

NEBRASKA

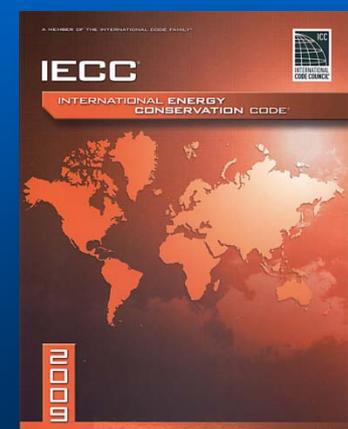
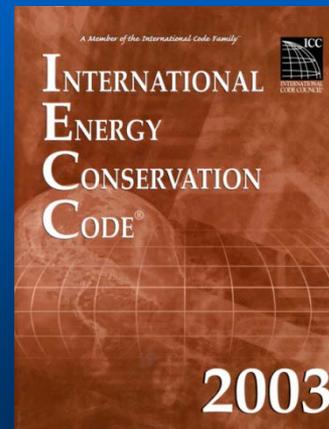
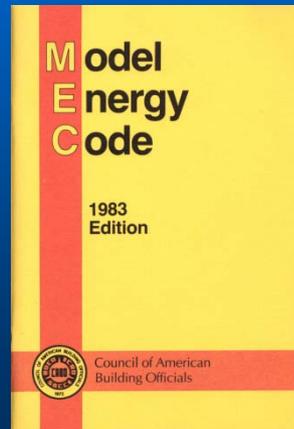


