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The Reality Of Our Construction Process

By: Harry Kohal, Eagle Technology, and William C. Pegues, WDG Architecture

As an attendee/speaker at the TFM - Construct 2009 show in Indianapolis in June Architects and Specification writers had a chance to mingle. The honest conversation over lunch tables was truly an awakening to reality, like it or not.

Only in the U.S. would the industry consider the lawsuit as the final step in the construction process. Only in the U.S. would a building owner spend money on a second architectural firm to prove that the one he hired the first time made errors! In between are the specification writers, the general contractor, the subs, the commissioning agent and finally facilities management dragged kicking and screaming through the project, hoping to make money, while escaping the wrath of the general contractor and the lawsuit.

This is a grim state of affairs. One that you will never see on "Home Improvement" or "This Old House." This is reality in American commercial construction.

Architects are the listeners, the designers of vision and purpose. The specification writers transform the vision into real data to begin the process. The general contractor bids and begins the project and from that point on, what was designed and what is delivered might never again meet. Energy saving specifications get cut or "Value-engineered" out of the construction to save cost. In turn companies make millions of dollars down the road, putting back the energy saving devices that were "Value-engineered" out.

When the building doesn't perform well, the owner goes to a whole new architectural firm to prove their original trusted partner didn't know what they were doing. In the end the owner spends the money they should have left in the construction process on lawyers who prove that the original spec was right, and the owner themselves allowed the fiasco to occur.

The keynote speaker at this event has been in charge of the space-lab, being constructed in space by multiple nations. One of the most impressive points he made during his presentation was the fact that none of the modules were ever built or tested together on the ground.

We can communicate, design and build to meet specifications to the smallest detail, so reality is that we can do it. Day to day reality is that we don't care to communicate and communicate again to make sure everyone involved has the same mission, that is to build what the owner wants and needs, and educate why and why not little changes make a difference. After all glass is glass, right? A roof is a roof, right? One system is the same or equal to another, right? WRONG! Everything is determined by small choices. Imagine trying to change the diameter of a screw from one space module to another without looking at what it might affect. That's what we do when we change to equivalents after a specification is completed.

Architects and specifiers fail the building owner as well. Most of the time, there is little or no concern on the life-cycle issue of maintenance. Who is going to maintain it, what tools are architected into the project? Will the tool take advantage of today's intelligent technology, and how will the people responsible be trained and supported through the life-cycle of the facility? It will, after-all, last longer than the average employee, and has systems that are very different because of technological advances. We heard architects saying "What screws up a really good building, is the facility person who has to go in and tweak something to feel like they are doing something." What does the architect do to educate the owner and the facility manager to do the job right?

The architectural firm should be the overall project manager, and get paid to stay involved from beginning to turn-over. By staying involved and knowing the vision and the mission of the facility, they can best advise how changes affect the final product. Specifying a maintenance management system that interfaces to the building automation system with proper training and data gathered throughout the course of the construction process will give actionable data to the commissioning agent and the facility manager.

The show was valuable. It pointed out we need to start a revolution of LEAN building principles which lead to owner satisfaction. We need to design buildings that meet environmental and energy goals, keep the lawyers busy with other matters, spend the money at the right time for the best results and yield happiness ever after. LEAN principles will save the building industry and make us less dependant on fossil fuels. Having the architect lead the project through every phase will take more time up front, but save time in the actual construction process. There will be no fighting on the job about whose pipe gets hung at this level, all that will have been designed, planned and agreed to before the construction begins.

Unfortunately, unless changes start with every member from start to end of the project team, we know that's never going to be reality - sad but true!



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