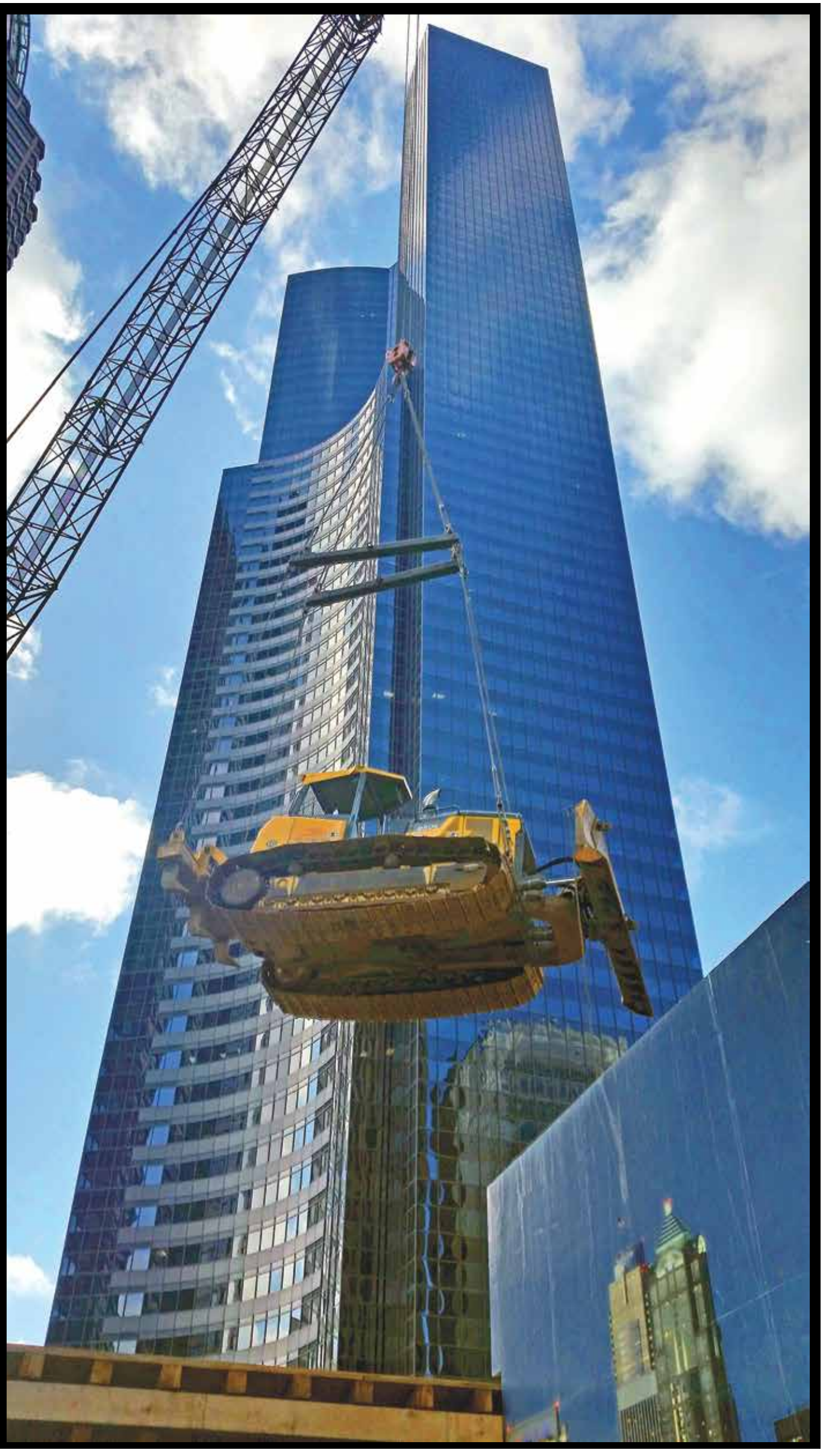
Construction & Equipment



Seattle Daily Journal of Commerce

April 30, 2015

INDUSTRY ASSOCIATIONS NOW HAVE 3 GENERATIONS OF MEMBERS

Each group has somewhat different wants and goals, and different ways of attaining what they desire.

The end of the Great Recession has businesses and trade associations working to rebuild and adjust to the "new normal."

Companies are doing more with less. Business owners are looking for a higher value-to-dollar ratio. Ironically, technology-driven communication has made it more difficult to communicate. And suiting the workplace and associations to the three distinct generations presents a number of new challenges.

BY WENDY NOVAK
ABC OF WESTERN WASHINGTON

Economic factors, business realities and generational differences challenge associations to recruit and engage members. It's harder to get prospective members' attention with today's blur of communication, harder to get their time, and it requires a much longer conversation to convince them of the value of joining. A recruitment process that used to take weeks now takes months.

Then the challenge of getting members engaged begins. Everyone seems to spend more time working, and most families now have both parents working. Parents are sharing childcare and taking turns attending events, coaching teams and driving children to after-school lessons.

Convincing people it is worth fitting association activities into an already packed schedule is a challenge. If you can't convince them the association can provide benefits and services that they value and need, in a way that is meaningful to them, they won't join. When they do join, you must engage them in some useful way (to them) or they don't continue.

Basically membership in an association is a one-year contract where the association has to prove its worth every day.

Satisfying three generations

The industry standard for associations for decades was a regular monthly meeting with networking time, a meal and a speaker. Now members are looking for less formal, but more intimate opportunities to get together with like-minded people who are at the same place in their careers or can help them advance their careers.

Here's a breakdown of the three generations:

- Baby boomers were the wealthiest, most active and most physically fit generation, and amongst the first to grow up genuinely expecting the world to improve with time. They also worked hard and achieved peak levels of income.
- Gen Xers are highly educated, active and family-oriented with a world view that is based on change, and in search of human dignity and individual freedom.
- Millennials — those born after 1980 and a bigger cohort than boomers — are an ever-increasing influence on both business and trade associations. Those who think that millennials are just younger Gen Xers are making a mistake. They, like boomers, expect the world to cater to their needs. They still want to have personal and business relationships, but in different ways and for different reasons.

To get any of these groups to join or become active in their trade associations or professional societies, the associations must understand and provide what each group is looking for, and then get their attention long enough to explain it to them. Each group has somewhat different wants and goals, and different ways of attaining what they desire.

Technology impact

Technology has a major impact on associations — just like every other aspect of life — primarily in communication pathways. To reach all three generations in the work place, associations must mail, fax, email, link, post and tweet. With so much communication inbound it is increasingly difficult to survive the delete button unless you can capture someone's attention in a nano-glance. People expect services on the fly with whatever device is in their hand.

The conundrum is getting through the clutter. Associations filter through industry news across all communication methods and provide members only the information they care about. This filtering turns digital noise into useful news.

Proving value

One enormously valuable benefit of association membership that is often overlooked is the opportunity to gain leadership skills and experience.

Associations are by definition groups of people; some who lead and some who follow. Within associations there are ample opportunities to learn leadership skills and become a leader, from heading up a small task force to taking top office at the national organization.

Many company heads encourage their up-and-comers to get involved in an association to add this dimension to their career growth. Companies gain from the individual's expanded leadership skills and experience learned from the association. Should things not go well, it doesn't impact the company.

Just as companies have had to adjust to the new economy

GENERATIONS — PAGE 11

CONTRACTORS FACE NEW RISKS WITH EARLY DESIGN

Collaborative contracting means risk must be allocated and insured against.

BY TYMON BERGER & TRISTAN SWANSON

ASHBAUGH BEAL

Construction is a collaborative process. Always has been, always will be.

Despite this reality, market forces have historically prevailed in developing construction contracts to compartmentalize the owner's relationships with the builder and the designer, keeping designer and builder separate from each other despite the need for these entities to work together in order for the project to succeed.

At its most dysfunctional, collaboration in construction occurs in the field, typically between a superintendent and a field engineer doing their level best to resolve an issue that managed to go unaddressed until well after steel had been purchased, formwork built and concrete poured. Despite the most valiant efforts, collaboration at this point often comes too late to efficiently affect any needed changes.

Enter alternative contracting methods. Construction is no different from other businesses in that the market participants figure out the best way to accomplish a goal while lawyers and insurers follow behind wagging a finger at the risk created by going off script, improvising or being an entrepreneur.

