RLB | Rider Levett Bucknall

PERSPECTIVE

2017

BRINGING IMAGINATION TO LIFE

It has been an exciting and busy year for Rider Levett Bucknall, we are fortunate and thankful to have provided project management, cost management and advisory services on a range of interesting projects for amazing clients.

We are also proud to have a passionate team that takes pride in their work. All our employees across North America, and the world, contribute significantly to the evolving landscapes and skylines. In Oregon, we're helping school districts maximize limited budgets while creating learning environments that promote student success. Our Boston office helped a large financial institution manage their budget for the greenest high-rise ever built, exceeding the criteria for LEED platinum. In Phoenix, we helped Native Americans create an impressive new resort casino complex which will provide them with income to support learning, education and cultural efforts. In Hawaii, we are working with hotel owners to create spectacular destinations for their guests, while producing attractive financial returns on their investment. These are just a few examples of how we're helping bring imagination to life.

From technology to project delivery models, the building industry is constantly evolving. At Rider Levett Bucknall, it is critical for us to stay at the forefront of these trends and help our clients and their projects succeed. *Perspective* is a compilation of insights from my colleagues at Rider Levett Bucknall, it addresses a range of industry related topics ranging from procurement methods to how to handle conflict during construction.

We hope that you find these articles insightful for the building industry and applicable to the projects you help come to fruition.

Best wishes for a successful year ahead.

JULIAN ANDERSON FRICS FAACE
PRESIDENT, NORTH AMERICA

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Chicago, Illinois

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PROFIT STARTS WITH PLANNING

HOW TO MANAGE YOUR COSTS & REAP REWARDS

Cranes are again filling city skylines all over the United States, and that's great news for the construction industry. The proverbial clouds have cleared, and it seems that there is nowhere to go but up. Now that the economy has bounced back, many people are eager to dust off their recently shelved projects and go full speed ahead.

That scenario works for many people – but cost consultants are a lot more cautious than most people. And for good reason. We believe that it's essential to be fiscally responsible where construction is concerned – in fact, it's even more critical in boom times than bad times. If you do the right planning at the outset, you will have many fewer regrets and much better results.

BY JULIAN ANDERSON FRICS, FAACE

There are a couple of reasons to proceed cautiously. First and foremost, when construction activity increases, construction costs always rise. That's because there is less available labor and greater need for that labor – it's a simple matter of supply and demand. In addition, in the past ten years or so, new technologies have dramatically changed construction. So the industry has to adjust to, and then absorb, these new methods of design and delivery, as well as the cost implications that come with those shifts.

We also need to recognize that we're still in rebound mode. While people have the confidence to start new projects (or restart projects, as the case may be), the economy is still compensating for the previous slowdown. In other words, we're experiencing a recalibration in terms of what the economy can or cannot bear, but we're not fully stabilized. And that's contributing to current labor shortages, even while we're on the upswing.

For example, let's look at housing construction. The normal rate of housing construction should be between 1,250,000 to 1,500,000 new homes per year. During the housing boom that took place from 2000 to 2006, we were building an average of almost 1,800,0000 houses annually. Essentially, that's an overbuild of at least 2,000,000 homes in four years (based on a need of 1,500,000 homes per year).

As we know, however, the economy moves in cycles. During the drop-off that occurred after 2006, the annual output in the U.S. fell to about 500,000-750,000 homes, which resulted in a gap of approximately 5,000,000 houses. Added together, over the last decade, we have accumulated an overall shortage of about 3,000,000 houses. To catch up, we now need to build as many houses per year as we did at the height of boom. This is having a direct impact on construction, causing it to drive up inflation in the near term. (Data source: U.S. Census Bureau and the Department of Housing and Urban Development).

A 360-degree view of construction

In view of this volatility, good decision-making requires having the right information from the get-go. The good news is that the Consumer Price Index (http://bls.gov/cpi) (CPI) is pretty low. The CPI monitors inflation rates in the general economy, based on the prices of consumer goods and services. And while it's good that this number is low, we want

to make sure that it doesn't dip too low, because then it will cause deflation.

While the CPI gives some important information, it's not a very accurate picture of the economy at large, because it doesn't account for some of the biggest consumer costs, such as energy and housing. And, in most cities, construction costs right now are rising at a far higher rate than costs for other goods and services.

It's also important to get good information about the design and construction industry. *Engineering News-Record*'s Building Cost Index (http://enr.construction.com/economics) is a far better yardstick for the construction industry than the CPI, because it measures the change in cost of materials and labor. Since the cost of labor fluctuates most dramatically between economic upturns and downturns, it's one of the most critical pieces of information to have when you're planning a project.

Even so, these costs only tell part of the story; they don't paint a full picture of the construction landscape. The definition of "construction costs" needs to be much broader, because costs are affected not only by the hard costs of construction and labor, but also by information about overhead levels, profit margins, and sales taxes. At Rider Levett Bucknall, we publish this information on a quarterly basis in our Comparative Cost Index (http://rlb.com/en/index/publications). Most other indices don't take these factors into account.

By looking at costs in this 360-degree way, we get more insight into the construction industry. We've found that, for example, construction costs typically increase more rapidly than the combined cost of labor and materials in a boom economy. If you think about it, it's pretty obvious: in a boom cycle, labor costs go up, but so do profit margins. And the overall construction cost outlook is influenced by all of these gains – not just one or two of them. Similarly, in a bust cycle, construction costs go down or may even be reversed, due to reductions in overhead costs, as well as lower profit margins. When all the costs of construction are considered, the increases are much more dramatic than we might otherwise expect.

How are you measuring costs?

There's more technology than ever before, especially in the construction industry. Buildings are more wired, green, and efficient than they've ever been. They're also more sophisticated, safer, and more resistant to disasters like fire and earthquakes. These changes affect every market – from healthcare to hospitality, residential to education. Designers and builders are also using pre-fabrication to build more effectively and manage projects more efficiently.

Technology can also help experts in the construction industry to gather and evaluate information, which can lead to better financial planning. With 3D modeling, designers and construction managers have access to more information sooner than they ever had before. At the same time, the construction industry needs to understand this information and be able to interpret it accurately.

For example, the information embedded in a BIM model is not always useful, because standard costs are not applicable to all buildings. Yet the BIM model assumes standard, fixed costs that don't change. So, while BIM is an extremely useful tool for people who design buildings, people who use BIM for cost estimating can fall into traps if they don't understand the complexities of construction.

Consider a BIM model that has embedded cost information to estimate the "standard" cost of a glass curtainwall. That cost will vary widely, depending on whether a piece of that curtainwall is on the second floor of a two-story building or the 103rd floor of a high-rise. In addition, the data embedded in a model does not update as costs invariably change, due to the market and other factors affecting the industry. For BIM to be a more robust and useful tool in terms of estimating and predicting costs, the industry needs better ways of keeping information relevant and up to date.

Start off on the wrong foot and you'll be limping by the end

The construction industry is getting more complex, so it's more critical than ever to estimate and manage costs wisely. It's also important to measure as many variables as possible and bake those metrics into the decision-making process. Every decision has an impact on cost – from the decision to use a construction manager to the decision to use a certain material or building system. All choices come with a price.

You'll be most successful if you take the broad view. Sometimes it's better to invest more money at the outset of a project in order to yield a better return over the long run. This is particularly true in the case of sustainable construction. When most owners weigh the impact of "going green," they typically think about the capital costs of those decisions; generally, low-energy systems require a greater initial investment than a traditional system. However, if you consider the influence of sustainable systems over the entire lifespan of a building, they can actually have a positive influence on long-term ownership; more efficient building systems can lower energy use and reduce operating costs over time. So you can't afford to be myopic.

Likewise, it is critical to assess building life before you build, and understand the owner's goals in terms of longevity. These decisions have a direct impact on ROI. Of course, most people consider codes or best practices when they design, but they don't always think about timespan. From a cost perspective, these decisions are crucial. Let's go back to our previous example of the curtainwall. The choice of one building façade or curtainwall system over another can appear to be a subjective design decision, but it can also have a long-term impact on the lifespan of that same building, as well as the operational costs of that building. Where costs are concerned, every choice matters.

With recent changes in procurement methods, cost decisions will be even more critical than ever. Public-private partnerships (PPPs) are becoming increasingly common for delivering large projects. In addition to PPPs, government agencies will be relying more and more on private developers to build their new facilities. This type of procurement will require different and innovative funding mechanisms. As a result, the cost and financing of projects will get more complex over the next ten years, so the industry will have to become sharper and more sophisticated.

Unfortunately, if you don't get it right at the start, the budget won't add up in the end. That's what I call "Anderson's Maxim" which is this: Most projects that are launched with poorly conceived budgets never fully recover. On the other hand, if you start with a realistic budget, and avoid the usual pitfalls, you will be able to see a project through to its successful and profitable conclusion.

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> **"IT IS CRITICAL TO ASSESS BUILDING LIFE BEFORE YOU BUILD, AND UNDERSTAND THE OWNER'S GOALS IN TERMS OF LONGEVITY"**

BALLPARKING THE BALLPARK

BY PETER KNOWLES FRICS & STEVE KELLY MRICS

THE IMPORTANCE OF TRUE COST-MODELING FOR SPORTS FACILITIES

The benefits of having a sports facility in a community are many—from a shared sense of public pride to increased job opportunities to enhanced real estate values—but perhaps surprisingly, immediate profitability is not among them. Whether minor league ballpark or Olympic-caliber stadium, the economics of athletic facilities is an intricate business, involving franchise fees, broadcast agreements, sponsorships, public funding, licensing issues, and more. Because of this complicated scenario, a realistic understanding of the budget is critical, and must be determined well before the architectural design phase begins.

Cost modeling, an algorithm-based process of estimating the complex expenses of a construction project by analyzing fixed and variable factors, can provide the clarity and direction that get a project off on the right financial foot, putting the facility development on the road to profitability. While there are two established approaches to this—one focuses on cost-per-seat, the other on cost-per-square-foot—there are compelling arguments why relying on just one of these methods may lead to inaccurate conclusions.

The reason for this is apparent to anyone who has walked through an arena turnstile in the past five years: Modern athletic facility design is far from standardized. What was once simply a playing field surrounded by bleachers, today's facilities have evolved into entertainment destinations where the competition is not just between teams on the gridiron, diamond, or rink, but also for customers at the multitude of concessions that now populate these venues. Restaurants and bars, luxury suites, and fan-experience features all make significant contributions to the bottom line of the facility's business. Such diverse amenities frequently require sophisticated technologies that go beyond the normal parameters of design, so it follows that they also defy conventional cost-modeling techniques.

As sports seasons are limited in length, facility operators look to supplement their income by scheduling revenue-generating events throughout the entire year. To do so, the venue must be designed to accommodate a variety of activities, from concerts to conventions. When a building is multi-functional, and doesn't fit a well-defined profile of a single-purpose structure, using cost-modeling with a narrow focus simply isn't a suitable approach.

It's not just the bells and whistles aspects of arenas that keep cost-modeling experts on their toes; the basic building program can prove resistant to seat- or square-foot-based study, as well. Something as fundamental as the location of a facility can dictate certain architectural measures that disrupt strictly formulaic analysis. Examples of such circumstances abound: facilities in earthquake-prone regions will require seismic engineering; those in northern climes must contend with snow loads on the roof; where extreme heat and humidity prevail, solar control might take the form of an expensive retractable roof or a more affordable passive shading system. All these present estimating challenges, which cannot be resolved though a single mode of cost-modeling without risk.

Paradoxically, even the seating plan may confound traditional cost-modeling practices. Particularly with the increasing emphasis on luxury boxes as a source of revenue, the amount of general admission seating has become an economically fraught issue.

In order to address these issues, some important questions should be considered, such as:

- Will the event level be partially below surrounding grade?
- Does a significant portion of the bowl need to be retractable?
- What other programs might be incorporated, such as convention space, academic uses, etc.?
- Is the primary design goal to have a multi-sport/event facility?
- Does the location of the facility necessitate particular player or patron safety measures?
- Will state or city workforce initiatives come in to play?

Responsive cost models are key

As early as possible during conceptual design stages, a responsive cost model should be assembled so that building elements can be isolated, interrogated, and priced individually. Fortunately, most facility designers will have sufficient experience to be able to respond constructively to detailed design questions asked early on in the process.

An effective cost model should be organized by building elements, such as:

- Core & Shell
  - Foundation system
    - Site excavation, site fill
  - Superstructure
    - Cast in place concrete
    - Precast
    - Steel
  - Building envelope
    - Roof system: structure and covering
    - Exterior cladding: opaque versus glazed
    - Waterproofing and insulation requirements
- Fit Out
  - May initially be program-based but should endeavor to assign costs (based on historical reference points) to the following:
    - Interior doors and partitions
    - Interior finishes
    - Interior fittings and equipment
  - MEP
  - A/V and special systems
- Site Preparation and Development
  - Associated with facility footprint
  - Associated with other aspects of the project masterplan

There are significant advantages to implementing a more detailed cost modeling technique. Unique facility design and cost challenges, which are often overlooked in comparative cost modeling, can be illuminated and addressed early on. At early stages, the conceptual design is still quite flexible and malleable and responses to cost issues can be modeled and priced in relatively short order if the baseline cost model has been properly prepared. And, perhaps most important, conversations about

the facility costs can be addressed with specific data rather than conjecture and biased opinions.

