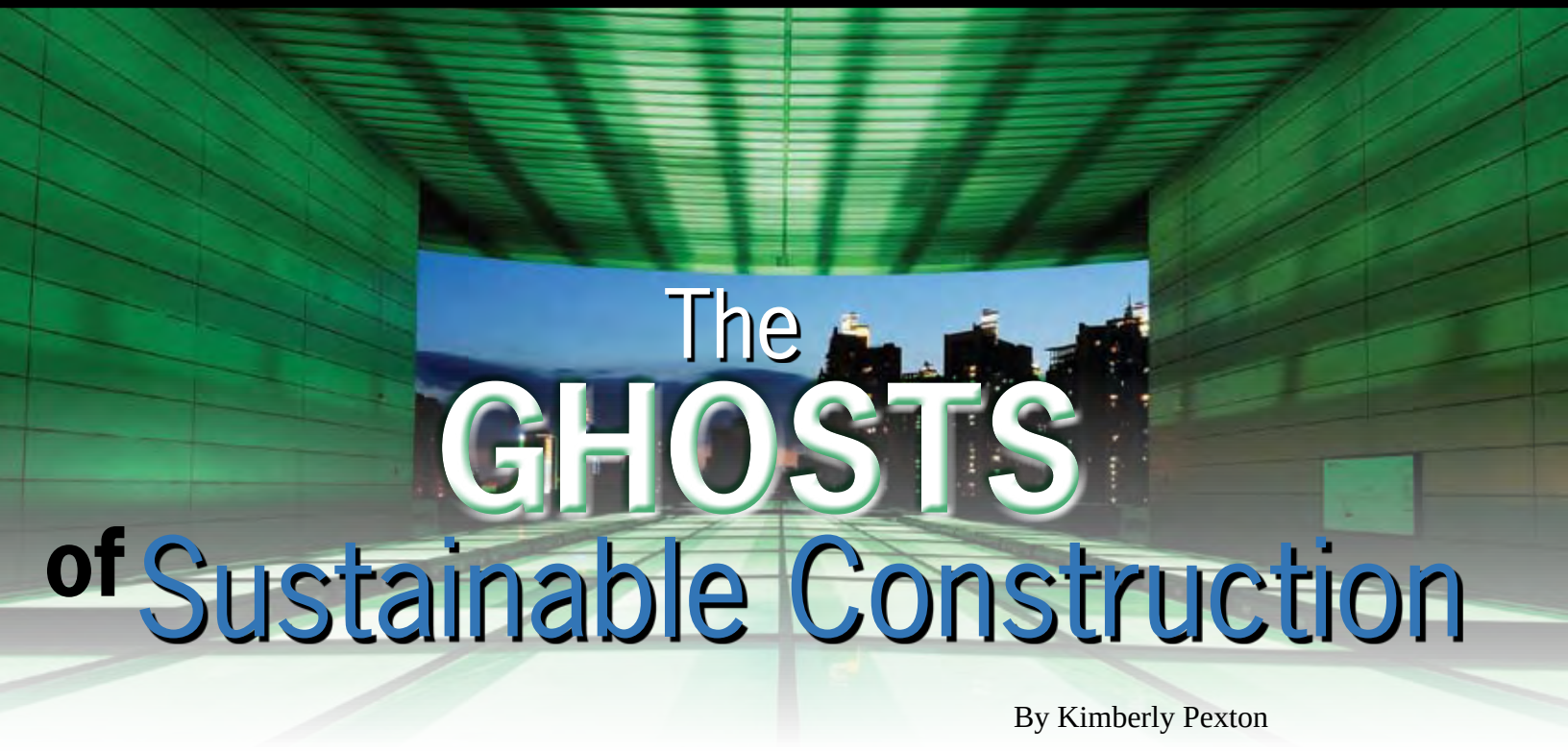

The GHOSTS of Sustainable Construction

By Kimberly Pexton

One decade into the green evolution, the construction world is able to evaluate the past promises and current realities as well as see a few glimpses into what the future of construction is looking like for an industry that is truly facing their environmental stewardship demons head on.

The Ghost of Green Promises Past

Green building is not a new concept. The OPEC embargo in 1970 pushed us into seeing dependence on foreign oil in a new light. When the first Earth Day commenced on April 22, 1970, green ideals were spinning in circles; today they have settled into a tangible green agenda. The most tangible of course was the launch of LEED for New Construction and Major Renovation three decades after the first Earth Day, which established a set of guidelines that defined green building. No one can deny the catalyst that LEED has been for awakening a sleeping giant in the construction world. The evolution of green building boosted promises of reduced energy consumption and increased employee productivity. LEED created quite a buzz in the construction world, but it's not the only game in town; Green Globes, Energy Star and jurisdictional green building programs provide ample ground to exercise environmental brute strength in whatever arena chosen … that is if LEED is not the mandate.

