

Professional Practice Corner

“Green” Risk Management

Rob Hughes

I can recall the first time I heard the terms “green building” and “green design.” It was about 1999 and I was an executive in the professional liability claims group for a significant insurance carrier; one actively insuring and advising architects, engineers, Construction Managers (agency and at-risk) together with design-build firms and an array of general and specialty contractors.

One of our insureds had come to us for advice as to how best to enter, from a risk and insurance perspective, the field of “green design.” Honestly, I had to research the term (probably on that other “new” and “hot” tool called the Internet) as a first step; background research necessary to understanding the term and the scope of a green building project.

“Green” Risk Management – The View In 1999

The training program ultimately focused primarily on existent risk management principles – client selection, client expectations (schedule/budget/quality), communication (with your client and among the project team) and a good, reasonable contract.

It also tried to predict some possible pitfalls – over promising on such end results as energy usage and savings, ease of use/maintenance and aesthetic appeal. Risk management, I like to say, is 10 percent “forecasting” and 90 percent “lessons learned,” but in this case it was clearly the opposite ratio. We had no past projects and claims to draw on so we had to predict the issues while relying on existent keys to effective risk management as the basis for creating a green specific training program.

In the ensuing ten years – how much has changed and does any of the advice from that original program apply today?

Higher Risk?

My underlying prediction in 1999 was that green would prove to be higher risk; meaning the same project if built “green” would result in more frequent and more severe claims than that very project as “non-green.” Have I been proved right or wrong? No professional liability carrier has experienced a significant volume of green claims; in fact the overall frequency of professional liability claims of whatever nature has held steady over this ten year period. Has any carrier seen a catastrophic loss – meaning significant damages paid out on a green claim? No such claim has “made the headlines” but I cannot attest to there being no such claim currently in existence. One caveat: The United States Green Building Council (USGBC) reported earlier this summer that approximately 1,500 projects have been LEED certified since 2000. Our current state of claims experience rests primarily with these 1,500 projects, not an infallible sample pool but certainly one of value.

All in all, good news! Yet news that seemingly contradicts two underlying risk management tenets – a new area of practice tends to give rise to claims as does the failure to meet client expectations. The former is somewhat straightforward – a design or Construction Management firm is intrinsically at greater risk when it is working on its first green project (or first Design-Build project, or first church or fire station, and so forth) as compared to a firm working on its tenth or hundredth such project. The latter lends itself to a bit more explanation, although can there be any doubt about green building projects being rife with specific, significant owner expectations?

Standard Of Care

Professionals such as architects, engineers and Construction Managers are legally obligated to perform to a certain level. This is known as the “Standard of Care” and it is generally defined as that level of skill and care ordinarily provided by similarly disciplined professionals practicing in the same or similar locality under the same or similar circumstances.

A green roof may function as designed, but if the building fails to secure the sought after LEED certification (or vice versa) a claim of negligence is likely.

The Standard of Care is at least in part defined by a profession’s Code of Practice; not, for example, the American Institute of Architect’s Code of Ethics requires an architect to be “environmentally friendly.” The Standard of Care is also defined by your contract and an architect’s contract may require him to discuss “the feasibility of incorporating environmentally responsible design approaches.” (See *AIA Document B104 – 2007, Standard Form of Agreement Between Owner and Architect*.) If an architect fails to discuss green as an option or fails to be environmentally friendly on a non-green project, these failures may be seen as failures to follow its Code of Ethics and/or the aforementioned Section 3.2.2 of the B104-2007 and are breaches of the Standard of Care. There is liability for the resultant damages.

The Standard of Care is open to interpretation (in a claim setting this is the proverbial “battle of experts”) and may be task specific (i.e., design of a particular aspect of a project) or the overall project (i.e., is there an “acceptable” error rate on design drawings under which the design firm has met the Standard of Care, but is negligent once that rate is exceeded?)

Accordingly, the Standard of Care as to green is a function of particular tasks within the project and then the overall work product or end result. A green roof may function as designed, but if the building fails to secure the sought after LEED certification (or vice versa) a claim of negligence is likely. That claim will not be limited to the architect, but will extend to other professionals, including the Construction Manager. The Construction Manager may be held partially responsible for the failure on the contractor side (i.e., should have noted a failure to build as per the plans) as well as the design team (i.e., failure to adequately review the design).

The Construction Manager’s exposure significantly increases for the same failure if the project delivery system is Design-Build (CM-led) versus Design-Bid-Build with the Construction Manager as the owner’s representative. As a Design-Build lead, the Construction Manager is liable to the owner not only for its own failures, but those of its various subcontractors and sub-consultants. Moreover, liability may result from commissioning services; if the failure is in the commissioning effort then the professional liability claim and alleged breach of the Standard of Care will focus on this rapidly growing service area. (As an aside, be sure to verify with your professional liability carrier that it considers “commissioning” a professional service and that they are covered services under your professional liability policy.)