Obviously this process places demands on design and project teams, which are more commonly encountered at later stages of the process. However, an added virtue of implementing discovery early on is that it engages the entire team in an informed discussion about costs at a point in the design where changes can be affected with minimal effort and maximum impact.

Cost modeling is a powerful tool for planning sports facilities, but to reap the rewards it offers, it's important to understand the limits, as well as the capabilities, of the process. With architects continuously upping the ante on facility designs, relying on per-square-foot methods can be a costly mistake. Responsive modeling is critical. Experience and strong relationships are key to engendering full "buy-in" for these methods with all stakeholders and team members. But when everyone is on board, this process can actually promote and improve trust, foster teamwork, and create a sense of shared responsibility to ensure a successful project outcome.

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Minnesota Vikings Stadium
Minneapolis, Minnesota

PROJECT MANAGEMENT AND THE LITIGATION EXPERT TEAM

BY JOHN T. JOZWICK, ESQ. & JEFFREY G. LANDTISER AIA, CPTED

With surprising frequency, attorneys involved in litigating design and construction issues take a very simple, even myopic view of the use of expert witnesses. In a lawsuit that's focused on structural problems, for instance, who could carry more authority than a structural engineer? The strategy seems straightforward: enlist the expert most closely aligned with the issue, develop their testimony, and go forward.

However targeted and economic this approach may seem on the surface, though, in the end it is extremely short-sighted. Architecture and construction are complicated processes, integrating multiple disciplines and professions—and so it stands to reason that successfully resolving disputes in these businesses would need to tap into many fields of expertise. Continuing our hypothetical example, a web of contributing factors underpins the typical structural failure incident: soil conditions, installation procedures, defective materials, jobsite conditions, and more. Relying on a single witness to address these diverse technical issues is not only problematic, it telegraphs a certain naiveté on the part of the attorney.

On the other hand, a battery of specialist witnesses is a formidable tool in court, whether it's being heard by a judge or a jury. Assembling, retaining, and managing a credible, experienced team of experts can play a key role in achieving legal success, and there are ways to optimize its effectiveness.

Because experts are typically hired individually, they tend to work independently. Without a structure in place to coordinate and process their input, the important information they provide can be compromised or even contradictory. Written reports submitted late in the process, or that are filled with factual inconsistencies, can force a legal staff into a position of cobbling together documentation under pressure, raising the possibility of error. At deposition, insufficiently coached experts (who by nature are more technocrats than storytellers) can lapse into focusing on one another's opinions, rather than the case at hand, creating an unprofessional impression. In the worst-case scenario, these behaviors could result in conflicting testimony that might jeopardize the outcome of a case.

To prevent this kind of confusion, we recommend adopting a program of project management when working with a team of experts.

Project management is a goal-oriented methodology that's widely employed by the AEC industries and is starting to make inroads into law firms; its effectiveness has been tested and proven. Comprising an organized plan of action and communication, it brings a level of transparency and cohesiveness to any process. Applying project management techniques when working with expert witnesses can increase efficiency and reduce costs associated with the practice.

A number of highly formalized approaches to project management have been developed for specific businesses. Of course, some of the basic precepts of project management can be enacted without training. Among those that will be helpful in working with expert witnesses:

- Identify the stakeholders. The network of interested parties in a case where expert teams are utilized is extensive and dynamic. A system that clearly identifies professional roles and responsibilities will add clarity to the process and avoid redundant or misdirected communications.
- Agree upon a schedule. Setting up a series of realistic deadlines for receipt of expert-witness reports gives people a long- and short-term perspective on the milestones that must be met. Coordinating the delivery of information from experts can eliminate any last-minute panic, and will allow the legal team to methodically review the materials, enabling them to resolve any discrepancies in the findings and craft the best possible case for the client.
- Monitor progress. Lost lab tests and garbled interview transcripts are just a couple of the everyday setbacks that can impact a project. Delays are inevitable, but they needn't derail making progress in developing the case. Informing all members of the team about any disruption in the timeline will ensure that the investigative process doesn't come to a halt.
- Establish a single point of contact. Having one person in charge of day-to-day communications keeps messaging clear and minimizes the potential for misunderstanding. In addition to centralizing ongoing communications, this individual can also consolidate the production and distribution of evidentiary documents and exhibits.

The benefits of implementing a project management system for expert teams is illustrated by a recent episode where we acted as the architectural expert and overall expert manager in a forensic review case that involved million-dollar-plus claims on an unrealized residential development. At issue were adherence to regulatory processes, plat layout, overall yield and easements, and the accurate determination of development costs.

A gamut of municipal agencies, title companies, and construction firms had been connected with the project. The plaintiff retained a single representative—a real estate appraiser—to make their case for lost revenue and profit; for the defense, we assembled a team of experts from a spectrum of AEC professions, and instituted a project management structure and demonstrated overall development pro forma.

We were responsible for engaging and coordinating all of the cost and construction experts, as well as the civil, geotechnical, and appraisal experts. As we assumed the role of project manager, overseeing the production, synthesis, and distribution of the experts' reports, the defense was the beneficiary of a 360º, fully-vetted review of the project's circumstances and its financial implications. An additional result of the investigation—the lack of qualifications on the part of the plaintiff's "expert", and his inability to speak to the technical design and construction required, in turn voided much of his findings—further undermined the arguments made by opposing legal team. Once the evidence was presented in court, the case settled very quickly (and favorably) for our client, demonstrating the positive value of project management for expert witnesses.

Organization, coordination, and communication: these are the core principles of project management. Applying them to expert witnesses will improve both the efficiency and the efficacy of construction litigation.

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AS SEEN IN

Building Design + Construction - Rider Levett Bucknall Blog, July 2016, "From Construction Site to Court Room: How Project Management is Transforming Expert Witness Teams"

THE RETURN OF THE HARD BID

HOW TO MANAGE COMMON CHALLENGES - AND MAXIMIZE BENEFITS - OF TRADITIONAL PROJECT DELIVERY

> After being rejected as an irreconcilably flawed process and discarded in favor of other project delivery methods, the traditional hard bid process has started to resurface in recent years, especially with public owners such as school districts. While it can be argued that hard bid is not as efficient or collaborative as other delivery methods, the traditional process could have some merit in today's market.

BY GRAHAM ROY FRICS

Construction activity is accelerating to new, post-Recession levels. In such busy times and with labor resources being stretched, owners may not actually be experiencing the much-lauded benefits of more popular methods such as Construction Manager/General Contractor (CMGC) or Construction Manager at Risk (CMAR). CMGC can incorporate a contractor's "A-teams" to help bring perspective and input into planning and design decisions, while CMAR can enable owners to "fast-track" early components of construction prior to full completion of design. But when schedules are tight and labor is scarce, these benefits seem to diminish, if not vanish altogether. Newer, technology-driven methods, such as IPD, can produce a collaborative overall effort, but, in the end, may not necessarily produce the best fiscal value.

For these reasons, perhaps, the hard bid seems to be making a comeback. However, the process is still riddled with issues that newer methods are meant to address more effectively and efficiently. Bringing a trusted advisor, such as a quantity surveyor or cost manager, into the project early on can help address these issues, maximizing the benefits of hard bid while minimizing its shortcomings.

An experienced advisor can assist owners by carefully managing the cost and time aspect of projects at the earliest pre-concept and pre-bid stages. They can assist with more traditional milestone estimating, value engineering, life cycle costing, and provide necessary constructability advice throughout the design process.

Weighing the pros and cons

According to proponents of hard bid, it offers certain benefits for owners that other methods don't: lower costs; greater control over projects; higher quality, more complete design documentation; and greater transparency, especially for public owners.

Conversely, its opponents would argue that the process is no guarantee of perfect documentation and inconsistencies in the process inevitably lead to conflicts and change orders. The process is less collaborative, the duration of pre-construction can be longer than with other methods, and constructability issues are not fully discovered or strategically addressed. Additional pros and cons of hard bid include:

Lake Washington School District
Redmond, Washington

Pros

- The process is well-suited to less complex building types such as new construction of schools
- It does not require paying fees for CM preconstruction services, which can vary in quality
- Open, competitive bidding by GCs for the entire construction contract provides the lowest cost for the design requirements specified
- Advances in BIM can help create higher-quality, design and bidding documentation with greater accuracy
- The architect, serving as the owner's primary advocate, acts as a third-party arbitrator on any disputes or discussions between the owner and general contractor.

Cons

- The use of BIM, combined with the lack of integration of the CG early in the design process, creates an unrealistic expectation that the final design will meet the concept cost model regardless of how much the final design departs from the initial parameters.
- Due to a lack of early contractor participation, design professionals may incorporate systems without fully realizing the constructability issues, leading to change orders and increased costs
- Relying on the architect to serve as the owner's primary advocate for arbitration or dispute resolution between the owner and general contractor can create a confrontational team dynamic
- The process creates an environment where the owner has no access to the GC's accounting. There is a risk that any real savings achieved in value engineering during the construction process will go to the GC unless a cost manager is retained to assist with negotiation.
- Hard bid can, at times, foster "bid shopping" for lower priced subcontractors, resulting in lower quality craftsmanship and/or multiple change orders during construction.

Strategies to address the inherent challenges of hard bid

As with every method, using the hard bid model provides benefits but also poses challenges. Let's look at some more complex challenges related to hard bid and related strategies to address these issues.

Challenge #1:

Contractors, as well as their subs, are often unfamiliar with important details of a project and its documents prior to submitting a bid.

Frequently in the hard bid process, GCs don't have the time to give their due diligence to really understand the project, identify issues, ask questions about the design and discuss certain aspects of the project that may require clarification. This creates an environment where making seemingly simple decisions – such as a paint or mortar color, for example – can become confrontational, bog down project momentum, and waste time, effort, and money.

Strategy:

Work directly with a dedicated owner's advisor at the earliest stages of the project. An experienced, knowledgeable advisor can vet bidding GCs, confirm their knowledge and understanding of the project, and ensure that the chosen contractor has done their due diligence with regard to any potential design questions. An advisor can create accurate, benchmarked construction and project budgets and schedules to keep the project moving forward when legitimate questions arise.

Challenge #2:

The hard bid process allows contractors to have greater control of the project, increasing time and budget overruns.

Unfortunately, some contractors and sub-contractors are inappropriately confrontational and are not "team players." While this is not the case for all GCs and subs, some have been seen as opportunists who bid low, win the project, and then focus their attention on creating as many change orders as possible, leveraging those changes to increase contract fees and costs.

In other instances, the "hard bid" contractor may be less prepared for project initiation, and slower to start. Even though most contracts stipulate that a construction schedule be submitted early on, some GCs do not provide schedules of work until after the project has been underway for several months.

Strategy:

Conduct a thorough risk analysis to help mitigate budget and time overruns. Create a process whereby the project is designed within the budget. Similarly provide accurate and realistic initial scheduling and subsequent updating throughout the process. Review documentation and work as a team to clarify and/or modify any issues toward a mutually beneficial solution.

Challenge #3:

Operational issues can endanger the project because the contractor is not a part of the team prior to construction. For example, in other project delivery methods, when BIM is used, it is a collaborative tool by all team members. Many "hard bid" GCs are unprepared to respond to BIM-related changes in documentation because they have not integrated it into their workflows.

With BIM, there is an expectation that everything is shown in the plans, detailed, perfectly coordinated, and in ultra-high resolution. While the majority of contractors today have likely worked on BIM projects before, many are not prepared for how BIM can affect their workflows and information exchange. Some must engage third party service providers to manage BIM-related changes to documentation, such as RFI's.

According to a study by Brigham Young University, "while BIM [offers] significant benefits to estimating, there are also limitations that must not be ignored particularly when dealing with detailed construction estimates." This is especially true when the contractor is brought on via a hard bid process and is not a team member prior to commencing construction.

Strategy:

Operational challenges must be discussed and resolved early on. Expectations with regard to experience and proficiency with building technologies such as BIM, and how it affects workflows and information exchanges, must be clear and confirmed during the bid process before the contract is awarded. A dedicated advisor can provide oversight, guidance, and a clear plan of action to ensure that the GC is compliant.

Looking Ahead

When correctly managed and applied to an appropriate project and scope, the hard bid process can yield multiple benefits that other delivery methods may not provide, especially in today's busy construction market.