ENERGY OFFICE

Building Energy Codes Partnerships



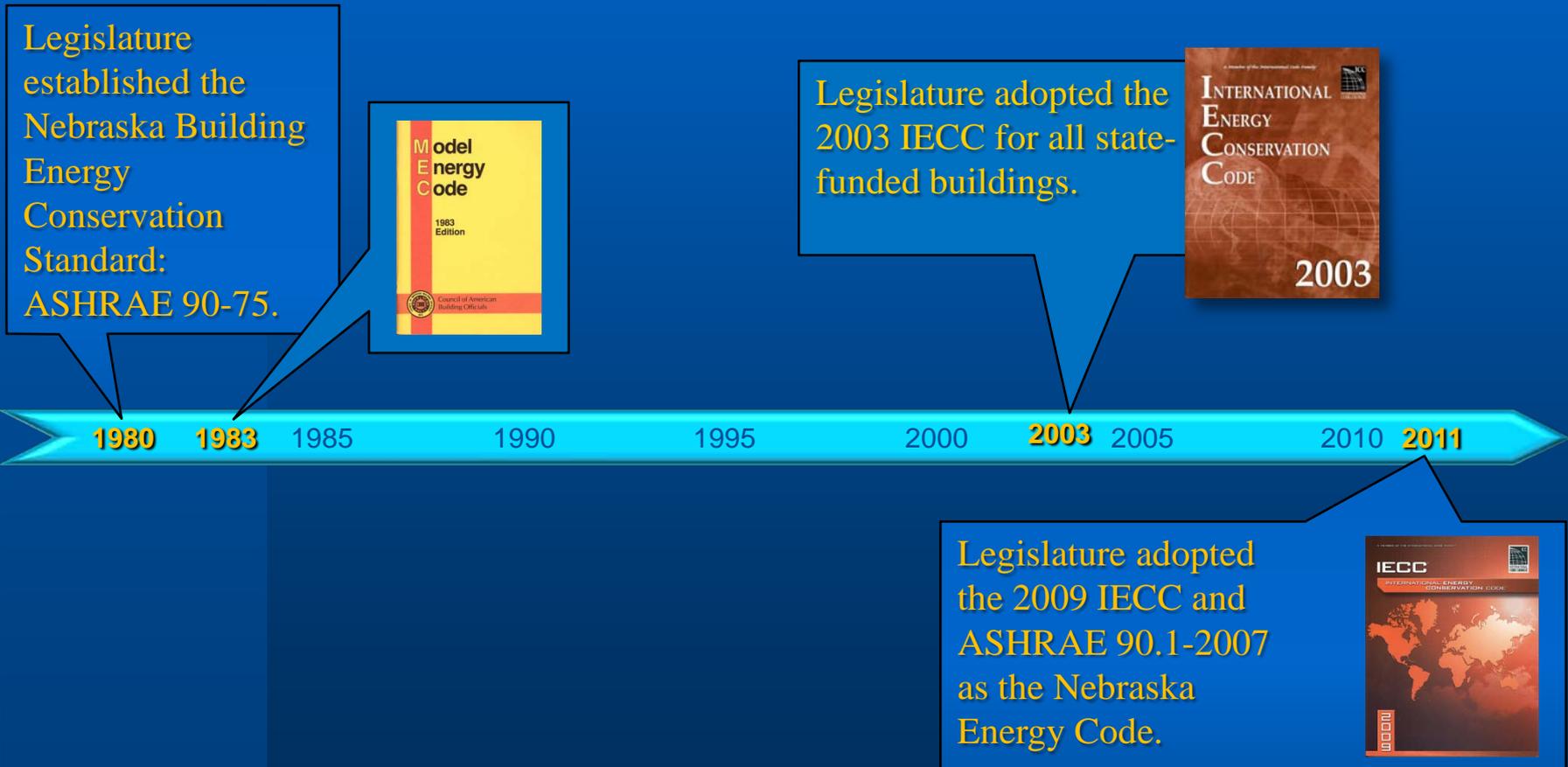
The Nebraska Experience



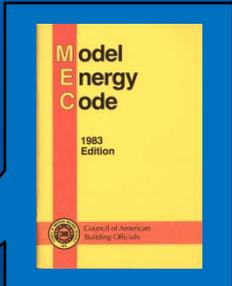


Building Energy Codes Partnerships

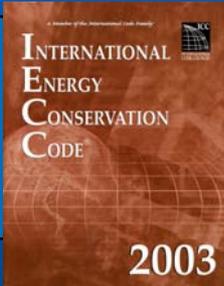
Here's a brief overview of how the state and it's partners moved from the 1983 MEC to the 2009 IECC.



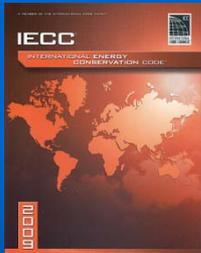
Legislature established the Nebraska Building Energy Conservation Standard: ASHRAE 90-75.



Legislature adopted the 2003 IECC for all state-funded buildings.



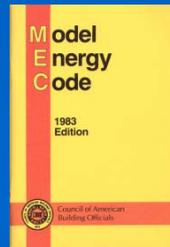
Legislature adopted the 2009 IECC and ASHRAE 90.1-2007 as the Nebraska Energy Code.





Building Energy Codes Partnerships

Legislature adopts the *1983 Model Energy Code* as the Nebraska Energy Standard.



1980 **1983** 1985 **1989** 1990 1995 2000 2005 2010

The Legislature considers updating energy code.

- **Opponents:** State homebuilders. Reason? Residential code requirements too costly.
- **Partners:** Bldg. Professionals supported commercial energy code update.
Electric utilities: Supported commercial and residential code update.

Legislation killed in committee.



Building Energy Codes Partnerships



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Conclusion after two defeats:
A different approach was needed.



Building Energy Codes Partnerships

A New Approach...

- Prove it
- Education
- Involvement
- Continued education

1980



Building Energy Codes Partnerships

The agency and lenders financed 122 homes totaling \$21.38 million which met or surpassed the *1995 Model Energy Code* then 1998 IECC by at least 30 percent. The agency offered interest rate reductions, from $\frac{1}{4}$ to 1 percent, to encourage the construction of very energy efficient homes.
Partners: Home builders, utilities and lenders.

1980

1985

1990

1995 **1996**

2000 **2002**

2005

2010





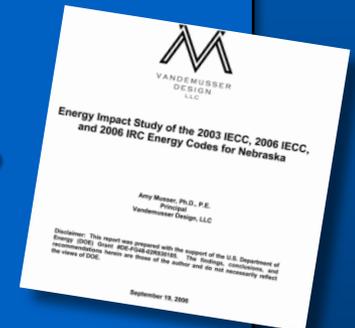
Building Energy Codes Partnerships

2006 US DOE SEP Special Projects grant received

- \$24,725 for 37 code workshops for 1,172 building professionals, code officials and suppliers.
- Certification examinations for 75 local codes officials.

- 2006 IECC compared to 2003 IECC Energy Impact Study of the 2003 IECC, 2006 IECC, and 2006 IRC Energy Codes for Nebraska, September 2006.

Findings: 2006 IECC would have increased energy use compared to 2003; State made no effort to adopt 2006 for this reason.



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2010



Legislature passes bill requiring 2003 IECC for all buildings.



Building Energy Codes Partnerships

US DOE SEP Special Projects grant received

- \$303,065 for upgrading the commercial building energy code 30 percent beyond 2006 IECC
- **Building Codes Advisory Council created with representatives [Partners] utilities, builders, local codes staff and architects**
- Nebraska-specific Advanced Commercial Building Energy Code Study, November 2009

Special Projects Grant cont.

American Recovery and Reinvestment Act

- ARRA requirement of adoption of 2009 IECC
- Nebraska allocated \$315,000 in SEP ARRA funds for building energy codes projects
- \$12 million added to loan pool. Financing new homes that are 50 +- percent or more above code

- Analysis of 2009 IECC [International Energy Conservation Code Cost Impact Memo, September 2009](#). Compliance cost \$476; annual savings = \$164; 3 year simple payback.

1980

1985



Net Zero Home

2000

2005

2008 2009

2010

- Net Zero Home financed and built (\$700,000+).



