

BUILDER'S GUIDE TO ENERGY EFFICIENT HOMES IN LOUISIANA: ENERGY EFFICIENT PACKAGES

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The *Builder's Guide to Energy Efficient Homes in Louisiana* is being updated to reflect new code requirements.

Investments in energy efficient features in new homes are remarkable because everyone wins:

- Most homeowners win because they receive a positive cash flow within 1-3 years.
- Homeowners benefit from improved comfort, better indoor air quality, reduced moisture problems, and fewer health problems.
- Builders have fewer callbacks, and make additional profit from the extra construction costs.
- Heating and cooling contractors have fewer call backs.
- Realtors receive additional fees from the additional cost of the energy features, and enhance their reputations by selling the higher quality homes that homebuyers appreciate.
- Participating financial institutions receive higher mortgage payments and have more secure loans because the homes have lower annual ownership costs due to reduced utility bills.
- National lending agencies such as the Federal Housing Authority (FHA) and the Veteran's Administration (VA) usually require some degree of efficiency by mandating that new homes comply with the latest Residential Energy Code (IRC) 2006. However, this may vary on a state-by-state, parish-by-parish, or county-by-county basis.
- The local community benefits as more money stays within the community, and local subcontractors and product suppliers make additional income by selling improved energy efficient features.

Achieving Energy Efficiency

Overall success, resulting in a well-designed and constructed home that is also energy efficient, requires careful and cooperative collaboration between the owner, the architect (or licensed home designer), and the builder. The architect or designer should serve as the main coordinating party between the participants.

Designing and building a home that uses energy wisely definitely does not mean sacrificing a home's aesthetic qualities or amenities. Quite the opposite; usually, the better the home is designed, the easier and more natural it is to make it energy efficient, comfortable and convenient. While an energy efficient home usually utilizes better quality materials than a standard code compliant home, the payback due to increased energy savings (for the better quality materials) is usually 2-3 years. After the payback is 100% complete, the owner benefits from the energy savings for the duration of the mortgage; and as long as he occupies the home.

Quality of Construction Affects Energy Efficiency

Quality of the basic construction goes a long way to providing comfort to the homeowner and to affording

savings on energy costs. The following areas should be thoroughly reviewed in the design process and during construction:

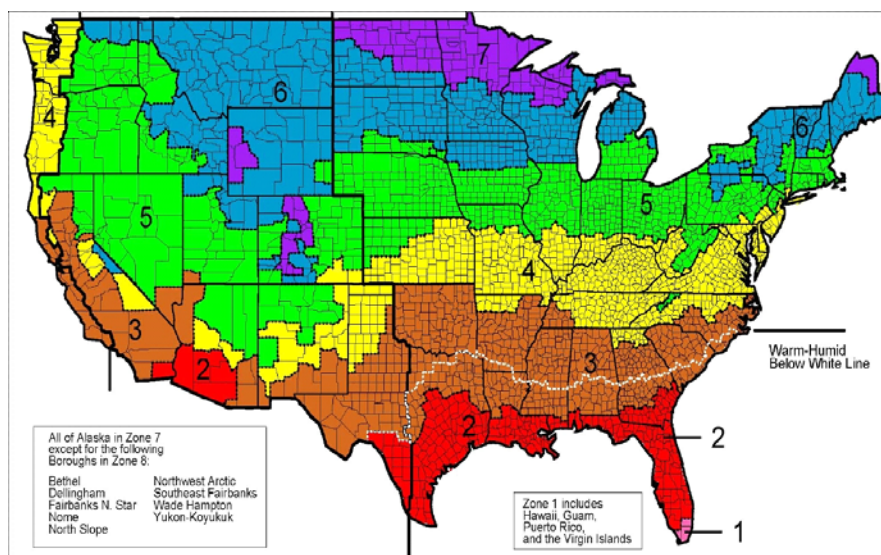
1. Quality of framing and installation of insulation and windows.
2. Attention to detail in sealing air leaks.
3. Design and installation of the heating and cooling equipment.
4. Effectiveness in sealing duct leaks.

International Residential Code 2006 (IRC 2006)

The state of Louisiana adopted IRC 2006, effective January 2007, as its residential building code. Chapter 11 is the section that deals with residential energy efficiency. Chapter 11 of the IRC 2006 contains a climate zone map that governs which residential building components are permitted in each of the 6 climate zones. In addition to dividing the United States and its territories into 6 climate zones (see figure), it also deals with:

1. The building thermal envelope.¹
2. Insulation and fenestration.²
3. Duct insulation for supply and return ducts.
4. Duct sealing.
5. Air leakage and moisture control.
6. Recessed lighting - limiting air leakage.

International Residential Code (2006) Climate Zone Map



¹ The building envelope consists of the building's roof, walls, windows and doors. The envelope controls the flow of energy between the interior and exterior of the building. Source: U.S. DOE EERE website (URL: <http://www.eere.energy.gov>, May 2, 2007.

² Fenestration is defined as the arrangement, proportioning and design of windows and doors in a building.