



ENERGY EFFICIENCY

Energy Efficient Buildings in Iowa by Design

**American
Institute of
Architects,
Iowa Chapter
Position**

Adopt consistent codes across the State of Iowa in collaboration with building industry groups and authorities to create Energy Efficient Buildings in Iowa by Design.

Energy infrastructure is slow to respond to change in policy and implementation because of its longevity and the limitations of new economic investment. Energy efficiency successfully reduces demand, increases resilience, contributes to stable energy prices, and allows for economic competitiveness. A holistic approach to building energy use encompasses the embodied energy that goes into creating a building. There is also a heightened awareness that not all building materials are created equal.

Recommendations for Action:

- 1 Adoption of Energy Codes consistent with the edition of the Building Codes adopted by the State of Iowa.
- 2 Collaboration with building industry groups and authorities responsible for adoption and implementation of codes and standards.
- 3 Foster education of energy efficiency benefits across the State with community leaders, building owners, and consumers.

Current Iowa Codes:

State adopted Building Codes for State owned or regulated buildings*:

- 2015 International Building Code (IBC)
- 2015 International Residential Code (IRC)
- 2015 International Existing Building Code (IEBC)

State adopted Energy Code:

- 2012 International Energy Conservation Code (IECC)
(applicable to all buildings statewide as adopted by Iowa Building Code Bureau)

*Local jurisdictions can adopt/enforce locally and amend to include more stringent standards.
(see Building Codes Brief for complete list of State adopted codes)





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Model Codes are Families:

- Developed and maintained by an independent standards organization through a stakeholder process in response to changing needs of society and building industry.
- Maintained on regular 3-year cycle with each edition of the code “family” developed and designed to function together.

Energy Efficiency is Cost-Effective:

While building owners desire low operational costs, the connection to energy efficiency and initial investments are not well understood. Energy efficiency is much more economical to incorporate while the building is initially being constructed.

- Cost-effectiveness analysis of the Residential provisions of 2015 IECC for Iowa indicate:(from the currently adopted Iowa State Code)
 - Simple payback is 2.5 years, without additional incentives.(cost of implementing saving measures/energy cost saved)
 - Life-cycle cost savings over 30 years is \$2,181.97.
 - Net annual consumer cash flow in year 1 is \$121.82.
- Cost-effectiveness analysis of the Commercial provisions for ASHRAE 90.1 for Iowa: (a method of complying with IECC 2015 Commercial Provisions)
 - Simple payback is 9.6 years.
 - Life-cycle cost savings over 30 years is \$2.24/sf for publicly-owned buildings and \$1.33/sf for privately-owned buildings.

(Changes in Commercial Energy Cost Intensity by code adoption is \$0.11/sf annually or 8.3% nationally, based on ASHREA 90.1 between 2013 and 2016. Though changes in residential codes have not been recorded by DOE, similar percentages of savings may be assumed.)

Resources:

- University of Massachusetts, Amherst, 2016 NaturalScience Blog.
- Iowa State Building Code Bureau: www.dps.state.ia.us/fm/building/index.shtml
- National Council on Building Codes & Standards: c.yrncdn.com/sites/www.nibs.org/resource/resmgr/ncgbc/NCBCS_TimelyCodeAdoption.pdf
- Cost-Effectiveness Analysis of Residential Provisions of the 2015 IECC for Iowa: www.energycodes.gov/sites/default/files/documents/IowaResidentialCostEffectiveness_2015.pdf
- Cost-Effectiveness Analysis of ASHRAE Standard 90.1-2013 for Iowa: www.energycodes.gov/sites/default/files/documents/Cost-effectiveness_of_ASHRAE_Standard_90-1-2013-Iowa.pdf
- Energy Savings Analysis, ANSI/ASHRAE/IES Standard 90.1-2016: www.energycodes.gov/sites/default/files/documents/O2202018_Standard_90.1-2016_Determination_TSD.pdf