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AS SEEN IN

Seattle Daily Journal of Commerce, July 2016, "As Labor Gets More Expensive, Owners Return to Hard Bidding"

> **"Bringing a trusted advisor, such as a quantity surveyor or cost manager, into the project early on can help address these issues, maximizing the benefits of hard bid while minimizing its shortcomings."**


EXIT

OF CONFLICT AND COMMUNICATION

THE RISKS AND REWARDS OF COLLABORATION IN CONSTRUCTION

BY JULIAN ANDERSON FRICS, FAACE

According to the Oxford English Dictionary, 'collaboration' is "the action of working with someone to produce or create something." To many in the construction industry, it is the equivalent of the holy grail—an elusive ideal of performance. In theory, in a truly collaborative venture, all parties focus on, and contribute to, a project's goals, thus ensuring success for the project and themselves.

Experience, however, suggests a different reality. While construction requires many players to act together (collaborate) for a project to be successful, each person typically has somewhat different goals from the others. While some of those goals will not be in alignment, they might even be competing or conflicting. For example, an interior designer may have a vision for a desired quality of furnishings and finishes, but if that vision is too grand for the project's budget, it may negatively impact the landscape architect's vision when the quality of the landscaping design is compromised to fund the opulent interiors. Success for one party leads to the relative failure of another.

To add to the complexity, the successful achievement of one player's goals may not be dependent on the successful achievement of another player's goals. Consider that a project's mechanical system might be a dismal failure, while its structural design is award-winning; the mechanical designer failed to meet their goal of designing an appropriate system, yet this had no effect on the structural engineer achieving their goals. However, in this example, the project may be considered a complete failure by its owner because of the poor mechanical system—regardless of the fact that it was recognized for outstanding structural design.

Finally, the transmission of information between designers, between designers and contractors, and between contractors and sub-contractors/suppliers provides numerous opportunities for gaps in understanding that lead to disrupted expectations and ultimately claims and/or financial losses.

In short, while some degree of collaboration is necessary for any project to achieve completion, the construction process is more often an antagonized struggle involving competing, disconnected goals; broken trust; and imperfect communications—often resulting in litigation. The Norton Rose Fulbright 9th Annual (2013) Litigation Trends Survey, in which Fulbright surveys companies in the United States and the United Kingdom on litigation issues and trends, stated:

> "Engineering and construction companies led in litigation, with 80% of them filing at least one suit last year. The engineering sector faced suits at an even greater rate than it initiated them and almost half of all Fulbright's engineering respondents faced at least one high-dollar suit during the last year. Not surprisingly, 57% of engineering respondents reported an annual litigation spend of $5 million or more – the highest for all respondents to Fulbright's survey."[1]

At the core of this scenario are misaligned goals. As Dr. Dean Kashiwagi P.E. and his team at the Performance Based Studies Research Group (PBSRG) at Arizona State University described this classic stand-off: "The client wants low price and high value, and the vendor (contractor) wants minimum performing systems."[2]

Add to the mix humans with their different goals, different ways of working, and common reaction to conflict. As John Jozwick, General Counsel for Rider Levett Bucknall, Ltd. writes:

> "When we human beings experience conflict, we naturally perceive feelings of threat, fear, and mistrust. In fact, research has found that humans, when faced with conflict, are actually 'hard wired' to experience an emotional fight-or-flight reaction before we are able to respond rationally. From the moment we encounter information that might pose a conflict or threat, we fear first and think second."[3]

[1] "Litigation Bounces Back: Regulation Hits High - U.S. Release." Fulbright's 9th Annual Litigation Trends Survey: Litigation Bounces Back; Regulation Hits High. February 26, 2013. Accessed November 9, 2015.
[2] Case Study: Best Value Procurement/Performance Information Procurement System Development, Dean Kashiwagi, PhD, Fulbright Scholar, PE. Accessed October 1, 2016
[3] "Building Trust: How Project Neutrals Manage Conflict and Foster Successful Projects" John Jozwick, Esq. Accessed September 29, 2016

In my experience, successful projects have a three common characteristics:

- **The right team.** One that is well experienced in the project type, used to working together, and that has delivered successful projects in the past can be trusted to go the distance to completion with a collaborative attitude.
- **Fiscal clarity.** It's critical to confirm at the outset of a project that its scope, quality, and schedule can realistically be achieved within an established budget. What I call "Anderson's Maxim"— "Most projects with poorly conceived budgets never fully recover"—is a guiding principle in construction.
- **A shared vision.** All the participants in the project must precisely understand their scope and what is specifically required of them.

Can the form of contract enhance (or enforce) collaboration in construction? An effective but ultimately limited tool, the contract is relevant to the extent that it is suitable for the type of project being procured, ensures the project team is familiar with the specific project type, and accurately allocates the risk factors appropriate for the project type. But in and of itself, a contract can neither inspire nor compel genuine collaboration. Does Integrated Project Delivery (IPD) solve the problems of construction? While it has merits, it, too, is not the be-all-end-all any more than CM-at-risk, design/build, or other forms of contract. Can engaging project neutrals and using partnering help? Yes, but only to a point—again, authentic collaboration defies formal negotiation.

Still, no project can reach completion without some collaboration. Aspiring to the highest level of collaboration is good, but better still to have an appropriate budget, an alignment of the parties' understanding of project scope and quality, and a clear-eyed vision of their respective roles. Failure to achieve this will result in an unsuccessful, litigious project where no parties will fulfill their goals. Collaboration in construction carries both risk and reward: The biggest risk is failure, either individual or collective. The greatest reward is success.

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BRINGING IMAGINATION TO LIFE

PRESCRIPTION FOR SUCCESS

MANAGING TECHNOLOGY IN THE DESIGN OF HEALTHCARE FACILITIES

BY DAVE POWERS

From patient care and diagnosis to medical records management to the maintenance of energy-conscious facilities, technology has become a critical component in every aspect of hospital and healthcare design. This parallels the condition of the AEC industries, which have seen a similar sea-change in the way business is conducted. Contract documents have gone from paper to electronic files, with BIM (Building Information Modeling) programs capable of generating digital representations of not only a physical facility, but also its performance and costs over its complete life-cycle. Augmented and virtual reality models enable incredibly realistic walk-throughs of unbuilt spaces, allowing architects to identify and resolve potential problems early in the process, saving time and money for the client.

While the benefits of intelligently deployed technology are abundantly clear to both designers and healthcare end-users, it's no simple task to manage the integration of technology into a building program. The exponential growth of the field has the potential to expose gaps in the design team's knowledge, including owner's responsibilities that manifest in budget shortfalls; marginalized functionality of evidence-based designs; and ultimately, suboptimal facility performance. It's vital to have a proven strategy for minimizing risk.

Having a sound management plan in place throughout the execution/construction phase of the project is fundamental to the future success of a healthcare facility. Providing regular updates to stakeholders is recommended; for maximal effect, these should be structured working sessions, rather than overwhelming, random information dumps. Ensuring that all project participants have the proper understanding of all phases of the project will help maintain the intended outcome. During the life of a project, changes will occur; systems, equipment, vendors, and other goods or services may not be available. These occurrences are common (especially in tech field), and a smart team will anticipate them. Meaningful discussions should take place to understand the impact of these changes. Perceptive questions—Will patient care be affected? Is there an impact to facilities? Does the change disrupt other systems or have unintended downstream effects?—need to be asked and honestly answered. Incorporating long-term thinking into decision-making is necessary to the change-management process. Too often, a decision will be made solely on price; for instance, specifying a certain material may save $10,000 in up-front costs, but down the road will incur an additional $100,000 per year in maintenance or operational expenses.

- Modern technology can provide a 360-degree view of a construction project, allowing all stakeholders at all phases of the job the opportunity to fully participate in the process. While the benefits of this are indisputable, there are ways to improve the experience of the tech-centric design and construction process and improve outcomes for clients. Here are three key areas where technology can help shape the efficient creation and operation of healthcare facilities:
- Information Management: Supporting Communication. As tech needs are diverse, so are the many various solutions available. Assessing the technology requirements of all parties—including administration staff, medical personnel, and facilities managers—early in the design stage will reduce the need to revise plans as the project progresses. This will save money and keep schedule delays under control. While hospitals may want to stretch their budget by buying specific pieces of diagnostic and treatment equipment from different manufacturers, they must also account for the additional costs of "translation" equipment required to make the various systems communicate effectively. Since most hospitals will source equipment from multiple vendors, it's essential that these information streams are bundled into one language that is readable by existing and/or planned software, computer hardware, and medical equipment.
- Cost Management: Budgeting for Now and Later. From the outset of the planning process, integrate technology into the financial planning for healthcare construction projects. Hospitals should include a line-item in their budgets for technology: it's increasingly competitive with funding for traditional capital expenditures. Without comprehensive planning and budgeting, owners may be forced to make cuts well into the design and construction process—an action that runs the risk of compromising operations and/or diminishing the design intent.
- Project Management: Staying on Track with Tech. During design and construction, the project's technology team should meet to review and reevaluate its recommendations and make course corrections as needed. Optimally, these meetings would be scheduled to take advantage of the periodic upgrades to software and hardware systems. As an example, in the case of a hospital project that was slated to be five years in design and four years in construction, the tech team convened three times over the course of the job. This allowed them to learn about, refine, and implement necessary changes to the technological infrastructure in a timely manner.

It can be challenging to guide clients through the complex process of bringing state-of-the-art healthcare facilities online. By leading the discussion of technology at every level, the full value of this life-changing resource can be realized by all stakeholders, from owners to healthcare providers to patients.

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READY. SET. RENOVATE!

STRATEGIES TO MANAGE COSTS AND MAXIMIZE ROI FOR A SUCCESSFUL HOTEL RENOVATION

> In recent years, many projects were put on hold during the recession; boutique hotels to big name brands committed very little investment into property improvement plans. The good news is that hotel construction is now at an all-time high. According to a study[1] by Bjorn Hanson, clinical professor at the Preston Robert Tisch Center for Hospitality, Tourism and Sports Management at New York University, capital expenditures by U.S. hotel owners in 2014 was $6 billion, up almost 20% over the previous three years combined. Now that the economy is improving, hotel owners are building new properties and renovating aging ones to regain or retain a competitive edge.

BY PAUL BRUSSOW

Renovating and upgrading an existing hotel is all about time and budget. It's essential to plan ahead for the inherent challenges – and costs – this work can pose. Is your project complicated enough to warrant closure during renovations? In most cases, renovations do not require a complete shutdown of the property. But you may need to phase the work out by stack or on a floor-by-floor basis while staying in operation. Is the property an older building that needs to be brought up to current standards? How quickly do renovations need to be completed in order to make the numbers work? It's imperative to address the existing and unknown cost issues inherent to renovating without negatively impacting the budget, work schedule, or, above all, hotel guests.

Control costs and maximize ROI in any renovation scenario

Closing a property during construction is usually not going to be the best option, especially if the work is not comprehensive. However, if the project requires major renovations and an extended project schedule, the potential loss of revenue must be balanced against the potential impact that staying open might have to the guest experience and general operations.

On the other hand, if the planned project is extensive, then closing could be an option as long as the schedule is strictly managed and work is completed in time to avoid loss of revenue. Another option would be to close briefly for any major or potentially disruptive construction activity and then reopen to complete the rest of the work in phases.

In any scenario, there are risks inherent to nearly all hotel renovations projects whether the property is closed or not. Whatever the approach to renovation, it's critical that the following risks be thoroughly assessed and proactively addressed.

Renovation risk #1: Working with an improperly defined scope

Improperly defined or insufficient project scopes notoriously produce uncertainty, confusion, delays, and cost overruns. However, because of the nature of renovations versus new construction, it is particularly important that potential issues that might derail the project are addressed effectively and strategically. This requires proactive project management and planning.

[1] Hanson, PhD, Bjorn. "U.S. Lodging Industry Capital Expenditures Increase to Another Record Level in 2014." *New York University School of Professional Studies*. Preston Robert Tisch Center for Hospitality, Tourism and Sports Management at New York University, 23 Sept. 2014. Web. 16 Sept. 2015.

Four Seasons Resort O'ahu at Ko Olina
Kapolei, Hawaii

An effective project manager will foresee and respond to potential issues prior to construction – and carefully monitor the project as it moves forward – to ensure that it is completed according to specified quality, allocated resources, schedule, and budget. Otherwise, if management isn't vigilant, the project will almost always drift from its intended parameters.

As renovations progress, scope must be strictly observed, enforced, and, if necessary, proactively amended; if a renovation gets out of scope, it's likely due to factors such as insufficient attention to unforeseen construction requirements or failure to integrate stakeholders' input at the initial stages of the process. For example, big brands will likely require specific finishes or design aesthetics that must be adhered to in all properties. Failure to specify out the correct and approved details in the beginning can stop a project in its tracks and delay getting back to normal operations, and this can mean increased costs and lost revenue.

