Champaign County Building Code
Feasibility Study and Implementation Strategies

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Prepared by the
Champaign County Regional Planning Commission

CHAMPAIGN COUNTY
rpc
REGIONAL
PLANNING
COMMISSION

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Acronyms	
BECP	Building Energy Codes Program
CCPHD	Champaign County Public Health Department
CCDPZ	Champaign County Department of Planning and Zoning
CDB	Illinois Capital Development Board
CUPHD	Champaign-Urbana Public Health District
DPZ	Champaign County Department of Planning and Zoning
HMP	Champaign County Multi-Jurisdictional Natural Hazard Mitigation Plan
ICC	International Code Council
IECC	International Energy Conservation Code
IDPH	Illinois Department of Public Health
LRMP	Champaign County Land Resource Management Plan
NPDES	National Pollutant Discharge Elimination System
USDOE	United States Department of Energy
ZBA	Champaign County Zoning Board of Appeals

Executive Summary

This report lays the groundwork for County Board review of the feasibility and capabilities of Champaign County to implement a building code, with energy efficient building design standards considered. The report includes information as summarized below.

Building Construction-Related State Requirements

Chapter 1 reviews the State of Illinois requirements regarding new building construction relevant to the County. These building construction-related State requirements have increased significantly since 2005.

The Champaign County Office of State's Attorney provided the opinion that the County may not regulate agricultural buildings. Model building code(s) adopted by the County would apply only to construction of non-agricultural buildings and non-agricultural structures, and in all unincorporated areas of the County--including the 1-1/2 mile extra-territorial jurisdiction.

Current Building Construction-Related Permitting at County Level

Chapter 2 describes the type of building construction-related permitting and enforcement that occurs in unincorporated areas of Champaign County, including:

- Sewer service and water well inspection and permitting that takes place for the Champaign County Public Health Department.
- Building and structure zoning use permitting at the Champaign County Department of Planning and Zoning (CCDPZ). A zoning use permit is intended to be issued once all requirements of the County Zoning Ordinance are satisfied. The zoning regulations regarding buildings and structures routinely reviewed by the CCDPZ include building or structure placement, size and height considerations.
- Agricultural buildings and agricultural structures, as defined in the County Zoning Ordinance, are required to meet the front building setback requirements, and are exempt from all other requirements of the County Zoning Ordinance.
- Enforcement of the related County ordinances at both County departments described above occurs on a complaint-basis only. Both County departments utilize a similar enforcement procedure of site inspection and follow-up letter, repeated if insufficient response, with cases ultimately forwarded to the Assistant State's Attorney Office for further action, if need be.

Currently recognized deficiencies and continuing needs with regard to present building construction-related permitting procedures in Champaign County include:

- in-house tracking and communication regarding private water well and waste discharge system permitting in unincorporated Champaign County; and
- ongoing enforcement of existing County ordinances.

Types of Benefits and Costs Associated with Building Code Adoption

Chapter 3 contains a qualitative review of potential general benefits to the County if a model building code were adopted by the County, and potential costs, specific to the County, that would be incurred in adopting a building code.

Potential general benefits to the County of adopting a building code include:

- greater potential for improved protection of public health, safety and welfare;
- environmental, and financial benefits associated with energy efficient building design; and
- improved cost and availability of property insurance in unincorporated area of the County.

Chapter 3 includes a description of the type of activities incurring costs to the County, if the County would choose to further consider County adoption of a building code.

Recommended Strategies Forward

Chapter 4 highlights County considerations regarding implementation of a model building code, and expands on the following recommended strategy for County Board consideration of County adoption of a building code:

1) Continue to evaluate the feasibility of implementing a building code:
   1a) Complete a needs assessment regarding type of model building code(s) to implement.
   1b) Complete a quantitative cost-benefit analysis of specific County alternatives.

2) Amend County Ordinances to be consistent with state requirements.
   2a) Amend County Ordinances, as may be necessary, to include the provisions of the Champaign County Land Resource Management Plan Policies 6.2.1, 6.2.2, and 6.2.3 regarding compliance with the State Life Safety Code or equivalent.
   2b) Amend County Ordinances, as otherwise may be necessary, to be consistent with state requirements.

3) Make information available to prospective applicants regarding building code requirements, energy efficient building design, wind-resistant and seismic strengthening measures.

4) Support increased efforts by the County to enforce building construction–related provisions of County Ordinances, with priority given to public health and safety.

Introduction

Scope of Report

This report lays the groundwork for County Board review of the feasibility and capabilities of Champaign County to implement a building code, with energy efficient building design standards considered.

The report provides the following information:

- state and local requirements regarding building construction
- current permitting practices in Champaign County with regard to building construction
- case studies of counties which have adopted a building code
- best management practices regarding construction permitting and potential incentives to encourage energy efficient buildings
- potential strategies for the County to implement and enforce a building code
- qualitative review of costs and benefits associated with County adoption and enforcement of a building code
- recommendations to the County Board regarding potential next steps

Why the Report is Needed

The *Champaign County Land Resource Management Plan* and *Champaign County Multi-Jurisdictional Natural Hazard Mitigation Plan* contain one or more action items that call for the County to adopt a building code or parts of a building code. The information provided in this report is intended to be useful as these action items are considered.

Action items that call for the County to adopt a building code are described below.

Champaign County Land Resource Management Plan (LRMP) [adopted April, 2010]

'Public Health and Public Safety' and 'Energy Conservation' goals of the LRMP contain objectives and/or policies regarding County adoption of a building code and County promotion of energy efficient building design standards.

Table 1 describes the LRMP action items (referred to as 'LRMP Priority Items') associated with LRMP 'Public Health and Public Safety' goal, objectives and policies. Table 2 describes the LRMP action items associated with the LRMP 'Energy Conservation' goal, objectives and policies.

Why the Report is Needed (continued)

Table 1: LRMP 'Public Health and Public Safety' Priority Items Related to Building Code Adoption

LRMP Objective/Policy		LRMP Priority Items
LRMP Objective 6.2	Champaign County will seek to ensure that public assembly, dependent population, and multifamily land uses provide safe and secure environments for their occupants.	
LRMP Policy 6.2.1	The County will require public assembly, dependent population, and multi-family premises built, significantly renovated, or established after 2010 to comply with the Office of State Fire Marshal life safety regulations or equivalent.	• Review all Zoning Map amendments for conformance to all relevant [LRMP] goals, objectives and policies. • Amend relevant Champaign County ordinances to include provisions of Policy 6.2.1.
LRMP Policy 6.2.2	The County will require Champaign County Liquor Licensee premises to comply with the Office of State Fire Marshal life safety regulations or equivalent by 2015.	• Amend County Liquor Ordinance.
LRMP Policy 6.2.3	The County will require Champaign County Recreation and Entertainment Licensee premises to comply with the Office of State Fire Marshal life safety regulations or equivalent by 2015.	• Amend County Recreation and Entertainment Ordinance.
LRMP Objective 6.3	Champaign County will seek to ensure that all new non-agricultural construction in the unincorporated area will comply with a building code by 2015.	• Submit a proposal to ELUC adopting a Building Code for unincorporated Champaign County. • Proceed with ELUC recommendations regarding the adoption of a Building Code.

Why the Report is Needed (continued)

Table 2: LRMP 'Energy Conservation' Priority Items Related to Building Code Adoption

LRMP Objective/Policy		LRMP Priority Items
LRMP Objective 9.1	Champaign County will seek to reduce the discharge of greenhouse gases.	• Monitor and pursue potential funding opportunities to achieve provisions of Policy 9.1.2. • Develop information package for public dissemination.
LRMP Policy 9.1.2	The County will promote energy efficient building design standards.	
LRMP Objective 9.2	Champaign County will encourage energy efficient building design standards.	• Amend relevant Champaign County ordinances.
LRMP Policy 9.2.1	The County will enforce the *Illinois Energy Efficient Commercial Building Act*.	

Champaign County Multi-Jurisdictional Natural Hazard Mitigation Plan (HMP) [adopted August, 2009]

The HMP features a set of five hazard mitigation goals, one of which is to minimize avoidable injuries and deaths due to natural hazards.

Prioritized mitigation action items were identified for each participating jurisdiction to implement, if feasible, prior to the occurrence of natural hazards.

The mitigation action item identified for implementation by Champaign County in order to minimize the impacts of both severe storms or of an earthquake is as follows:

> "Adopt building regulations that require wind-resistant and earthquake-resistant construction measures for critical facilities that house vulnerable populations or that house volatile liquids or hazardous wastes."

Illinois Legislation Regarding Counties and Building Codes

In Illinois, building code adoption and enforcement is primarily the responsibility of the local government authority having jurisdiction.

Illinois has no mandatory building code in place throughout the state.[1] However, Illinois has passed legislation that requires new construction to comply with certain building code provisions under specific circumstances.

Increase in Building Construction-Related State Requirements
State requirements regarding new building construction have increased significantly since 2005, as shown in the following summary:

State requirements regarding new building construction **in effect over the past 12+ years**:

- *Illinois Accessibility Code* provisions apply to building construction intended for the public or multi-family buildings meeting certain criteria;
- *Illinois Plumbing Code* provisions apply to buildings intended for human occupancy;
- National Fire Protection Association *Illinois Life Safety Code* provisions are generally intended to apply to building construction that is commercial, industrial, intended for public and/or multi-family occupancy; and
- model building codes adopted at the state level apply to schools, universities and state-owned facilities.

More recent State requirements regarding new building construction **2005 – present**:

- new residential building construction contracts must meet provisions of an adopted building code within 100 miles of the construction site as agreed upon by the parties (otherwise default building code provisions are assumed);
- new commercial construction after July 1, 2011 must comply with the 2006 or later editions of the *International Building Code*; *International Existing Building Code*; *International Property Maintenance Code* and the 2008 or later edition of the *National Electrical Code (NFPA 70)*; and
- *Illinois Energy Conservation Code* provisions apply, if construction is located in a local jurisdiction which has adopted a building code.

continued

More recent State requirements regarding new building construction **2005 – present**:

Beginning January 1, 2012:

- State certification requirements for closed loop well contractors become effective. The amended *Illinois Water Well Construction Code* now provides that: the Illinois Department of Public Health (IDPH) require a one-time fee for permits for the construction, modification, or abandonment of closed loop well; all closed loop contractors be certified by IDPH; and all closed loop contractors who are certified not engage in the occupation of closed loop well contractor unless he or she is registered with IDPH. [2]

State requirement **beginning January 1, 2013**:

- Construction and installation of a surface discharging private sewage disposal system without certain National Pollutant Discharge Elimination System permits from the Illinois Environmental Protection Agency will be prohibited. The private sewage disposal code must be amended before January 1, 2013. Beginning in 2013, no person shall construct or install a surface discharging private sewage disposal system without meeting certain permitting requirements. [3]

Agricultural Buildings Are Exempt from County Building Code Authority

The County may not apply building rules and regulations to agricultural buildings, as per the Counties Code (55 ILCS 5/5-1063) excerpt provided below:

> "(55 ILCS 5/5-1063) (from Ch. 34, par. 5-1063)
> Sec. 5-1063. Building construction, alteration and maintenance. For the purpose of promoting and safeguarding the public health, safety, comfort and welfare, a county board may prescribe by resolution or ordinance reasonable rules and regulations (a) governing the construction and alteration of all buildings, structures and camps or parks accommodating persons in house trailers, house cars, cabins or tents and parts and appurtenances thereof and governing the maintenance thereof in a condition reasonably safe from hazards of fire, explosion, collapse, electrocution, flooding, asphyxiation, contagion and the spread of infectious disease, where such buildings, structures and camps or parks are located outside the limits of cities, villages and incorporated towns, but excluding those for agricultural purposes on farms including farm residences, but any such resolution or ordinance shall be subject to any rule or regulation heretofore or hereafter adopted by the State Fire Marshal pursuant to "An Act to regulate the storage, transportation, sale and use of gasoline and volatile oils", approved June 28, 1919, as amended; (b) for prohibiting the use for residential purposes of buildings and structures already erected or moved into position which do not comply with such rules and regulations; and (c) for the restraint, correction and abatement of any violations."

Appendix E contains the full text of 55 ILCS 5/5-1063 *et seq.* regarding the county power to adopt a building code. The Champaign County Office of State's Attorney clarified that the County's regulations must be subject to regulations promulgated by the State Fire Marshall relating to storage of gasoline and certain volatile substances.[4]

Illinois Capital Development Board

The Illinois Capital Development Board Division of Building Codes and Regulations (CDB) is a key source of information regarding building requirements in Illinois. The CBD is an advisory body assigned the responsibility to assist in streamlining building requirements in Illinois. The CDB additionally oversees the design and construction of new buildings for schools, universities and State-owned facilities. Model building codes adopted at the state level apply to schools, universities and state-owned facilities.

More about the Illinois Legislation

Additional information about each of the Illinois laws mentioned above follows:

Illinois Residential Building Code Act

The *Illinois Residential Building Code Act* (815 ILCS 670/1 *et seq*.), effective January 1, 2005, requires a construction contract for residential construction to be based on an adopted building code, regardless of whether a building code has been adopted by a local jurisdiction.

Section 14 of the *Act* outlines minimum building code requirements for residential construction contracts, including default building code provisions in the event no building code is specified.

Appendix A contains full text of the *Illinois Residential Building Code Act*.

Illinois Public Act 096-0704

Throughout Illinois, new commercial construction after July 1, 2011 must comply with the 2006 or later editions of the *International Building Code*; *International Existing Building Code*; *International Property Maintenance Code* and the 2008 or later edition of the *National Electrical Code (NFPA 70).* Newly constructed commercial buildings must pass an inspection conducted by an inspector meeting the qualifications established by CDB. A local government may enter agreements with other governmental units to enforce building codes as well as to hire third party inspectors qualified in accordance with the terms of the Act to provide inspection services.[5]

Appendix B contains the online CDB announcement "Illinois Building Code Requirements Take Effect July 1, 2011 for Areas of the State Where a Building Code has not been Adopted and Registered."

Energy Efficient Building Act

The *Energy Efficient Building Act (*20 ILCS 3125/1 *et seq*.) effective July 1, 2011, requires all new commercial and residential construction for which a building permit application is received by a municipality or county to follow a comprehensive statewide energy conservation code.

Appendix A contains full text of the *Energy Efficient Building Act.*

Illinois Energy Conservation Code

Based on the *Energy Efficient Building Act*, the CDB officially adopted the 2009 International Energy Conservation Code, excluding any published supplements, to apply to all commercial

Illinois Energy Conservation Code (continued)

structures in Illinois.[6] Appendix A contains the full text of the *Illinois Energy Conservation Code* (Joint Committee on Administrative Rules Administrative Code, Title 71: Public Buildings, Facilities and Real Property, Chapter I: Capital Development Board, Subchapter d: Energy Codes, Part 600 Illinois Energy Conservation Code).

Illinois Plumbing Code
(Joint Committee on Administrative Rules Administrative Code, Title 77: Public Health, Chapter I: Department of Public Health, Subchapter r: Water and Sewage, Part 890 Illinois Plumbing Code). The following excerpt of the *Illinois Plumbing Code* excerpt serves as a good overview of Code provisions:

> "Each building which is intended for human habitation or occupancy shall have a connection to a public water system, a semi-private water system, or a private water supply constructed in accordance with the requirements of the *Illinois Water Well Construction Code* (77 Illinois Administrative Code 920) or the *Surface Source Water Treatment Code* (77 Illinois Administrative Code 930), and a connection to a public sewer system or private sewage disposal system constructed to the requirements of the *Illinois Private Sewage Disposal Code* (77 Illinois Administrative Code 905). All installations shall also be in accordance with any additional applicable State and local laws, ordinances, rules and regulations and local codes."[7]

Illinois Accessibility Code
(Joint Committee on Administrative Rules Administrative Code, Title 71: Public Buildings, Facilities and Real Property, Chapter I: Capital Development Board, Subchapter b: Accessibility Standards, Part 400 Illinois Accessibility Code).

The *Illinois Accessibility Code* is intended to implement the *Environmental Barriers Act* [410 ILCS 25]. The Code is intended to "ensure that the built environment, including all spaces and elements of all applicable buildings and facilities in the State of Illinois, is so designed, constructed, and/or altered to assure the safety and welfare of all members of society and to be readily accessible to, and usable by, environmentally limited persons."[8]

The *Illinois Accessibility Code* applies to public facilities or 'multi-story housing units' defined as any building of four or more stories containing 10 or more dwelling units.

Office of State Fire Marshal Administrative Rules (including the ***NFPA Life Safety Code****)*
(Joint Committee on Administrative Rules Administrative Code, Title 41: Fire Protection, Chapter I: Office of the State Fire Marshal, Part 100 Fire Prevention and Safety).

The Office of the State Fire Marshal adopted the "Code for Safety to Life from Fire in Buildings and Structures" as published by the National Fire Protection Association (NFPA 101) 2000 edition, *Life Safety Code*. The *Life Safety Code* becomes the code for Fire Prevention and Safety subject to modifications set forth in Part 100. Appendix B contains an explanation of fire code enforcement within Illinois.

Illinois Public Act 097-0363
State certification requirements for closed loop well contractors become effective January 1, 2012. The amended *Illinois Water Well Construction Code* provides that: the Illinois Department of Public Health (IDPH) require a one-time fee for permits for the construction, modification, or abandonment of closed loop well; all closed loop contractors be certified by IDPH; and all closed loop contractors who are certified not engage in the occupation of closed loop well contractor unless he or she is registered with IDPH. Appendix C contains full text of *Public Act 097-0363*.

Illinois Public Act 096-0801
Beginning January 1, 2013, the construction and installation of a surface discharging private sewage disposal system without certain National Pollutant Discharge Elimination System permits from the Illinois Environmental Protection Agency will be prohibited. The private sewage disposal code must be amended before January 1, 2013. Beginning in 2013, no person shall construct or install a surface discharging private sewage disposal system without meeting certain permitting requirements. Appendix D contains full text of *Public Act 096-0801*.

Related Illinois Legislation

Other Illinois legislation addresses the powers of the county to provide or to promote safe and affordable Housing. Table 3 lists these legislated powers.

Table 3: Illinois County Powers Related to Safe and Affordable Housing

55 ILCS 5/5-1121; 65 ILCS 5/11-31-1(a)	The county retains the power to demolish, repair, or enclose dangerous and unsafe buildings.
55 ILCS 5/5-1052	The county may regulate plumbing under its public health ordinance.
55 ILCS 5/5-1061	The county may regulate air contamination.
55 ILCS 5/5-40001	The county may implement building restrictions in flood prone areas and flood related erosion prone areas as needed to participate in the federal flood insurance program.
55 ILCS 5/5-13001 *et seq.*	The county may establish set back lines for construction.
50 ILCS 805/4(9)	The county may implement a Land Resource Management Plan which may help the county coordinate its zoning and other land use tools to promote several policy goals including providing for existing and anticipated housing needs of municipalities.
50 ILCS 465/1 *et seq*.	The county may participate in programs designed to help provide first-time homebuyers affordable mortgages.

Illinois Counties with an Adopted Building Code

Table 4 lists the 25 Illinois counties with an adopted building code, along with the estimated total population of each county based on 2010 U.S. Census data.

Table 4: Illinois Counties with an Adopted Building Code

County (Population based on 2010 U.S. Census)[1]
Boone (54,165)
Cook (5,194,675)
DeKalb (105,160)
DuPage (916,924)
Grundy (50,063)
Henry (50,486)
Iroquois (29,718)
Jersey (22,985)
Jo Daviess (22,678)
Kane (515,269)
Kankakee (113,449)
Kendall (114,736)
Lake (703,462)
LaSalle (113,924)
Macon (110,768)
Madison (269,282)
McHenry (308,760)
Monroe (32,957)
Peoria (186,494)
Rock Island (147,546)
Saint Clair (270,056)
Sangamon (197,465)
Tazewell (135,394)
Will (677,560)
Winnebago (295,266)

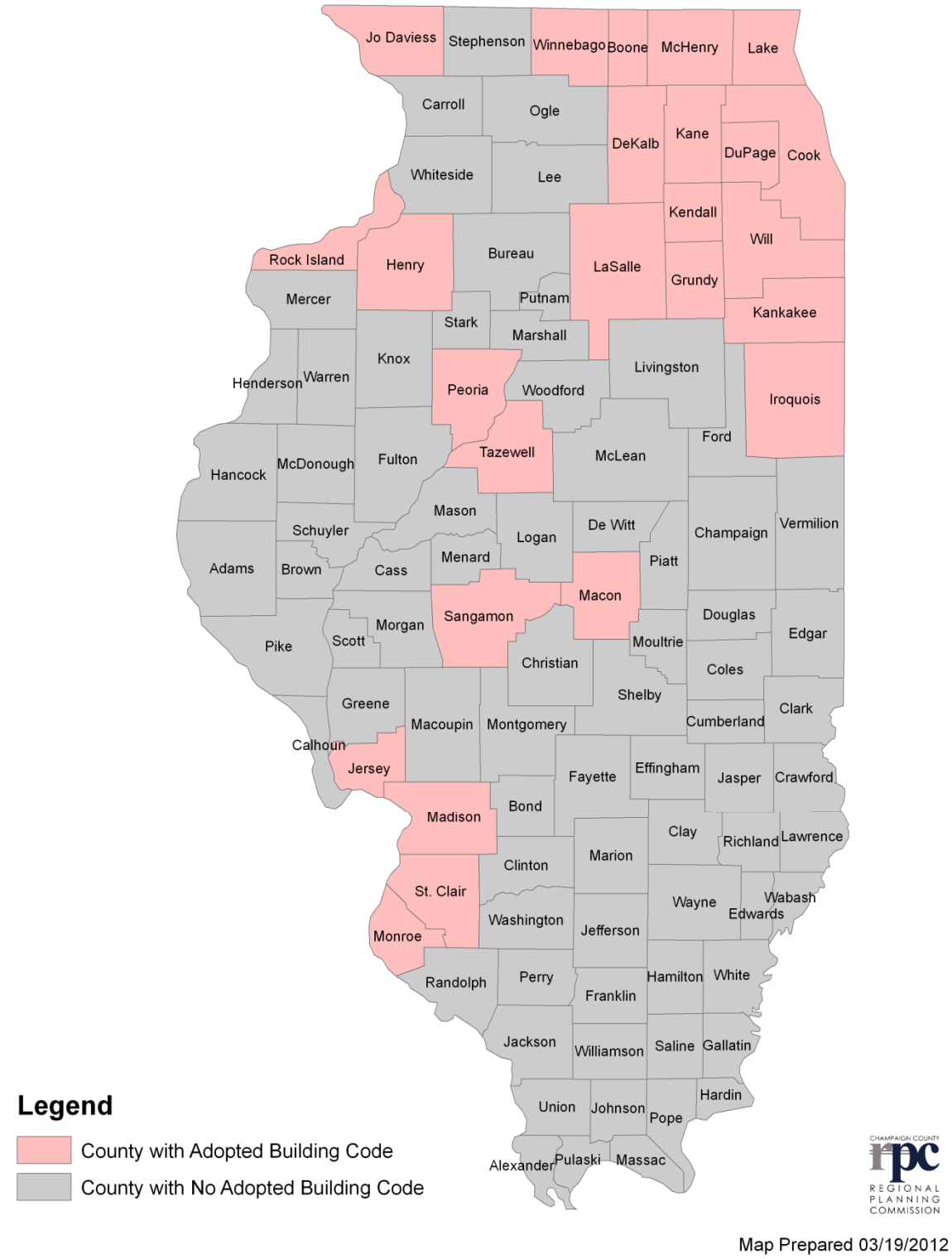
Table 4 Note:

1. The total population estimate includes the populations of cities and villages within the county as well as the unincorporated area population.

Figure 1-1 (on the following page) is a map indicating location of the 25 Illinois counties which have adopted a Building Code as of the date of this report.

Figure 1-1

Illinois Counties with an Adopted Building Code



Chapter 1 Notes

1. All states have a legal right to regulate construction, but not all states exercise this right. A statewide building code would be intended to assure a minimum level of protection throughout the state.

2. Illinois Public Act 097-0363 concerning amendments to Illinois legislation regarding water well closed loop systems, became law on August 15, 2011.

3. Public Act 096-0801 concerning amendments to Illinois legislation regarding construction and installation of surface discharging private sewage disposal systems became law on November 3, 2009.

4. Based on the February 13, 2006 memorandum from Assistant State's Attorney Joel Fletcher to the Environment and Land Use Committee regarding building code powers of the County.

5. Illinois Public Act 096-0704 became Illinois law on January 1, 2010. The Public Act 096-0704 description is from the online Illinois State Fire Marshall Office announcement about Public Act 096-0704, http://www.sfm.illinois.gov/documents/Announcement%20State%20Building%20Code%20Effective%20July%202011.pdf, downloaded 3/21/2012.

6. Source: Illinois Capital Development Board website http://www.cdb.state.il.us/ibc.shtml, downloaded 2/27/2012.

7. Excerpted from the *Illinois Plumbing Code*, (Joint Committee on Administrative Rules Administrative Code, Title 77: Public Health, Chapter I: Department of Public Health, Subchapter r: Water and Sewage, Part 890 Illinois Plumbing Code).

8. Excerpted from the *Illinois Accessibility Code* (Joint Committee on Administrative Rules Administrative Code, Title 71: Public Buildings, Facilities and Real Property, Chapter I: Capital Development Board, Subchapter b: Accessibility Standards, Part 400 Illinois Accessibility Code).

Local Land Use and Development Regulations

Local land use and development regulations are related to the construction and/or alteration of buildings and structures in Champaign County, insofar as they regulate the location, bulk, size of a structure and the overall numbers of structures. Additionally, local land use and development regulations require that buildings meet minimum standards as identified in existing state codes (e.g., plumbing, accessibility, and life safety). Table 5 contains an overview of these regulations, their administration and jurisdiction.

Table 5: Major Local Land Use and Development Regulations

Regulation	Main Subject Matter	Administered by:	Jurisdiction
County Zoning Ordinance	land use, intensity and site design	County Department of Planning & Zoning	all unincorporated areas plus Longview and Foosland
County Subdivision Regulations	land division, streets, drainage and infrastructure	County Department of Planning & Zoning	unincorporated areas outside 1-1/2 mile ETJ[1] of municipalities with a comprehensive plan
County Special Flood Hazard Area Ordinance	construction and filling in floodplains	County Department of Planning & Zoning	all unincorporated areas
County Stormwater Management Policy	drainage, stormwater detention and erosion control	County Department of Planning & Zoning	applied in conjunction with County Zoning and Subdivision Ordinances
County Public Nuisance Ordinance	nuisance use of land (e.g., junk, inoperable vehicles)	County Department of Planning & Zoning	all unincorporated areas
County Health Ordinance	septic systems, water wells, food service	Champaign County Public Health Department (CCPHD)	Within CCPHD jurisdiction
Municipal Subdivision Regulations	land division, streets, drainage and infra-structure	municipalities	1-1/2 mile municipal ETJ of municipalities with a comprehensive plan

continued

Table 5: Major Local Land Use and Development Regulations (continued)

Sanitary District Ordinances	sewer connections, sewer construction, discharges to sewers	public sanitary sewer districts (e.g., Urbana-Champaign Sanitary District, Sangamon Valley Public Water District)	within sanitary district boundaries
Accessibility Code	building access for disabled	County Department of Planning & Zoning	applied in conjunction with County Zoning and Subdivisions Ordinances
Life Safety Code	building safety	Office of State Fire Marshal w/local fire chief review	within Fire Protection District boundaries

Table 5 Note:
1. ETJ is an acronym for 'extra-territorial jurisdiction.'

County Departments Involved in Construction-Related Review, Permitting and Enforcement

Champaign County Department of Planning and Zoning

The Champaign County Department of Planning and Zoning (CCDPZ) administers and enforces five inter-related sets of Champaign County land use regulations, as described further in Table 6.

Table 6. Champaign County Land Use Regulations Administered and Enforced by CCDPZ[1, 2]

Zoning Ordinance	Regulates density (overall number) of structures, bulk (i.e., size in terms of height and footprint), and requires certain existing state water supply and onsite sewage disposal , accessibility and safety codes be met.
Subdivision Regulations	Sets standards for lot subdivision in terms of subdivision site suitability and infrastructure (e.g., roads, drainage, water supply, and sanitary sewage.
Stormwater Management Policy	Sets minimum standards regarding stormwater movement on a development site to reduce damage to property and protect public interests. Temporary storage of stormwater runoff; to control the rate of release of stormwater runoff; provide for adequate drainage of development sites and surrounding areas; and protect existing agricultural drainage systems.
Special Flood Hazard Areas Ordinance	Sets minimum standards regarding construction within the 100-year floodplain, consistent with federal flood insurance program minimum requirements.
Public Nuisance Ordinance	Prohibits certain activities and conditions identified as public nuisances (e.g., garbage, debris or sewage disposal, yardwaste, etc., outdoor storage of inoperable vehicles, abandoned structures, dangerous structures, open unfenced excavations, excessive noise).

continued

Table 6 (continued)

Illinois Accessibility Code[2]	Sets minimum standards for new construction of public facilities with regard to accessibility to people with disabilities. The *Illinois Accessibility Code* standards that apply to a development address: parking for the disabled, walkways, and pedestrian ramps.

Table 6 Notes:

1. The *Champaign County Rental Habitability Ordinance* establishes minimum maintenance requirements necessary to ensure adequate habitability of a residential rental building, and applies specifically to residential rental properties in unincorporated areas of the County. (The *Champaign County Rental Habitability Ordinance* provisions are not intended to negate any additional requirements of the *Champaign County Public Nuisance Ordinance*.)

The *Champaign County Rental Habitability Ordinance* is not enforced by the CCDPZ, as further explained in the ordinance:

> "The minimum maintenance requirements for habitability established by this ordinance are not enforced by Champaign County but are specifically intended to be relevant to tenant claims under the *Residential Tenants' Right to Repair Act* (765 ILCS 742 et seq.) and to further the [County's] authority granted by 55 ILCS 5/5-1063 related to building maintenance."

2. The CCDPZ administers the *Illinois Accessibility Code*. The *Code* contains requirements that apply to building construction and requirements that apply to exterior development. The County has not adopted a building code and the CCDPZ does not conduct inspections of buildings under construction. The CCDPZ plan review prior to issuance of a zoning use permit is limited to review of exterior site development for compliance with *Illinois Accessibility Code*. A CCDPZ inspection of new or expanded public facilities would be expected to occur prior to issuance of a zoning compliance certificate. CCDPZ enforcement of the *Illinois Accessibility Code* does not occur.

CCDPZ Staff

The CCDPZ is staffed by the Director of Planning & Zoning, one Associate Planner, one Zoning Officer, and two Planning & Zoning Technicians.

Zoning Use Permits Issued

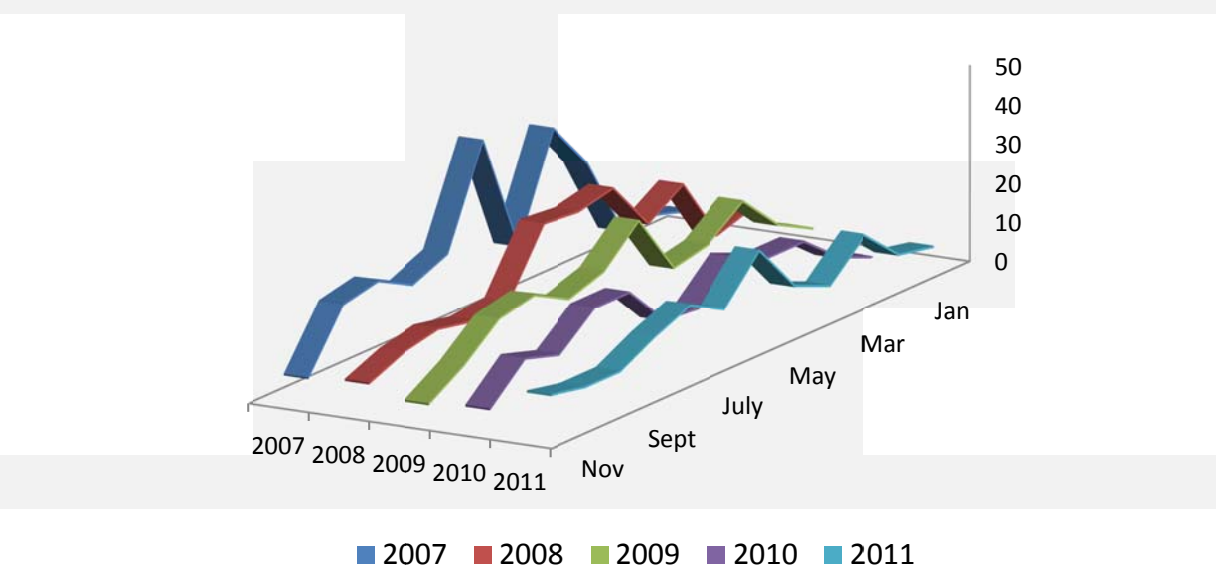
The CCDPZ issues zoning use permits for new construction, and additions or alterations to structures intended to increase the footprint of a structure, or exceed existing height limits.

Table 7 (on the following page) summarizes the numbers of zoning use permits issued by the CCDPZ over the past five years, and Figure 2 illustrates the trend in total numbers of permits during this same time period.

