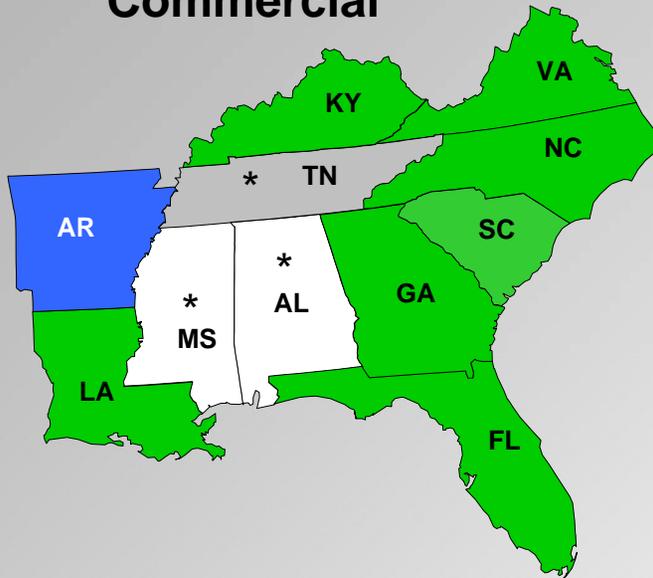




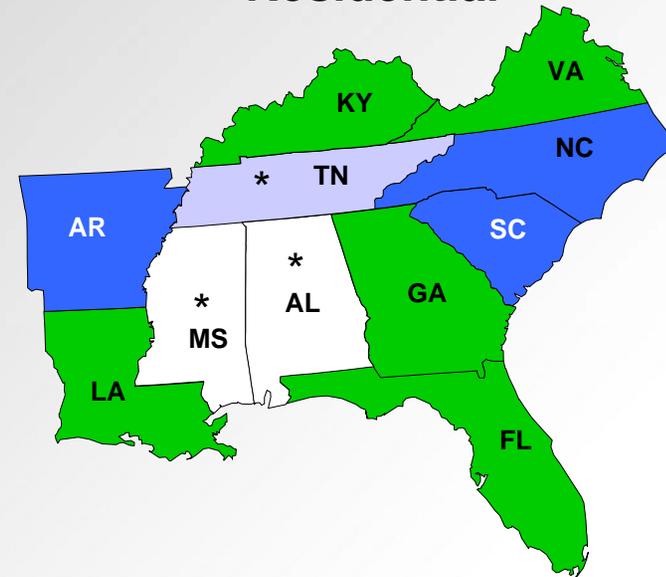
SEEA – Southeast Energy Efficiency Alliance

Commercial



- ASHRAE 90.1-2004/2006 IECC, equivalent or better
- ASHRAE 90.1-2001/2003 IECC or equivalent
- Older or less stringent than ASHRAE 90.1-1989/2000 IECC
- No statewide code
- Adoption by county/jurisdiction above state mandated minimum

Residential



- IECC 2006, equivalent or better
- IECC 2003 or equivalent
- Older or less stringent than IECC 1998
- No Statewide Code
- Adoption by county/jurisdiction above state mandated minimum



Georgia

You develop it, we'll adopt it, after we change it, and hopefully someone will enforce it.

As a home-rule state, the interpretation and enforcement of all State construction codes is left to the local building official, if there is one.

The 2006 IECC with Georgia Supplements and Amendments is the current statewide energy code.



What we think we did right...

- In an attempt to get HVAC contractors to conduct a load calculation for residences, GA added a sentence to the end of Section 401.3 'Certificate' of the 2006 IECC. This sentence reads: **“The certificate shall also list the calculated heating load, sensible cooling load, latent cooling load and cfm for space conditioning.”**
- GA has also added an Appendix A to the IECC called “Air Sealing Key Points.” This appendix has greatly improved the enforcement of, and compliance with the air leakage requirements of Section 402.4 by representing them graphically.

