasons. Exception: unheated greenhouse**
19 **structures that can be decoupled from the building's conditioned thermal**
20 **envelope.**

21 **Section 5. Residential permit fees. The Planning Department shall**
22 **institute new plan check and permit fees for single family residences, which**
23 **shall increase the standard fees by 25 percent where the heated floor area**
24 **exceeds 3400 square feet and by 50 percent where the heated floor area**
25 **exceeds 5000 square feet.**

26 **Section 6. SEVERABILITY CLAUSE. If any section, paragraph, sentence,**
27 **clause, word or phrase of this ordinance is for any reason held to be invalid or**
28 **unenforceable by any court of competent jurisdiction, such decision shall not**
29 **affect the validity of the remaining provisions of this ordinance. The Council**
30 **hereby declares that it would have passed this ordinance and each section,**
31 **paragraph, sentence, clause, word or phrase thereof irrespective of any**
32 **provision being declared unconstitutional or otherwise invalid.**

1 Section 8. **COMPILATION.** This ordinance shall be incorporated in and
2 made part of the Revised Ordinances of Albuquerque, New Mexico, 1994.

3 Section 9. **EFFECTIVE DATE.** This ordinance shall take effect sixty days
4 after publication by title and general summary.

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