Table 7: Number of Zoning Use Permits (2007 – 2011)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Totals
2007													
Agriculture	0	2	1	5	3	2	7	4	1	2	5	3	35 14%
Residential	4	4	7	22	29	9	34	16	17	21	15	3	210 86%
Other	1	2	0	2	10	5	6	2	0	0	1	0	
Subtotal	5	8	8	29	42	16	47	22	18	23	21	6	245
2008													
Agriculture	1	2	3	1	5	3	4	2	1	1	0	0	23 12%
Residential	5	3	12	10	23	21	22	8	7	9	8	6	166 89%
Other	2	0	7	5	1	3	2	2	3	3	3	1	
Subtotal	8	5	22	16	29	27	28	12	11	13	11	7	189
2009													
Agriculture	0	2	3	2	2	4	5	2	4	4	1	0	29 17%
Residential	4	7	16	9	7	19	13	12	13	10	7	4	142 83%
Other	1	1	1	2	2	4	0	1	3	4	2	0	
Subtotal	5	10	20	13	11	27	18	15	20	18	10	4	171
2010													
Agriculture	0	2	2	1	1	2	1	1	2	3	1	2	18 14%
Residential	0	1	10	10	11	5	6	7	15	8	11	3	109 86%
Other	0	1	0	1	4	0	1	11	2	0	2	0	
Subtotal	0	4	12	12	16	7	8	9	19	11	14	5	127
2011													
Agriculture	1	2	1	1	1	0	3	4	2	1	5	1	22 15%
Residential	4	3	11	3	7	17	8	12	12	8	3	8	122 85%
Other	0	2	4	3	3	7	2	2	0	0	1	2	
Subtotal	5	7	16	7	11	24	13	18	14	9	9	11	144

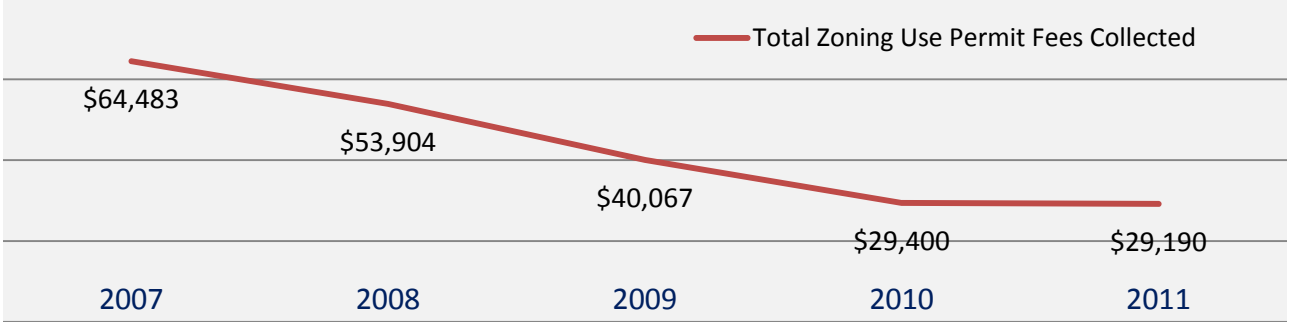
Figure 2: Trend in Total Numbers of Zoning Use Permits 2007 - 2011



Fees Collected for Permits

Figure 3 indicates the total amounts of zoning use permit fees collected by the CCDPZ over the past five-year period. The amount of zoning permit fees collected trended downward consistent with a decline in total numbers of zoning use permits issued by the CCDPZ over the past five years.

Figure 3: Zoning Use Permit Fees Collected 2007-2011



Enforcement Backlog

The CCDPZ Enforcement Program receives and investigates citizen complaints regarding zoning and nuisance and initiates cases related to violations of the Champaign County Zoning Ordinance.[1] The CCDPZ has experienced a backlog of unresolved enforcement cases for several years. Based on the CCDPZ Summary Report for Fiscal Year 2011, during 2011 CCDPZ staff resolved 224 enforcement cases, which exceeded the budgeted expectation of resolving 160 enforcement cases, with 100 of these cases not requiring an inspection. The Summary Report indicates states: "FY 2011 ended with 429 enforcement cases which is the lowest backlog of cases since September 2006."

CCDPZ Budget

The CCDPZ element of the Champaign County Fiscal Year 2012 budget indicates the continuing CCDPZ objectives to provide high quality services within staff and budgetary limits.

Champaign County Public Health Department

On behalf of the Champaign County Public Health Department (CCPHD), Champaign County contracts the services of the Champaign-Urbana Public Health District Environmental Health Division staff sanitarians to conduct inspections and issue permits for septic systems and water wells in rural unincorporated Champaign County. Additionally, CCPHD staff sanitarians inspect for compliance with food sanitation regulations and administer food service operating permits.

Inspections and permits for septic systems and water wells are required for buildings intended for human habitation or occupancy, as per regulations of the *Champaign County Health Ordinance*. Table 8 provides an estimate of the numbers of these inspections which occurred during 2010 and which are expected to occur in 2011 and during 2012.

Table 8: Related CCPHD Permits and Inspections 2010 – 2012

Inspection Type	2010	2011	2012
Sewage Construction Permits Issued	81	85	85
Sewage Construction Inspections	170	170	170
Private Sewage Complaints Investigated	51	50	50
Water Well Construction Permits Issued	49	50	50
Water Well Construction Inspections	108	105	105
Abandoned Water Wells Sealed	40	40	40

Table 8 Note:
1. Numbers are estimates and projections as shown in the County Board of Health element of the *2012 Champaign County Budget*.

CCPHD Staff

The Champaign-Urbana Public Health District Environmental Health Division consists of a team of thirteen members: the director, two program coordinators, an emergency preparedness planner, seven sanitarians and two administrative assistants.

CCPHD Budget

The CCPHD is supported through the Health Fund levy; federal, state and local grants; and fees. The maximum rate for the Health Fund levy is $.10/100 assessed valuation. The current rate is $.0259/100 assessed valuation.[2] An excerpt of the CCPHD element of 2012 Champaign County budget follows:

> "The Board of Health budget is dependent upon property taxes, permits and federal and state grants for specific public health services. The property tax increases by approximately 2.4% from FY2011 to FY2012, and all other fees and grants revenues are currently projected to remain substantially stable. These revenues afford the Board of Health the capability to enter into a contract with the Champaign-Urbana Public Health District (CUPHD) to provide public health services throughout the County."

Enforcement of *Champaign County Health Ordinance*

Information regarding enforcement of the *Champaign County Health Ordinance* requirements with regard to water well and sewer construction is addressed by CCPHD contracted staff on a complaint-basis only. CCPHD contracted staff investigate incoming complaints with a site visit and follow-up letter requesting compliance and repeating these steps, based on an insufficient response. If this approach does not result in success, then the enforcement case is forwarded to the Assistant State's Attorney office for further action.

Review, Permitting and Enforcement of Construction-Related Land Use and Development Regulations

Residential Construction in Unincorporated Areas of Champaign County

For new residential construction,[3] a Zoning Use Permit must be issued by the CCDPZ prior to the start of any construction, and a Zoning Compliance Certificate must be issued by the CCDPZ following construction.

Prior to issuance of a Zoning Use Permit, CCDPZ staff review the proposed development site for compliance with subdivision regulations. Within 1-1/2 miles of a municipality which has adopted a comprehensive land use plan, the subdivision review is conducted by the municipal staff and municipal governing body. In remaining unincorporated areas of the County, the CCDPZ staff coordinates subdivision review with County Board as may be necessary, based on *Illinois Plat Act* exemptions that may be available.

Prior to issuance of a Zoning Use Permit, CCDPZ staff review the history of the development site in rural zoning districts for compliance with the Zoning Ordinance limit on the number of new lots created from a parcel to accommodate a new dwelling. Once the 'by right' limits are met, no additional single family dwellings may be constructed without County Board discretionary approval of a rezoning and special use request.[4]

A residence may qualify as a farm dwelling[5] and therefore be considered as exempt from most Zoning Ordinance requirements, including the requirement to obtain a Zoning Use Permit and Zoning Compliance Certificate. Important to note (as an exception to this exemption) is that a farm dwelling must comply with the Zoning Ordinance restriction regarding building and setback lines, and (if adopted) the Zoning Ordinance minimum lot size requirement for a farm dwelling (a.k.a., a 'residence on land used for agricultural purposes').

The coordination of CCPHD staff sanitarian issuance of required well construction and septic system permits on behalf of the Champaign County Public Health Department and CCDPZ staff issuance of Zoning Use Permits for a residence does not typically take place.

If the residence to be constructed is a 'manufactured home',[6] then the following provisions must be met prior to CCDPZ issuance of a Zoning Use Permit:

- *National Manufactured Home Construction and Safety Standards* (24 CFR Part 3280) or
- *Illinois Manufactured Housing & Mobile Home Structure Rules* (77 Illinois Administrative Code, Part 880)

Following construction of a manufactured home, provisions of the *Mobile Home Tiedown Rules and Regulations* (77 Illinois Administrative Code, Part 870) must be met prior to CCDPZ issuance of a Zoning Compliance Certificate.

The *Illinois Accessibility Code* applies to public facilities or to 'multi-story housing units' defined as any building of four or more stories containing 10 or more dwelling units. To date, no zoning use permit applications for a multi-story housing unit meeting these qualifications has been received by the CCDPZ.

Residential Construction in Unincorporated Areas of Champaign County (continued)

The *Illinois Life Safety Code* is administered and enforced on a complaint-basis only by jurisdictions other than the County. Under State law, Illinois fire chiefs are required to enforce fire codes within their jurisdictions as set forth by the Life Safety Code. Appendix B contains information about fire chief responsibilities in this regard. The following excerpt of the Illinois Life Safety Code includes information about inspections and enforcement of the *Code*:

> "Under the direction of the Office, the chief of the local fire department is hereby empowered and directed to make inspections in his geographical area of responsibility. Where any such inspection discloses a violation or violations of this Part, the State Fire Marshal or the local fire chief shall notify the owner, occupant, or other interested party in writing as provided in Section 9 of the Fire Investigation Act [425 ILCS 25/9] to correct said violation or violations. Violations shall be corrected within a reasonable time based upon the severity of the hazard and the work required to correct the violation.
>
> The Office will inspect building based upon requests from agencies of state and local government, complaints from the public, known or observed violations, potential for loss of lives from fire in given occupancies where statutes, rules or regulations mandate inspections by the Office or where an inspection of a structure or an occupancy is necessary to prevent fire or to minimize the dangers of fire, in accordance with this Part, subject to available resources."

Non-Residential Construction in Unincorporated Areas of Champaign County

As required for residential construction, a Zoning Use Permit is required for any new commercial, industrial, or other non-residential construction. The same CCDPZ permitting process and CCDPZ follow up issuance of a zoning compliance certificate is required.

As for residential construction, if the zoning use permit requested is for a non-residential use that is not permitted 'by right,' then additional requirements apply and need to be met prior to the CCDPZ issuance of a permit. A use not permitted 'by right' requires that a public hearing take place in order that a Special Use and/or a Rezoning request to allow the proposed use be reviewed by the Zoning Board of Appeals.[7]

A commercial or industrial use, or certain multi-story buildings, and licensed businesses, if a public facility, need to comply with provisions of the *Illinois Life Safety Code*. The CCDPZ staff reviews regarding *Life Safety Code* requirements are typically limited to plan review of exterior site elements (as noted above for residential construction). These reviews are the responsibility of the local fire chief (see Appendix B).

Under certain circumstances,[8] a condition of a Special Use Permit issued by the County may be that proof needs to be provided to the CCDPZ (prior to the issuance of a Zoning Use Permit or Zoning Compliance Certificate) that the *Illinois Life Safety Codes* have been met.

Summary

The building construction-related permitting and enforcement that occurs in unincorporated areas of Champaign County, is limited to:

- Sewer service and water well permitting takes place at the Champaign County Public Health Department. (The Illinois Department of Public Health private water well and sanitary sewer service construction and permitting requirements apply across the board, with no exceptions.)

- Building and structure zoning use permitting at the Champaign County Department of Planning and Zoning. A zoning use permit is intended to be issued once all requirements of the County Zoning Ordinance are satisfied. The zoning regulations regarding buildings and structures routinely reviewed by CCDPZ include: building or structure placement, size and height considerations.

- Agricultural buildings and agricultural structures, as defined in the County Zoning Ordinance, are exempt from all but front building setback requirements of the County Zoning Ordinance.

- Enforcement of the related County ordinances at both County departments described above occurs on a complaint-basis only. Both County departments utilize a similar enforcement procedure of site inspection and follow-up letter, repeated if insufficient response, with cases ultimately forwarded to the Assistant State's Attorney Office for further action if need be.

Efforts to eliminate current recognized deficiencies at the County level should include:

- improving in-house tracking and communication regarding private water well permitting and waste discharge system permitting in unincorporated Champaign County; and

- strengthening efforts to enforce existing County ordinances.

Chapter 2 Notes

1. Excerpt from the Champaign County Department of Planning and Zoning element of the 2012 Champaign County Budget.

2. Excerpt from the County Board of Health element of the 2012 Champaign County Budget.

3. New residential construction includes alterations or additions to a residential structure that result in a significant additional footprint of the structure.

4. A public hearing to consider a rezoning and special use request for a 'Rural Residential Overlay' to construct additional single family dwellings is required. The public hearing occurs at the County Zoning Board of Appeals (ZBA), and a ZBA recommendations regarding the rezoning

request and special use request to construct additional dwellings is forwarded to the County Board for their consideration. The review process is discretionary, with no guarantee of approval.

5. A farm dwelling is a dwelling occupied by a farm owner or operator, tenant farm worker, or hired farm worker. In Champaign County, it is generally assumed that a dwelling located on a lot that is 35 acres or larger is a farm dwelling, unless information provided as part of the public record to the ZBA indicates otherwise.

6. As defined in the *Champaign County Zoning Ordinance*, a 'manufactured home' is a "factory assembled dwelling unit designed and constructed to be transported in one or more parts by truck or by towing on wheels temporarily or permanently attached to its frame." (This definition includes mobile homes and modular homes or housing units and excludes motor vehicles and travel trailers.)

7. The ZBA approves Special Uses, and the County Board has final authority regarding County Board Special Uses and Rezoning requests.

8. The *Champaign County Zoning Ordinance* contains 'standard conditions' for some land uses which require a Special Use Permit. A standard condition for a particular use may be that such proof be provided to the CCDPZ prior to the issuance of either a Zoning Use Permit or a Special Use Permit. As part of the Special Use Permit review process, the ZBA may request such proof be provided to the CCDPZ as a 'special condition.'

Benefits of Building Code Adoption

This chapter reviews the types of benefits associated with building code adoption—benefits to the environment, to property owners, and to those who live in, work in, or visit the County.

The International Code Council (ICC) cites potential benefits to a community associated with local adoption of a building code[1], as follows:

Codes protect public health, safety and welfare

• Building codes provide protection from tragedy caused by fire, structural collapse and general deterioration in our homes, schools, stores and manufacturing facilities.

• Safe buildings are achieved through proper design and construction practices and a code administration program that ensures compliance. Home and business owners have a substantial investment that is protected through complete code enforcement.

Codes keep construction costs down

• The 'International Codes' provide uniformity in the construction industry. This uniformity permits building and materials manufacturers to do business on a larger scale — statewide, regionally, nationally or internationally. Larger scale allows cost savings to be passed on to the consumer.

Codes provide consistent minimum standards in construction

• Codes establish predictable and consistent minimum standards that are applied to the quality and durability of construction materials, a practical balance between reasonable safety, and cost to protect life and property. The term "minimum requirements" means that construction meets the criteria of being both practical and adequate for protecting the life, safety and welfare of the public.

• Inspection during construction is the only way to independently verify that code compliance has been achieved. An average of 10 inspections are conducted to homes, offices or factories to verify conformity to minimum standards.

Codes contribute to the well-being of the community

• The preservation of life and safety, as well as the maintenance of property values over time, are a direct result of the application and enforcement of model building codes.

• The conservation of energy contributes to intelligent use of resources and provides the consumer with cost savings.

Source: International Code Council (ICC) "Introduction to Model Codes," from the ICC website, www.iccsafe.org/gr/documents/adoptiontoolkit/02-about_the_icc.pdf, downloaded February 20, 2012.

Benefits of Adopting Model Codes

Local government jurisdictions which adopt a building code most often choose to adopt a building code based on the International Codes or an existing model code. The International Codes (often referred to as I-Codes) are developed and continuously updated via a national governmental consensus process. The I-Codes are designed to be convenient (from perspectives of an inspector or plan reviewer) generally because reference to fewer codes is required.[2]

Appendix F contains additional background regarding the development of model building codes and the ICC International Codes.

Improved Property Insurance Rates

The ICC report entitled 'The Impact of Building Codes on Property Insurance' (provided as Appendix G) indicates that local adoption of the 'International Codes' is associated with the improved cost and availability of property insurance. The report states that a community with a well-enforced and up-to-date building code would be expected to experience a reduction in loss, and in return, receive better insurance rates:

> "[Better property insurance rates] … provides an incentive for communities to adopt contemporary codes and rigorously enforce them, especially as the codes relate to windstorm and earthquake damage. The end result is safer buildings, less damage and lower insured losses from catastrophes."

Energy Conservation Benefits Associated with Adoption of a Model Energy Code

The U.S. Department of Energy Building Energy Codes Program (BECP) maintains an online database regarding model energy codes (e.g., the International Energy Conservation Code). The BECP promotes local government adoption and implementation of an energy code via a website containing information regarding energy code benefits. Excerpts from the BECP website regarding benefits of energy code adoption are provided below:

> "Today's energy, economic, and environmental challenges—combined with the fact that buildings consume nearly 40% of the nation's energy—make energy codes a central part of a sustainable future." [3]

> "New buildings, while they represent just over 1% of the total building stock in a given year, are important because they represent a unique chance to effect energy efficiency; keeping in mind that building energy codes also apply to retrofitting of existing buildings. Once a new building is constructed, it is very expensive and often impossible to achieve the energy efficiency that can be economically built in at the time of construction. Since buildings will be in existence for decades if not centuries this is an opportunity that we cannot afford to lose and had we done a more robust job in the past, retrofitting of existing buildings would not be as critical today. It is vital to make energy efficiency a fundamental part of the building design and construction process and energy codes are an effective way to achieve this goal and ensure energy efficiency is a component of all buildings. States have the lead to make this happen."[4]

Benefits (continued)

> "Research shows that contemporary energy codes could save about 330 trillion BTU by 2030, almost 2% of total current residential energy consumption. There would also be comparable savings in consumer energy bills, air pollution and greenhouse gas emissions. Those savings help the state economy by putting more money is consumer's pockets and reducing environmental costs to the state and its industry."[5]
>
> "This Program supports energy code development, adoption, implementation, and compliance initiatives at the national, state and local level and is estimated to generate energy cost savings of more than $2.5 billion per year."[6]
>
> "Since inception of the Program 20 years ago accumulated energy savings has been more than 1.5 quads and cost savings to consumers has been more than $14 billion. These savings have resulted primarily from the Program's activities that accelerate the adoption of building energy codes by and within the states and that improve code compliance by means of various software tools and other types of training and technical support."[7]

The BECP "Top Ten Reasons for Building Energy Codes" are listed below:

1 Energy codes not only save money, but also help to reduce needless consumption of energy to heat, cool, light, ventilate and provide hot water for newly built residential and commercial buildings constructed without adequate energy efficiency features.

2 Energy codes help protect the natural environment from unnecessary emissions.

3 Energy codes continue to progress in terms of stringency, scope, and enforcement emphasis, all of which provide new jobs or opportunities to enhance the skills of the current workforce.

4 Energy codes safeguard owners and tenants from long-term financial burdens that can result from short-term design and construction decisions.

5 Energy codes provide a common basis upon which to educate the building design and construction community in energy efficiency.

6 Energy codes increase the use of energy efficient technologies proven through incentive programs, freeing up resources to focus on new, more efficient additional technologies.

7 Energy codes provide a cost-effective step toward mitigating problems associated with growing demand for energy and power resources.

8 Energy codes help drive the development and deployment of new building technologies and design strategies.

9 Energy codes support energy conservation and efficiency actions beyond minimum code levels.

(continued)

BECP "Top Ten Reasons for Building Energy Codes" (continued)

10 Energy codes provide a common foundation for evaluating, regulating, and incentivizing building design, construction, technologies, and performance."

Source: Promotional information PNNL-SA-79814 from the USDOE Building Energy Code Program website: http://www.energycodes.gov, downloaded June 10, 2011.

About Energy Codes

The USDOE BECP publication 'Building Energy Codes 101: An Introduction' indicates energy codes-- such as the 2009 International Energy Conservation Code (IECC) which the State of Illinois has adopted as its model energy code—"… currently address the energy-efficiency requirements for the design, materials and equipment used in nearly all new construction, additions, renovations, and construction techniques." The IECC applies to these building components:

- wall, floor, and ceiling
- doors and windows
- heating, ventilating, and cooling systems and equipment
- lighting systems and equipment
- water-heating systems and equipment

Appendix H is a copy of the above-referenced BECP publication[8] and is provided as further reference regarding energy codes and the benefits and challenges associated with adoption of an energy code.

Costs of Building Code Adoption and Enforcement

This chapter reviews the types of costs associated with building code adoption by the County, including potential start-up costs and potential ongoing costs to the County.

Potential Costs to the County to Adopt a Building Code

The process of building code adoption by the County is one that would involve considerable effort. Potential start-up costs incurred would include the cost to complete preliminary tasks prior to building code adoption, such as:

- provide advance public notice of the County review of a building code for possible adoption
- arrange for a public hearing, public review period, and otherwise provide for public input
- select model building code(s), and draft selected modifications (if any), and obtain a legal review of the building code proposal prior to County consideration
- refine an implementation strategy based on a selected level of service with regard to plan review and inspection
- further evaluate Department of Planning and Zoning equipment, staffing, and resource needs
- develop a procedure manual related to building code permitting
- establish a building permit fee schedule
- amend existing, relevant County ordinances to reflect County adoption of a building code

Costs (continued)

In Illinois, the administration and enforcement of a building code is intended to occur at the local government level at which the code is adopted. As described in earlier chapters of this report, the codes enforced at the state level include the *Illinois Plumbing Code,* the *Illinois Environmental Barriers Act*, the *International Energy Conservation Code*, and administrative rules adopted by the Office of the State Fire Marshal (including the *NFPA Life Safety Code*).[9]

As per state legislation, the County adoption of an energy code would also be required if the County adopts a building code.

Building code administration and enforcement strategies will vary based on local government authority and resources. (For example, where resources are scarce (such as at the State level) the enforcement of public safety and fire safety codes may take precedence over enforcement of energy codes.)[10]

A county administration and enforcement program for a building code would typically include all or some of following types of tasks:

- plan review
- review of products, materials, and equipment specifications
- review of test, certification reports, and product listings
- review of supporting calculations
- inspection of the building and building systems during construction
- evaluation of materials substituted in the field
- inspection immediately prior to occupancy

Expected costs to the Champaign County government to administer and enforce a model building code would depend on the level of service and method selected by the County to review/inspect and enforce the building code. Two levels of service for County consideration would include:

- Expand the County Department of Planning and Zoning and/or County Department of Public Health to include a building program with personnel to conduct in-house plan review and inspections associated with permitting and enforcement of a model building code, or

- Increase the responsibilities of the County Department of Planning and Zoning to include administration of a model building code with third-party plan review and inspection out-sourced on a contractual basis, with associated costs to be incurred by the building permit applicant.

Additional to both options above would be the cost to the County to process expected occurrences, over time, of enforcement cases related to building permitting. The amount of associated enforcement cases would be determined by factors such as the number of building permits issued by the County and the number of incoming complaints received by the CCPDZ or county building program staff.

Additional Information Regarding Adoption of a Building Code by Other Counties
Information regarding two Illinois counties which have adopted a building code is provided in Appendix I. Appendix J contains an example of a Colorado county which has adopted building code provisions containing energy efficiency related incentives.

Summary

Chapter 3 describes the potential benefits of County adoption of a model building code, and potential costs, specific to the County, that would be incurred in adopting a building code.

Potential general benefits to the County of adopting a building code include:

- greater potential for improved protection of public health, safety and welfare;
- environmental, and financial benefits associated with energy efficient building design; and
- improved cost and availability of property insurance in unincorporated area of the County.

Chapter 3 includes a description of the type of activities incurring costs to the County, if the County would choose to further consider County adoption of a building code.

Chapter 3 Notes

1. The term 'building code' may refer to a family of codes, such as the International Code Council "International Codes," that are coordinated with each other to address specific scopes of technical application. A set of such codes generally consists of four documents: a building code, a plumbing code, a mechanical code and an electrical code.

2. Based on "Introduction to Model Codes," International Code Council Public Policy Toolkit, on the International Code Council website www.iccsafe.org/gr/documents/adoptiontoolkit/02-about the_icc.pdf downloaded February 20, 2012.

3. From the USDOE Building Energy Code Program website: http://www.energycodes.gov, downloaded June 10, 2011.

4. From the USDOE Building Energy Code Program website: http://www.energycodes.gov, downloaded June 10, 2011.

5. From the USDOE Building Energy Code Program website: http://www.energycodes.gov, downloaded June 10, 2011.

6. From the USDOE Building Energy Code Program website: http://www.energycodes.gov, downloaded June 10, 2011.

7. From the USDOE Building Energy Code Program website: http://www.energycodes.gov, downloaded June 10, 2011.

8. From Building Energy Codes 101: An Introduction, U.S. Department of Energy, Building Energy Codes Program Publication PNNL-SA-70586, February 2010, USDOE Building Energy Code Program website: http://www.energycodes.gov, downloaded June 2, 2011.

9. From the online Illinois State Fire Marshall Office announcement regarding Public Act 096-0704, http://www.sfm.illinois.gov/documents/Announcement%20State%20Building%20Code%20Effective%20July%202011.pdf, downloaded 3/21/2012. Under the Act, local governments are granted the right to enter agreements with other governmental units to enforce building codes as well as to hire third party inspectors qualified in accordance with the terms of the Act to provide inspection services.

10. Building Energy Codes 101: An Introduction, U.S. Department of Energy, Building Energy Codes Program Publication PNNL-SA-70586, February 2010, USDOE Building Energy Code Program website: http://www.energycodes.gov, downloaded June 2, 2011, page 17.

4 Recommended Strategies Forward

County Building Code Considerations

The information presented in this report suggests that, with adoption of a model building code, the County has the potential to achieve:

- improved protection of public health, safety and welfare;
- environmental, and financial benefits associated with energy efficient building design; and
- improved cost and availability of property insurance in unincorporated area of the County.

Other County considerations:

1) Based on the Champaign County Office of State's Attorney opinion that the County may not regulate agricultural buildings,[1] model building code(s) adopted by the County would apply only to construction of non-agricultural buildings and non-agricultural structures, and in all unincorporated areas of the County--including the 1-1/2 mile extra-territorial jurisdiction.

2) The County would assess exactly which model code(s), and which modifications to the model codes (if any), to adopt. For example, the County may choose whether to retain or modify the wind or seismic building standards of a model building code.

3) With County adoption of a [model] building code, the state requires the *Illinois Energy Conservation Code* provisions or equivalent be met. (Again, based on the State's Attorney opinion referenced,[1] the County would not regulate agricultural buildings and agricultural structures).

4) The Illinois Capital Development Board would continue to oversee the construction of new buildings for schools, universities and State-owned facilities, applying standards regarding building construction passed into law by the State.

Recommended Strategies Forward

1) Continue to evaluate the feasibility of implementing a building code:

   1a) Complete a needs assessment regarding type of model building code(s) to implement.

   1b) Complete a quantitative cost-benefit analysis of specific County alternatives.

2) Amend County Ordinances to be consistent with state requirements.

   2a) Amend County Ordinances, as may be necessary, to include the provisions of the Champaign County Land Resource Management Plan Policies 6.2.1, 6.2.2, and 6.2.3 regarding compliance with the State Life Safety Code or equivalent.

   2b) Amend County Ordinances, as otherwise may be necessary, to be consistent with state requirements.

continued

Recommended Strategies Forward (continued)

3) Make information available to prospective applicants regarding building code requirements, energy efficient building design, wind-resistant and seismic strengthening measures.

4) Support increased efforts of the County to enforce building construction–related provisions of County Ordinances, with priority given to public health and safety.

Further Description of Recommended Strategies Forward

1) Continue to evaluate the feasibility of implementing a building code.

1a) *Complete a needs assessment regarding the type of model building code(s) to implement.*

The needs assessment would be based on: estimates and types of projects expected; estimated resource levels; and alternate building department models considered.

1b) *Complete a quantitative cost-benefit analysis of specific County alternatives*.

This report has provided qualitative descriptions of types of potential benefits and costs associated with the process of County consideration of and adoption of a model building code.

The next step toward an informed County Board decision regarding adoption of a building code is to provide a quantitative cost-benefit analysis of specific County alternatives.

One example of a building code analysis study completed for Peoria County,[2] suggests that the cost benefit analysis be provided to create and implement a 'building department' under various building department models and service levels. Building department models to consider would include:

- in-house plan review and inspection;
- partial in-house plan review and inspection and partially outsourced plan review and inspection; and
- out-sourced plan review and inspection.

Based on variable levels of service, and on an estimate of numbers and types of projects expected, the cost-benefit analysis should include:

- an assessment of start-up and annual resource requirements;
- potential fee schedule and cost recovery assessment; and
- recommendations for staffing alternate building department models.

Appendix K is an excerpt of the Peoria County Building Department Grant Study[2] on which the above cost-benefit analysis recommendation is based.

2) Amend County Ordinances to be consistent with state requirements.

2a) *Amend County Ordinances, as may be necessary, to include the provisions of the Champaign County Land Resource Management Plan Policies 6.2.1, 6.2.2, and 6.2.3 regarding compliance with State Life Safety Code or equivalent.*

2b) *Amend County Ordinances, as otherwise may be necessary, to be consistent with state requirements.*

State statutes allow that the County can require the cost associated with a necessary building construction plan review and/or inspection to be incurred by a permit applicant.

3) Inform prospective applicants regarding building code requirements, energy efficient building design, wind-resistant and seismic strengthening measures.

Current County efforts to provide information should be expanded to include handouts and/or online information links to existing energy efficient building design resources.

4) Support increased efforts by the County to enforce building construction–related provisions of County Ordinances, with priority given to public health and safety.

Efforts to eliminate current recognized deficiencies at the County level should include:

- improving in-house tracking and communication regarding private water well permitting and waste discharge system permitting in unincorporated Champaign County; and

- strengthening efforts to enforce existing County ordinances.

Chapter 4 Notes

1. The February 13, 2006 memorandum from Champaign County Assistant State's Attorney Joel Fletcher to the Environment and Land use Committee regarding building code powers of the County includes the statement that "the county may not regulate agricultural buildings' with 55 ILCS 5/5-1063(a) as the cited reference.

2. Peoria County Building Code Analysis, BF Technical Code Services, Inc., Hoffman Estates, IL, March, 2003.

***

BUSINESS TRANSACTIONS

(815 ILCS 670/) Illinois Residential Building Code Act.

(815 ILCS 670/1)
Sec. 1. Short title. This Act may be cited as the Illinois Residential Building Code Act.
(Source: P.A. 93-778, eff. 1-1-05.)

(815 ILCS 670/5)
Sec. 5. Purpose. The purpose of this Act is to provide minimum requirements for safety and to safeguard property and the public welfare by regulating and controlling the design, construction, installation, and quality of materials of new residential construction as regulated by this Act.
(Source: P.A. 93-778, eff. 1-1-05.)

(815 ILCS 670/10)
Sec. 10. Definitions. In this Act:
"International Residential Code" means the International Residential Code for One and Two Family Dwellings published by the International Code Council, as now or hereafter amended by the Council.
"New residential construction" means any original construction of a single-family home or a dwelling containing 2 or fewer apartments, condominiums, or town houses.
"Residential building code" means an ordinance, resolution, law, housing or building code, or zoning ordinance that establishes, for residential building contractors, construction-related activities applicable to single-family or 2-family residential structures.
"Residential building contractor" means any individual, corporation, or partnership that constructs a fixed building or structure for sale or use by another as a residence or that, for a price, commission, fee, wage, or other compensation, undertakes or offers to undertake the construction of any building or structure to be used by another as a residence, if the individual, corporation, or partnership reasonably expects to earn a financial profit from that activity.
(Source: P.A. 93-778, eff. 1-1-05.)

(815 ILCS 670/15)
Sec. 15. Adoption of building code. A contract to build a home (1) in any municipality in this State that does not have a residential building code in effect or (2) in any portion of a county that is not located within a municipality and does not have a residential building code in effect must adopt as part of the construction contract the applicability of a residential building code that is agreed to by the home builder and the home purchaser as provided in this Section. The home builder and the home purchaser may agree to adopt any municipal residential building code or county residential building code that is in effect on the first day of construction in any county or municipality that is within 100 miles of the location of the new home. If the home builder and the home purchaser fail to agree to a residential building code or if no residential building code is stated in the contract, the plumbing code promulgated by the Illinois

(815 ILCS 670/) Illinois Residential Building Code Act (continued)

Department of Public Health under Section 35 of the Illinois Plumbing License Law, the National Electric Code as adopted by the American National Standards Institute, and the International Residential Code shall, by law, be adopted as part of the construction contract.
(Source: P.A. 93-778, eff. 1-1-05.)

(815 ILCS 670/20)
Sec. 20. Homes constructed for resale. If a builder constructs a home for resale, the builder must certify to the buyer that the builder has constructed the home in compliance with a code authorized under Section 15 and must identify that code.
(Source: P.A. 93-778, eff. 1-1-05.)

(815 ILCS 670/99)
Sec. 99. Effective date. This Act takes effect January 1, 2005.
(Source: P.A. 93-778, eff. 1-1-05.)

Source: Illinois Compiled Statutes website
http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=2585&ChapterID=67&Print=True
downloaded on 3/5/2012

EXECUTIVE BRANCH

(20 ILCS 3125/) Energy Efficient Building Act.

(20 ILCS 3125/1)
Sec. 1. Short title. This Act may be cited as the Energy Efficient Building Act.
(Source: P.A. 96-778, eff. 8-28-09.)

(20 ILCS 3125/5)
Sec. 5. Findings.
(a) The legislature finds that an effective energy efficient building code is essential to:
(1) reduce the air pollutant emissions from energy consumption that are affecting the health of residents of this State;
(2) moderate future peak electric power demand;
(3) assure the reliability of the electrical grid and an adequate supply of heating oil and natural gas; and
(4) control energy costs for residents and businesses in this State.
(b) The legislature further finds that this State has a number of different climate types, all of which require energy for both cooling and heating, and that there are many cost-effective measures that can reduce peak energy use and reduce cooling, heating, lighting, and other energy costs in buildings.
(Source: P.A. 96-778, eff. 8-28-09.)