Cost Control Strategies:

- Early on in pre-construction, conduct an analysis to uncover various aspects of the project that require special considerations or attention, so that last minute reaction is not needed in the field. For example, before demolishing walls, understand the location of potential shafts, risers, and other special construction within the structure. Neglecting to perform such analyses, can negatively impact the scope by placing undue pressure on manpower and resources, and add weeks or months to the schedule. For example, simple modifications like changing an outlet location can become complicated if wire routing is not investigated and clearly understood before renovations commence.
- Create a fully defined scope by incorporating results from these analyses and all other pertinent details including schedule and budget.
- Once the scope is defined, meet with all stakeholders (owner, operator, brand, etc.) to mutually agree on all details of the scope including addressing any existing conditions upfront.
- Thoroughly investigate all aspects of the proposed project so all potential issues and ramifications can be anticipated. For example, a "simple" improvement like tiling the guest room entry can lead to floor transition issues, extensive floor leveling, or ADA problems if the work is not properly vetted before construction commences.
- A model room should be used to investigate any constructability issues with the proposed renovation. However, the model will only reflect one unit type, and it is critical to understand that there will be multiple room configurations within the total renovation.

Renovation risk #2: Underestimating the schedule and/or manpower

The desire to get the renovation done as quickly and efficiently as possible is an important goal. After all, time is money not only in terms of getting the property back into full operational order, but also in for the project team to finish the job within budget. However, a rushed schedule is never in anyone's best interests and can create a myriad of issues that result in either poor quality, undesired results, or work that must be redone if it's incorrectly or shoddily performed.

In addition, special consideration must be paid to the project schedule as it relates to manpower and the local labor pool, as shortages of skilled laborers still loom in most markets, especially in more heated markets. A schedule that's too aggressive could be unrealistic in the marketplace.

Cost Control Strategies:

- For larger renovations, explore the feasibility of breaking down the project into smaller parts and splitting up the work so that different labor pools can be engaged. For example, for a hotel with two large towers that need full renovations, two separate general contractors could be hired that would draw labor from different subcontractor pools. The Tiling scope

of a project could be broken into public areas versus rooms.
- Proactively address labor requirements as early as possible to ensure that the subcontractors assign suitable labor resources to the project.
- Build a schedule based on realistic labor requirements for a single floor. Overcrowding a floor with too many workers will lead to quality control issues.

Renovation risk #3: Poor procurement planning

In order to keep construction schedules and budgets on-target, a streamlined procurement process is absolutely essential. The furniture, fixtures, and equipment (FF&E) procurement process is one of the most time consuming and complex aspects of any new hotel or renovation. What's more, communication regarding schedule is key in every aspect of project management but it is especially important in procurement. A delayed FF&E can set a project back just as much as delays with any other part of the construction phase.

Cost Control Strategies:

- Make design decisions early and get sign off from all stakeholders, including a representative from the hotel brand if applicable, to ensure that the overall aesthetic and furniture, fixtures, and equipment (FF&E) packages are mutually agreed upon.
- Manufacturing of FF&E packages are also projecting longer lead times than years past. Fabrics and textiles, especially, require lead times twice what they used to. Therefore, timing for receipt of these items must be considered prior to setting a "start" date of any onsite construction to ensure the product is delivered in time for installation.
- Ensure FF&E orders are broken down into organized deliveries to minimize double handling and additional storage costs.
- Create contingencies and "Plan B" selections to fall back on if certain fixtures or materials are delayed or unavailable. If a back up is in place, the decision to focus on another aspect of the project while waiting for the original selection to arrive or simply replace it can be made without delaying the entire renovation.

The Way Forward

While the majority of renovations are cosmetic and do not require the closure of a hotel, extensive infrastructure replacement may lead to closure of the property to successfully complete the renovation. If closing is not necessary, careful planning to phase the work floor-by-floor or by stacks can significantly reduce risk and improve the overall quality of the end result.

Whether a property is closed or open during renovations, there are significant risks inherent to most renovations and project schedules. The aforementioned challenges should be carefully examined, and their correlating cost control strategies explored, in order to maximize ROI, minimize downtime, and result in a successful, on-budget project.

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AS SEEN IN

Building Design + Construction - Rider Levett Bucknall Blog, July 2016, "Proven Strategies for Managing Costs and Maximizing ROI for Any Hotel Renovation Scenario".

> **"It's imperative to address the existing and unknown cost issues inherent to renovating without negatively impacting the budget, work schedule, or, above all, hotel guests."**

Rumfire at Sheraton Waikiki
Honolulu, Hawaii

POST OCCUPANCY VALUE FOR MONEY AUDITS IN P3 PROJECTS: ACCURACY, ACCOUNTABILITY, AND A WAY FORWARD

BY JOE PENDLEBURY PQS, MRICS

Popular in the UK and Canada, the public-private partnership (P3) model for financing construction projects is making inroads into the US market as an alternative to traditional development methods. A P3 can save time, money, and reduce risk to the government by having a single contractor design, build, finance, and operate and maintain a facility over an extended period of time—anywhere from ten to 40 years. When carefully and transparently planned, P3s offer some significant advantages to owners and communities.

Value for Money—Taking the Long View

A key part of that planning is the value for money (VfM) assessment. Done at the outset of a project, in the design and construction phases, the projections of a building's performance can provide powerful, persuasive evidence of efficiency. However, these estimates frequently tell only part of the tale. Their accuracy is compromised because they do not sufficiently examine the property's operating performance over the long term.

Unlike P3 pre-construction VfM assessments, the analysis of these "legacy" costs that can provide crucial data is often incomplete. This is due in part because P3s are still relatively new to the US, but also because North America has not yet implemented a standardized, comprehensive audit and monitoring system. Until this is in place, the P3 contract should be written to clearly outline the processes that contribute to a complete, long-term VfM assessment.

For projects that include an operation and maintenance (O and M) role than lasts 25 years or more, it is important to develop wording in the P3 contract that ensures the owner has access to a sufficient amount of O and M information to ensure the project's legacy costs also provide value for money.

VfM is essentially a combination of qualitative and quantitative factors. Benchmarking—a system of comparing the measured performance of a facility to itself, its peers, or established norms—is the principal tool used to yield data that informs VfM assessments. The benchmarking process typically includes provisions for fluctuations in the costs of labor, materials, equipment, and energy.

To capture the most complete picture of a project, the value for money test examines efficiencies on many levels. In addition to evaluating the project as a whole (including equity, cost of debt, etc.), and comparing it to a traditionally-funded project of equivalent nature, analyzing separate components will enhance the accuracy of the data. Among these features are:

- Hard and/or soft facility management
- Life-cycle cost/sinking fund/reserve fund
- Determination of sufficient equity and appropriate penalties to ensure the private-sector partner performs according to the specifications in the latter years of the project
- Appropriate performance/availability mechanisms
- The optimal level of risk transfer

Benchmarking—Assessing Performance

The first round of benchmarking measurements is best done after the building has been occupied and running for at least six months—depending on the complexity of the facility. As a rule of thumb, the benchmarking should take place after the initial commissioning and troubleshooting processes are completed, and the fine-tuning of the building has been done. This early evaluation will confirm that key performance indicators (KPI) can be documented and achieved. In many jurisdictions in Canada and the UK, P3 projects have a five-year benchmarking requirement.

Because P3 agreements are usually in place for significant periods of time, it is important to both public- and private-sector parties to ensure that critical aspects of the agreements are subject to periodic benchmarking reviews. To assure an impartial analysis, these should be performed by an independent audit team. If the benchmarking exercise does not yield an acceptable level of comfort for the public-sector party, an enforced market testing of the product or system may be ordered, if the contract contains provisions permitting such an action.

It's critical to note that the post-occupancy audit should not be just a tally of the bills paid by the concessionaire; such a superficial accounting provides a one-dimensional view of the project. To develop a comprehensive, integrated understanding of the building's performance, a quantity surveyor with experience in building-condition- and reserve-fund-studies must prepare the audit, to identify any operational deficiencies. An analogy: Adding up your household utility bills may show you are spending $200 a month on electricity, but to put that information in a useful perspective, a homeowner should seek advice from an authority who is able to tell you that your monthly expenditure on electricity should be only $50, and that there may be a problem with your house.

Quantitative feedback on a building's performance should be augmented by qualitative information. Among the questions that can add depth to the VfM assessment:

- Is the quality level appropriate? In other words, do the service level agreements and/or performance specifications accurately reflect initial and life-cycle client requirements?
- Is the operation integrated and efficient?
- Does the original purpose—and consequently, the specifications—for the project remain unaltered? Or has the project brief changed?
- Are there current KPIs available for review, and, if so, are they appropriate to the project in its current form?

Once established, the benchmark will enable future audits to examine the efficiency of the systems and operations to see if further improvements can be made, to optimize the benefit to all parties. This may include replacing some of the suppliers, if the value or service levels can be improved by going back out to the competitive marketplace.

This can only be achieved if contract conditions can be formulated and implemented at the procurement stage to allow any proposed efficiencies to be implemented. A possible scenario would be one review to confirm that the contracted KPIs have been achieved, with any optimizations to be completed as a separate exercise.

Another important provision in the paperwork: Protection for both the owner and the concessionaire in the event of a transfer of the property during the period of the agreement. A review of the legal and economic provisions contained within the transfer agreement should be conducted by an independent third party. It is quite common for P3 properties to change hands, either through the sale of the asset, or being consumed by a merger.

Banking on Performance Data

A smartly structured P3 contract that includes clear provisions for determining a building's legacy costs is not only useful to the immediate partners on the project, but could take a significant step toward advancing the entire construction industry.

Creating a database from the audit of various projects will be an invaluable tool for government partners to accurately assess VfM, not only for a specific project, but also as evidence to inform future contracts, KPIs, and operating and maintenance standards. The potential benefits of the information wouldn't be limited to P3 jobs; such data could be applied to traditionally tendered projects, as well—making it a truly valuable proposition.

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Canadian Facility Management & Design, January 2017, "Post-Occupancy Audits In P3 Projects"


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EXPO IN THE CITY

BY SCOTT SUMNERS PMP, CCM

Convention centers in the hearts of vibrant cities are poised for unprecedented success and greater return on investment than their suburban counterparts. Recent growth trends in the exhibition industry – combined with attendees' preferences for urban locations – are creating significant opportunities for convention centers in these destinations. While urban facilities are inevitably more expensive to build, they are also more lucrative because they provide an edge in attracting new events and deliver strong economic returns to the communities that build them.

Each year, top cities around the world compete for the largest and most profitable conventions and the competition is fierce. Financing and construction in the exhibition industry showed strong growth in 2014, while 2015 has seen major gains in revenues, demand, and attendance.[1, 2]

Globally, convention center revenue growth has outpaced world GDP each year, with the growth rate almost doubling to 5.8% in 2014.[3] This robust growth continues to bring new prospects to communities vying for these mega-events, even as stakes grow higher and competition steepens.

Better Benefits for Cities

Communities recognize the benefits of booking convention business, and are investing in new buildings and expansions to accommodate them. Cities investing most heavily and frequently are those that can capitalize on their market strengths and land these events. In this game, central city locations dominate.

Great destinations win the largest events, and the expansions moving forward today, which typically require significant public investment, are almost exclusively in urban settings. Urban destinations are the most competitive – professional associations and the meeting planners who represent them seek out these locations because convention attendees and sponsors want an experience. "People who are attending conferences today are a lot more discriminating," says Brian Tennyson of LMN Architects in Seattle. "The planners need a space where they can connect people with their surroundings. No one wants to sit in a box for eight hours anymore."[4]

The amenities offered by the most competitive destinations must be superior – local restaurants, shopping, entertainment, nightlife and the elusive 'urban vibe' – and events hosted in city centers with these features are better attended.

One example, Nashville's Music City Center exceeded one million room nights booked before it even opened. "All it takes is a visit to Music City to see why we are now the nation's best convention and event destination," said Nashville Mayor Karl Dean. "We are not just opening the doors of a new downtown convention center, we are opening a new world of opportunity for Nashville's hospitality and tourism industry."[5]

Conversely, when cities with successful centers and expansion plans fail to act with certainty they put their success at risk. Boston's planned expansion was put on hold in early 2015 and the delay has created increased criticism and missed revenue as events leave Boston and book elsewhere.[6]

Urban facility expansions are widely supported by local leaders and voters alike. Local governments are increasingly putting big-ticket projects with political risk before voters for approval, and the trend is positive. Voters approved the Phoenix Convention Center in 2001; Oklahoma City's expansion was approved as part of a larger plan in 2009[7]; and Denver voters approved an expansion in November 2015.[8]

Better Returns on Investment

These facilities also generate higher economic and fiscal returns for the communities that fund them. Downtown hotels typically have higher rates, so when convention delegates stay in these urban locations, their higher spending results in higher room tax revenues, which boost the local economy. In addition, many convention centers exist within special tax districts with sales tax rates higher than the surrounding areas. As a result, convention delegates' spending produces higher sales tax collections and overall revenue, especially for local businesses.

Further, urban centers typically offer a great diversity of food, beverage, and entertainment options in the center's surrounding neighborhood. These local businesses present convention delegates with more options, encouraging them to spend more money outside the convention center, resulting in higher-than-average revenues overall.