Building Energy Codes Partnerships

Building Codes Advisory Council

- AIA-Nebraska Chapter
- Certified Home Energy Rater
- 4 Code Inspectors: City of Omaha, and North Platte, NE Code Officials Assoc., Retired “Dean of Codes”
- City of Lincoln: Senior Policy Aide for Sustainability
- Commercial Contractor
- AGC-Nebraska Building Chapter
- Engineering Firm
- 2 Homebuilders: City of Omaha and City of Lincoln
- Nebr. State Home Builders Association
- HVAC Professional
- NE Board of Architects and Professionals
- Utilities: OPPD, NPPD, LES, MUD, Black Hills
- NE Dept. of Admin. Services: Building Division
- Others: BCAP, ICC, MEEA, NASEO



Building Energy Codes Partnerships

Building Codes Advisory Council

- Not paid
- Monthly meetings
- Discussed
 - Support of/Concerns with 2009 IECC
 - Verification for Duct Tightness Test
 - Support of/Concerns with Rules and Regulations
 - Verification for Duct Tightness Test
 - Training Topics/ Locations
- Great Plains Energy Codes Conference



Building Energy Codes Partnerships



PNNL Building Energy Codes grant received

- \$276,417+ for four tasks:

1. Assess code compliance; 100 homes evaluated. Findings: State code compliance average is 64%
2. Measure economic value of compliance [Nebraska Incremental Cost Analysis for New Single Family Homes](#) and [True Cost of the 2009](#)

[International Energy Conservation Code for New Homes in Nebraska](#)

3. Provide code training. More than 700 building professionals were trained at 11 workshops; 700 IECC/ASHRAE code books distributed.
4. Evaluate compliance strategies; A “Gap Analysis” suggesting ways to reach 90 percent compliance.

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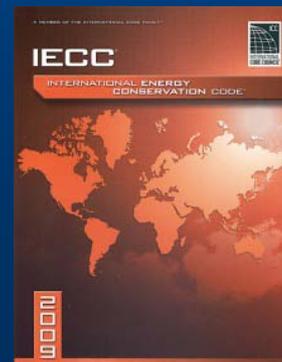
1995

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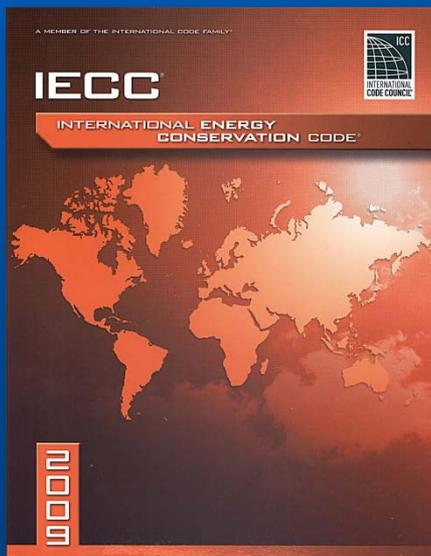
- The Legislature adopted the 2009 IECC replacing the 2003 IECC.
- Supporters: Code Officials , Utilities
- Neutral: Homebuilders, League of Municipalities



Building Energy Codes Partnerships

Now completing *ARRA* Building Energy Codes projects

- Analyze 2012 IECC [Energy Impact Study of the 2009 IECC and 2012 IECC Energy Codes for Nebraska, March 14, 2012](#)
- RESCheck and COMCheck training at 6 workshops.
- Certification for codes officials offered.
- Using findings on compliance for residential construction (100 homes), a retired “Dean of Codes” is providing customized one-on-one training at more than half the state’s jurisdictions.
- ARRA financed mortgages: 61 homes totaling \$23.51 million.



ARRA financed mortgages: 61 homes at 50 percent above code or better totaling \$23.51 million.

1980

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2012



Building Energy Codes Partnerships

What did we learn over 32 years?

1. Updating codes isn't easy.
2. Compliance is harder than updating a code.
3. You can't achieve success alone.
4. It takes money: analyzing, training, educating, financing.
5. Work with partners and others wherever possible.
 - **Homebuilders:** provided training, designed, built and financed homes well above code.
 - **Code officials:** provided code tools, training and certification costs.
 - **Utilities:** Provide testimony in code adoption, support trainings, attending meetings, and financial investment

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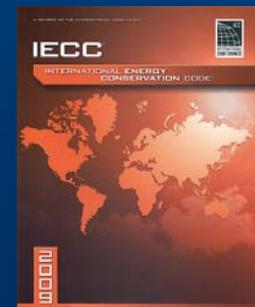
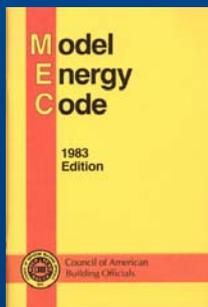
1995

2000

2005

2010

2012





Building Energy Codes Partnerships

Future of Building Codes Advisory Council

- Who are we missing?
 - Real Estate professionals
 - Consumers
 - Local policy makers
 - Distributors
- Do we need to limit the size?
- What is their role?

N E B R A S K A



ENERGY OFFICE

**Energy Building Code
information and resources are
a click away at**

www.neo.ne.gov