“Standard Of Expectations”

The Standard of Care is a well known although often debated legal doctrine. I have coined my own companion standard – one I call the “Standard of Expectations.” Nearly 70 percent of professional liability claims are brought against the professional by its client (usually the project owner). A significant majority of these claims derive from the owner’s perception that its expectations have not been met – schedule, budget, quality but also now green.

One expectation of a green project is the general “feel good” attitude of all involved; doing the right thing, so to speak. Yet developers, municipalities, school districts and other owners are not in existence as a function of feeling good; much more specific factors drive their decisions. To be a successful designer or Construction Manager to these clients, you must confirm these factors on a client by client and project by project basis; otherwise there will be unmet expectations and a claim.

Example – Public Sector

School Districts have available to them any number of resources confirming that green schools:

- Are healthy and comfortable,
- Conserve energy, water and other resources
- And are easy (or at least easier) to maintain and operate

But did you also know that some studies support the conclusion that a green school promotes learning? A well, naturally lit classroom may help promote its students to learn at rates upwards of +20 percent in math and reading while increasing student results on standardized tests. As a Construction Manager, do you have a client that is looking to achieve not only a green building but these learning related results? If LEED certification is secured, but test results remain unchanged, can you be sued? Yes, although establishing a clear link to your efforts as a professional and the lack of improvement may be a challenge as would calculating the resultant damages – what are higher test scores and improved learning worth?

Example – Private Sector

On the private sector side, expectations may be even more specific and that much more prone to defeating or supporting a claim. Green commercial buildings are known to:

- Reduce energy and operating costs.
- Improve the work environment – and increase employee productivity and retention rate while decreasing absenteeism and turnover.
- Reduce liabilities (i.e. – improved indoor air-quality).
- Present a positive public image.
- Increase sales (retail setting).

But did you also know that many developers may very well have even further refined their expectations:

LEED Rating	Cost Premium
Certified	0 percent
Gold/Silver	1 percent to 2 percent
Platinum	3 percent to 4 percent

They may also look to realize higher rents (15 percent to 40 percent) and higher initial or resale value. Moreover, energy saving of 30 percent, or some other specific level, will be realized for the first five or ten years or throughout the

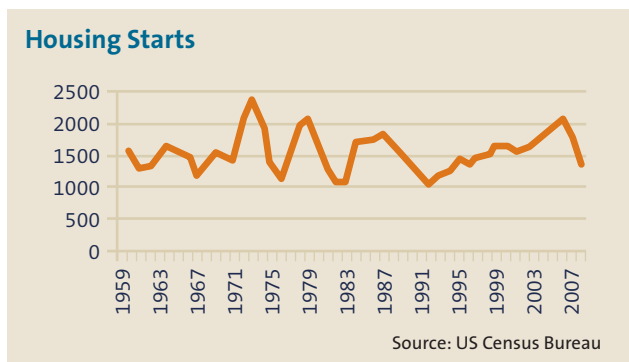
Continued on page 15

The Economic Recovery – Construction Forecast

By Edward M. Kopp III, AIA, CCM, CCC, PSP,
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The US economy and the construction industry are closely aligned, almost to the point of accurate predictive analysis that could cause tunnel vision. After all, the bright light in the tunnel is the eventual economic recovery. What we're unsure of is how long the tunnel is and how fast the recovery is moving.

Residential construction and improvements normally encompass more than 50 percent of the construction dollars allocated but with the decline in sales and housing prices it's expected to be slightly less than 45 percent in 2008. In some areas of the country housing sales have begun to steady. However, in many areas housing prices may continue to fall for another 12 months due to the high inventory of homes resulting from foreclosures and relocations. In addition, the present tight credit standards have squeezed out speculators and high risk loans. This downturn is more of a credit issue than a housing issue. As the credit crunch subsides, a recovery in the housing market will also depend on how quickly buyer confidence returns to a positive outlook.



The recovery in the residential sector may take a year or two. This forecast is based on the past housing market cycles. According to the US Census Bureau, the housing industry experienced downturns around 1961, 1967, 1975, 1982, 1991, 2001, and 2007, about every six to ten years. Most of these housing recoveries took one to two years to recover and approximately two to four years to regain their prior level before the decline. Most recoveries have been led by an increased investment in construction projects by the public sector.

Therefore, based on past construction economic recoveries, we can anticipate a similar recovery led by public sector construction projects. It is likely, because of the present condition of our infrastructure, that construction projects will be transportation and infrastructure related. Infrastructure projects in need of repair are roads, bridges, dams, locks, dikes, sewage treatment plants, city water works, public transportation, and schools.

In 2005, the American Society of Civil Engineers reported that 25 percent of our bridges are structurally weak, 50 percent of our inland locks are obsolete, and over 3,300 dams are not safe. Even with the increase in gasoline prices, traffic is grid locked on our major road systems. It has been reported that traffic delays have increased over 525 percent between 1992 and 2003. This traffic congestion wastes over \$70 billion in fuel, results in over 4.2 billion hours of lost time, and reduces productivity by \$80 billion.