(20 ILCS 3125/) Energy Efficient Building Act (continued)

(20 ILCS 3125/10)
Sec. 10. Definitions.
"Board" means the Capital Development Board.
"Building" includes both residential buildings and commercial buildings.
"Code" means the latest published edition of the International Code Council's International Energy Conservation Code, excluding published supplements but including the adaptations to the Code that are made by the Board.
"Commercial building" means any building except a building that is a residential building, as defined in this Section.
"Department" means the Department of Commerce and Economic Opportunity.
"Municipality" means any city, village, or incorporated town.
"Residential building" means (i) a detached one-family or 2-family dwelling or (ii) any building that is 3 stories or less in height above grade that contains multiple dwelling units, in which the occupants reside on a primarily permanent basis, such as a townhouse, a row house, an apartment house, a convent, a monastery, a rectory, a fraternity or sorority house, a dormitory, and a rooming house; provided, however, that when applied to a building located within the boundaries of a municipality having a population of 1,000,000 or more, the term "residential building" means a building containing one or more dwelling units, not exceeding 4 stories above grade, where occupants are primarily permanent.
(Source: P.A. 96-778, eff. 8-28-09.)

(20 ILCS 3125/15)
Sec. 15. Energy Efficient Building Code. The Board, in consultation with the Department, shall adopt the Code as minimum requirements for commercial buildings, applying to the construction of, renovations to, and additions to all commercial buildings in the State. The Board, in consultation with the Department, shall also adopt the Code as the minimum and maximum requirements for residential buildings, applying to the construction of all residential buildings in the State, except as provided for in Section 45 of this Act. The Board may appropriately adapt the International Energy Conservation Code to apply to the particular economy, population distribution, geography, and climate of the State and construction therein, consistent with the public policy objectives of this Act.
(Source: P.A. 96-778, eff. 8-28-09.)

(20 ILCS 3125/20)
Sec. 20. Applicability.
(a) The Board shall adopt the Code within 9 months after its publication. The Code shall take effect within 3 months after it is adopted by the Board and shall apply to any new building or structure in this State for which a building permit application is received by a municipality or county, except as otherwise provided by this Act. In the case of any addition, alteration, renovation, or repair to an existing commercial structure, the Code adopted under this Act applies only to the portions of that structure that are being added,

altered, renovated, or repaired.

(b) The following buildings shall be exempt from the Code:

(1) Buildings otherwise exempt from the provisions of a locally adopted building code and buildings that do not contain a conditioned space.

(2) Buildings that do not use either electricity or fossil fuel for comfort conditioning. For purposes of determining whether this exemption applies, a building will be presumed to be heated by electricity, even in the absence of equipment used for electric comfort heating, whenever the building is provided with electrical service in excess of 100 amps, unless the code enforcement official determines that this electrical service is necessary for purposes other than providing electric comfort heating.

(3) Historic buildings. This exemption shall apply to those buildings that are listed on the National Register of Historic Places or the Illinois Register of Historic Places, and to those buildings that have been designated as historically significant by a local governing body that is authorized to make such designations.

(4) (Blank).

(5) Other buildings specified as exempt by the International Energy Conservation Code.

(c) Additions, alterations, renovations, or repairs to an existing building, building system, or portion thereof shall conform to the provisions of the Code as they relate to new construction without requiring the unaltered portion of the existing building or building system to comply with the Code. The following need not comply with the Code, provided that the energy use of the building is not increased: (i) storm windows installed over existing fenestration, (ii) glass-only replacements in an existing sash and frame, (iii) existing ceiling, wall, or floor cavities exposed during construction, provided that these cavities are filled with insulation, and (iv) construction where the existing roof, wall, or floor is not exposed.

(d) A unit of local government that does not regulate energy efficient building standards is not required to adopt, enforce, or administer the Code; however, any energy efficient building standards adopted by a unit of local government must comply with this Act. If a unit of local government does not regulate energy efficient building standards, any construction, renovation, or addition to buildings or structures is subject to the provisions contained in this Act. (Source: P.A. 96-778, eff. 8-28-09.)

(20 ILCS 3125/25)

Sec. 25. Technical assistance.

(a) The Department shall make available to builders, designers, engineers, and architects implementation materials that explain the requirements of the Code and describe methods of compliance acceptable to Code Enforcement Officials.

(b) The materials shall include software tools, simplified prescriptive options, and other materials as appropriate. The simplified materials shall be designed for projects in which a design professional may not be involved.

(c) The Department shall provide local jurisdictions with

technical assistance concerning implementation and enforcement of the Code.
(Source: P.A. 93-936, eff. 8-13-04.)

(20 ILCS 3125/30)
Sec. 30. Enforcement. The Board, in consultation with the Department, shall determine procedures for compliance with the Code. These procedures may include but need not be limited to certification by a national, State, or local accredited energy conservation program or inspections from private Code-certified inspectors using the Code.
(Source: P.A. 93-936, eff. 8-13-04.)

(20 ILCS 3125/35)
Sec. 35. Rules. The Board may adopt any rules that are necessary for the furtherance of this Act.
(Source: P.A. 93-936, eff. 8-13-04.)

(20 ILCS 3125/40)
Sec. 40. Input from interested parties. When developing Code adaptations, rules, and procedures for compliance with the Code, the Capital Development Board, or the Illinois Building Commission as directed by the Board, shall seek input from representatives from the building trades, design professionals, construction professionals, code administrators, and other interested entities affected.
(Source: P.A. 93-936, eff. 8-13-04.)

(20 ILCS 3125/45)
Sec. 45. Home rule.
(a) No unit of local government, including any home rule unit, may regulate energy efficient building standards for commercial buildings in a manner that is less stringent than the provisions contained in this Act.
(b) No unit of local government, including any home rule unit, may regulate energy efficient building standards for residential buildings in a manner that is either less or more stringent than the standards established pursuant to this Act; provided, however, that the following entities may regulate energy efficient building standards for residential buildings in a manner that is more stringent than the provisions contained in this Act: (i) a unit of local government, including a home rule unit, that has, on or before May 15, 2009, adopted or incorporated by reference energy efficient building standards for residential buildings that are equivalent to or more stringent than the 2006 International Energy Conservation Code, (ii) a unit of local government, including a home rule unit, that has, on or before May 15, 2009, provided to the Capital Development Board, as required by Section 55 of the Illinois Building Commission Act, an identification of an energy efficient building code or amendment that is equivalent to or more stringent than the 2006 International Energy Conservation Code, and (iii) a municipality with a population of 1,000,000 or more.
(c) No unit of local government, including any home rule unit or unit of local government that is subject to State regulation under the Code as provided in Section 15 of this Act, may hereafter enact any annexation ordinance or resolution, or require or enter into any annexation agreement, that imposes energy efficient building standards for

residential buildings that are either less or more stringent than the energy efficiency standards in effect, at the time of construction, throughout the unit of local government.

(d) This Section is a denial and limitation of home rule powers and functions under subsection (i) of Section 6 of Article VII of the Illinois Constitution on the concurrent exercise by home rule units of powers and functions exercised by the State. Nothing in this Section, however, prevents a unit of local government from adopting an energy efficiency code or standards for commercial buildings that are more stringent than the Code under this Act.

(Source: P.A. 96-778, eff. 8-28-09.)

(20 ILCS 3125/99)

Sec. 99. Effective date. This Act takes effect upon becoming law.

(Source: P.A. 93-936, eff. 8-13-04.)

Source: Illinois Compiled Statutes website
http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=2614&ChapterID=5&Print=True
downloaded on 3/5/2012

ILLINOIS BUILDING CODE REQUIREMENTS TAKE EFFECT JULY 1, 2011

FOR AREAS OF THE STATE WHERE A BUILDING CODE

HAS NOT BEEN ADOPTED AND REGISTERED

Public Act 096-0704 states that all new commercial construction after July 1, 2011, must comply with the 2006 or later editions of the International Building Code; International Existing Building Code; International Property Maintenance Code and the 2008 or later edition of the National Electrical Code (NFPA 70). ***However, this Act does not apply to any area that has adopted its own building code and registered that code adoption with the Capital Development Board (CDB) in accordance with the*** Illinois Building Commission Act. This Act also requires that newly constructed commercial buildings must pass an inspection conducted by an inspector meeting the qualifications established by CDB.

Under the Act, local governments are granted the right to enter agreements with other governmental units to enforce building codes as well as to hire qualified third party inspectors to provide inspection services.

Note that Public Act 096-0704 does not negate any other statutorily authorized code or regulation administered by State agencies. This includes, but is not limited to, the Illinois Plumbing Code, the Illinois Environmental Barriers Act, the Illinois Accessibility Code, the International Energy Conservation Code, and administrative rules adopted by the Office of the State Fire Marshal (including the NFPA Life Safety Code).

The following information is contained in the Act and Administrative Rules:

"Commercial Building" means any building other than a single-family home or dwelling containing two or fewer apartments, condominiums, or townhomes or a farm building as exempted from Section 3 of the Illinois Architecture Practice Act.

"Newly Constructed Commercial Building" means any commercial building for which original construction has commenced on or after July 1, 2011.

"Qualified Inspector" means an individual shall have fulfilled one of the following requirements:

1. Obtained professional licensure as an architect or engineer in Illinois;
2. Received a "Proper Identification" card through Illinois State Board of Education's procedures as a qualified building inspector/plan reviewer (23 Ill. Adm. Code 180); or
3. Qualified by an apprentice program certified by the US Department of Labor's Office of Apprenticeship.

Please contact the Capital Development Board with questions regarding this Act.

To view the Joint Committee on Administrative Rules (JCAR), Administrative Code, click the following link: http://www.ilga.gov/commission/jcar/admincode/071/07100300sections.html

CDB 71 ILLINOIS ADMINISTRATIVE CODE 600

SUBCHAPTER d

TITLE 71: PUBLIC BUILDINGS, FACILITIES, AND REAL PROPERTY
CHAPTER I: CAPITAL DEVELOPMENT BOARD
SUBCHAPTER d: ENERGY CODES

PART 600
ILLINOIS ENERGY CONSERVATION CODE

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CDB 71 ILLINOIS ADMINISTRATIVE CODE 600

SUBCHAPTER d

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AUTHORITY: Implementing and authorized by the Capital Development Board Act [20 ILCS 3105] and the Energy Efficient Building Act [20 ILCS 3125].

SOURCE: Adopted by emergency rulemaking at 28 Ill. Reg. 11355, effective July 26, 2004, for a maximum of 150 days; emergency rules expired December 22, 2004; adopted at 29 Ill. Reg. 777, effective January 1, 2005; new Part adopted by emergency rulemaking at 29 Ill. Reg. 5736, effective April 8, 2005, for a maximum of 150 days; emergency expired September 4, 2005; emergency rulemaking repealed at 29 Ill. Reg. 6093, effective April 18, 2005, for a maximum of 150 days; emergency expired September 14, 2005; old Part repealed at 29 Ill. Reg. 16414 and new Part adopted at 29 Ill. Reg. 14790, effective April 8, 2006; amended at 31 Ill. Reg. 14422, effective October 9, 2007; emergency amendment at 33 Ill. Reg. 12407, effective August 18, 2009, for a maximum of 150 days; amended at 33 Ill. Reg. 16702, effective November 23, 2009; emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days.

SUBPART A: GENERAL

Section 600.100 Definitions
EMERGENCY

Definitions of terms in the International Energy Conservation Code, incorporated by reference in Subpart C of this Part, apply, as do the following definitions:

"Act" means the Capital Development Board Act [20 ILCS 3105].

"Authority Having Jurisdiction" or "AHJ" means the organization, office or individual responsible for approving equipment, materials, an installation or procedure.

"CDB" means the Illinois Capital Development Board.

"Commercial Facility" means any building except a building that is classified as a residential building. [20 ILCS 3125/10]

"Council" means the Illinois Energy Conservation Advisory Council appointed under Subpart B of this Part.

"EEB Act" means the Energy Efficient Building Act [20 ILCS 3125].

"Professional Services Agreement" means the contract for services entered into by CDB and design professionals.

"Using Agency" means the State agency using facilities described in Section 4.01 of the Act.

"Illinois Energy Conservation Code" or "Code" means:

With respect to the State facilities covered by Subpart B:

This Part, all additional requirements incorporated within Subpart B (including ASHRAE 90.1 Standards), and any statutorily authorized adaptations to the incorporated standards adopted by CDB; and

With respect to the privately funded commercial facilities covered by Subpart C:

This Part, all additional requirements incorporated within Subpart C (including the 2009 International Energy Conservation Code, excluding published supplements, which encompasses ASHRAE 90.1), and any statutorily authorized adaptations to the incorporated standards adopted by CDB.

With respect to the residential buildings covered by Subpart D:

This Part, all additional requirements incorporated within Subpart D (including the 2009 International Energy Conservation Code, excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB.

"IECC" means the International Energy Conservation Code.

"Municipality" means any city, village or incorporated town. [20 ILCS 3125/10]

"Residential Building" means (i) a detached one-family or 2-family dwelling or (ii) any building that is 3 stories or less in height above grade that contains multiple dwelling units, in which the occupants reside on a primarily permanent basis, such as a townhouse, a row house, an apartment house, a convent, a monastery, a rectory, a fraternity or sorority house, a dormitory, and a rooming house; provided, however, that when applied to a building located within the boundaries of a municipality having a population of 1,000,000 or more, the term "residential building" means a building containing one or more dwelling units, not exceeding 4 stories above grade, where occupants are primarily permanent. [20 ILCS 3125/10]

"State Funded Building" means and includes buildings under the jurisdiction of each officer, department, board, commission, institution and body politic and corporate of the State, including the Illinois Building Authority, school districts, and any other person expending or encumbering State or federal funds by virtue of an appropriation or other authorization by the General Assembly or federal authorization or grant. This includes State funded *housing, hospitals, penitentiaries, laboratories, educational facilities, administrative facilities, recreational facilities, environmental equipment and parking facilities* [20 ILCS 3105/4.01].

(Source: Amended by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

Section 600.110 Adoption and Modification of the Code
EMERGENCY

a) The purpose of the Illinois Energy Conservation Code is to implement Section 10.09-5 of the Capital Development Board Act [20 ILCS 3105/10.09-5], which requires CDB to adopt rules implementing a statewide Energy Code. Additionally, Section 15 of the Energy Efficient Commercial Building Act [20 ILCS 3125/15] requires CDB to officially adopt, as a minimum requirement, the 2009 International Energy Conservation Code, excluding any published supplements, to apply that Code to all commercial structures in Illinois, and to assist local code officials with enforcing the requirements of the Code.

b) This Code as described in Subpart B (State facilities) is effective July 26, 2004. This Code as described in Subpart C (privately-funded commercial facilities) is effective April 8, 2007. The Code as described in Subpart D (residential buildings) is effective January 9, 2010.

c) Application of the Code

1) State Facilities. The Code as described in Subpart B of this Part applies to all State facilities for which money has been appropriated or authorized by the General Assembly.

2) Privately Funded Commercial Facilities and Residential Buildings. The Code as described in Subparts C and D of this Part applies *to any new building or structure in this State for which a building permit application is received by a municipality or county.* [20 ILCS 3125/20]

A) Additions, alterations, renovations, or repairs to an existing building, building system, or portion thereof shall conform to the provisions of the Code as they relate to new construction without requiring the unaltered portion of the existing building or building system to comply with the Code. [20 ILCS 3125/20(c)]

B) All exceptions listed in the Code related to additions, alterations, renovations or repairs to an existing building are acceptable provided the energy use of the building is not increased.

d) This Code, together with the standards incorporated by reference in this Part, has the force of a building code and is administrative law applicable in the State of Illinois.

(Source: Amended by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

SUBPART B: STATE FUNDED FACILITIES

Section 600.210 Request for Variance
EMERGENCY

a) Who May File a Request for Variance

1) Any architect or engineer under contract with CDB to provide professional services for the proposed project.

2) The using agency's chief executive officer or his or her designated representative.

3) The Chairman of the Illinois Energy Conservation Advisory Council.

b) Consideration of Request for Variance
A variance from any requirement of the Code as described in this Subpart will be granted by CDB for one or more of the following reasons only:

1) Compliance would not be technically feasible.

2) Compliance would compromise the health, welfare or safety of building occupants.

3) Compliance would prevent the building from serving its intended purpose.

4) Compliance would violate another State or federal law or code.

5) Compliance would increase the energy consumption of the building.

6) Compliance would require the use of inferior products or materials.

c) Submitting the Request for Variance

1) The request shall be submitted to the CDB Project Manager.

2) Requests should be submitted as early in the project as there is cause, but no later than 75 days prior to the anticipated bid date. Approval or denial of a variance shall be no cause for delay in the project unless the request for variance was filed by CDB or the using agency for which the project is being constructed.

3) The following shall be submitted when requesting a variance:

A) A letter from the petitioner stating the specific provisions of the Code from which the variance is requested and a detailed explanation of how compliance with the Code would result in one or more of the conditions described in subsection (b).

B) The request shall include supporting data, calculations, analysis, etc.

d) CDB Action

1) Upon receipt of the Request for Variance, the CDB Project Manager will review the request and make a recommendation to CDB's Professional Services Unit within 7 calendar days.

2) Professional Services Unit will evaluate the Request for Variance within 30 days after CDB's receipt of the Request and make a determination.

3) If it is determined that the Request for Variance would cause one of the conditions stated in subsection (b), the variance shall be approved by CDB.

4) If it is determined that the Request for Variance would not cause one of the conditions stated in subsection (b), the Agency may:

A) Deny the Request for Variance.

B) Approve the Request for Variance subject to specific conditions determined by CDB.

e) Modifications and Revisions
The petitioner may, in writing, request that the original Request for Variance be modified and resubmit the Request for Variance.

f) Revocation
CDB may revoke any variance if:

1) it is determined that the variance was obtained through fraud or deceit;

2) the petitioner has violated the specific conditions on which the variance was approved; or

3) the variance was issued in error.

g) Appeals

1) Any person whose Request for Variance is denied or approved with conditions may appeal CDB's initial determination. The appeal shall be submitted in writing and must be received within 10 days after the initial CDB action is received by the requestor. The request shall be submitted to the Chairman of the Advisory Council.

2) The Chairman of the Advisory Council will review the request with the Advisory Council, as deemed necessary by the Chairman, within 14 days after receipt and take one of the following actions:

A) Uphold CDB's initial determination.

B) Reverse CDB's initial determination and issue the variance.

C) Change the conditions applied to the variance granted by CDB.

(Source: Amended by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

SUBPART C: PRIVATELY FUNDED COMMERCIAL FACILITIES

Section 600.300 Standards for Privately Funded Commercial Facilities EMERGENCY

a) The 2009 International Energy Conservation Code (IECC), excluding published supplements, available from the International Code Council at 500 New Jersey Avenue NW, 6th Floor, Washington DC 20001, phone: 1-888-ICC-SAFE (422-7233), is hereby incorporated into the Illinois Energy Conservation Code, as described in this Subpart as applicable to privately funded commercial facilities, with the modifications outlined in subsection (c).

b) All incorporations by reference in this Section are of the cited standards as they existed on the date specified. These incorporations include no later editions or amendments.

c) Modifications to IECC
Under Section 15 of the EEB Act, when applying the Code to privately funded commercial facilities, CDB may modify the incorporated standards to respond to the unique economy, population distribution, geography and climate of Illinois, as long as the objectives of the Act are maintained pursuant to that statutory authority.

(Source: Amended by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

Section 600.320 Local Jurisdiction
EMERGENCY

a) Construction projects involving privately funded commercial facilities and for which a municipality or county requires a building permit must comply with the Illinois Energy Conservation Code if the project involves new construction, addition, alteration, renovation or repair. *In the case of any addition, alteration, renovation or repair to an existing commercial structure, the Code* as described by this Subpart C *applies only to the portions of that structure that are being added, altered, renovated or repaired*. [20 ILCS 3125/20(a)]

b) The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code. The AHJ is authorized to enforce a building code that differs with the Code as described in this Subpart C, but any standards applied by an AHJ must be at least as stringent as the Code as described in this Subpart C.

c) A unit of local government that does not regulate energy efficient building standards is not required to adopt, enforce, or administer the Code; however, any energy efficient building standards adopted by a unit of local government must comply with this Act. If a unit of local government does not regulate energy efficient building standards, any construction, renovation, or addition, to buildings or structures is subject to the provisions contained in this Act.

(Source: Amended by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

Section 600.340 Application to Home Rule Units
EMERGENCY

No unit of local government, including any home rule unit, may apply *energy efficient building standards* to privately funded commercial facilities *in a manner that is less stringent* than the Code as described in this Subpart C. However, *nothing in the EEB Act* or this Subpart *prevents a unit of local government from adopting an energy efficiency code or standards that are more stringent than this Code.* [20 ILCS 3125/45]

(Source: Amended by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

SUBPART D: RESIDENTIAL BUILDINGS

Section 600.400 Standards for Residential Buildings
EMERGENCY

a) The 2009 International Energy Conservation Code (IECC), excluding published supplements, available from the International Code Council at 500 New Jersey Avenue NW, 6th Floor, Washington DC 20001, phone: 1-888-ICC-SAFE (422-7233), is hereby incorporated into the Illinois Energy Conservation Code, as described in this Subpart as applicable to residential buildings, with the modifications outlined in subsection (c).

b) All incorporations by reference in this Section are of the cited standards as they existed on the date specified. These incorporations include no later editions or amendments.

c) Modifications to IECC
Under Section 15 of the EEB Act, when applying the Code to residential buildings, CDB may modify the incorporated standards to respond to the unique economy, population distribution, geography and climate of Illinois, as long as the objectives of the Act are maintained pursuant to that statutory authority.

(Source: Added by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

Section 600.410 Exemptions
EMERGENCY

a) The following buildings are exempt from the Code:

1) *Buildings otherwise exempt from the provisions of a locally adopted building code and buildings that do not contain a conditioned space;*

2) *Buildings that do not use either electricity or fossil fuel for comfort conditioning;*

3) *Historic buildings listed on the National Register of Historic Places or the Illinois Register of Historic Places, and those buildings that are designated by authorized personnel as historically significant;*

4) *Other buildings specified as exempt by the IECC.* [20 ILCS 3125/20]

b) *For the purposes of determining whether an exemption* authorized under subsection (a)(2) *applies, a building will be presumed to be heated by electricity, even in the absence of equipment used for electric comfort heating, whenever the building is provided with electrical service in excess of 100 amps, unless the code enforcement official determines that this electrical services is necessary for purposes other than providing electric comfort heating.* [20 ILCS 3125/20(b)(2)]

(Source: Added by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

Section 600.420 Local Jurisdiction
EMERGENCY

a) Construction projects involving residential buildings and for which a municipality or county requires a building permit must comply with the Illinois Energy Conservation Code if the project involves new construction, addition, alteration, renovation or repair. *In the case of any addition, alteration, renovation or repair to an existing commercial structure, the Code* as described by this Subpart C *applies only to the portions of that structure that are being added, altered, renovated or repaired*. [20 ILCS 3125/20(a)]

b) The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code.

c) No unit of local government, including any home rule unit, may regulate energy efficient building standards for residential buildings in a manner that is either less or more stringent than the standards established pursuant to this Subpart D; provided, however, that the following entities may regulate energy efficient building standards for residential buildings in a manner that is more stringent than the provisions contained in this Subpart D: (i) a unit of local government, including a home rule unit, that has, on or before May 15, 2009, adopted or incorporated by reference energy efficient building standards for residential buildings that are equivalent to or more stringent than the 2006 International Energy Conservation Code, (ii) a unit of local government, including a home rule unit, that has, on or before May 15, 2009, provided to the Capital Development Board, as required by Section 55 of the Illinois Building Commission Act, an identification of an energy efficient building code or amendment that is equivalent to or more stringent than the 2006 International Energy Conservation Code, and (iii) a municipality with a population of 1,000,000 or more. No unit of local government, including any home rule unit or unit of local government that is subject to State regulation under the Code as provided in [20 ILCS 3125/15], may hereafter enact any annexation ordinance or resolution, or require or enter into any annexation agreement, that imposes energy efficient building standards for residential buildings that are either less or more stringent than the energy efficiency standards in effect, at the time of construction, throughout the unit of local government.

(Source: Added by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

Section 600.430 Compliance
EMERGENCY

a) Compliance with the Illinois Energy Conservation Code as described by this Subpart D (applicable to residential buildings) shall be determined by the local authority having jurisdiction (AHJ).

b) Minimum compliance shall be demonstrated by submission of:

1) Compliance Certificates generated by the U.S. Department of Energy's REScheck code compliance tool; or

2) Other comparable compliance materials that meet or exceed, as determined by the authority having jurisdiction, U.S. Department of Energy's REScheck code compliance tool; or

3) The seal of the Architect/Engineer as required by Section 14 of the Illinois Architecture Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

(Source: Added by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

Section 600.440 Application to Home Rule Units
EMERGENCY

No unit of local government, including any home rule unit, may regulate energy efficient building standards for residential buildings *in a manner that is less or more stringent* than the standards established pursuant to this Subpart D.

(Source: Added by emergency rulemaking at 34 Ill. Reg. _____, effective _____, for a maximum of 150 days)

Duties of Illinois Fire Chiefs Relative to Fire Code Enforcement Under State Law

Illinois fire chiefs need to be aware of the following facts concerning their duty to enforce fire codes within their jurisdictions as set forth under State law.

- After the Cook County Administration Building Fire in October 2003, the State of Illinois commissioned James Lee Witt and Associates to provide an independent evaluation of the fire and the State's code authority. That investigation led to a final report entitled *"Cook County Administration Building Fire Final Report*", commonly known as the "Witt Report". One of the findings of the Witt Report, and the Illinois Code Task Force that was formed to follow through on the findings of the Report, was that modifications were necessary in the methods used by the Office of the State Fire Marshal (OSFM) to issue notifications to municipalities relative to State fire codes.

- As a result, the OSFM has conducted past mailings to all fire chiefs, city managers, mayors and county officials to make them aware of the requirements imposed by State law. However, with the turnover of personnel inevitably experienced by municipalities and fire districts, the OSFM believes it is time to once again make fire chiefs aware of these issues and their obligations.

- The Witt Report identified a misunderstanding of applicable State laws and fire codes by municipalities across the state. One of the most notable findings was a misunderstanding or complete lack of knowledge by municipalities that the Fire Investigation Act required local authorities to enforce the State-adopted fire code or a code that was equally as stringent as the State-adopted code.

- State statute, specifically the Fire Investigation Act (425 ILCS 25), requires that fire chiefs enforce the fire prevention rules adopted by the OSFM except in those localities that have adopted fire prevention and safety standards "equal to or higher" than the rules adopted by the OSFM.

- Under the authority granted by the Fire Investigation Act, the OSFM has adopted the National Fire Protection Association's (NFPA) Life Safety Code (LSC) - 2000 edition into Illinois Administrative Code to serve as the State's rules for fire prevention and safety. This adoption is made at 41 Ill. Adm. Code 100. In conjunction with the authority granted by the Fire Investigation Act, this makes the 2000 edition of the Life Safety Code the minimum requirements that must be met statewide in Illinois.

- The Fire Investigation Act does not provide the ability for a fire chief to enforce less stringent standards simply because a community may be a home rule unit of government. There is language within the Fire Investigation Act stating that it "is not a limit on any home rule unit". Many are under the mistaken belief that this wording allows home rule units of government to disregard the OSFM-adopted Life Safety Code and only enforce their own locally adopted codes. However, the Act does not allow a community to opt out of this requirement simply by virtue of exercising home rule authority. The Act's statement pertaining to limitations on home rule authority results in local authorities being allowed to adopt and enforce more stringent requirements than are imposed by OSFM-adopted rules, but not to disregard the LSC adoption by the OSFM or enforce fire safety rules that are less stringent than those imposed by the LSC. This decision has been supported by case law.

Duties of Illinois Fire Chiefs Relative to Fire Code Enforcement Under State Law

- Because a municipality or fire protection district has not adopted the Life Safety Code themselves, does not mean that occupancies within that jurisdiction escape the need to comply with the LSC. The LSC serves as the minimum standard statewide as the result of the authority of the Fire Investigation Act and the rule adoption of the LSC by the OSFM.

- Many municipal fire departments and fire protection districts believe that the State Code (the OSFM-adopted LSC) exists to serve only areas where no local jurisdiction has adopted or enforced a code of their own. Others believe that the OSFM simply enforces the State code in State-licensed occupancies within their municipality but that the local fire department or code enforcement agency is free to adopt and enforce whatever code they desire in all other buildings. Both of these assumptions are incorrect. The OSFM-adopted LSC is applicable statewide in all occupancy classifications with the exception of public elementary and secondary schools under the jurisdiction of the Illinois State Board of Education.

- The Fire Investigation Act does not stipulate that the OSFM determines if a local fire code different than the code adopted by the OSFM is "equal to or higher than" the requirements adopted by the OSFM. Local fire chiefs are responsible for ensuring that the code requirements adopted and enforced on a local basis are at least as stringent as those of the OSFM-adopted LSC or to enforce the requirements of the OSFM-adopted LSC.

- There are multiple issues and requirements to be examined when comparing locally adopted codes to the OSFM-adopted NFPA LSC. However, one major issue causes many locally adopted codes to be less stringent than the LSC. The LSC requires compliance in both new and existing occupancies. Although true that often the requirements pertaining to existing occupancies are less stringent than those applicable to new occupancies, the LSC does not exempt or "grandfather" any existing occupancies from complying with the code. This is not usually true with locally adopted building codes and some fire prevention code requirements that are adopted in only a forward-looking manner to apply to new construction after the date of adoption. Even when other nationally recognized codes have some requirements applicable to existing structures, they often do not impose near the same degree of stringency as the LSC.

- It is a commonly held belief that if a community has adopted the International Code Council's (ICC) International Building Code (IBC) and/or International Fire Code (IFC), that equivalency to application of the NFPA LSC and compliance with the State's Fire Investigation Act is achieved. However, comparisons of the specific requirements of the ICC codes to the LSC indicate that this is not accurate, especially in application to existing occupancies.

- Local amendments that allow less stringent conditions than are prescribed by nationally recognized codes are another common reason that a community's adopted fire code may not be considered "equal to or higher" than the OSFM's adopted rules.

- The entire content of the Fire Investigation Act as well as the "Part 100" administrative rules wherein the OSFM adopts the NFPA Life Safety Code can be accessed at the OSFM's website: www.state.il.us/osfm

http://www.sfm.illinois.gov/fireservice/llinoisfirechiefresponsibilities.aspx

Public Act 097-0363

HB0308 Enrolled LRB097 05460 CEL 45519 b

AN ACT concerning regulation.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 5. The Water Well and Pump Installation Contractor's License Act is amended by changing Sections 2, 6 and 13 as follows:

(225 ILCS 345/2) (from Ch. 111, par. 7103)

(Section scheduled to be repealed on January 1, 2012)

Sec. 2. As used in this Act, unless the context otherwise requires:

(1) "Water well" and "well" mean any excavation that is drilled, cored, bored, washed, driven, dug, jetted or otherwise constructed when the intended use of such excavation is for the location, diversion, artificial recharge, or acquisition of ground water, but such term does not include an excavation made for the purpose of obtaining or prospecting for oil, natural gas, minerals or products of mining or quarrying or for inserting media to repressure oil or natural gas bearing formation or for storing petroleum, natural gas or other products, or monitoring wells;

(2) "Ground water" means water of under-ground aquifers, streams, channels, artesian basins, reservoirs, lakes and other water under the surface of the ground whether percolating

or otherwise;

(3) "Drill" and "drilling" mean all acts necessary to the construction of a water well including the sealing of unused water well holes;

(4) "Water Well Contractor" and "Contractor" mean any person who contracts to drill, alter or repair any water well;

(5) "Water Well Pump Installation" means the selection of and the procedure employed in the placement and preparation for operation of equipment and materials utilized in withdrawing or obtaining water from a well for any use, including all construction involved in making entrance to the well and establishing such seals and safeguards as may be necessary to protect such water from contamination and all construction involved in connecting such wells and pumping units or pressure tanks in the water supply systems of buildings served by such well, including repair to any existing installation;

(6) "Water Well Pump Installation Contractor" means any person engaged in the business of installing or repairing pumps and pumping equipment owned by others;

(7) "Water Well and Pump Installation Contractor" means any person engaged in both businesses described in subsections 4, 5, and 6 above;

(8) "Department" means the Department of Public Health of this State;

(9) "Director" means the Director of the Department of Public Health;

(10) "Board" means the Water Well and Pump Installation Contractors Licensing Board created by Section 6 of this Act;

(11) "Person" includes any natural person, partnership, association, trust and public or private corporation;

(12) "Monitoring well" means a water well intended for the purpose of determining groundwater quality or quantity; ~~.~~

(13) "Closed loop well" means a sealed, watertight loop of pipe buried outside of a building foundation intended to recirculate a liquid solution through a heat exchanger but is limited to the construction of the bore hole and the grouting of the bore hole and does not include the piping and appurtenances used in any other capacity. "Closed loop well" does not include any horizontal closed loop well systems where grouting is not necessary by law or standard industry practice;

(14) "Closed loop well contractor" means any person who installs closed loop wells for another person. "Closed loop well contractor" does not include the employee of a closed loop contractor.

(Source: P.A. 86-843.)

(225 ILCS 345/6) (from Ch. 111, par. 7107)

(Section scheduled to be repealed on January 1, 2012)

Sec. 6. Water Well and Pump Installation Contractors Licensing Board; Closed Loop Well Contractors Certification Board.

(a) There is created in the Department the Water Well and

Pump Installation Contractors Licensing Board which shall exercise its duties provided in this Act under the supervision of the Department. The Water Well and Pump Installation Contractors Licensing Board shall consist of 6 members, designated from time to time by the Director. Two members shall be licensed water well contractors, 2 ~~two~~ members shall be licensed water well pump installation contractors, and 2 ~~two~~ members shall be licensed water well and pump installation contractors. In making the appointments to the Water Well and Pump Installation Contractors Licensing Board, the Director shall consider the recommendation of the Illinois Association of Groundwater Professionals or its successor organization.

The members of the Water Well and Pump Installation Contractors Licensing Board shall be reimbursed for necessary traveling expenses in accordance with travel regulations prescribed by the Department of Finance.