This article discusses the oftentimes unallocated risk that's created by collaboration and the melding of construction and professional services; the technology incentivizing even greater collaboration and blurring of the traditional designer and builder roles; and how you can effectively manage this risk by reassessing your contracts and insurance coverage.

Filling in design gaps

Years ago, contractors began offering owners pre-construction services to overcome inefficiencies of traditional design and construction — inefficiencies that ultimately made the contractor look bad. Under this broad umbrella of services, a contractor would get involved early on and work with the owner and designers to deliver a project that was cost-effective, met the owner's needs, and posed the fewest challenges to build.

In essence, pre-construction services moved collaboration forward to a point where changes could be made with minimal cost. With a need to tout innovation, the industry soon marketed these pre-construction services as alternative contracting methods using mysterious names like CM-at-risk, GC/CM and IPD.

Meanwhile, design completeness remained on a steady decline. The owner and its designers looked more and more to the builder to fill design gaps, and the builder typically looked to its subcontractors and suppliers. To this day, significant portions of a project are designed through subcontractor shop drawings and submittals. Additionally, the design can be so heavily influenced by the builder's early participation that the builder effectively becomes a designer.

The contractor's zealous desire to deliver for the owner and earn repeat business resulted in an unchecked growth of risk. Then the technological revolution of building information modeling, or BIM, arrived and brought with it an irresistible temptation to collaborate on a virtual model of the project. While the early collaboration has proven invaluable in improving nearly all aspects of construction, it has also resulted in the contractor acquiring a basket of risks that the contractor often fails to understand and consequently fails to spread and insure against.

Construction is not known for its technological innovations — the reality is that to this day, the speed of construction can literally be brick-by-brick. But BIM has emerged as a true disruptor, representing one of the biggest leaps forward in construction since the hydraulic backhoe replaced the cable shovel. Improvements in storage and connectivity has made BIM commonplace on projects of all sizes, and BIM has become the center point of complementary methodologies like lean construction and collaborative contracts.

BIM promotes efficient collaboration by providing all of the participants an economic benefit from collaborating. More, it pulls collaboration upstream, no longer relegated to the field at extraordinary costs, but instead in a virtual environment at virtually no cost.

New risks

The shared financial benefits from BIM collaboration provide a natural incentive for more collaboration. But this collaboration means new risks and potential liabilities because in most cases, businesses continue to model their risk allocation within the traditional assumption of compartmentalization. All the while, the businesses' collaborative efforts reach beyond these traditional confines, creating risks that all too often go unaddressed.

Given that BIM, collaborative contracts, and design-by-shop drawing are the norm for today's private construction projects, the question is, do your contracts and insurance policies properly spread and bear the risks and liabilities that accompany this new way of building?

From a contract standpoint, both the American Institute of Architects and ConsensusDocs provide standard BIM addendums. These are good places to start as far as structuring the allocation of collaboration risks. But a contractor will want to review these contract provisions with an attorney experienced in this area before using these off-the-shelf addendums. Both addendums allocate risk in ways

EARLY DESIGN — PAGE 12

INSIDE

ON THE COVER

Tall buildings require deep holes. On page 4, Shonnessy Gilmore of J. R. Hayes Corp. writes about how to keep safe when digging deep.

PHOTO BY TONY PERROTTI/J.R. HAYES CORP.

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HOW TO KEEP SAFE WHILE WORKING IN A DEEP HOLE

Detailed planning and communication is vital when operating at increasingly smaller jobsites.

A crane was needed to lower a bulldozer into this deep excavation in Seattle.

PHOTOS BY TONY PERROTTI/J.R. HAYES CORP.

BY SHONNESSY GILMORE
JR HAYES CORP.

We work in a schedule-driven world, where more and more subcontractors share limited site space in the name of efficiency. In order to keep a small space safe when filled with different teams and heavy machinery, communication is most important.

Subcontractor coordination needs to start before anyone steps foot on the jobsite.

Before entering the site, a subcontractor should provide the general contractor with a site-specific safety plan, including the scope of work, a job hazard analysis (a step-by-step breakdown of tasks to be performed, associated hazards and how to mitigate or remove the hazards), a fall protection plan, emergency response plans, and general safety and disciplinary procedures. In return, the general contractor should review and approve the plan, and provide additional documentation and plans if there are special hazards to the site, such as soil/air contamination.

Another aspect to be considered before entering a site is training. Are your people adequately trained to safely deal with anticipated hazards on site?

In Seattle, we hit contaminated soils often during excavation, so I prefer our Seattle workers be Hazwoper 40 trained, as well as any other applicable training to the job. In excavation, this typically includes trenching and shoring, confined spaces and first aid training.

Monitoring employee training and staffing the job from the beginning with the most qualified personnel for each project can prevent a number of injuries, and saves pulling the workers out mid-job for certifications.

Once on site, the general should have all the subcontractors who will be working in the same space meet for a pre-construction planning meeting, where a three-week job schedule and sequencing can be outlined. Subcontractors should be willing to work with one another for sequencing, and the general should facilitate these meetings weekly. This can prevent fights for space, and sequencing is incredibly important in modern construction, where accelerated job schedules force greater numbers of subcontractors to share spaces that are consistently getting smaller.

Ideally, all subcontractors and the general should do a daily huddle where each crew outlines the day's work, the space they will need throughout the day, and any assistance that they can provide one another. They need to make other subs aware of any extra dangers associated with the task, as well as blind spots, fall hazards and pinch points.

Each morning, I require my workers to do their own pre-task plan, which includes a checklist and a small job hazard analysis of the day's activities. This makes the workers aware of the risks they face daily, and serves as a signed log of ongoing employee training.

Hands-on practice

In this cross-sectional world, communicating jobsite risks to public servants is a necessity as well. On a job where we will have fall risks, it pays to bring the fire department on site and let them plan a rescue should one become necessary.

At JR Hayes, we also invite local fire departments to our company office pit to give them a chance to practice live rescue drills on trench collapses, hazardous atmospheres and trapped personnel. It gives them an opportunity to become familiar with our operation, and allows for hands-on practice before it is necessary.

Additionally, the city must be notified for road closures, diverting traffic and permitting. When breaking ground, all subcontractors must call in their own utility locates, and with sensitive excavations (near live lines or communications cables) the subcontractor should have the utility's personnel on site while working in proximity of the line.

Finally, safe site communication between subcontractors and the general contractor would not be complete without including the neighboring community. Workers should barricade the site, check for areas where the public could walk on site, and plan to tell the neighbors before particularly loud or disruptive phases.

When JR Hayes has joined with various contractors for deep hole excavation in downtown Seattle and South Lake Union, the gen-

Installing the conveyor on the Block 52 project in Seattle required a late night street closure and careful planning between crane operators, general contractors and subcontractors.

eral contractor typically requests all of our safety paperwork a least a month prior to start for review and approval.

We use three-week schedules created with the general contractor and the subcontractors to sequence the job. Most jobs require installation of a 120-foot-long conveyor belt to finish excavation, and sometimes a secondary belt for deeper holes.

This process has gone smoothly due to intensive communication with the city, general and subcontractors; we've benefited greatly from general contractors who allow us to be the experts in our field by providing our own signage, lock out/tag out program and weekly safety audits.

Often on our Seattle projects we hit contamination such as underground storage tanks holding petroleum products, general waste, or contaminated ground water. It is vital that the general contractor communicate these risks to the subcontractors so they can work together to protect their workers through avoiding cross-contamination of the site, educating workers on how to protect themselves from the contaminants, and monitoring hot spots in order to change risk levels as needed.

Sequencing work around the different subcontractors is a dif-

DEEP HOLE — PAGE 11

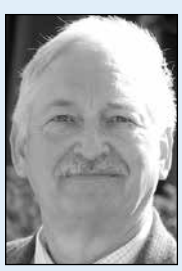
JR Hayes invited the local fire department to its main office in Maple Valley for proactive rescue training.

Operators worked together to move dirt out of the Kinects project hole in Seattle.

IN DISPUTE RESOLUTION, TRAINED 'NEUTRALS' ARE A PLUS

A neutral perspective often allows a project owner to more accurately assess its rights, defenses and exposures.

Trained neutrals performing interpretation and dispute decisions on construction contracts are an example of a continuous quality improvement step for project owners that involves little, if any, additional costs while providing substantial benefits. This process improvement will often avoid unexpected project owner dispute resolution expenses and higher claim payments, if the project team is unable to successfully negotiate a resolution to change proposals.



