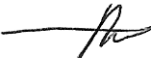


MEMORANDUM

From: Mike DeWein
BCAP Technical Director 

To: Felix Lopez
Texas State Energy Conservation Office

Date: June 24, 2009

RE: Comments on the 2009 IRC for Texas

Thank you for giving BCAP the opportunity to comment on the 2009 International Residential Code (IRC) adoption in Texas. BCAP commends the state for adopting an energy code that will increase energy efficiency for new homes, additions and renovations statewide. We are concerned, however, with the stringency of the 2009 IRC and strongly believe that the state will benefit from the adoption of the 2009 International Energy Conservation Code (IECC). As you know, the American Recovery and Reinvestment Act (ARRA) specifies the adoption of the 2009 IECC as a pre-condition for compliance, hence earning all of the \$218.7 million in federal funding Texas is eligible to receive from the U.S. Department of Energy's State Energy Program (SEP).

In comparison with the 2009 IECC for residential buildings, we believe that the 2009 IRC is less stringent in the following areas:

- The solar heat gain coefficient (SHGC) requirement for windows in climate zones 2 and 3, which represent the majority of the state of Texas, is SHGC-.30 in the IECC, while the IRC allows SHGC-.35. The lower (more stringent) requirement of SHGC-.30 in the 2009 IECC will save residential buildings in heat gain, thus saving homeowners energy and money on air conditioning and A/C system sizing in new homes.
- Also, the requirements for cathedral ceilings, a popular feature in many new homes, are also less restrictive in the IRC than the IECC. The IECC limits the allowance for R-30 insulation in ceilings without attics to 500 ft² or 20% of the total insulated ceiling area (whichever is less). The IRC limits the allowance to 500 ft² without regard to the total ceiling area. This will only impact homes in climate zone 4 -- which encompasses much of Northwest Texas -- and will allow the reduction of R-38 to R-30 insulation there.
- The IRC contains no "tradeoff cap" for trading off glazing U-factor or SHGC levels, like the IECC does. The IECC has an SHGC trade-off cap of 0.50 in Texas climate zones 2 and 3 (402.5.) and a U-factor cap of U-0.48 in zone 4. As these caps do not increase the stringency of the code (but rather restrict trade-off options), there is no direct impact on annual energy costs. There may be, however, some impacts on occupant comfort and/or resistance to moisture condensation due to HVAC impacts.
- The air barrier and insulation inspection tables (IECC 402.4.2 and IRC N1102.4.2) differ slightly. The IECC requires checking that "Air-permeable insulation is inside of an air barrier" (right column in the first row). The IRC is missing this language. This could be an issue for assuring that moisture buildup does not occur in insulation falling outside the air barrier.
- Since Texas uses the fine IC3 compliance software developed by Texas A&M Energy Systems Laboratory, which is based on the performance compliance method, and the IRC does not include a performance compliance method, there may be some conflict with the continued use of Texas' IC3 software if the IRC is adopted rather than the IECC.
- ARRA requires the adoption of the latest national model codes (as mentioned above) as part of the process to access federal stimulus funds. This will result in the injection of \$218.7 million into the Texas economy via energy efficiency related grants and incentives. (<http://www.energy.gov/texas.htm>).

As with our comments on the IECC adoption, BCAP believes that Texas should improve the residential energy code for low-rise multifamily construction by including multifamily common wall improvements. This will improve the common/party/fire wall inefficiencies related to air leakage and lack of insulation in those envelope systems that plague the low-rise multifamily housing industry, in particular. We have attached that recommended language again.