

# **BUILDERS POINT OF VIEW**

## **NEW SCIENCE EFFECTS OUR LIVES**

**By Alex Guthrie**

**Building sciences and technologies have changed the way builders and contractors view their professions. New building codes and products are forcing changes in attitudes and practices. These professionals are being required to reexamine the very rules by which they've operated and considered acceptable for many years. The price of making the wrong decisions is too high in an increasingly litigious society and an educated consumer, exposed to all the ideas they can handle, is more demanding than ever.**

**Many of the old building methods that performed well for their era are not adequate for the way we live our lives today and have been reviewed and in many cases coded out. Most of the older builders have had to relearn things we've understood as the proper way and try new methods and materials.**

**The cost of energy which includes the environmental cost of producing it has forced us to take a closer look at the entire energy chain from production to the end user and examine how it affects us all. This leads to a basic theory of physics, the more we use the more we need and the more energy we produce, the worse our air becomes. This also needs to be viewed as a regional issue since we are all sharing the same air and water, our neighbors do effect our environment. If you think about it, being in the northern part of a state that has primarily southern winds blowing off the coast; all of our neighbors to the south are affecting our air and ultimately our water.**

**So now comes the hard part, devising methods and practices that reduce our energy requirements and ultimately help control air and water pollution. Many very intelligent people from very diverse backgrounds met for many months in Austin and other regions to come up with a plan that would address these problems. Spurred by threats of monetary penalties by the feds, a plan had to be devised and presented to insure that funding for highways and other project weren't lost.**

**A great example is the use of energy efficient windows and doors. Until recently these were optional and used only in certain areas of the house, today because of the new residential energy code, we use them as a standard and in fact some municipalities by virtue of rewriting their codes dictate to us that they be used.**

**What we regard as the "Envelope" of a house or exterior walls, roof, and foundation are looked at differently as we try to meet the new Home Energy Ratings System or "HERS" ratings. This formula was developed to determine the energy consumption of our houses and by using various methods we can determine what needs to be done to make the envelope more efficient.**

**Products like radiant barrier plywood combined with new techniques such as sealing the attic and crawl spaces are helping to reduce energy consumption and create more comfort. Focusing more on the performance of the walls by sealing window and door**

**openings and reducing air infiltration means our heating and air conditioning systems work less.**

**Sealing the exterior of your home is the best way to start the efficiency cycle; air penetration into the wall cavities from the outside has a tremendous effect on how well you can control the temperature inside. You may not realize it but the little things will really add up. The dry air inside your home attracts the moister air outside; this attraction can trap moist air inside your walls and create a haven for mold. Small holes, penetrations such as electrical outlets, vents and plumbing faucets can let a lot of air inside that has to be heated or cooled. Seal these small openings with caulk or expanding foam and you will help prevent air as well as moister leakage.**

**By reexamining our practices and gaining knowledge from all sides of the equation, we have learned many things as an industry that will benefit us all. For instance, we learned that we save energy and create more comfort in our homes by making sure our air conditioning ducts are properly sealed. Many times I've climbed in an attic in the summer only to find it was as cool as the house. And the same thing occurs under the house, it is common for us to find broken and crushed ducts that are leaking excessively. The old method of sealing duct joints with tape will not comply with current code; we now seal these joints with applied compounds that prevent air leakage. One new technique that is gaining in popularity is to seal the entire duct system with foam insulation; sprayed on the ducts in a liquid form the foam creates a super insulated duct system much like a Styrofoam cooler and you can imagine how much more efficient this can be.**

**Insulating has become a science of its own, where once we simply stapled batts of insulation to the walls and ceilings, we now have many options that include environmentally friendly cellulose or recycled paper, closed cell foam, and a variety of other choices depending on our needs. We now inspect our insulation to meet minimum standards; a new requirement of the energy code.**

**The less energy we use, the less we must produce, saving our natural resources and creating less pollution.**

**Sealing the outside walls, proper ventilation in the attic, applying the right amount of insulation in the right areas, and making sure your air-conditioning system is working properly not only provides more comfort, it saves the environment we all share.**

**By working together and listening to each other's concerns, the building industry and the science community are developing new techniques and creating ways to benefit us all.**