The Water Well and Pump Installation Contractors Licensing Board shall advise and aid the Director in:

(1) ~~(a)~~ preparing subject matter for continuing education sessions and examinations to test the knowledge and skills of applicants for license in the construction, installation and repair of water wells, well pumps, water pressure storage tanks, connecting piping and related appurtenances, including proper sealing of abandoned water wells, and the rules and regulations of the Department promulgated pursuant to the Illinois Pump Installation

Code Law and the Illinois Water Well Construction Code Law;

(2) ~~(b)~~ promulgating rules to govern the number of hours of continuing education required for a continuing education session, examinations, hearings for suspension or revocation of or refusal to issue or renew a license, clarifying the law as it relates to water well and pump installation contracting;

(3) ~~(c)~~ holding examinations of applicants for license at least once a year prior to November 1st in each year;

(4) ~~(d)~~ holding hearings for the revocation or suspension of, or refusal to issue, renew or reinstate licenses;

(5) ~~(e)~~ submitting recommendations to the Director from time to time for the efficient administration of this Act;

(6) ~~(f)~~ grading all tests and examinations for licenses and promptly reporting the results to the Director; ~~and~~

(7) ~~(g)~~ performing such other duties from time to time prescribed by the Director; and ~~.~~

(8) consulting and agreeing with the Closed Loop Well Contractors Certification Board regarding:

(i) the registering and certification of closed loop well contractors; and

(ii) the installation of closed loop wells.

For purposes of this item (8), the term "closed loop well" shall be limited to the construction, installation,

repair, and abandonment of the bore hole and the grouting of the bore hole.

(b) There is created in the Department the Closed Loop Well Contractors Certification Board, which shall exercise its duties provided in this Act under the supervision of the Department. The Closed Loop Well Contractors Certification Board shall consist of 6 members, designated from time to time by the Director. A temporary board shall be appointed by the Department for the sole purpose of assisting with the process of initial certification and registration of closed loop well contractors and shall remain in place until 2 years after the effective date of this amendatory Act of the 97th General Assembly. On the dissolution of the temporary board, the 6 members must be closed loop well contractors who are registered and certified under this Act. In making appointments to the Closed Loop Well Contractors Certification Board, the Director shall consider the recommendations of organizations that are representative of the closed loop well industry in Illinois. Recommendations shall include consideration of statewide geographical representation.

The Closed Loop Well Contractors Certification Board shall advise and aid the Director in:

(1) preparing subject matter for continuing education sessions relating to closed loop wells and preparing examinations to test the knowledge and skills of applicants for certification relating to the construction,

installation, repair, and abandonment of closed loop wells and the rules of the Department adopted under this Act for closed loop wells;

(2) adopting rules relating to (i) closed loop wells, (ii) continuing education requirements, (iii) examinations, (iv) hearings for suspension or revocation of or refusal to issue or renew a certification, and (v) the construction, installation, repair, and abandonment of closed loop wells;

(3) holding examinations of applicants for certification at least once a year prior to November 1st in each year;

(4) holding hearings for the revocation or suspension of, or refusal to issue, renew, or reinstate, certifications;

(5) submitting recommendations to the Director from time to time for the efficient administration of this Act;

(6) grading all tests and examinations for certifications, and promptly reporting the results to the Director;

(7) performing such other duties as may be from time to time prescribed by the Director; and

(8) conferring with the Water Well and Pump Installation Contractors Licensing Board regarding the construction, installation, repair, and abandonment of closed loop wells.

(Source: P.A. 90-692, eff. 1-1-99.)

(225 ILCS 345/13) (from Ch. 111, par. 7114)

(Section scheduled to be repealed on January 1, 2012)

Sec. 13. The fee to be paid by an applicant for an examination to determine his fitness to receive a license as a water well contractor is $50.

The fee to be paid by an applicant for an examination to determine his fitness to receive a license as a water well pump installation contractor is $50.

The fee to be paid by an applicant for an examination to determine his fitness to receive a license as a water well and pump installation contractor is $80.

The fee to be paid by an applicant for the annual renewal of a license as a water well contractor or water well pump installation contractor is $25.

The fee to be paid by an applicant for the annual renewal of a license as a water well and pump installation contractor is $35.

The fee to be paid by an applicant for the reinstatement of a water well contractor license or a water well pump installation contractor license which has lapsed less than 3 years is $10, plus all lapsed renewal fees.

The fee to be paid by an applicant for restoration of a water well contractor's license or water well pump installation contractor's license which has lapsed more than three years is

$150.

The fee to be paid by an applicant for the reinstatement of a water well and pump installation contractor license which has lapsed less than 3 years is $15, plus all lapsed renewal fees.

The fee to be paid by an applicant for the restoration of a license as a water well and pump installation contractor which has lapsed more than 3 years is $175.

There shall be no reduction in such fees because a license when issued may be valid for less time than a full license year.

(Source: P.A. 77-1626.)

Section 10. The Illinois Water Well Construction Code is amended by changing Sections 3, 5, and 6 and by adding Sections 9.1 and 9.2 as follows:

(415 ILCS 30/3) (from Ch. 111 1/2, par. 116.113)

Sec. 3. Definitions. As used in this Act, unless the context otherwise requires:

(a) "Construction" means all acts necessary to obtaining ground water by any method, including without limitation the location of and the excavation for the well, but not including prospecting, surveying or other acts preparatory thereto, nor the installation of pumps and pumping equipment.

(b) "Department" means the Department of Public Health.

(c) "Director" means the Director of Public Health.

(d) "Modification" means any change, replacement or other alteration of any water well which shall be contrary to the rules and regulations regarding the construction of a well.

(e) "Water well" means any excavation that is drilled, cored, bored, washed, driven, dug, jetted or otherwise constructed when the intended use of such excavation is for the location, diversion, artificial recharge, or acquisition of ground water, but such term does not include an excavation made for the purpose of obtaining or prospecting for oil, natural gas, minerals or products of mining or quarrying or for inserting media to repressure oil or natural gas bearing formation or for storing petroleum, natural gas or other products or for observation or any other purpose in connection with the development or operation of a gas storage project.

(f) "Public water system", "community water system", "non-community water system", "semi-private water system" and "private water system" have the meanings ascribed to them in the Illinois Groundwater Protection Act.

(g) "Potential route", "potential primary source" and "potential secondary source" have the meanings ascribed to them in the Environmental Protection Act.

(h) "Closed loop well" means a sealed, watertight loop of pipe buried outside of a building foundation intended to recirculate a liquid solution through a heat exchanger <u>but is limited to the construction of the bore hole and the grouting of the bore hole and does not include the piping and</u>

appurtenances used in any other capacity. "Closed loop well" does not include any horizontal closed loop well systems where grouting is not necessary by law or standard industry practice.

(i) "Monitoring well" means a water well intended for the purpose of determining groundwater quality or quantity.

(j) "Closed loop well contractor" means any person who installs closed loop wells for another person. "Closed loop well contractor" does not include the employee of a closed loop contractor.

(Source: P.A. 86-843.)

(415 ILCS 30/5) (from Ch. 111 1/2, par. 116.115)

Sec. 5. Department powers and duties.

The Department has general supervision and authority over the location, construction and modification of water wells, closed loop wells and monitoring wells and for the administration of this Act. With respect thereto it shall:

(a) Adopt and publish, and from time to time amend rules and regulations as hereinafter provided;

(b) Commencing no later than January 1, 1988, issue permits for the construction or change in depth of any water well other than community public water systems and monitoring wells; ~~and~~

(b-5) Commencing no later than one year after the effective date of this amendatory Act of the 97th General Assembly, issue permits for the construction, modification, and abandonment of closed loop wells; and

(c) Exercise such other powers as are practical and reasonably necessary to carry out and enforce the provisions of this Act.

(Source: P.A. 86-843.)

(415 ILCS 30/6) (from Ch. 111 1/2, par. 116.116)

Sec. 6. Rules and regulations. The Department shall adopt and amend rules and regulations reasonably necessary to effectuate the policy declared by this Act. Such rules and regulations shall provide criteria for the proper location and construction of any water well, closed loop well or monitoring well and shall, no later than January 1, 1988, provide for the issuance of permits for the construction and operation of water wells other than community public water systems~~, closed loop wells~~ and monitoring wells. The Department shall by regulation require a one time fee, not to exceed $100, for permits for construction, modification, or abandonment of water wells. The Department shall by rule require a one-time fee for permits for the construction, modification, or abandonment of closed loop wells. ~~issued under the authority of this Act.~~

(Source: P.A. 86-843.)

(415 ILCS 30/9.1 new)

Sec. 9.1. Closed loop well contractor certification.

(a) Within 2 years after the effective date of this amendatory Act of the 97th General Assembly, all closed loop

well contractors, shall be certified by the Department. The Department shall issue closed loop well contractor certificates to those applicants who are qualified and have successfully passed the Department's closed loop well contractor's certification exam. Application for certification as a closed loop well contractor must be made to the Department in writing and under oath or affirmation on forms prescribed and furnished by the Department. Applications may require any information the Department deems necessary in order to carry out the provisions of this Act. The Department shall collect a fee for the closed loop well contractor's qualification exam.

(b) Any person holding a valid water well contractor's license issued under the Water Well and Pump Installation Contractor's License Act may apply and receive, without examination or fee, a closed loop well contractor's certification, provided that all other requirements of this Act are met.

(c) Any person who only installs horizontal closed loop wells using the open trench method shall be exempt from certification under this Section.

(415 ILCS 30/9.2 new)

Sec. 9.2. Closed loop well contractor registration.

(a) Beginning one year after the effective date of this amendatory Act of the 97th General Assembly, no person may engage in the occupation of a closed loop well contractor

unless he or she holds a valid certificate of registration as a closed loop well contractor issued by the Department.

(b) All closed loop well contractors doing business in this State must annually file an application for registration with the Department.

(c) One year after the effective date of this amendatory Act of the 97th General Assembly, all applications filed for registration under this Section must be accompanied by verification of the certification of the applicant by an organization approved by the Department for its appropriateness in determining the knowledge and expertise as a closed loop well contractor, and the applicant must submit proof of certification under Section 9.1 of this Act, unless specifically exempt from certification in subsection (c) of Section 9.1 of this Act.

(d) Certificates of registration issued under this Section shall expire and must be renewed on an annual basis.

(e) The Department shall collect an annual fee for registration of a closed loop well contractor.

Section 99. Effective date. This Act takes effect upon becoming law.

Public Act 096-0801

HB0170 Enrolled LRB096 03004 ASK 13018 b

AN ACT concerning regulation.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 5. The Private Sewage Disposal Licensing Act is amended by changing Sections 3 and 7 as follows:

(225 ILCS 225/3) (from Ch. 111 1/2, par. 116.303)

Sec. 3. As used in this Act, unless the context otherwise requires:

(1) "Domestic Sewage" means waste water derived principally from dwellings, business or office buildings, institutions, food service establishments, and similar facilities.

(2) "Director" means Director of the Illinois Department of Public Health.

(3) "Department" means the Illinois Department of Public Health.

(4) "Human Wastes" means undigested food and by-products of metabolism which are passed out of the human body.

(5) "Person" means any individual, group of individuals, association, trust, partnership, corporation, person doing business under an assumed name, the State of Illinois or any Department thereof, or any other entity.

(6) "Population Equivalent" means an average waste loading

equivalent to that produced by one person which is defined as 100 gallons per day.

(7) "Private Sewage Disposal System" means any sewage handling or treatment facility receiving domestic sewage from less than 15 people or population equivalent and having a ground surface discharge or any sewage handling or treatment facility receiving domestic sewage and having no ground surface discharge.

(8) "Private Sewage Disposal System Installation Contractor" means any person constructing, installing, repairing, modifying, or maintaining private sewage disposal systems.

(9) "Property Owner" means the person in whose name legal title to the real estate is recorded.

(10) "Waste" means either human waste or domestic sewage or both.

(11) "Private Sewage Disposal System Pumping Contractor" means any person who cleans or pumps waste from a private sewage disposal system or hauls or disposes of wastes removed therefrom.

(12) "Alternative private sewage disposal system" means any system designed to address a unique circumstance where the prescriptive requirements of the private sewage disposal code does not apply, where the final treatment and discharge is free flowing through native soil, and where (i) the projected wastewater is likely to be atypical of residential or domestic

wastewater in that flow may exceed 1500 gallons per day; (ii) the 5-day biochemical oxygen demand of the wastewater may exceed 300 milligrams per liter; (iii) any portion of the system is to be shared by 2 or more owners; or (iv) any portion of the treated wastewater is proposed for recycling or reuse.

(13) "NPDES" means the National Pollutant Discharge Elimination System.

(14) "Surface Discharging Private Sewage Disposal System" means a sewage disposal system that discharges into the waters of the United States, as that term is used in the Federal Water Pollution Control Act.

(Source: P.A. 95-656, eff. 10-11-07.)

(225 ILCS 225/7) (from Ch. 111 1/2, par. 116.307)

Sec. 7. (a) The Department shall promulgate and publish and may from time to time amend a private sewage disposal code which shall include minimum standards for the design, construction, materials, operation and maintenance of private sewage disposal systems, for the transportation and disposal of wastes removed therefrom and for private sewage disposal system servicing equipment. In the preparation of the private sewage disposal code, the Department may consult with and request technical assistance from other state agencies, and shall consult with other technically qualified persons and with owners and operators of such services. Such technically qualified persons shall include representatives of the real

estate, development, and building industries.

(b) The Department is expressly prohibited from amending the private sewage disposal code by rule if there are increases in the land density requirements. Amendments that increase the land density requirements must be approved by the Illinois General Assembly.

(c) On and after January 1, 2013, a surface discharging private sewage disposal system with a discharge that enters the waters of the United States, as that term is used in the Federal Water Pollution Control Act, shall not be constructed or installed by any person unless he or she has a coverage letter under a NPDES permit issued by the Illinois Environmental Protection Agency or he or she constructs or installs the surface discharging private sewage disposal system in a jurisdiction in which the local public health department has a general NPDES permit issued by the Illinois Environmental Protection Agency and the surface discharging private sewage disposal system is covered under the general NPDES permit. The private sewage disposal code must be amended before January 1, 2013 to comply with this subsection.

(d) Except as provided in subsection (c) of this Section, before ~~Before~~ the adoption or amendment of the private sewage disposal code, the Department shall hold a public hearing with respect thereto. At least 20 days' notice for such public hearing shall be given by the Department in such manner as the Department considers adequate to bring such hearing to the

attention of persons interested in such code. Notice of such public hearing shall be given by the Department to those who file a request for a notice of any such hearings.
(Source: P.A. 88-690, eff. 1-24-95.)

Section 10. The Environmental Protection Act is amended by adding Section 3.487 and by changing Section 12 as follows:

(415 ILCS 5/3.487 new)

Sec. 3.487. Surface discharging private sewage disposal system. "Surface discharging private sewage disposal system" means a sewage disposal system that discharges into the waters of the United States, as that term is used in the Federal Water Pollution Control Act.

(415 ILCS 5/12) (from Ch. 111 1/2, par. 1012)

Sec. 12. Actions prohibited. No person shall:

(a) Cause or threaten or allow the discharge of any contaminants into the environment in any State so as to cause or tend to cause water pollution in Illinois, either alone or in combination with matter from other sources, or so as to violate regulations or standards adopted by the Pollution Control Board under this Act.

(b) Construct, install, or operate any equipment, facility, vessel, or aircraft capable of causing or contributing to water pollution, or designed to prevent water

pollution, of any type designated by Board regulations, without a permit granted by the Agency, or in violation of any conditions imposed by such permit.

(c) Increase the quantity or strength of any discharge of contaminants into the waters, or construct or install any sewer or sewage treatment facility or any new outlet for contaminants into the waters of this State, without a permit granted by the Agency.

(d) Deposit any contaminants upon the land in such place and manner so as to create a water pollution hazard.

(e) Sell, offer, or use any article in any area in which the Board has by regulation forbidden its sale, offer, or use for reasons of water pollution control.

(f) Cause, threaten or allow the discharge of any contaminant into the waters of the State, as defined herein, including but not limited to, waters to any sewage works, or into any well or from any point source within the State, without an NPDES permit for point source discharges issued by the Agency under Section 39(b) of this Act, or in violation of any term or condition imposed by such permit, or in violation of any NPDES permit filing requirement established under Section 39(b), or in violation of any regulations adopted by the Board or of any order adopted by the Board with respect to the NPDES program.

No permit shall be required under this subsection and under Section 39(b) of this Act for any discharge for which a permit

is not required under the Federal Water Pollution Control Act, as now or hereafter amended, and regulations pursuant thereto.

For all purposes of this Act, a permit issued by the Administrator of the United States Environmental Protection Agency under Section 402 of the Federal Water Pollution Control Act, as now or hereafter amended, shall be deemed to be a permit issued by the Agency pursuant to Section 39(b) of this Act. However, this shall not apply to the exclusion from the requirement of an operating permit provided under Section 13(b)(i).

Compliance with the terms and conditions of any permit issued under Section 39(b) of this Act shall be deemed compliance with this subsection except that it shall not be deemed compliance with any standard or effluent limitation imposed for a toxic pollutant injurious to human health.

In any case where a permit has been timely applied for pursuant to Section 39(b) of this Act but final administrative disposition of such application has not been made, it shall not be a violation of this subsection to discharge without such permit unless the complainant proves that final administrative disposition has not been made because of the failure of the applicant to furnish information reasonably required or requested in order to process the application.

(g) Cause, threaten or allow the underground injection of contaminants without a UIC permit issued by the Agency under Section 39(d) of this Act, or in violation of any term or

condition imposed by such permit, or in violation of any regulations or standards adopted by the Board or of any order adopted by the Board with respect to the UIC program.

No permit shall be required under this subsection and under Section 39(d) of this Act for any underground injection of contaminants for which a permit is not required under Part C of the Safe Drinking Water Act (P.L. 93-523), as amended, unless a permit is authorized or required under regulations adopted by the Board pursuant to Section 13 of this Act.

(h) Introduce contaminants into a sewage works from any nondomestic source except in compliance with the regulations and standards adopted by the Board under this Act.

(i) On and after January 1, 2013, construct or install a surface discharging private sewage disposal system that discharges into the waters of the United States, as that term is used in the Federal Water Pollution Control Act, unless he or she has a coverage letter under a NPDES permit issued by the Illinois Environmental Protection Agency or he or she is constructing or installing the surface discharging private sewage disposal system in a jurisdiction in which the local public health department has a general NPDES permit issued by the Illinois Environmental Protection Agency and the surface discharging private sewage disposal system is covered under the general NPDES permit.

(Source: P.A. 92-574, eff. 6-26-02.)

COUNTIES
(55 ILCS 5/) Counties Code.

Building construction, alteration and maintenance

(55 ILCS 5/5-1063)(from Ch. 34, par. 5-1063)

Sec. 5-1063. **Building construction, alteration and maintenance**. For the purpose of promoting and safeguarding the public health, safety, comfort and welfare, a county board may prescribe by resolution or ordinance reasonable rules and regulations (a) governing the construction and alteration of all buildings, structures and camps or parks accommodating persons in house trailers, house cars, cabins or tents and parts and appurtenances thereof and governing the maintenance thereof in a condition reasonably safe from hazards of fire, explosion, collapse, electrocution, flooding, asphyxiation, contagion and the spread of infectious disease, where such buildings, structures and camps or parks are located outside the limits of cities, villages and incorporated towns, but excluding those for agricultural purposes on farms including farm residences, but any such resolution or ordinance shall be subject to any rule or regulation heretofore or hereafter adopted by the State Fire Marshal pursuant to "An Act to regulate the storage, transportation, sale and use of gasoline and volatile oils", approved June 28, 1919, as amended; (b) for prohibiting the use for residential purposes of buildings and structures already erected or moved into position which do not comply with such rules and regulations; and (c) for the restraint, correction and abatement of any violations.

In addition, the county board may by resolution or ordinance require that each occupant of an industrial or commercial building located outside the limits of cities, villages and incorporated towns obtain an occupancy permit issued by the county. The county board may by resolution or ordinance require that an occupancy permit be obtained for each newly constructed residential dwelling located outside the limits of cities, villages, and incorporated towns, but may not require more than one occupancy permit per newly constructed residential dwelling. Such permit may be valid for the duration of the occupancy or for a specified period of time, and shall be valid only with respect to the occupant to which it is issued. A county board may not impose a fee on an occupancy permit for a newly constructed residential dwelling issued pursuant to this Section. If, before the effective date of this amendatory Act of the 96th General Assembly, a county board imposes a fee on an occupancy permit for a newly constructed residential dwelling, then the county board may continue to impose the occupancy permit fee.

Within 30 days after its adoption, such resolution or ordinance shall be printed in book or pamphlet form, published by authority of the County Board; or it shall be published at least once in a newspaper published and having general circulation in the county; or if no newspaper is published therein, copies shall be posted in at least 4 conspicuous places in each township or Road District. No such resolution or ordinance shall take effect until 10 days after it is published or posted. Where such building or camp or park rules

Sec. 5-1063. (continued)

and regulations have been published previously in book or pamphlet form, the resolution or ordinance may provide for the adoption of such rules and regulations or portions thereof, by reference thereto without further printing, publication or posting, provided that not less than 3 copies of such rules and regulations in book or pamphlet form shall have been filed, in the office of the County Clerk, for use and examination by the public for at least 30 days prior to the adoption thereof by the County Board.

Beginning on the effective date of this amendatory Act of the 92nd General Assembly, any county adopting a new building code or amending an existing building code under this Section must, at least 30 days before adopting the building code or amendment, provide an identification of the building code, by title and edition, or the amendment to the Illinois Building Commission for identification on the Internet. For the purposes of this Section, "building code" means any ordinance, resolution, law, housing or building code, or zoning ordinance that establishes construction related activities applicable to structures in the county.

The violation of any rule or regulation adopted pursuant to this Section, except for a violation of the provisions of this amendatory Act of the 92nd General Assembly and the rules and regulations adopted under those provisions, shall be a petty offense.

All rules and regulations enacted by resolution or ordinance under the provisions of this Section shall be enforced by such officer of the county as may be designated by resolution of the County Board.

No such resolution or ordinance shall be enforced if it is in conflict with any law of this State or with any rule of the Department of Public Health.
(Source: P.A. 96-721, eff. 1-1-10.)

(55 ILCS 5/5-1063.5)

Sec. 5-1063.5. Permits for demolition and renovation; asbestos. Before a county may issue a demolition or renovation permit for property that is regulated under Part 61 of Title 40 of the Code of Federal Regulations (NESHAP), the county must notify the permit applicant of the requirement to file a NESHAP notification form with the Illinois Environmental Protection Agency, as required by Section 61.145(b) of Title 40 of the Code of Federal Regulations. A county may seek assistance from the Illinois Environmental Protection Agency or any other State agency in developing procedures to implement the provisions of this Section.
(Source: P.A. 96-1536, eff. 3-4-11.)

Source: Illinois Compiled Statutes website
http://www.ilga.gov/legislation/ilcs/ilcs4.asp?DocName=005500050HDiv%2E+5%2D1&ActID=750&ChapterID=12&SeqStart=55500000&SeqEnd=72700000&Print=True
downloaded on 3/19/2012

Introduction to Model Codes

Concern for safety in buildings has been recorded in the laws of some of the most ancient civilizations. The regulation of building construction in the United States dates from the early settlement of North America. Construction laws developed and became more complex as the surrounding cities grew and experienced the threats and consequences of disease, fire and structural collapse.

In the early 1900s, special interest groups, such as the insurance industry (which was concerned with the mounting losses of life and property due to fire), joined others with similar concerns to develop a model law, or guide document, that could be adopted by a legislative body to reduce those losses. The result was the development and production of a model code that was offered to states and local governments for their voluntary enactment as law. The model code was promulgated by the National Board of Fire Underwriters, later to become the American Insurance Association, and was intended to be a foundation on which the legislative body could create its own regulations. The document, or any portion thereof, could be adopted by a specific reference to it in the legislation based on the perceived needs of that legislative body. Similarly, the legislative body could, in the preparation of the law, designate the application of the code to a certain class or classes of structures or to certain building uses. The model code was simply a document that a legislative body could utilize to the extent that they found necessary or desirable.

This first model code gained widespread popularity among legislative authorities by providing an accessible source of comprehensive, contemporary and respected technical requirements without the difficulties and expense of investigation, research, drafting and promulgation of individual local codes. Additionally, at approximately 10-year intervals, a new edition of the model code was produced. This allowed governments to reflect current construction technology and keep their building code requirements up to date.

Beginning in 1915, code enforcement officials, or those municipal officials charged with the responsibility of enforcing building code laws, began regular regional and national meetings to discuss their common problems and concerns. From these meetings came the formation of three organizations of code enforcement officials: Building Officials Conference of America, now known as Building Officials and Code Administrators (BOCA) International, Inc.; International Conference of Building Officials (ICBO); and Southern Building Code Congress International, Inc. (SBCCI). These three organizations created the International Code Council (ICC).

While legislative bodies are not obligated to adopt a model code and may write their own code or portion of a code, studies conducted by the federal government have indicated that more than 97% of U.S. cities, counties and states that adopt codes choose building and fire codes created by the three building safety groups that make up the ICC. BOCA, ICBO and SBCCI have more than 190 years of collective experience developing codes. ICC Codes are used across America and around the world. A code has no legal standing until it is adopted as law by a legislative body. When it is adopted as law, the code's original formal status is restricted to the geographic boundaries of that legislative body's political jurisdiction. All owners of property within the boundaries of the jurisdiction are required to comply with the enacted building code.

In cases where a code has not been adopted in a jurisdiction, the codes have assumed an authoritative status for building designers. Engineers and architects are licensed by the state to practice their profession and have a duty to be aware of the building features and elements that are a threat to the public and to the building user. The codes, then, are utilized by design professionals for their design in such geographical areas, even though the codes may not be universally adopted as law.

Building Codes

The regulation of building construction in the United States is accomplished through a document known as a building code. This document is adopted by a state or local government's legislative body, then

enacted to regulate building construction within a particular jurisdiction. A building code is a collection of laws regulations, ordinances or other statutory requirements adopted by a government legislative authority involved with the physical structure and healthful conditions for occupants of buildings. The purpose of a building code is to establish the minimum acceptable requirements necessary for protecting the public health, safety and welfare in the built environment. These minimum requirements are based on natural laws, on properties of materials, and on the inherent hazards of climate, geology and the intended use of a structure (or its "occupancy").

The primary application of a building code is to regulate new or proposed construction. Building codes only apply to an existing building if the building undergoes reconstruction, rehabilitation or alteration, or if the occupancy of the existing building changes to a new occupancy as defined by the building code.

The term "building code" is frequently used to refer to a family of codes, such as the International Codes, that are coordinated with each other to address specific scopes of technical application. This set of codes generally consists of four documents: a building code, a plumbing code, a mechanical code and an electrical code.

Why Have a Building Code?

Codes protect public health, safety and welfare

- Building codes provide protection from tragedy caused by fire, structural collapse and general deterioration in our homes, schools, stores and manufacturing facilities.

- Safe buildings are achieved through proper design and construction practices and a code administration program that ensures compliance. Home and business owners have a substantial investment that is protected through complete code enforcement.

Codes keep construction costs down

- The International Codes provide uniformity in the construction industry. This uniformity permits building and materials manufacturers to do business on a larger scale — statewide, regionally, nationally or internationally. Larger scale allows cost savings to be passed on to the consumer.

Codes provide consistent minimum standards in construction

- Codes establish predictable and consistent minimum standards, that are applied to the quality and durability of construction materials, a practical balance between reasonable safety, and cost to protect life and property. The term "minimum requirements" means that construction meets the criteria of being both practical and adequate for protecting the life, safety and welfare of the public.

- Inspection during construction is the only way to independently verify that code compliance has been achieved. An average of 10 inspections are conducted to homes, offices or factories to verify conformity to minimum standards.

Codes contribute to the well-being of the community

- The preservation of life and safety, as well as the maintenance of property values over time, are a direct result of the application and enforcement of model building codes.

- The conservation of energy contributes to intelligent use of resources and provides the consumer with cost savings.

Local and State Codes

Development of local and state codes varies considerably in degree and procedures. Almost all local and state codes in America are based on the International Codes or model codes, particularly for engineering provisions.

State codes can be developed in a variety of ways. Some states adopt a particular edition of a model code, leaving administrative matters to local jurisdictions. Others start with a model code and revise and administer a separate code only for state-funded buildings. Still others may require a special code for certain occupancies, such as schools and assembly buildings.

Local codes also are diverse in the extent to which the base model code is amended. Most local amendments are limited to administrative provisions, which are subject to change to meet other local regulations regarding implementation of ordinances. Engineering provisions are among the least amended, with a common reason for amendments related to unique site conditions that affect foundation design or applied wind and snow loads.

There are still large cities that have had the advantage of a large professional population willing and able to provide advice on customizing nationally recognized codes and standards for local use. The list of these cities shrinks each year as the International Codes and national standards become more detailed in scope.

Local and state amendments to technical provisions in International Codes and national standards should be avoided and opposed in every case. A concern with a provision thought to be incomplete or improper should be addressed through the code development process and procedure made available to all by the International Code Council.

Involvement by Technical Organizations

Many representatives of professional organizations participate in codes and standards activities at local, state and national levels. Most of them will have members that also hold national membership, which presents an opportunity to promote the support of model codes and national technical standards.

Trade associations that represent suppliers of construction materials are another type of organization most likely to have significant participation in all codes and standards activities.

Standards

A standard is "a prescribed set of rules, conditions or requirements concerned with the definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, design or operations; descriptions of fit and measurement of size; or measurement of quality and quantity in describing materials, products, systems, services or practices." There are thousands of standards in existence, dealing with an endless array of consumer products, manufacturing methods, quality of materials and procedures for various operations and processes. Of concern to the model code process are those standards that play a key role in institutionalizing construction practices and procedures across the United States. A standard, in conjunction with a criterion that is the quality or quantity required by the building code as measured by that standard, can simplify the model code text and utilize the considerable expertise of those participating in specialized standards-writing activities. Any group of manufacturers, associations, consumers, users or agencies can cooperatively develop a standard for its own purposes and reasons. Only when the standard is developed in accordance with definitive rules of procedure and consensus does the standard obtain the stature appropriate and necessary for regulatory use in model codes. Additionally, a standard to be utilized by a model code must measure quantity or quality appropriate for regulation by the code.

For various reasons, an owner may utilize a standard and specify a criterion for performance of a building element over and above that which the applicable code requires. This is common and reflects a key fundamental aspect of a model code-a statement of minimum performance requirements and characteristics, with the protection of the public health, safety and welfare as its primary intent.

Referenced Standards

Since not all standards are intended to be utilized by a model code, a model code must state the standards which are applicable and also when they are applicable. This is accomplished through a specific reference in the code to a given standard which clearly identifies when and how the standard is to be utilized. For example, a code will require that a building element be able to perform to a certain criterion and then reference a standard for use in measuring the performance of any proposed system intended to accomplish that performance.

The International Code Council has established a policy governing referenced standards that requires such standards to comply with the following requirements:

1. The need for the standard to be referenced shall be established.
2. A standard or portions of a standard intended to be enforced shall be written in mandatory language.
3. The standard shall be appropriate for the subject covered.
4. All terms shall be defined when they deviate from an ordinarily accepted meaning or a dictionary definition.
5. The scope or application of a standard shall be clearly described.
6. The standard shall not have the effect of requiring proprietary materials.
7. The standard shall not prescribe a proprietary agency for quality control or testing.
8. The test standard shall describe, in detail, preparation of the test sample, sample selection or both.
9. The test standard shall prescribe the reporting format for the test results. The format shall identify the key performance critical for the element(s) tested.
10. The measure of performance for which the test is conducted shall be clearly defined in either the test standard or in code text.
11. The standard shall not state that its provisions shall govern whenever the referenced standard is in conflict with the requirements of the referencing code.
12. The preface to the standard shall announce that the standard is promulgated according to a consensus procedure.
13. The standard shall be readily available.
14. The standard shall be developed and maintained through a consensus process such as ASTM or ANSI.

The model codes place great reliance on the use of standards produced in the private sector. Each standard is specifically identified in the code text with the manner and scope of required conformity to the standard. Assume, for example, that the code requires a reinforced concrete structural element to be designed in accordance with the ACI 318 uniquely identifies the standard *Building Code Requirements for Reinforced Concrete,* which is published by the American Concrete Institute (ACI). This standard is also listed in the code as one of the referenced standards.

with well-enforced, up-to-date codes would be expected to experience a reduction in loss, and in return, receive better insurance rates. This "better building/less loss" relationship provides an incentive for communities to adopt contemporary codes and rigorously enforce them, especially as the codes relate to windstorm and earthquake damage. The end result is safer buildings, less damage and lower insured losses from catastrophes.

The BCEGS program assigns each municipality a grade or classification of 1 (exemplary commitment to building code enforcement) to 10 (essentially no adopted codes). ISO develops advisory rating credits that apply to ranges of BCEGS classifications (1-3, 4-7, 8-9, 10), and provides insurers BCEGS classifications, BCEGS advisory credits and related underwriting information. Insurers use these in assessing risk and applying rate credits. This program was phased in over a five-year period, from 1996 to 2001. At present, all communities have been graded. ISO has begun re-grading communities based on code adoption and implementation activities that have occurred since the initial grading period.

A summary of the ISO classification and grading process is as follows:

- Each community is evaluated based on how it administers codes, reviews plans and conducts field inspections. Administration includes, among other things, whether the code is up-to-date, resources devoted to training and certification of code officials, contractor licensing, and records of code official certifications and training.
- Relevant information is provided to ISO by the code official. ISO field representatives conduct an on-site evaluation and assign a classification of 1 to 10 to the community. If the community has different codes and programs for different building types, a separate classification can be issued for each building type.
- ISO files rate credits to be applied to loss costs for personal and commercial property coverage in each community. Once state regulators approve or acknowledge the filings and they become effective, insurers that have given ISO filing authorization can automatically apply the credits.
- A community is reevaluated in five years, or sooner if requested, due to an enhancement in their code program.

When ISO evaluates a community, the classification automatically applies to any building receiving a certificate of occupancy on or after the date of classification. That classification remains with the building regardless of what happens with any future re-classification.

Issue Identification

Because the insurance industry, communities and their elected officials, the construction industry and the general public are all affected, the results of reclassification are critical. A community's classification or grade can be downgraded due to lack of initiative in adopting more contemporary codes, the availability and use of comprehensive support services for those adopted codes, and how they implement and enforce those codes. For example, one California community has reported that lack of action regarding adoption of a new state building code was the key factor in their ISO classification being changed from 3 to 7 during a recent reclassification. Such a downgrade adversely affects construction, and in turn, the economy of

the community and its citizens. In a worst-case scenario, erosion in a community's grade could shut down all new construction. In communities located in states with preemptive legislative authority to adopt building codes, the lack of action, or incorrect action, by the state affects each community on an individual basis, as well as the state at large.