What we think we did right...

Georgia Energy Code Compliance Certificate*			
Builder	<input type="text"/>	Contact Info	<input type="text"/>
Insulation Co.	<input type="text"/>	Contact Info	<input type="text"/>
HVAC Co.	<input type="text"/>	Contact Info	<input type="text"/>
Envelope Information: (List R-Values for the following components)			
Flat ceiling/roof	<input type="text"/>	Slope/vault ceiling	<input type="text"/>
Exterior wall	<input type="text"/>	Attic knee wall sheathing	<input type="text"/>
Attic knee wall	<input type="text"/>	Basement continuous	<input type="text"/>
Basement stud wall	<input type="text"/>	Crawlspace continuous	<input type="text"/>
Crawlspace stud wall	<input type="text"/>	Above grade mass wall	<input type="text"/>
Foundation slab	<input type="text"/>	Floor over unconditioned space	<input type="text"/>
Cantilevered floor	<input type="text"/>	Other Insulation	<input type="text"/>
Fenestration:			
Window U-factor	<input type="text"/>	Window SHGC	<input type="text"/>
Skylight U-factor	<input type="text"/>	Skylight SHGC	<input type="text"/>
Glazed Door U-factor	<input type="text"/>	Opaque Doors U-factor (<50% glazed)	<input type="text"/>
Mechanical Summary			
Water Heater installed by:		<input type="text"/>	
Water Heater Type:	Energy Factor:		
Gas	<input type="text"/>		
Electric	<input type="text"/>		
Other (explain)	<input type="text"/>		
Number of Heating and Cooling Systems (air handlers)		<input type="text"/>	
Heating Type:	Efficiency:		
Gas	<input type="text"/>	AFUE	
Air Source Heat Pump	<input type="text"/>	HSPF	
Other	<input type="text"/>		
Cooling System Type: (Direct Expansion, Heat Pump, Geothermal, Etc.)		<input type="text"/>	
Cooling System SEER:		<input type="text"/>	
Total House Heating Load (Btu/h based on ACCA Man. J or other approved methodology)		<input type="text"/>	
Total House Cooling Load (Btu/h based on ACCA Man. J or other approved methodology)		<input type="text"/>	
Cooling Sensible Load (Btu/h)		<input type="text"/>	
Cooling Latent Load (Btu/h)		<input type="text"/>	
Total Air Handler CFM (Based on Design/Calculations)		<input type="text"/>	
Heating and Cooling Calculations Performed by (Name)		<input type="text"/>	
<small>*Certificate shall be readily accessible and posted on the electrical distribution panel or air handler. List primary type when there is more than one value for each component (i.e. certificate shall list the value covering the largest area). The certificate shall be completed by the builder or registered design professional.</small>			

We've included the requirements of Section 401.3 as a form, posted on our website, that builders can download, fill out and print.

www.dca.state.ga.us



Energy Code Compliance?

- Georgia has a very fair and open code adoption and amendment process at the state level, although this is not well known.
- We struggle with sporadic and inconsistent energy code enforcement at the local level.
- We're really known for the 4 "P's", peanuts, peaches, pecans and poultry.

Moving forward...

- Senate Bill 130 was signed into law by Governor Perdue in May 2008. This bill has charged DCA with developing guidelines for new and renovated state buildings to be 30% more efficient than ASHRAE 90.1-2004. It also incorporates guidelines for broader aspects of sustainability.
- Today, the State Codes Advisory Committee is voting on a proposed amendment that will ban electric resistance heat in the primary, central HVAC system in all new residential construction.
- If you've learned nothing else from this presentation you can at least remember that Georgia is the **chicken capital of the world**, processing 18 million pounds per day.
- Ryan Meres, Building Codes Consultant, 404-679-3109



Arkansas

The Natural State

So we've got this brand new code (a modified 2003 IECC), now how can it be enforced without any "carrots or sticks?"