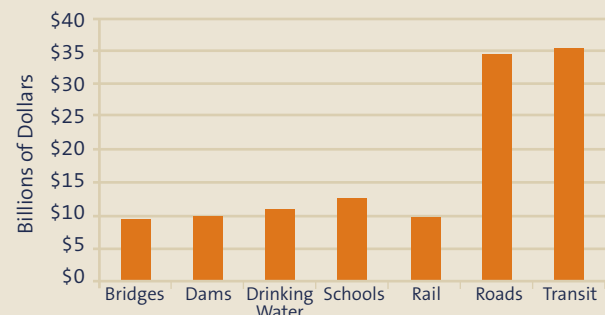
Therefore, we are likely to see new infrastructure projects that will explore and fund improved mass transit options and other ways to ease our commute.

If rebuilding our infrastructure is an integral part of construction economic recovery, then we can anticipate an increased demand for steel, concrete, asphalt, PVC piping, and other materials related to these projects. The increased demand will cause the price for these materials to increase and delivery times to lengthen. Therefore, it is very likely that future construction prices will see steep increases in material costs as the recovery gets underway.

Significant increases in the price of construction materials are not new. Since 2003 we have experienced considerable construction material price increases and many materials continue to increase, but at a reduced rate during this downturn. Steel, concrete, and petroleum-based goods such as asphalt, PVC piping, and roofing have been escalating at greater than normal rates. However, other materials typically associated with home building like wood, wood products, and gypsum wall board have declined.

In the past, the US economic recovery could be stimulated by changes in our economy alone. Today there is a greater influence on material prices and material availability due to foreign competition. In addition, as prices increase globally, the cost of maintaining our existing infrastructure takes a greater portion of available funds and leaves less funds for new construction projects.

Estimated Annual Investment Needed



Right now, at or near the bottom, is actually the best time to be bidding construction projects. Within the last year, the industry has experienced a significant decline in construction bid prices. General contractors, subcontractors, and suppliers have reduced their mark-ups in order to stay busy, pay their bills, and stay in business. They have retained their better, more experienced, trade personnel which is resulting in a higher quality construction product. For the 12th straight month, construction employment has declined with the residential market leading the way at a decline of approximately 27 percent in the last 12 months.

Public agencies and private owners should be pushing their projects to get them out for bid as quickly as possible to take advantage of this great economic condition in the construction market. Also consider, bond rates are relatively low and many government agencies do not have much debt due to the past income they received from real estate tax revenues.

In conclusion, the last two decades of underinvestment in our infrastructure has created a backlog of improvements that is costing us billions in efficiencies and economic growth.

The American Society of Civil Engineers estimates that the US needs to invest \$1.6 trillion in the next five years to bring our infrastructure up to world standards. This investment in our infrastructure will create jobs and increase the demand for materials and services throughout our economy. It also has the greatest multiplier effect of any stimulus because it provides the foundation to energize our economy, improve productive capacity, and will also lead to an increase in private capital expenditures. Given the current market situation in the construction industry, savvy owners are pushing to get their projects designed and out for bid as quickly as possible. Those who do will be taking advantage of the competitive pricing situation, be in the forefront of material price increases, and be involved in strengthening our economy. [CM](#)

Edward M. Kopp has more than 35 years of experience and is the senior project manager for MBP in its Williamsburg, Va. office. He has authored articles and presentations on construction cost trends, quality assurance, project controls, project management and other related topics.

“Green” Risk Management, Continued from page 13

operating life of the building. One can readily see the claim – a LEED certified building is defined by a “premium cost” of 6 percent not 4 percent; the owner will sue for the 2 percent difference. Same as to energy savings – if 30 percent is the expectation but only 20 percent is realized a claim based on the difference in savings (and cost to improve the system) will be pursued.

Green Risk Management – The View In 2008

With some updating, the 1999 training seminar can still be effectively used today. Yes, the potential remains that green projects will prove to be higher risk, but that possibility will be minimized by “traditional” risk management techniques:

Informed client selection and, where possible, working repeatedly for the same clients (assuming they’re good clients!) A straightforward interview question for the prospective client is, What premium costs have they set aside for this green project?

Standard of Care – be sure you agree to a reasonable standard of care; not one based on the “best” or “highest” level of performance. Be cautious of language defining you as a “fiduciary” to your client; a fiduciary may be subject to a higher level of performance. Moreover, the professional must also recognize that green design is rapidly evolving, so to is the standard of care; what was a reasonable design a year ago, may not be so reasonable today (given BIM, IPD, new products, etc.).

“Standard of Expectations” – identify and understand your client’s expectations up front and throughout the project (they may change as might their relative priority) and track your performance as to each.

Contract – negotiate a contract that is fair to both parties and avoid any language guarantying certain end results (i.e. – recognize the difference between agreeing to “design a building having 30 percent less energy use” versus agreeing to make “reasonable efforts to design a building having 30 percent less energy use).

The true test may very well be ten years from now; will this article prove to be of continued relevance? We will certainly have many, many more green projects and experiences to draw on – The USBGC reports upwards of 11,000 projects are currently in the LEED certification process. [CM](#)

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We welcome submissions for the Professional Practice Corner. Please send your ideas to John McKeon at jmckeon@cmaanet.org.