BY RON LEADERS
CONTRACT SOLUTIONS GROUP

Industry practices for decades have used the engineer or architect as the interpreter and initial dispute decision-maker in construction contracts when disputes cannot be resolved through negotiation. Concerns have been raised about the potential conflict of interest in having the designer interpret contractual implications or decide disputes arising from their design documents.

Owner consultants are asked to be their client's advocates while providing neutral interpretations and decisions. In addition, these same decision-makers are often the ones involved in the unsuccessful negotiation of the change proposal.

Architects have recognized this inherent potential conflict of interest.

In 2007, AIA revised its design and construction documents to allow the project owner to designate a neutral third party as the initial decision-maker.

This article summarizes the benefits of a neutral decision-maker, and why public agencies should consider this dispute resolution approach. Involvement of a neutral does not reduce the important role of consultants in analyzing claims and advocating for their clients, but a neutral perspective often allows a project owner to more accurately assess its rights, defenses and exposures.

Neutrals move quickly

Construction documents published by professional engineering associations and WSDOT Standard Specifications still designate the engineer as the initial interpreter and dispute decision-maker. Under these contracts, the involvement of a true neutral dispute resolution board or mediator does not occur until much later in the dispute resolution process, often after several iterations of dispute analysis by the engineer has occurred.

This on-going designer role as the initial decision-maker often results in additional expenses of analysis and entrenching of positions prior to the involvement of a neutral that can bring a broader perspective and more insight in contract interpretation and claim evaluation concepts.

Industry experience confirms it is unrealistic to expect a designer to reconsider its initial determination during the dispute resolution process. Instead, project owners typically will see their staff or consultants "double-down" or reconfirm their initial determination, creating a higher barrier to any early resolution of a dispute.

Even if owners continue to use their staff or consultants in the interpreter and decision-maker role, it is recommended that a neutral second opinion and assessment be obtained before extensive expenses are incurred in reconfirming an earlier determination.

An ideal time to involve a neutral interpreter and decision-maker is when the project team is unable to resolve an initial dispute through negotiation.

A neutral can quickly evaluate the contract provisions and issues relating to each party's position, which should have been developed through the earlier project team negotiation process. This neutral review can be done quickly, minimizing extended delays and costs with a more formal claim process.

This step of moving the dispute to another party is a common feature in well-designed dispute resolution procedures.

Owner losses

For project owners who feel their current practices of using designers, CMs or agency staff to perform these interpretations and dispute decision-making roles is adequate, the following example will provide sobering evidence of losses that can arise when they do not use a neutral professional with

adequate expertise in contract interpretation and claim evaluation principles.

The following construction dispute was evaluated and resolved in binding arbitration. A public agency contracted to design and construct an $8.5 million facility. The design contract provided that the architect would be the initial interpreter and decision-maker on disputes and claims. The architect was to act in a neutral and unbiased manner, which is a typical contract provision.

Major structural redesign issues were identified early, which affected the critical path of the project. The architect denied many cost adjustments without much explanation and denied all schedule extensions without any analysis. Many more non-structural design deficiencies were identified by the contractor, and the architect again generally rejected any requests for additional costs and time with little substantive analysis.

The contractor accelerated its performance to make up for the delays caused by the deficiencies in the design because no time extensions were granted. Four trade contractors went out of business on the project due to inability to recover extra costs denied by the architect. The prime contractor was forced to curtail its business operations while it attempted to recover its losses in arbitration.

In spite of project delays of approximately four months, the architect and its schedule consultant did not approve any time extensions. The three construction arbitrators in the hearing each expressed surprise during deliberations at the lack of any reasonable basis for the architect's interpretations and determinations on contract adjustments. The evidence confirmed the architect was defending its design from criticism.

The three arbitrators had the skills and expertise to provide early neutral interpretation and determination services.

Each arbitrator indicated that had an experienced and knowledgeable neutral been involved on the project, many of the contractor's claims would have been promptly approved. This would have resulted in approved change orders of approximately $142,000 for direct costs and $127,000 for delay damages had time extensions been approved. The time extensions would have avoided the contractor's need to accelerate its performance.

Instead of paying the contractor an entitlement amount (as determined by the arbitrators) of $269,000 for direct and delay costs, the public agency spent considerably more to defend the claims.

The claim was decided in arbitration, with a final award of $1.54 million assessed against the public agency.

This award amount included $545,586 in acceleration damages due to the lack of approved time extensions. The agency's withholding of the $314,000 contract balance to cover liquidated damages was also rejected in arbitration. Finally, the agency was required to pay the contractor approximately $408,000 in attorney's fees, interest and arbitration expenses.

These amounts do not include the costs of attorneys, consultants and arbitration expenses incurred by the agency defending the claim.

This claim is not a unique situation. In my 30 years of providing construction neutral services, I have seen many instances where the lack of a well-trained neutral interpreter and dispute decision-maker resulted in additional claim evaluation expenses and unexpected payments on contractor claims by public agencies.

Here are some recommendations:

1. Designate a third party neutral for contract interpretation and dispute determination duties under the initial contract. This individual can be engaged by the public agency under a sole source selection process because the costs should be below competitive procurement thresholds. The individual can also be engaged by the designer or construction manager to facilitate the contracting process.

2. If no change is made in using the engineer as interpreter and decision-maker, a second opinion assessment can be obtained from a neutral at any stage of the contract's dispute resolution process. This would provide guidance on any adjustment to dispute resolution positions or approaches that should be considered before additional analysis expenses are invested.

3. Where do agencies locate qualified neutrals? Consultant rosters may be a good source. Referrals for construction arbitrators and dispute review board members are another good source, although DRB members would preferably have training and expertise in contract interpretation and claim analysis in order to fulfill their neutral role under the contract.

Lack of legal background on the state Route 99 tunnel DRB was cited by the project expert panel as a reason the DRB recommendations on the project have not been accepted by either party, as the claims were believed to have a legal context not addressed by the DRB.

Benefits at little cost

Project owners desiring to improve their construction administration practices should look carefully at the use of a qualified and trained neutral to render unbiased interpretations and dispute resolution decisions. The process can be easily implemented and provide benefits far in excess of the minimal costs.

Ron Leaders has been designing and implementing dispute resolution processes and providing construction neutral services for more than 35 years. He also writes articles and trains on construction issues.

IS YOUR DECK DESIGNED TO HANDLE A CROWD?

Researchers found that the loads from people can exceed those of the most severe earthquakes and hurricanes.

Outdoor decks are a great way to extend living and entertaining spaces, but they can also be the most dangerous part of a building if not properly designed, constructed and maintained.

Building codes exist to protect public safety, and they require decks to be designed to resist both vertical and lateral loads.

BY DON BENDER
WSU

Vertical loads such as from people, furniture and the weights of building materials are well understood and the design is straightforward. However, I teach short courses to engineers and building officials across the nation, and it's rare to hear of anyone conducting a lateral design of decks.

When structural engineers conduct a lateral design, they check for earthquake and wind loads. The American Society of Civil Engineers publishes a standard, ASCE-7, that gives detailed procedures on how to calculate these loads. Using ASCE-7, it turns out that lateral loads on decks are not significant unless you are in an extremely high-risk region for earthquake or hurricane.

For most of the country, these lateral loads would not control the design of a deck.

Then we began to wonder about lateral loads that might be caused by people.

It turns out that the building codes and ASCE-7 are silent on lateral loads from people, except for stadium bleachers. So we decided to construct our own decks in our laboratory and it was "all hands on deck."

We loaded our decks with varying numbers of people representing small gatherings, all the way up to a very crowded condition (full design load of 40 pounds per square foot). At full design load, people are literally shoulder-to-shoulder.

We put the deck on rollers to simulate minimal substructure stiffness (as with posts that are pinned at each end), and then we fixed two corners of the deck to simulate attachment to a building (with sensors to measure the loads). We instructed our volunteers to move in unison side-to-side, simulating dancing or perhaps aerobics. Then we had them run across the deck, jump, and stop suddenly to simulate "horse play."

The results were startling.

For our most flexible decks studied, we found that the loads from people exceeded the most severe earthquakes and hurricanes. And people-induced lateral loads can happen anywhere, unlike other loads that are restricted to a few high-risk regions. This means that every deck in the country should be checked for people-induced lateral loads.

That got our attention and we dug deeper to understand what was causing the problem. The answer is found in a concept called load amplification caused by dynamic movement of the decks. The more flexible the deck with regard to sideway, the greater the load amplification.