The negative impacts of a higher (less exemplary) ISO grade or classification are:

- Increased risk of injuries and loss of life, property losses, and economic and social disruption from natural disasters.
- The loss of any possibility of insurance rate reduction on buildings constructed after the new classification.
- Loss of pride and decreased morale in the code enforcement department.
- Less support of state or local decision makers from the construction community and the public at large.

If a community or state has been enforcing an older model building code and has not yet adopted the International Building Code, it is at risk of receiving a higher grade or less desirable grade when reclassified.

Discussion

Clearly the insurance industry, construction community and state and local decision makers understand the link between loss of life and property, and the adoption, effective implementation and enforcement of construction codes. The BCEGS reinforces that link by rewarding communities that invest in a more robust building regulatory program, which is the focal point of this program and encompasses much more than the code that is adopted. It includes the entire program to support building safety – not on paper as evidenced by a code document but in practice as evidenced by safe, well-maintained buildings and the building department staff that enforce those codes on behalf of the elected officials and their constituents.

The importance of code provisions should not be minimized: codes must have sensible technical requirements, but also need to be usable, enforceable, cost effective, updated regularly, sensitive to acceptance of new technology, coordinated, reliable, trusted and based on a long history of success. The ISO process looks beyond the technical provisions of the adopted code to address all that takes place in the design, construction, inspection, approval and use of buildings. Given two scenarios – one with a code document that cannot be easily implemented and has no enforcement or support services, and another that can be easily implemented, has support services and is enforced; construction under the latter scenario is more likely to yield success. In short, the realization of safe buildings involves much more than simply looking at words in a code book and how they are developed.

For this reason the ISO process, and any other rational assessment of codes, is focused on the end result – safe buildings – and all code activities that can help achieve that end. This includes training and education for those in the related construction and code communities, certification of contractors and code officials, the level of plan review and construction inspection, the

availability of an evaluation program to facilitate the timely acceptance of new more effective building technology, a program to accredit testing laboratories and quality assurance agencies that play a vital role in code compliance, and all other activities conducted to ensure that code requirements are met at initial occupancy and throughout the life of the building.

All communities in the United States have been classified and rated by ISO and are now undergoing a re-classification process. As noted, a community's grade is based not only on the code adopted, but on the many factors that influence building safety at occupancy and during its life. When considering updating existing codes, communities need to look not only at the code requirements but also the usability and coordinated nature of all the adopted codes. Communities also must consider the resources needed to implement and enforce the codes and the support services available to augment those local efforts. State agencies with preemptive authority to adopt codes need to consider these issues, actively consult with the communities in the state and adopt a code that will improve the classification of communities within the state.

Conclusions

- The Building Code Effectiveness Grading Schedule can influence adoption and implementation of building codes. It has a direct impact on new construction, as well as the potential loss of life, property and economic viability associated with natural disasters affecting the built environment of each community as well as each state and the nation.
- The grading or classification of a community is based on much more than the code adopted. To look only at technical requirements of existing codes and codes to be adopted excludes many other factors that will impact building safety and could adversely affect the grading of a community. Not upgrading to the latest codes has similar consequences.
- A community's grading is also based on the usability of the code, the support services for the code and the ability of the community to enhance and maintain the professionalism and capabilities of those implementing and enforcing the code. The International Codes have an existing support structure, eliminating the need for each community or state to fund development and maintenance of that support structure.
- Building safety entails more than technical provisions in the code. The realization of a safe building is the result of a usable and understandable code, informed designers and builders, and capable and trained plan reviewers and effective field inspection by competent individuals supported by robust support services.
- Most communities in the United States that adopt codes use those developed and supported by the ICC. Those communities are more likely to retain or upgrade their existing classification by adopting the 2003 International Codes, with comprehensive support services to facilitate implementation and enforcement.

The Impact of Building Codes on Property Insurance

Purpose

The International Building Code and other International Codes can have a positive impact on property insurance. This paper will educate decision makers on how adopting the I-Codes can improve the cost and availability of property insurance for their communities.

Key Words

- Property loss reduction
- Reduced insurance costs
- Improved building safety
- Building code adoption, implementation and enforcement

Background

Natural disasters such as hurricanes, tornadoes, tropical storms, hail, earthquakes and wild fires can have a devastating effect on the built environment and the economy. Studies of various catastrophes graphically demonstrate that effective building code enforcement greatly reduces associated loss. According to *Best's Review,* losses attributable to Hurricane Andrew would have been 30 to 40 percent lower if Florida communities had strictly enforced existing building codes. A study by Factory Mutual Insurance Group illustrates that effective enforcement of building codes in those affected Florida communities would have reduced damage to buildings by up to 55 percent.

Post-disaster assessments of many communities showed a direct relationship between building failures, the codes adopted, the resources directed toward implementation and enforcement, and the services available to support those codes. To reinforce this relationship between loss reduction and code adoption and enforcement, the Insurance Services Office, Inc. (ISO), working with the Insurance Institute for Property Loss Reduction (now the Institute for Business and Home Safety) and tapping the expertise of the three model code groups (now the ICC), developed the Building Code Effectiveness Grading Schedule (BCEGS) in 1995.

About the BCEGS

The purpose of the BCEGS is to review the available public building code enforcement agencies, and to develop a building code effectiveness classification for insurance information and rating purposes. ISO assesses building code adoption and enforcement activities in a particular community, with special emphasis on mitigation of losses from natural disasters. Communities

with well-enforced, up-to-date codes would be expected to experience a reduction in loss, and in return, receive better insurance rates. This "better building/less loss" relationship provides an incentive for communities to adopt contemporary codes and rigorously enforce them, especially as the codes relate to windstorm and earthquake damage. The end result is safer buildings, less damage and lower insured losses from catastrophes.

The BCEGS program assigns each municipality a grade or classification of 1 (exemplary commitment to building code enforcement) to 10 (essentially no adopted codes). ISO develops advisory rating credits that apply to ranges of BCEGS classifications (1-3, 4-7, 8-9, 10), and provides insurers BCEGS classifications, BCEGS advisory credits and related underwriting information. Insurers use these in assessing risk and applying rate credits. This program was phased in over a five-year period, from 1996 to 2001. At present, all communities have been graded. ISO has begun re-grading communities based on code adoption and implementation activities that have occurred since the initial grading period.

A summary of the ISO classification and grading process is as follows:

- Each community is evaluated based on how it administers codes, reviews plans and conducts field inspections. Administration includes, among other things, whether the code is up-to-date, resources devoted to training and certification of code officials, contractor licensing, and records of code official certifications and training.
- Relevant information is provided to ISO by the code official. ISO field representatives conduct an on-site evaluation and assign a classification of 1 to 10 to the community. If the community has different codes and programs for different building types, a separate classification can be issued for each building type.
- ISO files rate credits to be applied to loss costs for personal and commercial property coverage in each community. Once state regulators approve or acknowledge the filings and they become effective, insurers that have given ISO filing authorization can automatically apply the credits.
- A community is reevaluated in five years, or sooner if requested, due to an enhancement in their code program.

When ISO evaluates a community, the classification automatically applies to any building receiving a certificate of occupancy on or after the date of classification. That classification remains with the building regardless of what happens with any future re-classification.

Issue Identification

Because the insurance industry, communities and their elected officials, the construction industry and the general public are all affected, the results of reclassification are critical. A community's classification or grade can be downgraded due to lack of initiative in adopting more contemporary codes, the availability and use of comprehensive support services for those adopted codes, and how they implement and enforce those codes. For example, one California community has reported that lack of action regarding adoption of a new state building code was the key factor in their ISO classification being changed from 3 to 7 during a recent reclassification. Such a downgrade adversely affects construction, and in turn, the economy of

the community and its citizens. In a worst-case scenario, erosion in a community's grade could shut down all new construction. In communities located in states with preemptive legislative authority to adopt building codes, the lack of action, or incorrect action, by the state affects each community on an individual basis, as well as the state at large.

The negative impacts of a higher (less exemplary) ISO grade or classification are:

- Increased risk of injuries and loss of life, property losses, and economic and social disruption from natural disasters.
- The loss of any possibility of insurance rate reduction on buildings constructed after the new classification.
- Loss of pride and decreased morale in the code enforcement department.
- Less support of state or local decision makers from the construction community and the public at large.

If a community or state has been enforcing an older model building code and has not yet adopted the International Building Code, it is at risk of receiving a higher grade or less desirable grade when reclassified.

Discussion

Clearly the insurance industry, construction community and state and local decision makers understand the link between loss of life and property, and the adoption, effective implementation and enforcement of construction codes. The BCEGS reinforces that link by rewarding communities that invest in a more robust building regulatory program, which is the focal point of this program and encompasses much more than the code that is adopted. It includes the entire program to support building safety – not on paper as evidenced by a code document but in practice as evidenced by safe, well-maintained buildings and the building department staff that enforce those codes on behalf of the elected officials and their constituents.

The importance of code provisions should not be minimized: codes must have sensible technical requirements, but also need to be usable, enforceable, cost effective, updated regularly, sensitive to acceptance of new technology, coordinated, reliable, trusted and based on a long history of success. The ISO process looks beyond the technical provisions of the adopted code to address all that takes place in the design, construction, inspection, approval and use of buildings. Given two scenarios – one with a code document that cannot be easily implemented and has no enforcement or support services, and another that can be easily implemented, has support services and is enforced; construction under the latter scenario is more likely to yield success. In short, the realization of safe buildings involves much more than simply looking at words in a code book and how they are developed.

For this reason the ISO process, and any other rational assessment of codes, is focused on the end result – safe buildings – and all code activities that can help achieve that end. This includes training and education for those in the related construction and code communities, certification of contractors and code officials, the level of plan review and construction inspection, the

availability of an evaluation program to facilitate the timely acceptance of new more effective building technology, a program to accredit testing laboratories and quality assurance agencies that play a vital role in code compliance, and all other activities conducted to ensure that code requirements are met at initial occupancy and throughout the life of the building.

All communities in the United States have been classified and rated by ISO and are now undergoing a re-classification process. As noted, a community's grade is based not only on the code adopted, but on the many factors that influence building safety at occupancy and during its life. When considering updating existing codes, communities need to look not only at the code requirements but also the usability and coordinated nature of all the adopted codes. Communities also must consider the resources needed to implement and enforce the codes and the support services available to augment those local efforts. State agencies with preemptive authority to adopt codes need to consider these issues, actively consult with the communities in the state and adopt a code that will improve the classification of communities within the state.

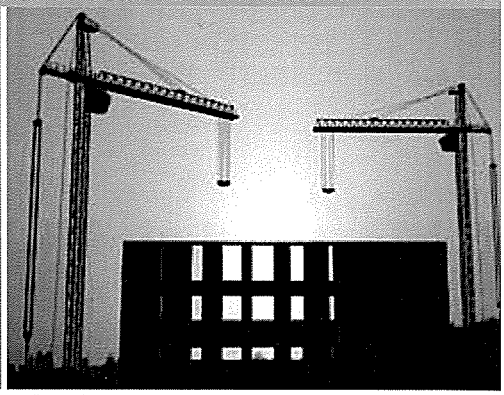
Conclusions

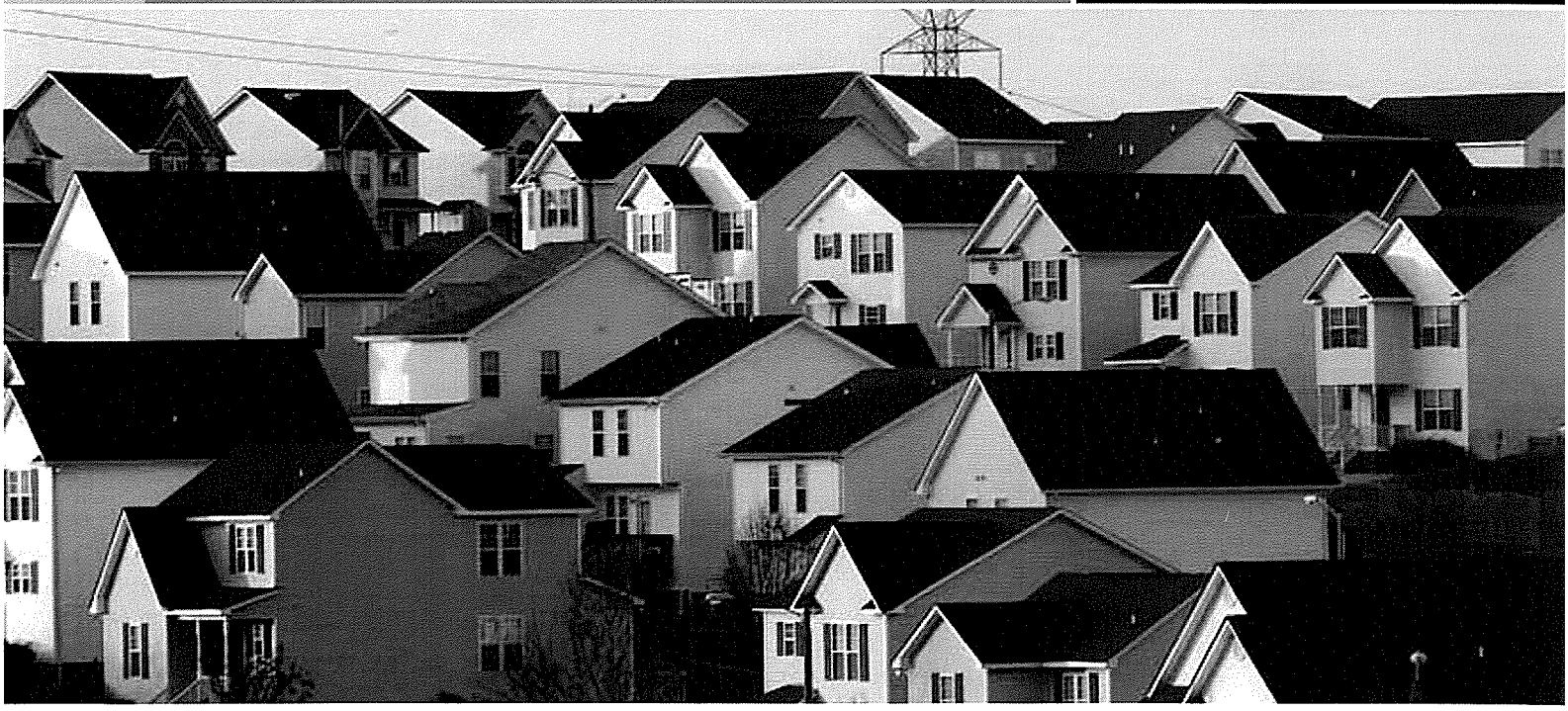
- The Building Code Effectiveness Grading Schedule can influence adoption and implementation of building codes. It has a direct impact on new construction, as well as the potential loss of life, property and economic viability associated with natural disasters affecting the built environment of each community as well as each state and the nation.
- The grading or classification of a community is based on much more than the code adopted. To look only at technical requirements of existing codes and codes to be adopted excludes many other factors that will impact building safety and could adversely affect the grading of a community. Not upgrading to the latest codes has similar consequences.
- A community's grading is also based on the usability of the code, the support services for the code and the ability of the community to enhance and maintain the professionalism and capabilities of those implementing and enforcing the code. The International Codes have an existing support structure, eliminating the need for each community or state to fund development and maintenance of that support structure.
- Building safety entails more than technical provisions in the code. The realization of a safe building is the result of a usable and understandable code, informed designers and builders, and capable and trained plan reviewers and effective field inspection by competent individuals supported by robust support services.
- Most communities in the United States that adopt codes use those developed and supported by the ICC. Those communities are more likely to retain or upgrade their existing classification by adopting the 2003 International Codes, with comprehensive support services to facilitate implementation and enforcement.

U.S. DEPARTMENT OF
ENERGY
Energy Efficiency &
Renewable Energy

Building Energy Codes 101

An Introduction





Building Energy Codes
U.S. Department of Energy

In order to provide a basic introduction to the varied and complex issues associated with building energy codes, the U.S. Department of Energy's (DOE's) Building Energy Codes Program (BECP), with valued assistance from the International Codes Council (ICC) and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), has prepared *Building Energy Codes 101: An Introduction*. This guide is designed to speak to a broad audience with an interest in building energy efficiency, including state energy officials, architects, engineers, designers, and members of the public.

For these purposes, the term "Building Energy Codes" is used within this document as a generic term that includes ASHRAE 90.1 (a standard), the IECC (a code), and other forms of building energy standards, guidelines, laws, rules, etc. that are adopted as part of the larger body of building codes and required to be satisfied as a condition for approval to construct and occupy buildings.

For a more comprehensive discussion of building energy codes, please refer to the additional resources referenced in the Appendix, on the BECP website (www.energycodes.gov), and watch for the BECP companion document, Energy Codes 201: An In-Depth Discussion.

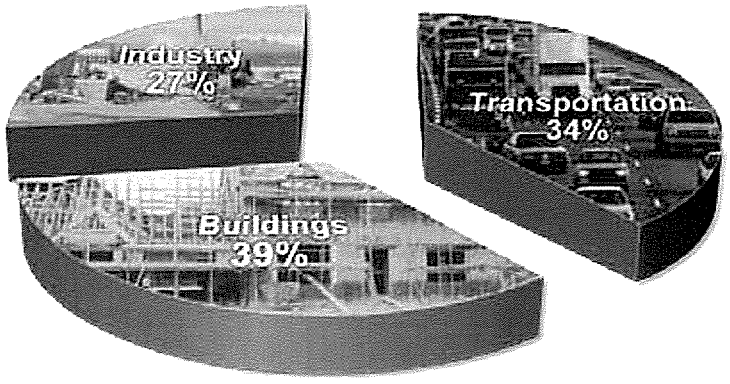
Contents

Introduction

The effects of energy use in buildings are nationwide, worldwide, and varied. Having a fundamental impact on people's lives, these effects include the economic well-being of the nation, the United States' dependence on foreign oil, and national security. On an individual basis, even human health can be affected by building energy use when rising energy costs render a conditioned, comfortable, healthy indoor environment unaffordable. On a larger scale, carbon emissions, which are directly tied to building energy use, affect the health of our planet.

Some sobering statistics help drive home the reality of building energy use:

- Nearly 5 million commercial buildings and 115 million residential households in the United States consume nearly 40 percent of the nation's total primary energy[1]
- Buildings consume 70 percent of electricity in the United States[2]
- In 2007, carbon dioxide (CO_2) emissions attributable to lighting, heating, cooling, cooking, refrigeration, water heating, and other building services totaled 2517 million metric tons[3] – this is 40 percent of the U.S. total and 8 percent of the global total.



What can be done to curb the significant and ever-growing impact of building energy use?

The adoption and enforcement of more stringent building energy codes in communities across the country is a critical component. This document provides a basic introduction to the many aspects of building energy codes, including their:

- Benefits in terms of the current energy, economic, and environmental challenges facing our world today
- Challenges in terms of adoption, implementation, compliance, and enforcement
- Development processes led by the International Codes Council (ICC) and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- Adoption and incorporation into building design and construction by states and jurisdictions
- Enforcement at the state and local level.

More stringent building energy codes are part of the energy solution

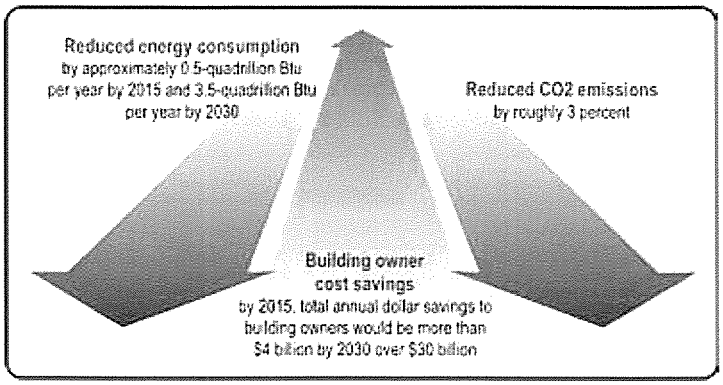
Code benefits and challenges

Stringent building energy codes offer considerable benefits that can be felt far into the future. Recent research[4] shows that if the 2006 International Energy Conservation Code® (IECC) and ANSI/ASHRAE/IESNA[5] Standard 90.1-2004 were upgraded to be 30 to 50 percent more stringent, adopted among states, and effectively implemented, significant benefits would be gained in terms of energy consumption, cost savings, and CO_2 emissions reduction:

- **Reduced energy consumption:** The effects of improved residential and commercial building codes would reduce primary energy use in buildings by approximately 0.5-quadrillion Btu per year by 2015 and 3.5-quadrillion Btu per year by 2030. This is equivalent to power generated by 260 medium (450-MW) power plants.[6]
- **Building owner cost savings:** By 2015, total annual dollar savings to building owners would be more than $4 billion. That figure may rise to over $30 billion by 2030. Even accounting for the increased investment cost of the measures, the net benefits to the nation are large.
- **Reduced CO_2 emissions:** CO_2 emissions would be reduced by roughly 3 percent in terms of the projected national CO_2 emissions in 2030.

Code challenges

Though the savings of more stringent building energy codes is clear, there are challenges involved in their adoption, implementation, compliance, and enforcement. For example, adoption is not automatic in most states. Without statewide adoption, jurisdictions are left without state guidance or resources, and builders can face a patchwork of codes across their region. Adding complication, the challenges of implementation, compliance, and enforcement vary depending on the jurisdiction; lack of training as well as lack of manpower are often cited as roadblocks to proper enforcement. As with any aspect of building codes, plan review and inspections take time, and this must be accounted for in department staffing. Training is critical to the design, building, and enforcement communities. Not only is there a need for understanding new code language, but new construction techniques and new materials and technologies must be considered and understood.



While investing in energy efficiency can save money down the road, choosing less energy-efficient methods of design or construction can save money now. Thus, builders are often challenged to justify the expense of incorporating energy-saving measures.

Increasing building energy efficiency such as what is achieved by BECP's efforts, resulting in

Less energy consumption
Less cost for consumers
Less carbon added to the environment.

Consider this case in point: Studies show that transforming the building sector to employ more energy-efficient designs, equipment, and solar power could cut projected overall household energy expenses in 2030 from $285 billion to $130 billion. Failing to catalyze building-sector transformations will raise the cost of meeting long-term climate goals by at least $500 billion per year globally.[7]

The role of technology in building is also important and must be balanced in terms of accessibility to the technology, ease of use, and associated costs. Finally, human behavior must be taken into account and can be influenced by public energy-use policies designed to create public awareness, empowerment, and incentives.

Building energy code development

Building energy codes[8] are minimum requirements for energy-efficient design and construction for new and renovated residential and commercial buildings.[9] A component of a complete set of building regulations that govern all aspects of the design and construction of buildings, building energy codes set an energy-efficiency baseline for the building envelope, systems, and equipment. Improving these minimum requirements or broadening the scope of energy codes softens the environmental impact of buildings as well as generates additional energy and cost savings over the decades-long, or even centuries-long, life cycle of a building.

Baseline codes: IECC and ASHRAE 90.1

Two primary baseline building energy codes may be adopted by states and local jurisdictions to regulate the design and construction of new buildings: the International Energy Conservation Code® (IECC), and the ANSI/ASHRAE/IESNA Standard 90.1 Energy Standard for Buildings except Low-Rise Residential Buildings. The IECC addresses all residential and commercial buildings. ASHRAE 90.1 covers commercial buildings, defined as buildings other than single-family dwellings and multi-family buildings three stories or less above grade. The IECC adopted, by reference, ASHRAE 90.1; that is, compliance with ASHRAE 90.1 qualifies as compliance with IECC for commercial buildings.

The IECC is developed under the auspices of the ICC using a government consensus process. Per this process, all interested parties may participate, but the final vote on the content of the codes is made by individuals associated with federal, state, or local governments who are also members of the ICC. The IECC is one of 14 model codes developed under the auspices of the ICC that combined provide the foundation for a complete set of building construction regulations. The ICC codes are updated every three years, providing a model the jurisdiction can adopt as is, or modify. Because the IECC is written in mandatory, enforceable language, state and local jurisdictions can easily adopt, implement, and enforce the IECC as their energy code. Before adopting the IECC, state and local governments often make changes to reflect regional building practices, or state-specific energy-efficiency goals.

✓ The IECC applies to both residential and commercial buildings. Updated about every three years, the most current version available is the 2009 IECC.

✓ ASHRAE 90.1 applies to commercial buildings (including multi-family high-rise buildings). Also updated about every three years, the most current version available is ASHRAE 90.1-2007.

Both the IECC and ASHRAE 90.1 are developed, revised, and adopted in open public forums.

ASHRAE 90.1 is developed under the auspices of the American Society of Heating, Refrigerating and Air Conditioning Engineers using the ANSI consensus process, which requires a balance of interests. All interested parties can participate by addressing the committee during deliberations, participating in subcommittees, or commenting during the public review process. The final vote of the project committee includes members from a balance of all interests, not limited to government representatives. Revisions in the development and maintenance of the standard occur on an ongoing basis and are not approved without achieving this balanced consensus, or substantial agreement reached by directly and materially affected interest categories. Before adopting ASHRAE 90.1, state and local governments often make changes to reflect regional building practices, or state-specific energy-efficiency goals.

Code collaboration

Both the IECC and ASHRAE 90.1 are developed, revised, and adopted in open public forums. The openness and transparency of these processes is critical to widespread acceptance of the end result. Stakeholders representing a cross-section of interests are involved in maintaining these documents and include:

- The design community, including architects, lighting, designers, and mechanical and electrical engineers
- The code enforcement community, including building code officials, representatives of code organizations, and state and local regulatory agencies
- Builders and contractors
- Building owners and operators
- Industry and manufacturers for the building industry
- Utility companies
- Energy advocacy groups
- The academic community
- Federal agency staff, including the Building Energy Codes Program (BECP).

Code maintenance relies on collaboration for a successful outcome.

Code maintenance relies on collaboration for a successful outcome. Collaboration keeps these documents current with technological, economic, and policy concerns, giving each stakeholder an opportunity to participate in updating and maintaining the codes. This focus of building industry resources at the national voluntary level is critical to a balanced and fair process, addressing such issues as market viability, industry fairness, and construction costs, to name just a few. Without the ICC, ASHRAE, or other organizations, each federal agency, state agency, or local government agency would need to conduct the development of similar provisions themselves. Aside from the countless resources required, the uniformity of codes across jurisdictions—so critical for the building industry—would be sacrificed. Building science and building energy efficiency are just two considerations in designing code changes. Energy codes and standards are compromise documents forged from a wide range of issues and concerns.

In Detail: The IECC process

How is the IECC Revised and who can participate?

The IECC is revised every three years per a well-defined revision process, as defined in Figure 1. Anyone may propose a revision to the IECC by submitting suggested changes to the code text along with supporting documentation. Proposed code changes are commonly submitted by a number of representative stakeholders. The ICC publishes proposed changes and distributes them to the public for review. This review occurs about six weeks prior to an open public hearing held to discuss the proposed revisions.

At the public hearing, testimony for and against each code change proposal is presented to the Code Development Committee responsible for a particular ICC code. Each committee is typically composed of seven to 11 individuals appointed by the ICC. The committee is represented by government members, code officials, home builder representatives, industry groups, and other interested and affected parties.

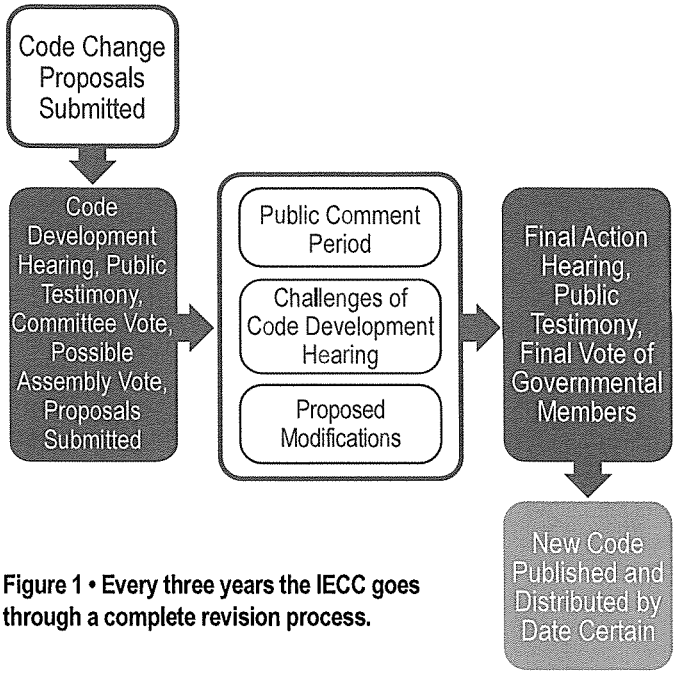


Figure 1 • Every three years the IECC goes through a complete revision process.

How are decisions about the IECC made?

The committee receives testimony and then votes to recommend a disposition on each change (approve, deny, or approve as modified, at the hearing). The committee's decision may be overturned by a "floor action"—a two-thirds affirmative vote of ICC members in attendance. The ICC publishes the results of the first hearing and those wishing to challenge the results of the first hearing may submit a public comment proposing the change. Their submission will place the code change on the agenda for a second public hearing. All public comments are published so that interested parties can present additional information on each change at a second public hearing. The final disposition of all changes is then decided by a vote of the governmental members (as distinguished from industry members) of ICC in attendance at the second public hearing. The ICC process allows for an appeal to the ICC Board of Directors concerning the action of the second hearing. Those changes approved at the second hearing are then implemented in the ICC codes and the finished documents represent the next edition of the ICC codes.

What is the timing of the IECC Process?

Proposed changes to the IECC are submitted once during each three-year revision cycle by any interested and affected party. Typically, proposed changes are submitted 18 months prior to the publication of a new version of the IECC. The Code Development Hearings occur approximately six months after the code change proposals are submitted. The results of the

In the 2012 ICC code cycle, BECP staff and their collaborators proposed code changes for residential and commercial buildings. If adopted, these revisions will increase building efficiencies by 30 percent over the level of the 2006 IECC and ASHRAE 90.1-2004.

Code Development Hearings are released three months after the hearings. Any interested and affected party is allowed to submit public comments up to six months after the results are released. The Final Action Hearings are held approximately four months after public comments are received. The final printed version of IECC is typically released in the calendar year following the Final Action Hearings. The most recently published ICC energy code is the 2009 IECC. The final public hearings for the 2012 IECC are scheduled for October 2010. All of the proposed changes approved during the final action hearings will be published in the 2012 IECC.

In Detail: The ASHRAE 90.1 Process

How is ASHRAE 90.1 revised and who can participate?

ASHRAE 90.1 is continually maintained through the development, review, and issuance of addenda to the Standard with approved addenda collected and a new edition published every three years. ASHRAE establishes project committees (the consensus body) of a minimum of five voting members from a broad representation of stakeholders. In some instances, ASHRAE will co-sponsor standard development. In the case of ASHRAE 90.1, their co-sponsor is IES.

How are decisions about ASHRAE 90.1 made?

After the committee proposes and approves, for public review, addenda to the standard, those addenda are approved by the Standards Project Liaison Subcommittee and are then made available for public review. Commenters provide written comments and the committee must address those comments and attempt to resolve the commenter either by accepting their comment in some manner, or if not, advising the commenter why their comment cannot be accepted. Once all commenters indicate the issues are either resolved, are unresolved (but do not wish to delay publication), or are unresolved, then the revision to the standard moves forward for approval.

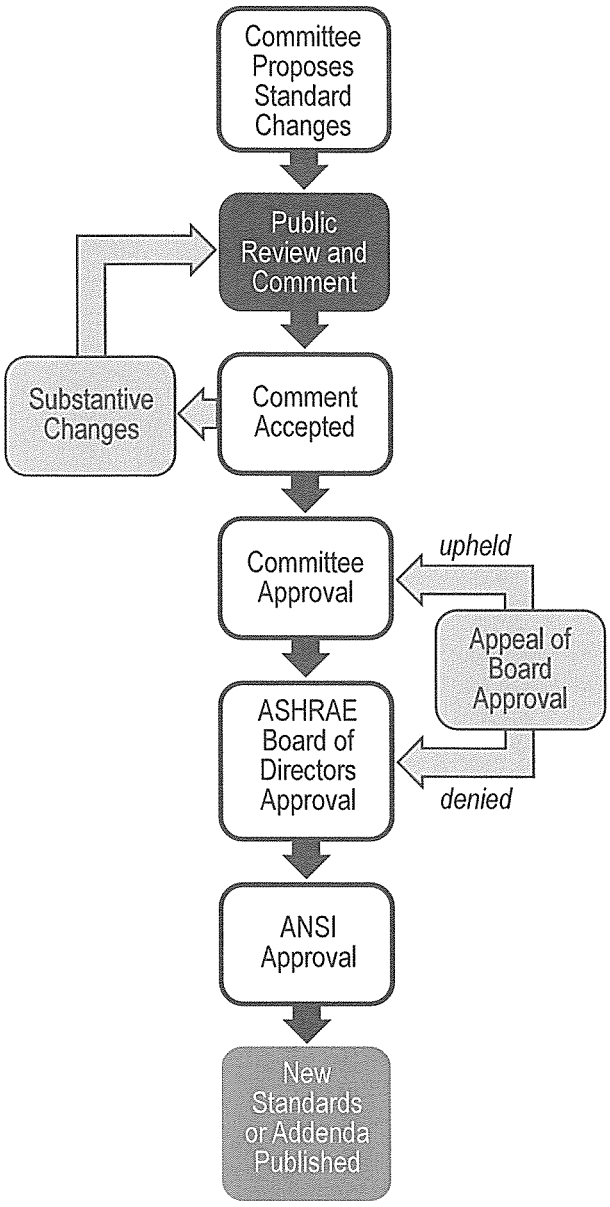


Figure 2 • ASHRAE 90.1 is continually maintained through the development, review, and issuance of addenda, with approved addenda collected and a new edition published every three years.

