

Abstract #: 494

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**Abstract Title: Why Doesn't 25 Years of an Evolving Energy Code Make More of a Difference?**

Abstract Text:

New and more stringent building energy codes are implemented with the assumption and expectation that significant energy conservation will occur. While simulation and various analysis methodologies may be reasonably sound at estimating the energy impact, the actual impact is largely dependent upon new code enforcement and occupant behavior. This work is based upon the research question: Do homes built to a newer energy code deliver measurable energy savings compared to homes built to a much earlier energy code? This residential research study was focused on comparing measured energy use of new code to old code homes. The new code group represented homes built to the 2007 Florida energy code, with 2009 supplement. The old code group were built to the code in effect from June 1, 1984 to Dec. 31, 1985. Energy monitoring equipment was installed to measure whole house, space heating/cooling, and domestic hot water energy use. Interior temperature and relative humidity were also monitored. Using utility bill and end-use monitored data, savings for the new code homes were determined to be 13% for cooling energy, 39% for heating energy, and 5% for domestic hot water energy. The overall annual energy savings were 13%. This paper presents the methodology of the research along with reasons why the measured savings are far less than predicted by simulations of homes built to the two codes. The results may be useful in policy decisions or evaluating the long-term implications of residential building energy codes.