Success Story



Arkansas
2004 Residential
Energy Code



ARKANSAS

Zone 7B

(HDD range is 3000-3499)

Conway • Crittenden • Cross
Faulkner • Garland
Hempstead • Hot Spring
Howard • Lee • Logan
Lonoke • Monroe • Perry
Phillips • Pike • Prairie
Pulaski • Saline • Scott
Sevier • St. Francis • White
Woodruff • Yell

To simplify the code for better understanding and evaluation, small trifold “code cards” were developed. These have been distributed to builders and code officials statewide.

Arkansas is the

arkansas
energy office

Energy Code Compliance

- Two surveys of code compliance indicated that almost half of new homes were not complying with the code.
- Although all builders in all parts of the state are supposed to comply, only a few jurisdictions have adopted the code and fewer still enforce the minimum requirements.

Arkansas is the

 arkansas
energy office

Energy Code Compliance



If the Energy Office only had a stick to enforce the code then we could send out the energy code police to ensure that the code was being followed.



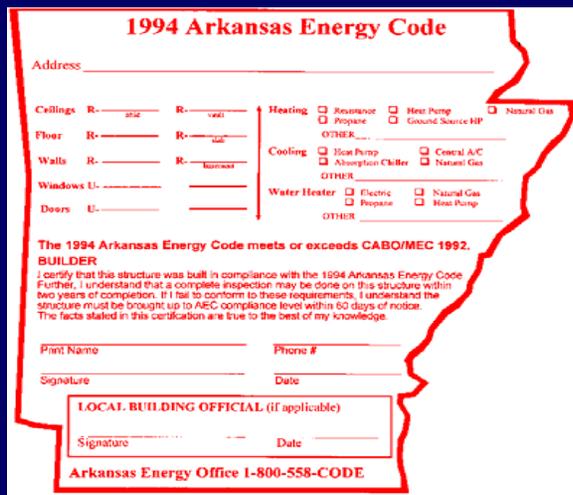
Arkansas is the

arkansas
energy office

Energy Code Compliance

Back to the future

The previous 1994 code (based on CABO/MEC '92) required a compliance sticker to be placed inside the circuit breaker box.



1994 Arkansas Energy Code

Address _____

Ceilings R-_____ R-_____ Heating Resistance Heat Pump Natural Gas
 Propane Ground Source HP

Floor R-_____ R-_____ OTHER _____

Walls R-_____ R-_____ Cooling Heat Pump Central A/C
 Absorption Chiller Natural Gas

Windows U-_____ U-_____ OTHER _____

Doors U-_____ U-_____ Water Heater Electric Natural Gas
 Propane Heat Pump

OTHER _____

The 1994 Arkansas Energy Code meets or exceeds CABO/MEC 1992.

BUILDER
I certify that this structure was built in compliance with the 1994 Arkansas Energy Code. Further, I understand that a complete inspection may be done on this structure within two years of completion. If I fail to conform to these requirements, I understand the structure must be brought up to AEC compliance level within 60 days of notice. The facts stated in this certification are true to the best of my knowledge.

Print Name _____ Phone # _____
Signature _____ Date _____

LOCAL BUILDING OFFICIAL (if applicable)
Signature _____ Date _____

Arkansas Energy Office 1-800-558-CODE

Arkansas is the

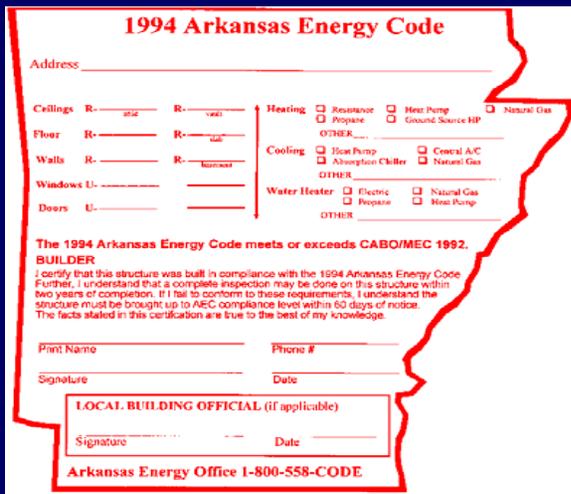


arkansas
energy office

Energy Code Compliance

Problems with the sticker:

- Builders did not want to sign it.
- No enforcement therefore very little to no compliance with the sticker.