Approved interim revisions (called addenda) are posted on the ASHRAE website in a supplement, once every 18 months, and are included in the next published version.

The committee responsible for the maintenance and revision of ASHRAE 90.1 for each addendum attempts to reach a resolution with the commenter. In some cases, this requires a further revision to the proposed addendum; in others, an impasse is reached. If the changes proposed are considered non-substantive, then another public review is not necessary; the revisions to the Standard will then move forward for publication approval. Changes deemed substantive require additional public review. Occasionally, when the committee maintaining and revising ASHRAE 90.1 feels the changes can be approved (either because there are no outstanding unresolved comments, or if there are some, they are resolved or cannot be resolved), the revisions to the standard are submitted for approval to the ASHRAE Standards Committee, the Technology Council, and then the Board of Directors.

Those who have submitted unresolved comments can appeal the Board of Directors' approval. An ASHRAE Appeals Panel reviews the record and addresses the appeal. If the appeal is upheld by the panel, the revision is sent back to the ASHRAE 90.1 committee for further work. If it is not upheld, the Board of Directors' approval stands, the addendum is approved by the American National Standards Institute (ANSI), and the addendum proceeds to publication if no appeals are received at ANSI. Unresolved commenters that have completed the ASHRAE appeals process may appeal the ANSI approval of the addendum. If the appeals at ANSI are denied or no appeals are received, then the addendum is published.

What is the timing of the ASHRAE 90.1 process?

A supplement to ASHRAE 90.1 is published once every 18 months and the complete standard is published, with approved addenda, once every three years. However, anyone may propose a revision to the Standard at any time. Approved interim revisions (called addenda) are posted on the ASHRAE website in a supplement, once every 18 months, and are included in the next published version. Key activities relating to revisions, including responding to public comments and continuous maintenance change proposals, typically occur during one of ASHRAE's annual (June) or winter (January) meetings. Public review of the Standard typically occurs two months after one of these meetings in either March or September.

Adoption of energy codes at the state and local level

Adoption of energy codes can occur directly through legislative action or by regulatory action through agencies authorized by the legislative body to oversee the development and adoption of codes. When adoption is accomplished through legislation, a committee may be appointed to provide recommendations and/or draft the legislation. When adoption occurs through a regulatory process, states and local governments often appoint an advisory body comprising representatives of the design, building construction, and enforcement communities. This advisory panel recommends revisions that should be considered for adoption. In basing their recommendations on model energy codes, the advisory panel considers modifications to the model codes to account for local preferences and construction practices. The panel also may serve as a source of information during the adoption process. Their recommendations then enter a public review process.

Overview of the adoption process

The code adoption process *generally* includes the following steps (note that the details of the adoption process vary depending on whether the energy code is adopted by legislation, regulation, or a local government):

1. A change is initiated by a legislative or regulatory agency with the authority to promulgate energy codes. Interested or affected parties also may initiate a change. An advisory body typically is convened and will recommend a new energy code or revisions to an existing energy code.
2. The proposal undergoes a public review process consistent with the legislative or regulatory process under which the code is being considered. Public review options include publishing a notice in key publications, filing notices of intent, or holding public hearings. Interested and affected parties are invited to submit written or oral comments.
3. The results of the review process are incorporated into the proposal, and the final legislation or regulation is prepared for approval.
4. The approving authority reviews the legislation or regulation. Revisions may be submitted to the designated authority for final approval or for filing.
5. After being filed or approved, the code becomes effective, usually on some specified future date. This delay creates a grace period that allows those regulated to become familiar with any new requirements. The period between adoption and effective date typically varies from 30 days to six months.

Visit www.energycodes.gov/implement/state_codes/ for more information on the adoption rates and compliance plans of each state.

Timing the adoption and revision of state and local codes

Some states adopt or revise energy codes in concert with the publication of a new edition of new codes, such as the ICC Codes or ASHRAE Standard. This may occur either through a legislative or regulatory process, or when the state regulation or legislation refers to "the most recent edition," in which case the adoption will simply occur automatically without formal action. The effective date of a new adoption can also be tied to the publication date of an energy standard or model energy code, e.g., "This regulation shall take effect one month from publication of the adopted model energy code."

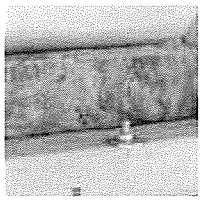
Other states review the new editions on a case-by-case basis to consider adoption, without a designated time line for adoption.

How energy codes affect building design and construction

Baseline building energy codes—the IECC and ASHRAE 90.1—currently address the energy-efficiency requirements for the design, materials, and equipment used in nearly all new construction, additions, renovations, and construction techniques. Their requirements affect the overall energy efficiency of any structure and can reduce the energy needed to maintain a healthy, comfortable, and fully functioning indoor environment. Quite comprehensive in nature, the codes apply to:

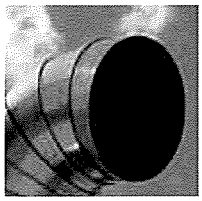
- Wall, floor, and ceiling
- Doors and windows
- Heating, ventilating, and cooling systems and equipment
- Lighting systems and equipment
- Water-heating systems and equipment.

Building envelope



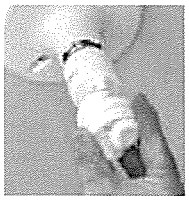
Local climate plays a role in the energy code requirements for the material selection and techniques used to construct the building envelope. Code requirements specify the insulation levels in the floor, ceiling, and walls and are intended to seal the building against air leakage and moisture migration. The defined energy-efficiency levels of doors and windows take into consideration heat loss and gain, depending on whether heating or cooling of the building is the predominant concern, and daylighting. Designers and contractors must make sure that the building materials and installation are completed as specified for the building to comply with the code.

Heating, ventilating, and cooling



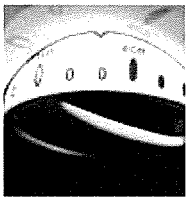
HVAC systems are composed of equipment that creates conditioned air or tempered liquid, conveys air or liquid through passageways (ducts and plenums) or pipes, and automatically regulates the amount to be conveyed via recirculation or exhausting. HVAC system efficiency can be improved by adding equipment that can convert delivered gas or electric power efficiently or by using economizers, which allow the automatic use of outside air or allow users to regulate space conditions. Energy codes provide minimum criteria for the size of HVAC systems and equipment, taking into consideration the energy demands of the building space.

Lighting and electrical



Energy efficiency for lighting is gained by using efficient sources of illumination, considering the number and location of lights throughout the space, and considering the control systems for appropriate operation. The energy codes provide minimum criteria to provide effective lighting control. Motor and transformer efficiency is also covered in this area.

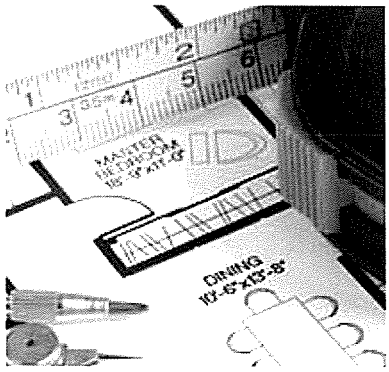
Water heating



Water-heating energy efficiency depends upon water-heating equipment, delivery, and operational controls. Energy codes provide minimum criteria to effectively heat and deliver hot water.

Note that both the IECC and ASHRAE 90.1 provide for exceptions; however, one can typically assume their building must comply with the code.

What Do Codes Mean for the Architect?



Architects need to design buildings that meet all the adopted local building codes within the building owner's budget. Complying with a building energy code is an additional challenge and affects the design of all building systems (e.g., building envelope, heating, ventilating, and air conditioning (HVAC), and lighting). Complying with energy codes also affects the materials selected for the building by requiring, for example, glazing with correct efficiencies, proper insulation levels, and lighting controls that meet the intent of the code.

To minimize the first cost for the project, the architect must work collaboratively with the HVAC and lighting designer to optimize the building design and take advantage of the increased efficiencies in the building. For example, increased insulation levels and efficient windows coupled with an efficient lighting system will reduce the heat loss from the building and heat gain from the lighting system. With such efficiencies in place, the HVAC contractor can optimize the heating and cooling system to reduce the higher first costs of the building's increased efficiencies. The benefit for the building owner is reduced utility bills for the life of the building.

Architects can learn about compliance with the IECC and ASHRAE 90.1 through training provided and sponsored by the American Institute of Architects. AIA also provides training on going above code to promote integration of energy-efficient and sustainable design into new buildings.

What Do Codes Mean for the Builder?

Builders face similar compliance challenges with local building codes and applicable energy codes. They must keep the building within budget, whether it is established by the building owner or their own business model. The builder must select products and materials that best fit the design of the building and satisfy the requirements of the energy code. For example, the builder may use 2" X 6" studs (instead of 2" X 4") for walls in a home so that higher levels of insulation can be installed to meet the code. Increasing the wall framing sizing will impact the cost of finish materials used in the building and may affect its design.

As with architects, builders must collaborate with their subcontractors to take advantage of the reduction in system sizes that result from the increased efficiencies installed in the building. Buildings that comply with an energy code will have higher levels of efficient materials and systems, leading to a decrease in the first cost for the efficiency measures.

The National Association of Homebuilders Research Center developed construction techniques for residential construction that will reduce the first cost of the building while still ensuring the home meets the structural requirements set by the code. By using advanced design practices a building can be built with a minimal increase in first cost and also comply with the energy code. Ultimately, the building owner will benefit with reduced energy bills and a comfortable, healthy home.

Energy code enforcement and compliance

Enforcement, or making sure that a building is in compliance with an energy code, is the last step in the building process. Like the other steps on the path—energy code development through the ICC and ASHRAE processes, adoption of those codes by states and jurisdictions, and code-compliant design and construction—enforcement is critical to realizing energy efficient buildings. The responsibility to enforce the building energy code falls upon states or jurisdictions, and the responsibility to comply with the building energy code falls on developers, designers, and contractors. Education and communication regarding energy codes are vital to the effective delivery of both enforcement and compliance.

Enforcement strategies will vary according to a state or local government's regulatory authority, resources, and manpower and may include all or some of the following activities:

- Review of plans
- Review of products, materials, and equipment specifications
- Review of tests, certification reports, and product listings
- Review of supporting calculations
- Inspection of the building and its systems during construction
- Evaluation of materials substituted in the field
- Inspection immediately prior to occupancy.

State enforcement

States generally enforce the energy code for state-owned or state-financed construction. Depending on the resources of the local government, some states enforce energy code for certain building types or locations. Plan review is typically performed by one office. Though there may be numerous state field inspectors, both review and inspection agencies are controlled by one organization. The building construction community benefits because this arrangement offers them a single point of contact from plan review to building inspection. State resources determine the extent of building plan reviews and construction inspections. When resources are limited, fire and safety codes can take precedence over energy code enforcement.

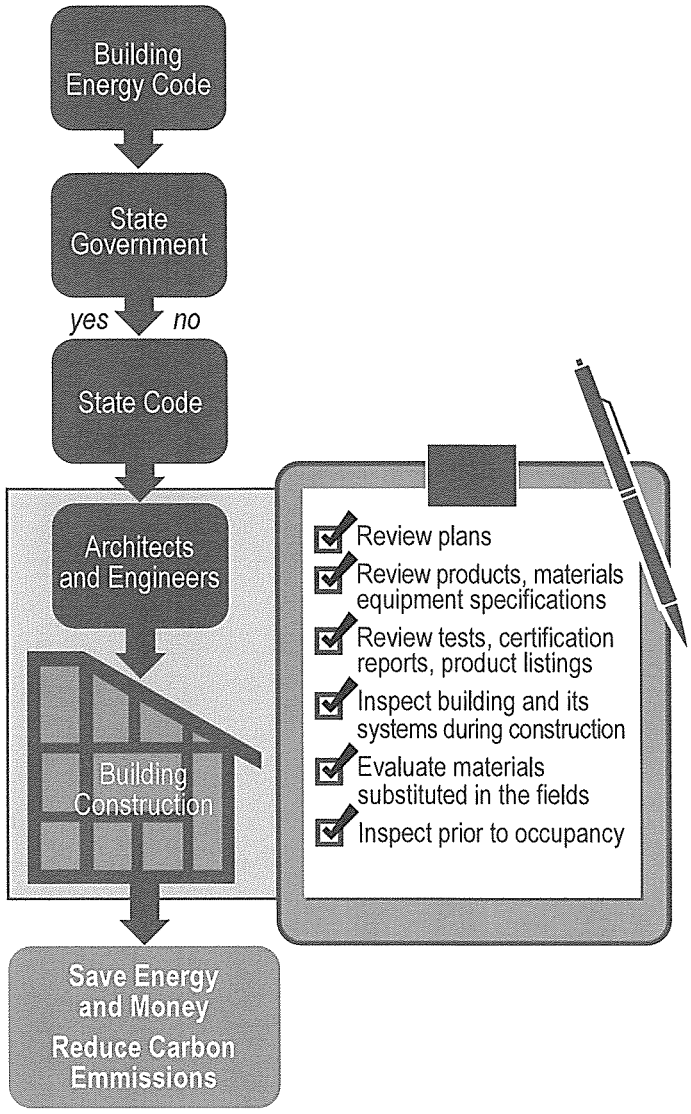


Figure 3 • The responsibility to enforce the building energy code falls upon states or jurisdictions, and the responsibility to comply with the building energy code falls on building owners, and developers, designers, contractors.

Local enforcement

Where local agencies are authorized and have the resources they will enforce the adopted codes. The proximity of local agencies to the construction site and design community offers the potential for more regular enforcement. As with states, the availability of resources determines the extent to which plan reviews and construction inspections can be performed. Also as with states, resource limitations can affect enforcement of energy codes when the local agencies are also responsible for fire and safety code enforcement.

Because jurisdictions vary, local enforcement may lead to differences in the rate of code compliance across a state. Compliance is enhanced when a state code agency actively supports local governments in its efforts to enforce the state code. Some states allow local jurisdictions to conduct enforcement activities that are usually the state's responsibility. This strategy offers the advantages associated with state enforcement, recognizes those local governments with equivalent enforcement capabilities, and helps ensure comparable levels of compliance. Continued state assistance helps to ensure a consistent level of enforcement by local jurisdictions. A hybrid approach might involve the state conducting the plan review, and the local authority conducting the construction inspection.

It is important to note that compliance will be increased if the adopting agency provides resources to the code officials to enforce the energy code and prepares the building construction community to comply with it. It is also important for all stakeholders to know when a new code is expected and understand its requirements. Many states or jurisdictions start this education process several months in advance of an energy code change—often before adoption of the code itself. The more publicity and training on the new code, the more it will be accepted and used.

DOE's easy-to-use code compliance software, RES*check* and COM*check*, as well as associated training and support resources, are available for download at no cost at www.energycodes.gov/compliance_tools.stm.

COMcheck™

REScheck™

Compliance tools

An important focus of education and training for building energy code enforcement and compliance are the tools available to facilitate enforcement and compliance. BECP, ICC, ASHRAE, and other organizations all supply tools and materials that make building energy code implementation and training easier for states and local jurisdictions. (See the appendix for additional resources.)

There are several common methods available to document compliance, including prescriptive forms, software-generated forms, and modeling runs. Local jurisdictions can generate simplified prescriptive forms, typically for residential construction. The one- or two-page form lists the minimum requirements for that climate zone, allowing the applicant to simply show the appropriate details on the submitted plans, and fill out the form, noting insulation levels, efficiencies, and the like.

Software programs such as RES*check*™ and COM*check*™ can also be used to demonstrate compliance. The user inputs building component areas, efficiencies, and other specifications to generate a compliance report. The software allows flexibility and trade-offs between components. For example, a designer may choose to include a greater glass area on a particular wall for a view corridor, and compensate by increasing insulation levels elsewhere.

Beyond-code programs

Progressive states and local jurisdictions with a focus on energy efficiency and/or sustainability are increasingly building upon the baseline building energy codes and adopting beyond-code programs, either as their minimum codes or as a component of a program that provides incentives to those that comply. The programs are referred to in various terms–beyond-code programs, green building programs or codes, stretch codes, and above-code programs. What they have in common as a key component is building energy efficiency; they may have more rigorous requirements than minimum energy codes and/or address additional issues not covered in the energy codes.

Most beyond-code programs use the IECC and/or ASHRAE 90.1 as a baseline, with additional requirements beyond that. Jurisdictions are both mandating these programs and offering them with incentives to those who voluntarily comply.

The relationship between beyond-code programs and the baseline energy codes

Designers, builders, plan reviewers, inspection staff, and all interested parties still need to thoroughly understand the underlying baseline energy code when working with a beyond-code program.

Most beyond-code programs use the IECC and/or ASHRAE 90.1 as a baseline, with additional requirements beyond that. Jurisdictions are both mandating these programs and offering them with incentives to those who voluntarily comply. They vary widely in scope–from a simple requirement to comply 10 percent above the current IECC, to comprehensive programs that also include such elements as water conservation, site selection and design, etc. As of August 2009, there were over 300 instances of beyond code program adoption of states and jurisdictions nationwide.

Initially serving as a proving ground, beyond-code programs are used to make efficiency improvements in the residential and commercial building marketplace which, over time, become acceptable as a typical practice and are often submitted to the ICC or ASHRAE processes as a code change proposal. High-efficacy lighting systems for residential homes is one example of this process. These lighting systems have been included in incentive programs for some time and are now required in the IECC.

Each jurisdiction adopting a beyond-code program or stretch code must determine how they will verify compliance. This will vary depending on the type of program and staffing.

Complying with beyond-code programs

Each jurisdiction adopting a beyond-code program or stretch code must determine how they will verify compliance. This will vary depending on the type of program and staffing. Often, when adherence to a third-party program is required, the jurisdiction will require submittal of verification from the third-party program. When the program is locally developed, such as the City of Albuquerque, it becomes the code for which the department conducts plan reviews and inspections. When the program specifies a percentage above the IECC or ASHRAE 90.1, RES*check*, COM*check*, or other modeling programs such as Energy Plus, can be used and submitted for plan review.

Conclusion

Building energy codes can play a key role in reducing building energy costs, our nation's reliance on foreign oil, and carbon emissions as well as in increasing the comfort of our homes and offices. Though the building energy codes world is not without its challenges, the benefits far outweigh the barriers. Crafted in open public forums, all stakeholders and interested and affected parties are welcome to participate in the building energy codes development processes. And the processes used to update both the IECC and ASHRAE 90.1 are designed to make sure the interests of varied stakeholders are considered, including those pertaining to industry, of importance to building scientists, and affecting financial viability. Building energy codes are readily available for states and jurisdictions to adopt, and a broad range of enforcement and compliance tools are available to help policy makers, designers, builders, and the enforcement community successfully implement building energy codes. Building energy codes are a baseline of energy efficiency that constantly drive beyond-code programs to improve. As code cycles iterate from one to the next, today's beyond-code programs become the baseline of tomorrow. Ultimately, the energy codes community will converge on its true goal—buildings with zero energy use.

As code cycles iterate from one to the next, today's beyond-code programs become the baseline of tomorrow. Ultimately, the energy codes community will converge on its true goal —buildings with zero energy use.

Appendix

Following is a description of and contact information for organizations and groups mentioned in the document, in addition to other national and regional resources.

Description	Contact
National Contacts and Resources	
The International Code Council (ICC) is a membership association dedicated to building safety and fire prevention. ICC develops the codes and standards used to construct residential and commercial buildings, including homes and schools. ICC is the publisher of the International Energy Conservation Code. They are a resource for code books and training. Local chapters are active in most states. They are the publisher of the ICC-700-2008 National Green Building Standard, and the International Green Construction Code currently under development in conjunction with the American Society for Testing and Standards (ASTM) and the AIA.	www.iccsafe.org **ICC** 500 New Jersey Avenue, NW, 6th Floor, Washington, D.C. 20001 Phone: 888-ICC-SAFE (422-7233)
American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) is an international membership organization of advancing heating, ventilation, air conditioning, and refrigeration through research, standards writing, publishing, and continuing education. They are a resource for standards, education, research, and training. Local chapters are active throughout the country. They are the publisher of ASHRAE 189, currently under development in conjunction with IESNA and USGBC and is being developed for inclusion into building codes.	www.ashrae.org **ASHRAE** 1791 Tullie Circle, N.E. Atlanta, GA 30329 Toll-free for Customer Service: 800-527-4723 (U.S. and Canada only) Phone: 404-636-8400
The U.S. Department of Energy's (USDOE) Building Energy Codes Program is an information resource on national energy codes. They work with other government agencies, state and local jurisdictions, national code organizations, and industry to promote stronger building energy codes and help states adopt, implement, and enforce those codes.	www.energycodes.gov
American Institute of Architects (AIA) is the leading professional membership association for licensed architects, emerging professionals, and allied partners.	www.aia.org **American Institute of Architects** The American Institute of Architects 1735 New York Ave. NW Washington, D.C. 20006-5292 Phone: 800-AIA-3837 or 202-626-7300
Energy & Environmental Building Alliance (EEBA). The stated mission of EEBA is to provide education and resources to transform the residential design, development, construction, and remodeling industries to profitably deliver energy efficient and environmentally responsible buildings and communities.	www.eeba.org **EEBA** 6520 Edenvale Boulevard, Suite 112 Eden Prairie, MN 55346 Phone: 952-881-1098
The Building Codes Assistance Project (BCAP) provides advocacy at the state and regional level, serves as clearinghouse for energy code information, develops resources to support code compliance, and provides energy code training and workshops.	www.bcap-energy.org **Building Codes Assistance Project** 1850 M Street, NW, Suite 600 Washington, D.C. 20036
The Alliance to Save Energy's (ASE) stated mission is to promote energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security. With relation to building energy codes, they are involved in policy advocacy, energy-efficiency projects, technology development and deployment, and public-private partnerships.	www.ase.org **Alliance to Save Energy** 1850 M Street, NW, Suite 600 Washington, D.C. 20036 Phone: 202-530-4356

Description	Contact
The National Association of Home Builders (NAHB) is a national trade association focused on policy, education, and research.	**www.nahb.org** **National Association of Home Builders** 1201 15th Street, NW Washington, D.C. 20005 Toll Free Phone: 800-368-5242 Local Phone: 202-266-8200
Regional Code Organizations – Most states belong to a regional code organization which will support their efforts to advance building energy codes. They provide policy guidance, access to research, training, etc.	
Southwest Energy Efficiency Project (SWEEP) is a regional non-profit organization that promotes greater energy efficiency in a six-state region that includes Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming and facilitates regional partnerships. Their programs include buildings and energy codes, utilities, transportation, industrial efficiency and combined heat and power.	**www.Swenergy.org** **Southwest Energy Efficiency Project** 2260 Baseline Rd. #212 Boulder, CO 80302 For general requests: Email: info@swenergy.org Phone: 303-447-0078
Northeast Energy Efficiency Partnership (NEEP) is a regional non-profit organization that facilitates regional partnerships to advance the efficient use of energy in homes, buildings, and industry in the Northeast U.S. states of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont.	**www.neep.org** **Northeast Energy Efficiency Partnerships, Inc.** 5 Militia Drive Lexington, MA 02421 Phone: 781-860-9177
Midwest Energy Efficiency Alliance (MEEA) is a regional non-profit organization that facilitates regional partnerships. As a central source for information and action, MEEA raises awareness, facilitates energy efficiency programs, and strengthens policy across the Midwest region, including the states of Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.	**www.mwalliance.org** **Midwest Energy Efficiency Alliance** 645 N Michigan Ave Ste 990 Chicago, IL 60611 Phone: 312-587-8390
Northwest Energy Efficiency Alliance (NEEA) is a regional non-profit organization that facilitates regional partnerships, whose stated mission is to mobilize the Northwest to become increasingly energy efficient for a sustainable future. NEEA works with the states of Washington, Idaho, Montana, and Oregon.	**www.nwalliance.org** **Northwest Energy Efficiency Alliance** 529 SW Third Ave., Suite 600 Portland, OR 97204 Phone: 800-411-0834 or 503-827-8416
Southeast Energy Efficiency Alliance (SEEA) is a regional non-profit organization that facilitates regional partnerships to promote and achieve energy efficiency through networking, program activities, and education. MEEA is active in the 11-state region of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.	**www.seealliance.org** **Southeast Energy Efficiency Alliance** P.O. Box 13909 Atlanta, Ga. 30324 Phone: 866-900.7332 or 404-931-1518

Endnotes

[1] Energy Information Administration, *Annual Energy Review 2007*, Figure 2.1a, Energy Consumption by Sector Overview. **http://www.eia.doe.gov/emeu/aer/consump.html**.

[2] U.S. Energy Information Administration. Electric Power Annual Report. Table 7.2. Retail Sales and Direct Use of Electricity to Ultimate Customers by Sector, by Provider, 1996 through 2007 (Megawatthours). **http://www.eia.doe.gov/cneaf/electricity/epa/epat7p2.html**.

[3] Source: U.S. Energy Information Administration, *Electric Power Annual 2007*, State Electricity Profiles 2007, United States.

[4] Belzer D, M Halverson, and S McDonald. 2009. *A Retrospective Analysis of Commercial Building Energy Codes: 1990-2008, Draft.* Building Energy Codes Program, Pacific Northwest National Laboratory, Richland, Washington.

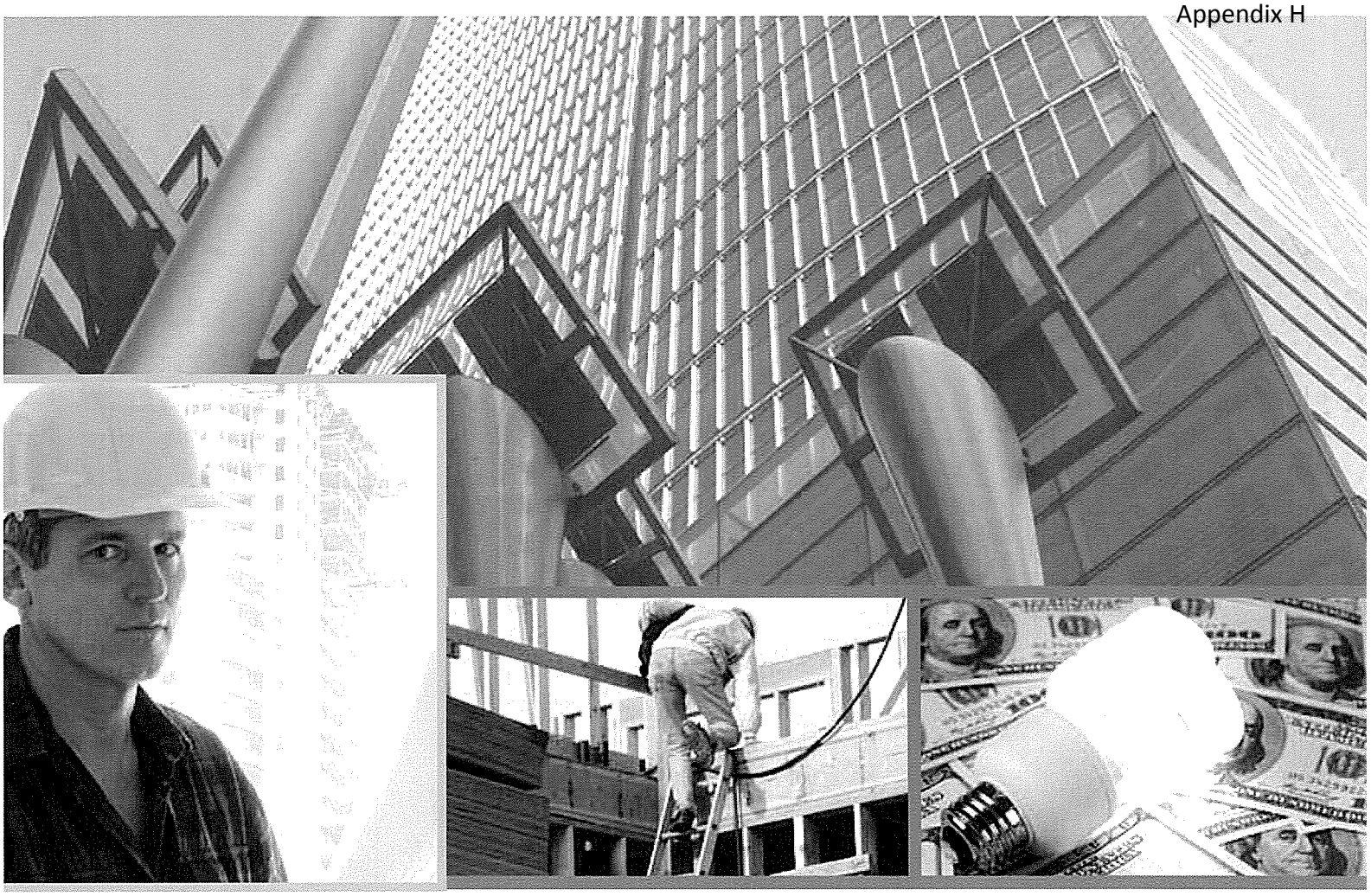
[5] The American National Standards Institute/ASHRAE/Illuminating Engineering Society of North America.

[6] 450 MW as a typical power plant size was based on the range in size of power plants installed in 2006. Refer to the following to see the complete range: *Buildings Energy Data Book*, Table 6.2.7, "Characteristics of New and Stock Generating Capacities, by Plant Type." **http://buildingsdatabook.eere.energy.gov/TableView.aspx?table=6.2.7**.

[7] Houser T. 2009. *The Economics of Energy Efficiency in Buildings.* Policy Brief 09-17, Peterson Institute for International Economics, Washington, D.C. Accessed January 13, 2009, at **http://www.iie.com/publications/pb/pb09-17.pdf**.

[8] The term "building energy codes" is used within this document as a generic term that includes ASHRAE 90.1 (a standard), the IECC (a code), and other forms of building energy standards, guidelines, laws, rules, etc. that are adopted as part of the larger body of building codes and required to be satisfied as a condition for approval to construct and occupy buildings.

[9] A separate set of federal building codes and standards apply to buildings constructed or used by any federal agency that is not legally subject to state or local building codes. They are not the focus of this document. More information can be found at **www.energycodes.gov/federal**.



The U.S. Department of Energy's Building Energy Codes Program is an information resource on national model energy codes. We work with other government agencies, state and local jurisdictions, national code organizations, and industry to promote stronger building energy codes and help states adopt, implement, and enforce those codes.

BECP Website:
www.energycodes.gov

BECP Technical Support:
techsupport@becp.pnl.gov
www.energycodes.gov/support/helpdesk.php

For more information, contact:

Jean Boulin, Program Manager
Phone: 202-586-9870
Email: Jean.Boulin@ee.doe.gov

Contact the EERE Information Center 1-877-EERE-INF
(1-877-337-3463) or visit **eere.energy.gov/informationcenter.**

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

PNNL-SA-70586 • February 2010

CASE STUDY: SANGAMON COUNTY IL

Sangamon County Adopts a Building Code in 2001

The Sangamon County Board Building Safety Section currently enforces the following Sangamon County Codes:

2006 International Building Code
2006 International Residential Code
2006 International Fire Code
2006 International Fuel Gas Code
2006 International Mechanical Code
2006 International Property Maintenance Code
2009 International Energy Code
2005 National Electrical Code
2004 Illinois Plumbing Code
Current edition of the Illinois Accessibility Code
Sangamon County Erosion Control

A copy of the Sangamon County Building Safety Department Required Inspections Information Handout is provided.

Background

Prior to its adoption of a Sangamon County Building Code, the Sangamon County Board passed a resolution to place a six-month moratorium, beginning November 15, 2000, on new subdivision development for the purpose of studying the need for changes to the Sangamon County Subdivision Regulations. An Ad Hoc Subdivision Development Committee was appointed on December 12, 2000 to oversee this process. The matters the committee studied included the adoption of a County Building Code.

An excerpt from the final recommendation report from the Land Use Advisory Committee regarding building codes follows:

Excerpt of Ad Hoc Subdivision Development Committee Report to the Sangamon County Board:

> **"II. BUILDING CODES**
>
> A. Rationale and Recommendation
>
> The public hearings held before the Sangamon County Board and the Ad Hoc Subdivision Development Committee appeared to establish a consensus opinion that Sangamon County should join those other counties in the State that have adopted building codes for new construction. It is important to mention that the building codes will only be applicable to new construction, with the exception of the property maintenance code, which will be explained separately. The codes will be applicable to major repairs but not to minor repairs, and the codes specify what falls in such categories. Also, State law provides that the codes are not applicable to structures used for agricultural purposes on farms, including farm residences.

Background (continued)
The opinion favoring the adoption of the building codes was based upon the fact that while it appeared most of the new construction in the County was more or less in accordance with code standards, there were clearly situations where this did not occur. When this did not occur, those persons who purchased the new buildings might unknowingly purchase housing or building stock that was inadequate or in fact dangerous from a fire and health safety standpoint. This may occur because without ongoing inspection during the construction phase, the deviations from code standards often cannot be discovered. The Committee believed that all new construction in Sangamon County should be in conformity with code standards and inspected to see that it complies. To that end, it has recommended that a chapter be added to the Sangamon County Code which will adopt the best building codes, that permits be required to proceed with construction, that appropriate inspection be conducted of the construction, and that an occupancy permit be required certifying that the construction is appropriate before occupancy of the new construction will be authorized.

B. Recommended Codes

Building codes have been a part of the American scene for many years. The hearings established that there are a series of codes called the International Codes which are the best and most recent work on the subject. The use of the term, "International" may be somewhat unfortunate, as it suggests perhaps something broader than is needed, but in fact the codes are designed for American cities and counties. The developers and persons testifying at the hearings asked that there be uniformity between the building codes in the City of Springfield (which has had building codes for years) and those in Sangamon County, since it would be far too complicated to have inconsistent codes. This objective should be accomplished by the adoption of the International Codes since the hearings established that the City plans in the near future to join the County in adopting the International Codes should that be the decision of the County Board.

The codes and State standards will provide regulations and inspection of the following aspects of construction: General building requirements; fire requirements; mechanical requirements; electrical requirements; energy conservation requirements; plumbing requirements; fuel gas requirements and accessibility requirements.