Strategies to Control Cost

Although urban convention centers are more attractive to meeting planners and convention attendees, and have a greater chance of generating the economic returns promised to the community, they are also more expensive to build.

Three common cost-increasing factors exist among these urban projects. Owners and project teams can manage costs and avoid surprises down the road by implementing these simple strategies:

Factor #1: Vertical Stacking

Urban convention centers are built vertically, with constrained sites, premium land prices, and a desire to maintain a walkable street grid. Thus, exhibition halls and meeting rooms that would otherwise be placed end-to-end are stacked on top of one another, and the extra space required for escalators, elevators and stairs results in higher costs.

A related issue that drives up costs is the excavation and shoring required for buildings that are partially underground. Depending on the cost of construction materials, this can be offset by savings in structural steel and building enclosure. This is, however, difficult to forecast ahead of time.

[1] CEIR. (2015, June 1). Retrieved from Center for Exhibition Industry Research: http://www.ceir.org/article-details?id=145
[2] CEIR. (2015, April 13). Retrieved from Center of Exhibition Industry Research: http://www.ceir.org/article-details?id=143
[3] AIPC. (2015). 2015 AIPC Member Survey, *Centre Growth & Engagement*. International Association of Convention Centres.
[4] Guillot, C. (n.d.). Retrieved from Collaborate: http://www.collaboratemeetings.com/feature/convention-centers-of-the-future-designed-today-2/
[5] Nashville Convention & Visitors Corp. (n.d.). Music City Center Bookings Exceed One Million Room Nights. Retrieved from visitmusiccity.com: http://www.visitmusiccity.com/media/pr_mcc1million
[6] Chesto, J. (2015, May 14). With expansion shelved, convention business at risk. Retrieved from The Boston Globe: https://www.bostonglobe.com/business/2015/05/14/convention-business-risk-wake-shelved-expansion/4cxcMncU7MRgfIE66YozIN/story.html
[7] City of Oklahoma City. (n.d.). MAPS3 Oklahoma City. Retrieved from OKC.GOV: http://www.okc.gov/maps3/
[8] Alderton, M. (2015, June 4). Denver Asks Voters to Fund Convention Center Expansion. Retrieved from Successful Meetings: http://www.successfulmeetings.com/News/Destinations/West/Denver-Asks-Voters-to-Fund-Convention-Center-Expansion/

A vertical configuration does have its benefits. By putting the large exhibition halls below street level, cities can maintain a pedestrian-scale urban fabric around the building with a walkable street grid. Inside the building, elevators and escalators offer a welcome alternative to the quarter-mile walk between meeting rooms that is prevalent in many suburban centers. Likewise, building employees travel less distance, potentially increasing efficiency and reducing costs.

Cost Control Strategy:
Plan ahead for a vertical building with more floor area and set the project budget accordingly. Monitor price trends for various construction materials and adjust the design accordingly to minimize the cost premium.

Factor #2: Showpiece Buildings

A city's convention center is often seen as a symbol of community pride. Expanding, decorating and embellishing a property to showcase it can become expensive. A facility may not need retail and restaurants at the street level, and building codes may not require lush landscaping and high-quality finishes, but often politics and negotiation can require that these features become part of the mix.

In addition, some centers house public art programs that encourage the public to walk through the building. This programming can conflict with clients' need to provide security and controlled access, resulting in increased operational costs.

Finally, public buildings are often expected to set the bar for sustainability and energy efficiency. While these may be noble goals, they inevitably result in higher project costs, competing directly with strategies to maximize building size and achieve the fiscal results projected when the building was approved.

Cost Control Strategy:
Identify potential project 'add-on' requirements early and understand their cost implications. Communicate these costs consistently, question any discrepancies, and seek alternative funding sources where possible.

Factor #3: Neighbor Issues

The 'urban vibe' – created by neighboring hotels, restaurants, and bars – can help make a convention center a successful property. But these same amenities can make the construction process a major pain.

Rightly so, surrounding business owners, workers, residents, and visitors demand restricted work hours, limited hours for deliveries, restrictions on street and sidewalk closures, and mitigation measures to protect adjacent buildings from damage or disruption. Increased costs can result from the need for construction site security, additional construction fencing, traffic control personnel, and dust control.
City parking costs are typically more expensive than in the suburbs. Without a proactive plan, contractors and subcontractors will park at city meters or in nearby residential neighborhoods to the annoyance of downtown businesses and local residents. Where possible, owners should negotiate parking arrangements with downtown garages so the onslaught of construction workers coming in at 5am and leaving at dusk isn't too disruptive.

Cost Control Strategy:
Clearly articulate all requirements for construction mitigation in solicitations and carefully evaluate proposals to assure each one is addressed. Include sufficient contingencies to manage unknowns, and protect them where possible.

Going Forward

The growth trends and future prospects for convention centers – particularly those in thriving central cities – are remarkably strong. Attendees prefer urban destinations with amenities that make destinations interesting and vibrant. The data demonstrates this fact, communities understand and embrace it, and city leaders and voters alike are responding by investing in these projects. While construction in central cities carries a cost premium, the benefits and ROI of these projects outweigh the incremental cost. Owners can manage their risk by setting clear expectations and thinking strategically from the start.

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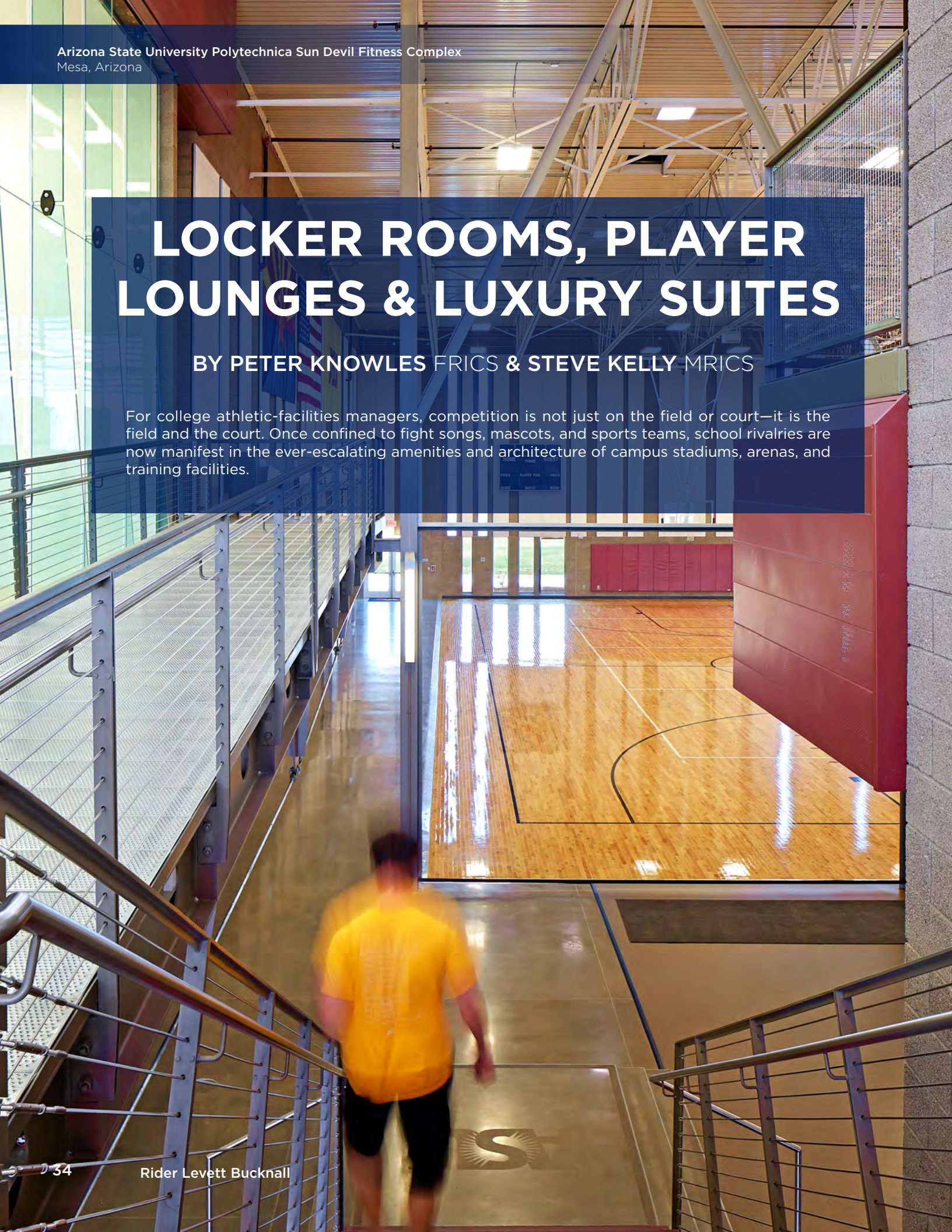


Arizona State University Polytechnica Sun Devil Fitness Complex
Mesa, Arizona

LOCKER ROOMS, PLAYER LOUNGES & LUXURY SUITES

BY PETER KNOWLES FRICS & STEVE KELLY MRICS

For college athletic-facilities managers, competition is not just on the field or court—it is the field and the court. Once confined to fight songs, mascots, and sports teams, school rivalries are now manifest in the ever-escalating amenities and architecture of campus stadiums, arenas, and training facilities.

Rider Levett Bucknall

It's a robust business that to a large extent has proved recession-resistant. Over the course of the past decade, many athletic departments in the Power Five conferences—the Atlantic Coast Conference, Southeastern Conference, Big 12, Big Ten, and Pacific 12—have built or renovated football and baseball stadiums, volleyball courts, soccer fields, golf practice facilities, and hockey arenas. The *Chicago Tribune* reports that from 2004 to 2014, spending on athletic facilities at these schools nearly doubled, growing from $408 million to $772 million.

Sports directors know that when deciding on stadium and arena improvements, there are multiple audiences that must be served by the new design: the players/athletes, the fans (both students and alumnae, who are often big financial boosters of the school), and—with increasing importance, given their unspoken role as potential financial rainmakers—recruiters for high school prospects and pro teams.

Making Sense of Dollars

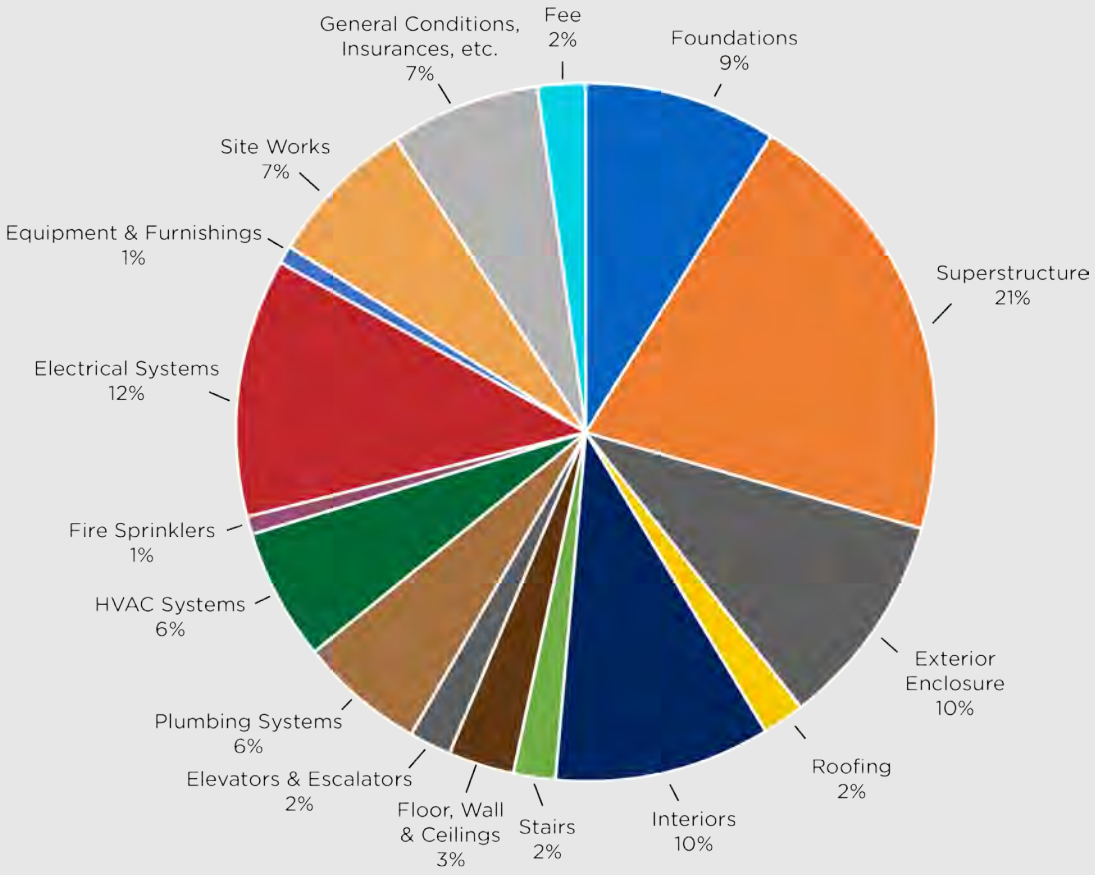
The economics of university sports facilities is a complex equation, involving broadcast agreements, sponsorships, a variety of funding sources, student fees, and more. Because of this complicated scenario, a realistic understanding of the budget is critical, and must be determined well before the architectural design phase begins.