Using computer-based models we found that the amplification can be as great as fourfold. When the deck is stiffened with diagonal deckboard placement or a very stiff substructure, the load drops to lower levels that can be easily resisted.

The most common deck construction has deckboards running parallel to the primary building with the supporting joists running perpendicular to the building. The parallel deckboard orientation does not result in a very stiff deck platform.

When we simulated dancing on a 12-by-12-foot deck with parallel deckboards in our laboratory, it moved 16 inches side-to-side.

Again, this sideways movement can result in very large dynamic forces.

On the other hand, when you fasten the boards at a 45-degree angle, the deck diaphragm is four times stiffer and six times stronger.

Engineers have known for a long time that if you want to stabilize a structure, you make lots of triangles. Just look at a roof truss and you will see what I mean. Many years ago before plywood was invented, walls on buildings typically had diagonal board sheathing. The triangles helped the walls resist sideways, or lateral loads.

So, we need decks that are stiff to minimize dynamic amplification of loads.

A deck is a structural system consisting of a "structural dia-

DECK — PAGE 11

This deck failed in 2013 in Bozeman, Montana, with Don Bender's youngest son on it. Since there were no injuries, the collapse wasn't reported.

PHOTOS COURTESY OF DON BENDER

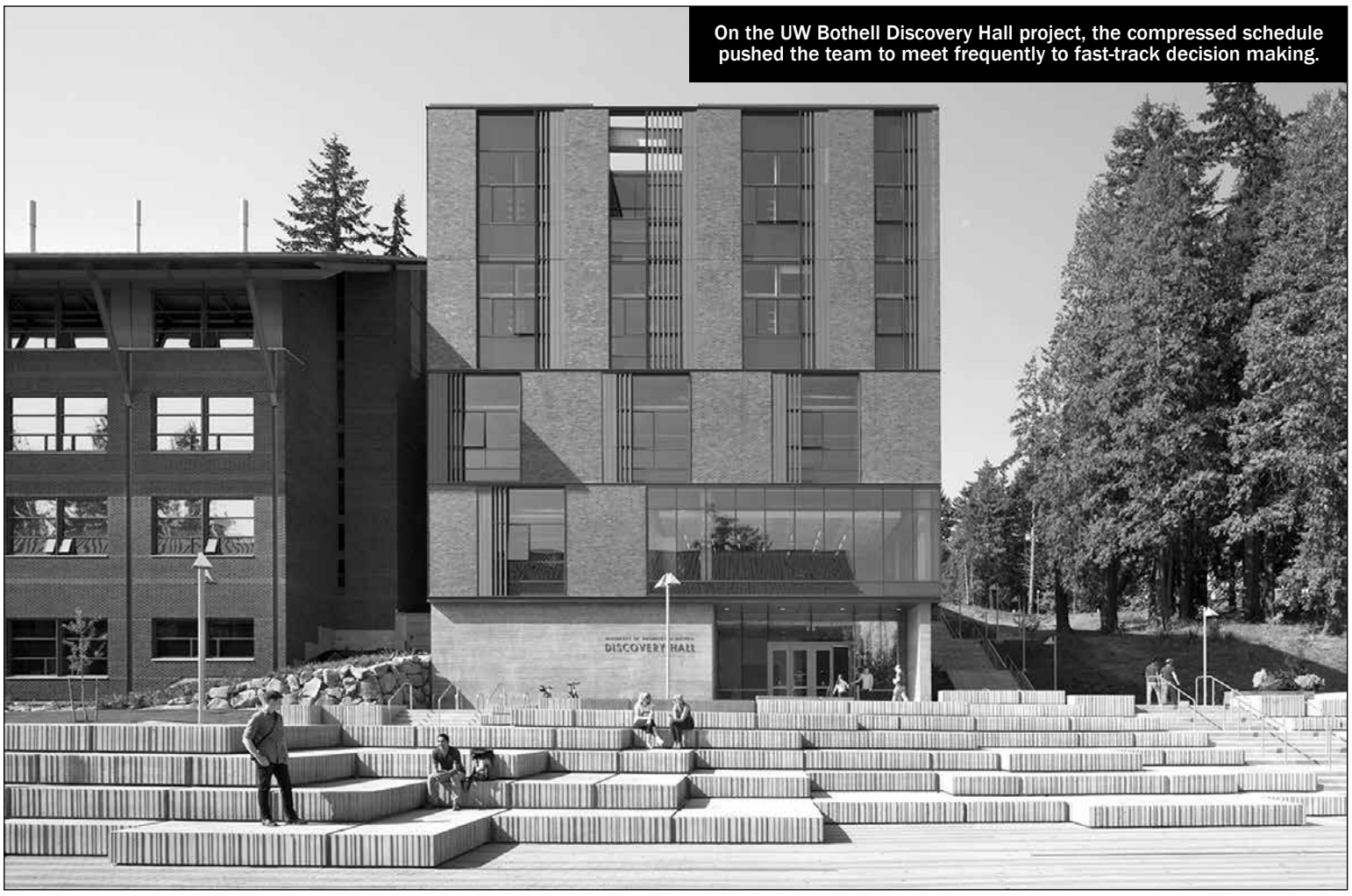
FOLLOW THESE PLANS FOR A SAFE DECK

A free and prescriptive design guide for decks was developed by a large team that included professor Don Bender. It can be found at http://www.awc.org/publications/dca/dca6/dca6-12.pdf

Many residential decks are built by low-bid contractors that don't know what they're doing. This deck is in Lewiston, Idaho.

WHAT IS HIGH-PERFORMANCE TEAMWORK? LOCAL LEADERS TELL ALL

Some of the key concepts that keep teams on track are accountability, trust, communication, goal-setting, company culture and conflict resolution.



On the UW Bothell Discovery Hall project, the compressed schedule pushed the team to meet frequently to fast-track decision making.

PHOTO BY LARA SWIMMER

Today the word "teamwork" is overused and cliche. Just because a group of people work together does not necessarily mean they are functioning in the truest sense of teamwork.

Some companies have heavily invested in analyzing teamwork because they recognize the value of high-performing teams to sustained business outcome. High-performing teams have key components that are likely predictors of successful projects.

BY LIZ EVANS
AGC OF WASHINGTON

Every May, the Associated General Contractors has the pleasure of recognizing members' most successful projects through the Build Washington Awards program. What is clear about the nominated projects is the cohesive teamwork that exists on these challenging and complex jobs.

Brian Aske, senior project manager with Lease Crutcher Lewis for eight years, was the project manager on one of these projects: Discovery Hall at the University of Washington.

ASKE

Aske said much of the teamwork approach is defined at the beginning of the project with a clear understanding of what the owner wants and values.

"Having conversations upfront that clearly define the project goals sets the tone for moving forward," he said.

On the Discovery Hall project, the compressed schedule pushed the team to meet frequently to fast-track decision making.

Steve Tatge, UW's director of major capital projects, concurred.

"This GC/CM project had language incorporated in the bid documents emulating integrated project delivery," Tatge said.

TATGE

The Discovery Hall project was set up for a true team-based approach led by Lewis' highly detailed modeling, which allowed problems to be solved in the model rather than in the field.

"The metrics for this project were no accident, we achieved success by design resulting in increased value, reduced change orders and no overtime," Tatge said.

For **Michael Sloane**, project manager on Abbott Construction's Community Health Center of Snohomish County project in Edmonds, one of the keys to quality teamwork was having the same group work on the project from beginning to end.

SLOANE

"The consistency of staff on the CHCSC project made for a stronger team," Sloane said.

Also helpful was the addition of a staff person to the formal team that was going to use the facility. That person quickly provided valuable feedback.

According to Sloane, the most important parts of a high-performing team are accountability and ownership.

"They are critical," he said. "Without those you don't have trust."

On this project, the team set the expectations early and reached agreement on how communication would flow. For the team, the greatest reward was being able to exceed the owner's expectations and get a lot more of the little things done.

Jim Davis, pre-construction manager at GLY, recently completed the Block 44 Amazon Phase VI project.

When asked what made this team so good, Davis responded: "We were all working towards a common goal with an experienced and supportive owner, Vulcan."

DAVIS

Davis said key components to successful teamwork are being open to different solutions other than your own and listening to all ideas on the table. For Davis and other team members, one of the rewards was developing rich relationships that go on long after the project.

In GLY's leadership training, staff learn many of the skills necessary for participating on sophisticated teams.