It is the recommendation of the Committee that the County (perhaps with the cooperation of the City of Springfield) provide a seminar or seminars for builders in the County to explain the requirements of the Codes There is an organization called BOCA (Building Officials and Code Administrators) which has the expertise to do this and is willing to do it. Most experienced builders have knowledge of the existing code requirements and only need to have an explanation of the differences between the old and new codes.

C. Administration and Enforcement

Adoption of the building codes will create a building and zoning department in place of the old zoning department. A building officer will be appointed as the executive in charge of the building code and permit process. Permits will be required for new

Background (continued)
construction or major repairs, inspections will be conducted when appropriate of ongoing permitted construction, and occupancy permits are required certifying proper completion before occupancy is permitted. Violators may be proceeded against administratively, by fine, or by injunction.

It will be necessary to allow time before the codes are placed in full force and effect to staff and develop the building department. The effective date for the enforcement of the codes will commence on 9/1/01. In the event that the volume of new construction does not require full time inspectors, it is believed that part time inspectors can do the job.

D. Cost

Permit fees will be charged with the objective of equalizing the cost of the new department with the fees charged. As time goes by, adjustments in the permit fees will probably be necessary to bring the fees into balance with the costs as practical experience develops the hard figures about revenues and costs.

E. Intergovernmental Cooperation

The hearings demonstrated that there may be cities and villages in Sangamon County that may wish to adopt codes similar to those that may be adopted in Sangamon County. It also disclosed that the cities and villages may wish to agree to have Sangamon County administer their codes as it administers the codes in unincorporated areas. This may be of benefit to the counties and the cities and villages, as the municipalities would not need to have their own building departments, while the County would receive the permit fees which should be helpful in covering its costs.

F. The Property Maintenance Code

The property maintenance code is the exception to the rule that the codes will only cover new construction. That code will cover existing construction. It is designed to give power to the Sangamon County Health Department to require the correction of serious public health problems in existing construction in Sangamon County. Typical problems of this kind are seriously deficient or non-existing sanitation facilities, deficient rubbish and garbage facilities, and insect and rodent infestation. The code would not be utilized to address non serious public health deficiencies in existing construction.

G. Counties which Have Building Codes in Force

Building Officials and Code Administrators International, Inc. advises that at this time fourteen counties in Illinois have building codes in force, and that Peoria County and McLean County are now in the process of considering the adoption of building codes. The counties that presently have building codes in force are Cook, DeKalb, DuPage, Grundy, Iroquois, Kane, Kankakee, Kendall, Lake, Macon, Madison, McHenry, Will, and Winnebago Counties."

Source: Excerpt of Ad Hoc Subdivision Development Committee Report to the Sangamon County Board, http://www.co.sangamon.il.us/departments/regionalplanning/LandUse/report.asp , March 2, 2012, downloaded 3/2/2012.

Reorganization of Sangamon County Building Safety Division

The Sangamon County Building Inspectors were initially part of the Sangamon County Planning and Zoning Department.

In 2009 the County Board passed a resolution reorganizing to form the 'Zoning Department' and relocating the inspectors to form a 'Building Safety' Division in the Sangamon County Department of Public Health.

As a result of a cost efficiency review, and need to reduce costs, building inspections were rationalized as a public safety function and reorganized to be based in the Sangamon County Department of Public Health in 2009.

Source: Phone interview: Norm Sims, Executive Director, Springfield-Sangamon County Regional Planning Commission, March 2, 2012

Sangamon County Building Safety Department

2833 South Grand Avenue East
Springfield, IL 62703

(217) 535-3145 (FAX) 747-5103 (e-mail) mailto:buildingsafety@co.sangamon.il.us

REQUIRED INSPECTIONS

Prior to start of any work or issuance of any permits for new structures, Septic System approval must be received by this Department from the Sangamon County Public Health Department.

1 Zoning inspection after construction staked out.
2 Footings inspection prior to pouring footings
3 Plumbing Ground Work inspection if applicable before concrete floor poured
4 Electrical Ground Work inspection if applicable before concrete floor poured
5 Plumbing Rough-in, Electrical Rough-in, Mechanical Rough-in inspections before sheetrock or plaster walls and ceilings installed
6 Electrical Service Entrance
7 Fireplace inspection before sheetrock or plaster walls and ceilings installed
8 Framing inspection before sheetrock or plaster and insulation installed
9 Insulation inspection sheetrock or plaster installation
10 Final Plumbing, Electrical, Mechanical and Building inspections when all Systems are installed and functioning as designed. Plumbing fixtures installed and fully operational, Electrical devices, (lighting, smoke detectors etc.) installed and fully operational, Mechanical equipment, (furnaces, exhaust fans etc.) installed and fully operational, Doors, windows and related hardware installed and fully operational.
11 Floor covering, painting and cosmetic finishes installations not required for Final Inspections
12 Re-inspections for corrective work must be completed prior to covering or Concealing
13 Other inspections may be required for your situation. Please contact this Office if you are not sure or have any questions. Phone # 535-3145
Building----------Leonard LeVeque
Plumbing/Mechanical----------Mike Smith
Electrical/Mechanical----------Mike Ashenfelter

Covering or concealing any of the above referenced work with permanent construction (concrete, sheetrock, paneling, brick, siding etc.) will not relieve Owner/Contractor from securing those inspections.
You may be required to remove construction to allow for inspection.

All finals must be inspected and approved before a Certificate of Occupancy will be issued. Occupancy is prohibited until the Certificate of Occupancy is granted.

Name:_____ **Date:**_____

CASE STUDY: IROQUOIS COUNTY IL

Iroquois County Building Permits Issued 2007 – 2011 Compared to Champaign County Zoning Use Permits Issued During Same Time Period

	Iroquois County Building Permits Issued	Total Iroquois County Building Permits Issued	Champaign County Zoning Use Permits Issued	Total Champaign County Zoning Use Permits Issued
2007				
Agriculture[1]	38	196	35	245
Residential	158		210	
Other	n/a			
2008				
Agriculture[1]	55	194	23	189
Residential	139		166	
Other	n/a			
2009				
Agriculture[1]	30	178	29	171
Residential	148		142	
Other	n/a			
2010				
Agriculture[1]	23	171	18	127
Residential	123		109	
Other	25*			
2011				
Agriculture[1]	52	240	22	144
Residential	102		122	
Other	86*			

* Windfarm turbines

Source of Iroquois County Building Permit Data: Phone Conversation with Debra Wright, Iroquois County Department of Planning and Zoning Assistant, 04/24/2012

Source of Champaign County Zoning Use Permit Data: Table 7, Chapter 2 of this report.

Note: Iroquois County requires a building permit for all types of construction, both agricultural and non-agricultural. The building permit fee for agricultural construction may be waived if an agricultural building or agricultural structure.

Iroquois County Adopted the 2003 International Building Code

The Iroquois County Board initially adopted BOCA model building code(s) in 1998. More recently, the Iroquois County Board adopted and enforces the 2003 International Building Code.

Iroquois County arranges to contract the services of a qualified plan reviewer and inspector (one person who performs both functions) on a *per diem* basis.

A copy of the Iroquois County building permit fee schedule and Iroquois County building permit application is provided on the following pages.

For office use only
Permit #_____
Bldg. Fee $_____

IROQUOIS COUNTY PLANNING & ZONING
1001 EAST GRANT STREET WATSEKA, IL 60970
815-432-6995 or 815-432-7221 FAX 815-432-6987

APPLICATION

for an Iroquois County Building Permit
(For any building or structure or alteration of existing building or structures.)
Note: Permit will not be issued unless total application is completed and a set of plans submitted.

1. Application is hereby made for a building permit involving premises legally described under Item 5 below.
2. Date of Application_____
3. Owner of Property:
   Name_____
   Address_____
   _____ Telephone_____
4. Mail permit to_____
5. Legal description of property. (Property Tax Identification Number & Legal Description)
   _____
   _____
   # of acres_____ Township_____ Section_____
6. ***911 address of property***: _____
7. Is property in Floodplain? Yes _____ No _____
8. Is property in **C R P**? _____
9. **Proposed construction and use, including dimensions**_____
   _____
   Type of Construction: stick_____ modular_____ year of modular_____
   Pole _____
   (circle one) ICC approved HUD approved

   Description of Project: (circle one)

   New Building Improvement to existing building Manufactured Home
   Other_____
   Will building have electrical?_____ Will building have plumbing?_____
   Total estimated cost of the above construction $ _____
10. Name, address and telephone number:
    General Contractor_____
    Sub-Contractor_____
    Concrete Contractor_____
    Electrical Contractor_____
    Plumbing Contractor_____
    Sewer Contractor_____

I/we hereby agree to reimburse the County for Building Permit Review fees if in fact this becomes necessary.

In consideration of this application and attached forms being made a part thereof, and the issuance of permit, I/we will *conform to the regulation set forth in the Iroquois County Building Ordinances*. I/we also agree that all work performed under said permit will be in accordance with the plans and plot diagram which accompany this application, except for such changes as may be authorized or required by the Building Officer. Iroquois County has adopted the *International Building Code, National Electrical Code and State Plumbing Code.*

There will be a FINE of $50.00 per day for moving in without Occupancy Permit.

_____
Signature of Owner or Authorized Agent

IMPORTANT
REQUIRED DATA ON PLOT PLAN SKETCH

A. State if your facility is existing or proposed.
B. Lot size, building dimensions and location with all set-backs.
C. Indicate North direction.
D. Indicate Location of road or roads.
E. Indicate well and septic locations.

SUPPLY COMPLETE INFORMATION

Locate Building on Lot By Dimensions to Lot Lines.

Survey stakes must be in place at property corners. Location of building or structure must be staked out on property as shown. **(Construction must not be started until permit is issued. No changes in location as shown may be made without first contacting Building Department.)**

Locations as shown below will be staked out by _____
(Date)

REMEMBER TO CALL J.U.L.I.E. (800-892-0123)BEFORE DIGGING

PLOT SKETCH

MISCELLANEOUS INFORMATION - BUILDINGS

Give total number of square feet in overall area of each floor and basement, including breezeways, garages, porches, etc.

Basement_____Square Footage Garage_____Square Footage
1st Floor_____Square Footage Other_____Square Footage
2nd Floor_____Square Footage TOTAL_____Square Footage

Owner will:_____Occupy _____ Rent _____ Sell
Number of Rooms_____ Number of Bathrooms_____
Basement:
_____ Yes _____ No
_____ Finished _____ Unfinished

Approximate Date Work is Expected to Start:_____

Description of Building

_____ Frame _____ Brick Veneer _____ Pole
_____ Concrete Block _____ Cinder Block
_____ Stone Veneer _____ Stucco

Foundation _____Poured _____Block _____ Pole

Heating _____ Hot Water _____ Electric _____Warm Air
_____ Oil Burner _____ Steam _____ Gas

Roofing _____ Asphalt Shingle _____ Wood Shingle
_____ Asbestos Shingle _____ Built-Up
_____ Metal _____ Slate
_____ Fiberglass Shingles

ORDINANCE 98-9

An Ordinance Establishing Building Permit Fees

BE IT HEREBY ORDAINED by the Iroquois County Board as follows:

Section 1. "Section 18-1. Fees." of the Iroquois County Code is hereby amended by inserting after paragraph "c." the following subsection to be known as paragraph "d.", to read as follows.

"RESIDENTIAL BUILDING PERMITS
(New Construction and additions to existing structures)

Cost	Fee	Cost	Fee
Up to $2,000	$ 85	$27,001 - $28,000	$215
$2,001 - $3,000	$ 90	$28,001 - $29,000	$220
$3,001 - $4,000	$ 95	$29,001 - $30,000	$225
$4,001 - $5,000	$100	$30,001 - $31,000	$230
$5,001 - $6,000	$105	$31,001 - $32,000	$235
$6,001 - $7,000	$110	$32,001 - $33,000	$240
$7,001 - $8,000	$115	$33,001 - $34,000	$245
$8,001 - $9,000	$120	$34,001 - $35,000	$250
$9,001 - $10,000	$125	$35,001 - $36,000	$255
$10,001 - $11,000	$130	$36,001 - $37,000	$260
$11,001 - $12,000	$135	$37,001 - $38,000	$265
$12,001 - $13,000	$140	$38,001 - $39,000	$270
$13,001 - $14,000	$145	$39,001 - $40,000	$275
$14,001 - $15,000	$150	$40,001 - $41,000	$280
$15,001 - $16,000	$155	$41,001 - $42,000	$285
$16,001 - $17,000	$160	$42,001 - $43,000	$290
$17,001 - $18,000	$165	$43,001 - $44,000	$295
$18,001 - $19,000	$170	$44,001 - $45,000	$300
$19,001 - $20,000	$175	$45,001 - $46,000	$305
$20,001 - $21,000	$180	$46,001 - $47,000	$310
$21,001 - $22,000	$185	$47,001 - $48,000	$315
$22,001 - $23,000	$190	$48,001 - $49,000	$320
$23,001 - $24,000	$195	$49,001 - $50,000	$325
$24,001 - $25,000	$200	$50,001 - $51,000	$330
$25,001 - $26,000	$205	$51,001 - $52,000	$335
$26,001 - $27,000	$210	$52,001 - $53,000	$340
$53,001 - $54,000	$345	$55,001 - $56,000	$355
$54,001 - $55,000	$350	$56,001 - $57,000	$360

$57,001 - $58,000	$365	$98,001 - $99,000	$570
$58,001 - $59,000	$370	$99,001 - $100,000	$575
$59,001 - $60,000	$375	$100,001 - $101,000	$580
$60,001 - $61,000	$380	$101,001 - $102,000	$585
$61,001 - $62,000	$385	$102,001 - $103,000	$590
$62,001 - $63,000	$390	$103,001 - $104,000	$595
$63,001 - $64,000	$395	$104,001 - $105,000	$600
$64,001 - $65,000	$400	$105,001 - $106,000	$605
$65,001 - $66,000	$405	$106,001 - $107,000	$610
$66,001 - $67,000	$410	$107,001 - $108,000	$615
$67,001 - $68,000	$415	$108,001 - $109,000	$620
$68,001 - $69,000	$420	$109,001 - $110,000	$625
$69,001 - $70,000	$425	$110,001 - $111,000	$630
$70,001 - $71,000	$430	$111,001 - $112,000	$635
$71,001 - $72,000	$435	$112,001 - $113,000	$640
$72,001 - $73,000	$440	$113,001 - $114,000	$645
$73,001 - $74,000	$445	$114,001 - $115,000	$650
$74,001 - $75,000	$450	$115,001 - $116,000	$655
$75,001 - $76,000	$455	$116,001 - $117,000	$660
$76,001 - $77,000	$460	$117,001 - $118,000	$665
$77,001 - $78,000	$465	$118,001 - $119,000	$670
$78,001 - $79,000	$470	$119,001 - $120,000	$675
$79,001 - $80,000	$475	$120,001 - $121,000	$680
$80,001 - $81,000	$480	$121,001 - $122,000	$685
$81,001 - $82,000	$485	$122,001 - $123,000	$690
$82,001 - $83,000	$490	$123,001 - $124,000	$695
$83,001 - $84,000	$495	$124,001 - $125,000	$700
$84,001 - $85,000	$500	$125,001 - $126,000	$705
$85,001 - $86,000	$505	$126,001 - $127,000	$710
$86,001 - $87,000	$510	$127,001 - $128,000	$715
$87,001 - $88,000	$515	$128,001 - $129,000	$720
$88,001 - $89,000	$520	$129,001 - $130,000	$725
$89,001 - $90,000	$525	$130,001 - $131,000	$730
$90,001 - $91,000	$530	$131,001 - $132,000	$735
$91,001 - $92,000	$535	$132,001 - $133,000	$740
$92,001 - $93,000	$540	$133,001 - $134,000	$745
$93,001 - $94,000	$545	$134,001 - $135,000	$750
$94,001 - $95,000	$550	$135,001 - $136,000	$755
$95,001 - $96,000	$555	$136,001 - $137,000	$760
$96,001 - $97,000	$560	$137,001 - $138,000	$765
$97,001 - $98,000	$565	$138,001 - $139,000	$770
$139,001 - $140,000	$775	$144,001 - $145,000	$800
$140,001 - $141,000	$780	$145,001 - $146,000	$805
$141,001 - $142,000	$785	$146,001 - $147,000	$810
$142,001 - $143,000	$790	$147,001 - $148,000	$815
$143,001 - $144,000	$795	$148,001 - $149,000	$820

2

$149,001 - $150,000	$825	$187,001 - $188,000	$ 1015
$150,001 - $151,000	$830	$188,001 - $189,000	$1020
$151,001 - $152,000	$835	$189,001 - $190,000	$1025
$152,001 - $153,000	$840	$190,001 - $191,000	$1030
$153,001 - $154,000	$845	$191,001 - $192,000	$1035
$154,001 - $155,000	$850	$192,001 - $193,000	$1040
$155,001 - $156,000	$855	$193,001 - $194,000	$1045
$156,001 - $157,000	$860	$194,001 - $195,000	$1050
$157,001 - $158,000	$865	$195,001 - $196,000	$1055
$158,001 - $159,000	$870	$196,001 - $197,000	$1060
$159,001 - $160,000	$875	$197,001 - $198,000	$1065
$160,001 - $161,000	$880	$198,001 - $199,000	$1070
$161,001 - $162,000	$885	$199,001 - $200,000	$1075
$162,001 - $163,000	$890	$200,001 - $201,000	$1080
$163,001 - $164,000	$895	$201,001 - $202,000	$1085
$164,001 - $165,000	$900	$202,001 - $203,000	$1090
$165,001 - $166,000	$905	$203,001 - $204,000	$1095
$166,001 - $167,000	$910	$204,001 - $205,000	$1100
$167,001 - $168,000	$915	$205,001 - $206,000	$1105
$168,001 - $169,000	$920	$206,001 - $207,000	$1110
$169,001 - $170,000	$925	$207,001 - $208,000	$1115
$170,001 - $171,000	$930	$208,001 - $209,000	$1120
$171,001 - $172,000	$935	$209,001 - $210,000	$1125
$172,001 - $173,000	$940	$210,001 - $211,000	$1130
$173,001 - $174,000	$945	$211,001 - $212,000	$1135
$174,001 - $175,000	$950	$212,001 - $213,000	$1140
$175,001 - $176,000	$955	$213,001 - $214,000	$1145
$176,001 - $177,000	$960	$214,001 - $215,000	$1150
$177,001 - $178,000	$965	$215,001 - $216,000	$1155
$178,001 - $179,000	$970	$216,001 - $217,000	$1160
$179,001 - $180,000	$975	$217,001 - $218,000	$1165
$180,001 - $181,000	$980	$218,001 - $219,000	$1170
$181,001 - $182,000	$985	$219,001 - $220,000	$1175
$182,001 - $183,000	$ 990	$220,001 - $221,000	$1180
$183,001 - $184,000	$ 995	$221,001 - $222,000	$1185
$184,001 - $185,000	$ 1000	$222,001 - $223,000	$1190
$185,001 - $186,000	$ 1005	$223,001 - $224,000	$1195
$186,001 - $187,000	$ 1010	$224,001 - $225,000	$1200
$225,001 - $226,000	$1205	$233,001 - $234,000	$1245
$226,001 - $227,000	$1210	$234,001 - $235,000	$1250
$227,001 - $228,000	$1215	$235,001 - $236,000	$1255
$228,001 - $229,000	$1220	$236,001 - $237,000	$1260
$229,001 - $230,000	$1225	$237,001 - $238,000	$1265
$230,001 - $231,000	$1230	$238,001 - $239,000	$1270
$231,001 - $232,000	$1235	$239,001 - $240,000	$1275
$232,001 - $233,000	$1240	$240,001 - $241,000	$1280

3

$241,001 - $242,000	$1285
$242,001 - $243,000	$1290
$243,001 - $244,000	$1295
$244,001 - $245,000	$1300
$245,001 - $246,000	$1305
$246,001 - $247,000	$1310
$247,001 - $248,000	$1315
$248,001 - $249,000	$1320
$249,001 - $250,000	$1325

$250,001 - UP add $5.00 per $1,000

NON-RESIDENTIAL BUILDING PERMITS
(New Construction and additions to existing structures)

Cost	Fee	Cost	Fee
$100 - $10,000	$ 85	$21,001 - $22,000	$145
$10,001 - $11,000	$ 90	$22,001 - $23,000	$150
$11,001 - $12,000	$ 95	$23,001 - $24,000	$155
$12,001 - $13,000	$100	$24,001 - $25,000	$157
$13,001 - $14,000	$105	$25,001 - $26,000	$159
$14,001 - $15,000	$110	$26,001 - $27,000	$161
$15,001 - $16,000	$115	$27,001 - $28,000	$163
$16,001 - $17,000	$120	$28,001 - $29,000	$165
$17,001 - $18,000	$125	$29,001 - $30,000	$167
$18,001 - $19,000	$130	$30,001 - $31,000	$169
$19,001 - $20,000	$135	$31,001 - $32,000	$171
$20,001 - $21,000	$140	$32,001 - $33,000	$173

$33,001 - $34,000	$175	$58,001 - $59,000	$225
$34,001 - $35,000	$177	$59,001 - $60,000	$226
$35,001 - $36,000	$179	$60,001 - $61,000	$227
$36,001 - $37,000	$181	$61,001 - $62,000	$228
$37,001 - $38,000	$183	$62,001 - $63,000	$229
$38,001 - $39,000	$185	$63,001 - $64,000	$230
$39,001 - $40,000	$187	$64,001 - $65,000	$231
$40,001 - $41,000	$189	$65,001 - $66,000	$232
$41,001 - $42,000	$191	$66,001 - $67,000	$233
$42,001 - $43,000	$193	$67,001 - $68,000	$234
$43,001 - $44,000	$195	$68,001 - $69,000	$235
$44,001 - $45,000	$197	$69,001 - $70,000	$236
$45,001 - $46,000	$199	$70,001 - $71,000	$237
$46,001 - $47,000	$201	$71,001 - $72,000	$238
$47,001 - $48,000	$203	$72,001 - $73,000	$239
$48,001 - $49,000	$205	$73,001 - $74,000	$240
$49,001 - $50,000	$207	$74,001 - $75,000	$241
$50,001 - $51,000	$209	$75,001 - $76,000	$242
$51,001 - $52,000	$211	$76,001 - $77,000	$243
$52,001 - $53,000	$213	$77,001 - $78,000	$244
$53,001 - $54,000	$215	$78,001 - $79,000	$245
$54,001 - $55,000	$217	$79,001 - $80,000	$246
$55,001 - $56,000	$219	$80,001 - $81,000	$247
$56,001 - $57,000	$221	$81,001 - $82,000	$248
$57,001 - $58,000	$223	$82,001 - $83,000	$249
$ 83,001 - $ 84,000	$250	$104,001- $105,000	$271
$ 84,001 - $ 85,000	$251	$105,001- $106,000	$272
$ 85,001 - $ 86,000	$252	$106,001- $107,000	$273
$ 86,001 - $ 87,000	$253	$107,001- $108,000	$274
$ 87,001 - $ 88,000	$254	$108,001- $109,000	$275
$ 88,001 - $ 89,000	$255	$109,001- $110,000	$276
$ 89,001 - $ 90,000	$256	$110,001- $111,000	$277
$ 90,001 - $ 91,000	$257	$111,001- $112,000	$278
$ 91,001 - $ 92,000	$258	$112,001- $113,000	$279
$ 92,001 - $ 93,000	$259	$113,001- $114,000	$280
$ 93,001 - $ 94,000	$260	$114,001- $115,000	$281
$ 94,001 - $ 95,000	$261	$115,001- $116,000	$282
$ 95,001 - $ 96,000	$262	$116,001- $117,000	$283
$ 96,001 - $ 97,000	$263	$117,001- $118,000	$284
$ 97,001 - $ 98,000	$264	$118,001- $119,000	$285
$ 98,001 - $ 99,000	$265	$119,001- $120,000	$286
$ 99,001 - $100,000	$266	$120,001- $121,000	$287
$100,001- $101,000	$267	$121,001- $122,000	$288
$101,001- $102,000	$268	$122,001- $123,000	$289
$102,001- $103,000	$269	$123,001- $124,000	$290
$103,001- $104,000	$270	$124,001- $125,000	$291

$125,001- $126,000	$292	$147,001- $148,000	$314
$126,001- $127,000	$293	$148,001- $149,000	$315
$127,001- $128,000	$294	$149,001- $150,000	$316
$128,001- $129,000	$295	$150,001- $151,000	$317
$129,001- $130,000	$296	$151,001- $152,000	$318
$130,001- $131,000	$297	$152,001- $153,000	$319
$131,001- $132,000	$298	$153,001- $154,000	$320
$132,001- $133,000	$299	$154,001- $155,000	$321
$133,001- $134,000	$300	$155,001- $156,000	$322
$134,001- $135,000	$301	$156,001- $157,000	$323
$135,001- $136,000	$302	$157,001- $158,000	$324
$136,001- $137,000	$303	$158,001- $159,000	$325
$137,001- $138,000	$304	$159,001- $160,000	$326
$138,001- $139,000	$305	$160,001- $161,000	$327
$139,001- $140,000	$306	$161,001- $162,000	$328
$140,001- $141,000	$307	$162,001- $163,000	$329
$141,001- $142,000	$308	$163,001- $164,000	$330
$142,001- $143,000	$309	$164,001- $165,000	$331
$143,001- $144,000	$310	$165,001- $166,000	$332
$144,001- $145,000	$311	$166,001- $167,000	$333
$145,001- $146,000	$312	$167,001- $168,000	$334
$146,001- $147,000	$313	$168,001- $169,000	$335
$169,001- $170,000	$336	$193,001- $194,000	$360
$170,001- $171,000	$337	$194,001- $195,000	$361
$171,001- $172,000	$338	$195,001- $196,000	$362
$172,001- $173,000	$339	$196,001- $197,000	$363
$173,001- $174,000	$340	$197,001- $198,000	$364
$174,001- $175,000	$341	$198,001- $199,000	$365
$175,001- $176,000	$342	$199,001- $200,000	$366
$176,001- $177,000	$343	$200,001- $201,000	$367
$177,001- $178,000	$344	$201,001- $202,000	$368
$178,001- $179,000	$345	$202,001- $203,000	$369
$179,001- $180,000	$346	$203,001- $204,000	$370
$180,001- $181,000	$347	$204,001- $205,000	$371
$181,001- $182,000	$348	$205,001- $206,000	$372
$182,001- $183,000	$349	$206,001- $207,000	$373
$183,001- $184,000	$350	$207,001- $208,000	$374
$184,001- $185,000	$351	$208,001- $209,000	$375
$185,001- $186,000	$352	$209,001- $210,000	$376
$186,001- $187,000	$353	$210,001- $211,000	$377
$187,001- $188,000	$354	$211,001- $212,000	$378
$188,001- $189,000	$355	$212,001- $213,000	$379
$189,001- $190,000	$356	$213,001- $214,000	$380
$190,001- $191,000	$357	$214,001- $215,000	$381
$191,001- $192,000	$358	$215,001- $216,000	$382
$192,001- $193,000	$359	$216,001- $217,000	$383

$217,001- $218,000	$384
$218,001- $219,000	$385
$219,001- $220,000	$386
$220,001- $221,000	$387
$221,001- $222,000	$388
$222,001- $223,000	$389
$223,001- $224,000	$390
$224,001- $225,000	$391
$225,001- $226,000	$392
$226,001- $227,000	$393
$227,001- $228,000	$394
$228,001- $229,000	$395
$229,001- $230,000	$396
$230,001- $231,000	$397
$231,001- $232,000	$398
$232,001- $233,000	$399
$233,001- $234,000	$400
$234,001- $235,000	$401
$235,001- $236,000	$402
$255,001- $256,000	$422
$256,001- $257,000	$423
$257,001- $258,000	$424
$258,001- $259,000	$425
$259,001- $260,000	$426
$260,001- $261,000	$427
$261,001- $262,000	$428
$262,001- $263,000	$429
$263,001- $264,000	$430
$264,001- $265,000	$431
$265,001- $266,000	$432
$266,001- $267,000	$433
$267,001- $268,000	$434
$268,001- $269,000	$435
$269,001- $270,000	$436
$270,001- $271,000	$437
$271,001- $272,000	$438
$272,001- $273,000	$439
$273,001- $274,000	$440
$274,001- $275,000	$441
$275,001- $276,000	$442
$276,001- $277,000	$443
$277,001- $278,000	$444
$278,001- $279,000	$445
$279,001- $280,000	$446
$280,001- $281,000	$447
$281,001- $282,000	$448
$236,001- $237,000	$403
$237,001- $238,000	$404
$238,001- $239,000	$405
$239,001- $240,000	$406
$240,001- $241,000	$407
$241,001- $242,000	$408
$242,001- $243,000	$409
$243,001- $244,000	$410
$244,001- $245,000	$411
$245,001- $246,000	$412
$246,001- $247,000	$413
$247,001- $248,000	$414
$248,001- $249,000	$415
$249,001- $250,000	$416
$250,001- $251,000	$417
$251,001- $252,000	$418
$252,001- $253,000	$419
$253,001- $254,000	$420
$254,001- $255,000	$421
$282,001- $283,000	$449
$283,001- $284,000	$450
$284,001- $285,000	$451
$285,001- $286,000	$452
$286,001- $287,000	$453
$287,001- $288,000	$454
$288,001- $289,000	$455
$289,001- $290,000	$456
$290,001- $291,000	$457
$291,001- $292,000	$458
$292,001- $293,000	$459
$293,001- $294,000	$460
$294,001- $295,000	$461
$295,001- $296,000	$462
$296,001- $297,000	$463
$297,001- $298,000	$464
$298,001- $299,000	$465
$299,001- $300,000	$466

$300,001 UP - Add $1.00 per $1,000

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WIND TOWER HEARING FEES

There will be a required fee of $1,500.00 for plat review for the Regional Planning Commission. There will also be a required fee of $750.00 for each Zoning Board of Appeals hearing. The required published legal notice is to be paid by the applicant. The County Board adopted this Ordinance August 2008.

WIND TOWER BUILDING PERMIT FEE

A building permit fee of $5,000.00 per tower will be charged per County Board approval March 10, 2009.

DOG KENNELS

Dog kennel fees are to be based upon the number of dogs.

$ 0	1 to 4
$ 50.00	5 to 9
$250.00	10 to 14
$350.00	15 to 19
$500.00	20 and up

Annual renewal will be one-half of initial fee.

DEVELOPMENT PERMIT FEE

There is imposed a Development Permit fee of $160.00 per application for a Development Permit under Section 18-45 of the Iroquois County Code.

CELLULAR TOWER HEARING FEE

There is a fee of $500.00 required for a public hearing for Cellular Tower placement. This was approved by the September 1998 County Board. The County Board adopted this Ordinance January 2000.

MOBILE HOME PARK CONDITIONAL USES

A permit fee of $250.00 is required for each ten acres of land to be used as a mobile home park. This will be a Conditional Use Application. The County Board approved this Ordinance January 2000.

Eagle County, Colorado Efficient Building Code

The Eagle County Board adopted its "ECO-Build" regulations to promote energy and material efficient building design and construction practices. The information provided below is excerpted from the official Eagle County website. Additional information is available at: the official website of Eagle County, Colorado: http://www.eaglecounty.us/.

ECO-Build applies to all new construction, as well as additions/reconstruction over 50 percent of the existing floor area, and exterior energy uses such as snowmelt, spas, and pools. The completed ECO-Build checklist must be submitted along with the subject building permit application. Mobile home units that are approved by Colorado Department of Housing are exempt.

ECO-Build also considers exterior energy uses over a nominal amount as identified below. Fees are based on average BTUs required for such amenities over a 20-year period in our climate. Fees are exempted if renewable energy system(s) are installed onsite prior to completion of the amenity which generate the equivalent of 50 percent of the energy needed for the use. Also, any rebates earned above may be credited accordingly. System design and calculations required.

ECO-Build Offset Calculation Worksheet

Exterior energy fees apply as follows:
Snowmelt over 200 square feet: $16 per square foot
Spa/hot tub over 64 square feet: $176 per square foot
Exterior pool: $136 per square foot

For example, if 500 square feet of snowmelt was proposed on a residential property, where 200 is exempt, then 300 x $16 per square foot = $4800

Source: Eagle County website http://www.eaglecounty.us/
Downloaded 3/23/2012

An excerpt of the *Eagle County Efficient Building Code* regulations is provided on the following pages.

DIVISION 4-8 EAGLE COUNTY EFFICIENT BUILDING CODE (ECObuild): SINGLE-FAMILY, DUPLEX, TOWNHOUSE *(org. 5/30/06)*

SECTION 4-800 PURPOSE

The intent of the ECObuild program is to encourage cost-effective sustainable building methods to create durable, energy efficient structures that conserve natural resources, promote the efficient use of building materials, and improve indoor air quality.

SECTION 4-810 APPLICABILITY

ECObuild applies to all new residential R3 (single family, duplex, townhouse) construction per the currently adopted building code, as well as additions/reconstruction over 50% of the existing floor area, and exterior energy uses such as snowmelt, spas, and pools over sizes listed in Section 4-825. The completed ECObuild checklist must be submitted along with the subject building permit application. Mobile Home units that are approved by Colorado Department of Housing are exempt.

SECTION 4-820 POINT REQUIREMENTS

Required points are applicable as below. Items filled out by the applicant will be checked as part of the plan check review, as well as in field inspections accordingly.

Dwelling units:

0-2000	square feet of floor area would need to meet	**40 points or more**
2001-3000	square feet of floor area would need to meet	**45 points or more**
3001-4000	square feet of floor area would need to meet	**50 points or more**
4001-5000	square feet of floor area would need to meet	**60 points or more**
5001-6000	square feet of floor area would need to meet	**70 points or more**
6001-7000	square feet of floor area would need to meet	**80 points or more**
7001-8000	square feet of floor area would need to meet	**90 points or more**
8001+	square feet of floor area would need to meet	**100 points or more**

OR, projects may pay a fee in lieu of meeting point requirements as calculated below:

$$\frac{\text{Square footage x number of points short x \$10}}{\text{Number of required points}} = \text{cash in lieu fee.}$$

For example, a 2000 ft^2 house meeting 35 points where 40 are required:

$$\frac{2000 \times 5 \times \$10}{40} = \$2500 \text{ cash-in-lieu fee}$$

Any funds collected will be placed into a separate Renewables and Efficiency Fund which will offer financial incentives for energy efficiency and renewable power installation in Eagle County. See Section 4-840 for details regarding use of this fund.