Responsive cost modeling is a planning tool that can bring much-needed clarity to the process. An algorithm-based method of estimating the complex expenses of a construction project by analyzing fixed and variable factors, cost modeling can provide the direction that gets a project off on the right financial foot, putting college athletic facility development on the road to success.

Because of its dynamic nature, responsive cost modeling offers the ability to see how changes in one area of a project can affect the entirety. Here's a simple, hypothetical example: At face value, expanding a stadium's capacity by 8,000 seats would increase the facility's revenue. Running that idea through cost modeling, though, might reveal that the expense of adding so many seats would outweigh the income they would generate; in other words, the return on investment would not be realized for several years. Further adjustments to the model could lead to the conclusion that the optimal economic solution would be to construct 4,000 new seats.

As illustrated in the accompanying chart, which illustrates the basic cost breakdowns for an "average" stadium, there are elements of facility design that are common to virtually all projects. The façade, framing, and interior partitions are standard structural components, while furnishings, finishes,

Percentage of Total Construction Cost



and equipment are unique to each building. Cost modeling each of these attributes can streamline the design process and open up new possibilities for the functionality and the aesthetics of a sports structure. That said, of course, every stadium or arena is destined to be different, often owing to circumstances of geography or climate. The heat in Arizona or Texas, for instance, can be so oppressive that open-air stadiums in those regions are inconceivable; roofs can be retractable or fixed. This in turn impacts utility expenses for the facility. Passive heating and air conditioning systems consume less energy than conventional HVAC systems.

Incorporating sustainable materials and mechanical systems in athletics buildings is a popular practice on campus. With many colleges adopting eco-friendly policies regarding facility construction, a school's reputation as an environmentally conscious institution has proven to be even more important than its official compliance with regulations. That fact, coupled with decreasing prices for "green" building materials, makes it easier to achieve LEED (Leadership in Energy and Environmental Design) certification or satisfy sustainability initiatives dictated by the institution.

Appealing Assets

High on the list of essential features for both new and renovated stadiums is wireless service, which has become central to a satisfactory fan experience. From using mobile apps to track the shortest lines for beer and bathrooms to live-tweeting the game, attendees require a hefty amount of bandwidth. Cutting into existing structures to install IT pathways is time-consuming work, which makes retrofitting facilities with tech upgrades expensive. For new-build projects, it's wise to design with the future in mind, anticipating innovation by including ample conduit channels. "Ample" can be quantified: To supply WiFi at speeds up to 30 times faster than at other facilities, Silicon Valley-proximate Levi's Stadium used approximately 31 feet of fiber optic cable for each of its 68,500 seats, for a total length of more than 400 miles.

Another must-have amenity are concession stands. On a square-foot basis, these relatively small areas are responsible for producing an impressively large amount of revenue. While typical hot-dog-and-beer counters suffice for most areas in an arena, that proletarian menu changes in the vicinity of the VIP sections. Occupants of luxury boxes have higher expectations for food and beverage services, and catering to them accordingly is one way of enticing these patrons to renew their highly-profitable suite licenses.

Supplementing these core features are the behind-the-scenes design options that schools use to set themselves apart from others. Perhaps not surprisingly, these features have a more niche appeal, geared to impressing prospective student athletes. Football players at Clemson will be able to choose between unwinding with a round of mini-golf or taking in a movie—just two of the recreational amenities to be found at their new training complex, currently under construction and slated to open in 2017. An in-house barber shop ensures that athletes from the University of Oregon are ready for their close-up come game time. At Eastern Washington University, the recreation center features a bouldering wall that simulates ascending an ice-covered cliff, among other terrain challenges. USC's John McKay Center boasts a digital media production center and a two-story video screen.

Confronting a Fickle Fan Base

However efficient cost modeling can be at forecasting the physical reality of stadiums, though, it can't predict human behavior—a fact that's underscored by more than a few high-profile case studies of college athletic facilities that didn't live up to expectations. In 2009, the University of Akron completed construction of a $62 million stadium. While the facility seats 30,000 people, average attendance at games in 2014 was disappointing, with below 10,000 in the stands. Such a shortfall on the anticipated revenue generated by ticket sales contributes to the school's debt, which has led to higher fees for students as well as staff layoffs.

Applied to more concrete aspects of a sports building, cost modeling provides athletic facilities managers with a clear view of the future, allowing them to control costs without sacrificing creativity.

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BUILDING TRUST:
HOW PROJECT NEUTRALS MANAGE CONFLICT AND FOSTER SUCCESSFUL PROJECTS

BY JOHN T. JOZWICK, ESQ.

Construction projects routinely end up in claims, disputes, arbitration, or litigation. In fact, the Norton Rose Fulbright 9th Annual (2013) Litigation Trends Survey, in which Fulbright surveys companies in the United States and the United Kingdom on litigation issues and trends, stated:

> "Engineering and construction companies led in litigation, with 80% of them filing at least one suit last year. The engineering sector faced suits at an even greater rate than it initiated them and almost half of all Fulbright's engineering respondents faced at least one high-dollar suit during the last year. Not surprisingly, 57% of engineering respondents reported an annual litigation spend of $5 million or more – the highest for all respondents to Fulbright's survey."

Even when construction contracts contain multiple alternative dispute resolution procedures (such as partnering, mediation, and arbitration) they routinely fail to avoid, let alone resolve, disputes in a timely manner. The significant number of construction-related disputes that end in arbitration or litigation might imply that construction industry professionals actually enjoy litigating disputes after a project is over or that they accept that it's simply a part of a "normal" construction project life-cycle. Make no mistake, however: these disputes waste valuable time and resources, an estimated $4 Billion to $11 Billion in the U.S. industry-wide according to a 2009 study conducted by the National Research Council.

Project Neutrals and DRB's help manage conflicts and resolve disputes

As everyone who works in the construction industry knows, there are many opportunities for conflicts to arise on a project. The typical contractual arrangements among owners, architects, design sub-consultants, prime contractors, and trade subcontractors place all of these entities in competing relationships with competing needs and interests. Documentation and communication practices further compound the potential for conflict. Typically, when subcontractors and the prime contractor have questions about the design, they submit Requests for Information (RFIs) to the owner who in turn seeks answers from the design team. Often, the response to these RFIs lead the contractor to claim that the response changes the original scope of the work, thereby requiring additional compensation from the owner to the contractor via a Change Order Request (COR). In turn, the owner becomes upset with the design team who has now impacted the budget for the project. Thus, the day-to-day procedures and processes instantly create conflict where there was harmony.

Firms across the industry are increasingly using Project Neutrals or independent Dispute Review Boards (DRB's) in the attempt to minimize the number of conflicts that end up in post-project arbitration or litigation dispute. Historical data, assembled by the Dispute Resolution Board Foundation (DRBF), has shown a dramatic decrease in disputes on projects utilizing the DRB process over the past two decades.

Yes, construction project conflicts are inevitable. The key issue is how we handle conflicts when they arise, and whether those conflicts will become prolonged and costly disputes.

Instinct versus intellect; Why the construction process actually creates conflict

In simplest terms, construction projects are inherently riddled with conflicts that create mistrust between the stakeholders who are trying to complete the work (i.e. the architect, engineer, general contractor, etc.) When we human beings experience conflict, we naturally perceive feelings of threat, fear, and mistrust. In fact, research has found that humans, when faced with conflict, are actually "hard wired" to experience an emotional fight or flight reaction before we are able to respond rationally. From the moment we encounter information that might pose a conflict or threat, we fear first and think second. For this reason, Project Neutrals and DRBs can be impartial, effective tools to assist conflicting parties to resolve and avoid disputes.

The very processes of a typical project can create emotional conflicts and professional disputes: from contract relationships to document flow to change orders. Contractors have to ask for clarifications in the design; the design team has to answer ambiguities in the design; change orders have to be requested and approved; all of these actions can be perceived as admissions of a mistake. The negative connotation that someone has made a "mistake" causes parties to become defensive, position-based, and emotionally reactive.

It should come as no surprise then, that negotiating these conflicts through a standard change order negotiation process further exacerbates the human conflict response, despite how "normal" we deem construction project processes like RFI's, change orders, additional compensation requests, time extension requests, and so forth, to be. Instinctively, we want to fight them or avoid dealing with them, not sit and negotiate them. Negotiating is often perceived as a concession of failure and weakness. Opposing sides begin to fear and mistrust the other parties, assuming one will leverage the situation to their advantage.

DRB's build foundations of trust among stakeholders

Negotiating and resolving construction conflicts are not easy tasks. They require rational responses to our natural physiological and emotional reactions. Effective conflict management on a construction project requires deliberate thought and effort. Conflict resolution of RFI's, changes, and claims needs to be neutrally encouraged and impartially managed. As a vital part of any construction project, the Project Neutral or DRB provides independent, neutral, trusted professional assistance to help the parties involved manage and resolve conflict issues and avoid disputes.

According to a report by the U.S. Department of Transportation's Federal Highway Administration, "For large, complex projects, DRBs can save enormous amounts of money and time. Disagreements are settled contemporaneous with the construction project, which allows the parties to free up time and resources and allows personnel to work on more productive things."

Trust is essential for a construction project to successfully reach completion without debilitating conflicts and costly disputes. Each stakeholder's interest in the project is interdependent with the interests of the other stakeholders involved in the work; this includes everyone from the design team to the owner, and from the prime contractor to subcontractors. Each must depend on the other to achieve the outcomes desired by each party. This interdependence carries a certain level of risk and that risk must be managed through trust that the parties will not take advantage of one another. Trust is the key, because each party must believe that the other parties will perform their obligations and cooperate when conflicts occur.

A well functioning DRB can establish a high-level of trust on a construction project and assist the parties in managing conflicts, changes, and delays to create fair and reasonable conflict resolution. If the DRB demonstrates competence, honesty, and respect for the project and all stakeholders, each stakeholder will trust the DRB to protect their interests and provide fair advice, recommendations, and guidance. This foundation of trust empowers each party to resolve conflicts and avoid disputes, knowing the DRB is available to provide impartial advice, interpret conflicts fairly, and serve as a neutral sounding board.

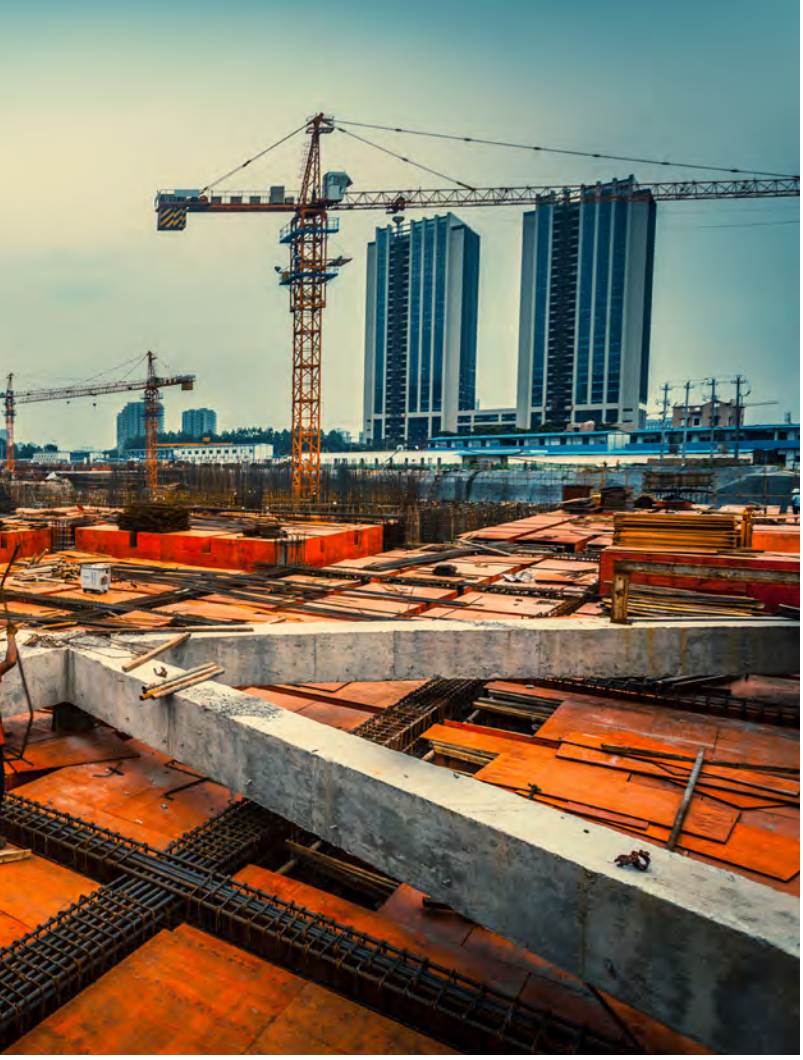
For example, a conflict arises, such as a disputed change order request for additional compensation and delay. In order to prevent the conflict from escalating into a full contract dispute, trust between the parties is critical. Typically they enter into a change order negotiation to resolve these types of conflicts.

