Tales from the Crawlspace

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Propertyexam

What is Building Science?

Building Science is term, often bandied about now, in reference to construction design, building operation and maintenance, energy efficiency and building renovation or improvement. Depending upon how the term is applied and to whom, it has the ring of pseudo-science or more directly bull, you know what. Let's start with what it's not, Building Science is most emphatically not an attempt to make "blue collar" or handyman work sound more important than it is. Anyone who's struggled with a home that has insidious or design defects like cold and hot areas, drainage problems, etc., knows it's important to be sure what's going on.

The term Building Science, originates from the energy efficiency industry. The general need and desire to build more energy efficient buildings and to make existing buildings more energy efficient changed the game, so to speak regarding design and operation. This has brought in many professional and academic resources to the study or nature of buildings. If you remember science in school, science is based upon "the scientific method". The scientific method is actually very practical and most importantly, results based. It comes in 4 parts:

1. Observation of existing conditions or phenomena
2. Formulation of a hypothesis (in physics and in this application this is based upon a causal relationship of mechanisms and how they interact).
3. Prediction of the results of the formed hypothesis
4. Experimentation to prove or disprove the hypothesis

This seems a little esoteric for a basic discussion but what it boils down to is that application of the scientific method and modern interest in the importance of buildings has caused many long held beliefs to be challenged. There are many, new and better ways of doing things that have been found and a new way of approaching the nature of buildings has emerged. Today, Building Science has come to specifically mean the application of the "House as a System" methodology. To be honest, home inspectors have basically followed this approach for years on some level. The home inspector looks at all aspects of a structure, how they interact and the environment of the home. However, not to digress, the "House as a System" approach is simply put; to observe or analyze all the parts of a building, how the parts interact and affect each other, how different things work together and how the building works with and is affected by its environment.

The modern Building Scientist is a building professional who applies this holistic approach to all aspects of design, maintenance or improvement of a building. Drainage can affect durability, safety and energy efficiency of a building. The "tightness" or seal of a building can dramatically affect energy efficiency, durability, air quality, fungal growth, environmental conditions for Wood Destroying Organisms and health & safety issues. The type of doors or how they are fit can affect air flow and our attempts to control temperature. All of these things and many, many more come under the umbrella of Building Science. It is an exciting (at least for me), growing and demanding study. There is a lot of new information and new ways to apply this knowledge in practical and useful ways. There is so much new information coming from different and sometimes conflicting sources, it can be daunting. There are new opportunities for those who become part of this movement, both in new construction and maintenance or improvement of existing buildings. Keeping up, applying and advancing the "state of the art" can be rewarding and challenging. For some of us, it's really kind of a calling.

Building Science is a term that everyone should hear more of and hopefully accept. Within this field is the opportunity for everyone to make a difference. Better knowledge of how to operate/maintain existing buildings can result in substantial savings. This can be in the form of controlling repair expenses as well as reduced energy costs. The average home can be made about 30% more energy efficient with simple, cost effective improvements applying known building science principles. Applied to all housing in the United States, this alone would reduce our energy use a staggering amount. More importantly it's something we can all do ourselves that can make a lasting difference.