Dan Simpson, principal at ZGF Architects, also worked on the Block 44 team.

"The key to this team was sharing an ambitious vision of what the project could be and transforming two parking lots and an alley into a beautiful and innovative office solution for Amazon," he said. "Vulcan provided the visionary leadership, Amazon was an engaged participant throughout, and GLY was a strong contractor. In the end we built a great project, but also a great experience."

SIMPSON

Is there a secret sauce for high-performing teams?

Exxel Pacific CEO **Kevin DeVries** said the key is the chemistry and culture of the company. He cites a style of leadership where everyone in the company is valued equally.

DEVRIES

"When everyone feels respected and valued, it sets the tone for good teamwork," he said.

Exxel recently completed the Stackhouse apartment project in Seattle, where **Brett Armstrong**, AGC's 2014 Superintendent of the Year, was the superintendent.

"Our team had one thing in common — a personal commitment to the project," Armstrong said. "It was enjoyable to go to work every day knowing that we were all supporting each other and doing whatever it took to make it easier for the next person."

ARMSTRONG

Armstrong said lessons learned should be talked about throughout the

TEAMWORK — PAGE 12

WHY IT'S BETTER TO RENT THAN BUY TIER 4 EQUIPMENT

Contractors should expect higher maintenance costs for the clean diesel engines due to special fluids, filters and servicing.

The Environmental Protection Agency was created to protect human health and the environment. So, it is no wonder that as part of its clean air initiative the EPA created Tier 4 engine requirements that reduce harmful exhaust gases for diesel-powered equipment.

BY STEVE MICHAELS
NEFF RENTAL

Not only are Tier 4 engines more friendly to the environment, but they are more fuel efficient and powerful.

If you are a contractor, you've likely heard of equipment with Tier 4 engines because as of 2011 they are required for all new construction equipment. Because of this, over the past few years there have been vast improvements to the way diesel engines are built for construction equipment.

However, this can affect your overall cost of owning and operating this equipment. And while there are fuel cost savings for Tier 4 over Tier 3, you still need to determine if it makes sense to buy or rent new equipment because implementing the final Tier 4 engines normally comes at a great cost.

You should consider a few things prior to making the decision to rent or buy equipment.

First, make sure that the project calls for Tier 4 because while it is required for all new equipment, you may be able to use older equipment on a jobsite. Additionally, be sure to familiarize staff with how to operate the unit correctly so projects stay on schedule.

You'll need to consider training for your staff as well.

Oftentimes when you purchase or rent, training packages are available to ensure that every mechanic and operator is properly educated on how to maintain this new technology.

As rental and purchasing decisions arise during the course of the year, closely consider the project's guidelines and budget.

When deciding if you should buy the equipment, many contractors consider the resale value of pre-Tier 4 equipment. This has been a common question and challenge due to the fact that resale equipment frequently is shipped outside the United States, where EPA regulations are not enforced.

What happens to the equipment with Tier 4i engines? Major manufacturers are working on kits to restore these engines back to Tier 3 so they can be shipped overseas without dramatically affecting resale value and cost. All newly produced units inside the U.S. are required by the EPA to be Tier 4, which then adds greater cost to engines that have to be reprogrammed back to Tier 4i and below.

Many Tier 4 engines with at least 75 horsepower use 1 to 4 percent less fuel compared to Tier 4i engines in certain applications.

Regardless of how you look at it, contractors will see an increase in the cost of Tier 4 equipment, which has been the case during the last few years with the evolution of the products. The 10 percent to 25 percent increase comes from the engine design, build and installation, as well as government requirements.

Keep in mind the cost of an engine in a small air compressor may be 50 percent of the total unit cost compared to an engine for a wheel loader, which may account for less than 20 percent of the overall cost.

Companies also should expect higher maintenance costs, as special fluids, filters and servicing is required. But also keep in mind that meeting the new EPA regulations allows contractors to better compete for sustainable projects.

Because of these extra costs, oftentimes it makes more sense to rent than buy. This allows contractors to minimize their cash outlay and capital requirement because they only pay for the time needed to complete the project. As such, any additional costs are only fractional because usage is minimized when renting compared to purchasing.

By renting more equipment, contractors may better direct their dollars to do what they do best: managing and completing projects.

Rental companies can deliver the latest high-tech equipment to the site with the assurance that the job is 100 percent compliant.

Steve Michaels is vice president of fleet operations at Neff Rental.

DECK

CONTINUED FROM PAGE 8

phragm" (the platform made up of joists and deckboards), substructure (post-and-beam framing that supports the deck), and guardrail to keep people from falling over the edge. The lateral stiffness comes from the diaphragm and/or the substructure.

For example, if the deckboards are placed at a 45-degree angle, and are nailed or screwed to the joists, then the structural diaphragm will be stiff and strong, and the substructure's job is to primarily resist vertical loads. However, if the deckboards are placed parallel to the building, the diaphragm is not very stiff, and the substructure must be reinforced to resist lateral loads, such as with embedded posts, knee-braces or other bracing.

New deck products are constantly evolving, such as wood-plastic composites. These products can be beautiful and low maintenance. Let's face it, who wants to go out and sand and re-finish their deck each year?

One fairly recent development in wood and WPC deckboards is "hidden fasteners" that fit in a slot on the side of each board. Great idea right? You don't see the fastener, and the slot allows the board to slip so that thermal expansion and shrinkage won't cause the boards to buckle.

The problem is that since the fasteners allow slip, the deck diaphragm has almost no stiffness from side-to-side. This means that the deck substructure must provide nearly all of the resistance to lateral loads. This can result in a complicated design that should be performed by a registered design professional.

Two other parts of a deck that require careful design are the attachment to the building and the guardrail posts/infill. One of the best investments you can make for the safety of your customer, family and friends is to employ the services of a registered design professional and regular inspection and maintenance of your deck.

Don Bender, P.E., is Weyerhaeuser Distinguished Professor of Civil Engineering and director of the Composite Materials & Engineering Center at Washington State University. He is an expert in testing, design and construction of timber structures, and is active in building code development.

DEEP HOLE

CONTINUED FROM PAGE 5

ficult, but necessary part of the process. We delineate (mark off with candlesticks and tape) under our conveyors or in the swing radius of a machine if it will operate in a fixed space for a period of time.

While having night and day crews can bring its own set of complications, if done well it can limit the number of people occupying the same space on a jobsite. Those daily all job meetings and pre-tasks can be the difference between a smooth day and broken equipment or injured people.

Space on construction sites is getting harder to find, and without detailed planning and communication, it isn't possible for multiple subcontractors to safely share a deep hole. The steps can seem repetitive, but without daily multi-sub planning of each phase, processes will start to overlap in disastrous ways.

Effective communication between everyone on site makes the job safe, and saves money and time in the long run. In modern construction jobs, it takes a community effort starting on the jobsite and extending out to the public to send everyone home safe at the end of the day.

Shonnessy Gilmore is safety director for JR Hayes Corp., a site development company based in the Puget Sound. She holds a master's degree in public health in environmental and occupational health from the University of Washington.

GENERATIONS

CONTINUED FROM PAGE 2

and multiple generations, trade associations have had to change the way they recruit, retain and engage members through more data-driven targeted services, multiple communication strategies and higher expectations for value delivered in a way that respects work and family time demands.

Associations that make the adjustments will grow and prosper.

Wendy Novak is the new ABC of Western Washington president. Novak served for many years on the ABC National Membership Professionals Council, and is a member of the American Society of Association Executives. She holds a bachelor's degree in business and is working on association executive certification.

EARLY DESIGN

CONTINUED FROM PAGE 3

that are not always suitable for the particular project or contractor, and as such, may require modification.

From an insurance standpoint, any collaboration that blurs a contractor's traditional role as builder will most assuredly push the contractor and its subcontractors outside of the insurance coverage typically provided by commercial general liability policies. So whether providing construction management services, design and constructability advice through BIM modeling, or design through shop drawings, these services must be covered by a combination of general and professional liability policies.

Some basic things to keep in mind in understanding the difference between the two policies is that, by and large, general liability policies insure against bodily injury and property damage only. Your general commercial liability policy will not cover pure economic loss and typically excludes professional services.

On the other hand, professional liability policies generally exclude bodily injury and property damage and instead only insure against economic losses arising from acts, errors or omissions in professional services. That said, endorsements to professional liability policies are often available that provide coverage for property damage and bodily injury.