The image shows a compliance sticker for the 1994 Arkansas Energy Code. It is a rectangular form with a red border, shaped to fit the outline of the state of Arkansas. The form contains the following sections:

- 1994 Arkansas Energy Code** (Title)
- Address** (Blank line)
- Building Details:**
 - Ceilings: R-___ attic R-___ vault
 - Floor: R-___ R-___
 - Walls: R-___ R-___ basement
 - Windows: U-___ U-___
 - Doors: U-___ U-___
- Heating:**
 - Resistance Heat Pump Natural Gas
 - Propane Ground Source HP
 - OTHER: _____
- Cooling:**
 - Heat Pump Central A/C
 - Absorption Chiller Natural Gas
 - OTHER: _____
- Water Heater:**
 - Electric Natural Gas
 - Propane Heat Pump
 - OTHER: _____
- Compliance Statement:**

The 1994 Arkansas Energy Code meets or exceeds CABO/MEC 1992.

BUILDER

I certify that this structure was built in compliance with the 1994 Arkansas Energy Code. Further, I understand that a complete inspection may be done on this structure within two years of completion. If I fail to conform to these requirements, I understand the structure must be brought up to AEC compliance level within 60 days of notice. The facts stated in this certification are true to the best of my knowledge.
- Builder Information:**

Print Name _____ Phone # _____
Signature _____ Date _____
- Local Building Official (if applicable):**

Signature _____ Date _____
- Arkansas Energy Office 1-800-558-CODE** (Footer)

Arkansas is the



arkansas
energy office

Energy Code Compliance

 Residential Energy Conservation Program

The City of Fayetteville, Arkansas

Window/walls ratio _____%

R-value of the predominate insulation:

Roof/ceilings _____

Walls _____

Perimeter slab _____

Crawl space _____

Ductwork installed in Un-conditioned space _____

U-factor of:

Windows _____

Exterior doors _____

Type and Efficiency of:

Heating Gas _____ AFUE _____
Electric _____ HP COP _____

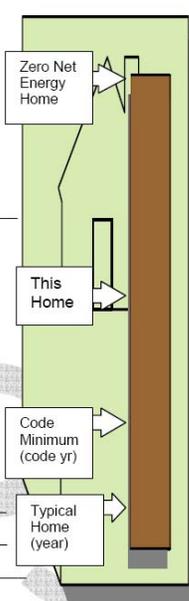
Cooling _____ SEER _____

Water heater _____

Builder signature: _____

Address: _____

Date of completion: _____



2008 Pilot Project:

Fayetteville, a progressive northwest Arkansas city, is promoting “green buildings” and energy code compliance is the first step.

Arkansas is the



Energy Code Compliance

 Residential Energy Conservation Program

The City of Fayetteville, Arkansas

Window/walls ratio _____%

R-value of the predominate insulation:

Roof/ceilings _____

Walls _____

Perimeter slab _____

Crawl space _____

Ductwork installed in Un-conditioned space _____

U-factor of:

Windows _____

Exterior doors _____

Type and Efficiency of:

Heating Gas _____ AFUE

Electric _____ HP COP

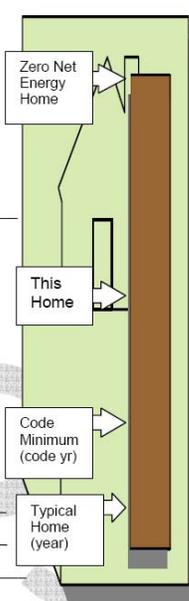
Cooling _____ SEER

Water heater _____

Builder signature: _____

Address: _____

Date of completion: _____



Fayetteville, will require this to be adhered to the inside of the breaker box before issuing a Certificate of Occupancy. Now that's a "stick!"