However, for the negotiation to be successful, the parties must trust that it will be a bilateral process of mutual commitment and effort to de-escalate the conflict and find a mutually acceptable resolution.

If trust levels are high, parties tend to be less defensive and willing to share information to help find a mutually acceptable solution. On the other hand, if parties mistrust each other they will often focus solely on their own needs and interests. Thus, trust between stakeholders makes conflict management and resolution easier and more effective. Conversely, mistrust breaks down the professional relationship and makes conflict management and resolution extremely difficult for the duration of the project.

Key traits and advantages of effective Project Neutrals and DRB's

As trained professionals in conflict management and dispute avoidance, Project Neutrals and DRB's, understand that the success of a project depends on their ability to build an environment of trust that will benefit the overall project team. Project Neutrals/ DRB's are successful when they:



- Develop trusted relationships with each stakeholder
- Play an active, integrated role in the overall project team
- Show interest and knowledge of the project, stakeholders, and contract goals
- Treat all parties equally, with respect and neutrality
- Create a safe environment where all parties can express concerns, needs, interests, and inquiries, regarding any conflict issue requiring neutral guidance or advice
- Serve as a resource to help stakeholders explore mutually acceptable solutions to conflicts
- Build trust across all parties in the project team by implementing a collaborative conflict management process

An effective Project Neutral/DRB fosters trust within the team by helping all parties create and maintain an environment where conflicts are collaboratively managed. Appointing a professional Project Neutral/DRB can help certain skeptical or mistrusting stakeholders, or those who may not be adept at proactively managing conflict and building trust relationships, to learn to build a better working process. Creating these processes creates an environment that cultivates a successful project outcome that is free of costly disputes and litigation.

The Project Neutral or DRB benefits a project and stakeholders in several ways:

- DRB's understand, manage, and resolve conflicts caused by normal construction processes in order to avoid disputes
- DRB's are neutral advisors with a focus on the project, not any one party's position
- DRB's establish an environment of trust and ensures that conflict resolutions will be fair and reasonable under the terms of the project contracts, plans, and specifications
- DRB's validate the trust concerns and emotional reactions of stakeholders that are triggered by conflict, while they reinforce the notion that negotiating and resolving potential dispute issues is beneficial to the project and, ultimately, to all parties
- DRB's help stakeholders transition their mindset from conflict, to conflict resolution, to dispute avoidance

Project Neutral services such as DRB's can provide an essential environment where on-going support, validation, guidance, and conflict resolution is provided throughout a project. RFI's, Change Orders, COR's, and other standard processes and procedures, are normal parts of a construction project. With DRB's and other Project Neutral services, project teams can view these processes as not to be feared or perceived as a threat or imminent conflict, but as issues that can be managed to avoid disputes and ensure a successful project outcome.

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APPLYING PUBLIC-PRIVATE PRINCIPLES TO BUILDING COMMUNITY SPORTS VENUES

BY PETER KNOWLES FRICS **& STEVE KELLY** MRICS

The ups and downs of the economy have forced communities and institutions to get creative when looking for ways to finance the construction of new recreational facilities or renovate existing venues. Banks have become very selective about writing loans for real estate ventures, as they seek to safeguard their reputations and manage risk. The once-stalwart subsidy standby, the municipal bond, is no longer a sure bet, as the interests of both voters and local government officials have shifted more toward supporting essential services like fire and police departments than a new ballpark or playing field.

So what's the best way to turn a field of dreams into a reality? One increasingly popular approach is the public-private partnership, also known as P3. Long employed in Europe, these are contractual agreements formed between a public agency and a private-sector entity that allow for greater private sector participation in the delivery and financing of construction projects. In North America, P3s are often utilized for large-scale "horizontal" developments, but their principles and processes can be efficiently adapted to smaller ventures, such as local sports facilities.

For those unfamiliar with P3s, the concept can be confusing. That's understandable: There is no one-size-fits-all P3 structure, because to achieve maximum efficiency, the agreements must be individually scaled to fit the specific goals and parameters of the construction project, its chosen partners, and the community. The degree to which the private sector assumes responsibility can differ from one model to another; different types of P3s lend themselves to the development of new facilities and others to the operation or expansion of existing properties; they can be structured for short- or long-term projects. The possibilities—and the potential—presented by P3s are at the core of their appeal.

Building the Team

The National Council for Public-Private Partnerships recommends enlisting recognized public figures as the spokespersons and advocates for the project. As the face of the project, such well-informed champions can play a critical role in conveying the value of a competently developed P3 to the community. Individuals such as a governor or legislative leader have the ability to provide and communicate balanced information, fend off misleading attacks, and keep a project on track.

Assembling a group of well-qualified professionals to perform due diligence and feasibility studies and develop realistic budgets in a transparent, ethical fashion shouldn't be taken lightly; laying this key groundwork will take time. To make sure everyone's interests are fairly represented, as broad a group as possible should be cultivated as stakeholders. Parties who have the potential for receiving direct benefits from the project will have a particular incentive to see it through to completion.

Show Me the Money

The challenges of raising money from a variety of sources make the planning phase of a project more important than ever before. The economics of athletic facilities is an intricate structure, involving franchise fees, broadcast agreements, sponsorships, public funding, licensing issues, and much more. Because this complicated equation is inherently dynamic and subject to change, a realistic understanding of the budget is critical, and must be determined well before the architectural design phase begins.

One effective tool that stakeholders can use is responsive cost modeling. An algorithm-based process of estimating the complex expenses of a construction project by analyzing fixed and variable factors, it can provide the clarity and direction that get a project off on the right financial foot, putting an athletic facility development on the road to success. Unlike other cost modeling techniques, responsive cost modeling allows building elements—think roofing materials, cladding, turnstyles, light fixtures, seating—to be isolated, adapted, and priced in an intra-active, flexible way.

At Rider Levett Bucknall, we've used responsive cost modeling on all types of athletic facilities around the world, from European soccer arenas to NFL stadiums. It's proved to be especially valuable in preparing proposals for host-cities for international sports competitions, like the Sydney, Beijing, London, and Rio Olympic Games.

While developing bids for potential Olympic locations is an undertaking on a scale that's larger than most communities will ever experience, there are lessons—and solutions—to be learned from the process that are applicable to smaller sports-venue projects.

One is that experience and strong relationships are key to engendering full "buy-in" for all stakeholders and team members involved in a collaborative development project. When everyone is on board, this process can actually promote and improve trust, foster teamwork, and create a sense of shared responsibility to ensure a successful project outcome.

Because of its responsive nature, cost modeling can level the playing field by allowing all team members and the public to clearly see how changes in one area of a project can affect the whole design. Here's a simple, hypothetical example: At face value, adding a bank of bleacher seats to a community ballpark would increase the facility's revenue; more seats equals more tickets sold, right? But subjecting that idea to cost modeling could indicate that the expense of purchasing and installing the bleacher would actually be greater than the income it would generate. Exploring other options, such as expanding the concession stand or upgrading the scoreboard to accommodate advertising, and then testing them through cost modeling could lead to a design solution that is both profitable and budget-friendly.

The Development Process: Think Marathon, Not Sprint

While enthusiasm for a new sports venue often runs high, bringing the project to fruition requires patience. Even a modest design can take years to achieve. To keep stakeholders' support from waning over the long haul, it's a smart strategy to demonstrate exactly how the project will pay off over time. Taking a long-term view on the design of the athletic facility isn't just pragmatic; it's a civic-minded perspective as well, a fact that won't be lost on the local constituency—prime among them, lenders and government representatives.

- **Prove responsibility by having realistic alternatives.** A measure of success for any sports development is avoiding the perception of wasted public money spent on permanent venues that become empty, "white elephant" facilities. In situations when plans for a permanent facility do not prove to be cost-effective, we have counseled clients to consider constructing temporary venues to deliver a more positive return on investment.

- **Show environmental awareness.** Adopting a future-friendly, sustainable design is another way to buoy community support for the project. With its capacity for generating virtually limitless scenarios for a building's performance, cost modeling can also be a tremendous resource in identifying the optimal choices for mechanical systems and construction materials. Whole-life costs consider all carbon and financial costs associated with a building throughout its full lifecycle: from construction and fit-out,

to operations and maintenance, repair and refurbishment, and ultimately disposal and replacement.

- **Be transparent.** There have been criticisms of P3 projects being rushed through without the public or their elected officials fully understanding the structure and the implications of the process. Transparency should be ensured during selection of partners and vendors, as well as throughout the life of the P3 agreement. One way to overcome misgivings about the process is through communication; staging an open-to-all presentation where people who have experience in P3 work can explain their benefits and answer questions in a public forum. In many states, a P3 proposal is submitted to an independent panel composed of members of stakeholder groups and affected parties, which then has a fixed period of time to review it and pose comments.

If You Build It...

As every fan knows, there are no guarantees in sports: Players get traded, injuries can shorten a promising season, underdogs can upset a dynasty. The same is true when crafting a deal to finance, design, build, and operate an athletic venue. Political realities and market conditions can change with little or no warning, delaying or substantially derailing the project. But by drafting the best team and following best project-management practices, it's possible to enrich your community with a revitalized sports center.

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Athletic Business, June 2016, "Applying Public-Private Principles to Community Sports Venues"

BUILDING BONDS

THE POWER OF A TRUSTED ADVISOR

BY CATHY SEWELL

Equal parts colleague and confidant, the trusted advisor is a valuable asset in the world of business. Particularly in the demanding realm of architecture, engineering, and construction industries, a person who brings a high level of professional expertise and personal empathy to the team can play a major role—albeit one that's typically behind the scenes—in shaping a successful practice and project.

Unlike a consultant who performs specific services to achieve a defined objective within a fixed time frame, a trusted advisor acts as a guiding partner over the full course of a professional relationship. By focusing on an in-depth understanding of the needs of the client, and selectively applying their experience, his or her steady influence can be felt on many levels and across many projects. Carefully designed over time, the relationship between a trusted advisor and their client has a tenure that extends beyond the terms of any contract.

A trusted advisor brings unique added value to a relationship; as it is based upon cumulative, personal experiences, it can not be replicated by competitors. Because an advisor has earned the trust of clients, they have access not only to their business plans but to their emotions and aspirations as well, giving the advisor exceptional and deep insight into the more complex aspects of a client's character.

In addition to enjoying repeat business from their current roster of clients, trusted advisors occupy an advantageous position when it comes to acquiring new accounts. Personal recommendations, strategic introductions, and word-of-mouth referrals made by satisfied clients are the ways trusted advisors are able to expand their business. This allows them to avoid the time, expense, and low return rate involved in cold-calling and other conventional lead-development legwork.

As the title implies, a client can expect their trusted advisor to provide constructive counsel on major decisions. Because an advisor is the antithesis of the proverbial "yes" person, clients rely on them for honest, balanced, and informed appraisals. Feedback, pro and con, should be freely dispensed as part of an ongoing dialogue. In addition, some trusted advisors call their clients' attention to new business opportunities, even if their primary service to the client is not business development. Of course, when discussing sensitive matters or proprietary information, a client should be secure in the knowledge that their trusted advisor will always maintain confidentiality. Above all, a trusted advisor holds their relationship with the client as the top priority.

Perhaps the most important thing to know is that you don't suddenly become a trusted advisor by reading a book or attending a seminar on the subject; it is a recognition that is earned over time and given by others to you. There are, however, several actions you can take every day to culture confidence among your community of professional colleagues and raise your profile as a trusted advisor:

Make Going the Extra Mile a Daily Practice

It's easy to fulfill the checklist of contractual obligations, but proactive behavior will help you stand out from the crowd. Offer your clients expertise beyond nominal service and share any insights germane to their business. Take the initiative to troubleshoot possible challenges on behalf of clients.

Put Your Clients' Interests Ahead of Your Own

Protecting your clients' assets can sometimes mean telling them "no" and steering them away from a project. It can also entail standing up to other partners, in a defensive action. An effective rule of thumb adopted by trusted advisors: Act like the clients' money is your money.

Don't Just Network - Consciously craft a support system between people and organizations

Be democratic about your contacts and connect with people at all levels of a company, from the receptionist to the CEO. If you recognize and respect that promising new associate now, you're more likely to be remembered in the future—once she has moved into the corner office. And when a middle manager jumps to another firm, he'll be more inclined to pass your name on to his new superiors if you drop him a note of congratulations. Encourage others in your organization to engage in the same way with their peers and contacts.