Also, it is quite rare for professional liability policies to name additional insureds, so a prime contractor should not plan on protection from its subcontractor's professional liability policy where, for example, the subcontractor's shop drawing design resulted in loss to the owner. The flipside is making sure that as the prime contractor, your professional liability policy includes protection for vicarious liability where a subcontractor's rendering of professional services results in a loss.

It's also important to look at your policies' definitions, which are a significant part of any policy. And in the case of professional services, you want that definition to be as broad as possible so it covers everything from construction management services to value engineering to design work.

Other considerations include understanding that professional liability policies are virtually all manuscript policies, meaning they are not standard policy forms. You should be prepared to work closely with your broker and coverage attorney to ensure you are getting the coverage you need.

Also, these policies are claims-made policies, meaning coverage is triggered by the claim being made, not when the loss occurred.

Collaborative construction contracts carry unique risks that must be allocated and insured against. Traditional contracts and commercial general liability policies aren't enough. If you have been operating under a business-as-usual approach when providing professional services, now is the time to make important risk management changes to insure your firm's continued and future success performing collaborative contracts.

Tymon Berger is a partner in Ashbaugh Beal's Construction Law Group and Tristan Swanson is a lawyer in the firm's Insurance Recovery Group. Ashbaugh Beal is based in Seattle.

TEAMWORK

CONTINUED FROM PAGE 9

project and not just at the end because, "this lends itself to an environment for supportive decision making, where people feel safe to express their ideas without fear of making a mistake."

Teamwork is not a difficult concept, but the components of highly effective teams can easily get distorted in an industry where there is a high degree of risk and conflict is imminent. These successful projects highlight some of the key concepts that keep teams on track: accountability, trust, communication, goal-setting, company culture and conflict resolution.

Setting aside agendas and egos and working with a relentless focus on team performance will yield rich rewards and more successful outcomes.

Liz Evans is the Northern District manager for AGC of Washington. She has served as the program manager for AGC's Build Washington Awards for the past 13 years.

AWARDS

ABC 2015 EXCELLENCE IN CONSTRUCTION AWARDS

Rafn Co. came out on top again, winning the Eagle of Excellence at the 2015 Excellence in Construction Awards held Wednesday night by the Associated Builders and Contractors of Western Washington.

Rafn's 525 at The Enclave project also won in the Mixed-Use Construction category. The Bellevue contractor was cited for saving time and costs on the project, which used wall panels prefabbed in a makeshift "factory" in an adjacent parking lot. It is the fourth year in a row that Rafn has won the Eagle.

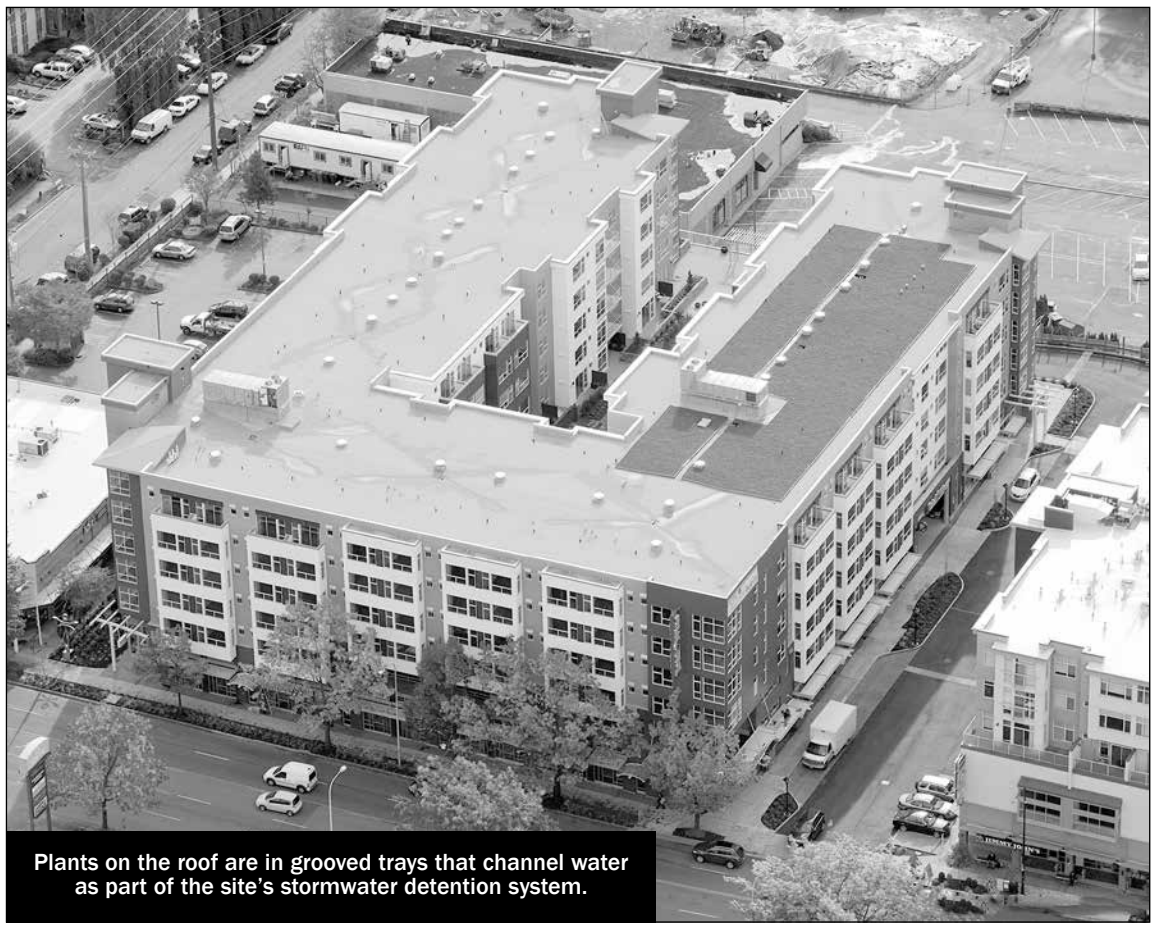
ABC presented 11 other awards to six other firms during the banquet at the Renton Pavilion Event Center. Four of those awards were won by Donovan Brothers Construction and three by Synergy Construction.

The judges this year were John Schaufelberger of the University of Washington, Kate Spitzer of Miller Hull Partnership, Scott Rhodes of Rhodes Architecture, Candice Clinton of CollinsWoerman, Rocky Flores of Mithun and Benjamin Minnick of the Seattle Daily Journal of Commerce.

EAGLE OF EXCELLENCE • MIXED-USE CONSTRUCTION

525 at The Enclave
Rafn Co.

Architect: Baylis Architects
Engineer: Coughlin Porter Lundeen
Owner: Wallace Properties
ABC members: Clark Nuber; Custom Sprinkler Corp.; Evergreen Concrete Cutting; Hallmark Construction; Comfort Systems USA/Merit Mechanical; Performance Mechanical Group; Propel Insurance; Rainbow Federal; Unity Electric



Plants on the roof are in grooved trays that channel water as part of the site's stormwater detention system.

PHOTO BY SKY-PIX

525 at The Enclave is the second phase of development for Wallace Properties in Northgate. The building has 266 market-rate apartments over almost 25,000 square feet of retail space.

In addition to the overall building, Rafn constructed tenant improvements for Total Wine, which takes up the entire ground floor retail space.

A key factor to the winning project was completing it 74 days ahead of schedule. Much of the time savings was a result of panelizing the building's walls.

Placement of prefabbed panels was precise and efficient; and allowed for flexible scheduling.

Adding to the efficiency of prefab construction was Rafn's rental of an adjacent parking lot for its own panel "factory." Walls were built concurrently with the foundation or concrete podium, then placed and secured much faster than conventional framing. The on-site framing allowed Rafn to complete wall erection and begin roof framing more than a month ahead of schedule.

Wallace anticipates the building will get LEED silver certification due to sustainable elements such as a green roof, extensive LED lighting and electric vehicle charging stations. LED lighting earned a Built Smart rebate from Seattle City Light.

The main roof and first level terrace have a plant matrix on a cocoa fiber mat laid out in snap-together trays. The trays have grooves that channel water as part of the site's stormwater detention system.

Common areas have un-tempered clean air circulation. By carefully placing diffusers and balancing the system, Rafn made certain that common areas are comfortable for residents.

Pre-made galley-style kitchens, similar to those in boats, were used in 20 studio units, reducing installation time.