Arkansas is the

 arkansas
energy office

Energy Code Compliance

Two more cities with code departments are being encouraged to improve energy code compliance with similar procedures.

Home Builders Associations have been advised and their response is positive.

Arkansas is the



Energy Code Compliance

Long range goal:

Legislation is being contemplated that will require all cities with a code department to adopt the energy code with an associated compliance sticker.

Arkansas is the

The logo for the Arkansas Energy Office features a stylized red and white geometric design on the left, consisting of several parallel lines forming a square-like shape. To the right of this design, the word "arkansas" is written in a light grey, sans-serif font. Below "arkansas", the word "energy" is written in a larger, bold, red, sans-serif font. To the right of "energy", the word "office" is written in a light grey, sans-serif font.

arkansas
energy office

Energy Code Compliance

Leveling the Playing Field

Although most new construction takes place in areas with a building code department, most rural areas in Arkansas have no building code department.

Other ideas are being considered (none of them are wonderful) to enhance code compliance in these outlying areas.

Arkansas is the



Energy Code Compliance



If your state has similar characteristics (largely rural) with successful energy code compliance, please let us know. We are very open to suggestions.

Arkansas is the

arkansas
energy office

Thank you

Evan Brown

Building & Industrial Programs Coordinator

Arkansas Energy Office

ebrown@arkansasEDC.com

(501) 682-7396

Arkansas is the

The logo for the Arkansas Energy Office features a stylized graphic of a building or energy structure on the left, composed of parallel lines. To the right of this graphic, the word "arkansas" is written in a light grey, sans-serif font. Below "arkansas", the word "energy" is written in a larger, bold, red sans-serif font. To the right of "energy", the word "office" is written in a light grey, sans-serif font.

arkansas
energy office



FLORIDA

Code objectives

1. Be simple to use and clearly understood;
2. Be uniform and consistent in its administration and application;
3. Be flexible;
4. Be affordable; and
5. Promote innovation and new technology.



Success Story

- Florida's Governor Crist declared that by January, 2009, our energy code will be 15% more stringent than the 2007 energy code. The Florida Building Commission has acted to make the code 15% more stringent by using the Method A whole building performance method, keeping the "baseline" or reference building the same and lowering the compliance score to 85 percent.

A graphic of the American flag, showing the stars and stripes, positioned at the bottom of the slide.

FLORIDA

Energy Code Compliance

- We're known to be one of the most advanced codes in the nation: our code meets or beats the current national standard.
- We struggle with lack of training for industry and enforcement personnel

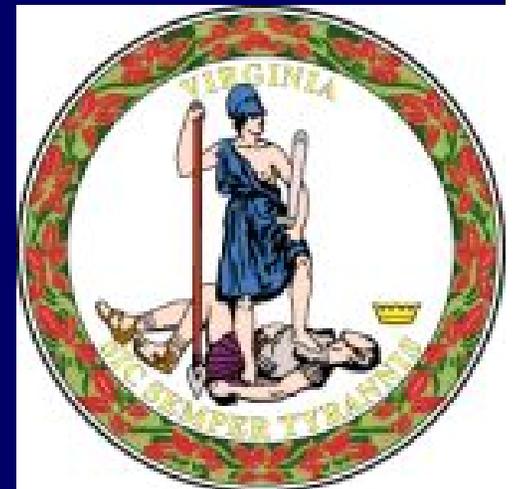
A close-up, slightly blurred image of the American flag, showing the stars and stripes. The flag is positioned at the bottom of the slide, with the stars on the left and the stripes on the right.

