

# **CITY of ALBUQUERQUE**

## **SEVENTEENTH COUNCIL**

COUNCIL BILL NO. F/S O-07-73 ENACTMENT NO. \_\_\_\_\_

SPONSORED BY: Benton, Cadigan, Heinrich

**ORDINANCE**

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

**Section 1. SHORT TITLE. Sections 1 through 5 of this ordinance may be  
cited as the “Albuquerque High Performance Buildings Ordinance”.**

**Section 2. Council Findings.**

**The Council makes the following findings:**

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

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

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

1           (4)     Periodic review and revision of this code will be necessary in order  
2     to adopt higher standards of energy efficiency that reflect advancements in  
3     technology, construction standards, and public policy.

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

5           (M)     ~~[-The 2003 New Mexico Energy Conservation Code as adopted by~~  
6     ~~the Construction Industries Division of the State of New Mexico with an~~  
7     ~~effective date of July 1, 2004;-][+The City of Albuquerque hereby adopts the~~  
8     2006 Edition of the International Energy Conservation Code (IECC). All  
9     references in the IECC to the International Building Code shall be deemed  
10    references to 14.7.2 NMAC, the 2003 New Mexico Commercial Building Code  
11    (NMCBC). All references to the International Residential Code shall be deemed  
12    references to 14.7.3 NMAC, the 2003 New Mexico Residential Building Code  
13    (NMRBC) All references to the International Plumbing Code shall be deemed  
14    references to 14.8.2 NMAC, the 2003 New Mexico Plumbing Code (NMPC). All  
15    references to the International Mechanical Code shall be deemed references to  
16    14.9.2, the 2003 New Mexico Mechanical Code (NMMC). All references to the  
17    IEC or International Electrical Code shall be deemed references to 14.10.4  
18    NMAC, the 2003 New Mexico Electrical Code (NMEC). All references to the  
19    International Fuel Gas Code are deemed references to the NMMC or the LP  
20    Gas Standards found at 19.15.40 NMAC, and NMSA 1978 70-5-1 et seq. +]

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

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

the costs of repairs, alteration, or rehabilitation, replacement of specific components and systems described herein shall comply with this Ordinance.

**B. Green Building Certification.**

(1) Buildings that are registered with the United States Green Building Council for (at minimum) Silver level certification under the Leadership in Energy and Environmental Design Green Building Rating System (LEED), including LEED for Homes (LEED-H), LEED for New Construction (LEED-NC), LEED for Neighborhood Development (LEED-ND) and LEED for Core and Shell (LEED-CS), and those registered for (at minimum) Silver level certification with Build Green New Mexico shall be exempt from requirements of paragraph 4.C below and shall receive priority plan check processing by all City departments.

(2) Applicants wishing to receive priority plan check or exemption shall submit their project registration and checklist to the City indicating the program credits they intend to pursue. The application shall also clearly describe the materials, systems and strategies they will use to achieve the credits in the plans submitted to the City for plan check approval. Upon certification of the project, a copy of the certification shall be provided for City records. The building official shall establish a fine structure and remedial requirements for applicants that fail to provide evidence of final certification.

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

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

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

(2) Name of individual performing load calculations.

- 1                   (3)     Name and version of load calculation software.
- 2                   (4)     Design temperatures (outdoor and indoor) according to the Air
- 3     Conditioning Contractors of America's (ACCA) Manual J, ACCA Manual N,
- 4     American Society of Heating, Refrigeration and Air Conditioning Engineers,
- 5     U.S. Department of Energy standards, or other methodology approved by the
- 6     City of Albuquerque.
- 7                   (5)     Area of walls, windows, skylights and doors.
- 8                   (6)     Orientation of building, windows and glass doors, infiltration
- 9     rate, duct loads, internal gains, insulation values, and Solar Heat Gain
- 10    Coefficient (SHGC) of windows and glass doors.
- 11                  (7)     Heating and cooling load calculations.
- 12                  (8)     Duct sizing according to ACCA Manual D, equipment sizing
- 13    according to ACCA Manual J and equipment selection according to ACCA
- 14    Manual S, or other methodologies approved by the City of Albuquerque.
- 15           D.     HVAC controls. All evaporative coolers installed in newly
- 16    constructed buildings shall be equipped with thermostat controls. All other
- 17    heating and air conditioning shall be controlled by automatic setback
- 18    thermostats.
- 19           E.     Evaporative coolers shall not use continuous bleed sump dumps.
- 20           F.     Residential HVAC Equipment. In buildings regulated by the
- 21    International Residential Code the following equipment standards shall apply:
- 22                  (1)     Forced air heating furnaces shall have minimum 90% Annual
- 23    Fuel Utilization Efficiency (AFUE) as rated on the manufacturer's label or be
- 24    Energy Star rated.
- 25                  (2)     Cooling equipment shall have minimum 15 SEER, as rated by
- 26    the Air-Conditioning and Refrigeration Institute (ARI), or be evaporative
- 27    coolers.
- 28                  (3)     Heat pumps shall have a minimum heating season
- 29    performance factor (HSPF) of 8.
- 30                  (4)     The primary source of space heating may not be electric
- 31    resistance. Exception: Passive solar energy may be the primary space heating
- 32    source if approved by the building official, in which case electric resistance
- 33    may be used as a backup secondary heat source.