The Ghost of Green Promises Present

Green building experts understand the simple laws of supply and demand. Consumers are demanding green buildings and as a customer service industry, we supply green buildings. Interestingly enough there is no one kind of consumer of green buildings. They don't fit neatly into a target market package; no one age group, political affiliation, type of business or type of building. Many Fortune 500 companies are influenced by their employees stated desire for a great place to work; a green place to work. Green experts promote the claim that employee productivity is increased by 16 percent and are using this as a carrot and stick tactic to persuade clients into green building designs. Of course, even if an employer buys into the argument for increased productivity, it comes with a staggering price tag – one that speaks volumes to the leadership in these companies that pursue green building.

Another reality deals with the fate of green building against the backdrop of a weak economy. Early assessments were that green was a fad that would die in a downturn. But worries that green was too expensive for clients to consider in this market have not rung true in all cases. Examples abound of businesses building green during these economic times. For example, PNC Bank, Bank of America, and other financial establishments who took a beating during this recession are building green. Non-profit organizations that rely heavily on member dues and donations are still looking to building green. One cannot flip through the *Washington Business Journal* or any other publication locally or nationwide without mention of businesses that are going green … in a limp economy.

Perhaps one driver of the continued growth of the green building movement is the economic benefit in the form of reduced water and energy bills – sound business practices no matter the econom-

ic climate. Using the most popular benchmark of the LEED Green Building Rating System, the reallocation of points in LEED 2009, allows for more point accrual under the water and energy categories. Focus on these credits hold the lowest first cost of construction and highest return on investment. From a water perspective, dual flush water closets, waterless urinals, aerators at flow fixtures and hands free functionalities come with a price tag that is small in the grand scheme of the design and construction of a building. Even applying this to a tenant fit out illustrates that low cost items have a great return on LEED credit accrual benefit.

As general contractors become more involved with green building projects, the value of specialty contractors with green capabilities increases significantly. As a GC, we work to provide a good first source of information for identifying what can be lean and green opportunities for specialties. However, we pre-qualify all of our specialty contractors on green building projects. Why? The less time we have to spend on the learning curve with a specialty the more resources are freed up to handle bigger details on projects. The process of going through a LEED project is much more streamlined and efficient with specialties that have done it before. This translates into simple marketing 101; missed opportunities and market differentiation. As we require and ask more in the way of sustainability from our subcontractors, we see more interest and action on their part. Allowing a contractor to come to the table in the design phase can work to minimize and eliminate changes that lead to costly delays, additional fees for re-design and compromise of environmental objectives. As more contractors, general and specialty, gain experience on green building projects they will be able to develop valuable services and programs that work to enhance and compliment green building design and increase profitability.

Ghost of Sustainable Construction Future

As Building Intergrated Modeling (BIM) gains traction the value of team integration will become more measurable. The ability for a GC to perform a clash analysis with a project schedule identifies sequencing issues before they are an issue. Quantity take-offs extrapolated from BIM while raw are still valuable in determining how much material is needed while proactively reducing waste related to over ordering, throwing it away and spending money to haul over-orders to a landfill.

In addition to BIM, another relatively untapped practice that fits into the sustainable construction mold is the practice of Lean Construction. Lean Project Delivery is a concept that was born out of the automo-

bile manufacturing industry; specifically Toyota where leadership worked to identify waste in systems. Waste is defined not just as material waste but man-hour waste as well. The main idea is that there is a core collaborative effort of all team participants fully engaged in proactive optimization of all aspects of a project. In construction, specialty subs would be called upon to use techniques such as preassembly to identify ways to minimize the amount of re-work. Lean Project Delivery supports the conclusion that risk associated with time, cost, quality and safety can be reduced by implementing "Lean" thinking. Lean Construction is congruent with sustainable design as both practices focus on efficiency and limiting waste.

Environmental Management Systems (EMS), developed in the manufacturing industry, has made its way into the construction world. General contractors and specialty contractors alike are opting to pursue formal certification under International Systems Operation Standard 14001 for Environmental Management Systems (ISO14001). It may come as no surprise that in 2006 there was a federal mandate that all agencies needed to have an EMS in place. General contractors are being asked in RFQs what kind of corporate environmental management systems they might have in place. It would be wise for someone in your organization to learn about the different EPA compliance laws that deal with the construction industry. If not, you are vulnerable to the risk of fines associated with non-compliance which have no caps or limitations.

Mandates and green building acts/ordinances are literally popping up daily. Whether one is going to follow the USGBC product or not, it is advisable to keep ASHRAE 189 High Performance Green Building standard on your radar. This standard is meant to leap past ASHRAE 90.1 which establishes minimum energy performance criteria for buildings; currently code in most jurisdictions. The prediction is that even before many states, counties, cities or towns mandate green building, the ASHRAE 189 standard would be codified therefore being the rule rather than the exception.

Redefined Promises

We can all agree that the environment has successfully gained recognition as a human issue. Did you notice the green undertone of many of the commercials during the Super Bowl? Green is mainstream and has become a human issue that is here to stay; the key for our industry will be how to seize this as an opportunity to increase profitability as we head into the future.

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