Homes achieving a Home Energy Rating System (HERS) index of 50 or lower, or LEED Gold will receive a **rebate** after certificate of occupancy for 25% of their building permit fee, not to exceed $5000:

For measures where a graduated point scale is possible, the following shall apply:

Quantity Level 1: 10-25% **Quantity Level 2: 26-50%**
Quantity Level 3: 51-75% **Quantity Level 4: 76-100%**

SECTION 4-825 EXTERIOR ENERGY USES

Eco-Build also considers exterior energy uses over a nominal amount as identified below. Fees are based on average BTUs required for such amenities over a 20-year period in our climate. Fees are exempted if renewable energy system(s) are installed on-site prior to completion of the amenity which generate the equivalent of 50% of the energy needed for the use. Also, any rebates earned above may be credited accordingly. System design and calculations required.

Exterior energy fees apply as follows:

Snowmelt over 200 square feet:	**$16 per square foot**
Spa/hot tub over 64 square feet:	**$176 per square foot**
Exterior pool:	**$136 per square foot**

For example, if 500 square feet of snowmelt was proposed on a residential property, where 200 is exempt, then 300 x $16 per square foot = $4800

SECTION 4-830 POINT DETAILS

SECTION 4-830.1 SITE/WATER CONSERVATION

1.1 Reduction of irrigated turf areas, all other landscaping drip irrigation only
3 points

Irrigated turf area must be equal or less than 25% of lot area, or 1000 square feet, whichever is smaller. Show turf areas and drip irrigation lines/beds on landscaping plan.

Use of low-water-demand or xeriscape-rated plants ONLY
2 additional points

Landscaping plan must show xeriscape plants listed by Colorado State University Extension Horticulture office, listed on www.xratedgardening.com, or other recognized source.

1.2 Low-flow or dual-flush toilets
2 points

A toilet that has 1.4 gallons per flush (GPF) or less qualifies as a low-flow toilet. To achieve the point, all toilets must be low-flow or dual flush. Inspected on-site.

1.3 Low-flow showerheads
1 point

Showerheads 2.0 gallons per minute or less must be installed on all showers. Provide any documentation for on-site inspection.

1.4 Water efficient clothes washer and/or dishwasher

1 to 2 points

Clothes washer/dishwasher must be listed on www.aceee.org or www.energystar.gov, or must be shown to have similar water usage. One point for water efficient clothes washer(s), one point for efficient dishwasher(s).

SECTION 4-830.2 RECYCLING AND REUSE

2.1 Use of pine beetle salvage wood
3 points per material used, up to 9 points

Pine beetle affected lumber harvested in Colorado can be utilized as dimensional framing material, as well as siding, flooring, trim, etc. Material must be used for over 50% of structure.

2.2 Surplus/deconstructed materials donated to building materials exchange
1 point per 10 cubic yards donated material, up to 6 points

Extra onsite materials, either new or deconstructed, can be donated to a local materials exchange yard. Keep receipt of donated materials with field plan set on job site.

2.3 Wood, cardboard recycled on site
2 points per material type recycled

Labeled containers must be on site with evidence of use and service.

2.4 Reclaimed and/or recycle-content materials
2 points per material used

Use of construction materials that are either reclaimed from another structure, and/or any materials with recycle-content in them qualify. Material information/documentation must be on job site with field set of plans for inspection.

Materials that are purchased from a reclaimed materials distributor, deconstructed by the owner/applicant from another structure, or that are purchased from a used building materials exchange qualify as reclaimed materials.

Provide material info with building permit; field inspected. Material must be used for over 50% of structure.

SECTION 4-830.3 FRAMING AND MATERIALS

3.1 Optimum value engineering techniques used
2-6 points

Use of 24-inch on center studs for over 50% of the structure	2 points
Use of 2-stud corners for over 50% of framing	2 points
Efficient headers in over 50% of framing	2 points

Efficient headers refers to insulated headers on exterior walls (minimum R-10). Inspected at framing inspection.

3.2 FSC or SFI certified materials used

2 points per material used, up to 8 points

Sustainably-harvested wood products certified by either the Forest Stewardship Council (FSC) or Sustainable Forestry Initiative (SFI). Material must be used in over 50% of building.

3.3 Materials manufactured within Colorado and/or rapidly renewable materials
1 point per material used, up to 8 points

Provide documentation on-site for any materials used that are manufactured in-state and/or are considered rapidly renewable. Rapidly renewable materials are building materials needing 15 years or less of growth for their harvest. Concrete or stone not included.

3.4 Straw Bales or Structural Insulated Panels (SIPs) used for exterior walls
10 points

SIP panels, a foam core laminated to oriented strand board, or straw bale construction both provide superior r-values and reduced air infiltration than conventional 2x6" wall construction. Must be used for >75% of exterior walls. Show in structural plans and inspected in field.

3.5 Insulated Concrete Forms (ICFs) for foundation/basement
5 points

Insulated Concrete Forms (ICFs) are expanded polystyrene form blocks which are stacked with concrete poured into the internal void. ICFs provide improved insulation and reduced moisture transport over conventional foundation walls.

ICFs shown on structural drawings for plans and inspected in field.

Insulated Concrete Forms (ICFs) for basement/foundation walls plus above grade walls.
10 points

ICFs must be used for >75% of exterior walls. ICFs shown on structural drawings for plans and inspected in field.

SECTION 4.830.4 ENERGY

4.1 Thermostats for each room
2 points

To qualify for the 2 points, each enclosed room must have a separate thermostat, not including storage areas, closets, bathrooms, mechanical rooms, or non-habitable space.

4.2 Efficient Boiler or Furnace
1 to 7 points

For each number of efficiency above 92%, a point is given. For example, if a boiler has an AFUE rating of 95%, then 3 points would be given. Field inspected.

4.3 Tankless on-demand water heater(s) or efficient gas water heater
3 points

Gas or electric models qualify, must meet over 50% of total domestic hot water needs. Units must have an intermittent ignition device (IID) instead of a standing pilot light to qualify.

Efficient gas conventional water heaters also help save energy. Gas waters 88% efficiency or above receive 2 points. Side arm boilers qualify as part of a modulating condensing boiler 90% efficiency or above. Field inspected.

4.4 Efficient lighting
2 points

Installation of lighting that uses 20% or less wattage as incandescent lighting for equivalent lumens. Compact Fluorescent Lamps (CFLs), T8s, T5s, LEDs or equivalent comply. Efficient lighting must be installed in over 50% of the structure. Field inspected.

4.5 No mechanical air conditioning
4 points

Through proper design of building aspect, window sizing and placement, overhang shading, and insulation, air conditioning systems are unnecessary in our climate. Eliminating the need for air conditioning offers an immediate initial cost savings as well as reduced operational costs for the life of the structure. Field inspected.

4.6 Radiant floor/hydronic baseboard heating system
2 points

Either in-floor radiant heat or baseboard hydronic heat qualifies as long as over 50% of the heating needs of the structure are met by hydronic means. Show system detail on construction plans, field inspected.

4.7 Air to air heat exchanger
2 points

An air-to-air heat exchange captures potentially lost warm or cool air while ventilating interior space. Heat exchange must be in place for all mechanical ventilation in place. Field inspected.

4.8 Roof/ceiling insulation
1 to 10 points

One point given for each R value over 49, up to 10 points maximum. Field inspected.

4.9 Wall insulation
1 to 8 points

Show wall insulation in construction plans. One point given for each R value over 20, up to 8 points maximum. For example, if an R-30 wall is installed, 8 points would be given. Field inspected.

4.10 Blown or sprayed insulation
1 point per Quantity Level

Blown or sprayed insulation reduces air infiltration and offers higher effective R values than batt insulation. Blown insulation installed in attics/ceilings, walls, and basements/crawlspaces qualifies. One point given for each quantity level of blown or sprayed insulation installed. For example, if 80% of the insulation in a structure is blown-in, then quantity level 4 (76-100%) or 4 points would be given. Field inspected.

4.11 Windows with low-e glazing
1 point for each U-.01 below U-.30

Window decals field inspected. Where U-rating variations occur, a weighted average will be utilized. For example, U-.25 rating would yield 5 points.

4.12 Insulating window coverings installed
3 points

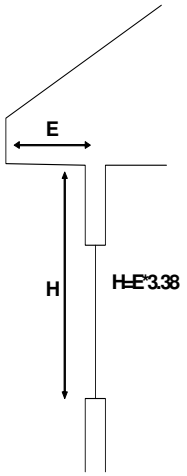
Window coverings must be properly installed and have a minimum R-3 to qualify. Over 75% of exterior windows must have insulated window coverings for points to apply.

SECTION 4.830.5 RENEWABLE ENERGY

5.1 Passive solar design
5 to 10 points

Prerequisite: Site and south facing glazed area must have unobstructed solar access from 10am to 2pm. Deciduous trees to south are allowable for summer shading.

Glazing: Install south-facing (at least within 20 degrees of due south) glass equivalent to 7% or more of total heated floor area. Inspected at plan review. **5 points**



Install south-facing glass equivalent to 12% or more of total heated floor area, and provide proper shading according to the figure to the left, where E= eave width, H=height of bottom of window from the eave, and H=E*3.38, or conversely, E=H/3.38.
5 additional points

5.2 Solar hot water system
8 points

Install a solar hot water system, which includes rooftop or ground-mounted panel collectors connected to a heat exchanger and/or insulated storage tank for domestic hot water supply. System must have unobstructed solar access. Systems may be active, using solar or electric pumps, or they may utilize a thermal siphon. Collectors must be facing within 20 degrees of due south, and between 30 and 50 degrees from horizontal. System size is dependent on number of bedrooms:

1 bedroom	40 square feet of collectors	50 gallons storage
2 bedrooms	48 square feet of collectors	60 gallons storage
3 bedrooms	64 square feet of collectors	80 gallons storage
4+ bedrooms	96 square feet of collectors	120 gallons storage

5.3 On-site solar photovoltaic, wind energy, micro-hydroelectric
3 points for every .5 kW installed

Solar photovoltaic system
Photovoltaic panels should be mounted within 20 degrees of due south and between 30 and 50 degrees from horizontal. System must have reasonably unobstructed solar access. Applicant must submit plans from a qualified architect, engineer, or designer certifying the kW capacity, and

proper system design. Proper protection to prevent electric islanding must be in place in the event on a power outage. Field inspected. Maximum 50 points possible.

Wind Power
An on-site wind energy generation system must be constructed in accordance to the Eagle County Land Use Regulations. System must be installed in a minimum class 3 wind site, either as mapped by the National Renewable Energy Laboratory www.nrel.gov , or from on-site anemometer measurements for at least 3 months. Proper protection to prevent electric islanding must be in place in the event on a power outage. Maximum 50 points possible.

On-site micro-hydroelectric generation
An on-site micro-hydroelectric generation system must be constructed with proper permitting from the U.S. Army Corps of Engineers and approvals from any applicable water-governing authority. Show system plan, any grading/abutments, penstock/weir design, and grid tie-in or storage as applicable. For more information, go to www.microhydropower.net. Proper protection to prevent electric islanding must be in place in the event on a power outage. Maximum 50 points possible.

5.4 Ground source heat pump (geothermal) system
5 to 20 points

Ground source heat pumps utilize glycol loop systems drilled into the ground to heat or cool a structure. Five points are given for each quantity level of the structure's heating/cooling needs met by the system. If utilized for a snowmelt system, total energy calculations must include exterior energy use(s) as well. 5 points per quantity level. For example, if the system met 60% of the structure's heating/cooling needs, quantity level 3 (51-75%), 5 points per quantity level, 15 points would be given.

5.5 Pellet Stove
2 points

Pellet stoves utilize a salvage/recycled renewable fuel source, are clean burning, cost effective, energy efficient, and are considered a carbon-neutral energy source. Pellet stove must generate 2.0 grams/hour of particulate or less. Plan check and field inspected.

SECTION 4.830.6 INDOOR AIR QUALITY

6.1 High efficiency particulate air (HEPA) filter on HVAC system, or no HVAC
2 points

Install a high efficiency filter on a forced-air furnace system. Any High Efficiency Particulate Air (HEPA) filter must be rated at MERV 13 (0.1 micron) or higher. Field inspected.

6.2 Low-or non-toxic floor coverings
1 point per Quantity Level, up to 4 points

Materials either listed on www.greenguard.org or show that coverings are below EPA thresholds for low/non-toxicity. Quantity Level is determined by the percentage of total floor area meeting the above criteria. For example, if 80% of the total flooring was non-toxic, then quantity level 4 (76-100%) would apply, 1 point per Quantity Level, so 4 points would be given.

6.3 No attached garage or automatic exhaust fan in garage
2 points

Exhaust fumes from vehicles in the garage enter living space attached to it. Show on site plan if there is no attached garage. If attached garage exists, or there is habitable space above a garage, submit specifications on properly sized mechanical exhaust ventilation either running on a sensor, or timer that automatically turns on when garage door closes.

6.4 Radon Mitigation
3 points

Design and install radon mitigation system that removes radon or other soil gas from under the slab/crawlspace and vent per EPA guidelines. More information at www.radon.org and www.buildingscience.com.

SECTION 4-830.7.0 INNOVATION POINTS

Innovative product use and/or design points will be given points on a case by case basis. The item must specifically meet the intent of the EcoBuild guidelines as stated at the beginning of this guidelines document, and points will be scaled as the item would apply to similar comparable items in the guidelines.

Some options eligible for Innovation Points may include but are not limited to:

Energy 10 Analysis, American Lung Association-certified home, modulating or sequentially staged boilers, net-zero energy home, pervious materials in hardscape areas, frost-protected shallow foundation, trombe wall/interior thermal massing systems, evapo-transpiration watering system, etc.

SECTION 4-840. RENEWABLES AND EFFICIENCY FUND

Fees collected would go into a separate Renewables and Efficiency Fund (REF) which would create financial assistance, rebates, and incentives that would promote energy and resource efficient projects elsewhere in Eagle County. An advisory board would meet periodically to appropriate funding accordingly based upon guidelines and criteria to be approved by the Eagle County Commissioners.

The Renewables and Efficiency Fund will be utilized as follows:

1. Educational materials and events including but not necessarily limited to printed process guides, resource reference guides, efficient building educational events to assist participants in code compliance, a webpage with available resources, links, and information, etc.

2. Proposed 25% rebates for building permit applications exceeding compliance as outlined in the Eco-Build Guidelines point requirements.

3. Any additional funds generated will be used to assist existing structures or current projects to achieve improved energy efficiency or renewable power generation in Eagle County. An advisory board consisting of appointed Eagle County residents will meet quarterly to make recommendations on appropriations of any funds. It is suggested that such recommendations be based upon the following criteria:

a. **Meets Intent.** The extent to which the proposed project meets the intent of the fund which is to encourage and promote energy efficiency and renewable power generation in Eagle County. This intent should be met by assisting in the incremental upgrade of a project, and shall not be utilized for construction costs required for code compliance.

b. **Cost/Benefit.** The extent to which the proposed project provides an economic return on appropriations invested. Expected performance in our climate and return on investment calculations must be provided.

c. **Public benefit**. The extent to which the proposed project offers a public benefit to the Eagle County community.

d. **Consistency with Comprehensive Plan**. The extent to which the proposed project is in compliance with the Eagle County Comprehensive Plan.

e. **Affordable Housing.** Special consideration is given to projects that positively affect occupants of local affordable housing in Eagle County. Funding may assist in the incremental upgrade of a project, and shall not be utilized for construction costs required for code compliance.

SECTION 4-850. SEVERABILITY PROVISION

Should any provision of this Eagle County Efficient Building Code (Eco-Build) be declared by a court of competent jurisdiction in any final judgment to be invalid, unlawful or unenforceable for any reason, such offending provision shall be deemed deleted and the remaining provisions of such Code shall remain in full force and effect.

DIVISION 4-9: EAGLE COUNTY EFFICIENT BUILDING CODE: COMMERCIAL/MULTI-FAMILY

SECTION 4-900 PURPOSE *(orig. 5/8/2008)*

The intent of the ECO-BUILD COMMERCIAL/MULTI-FAMILY program is to encourage cost-effective sustainable building methods to create durable, energy efficient structures that conserve natural resources, promote the efficient use of building materials, and improve indoor air quality for occupants.

SECTION 4-910: APPLICABILITY

Eco-Build applies to all new non-residential, mixed use, and/or multi-family construction per the currently adopted building code, as well as additions/reconstruction over 50% of the existing floor area, and exterior energy uses such as snowmelt, spas, and pools over sizes listed in Section 4-925. The completed Eco-Build checklist must be submitted along with the subject building permit application.

SECTION 4-920 POINT REQUIREMENTS

The minimum points required for applicable construction projects are 70. Projects achieving LEED Gold or better will receive a 25% building permit rebate, not to exceed $5000. Projects not meeting the minimum 70 points shall pay a mitigation fee as follows:

Fee = Square footage of project x number of points short x $ .15.

For example, a 4000 square foot project that is 5 points short would be assessed a fee as follows:

4000 x 5 x $ .15 = $3000

SECTION 4-925: EXTERIOR ENERGY USES

Eco-Build also considers exterior energy uses over a nominal amount as identified below. Fees are based on average BTUs required for such amenities over a 20-year period in our climate. Fees are exempted if renewable energy system(s) are installed on-site which generate the equivalent of 50% of the energy needed for the use. Also, any rebates earned above may be credited accordingly. System design and calculations required.

Exterior energy fees apply as follows:

Snowmelt over 200 square feet:	**$16 per square foot**
Spa/hot tub over 64 square feet:	**$176 per square foot**
Exterior pool:	**$136 per square foot**

SECTION 4-930: POINT DETAILS

SECTION 4-930.1 SITE/WATER CONSERVATION

1.1 Construction Activity Pollution Prevention
REQUIRED

Provide proper erosion control measures to prevent off-site sedimentation. Limits of disturbance to have sediment fencing, staked hay bales in swales/drainage ditches, revegetation matting in any areas outside fencing disturbed by construction.

1.2 Site is either a redevelopment location or brownfield redevelopment.
Redevelopment 5 points. Brownfield redevelopment 10 points

Show on site plan location of existing or pre-existing structures. Deconstruction is required for existing structures for any reusable/recyclable items. For brownfield redevelopment, show documentation demonstrating previous or existing site contamination and clean-up.

1.3 Walkability/bikability: The site/design provides connection to a recreation path network.
2 points

Show connection to path network on site/vicinity plan.

1.4 Covered bicycle storage and employee changing/storage rooms
2 points

Bicycle storage for at least 10% of occupants; show in plans, field verified. Employee changing rooms are not applicable to projects with no onsite employees.

1.5 On-site affordable housing unit, live-work mixed use.
10 points per unit

Show on-site dwelling unit(s) that meet the Eagle County Housing Guidelines for either a deed restricted for sale unit or rental unit.

1.6 Reduced parking area
3 points

Provide at least 15% less parking than what is currently required in the Eagle County Land Use Regulations onsite. A parking demand analysis must be completed and submitted by an accredited professional that demonstrated the amount of parking on site is adequate.

1.7 Maximize Open Space
2 points

Total lot coverage is less than 75% of maximum allowable for lot. Total surface parking and hardscape area is less than building footprint(s).

1.8 Stormwater Design
3 points

100% of surface water runoff travels through bioswales, landscaped detention areas, or combination thereof that provides a portion of irrigation needs from natural precipitation, eliminates direct discharge of potential pollutants or sediment, and promotes groundwater recharge.

1.9 Diverse native landscaping
1 point

Landscaping plan includes 10 or more native species. Show on landscaping plan, plantings must be in at CO for credit.

1.10 Water Efficient Landscaping
2 to 4 points

Irrigated turf area must be equal or less than 40% of landscaped area, or 1000 square feet, whichever is smaller. Show turf areas and drip irrigation lines/beds on landscaping plan. Landscape must be in place at time at CO for points.

Use of low-water-demand or xeriscape-rated plants ONLY
1 additional point

Landscaping plan must show xeriscape plants listed by Colorado State University Extension Horticulture office, listed on www.xratedgardening.com, or other recognized source. Any turf area (must meet above standard) shall use species that utilizes at least 25% less water than Kentucky blue grass.

Landscape design requires no permanent irrigation
4 total points

Landscape plan must meet landscaping minimum standards. Temporary irrigation is permissible during plant establishment period. Landscaping must be planted prior to CO.

1.11 Interior Water Use Reduction
2 to 3 points

Demonstrate total water use reductions on interior fixtures, including toilets, showers, sinks, faucets, and urinals. 2 and 3 points are credited for projects demonstrating 20% and 30% or more reduction in use, respectively. Estimates are based on average occupant usage pursuant to the 1992 Energy Policy Act for fixture flow rates.

SECTION 4-930.2: RECYCLING, REUSE, MATERIALS

2.1 Storage and Collection of Recyclables in Design REQUIRED

Show on construction plans areas for storage of recycling containers next to trash container(s). Adequate space for a cardboard 2-yard minimum container, and toters for co-mingled and newspaper/mixed paper required. Field verified.

2.2 Construction Waste Recycling

2 points per material type

Provide labeled containers during construction for recycling cardboard, wood waste, and/or co-mingled (bottles/cans). Labeled containers clean of trash with evidence of use must be in place during inspections.

2.3 Use of Beetle Kill Pine

3 points per material type

Pine beetle-affected lumber harvested in Colorado can be utilized as dimensional framing material, as well as siding, flooring, trim, etc. Material must be used for over 50% of structure.

2.4 Reclaimed and/or recycled-content materials

2 points per material type

Use of construction materials that are either reclaimed from another structure, and/or any materials with recycle-content in them qualify. Material information/documentation must be on job site with field set of plans for inspection.

Materials that are purchased from a reclaimed materials distributor, deconstructed by the owner/applicant from another structure, or that are purchased from a used building materials exchange all qualify as reclaimed materials (must provide documentation).
Some common recycle-content materials include composite decking, recycle-content faux shake/slate roofing, cellulose or shredded cotton batt insulation, recycle-content carpets, counter tops, recycle-content tile, etc. Provide material info onsite; field inspected. Material must be used for over 50% of structure.

2.5 Surplus or reclaimed materials donated to local building material exchange

1 point per 10 cubic yards donated

Donate any surplus building materials or deconstructed materials to a used building materials exchange. Must provide documentation from business donated to at final ecobuild inspection for credit.

2.6 FSC or SFI certified materials

2 points per material type

FSC (Forest Stewardship Council) or SFI (Sustainable Forestry Initiative) stamped certification on material(s) required. Material must be used in over 50% of the structure, no 'token' materials for points. Field inspected.

2.7 Materials manufactured within Colorado and/or rapidly renewable materials

2 points per material type

Show documentation for any materials used that were manufactured within Colorado, or that consist of

rapidly renewable materials (naturally reproducing within 15 years). Material type must be used in over 50% of the project. Field inspected.

SECTION 4-930.3: ENERGY

3.1 Combustion Analysis Report REQUIRED

Provide detailed combustion analysis report of furnace/boiler after installation and following manufacturer's start up. Combustion analysis must demonstrate performance no less than 10% of AFUE efficiency rating.

3.2 Blower Door Test Points

2 points for each .05 ACH below 0.35 NACH

Provide blower door test documentation showing NACH (Natural Air Changes per Hour) rating. Two points awarded for each .05 rating below 0.35. For example, an ACH rating of 0.22 would yield 4 points. For any ACH ratings below 0.20, an air-to-air heat exchanger (Energy Recovery Ventilator or Heat Recovery Ventilator) is required to provide efficient mechanical fresh air.

3.3 Infrared Heat Loss Analysis and Remediation

3 points

Infrared cameras can be effective tools for pinpointing areas of heat loss (interior-exterior temperature difference must be at least 25 degrees). Provide detailed report from an accredited professional on analysis performed, areas of heat loss, and demonstrated remediation (if stated in analysis).

3.4 Building Commissioning

6 points

Provide a comprehensive third party inspection, testing, and analysis of all heating, cooling, electrical, lighting, and ventilation systems. Include report and demonstrated remediation for items delineated by the report.

3.5 No recessed lights on ceiling to exterior or sealed/IC-rated

2 points

Recessed lights and outlets act as chimneys for heat loss and moisture transfer into attic spaces and wall cavities respectively. Either eliminate any recessed light and/or outlet wall/ceiling penetrations, or all can lights and outlets on exterior walls/ceilings are sealed and IC-rated (Insulation Contact rated). The fixtures must either be manufactured with no penetrations, or installed inside an airtight assembly of gypsum board or manufactured assembly.

3.6 Efficient Boiler/Furnace

1 to 7 points

One point for each AFUE efficiency rating percentage over 87%. For multiple boilers/furnaces, ratings area averaged. Field inspected.

3.7 Tankless water heater(s)

1 to 3 points

Gas or electric tankless on-demand water heater models qualify, must meet over 50% of total hot water needs. Units must have an intermittent ignition device (IID) instead of a standing pilot light to qualify. Tankless systems get 3 points. Side-arm boilers qualify for one point as part of a modulating condensing boiler 90% AFUE efficiency or above. Field inspected.

3.8 Efficient Interior Lighting
2 points

At least 50% of interior lighting is 75% or more efficient than incandenscent lighting (compact fluorescent, T5 or T8 fluorescent, LED, qualify). Field inspected.

3.9 Motion Detecting Light Switches
1 to 4 points

Lighting that operates by motion detection saves energy and increases safety. One point is given for each motion detection switch installed, up to 4 points. Field inspected.

3.10 Evaporative Cooling Only or No Mechanical Air Conditioning
2 to 4 points

Evaporative Cooling is defined as cooling which relies only on evaporation of water for its cooling needs. Evaporative cooling works efficiently in arid dry climates in Colorado. Evaporative Cooling only is awarded 2 points. No mechanical air conditioning (passive cooling, ceiling fans, whole house ventilation systems excepted) 4 points.

3.11 Radiant in-floor heat
2 points

Hydronic in-floor heating in over 50% of the heated area of the structure receives 2 points.

3.12 Air-to-Air Heat Exchanger
2 points

An air-to-air heat exchanger (also referred to as a Heat Recovery Ventilator (HRV) or Energy Recovery Ventilator (ERV)) pre-warms or cools outside air by providing a heat exchange with exhaust air. Majority of total mechanical ventilation must go through a heat exchanger for points. Field inspected.

3.13 Roof/Ceiling Insulation
1 to 15 points

One point awarded for each manufacturer-rated R-value of insulation installed in the roof assembly. For structures/roof assemblies with multiple different R-values, a weighted average is used.

3.14 Wall Insulation
1 to 8 points

One point awarded for each manufacturer-rated R-value of insulation installed in the exterior wall assembly. For multiple wall types with different R-values, a weighted average is used.

3.15 Slab Insulation
R-10 2 points R-15 or above 4 pts.

Either for basement floors or slab-on-grade, a minimum continuous R-10 subfloor insulation is

REQUIRED. Insulation R-15 or above, 2 points. Field inspected*. **Must call in for inspection of not being looked at for infloor heat, etc.*

3.16 Crawl Space/Basement Insulation
R-10 REQUIRED, 2 points R-15+, 3 points R-19+

For crawl spaces or basements, provide minimum R-10 (either inside or outside wall) insulation. 2 points for R-15 or above, 4 points for R-19 or above.

3.17 Blown or Sprayed Insulation
1 point per Quantity Level

Blown insulation installed in attics/ceilings, walls, and basements/crawlspaces qualifies. One point given for each quantity level of blown or sprayed insulation installed. For example, if 80% of the insulation in a structure is blown-in, then quantity level 4 (76-100%) or 4 points would be given. Field inspected.

3.18 Landscaped Roof
1 to 2 points

A landscaped vegetated roof that occupies over 50% of the total roof area qualifies for 2 points. If 25% of the area is a landscaped vegetated roof, 1 point. Field inspected.

3.19 Efficient Windows
1-8 points

Double-pane windows with low-e glazing REQUIRED. 1 point for each U-.01 below U-.35. Field inspected. If windows have differing U-ratings on project, then a weighted average is taken.

3.20 Insulating Window Shades
2 points
75% or more of total windows have insulating window coverings rated of R-3 or higher. Field inspected at CO.

SECTION 4-930.4 RENEWABLE ENERGY

4.1 Onsite Renewable Energy

Provide calculations demonstrating any onsite renewable energy systems (including passive solar) as a function of total energy use offset for that energy source (total electricity or total gas). Points as follows:

Over 5% offset 5 points
Over 10% offset 10 points
Over 25% offset 15 points
Over 50% offset 20 points
Over 75% offset 25 points

SECTION 4-930.5: INDOOR QUALITY

5.1 Radon mitigation system
REQUIRED

Install a Radon mitigation system that eliminates potential for Radon or other soil gases from entering

habitable areas of the structure. Must ventilate below floor/slab vapor barrier to exterior. Mechanical ventilation of Radon system not necessary unless otherwise specified.

5.2 HEPA filter in HVAC
1 point

Have a High Efficiency Particulate Air (HEPA) or MERV 13 (0.1 micron) or higher filter installed that effectively filters HVAC system.

5.3 Low- or Non-Toxic Floor Coverings
1 point per Quantity Level

Materials either listed on www.greenguard.org or show that coverings are below EPA thresholds for low-toxicity. In general, most tile, wood, and natural carpets meet low-toxic standards. For other coverings, provide documentation demonstrating compliance. Quantity Level is determined by the percentage of total floor area meeting the above criteria. For example, if 80% of the total flooring was non-toxic, then quantity level 4 (76-100%) would apply, 1 point per Quantity Level, so 4 points would be given.

5.4 Construction IAQ Plan
1 point

HVAC system must be covered until occupancy.

5.5 Indoor Chemical and Pollutant Control
2 points

Any onsite hazardous material storage must be air-tight and provide spill/leakage containment. Also, install a minimum 4x4' grated area with void below for all major entryways that reduces potential for dirt and other pollutants from entering the structure.

5.6 Mechanical Ventilation Beyond Code
2 points

Provide mechanical ventilation at least 10% over ASHRAE Standard 62.1-2004, which operates on occupancy controls (motion activated or CO_2 activated). An air-to-air heat exchanger (ERV or HRV) that pre-heats or cools fresh intake air is required.

SECTION 4-930.6 INNOVATION POINTS

Innovative product use and/or design points will be given points on a case by case basis. The item must specifically meet the intent of the Eco-Build guidelines as stated at the beginning of this guidelines document, and points will be scaled as the item would apply to similar comparable items in the guidelines.

SECTION 4-950. SEVERABILITY PROVISION

Should any provision of this Eagle County Efficient Building Code (Eco-Build) be declared by a court of competent jurisdiction in any final judgment to be invalid, unlawful or unenforceable for any reason, such offending provision shall be deemed deleted and the remaining provisions of such Code shall remain in full force and effect.

STUDY METHODOLOGY

Step 1 Determine current status

The type of work currently being performed must be determined before an action or implementation plan can be designed. All municipal and county governments have a list of services they perform. In many cases this list does not accurately reflect the level of services actually being performed.

There are some agencies which go far beyond the stated services. They provide in depth services which exceed the stated goals of the agency. In other cases, the government agency does not have the staff or expertise to achieve the stated goals. In either case, the starting point must be what is actually being done by the agency.

Determining the current status involved interviews with the staff to establish the types of services being provided. This information was verified with interviews with contractors and developers who perform work in the county jurisdiction.

Step 2 Review all current documentation of procedures, handouts and ordinances.

A review of the current information will indicate the type of services that are performed. It also shows the type of information which has been given to the public.

Step 3 Determine industry expectations

The requirements for a building permit have an effect on many sectors of the community. The many types of permit and inspection requirements have different impacts on the contractors. It is important to understand the contractors' potential problems and needs.

Informational meetings were held by the Peoria County Planning & Zoning Department which included all sectors of the construction industry including contractors, design professionals and real estate professionals.

Contractors were given the opportunity to express their concerns about a countywide permit and inspection program. The contractors were questioned on the type of plan reviews and inspections they feel are necessary. Their potential concerns for time constraints for plan review and inspections were investigated during the meetings.

The single-family home contractors expressed a number of concerns regarding a county building department. Many of the contractors did not oppose the creation of a Building Department for Peoria County. The contractors were also aware that there would be permit-related fees for the department. The home contractors' primary concerns were:

1. Limit the fee charged
2. Limit the number of inspections performed

3. Do not slow down the construction process
4. Create a system similar to the City of Peoria

The needs of the permittee who is not a typical contractor were also considered. There are many construction projects completed by homeowners. Homeowner-builder concerns, and how they would use the department services were considered along with the concerns of the contractor. The homeowner who acts as a general contractor will typically require additional staff time. They need greater assistance to understand the permit and code requirements. A complete set of handouts, which explain what is required for each type of project, is a great help to the homeowner.

During this step the needs of the end-user or building department customer were considered.

Step 4 Building department basics

There are different levels of service which can be provided by a building department. These different types of service and service levels were considered and analyzed. They are listed in Table 2 on page 19.

During this step an analysis of the different aspects of the building permit process was performed. This analysis will help establish the service levels desired by the county.

Step 5 Determine the county growth potential and resource requirements

The resource needs for a building department will depend on the construction activity in the county. This construction activity includes many different items including new homes, remodeling and additions to existing homes, new commercial and industrial buildings and miscellaneous permits such as sheds, decks, fences and swimming pools.

The County Planning and Zoning Department provided historical statistics showing the number and type of construction projects. This information provided details for projects for which permits were issued. There were also projects performed in the county for which the homeowner or contractor did not obtain permits. The number of permits and subsequent inspections will increase after a building department is created. There are no projections in this report for this possible increase in permits and inspections. It also does not include future growth in the construction industry.

A 2002 study performed by the Tri-County Regional Planning Commission, entitled "Peoria-Pekin Future Landscape Project," was used to review growth potential. The number and types of permits issued by Peoria County from 1999 through 2002 are shown in Table 7 on page 27.

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Step 6 Determine resources needs and permit fees

Before a budget and fee schedule can be established, the types of service, levels of service, and types of projects expected to occur need to be determined. This information, in combination with projected growth potential, will determine annual resource requirements.

During this step the different types of services and service levels were analyzed in order to make recommendations for staff levels.

Step 7 Department recommendations

The information gathered in Steps 1 through 6 was used to make the final recommendation for the study.