Partitions that divide outside space between units were developed by Rafn superintendent Phil Wheeler. They have planting beds with sun plants on one side and shade plants on the other. Partitions are held in place by ballast in the bottom.

All of the aluminum balconies were craned onto the building and bolted into place in one day.

The unit duct-work was installed in the joists instead of drop soffits, creating a system that is highly efficient and aesthetically more pleasing.

The project was encased in scaffolding with safety netting and permanent fall protection anchors on the roof. There was a heightened safety focus around forklift operations when moving panels from the adjacent factory to the project site; and the site was fenced and gated to protect the large number of pedestrians and auto traffic in the area.

Despite the tight site and heavy area traffic, there were no recordable or lost-time incidents during the 37,133 hours worked.

ABC 2015 EXCELLENCE IN CONSTRUCTION AWARD WINNERS

Eagle of Excellence
Mixed-Use Construction
525 at The Enclave
Rafn Co.

Commercial Construction
Franciscan Medical Pavilion
Auburn
Donovan Brothers Construction

Community & Public Service
Peter's Place Hygiene Center
Synergy Construction

Electrical & Communications
University VW/Audi — Freeway Motors
SME Inc. of Seattle

Health Care
US BioTek headquarters
Donovan Brothers Construction

Historic Preservation
Theta Delta Chi renovation
Express Construction Co.

Industrial Construction
Orion Building Auburn
Donovan Brothers Construction

Infrastructure
Wellington Hills retaining wall
Donovan Brothers Construction

Mechanical Construction
PLU swimming pool HVAC
Air Systems Engineering

Multifamily Construction
Viva
Synergy Construction

Specialty Contracting Interior
Starbucks Reserve Roastery & Tasting Room
Ski's Painting

Tenant Improvement
City North Apartments
Synergy Construction

AWARDS

The main entry has a cathedral ceiling, exposed glu-lam beams and a floor-to-ceiling polished stone chimney.

PHOTO FROM DONOVAN BROTHERS CONSTRUCTION

COMMERCIAL CONSTRUCTION

Franciscan Medical Pavilion Auburn

Donovan Brothers Construction

Architect: Jon Graves Architects & Planners
Engineer: Visser
Owner: Auburn Marketplace LLC
ABC members: Heiberg; Red Hawk Fire Protection

Situated near Auburn's 15th Street retail corridor, Franciscan Medical Pavilion is anchored by Fred Meyer to the south and Lowe's to the north. That and its proximity to Auburn General Hospital make it an ideal location for a medical office.

Construction began on the 37,000-square-foot building in fall 2013 with completion set for spring 2014. Due to that schedule, Donovan Brothers Construction used a permanent drainage system consisting of a cement-treated base with asphalt topping to control stormwater, enabling crews to work on the tilt-up shell throughout the winter.

Working in a busy retail location presented one of the biggest challenges to the job. Special considerations were taken to ensure safety of all who frequented the area, especially the daycare that was 100 feet from the project. Donovan created a traffic plan to divert daily deliveries away from heavy pedestrian and auto traffic.

The interior of the building has a walk-through lobby with exposed glu-lam ceiling beams, Douglas fir car decking and up lighting. The main entry has a 30-foot-high cathedral ceiling and a natural gas raised hearth fireplace with a dramatic floor-to-ceiling polished stone surround and chimney.

The project came in on time and within budget. There were no time-loss or medical injuries in 6,297 hours worked.

Heating, ventilation and plumbing systems were replaced at Peter's Place.

PHOTO FROM SYNERGY CONSTRUCTION

COMMUNITY & PUBLIC SERVICE

Peter's Place Hygiene Center

Synergy Construction

Architect: Stickney, Murphy and Romain Architects
Owner: Compass Housing Alliance
ABC members: Ahlers & Cressman; Construction Industry Training Council of Washington; Creative Surveillance Solutions; Dexter + Chaney; Global Metal Works & Erectors; Propel Insurance; Safety Matters; Schmitz & Associates; Sound Glass Sales

Peter's Place needed to combine two facilities into one in a 1980s-vintage building in Seattle's Rainier Valley.

The timeline was just three months and once demolition began the crew found that actual conditions were much different than the original plans. The Synergy team responded to each immediately so that no significant time was lost in the tight schedule.

Seismic upgrades included concrete shear walls running from the new foundation elements through the two floors to the roof.

Heating, ventilation and plumbing systems were replaced to accommodate the common area full of people all day, the 100-plus showers taken daily, and the commercial laundry equipment that runs almost continuously.

Once the project neared completion, the kitchen fixtures, including a three-compartment sink and all cabinetry, were relocated from the former day center and reconfigured to match the requirements at the new facility.

Today Peter's Place is a welcoming space where homeless men and women can find a path out of homelessness. People can seek refuge, meals, basic services, mental health counseling and nursing, as well as connect with case management, entitlements and other benefits. At night, Peter's Place opens its doors as a shelter for eight women and 38 men, creating a location for round-the-clock services for the homeless in Seattle.

There were no time-loss or medical injuries during 2,303 hours worked.

AWARDS

ELECTRICAL & COMMUNICATIONS

University VW/Audi — Freeway Motors
SME Inc. of Seattle

General contractor: Sierra Construction Co.
Architect: Gordon Fleener Architects
Engineer: Travis Fitzmaurice
Owner: Freeway Properties LLC
ABC members: Evergreen Concrete Cutting; Safety Matters; Tradesmen International

Freeway Properties hired SME Inc. of Seattle to install a new electrical system in its existing three-story, 173,000-square-foot building in the University District.

The building's first floor houses an automobile showroom and three state-of-the-art service bays, with 82,000 square feet of parking garage on the upper two levels for sales inventory and customer service.

Work involved installation of a 600-amp, 480-volt electrical service with power connections to specialized auto service bay equipment and LED lighting in the showroom, service bay and offices. Crews also installed lighting and exhaust fans on both parking garage levels, specialty display lighting, controls, a fire alarm system, and conduits for security, voice and data communications.

SME didn't get final plans until 12 months into the 15-month project and had to address budget concerns by the owner.

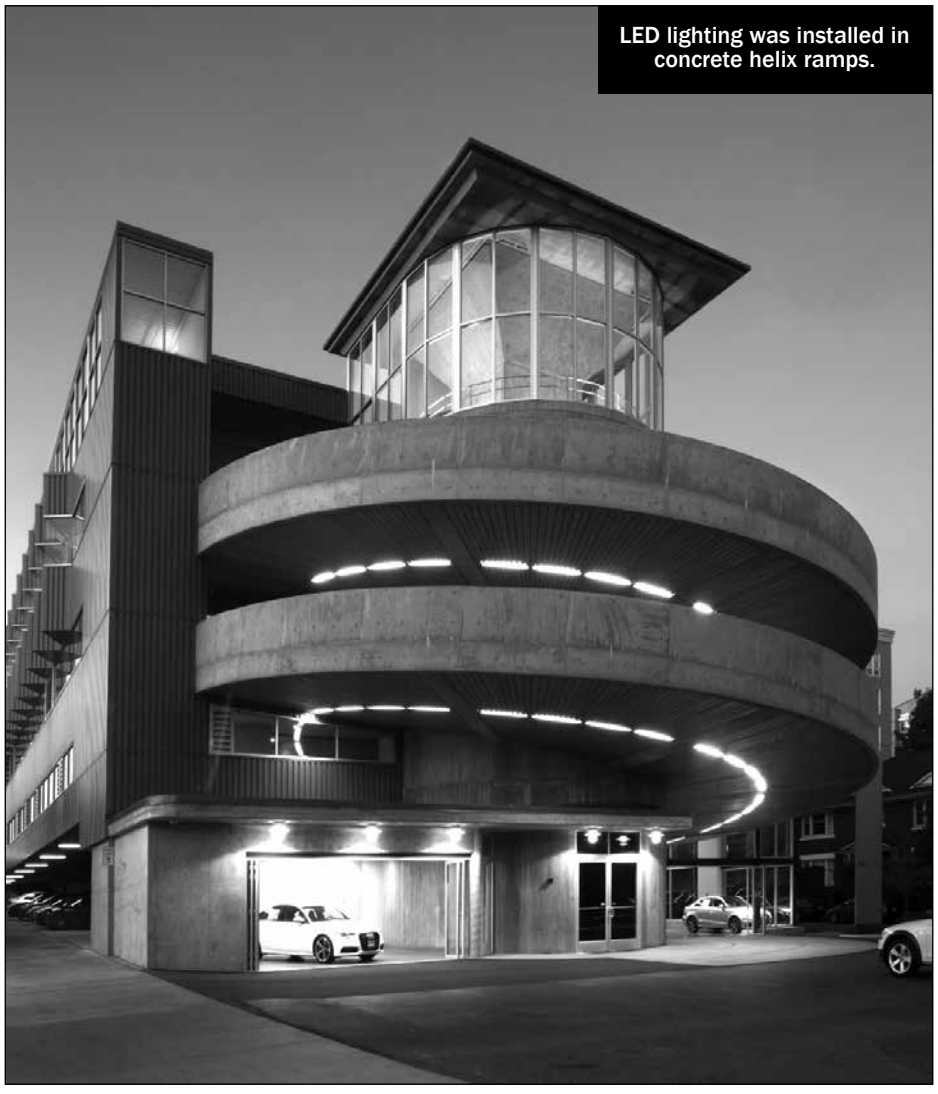
Because the building is concrete and steel, which is difficult to penetrate for electrical systems, SME chose to install electrical conduits, boxes and sleeves.