1           **G. Residential Building Leakage.** In all one and two-family dwellings  
2 regulated by the International Residential Code, framing inspections shall  
3 include a Thermal Bypass inspection as required by Energy Star. The  
4 Planning Department shall train building inspectors for this added inspection  
5 requirement.

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

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

14               (1) In all one and two-family dwellings regulated by the  
15 International Residential Code, roofs shall be insulated to at least R-38; walls  
16 shall be insulated to at least R-13; framed floors shall be insulated to at least  
17 R- 22 if over unheated uninsulated space; floor slabs on grade shall be  
18 insulated at their perimeter edges to at least R-5.5; basement walls shall be  
19 insulated to at least R-11.

20               (2) For all building types, including buildings otherwise exempted  
21 per Section 4.A, the replacement of existing low-slope (2:12 or less) membrane  
22 roofs covering fully-conditioned interior space shall require that the applicant  
23 verify the existing roof insulation value and include that information on the  
24 permit application. If the existing value is less than R-30 it shall be increased  
25 to a minimum of R-30 using means acceptable to the building official. The  
26 Planning Department and Family and Community Services Department shall  
27 coordinate to jointly create a financial assistance program for elderly and low-  
28 income homeowners to assist them in compliance with this provision.

29               (3) For all building types, a roof radiant barrier with an emittance  
30 of 0.05 or less as tested in accordance with ASTM C-1371 or ASTM E-408 is  
31 required over fully-conditioned interior space. The barrier shall be installed  
32 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) Buildings with sealed attics.
- (d) Buildings with mechanical equipment and all ductwork located wholly within the conditioned space.
- (e) Existing construction where there is no accessible attic space and no modification to the roof framing.
- (4) Low-slope roof surfaces over fully-conditioned interior space shall be Energy Star certified or 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.
- (5) Alternative systems that achieve equivalent thermal performance are allowed if approved by the building official.

**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, be solar heated water heaters or be on-demand type water heaters, also called "tankless" water heaters. Exception: water heaters of 6 gallon capacity or less with an added insulation blanket of minimum R-12.

<b>Gas</b>	
Size (gallons)	EF
30 or less	0.64
40	0.62
50	0.60
65	0.58
75	0.56
<b>Electric</b>	
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 occupancy sensors and temperature-operating controls or equivalent technology shall be

1 installed in all non-exempt construction and renovations. Exception: hot  
2 water systems with a maximum pipe length of 20 feet from the heater to the  
3 most distant point of use.

4 (3) Electric resistance water heating. Buildings having natural gas  
5 service located within the adjacent right-of-way shall not use electric  
6 resistance water heating as the primary source for hot water. Exception: on-  
7 demand type water heaters.

8 Buildings not having natural gas service located within the adjacent  
9 right-of-way may install electric resistance water heaters having a minimum  
10 EF as per Section 4.J(1) above in conjunction with a preprogrammed water  
11 heater timer in lieu of gas fired water heating. The timer shall be  
12 programmable by the user but shall be preprogrammed to turn the water  
13 heater off between the hours of 3:00 p.m. and 7:00 p.m. from June 1 to  
14 September 30 and from 12:00 a.m. to 4:00 a.m. throughout the year. The timer  
15 shall have an override capable of restoring power to the water heater for one  
16 hour when activated.

17 (4) Solar collectors shall be the primary source to heat all  
18 swimming pool water and to preheat industrial process water, including but  
19 not limited to, car washes and laundries. Exception: replacement of  
20 equipment in existing facilities.

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

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

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

31 Clothes Washers

32 Freezers

33 Refrigerators

1           **Dishwashers**

2           **N.**     In all residential occupancy types, light fixtures shall be Energy Star  
3           rated, or be standard fixtures with T-5, T-6 or T-8 fluorescent tubes or standard  
4           medium-base screw-in compact fluorescent bulbs.

5           **O.**     Windows and glass doors. North-, east-, and west-facing window  
6           and door glass shall be low-e coated. All glass facing within 45 degrees of  
7           south shall have overhangs, awnings or other shading devices so as to shade  
8           100 percent of the glass surface area at noon on June 21. All glass facing  
9           within 45 degrees of west shall be shaded by a minimum of 80 percent at 3  
10          p.m. on June 21, utilizing awnings, exterior shutters or other shading  
11          structures, or be a part of an assembly with a maximum Solar Heat Gain  
12          Coefficient (SHGC) of 30 percent. Interior blinds or shutters shall not be  
13          deemed to meet these requirements. Exception: unheated greenhouse  
14          structures that can be decoupled from the building's conditioned thermal  
15          envelope.

16          **Section 5.**   Residential building permit fees. The building permit fees  
17          schedule in the Uniform Construction Codes of the City of Albuquerque is  
18          amended by adding the following:

19          “In addition to the building permit fees set forth in the Building Permit Fees  
20          Table, the fee for any “house”, as defined at section 14-16-1-5 ROA 1994, shall  
21          be increased by 100 percent where the heated floor area exceeds 3400 square  
22          feet and by 200 percent where the heated floor area exceeds 5000 square  
23          feet.”

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

31          **Section 7. COMPILATION.** This ordinance shall be incorporated in and  
32          made part of the Revised Ordinances of Albuquerque, New Mexico, 1994.

**Section 8. EFFECTIVE DATE. This ordinance shall take effect ninety days after publication by title and general summary.**