Build Advocacy

A too-often overlooked constituency of networking is advocates. These are people who share your business values and commitments, but are not directly involved in your everyday work. An example: An architect may be impressed by the negotiating tactics demonstrated by representatives of a firm which occasionally performs value engineering on its projects, and mentions that to another architect, who reaches out to them. Endorsements from such tangential sources not only expand your network, but may also lead to new business. Never lose sight of the fact that everyone with whom you come in contact is a potential advocate.

Blur the Lines Between Professional and Personal Life

Be a friend to your clients by expressing interest in their personal lives as well as offering them advice on a professional level. That said, don't go overboard with this behavior. If your client senses any insincerity in your conversation—or feels that you are violating their privacy—take a step back. Examples of topics that can safely bridge the gap between business and home life in a neutral way include recommending a new restaurant; offering congratulations on kids' graduations, weddings, or other family milestones; and sharing opinions on new books or movies.

Stay in Touch

Regular communication enhances and strengthens connections. While email and phone calls can be the most efficient way of keeping in contact, remember that there's still no substitute for face-to-face meetings. Make time to get together for coffee or a quick lunch (and pick up the tab rather than pass the bill on to the client). Don't forget that communication is a two-way street—being an attentive listener is a vital skill for every professional.

By consciously practicing these principles, you'll gradually accrue the attributes of a trusted advisor. Combine them with your business expertise and acumen, and you'll be well positioned to enhance not only the careers of others, but your own, as well.

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AS SEEN IN

Building Design + Construction - Rider Levett Bucknall Blog, August 2016, "Building Bonds: The Role of 'Trusted Advisor' Is Earned Not Acquired"

The Palace Hotel
San Francisco, California

CREATING A BETTER TOMORROW

Tower at PNC Plaza
Pittsburgh, Pennsylvania

THE TRUE COST OF GLAZED CLADDING SYSTEMS FOR HIGH RISE BUILDINGS

BY JOE PENDLEBURY PQS, MRICS

Since glass cladding systems became popular in the mid-twentieth century, the market demand for highly glazed high rise structures has continued to grow. Structural issues with these types of façades (recently demonstrated by incidents of glass panels falling from newly constructed Toronto high rises) and the high costs required to operate and maintain these buildings, are well known. Still, the relatively low cost of constructing glass-walled buildings makes these systems the first choice for most commercial office and condominium developers.

Two major issues face owners and managers of highly glazed buildings, and they are poised to have a major impact on building owners and managers across Canada: (1) increased heating and cooling costs and (2) maintenance, repair and replacement of the cladding system either in part or in whole.

Glass-walled structures provide some – although not much – insulating value because they are designed with a sealed insulated barrier between two layers of glass. Unfortunately, this barrier degrades over time, increasing the operational costs of the building.

Mechanical systems are designed to accommodate the thermal performance of the building's cladding system. If the cladding system fails, the mechanical system will not be able to regulate the environment inside the building, increasing heating and cooling costs. Managers of glass towers, then, have no choice but to increase monthly maintenance fees, or pay to replace the cladding system entirely.

Potential for industry-wide impact

Depending on the quality and consistency of maintenance of the glazing – including any damage done over time to the exterior wall assembly due to condensation and freeze/thaw – replacement of the glass or sealants can be frequent and costly.

On some buildings, 5% of thermal windows may have failed before they're even delivered to the construction site due to damages during shipping. In other instances, after five years or so, many buildings will need repairs to compromised seals, requiring the closing up of the joints in the window wall system. After about 20 years, another 10% to 15% of thermal windows will fail as they're exposed to the elements. And by the 25-year mark, a growing number of cladding systems will have major thermal failures, requiring the building's skin and/or its mechanical systems to be upgraded entirely.

It's not hard to recognize the likely impact of these issues on buildings in major cities nationwide. Calgary currently has 40 million square feet of office space, while Vancouver has 48 million. Toronto has over 100 million square feet and continues to grow at over 1 million square feet per year. Commercial office buildings are not the only affected facilities; glass-clad condominiums are currently suffering from these same issues. In Toronto alone, over half of the city's 500,000 condo units are already over 20 years old.

Problems aren't immediately obvious

Most building operators will not immediately recognize window seal failures, until they realize that the building requires more energy to heat and cool. Tenants will certainly notice damage to finishes surrounding the windows as condensation accumulates. Eventually, foggy glass will be the final confirmation that replacement of the wall system must be addressed.

Window frames are packed with crystals that help absorb moisture during shipping and storage. These crystals play a major role in keeping the glazing unit dry and fog-free for the expected service life of the window unit, which is about 25 years. (The expected service life of the metal framing that holds the glazing, is around 43 years.) However, moisture can enter through damaged seals and will eventually overwhelm the moisture crystals, creating fog in what was once a dry space. As windows fail and fog up with condensation, the only remedy is to replace them.

The costs of replacing entire walls of glass are prohibitive to some owners of high rise structures. The average cost to remove and replace a glazed cladding system from a swing stage is about $200 per square foot. As the typical floor-area-to-cladding ratio in high rise structures is 0.33, this will translate into a cost of $66 per square foot over the above grade floor areas of a typical building.

Complete window wall replacement will not be the only expenses incurred to resolve this problem. Additional upgrades to these buildings must be made as well because of the way the cladding system ties into the building as a whole. In order to get access to replace the window systems, finishes will need to be removed to expose anchoring systems. This will include bulkheads, column surrounds, floor and ceiling finishes, electrical and mechanical interferences, and, in older buildings, potential asbestos and mold removals. In addition, owners may also need to relocate tenants or forgo occupancy on numerous floors so work may be done.

Solutions

Knowing that glazed systems will eventually fail, building operators must ensure they have the funds to pay for increased maintenance and replacement of the glass wall system. A reserve fund analysis will ensure that a sufficient amount is set aside; the earlier this is analysis is done, the more gradual the fund can be built up to avoid large special assessment payments that may be required for a catastrophic replacement.

It is not uncommon for 20% of a building's reserve funds to be required to replace the façade of a glass-walled building. This is in contrast to façade replacement costs of an insulated precast concrete or masonry building, which usually run about 6% to 7% of reserve funds as their life cycle is approximately 86 years compared to 43 years for a glazed wall.

Keeping vigilant with recording energy fluctuations and maintaining mechanical systems is crucial as

well, as is testing for window failures. Engineers, for example, can detect failures by shining a laser beam through the window, and measuring the changes to the amount of light that emerges on the other side of the glass.
The construction industry is making changes to improve the durability of glass walled systems. Efforts include requiring a rain screen to reduce leakage, improving the fastening systems to prevent thermal bridging, and doubling thermal breaks to prevent ice build up in the systems, as cold Canadian climates can cause premature failure to the thermal seals. Window wall manufacturers are also continuously improving through research and development.

Some Provincial Building Codes now require developers to increase energy efficiency to 25% above the National Building Code, but these code changes will not necessarily add to the overall life of the glazing systems.

The existing inventory of aging glass wall buildings with older technologies will soon require significant funding to undertake mid-life upgrades. Understanding the symptoms of a failing wall system, and developing monitoring specific to the cladding, will provide a projected life expectancy for your glazing. With this information available, forecasting reserve funding will allow a controlled and reasoned contribution calculation, and prevent the need for emergency funding when the inevitable system failure occurs.

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AS SEEN IN

Canadian Facility Management & Design, November 2014, "The Costs of Glazed Cladding Systems"

City Center
Las Vegas, Nevada

HOME MAINTENANCE 101

HOW UNINFORMED HOMEOWNERS CAN CAUSE DEVELOPERS BIG HEADACHES, AND WHAT TO DO ABOUT IT

BY JOHN T. JOZWICK, ESQ.

There's a saying that owners of older houses know all too well: "When you buy a home, you also buy a hardware store." That wisdom is increasingly lost on new homebuyers, whose expectations of their domicile reveal a stunning degree of ignorance when it comes to matters of basic home repair and maintenance.

Data from the most recently completed American Housing Survey (AHS) provides statistical confirmation of this trend. The 2013 survey reports that owners of new houses (the AHS classifies new construction as buildings no more than four years old) spent zero dollars on monthly routine maintenance of their homes.

The specific nature of this collective cluelessness is evidenced by complaints homeowners have made about their eight-to-ten-year-old homes, charging that the residence is defective. Here are some excerpts:

- The wood material at the front elevation main entry door is badly sun damaged and deteriorating.
- Peeling paint is noted on the fascia board at the front elevation in multiple locations.
- On the front of the house, there is an iron detail at the gables. The iron detail is rusting.
- The tree at the front elevation is hanging over the roof. This condition will result in damage to the roof.
- Bird droppings have blocked the flow of a roof flashing.
- Several dead insects are noted on the floor at the garage.
- Mold is noted on the caulking for the shower pan at the master bathroom.
- In the master bathroom shower, the gasket at the enclosure has deteriorated.

What's behind this perception that new houses are—or should be—maintenance-free? For first-time homeowners, the answer to this question may be predicated on their previous life as renters, where building supervisors took care of big and little repairs for tenants.

Or perhaps the owners have been covered by a home warranty in the past. Mandated by many states, these plans vary considerably in the extent of their coverage. Realtors typically advise their clients to read the warranty carefully, then contact the homebuilder in writing about the problem, and allow a reasonable amount of time for it to be remedied before pursuing legal options.

In the hands of a less-than-scrupulous litigator, minor claims such as the ones mentioned above have the potential to become major headaches for responsible contractors. By taking a proactive stance, the home-building industry can both educate the public about the importance of home maintenance and raise awareness within the construction community about protecting their professional rights and reputations.

Some of the risks posed to contractors by uninformed homeowners include repeated warranty claims, becoming enmeshed in construction-defect lawsuits, facing complaints made against their license(s), losing bonding capacity while involved in the dispute, and increased insurance premiums due to claim history. Regardless of their ultimate resolution, the expense of these claims—in both time and money—can be significant, as wading through the charges and culling out routine maintenance issues is a laborious process. Ironically, more effort is often spent explaining why a defect-allegation is a homeowner maintenance obligation, than addressing a true defect or workmanship issue.

Builders and contractors need to do a better job of bringing the topic of maintenance into the home purchase and remodel discussion. The goal is to set a reasonable expectation for the homeowner regarding the need to perform maintenance on the home throughout its life. (Think about a new car purchase and the efforts made by automobile manufacturers to provide buyers with care information and maintenance schedules.) Done in a responsible, balanced manner, construction pros can make clear that basic, routine upkeep can result in meaningful payoffs for homeowners:

- A well-maintained home is a safe home. Peeling carpeting or floor tiles can cause people to trip and fall; loose stair handrails invite accidents.
- A well-maintained home can save money. Ensuring that weather seals at windows and exterior doors is in good condition can help reduce heating and cooling costs. Fixing a dripping faucet or a running toilet will keep the water bill from rising.
- A well-maintained home is the best way to preserve—and increase—the value of the property. A neglected building will never recoup the owner's investment in the house.

While those in the residential construction industry may be aware of publications on standards of workmanship, most homebuyers/homeowners are not. One example is produced by the National Association of State Contractors Licensing Agencies (NASCLA), a nonprofit group that is dedicated to better regulation of the construction industry to protect the health, welfare, and safety of the general public. Its "Residential Construction Standards" document lays out in clear, layman-friendly terms the acceptable standards of construction for every structural, mechanical, and finish aspect of the home. From insulation and drywall to roofing and plumbing and more, it identifies common defects/problems in the home, defines the accepted performance standards for each of them, and outlines the builder's responsibility in resolving them. More importantly, the standards identify the homeowner's responsibility for maintenance issues that commonly give rise to disputes. In this regard, the NASCLA standards provide the following statement:

> "Many items related to deficiencies in the home are homeowner maintenance responsibilities. To assure themselves of long, comfortable use of their home and protection of their investment, homeowners should learn about and act on those maintenance responsibilities."
>
> —NASCLA *Standards*, Chapter 2, "Introduction to Construction Standards"

Several states also offer information on construction quality standards. For example, in Arizona, the Arizona Registrar of Contractors publishes "Workmanship Standards for Licensed Contractors." Much of the language is similar to the NASCLA standards, as it echoes standards of workmanship that contractors/builders should achieve and what maintenance actions homeowners should expect to perform over the first two years of new-home ownership and thereafter.

Educating the public about basic home maintenance benefits both homeowners and construction industry members alike. In addition to ensuring a sound residential structure, it can minimize adversarial relationships and inspire pride in quality work and a feeling of accomplishment on the part of both builders and homeowners. Builders should be proactive in making maintenance part of the home purchase process. Including discussion, maintenance schedules, and maintenance guides during the sale process may help set a better ownership expectation and reduce frivolous construction defect allegations.

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AS SEEN IN

Building Design + Construction - Rider Levett Bucknall Blog, August 2016, "Home Maintenance 101: How Uninformed Homeowners Can Cause Developers Big Headaches, and What To Do About It"

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