FLORIDA



Virginia

Virginia adopted the IECC since its inception and actively participate on code development committees and yet the bigger problem is providing inspector's time to enforce all parts of the code.



Success Story

- Virginia adopted the 2006 code this May but jumped to the 2009 code for the reduced outside air requirements in the IMC that directly affect the energy performance of new buildings.

A close-up, slightly blurred image of the American flag, showing the stars and stripes. The flag is positioned at the bottom of the slide, with the stars on the left and the stripes on the right.

Virginia

Energy Code Compliance

- “We struggle with.....” enforcement of insulation R values. By not requiring “typical” insulation details on the permit plans, we have hampered our inspectors ability to enforce the R values required by the Envelope Compliance Certification (COMcheck).

A close-up, slightly blurred image of the American flag, showing the stars and stripes. The flag is positioned at the bottom of the slide, with the stars on the left and the stripes on the right.

Virginia



South Carolina

While I breathe, I hope

- 1997:mandatory statewide building code
Included CABO's Model Energy Code
- On July 1, 2008, 2006 IECC became the
mandatory energy standard for
incorporation into SC building codes



Success Story

- 2007 legislation required LEED Silver or equivalent certification for state buildings.
- state buildings may exceed ASHRAE 90.1 by more than 20% with energy/atmosphere credits

A graphic of the American flag, showing the stars and stripes, positioned at the bottom of the slide.

South Carolina

Energy Code Compliance

- We're known for having progressive codes
- We struggle with enforcement at the local level—lack of manpower, turf battles

A graphic of the American flag, showing the stars and stripes, positioned at the bottom of the slide.

South Carolina



North Carolina

Motto: To Be Rather Than To Seem

- We are proactive in our enforcement of Building Codes
- The 17 Members of our Building Codes Council are appointed by the Governor (GS 143-136)



Success Story

- “We not only adopt, but also adapt a State Building Code that is most beneficial for all of the Citizens of North Carolina.”
- “We amend the code to make energy efficiency requirements stronger.”

A close-up, slightly blurred image of the American flag, showing the stars and stripes. The stars are on the left, and the stripes are on the right.

North Carolina

Energy Code Compliance

- “We are known for active Code development and effective statewide enforcement.”
- “Areas of complex requirements are not as easily enforced as those with more simple requirements.”

A graphic of the American flag, showing the stars and stripes, positioned at the bottom of the slide.

North Carolina



LOUISIANA

State Motto: Union, Justice, Confidence



Success Story

- On the heels of the Katrina and Rita disasters, the rebuilding effort sorely needed energy efficiency guidance.
- Historically, Louisiana adopted its first Residential Energy Code on January 1, 2007: IRC 2006.
- At the time there were 64 Parishes, but only about 37 Building Officials. Confusion reigned as to how to judge residential code compliance.
- Third party contract reviewers were solicited, and DNR conducted a two year state-wide seminar series on the use of *ComCheck* and *ResCheck*.



Jerry.Heinbrg@La.gov

Louisiana



Success Story

- In Residential work, a professional designer is often not involved. The owner must discover all required information without any design professional on board.
- Recently a Bill was introduced in the Legislature to delete the Energy Chapter of the IRC. It was withdrawn in committee. We read this as a very good sign of adaptation to the new energy era.



Jerry.Heinbrg@La.gov

Louisiana



Success Story

- The Commercial Building Energy Conservation Code has successfully been in place since 1998 in Louisiana. It is enforced by the State Fire Marshal's office, and has experienced changes in edition of ASHRAE 90.1 from 1989, to 2001, to 2004. DNR is the owner's resource for help.
- Because the Fire Marshal reviews only plans submitted by a professional of record, and has a staff of review architects, there is generally a high level of understanding.



Jerry.Heinbrg@La.gov

Louisiana





Kentucky