Budget concerns allowed SME to value engineer many aspects of the installation: changing service feeders from copper to aluminum and panel board feeders to aluminum MC cable; re-examining exhaust fan and damper requirements and reducing the number of dedicated circuits by 75 percent; and recommending lighting controls that were best suited for each area, avoiding redundancy and the corresponding expense.

To save time and money, SME used its fabrication shop to install power whips and lamps in 181 parking garage fixtures and 103 recessed fixtures. Fixtures were towed up the building's helix ramp to work areas within the garage on a special trailer built by one of the shop foremen.

SME fabricators built 56 assemblies, including the power pack and sensors for the parking garage, and had stainless steel work counters delivered to the shop where they installed 120- and 280-volt equipment receptacles and delivered them to the jobsite in time to meet the final inspection.

There were no time loss or medical incidents during the 8,245 hours worked.



LED lighting was installed in concrete helix ramps.

PHOTO FROM SME INC. OF SEATTLE

HEALTH CARE

US BioTek headquarters
Donovan Brothers Construction

Architect: Akiyama Architecture
Engineer: Swenson Say Faget
Owner: Shoreline Place LLC
ABC members: Global Metal Works & Erectors; Northshore Paving; Sound Glass Sales

US BioTek Laboratories, a specialty medical testing company, can identify an individual's hypersensitivity reaction to food and other allergens from a single drop of blood.

After its original design team could not meet budget demands, US BioTek hired Donovan Brothers Construction and Akiyama Architecture to provide a cost-effective building for its new world headquarters in Shoreline. The team's redesign saved more than $1 million.

The project included demolition of an existing strip mall for the construction of the 20,000-square-foot, two-story concrete tilt-up laboratory and office building. During construction a popular 7-Eleven store and restaurant remained open, complicating right of way and parking lot improvements due to extensive foot and auto traffic.

Construction challenges included the need to repair a rock retaining wall that lined the back of the property and to correct the grade of the slope above the wall. The site constraints also meant that crews had crane access to only one side of the building pad where an underground vault and casting slab were located — resulting in only two possible crane placements.

The owner's major requirements for the building were noise abatement and second floor lab access. Because the building has an exposed structure, Donovan chose a Verco acoustical roof deck with batt insulation for sound attenuation. To limit vibration from the elevator and mechanical rooms, crews cut and filled an insulation joint in the wall and installed double frame, double layer sound walls and acoustical panels.

US BioTek's main lab is on the second floor, requiring it to move equipment from outside using a forklift. The design team installed a seamless double door system that can be accessed from the inside of the building, allowing forklift access.

To accommodate future expansions, lines for water, nitrogen, compressed air and deionized water were plumbed through the floor. Battery back-ups were installed on critical equipment in case of long-term power loss.

Donovan completed the project on time and on budget with no accidents for the 8,905 hours worked.

The main lab has a wide double door so that equipment can be brought in.

PHOTO FROM DONOVAN BROTHERS CONSTRUCTION

AWARDS

HISTORIC PRESERVATION

Theta Delta Chi renovation
Express Construction Co.

Architect: Grouparchitect
Owner: XL Deuteron Corp.
ABC members: Exterior Finishes; Northstar CG; Tradesmen International

Theta Delta Chi house got new siding, windows, doors, deck railing and a roof.

PHOTO FROM EXPRESS CONSTRUCTION CO.

Originally built in 1916, The Charge House, an imposing structure known as the "White House," was remodeled in the 1960s with an addition.

During the mid-2000s, the fraternity was failing and the building became mainly a boarding house. In 2006, a group of students revived the fraternity, moved boarders out and filled the house with 32 new founding brothers.

The XI Deuteron Group, the national order of the Theta Delta Chi fraternity, hired Express Construction Co. to fully renovate the house during the summer months.

Project challenges began with few records, specifications and architectural drawings. That — coupled with a dense urban location with difficult access, no laydown area, minimal parking and a limited budget — made the project challenging.

The $573,000 budget was only an exterior skin/roof subset of the original $2 million proposal. Express was contracted to replace the exterior skin with HardiePlank siding and add new windows, a front door, roof and deck rail system. It also was tasked with renovating the exterior wood entry facade.

Due to unforeseen conditions, the construction budget was raised to $601,723. That included fixing rotten wall framing, restoring roof trusses, installing additional windows in the basement, upgrading wood finishes on windows in public areas, plus bay windows in the living room. Express also restored the masonry, upgraded electrical systems, replaced three sets of double basement doors, and replaced damaged structural materials.

All this was done with the added challenges of working in an urban area that attracts pranksters and homeless people, requiring security 24 hours a day. Material delivery was during off-peak traffic hours on a just-in-time schedule and trades were scheduled to finish work before new deliveries were made.

The building now meets seismic requirements and the team found sustainable materials that maintained the historical integrity of the house.

Express completed the project with no accidents in 1,177 hours worked.

INDUSTRIAL CONSTRUCTION

Orion Building Auburn
Donovan Brothers Construction

Architect: Innova Architects
Engineer: Barghausen Consulting Engineers
Owner: Orion Industries
ABC member: Miles Sand & Gravel Co.

Donovan Brothers had to coordinate construction with officials at the adjacent airport.

PHOTO FROM DONOVAN BROTHERS CONSTRUCTION

When Orion Industries decided to move its Federal Way-based company to Auburn, it hired Donovan Brothers to build its new 93,000-square-foot office and manufacturing facility.

The new building is larger and better suited to the fast growing company, named one Boeing's "suppliers of the year" for 2012.

The six-acre site is next to Auburn Municipal Airport, requiring the team to coordinate with the airport throughout design and construction. The project also had to be reviewed and approved by the FAA, which influenced design and construction.

The building's west elevation could not exceed 28 feet while the east elevation could not exceed 21 feet. This limited overhead space made the mechanical system design a challenge: HVAC equipment needed to be in a specific area that would allow for the structure to hold the weight of the equipment while staying within the FAA height requirements.

Orion, a nonprofit organization, had a strict budget. Donovan value-engineered the project by modifying designs to significantly reduce costs.

Redesigning the entry curtain wall was one of the most cost-effective changes. Donovan combined a commonly used storefront system with structural steel to save money and retain the look of the building. A vestibule was designed into the glass entry to create a secure space and help balance temperatures in the large lobby.

Other money-saving items included changing stainless steel finishes to powder-coated aluminum and forgoing commonly used flooring materials in favor of stained concrete floors in the lobby, lunchroom and staircases.

Construction began in April 2013 and after clearing the site, the team began a mass excavation for a stormwater detention pond that would line the entire east side of the site. To maximize the building footprint, the slope on the left side of the pond was replaced with a retaining wall made of 1,092 locking Ultrablocks. The depth of the pond, as well as the need to work on the wall from both sides, required installation of three dewatering wells and operation of pumps 24/7 until the wall was complete.

A "notice to airmen" was required by the airport when pouring concrete, tilting panels, setting the roof structure or hoisting was performed inside the flight path. This notice kept construction crews and airport traffic control aware of possible conflicts and safety hazards.

All aerial booms were fitted with red and white checkered flags and blinking lights for airplane safety. All hoisting had to be minimized and accomplished as quickly as possible; the team was able to tilt and secure all 61 concrete panels in just under two-and-a-half days.

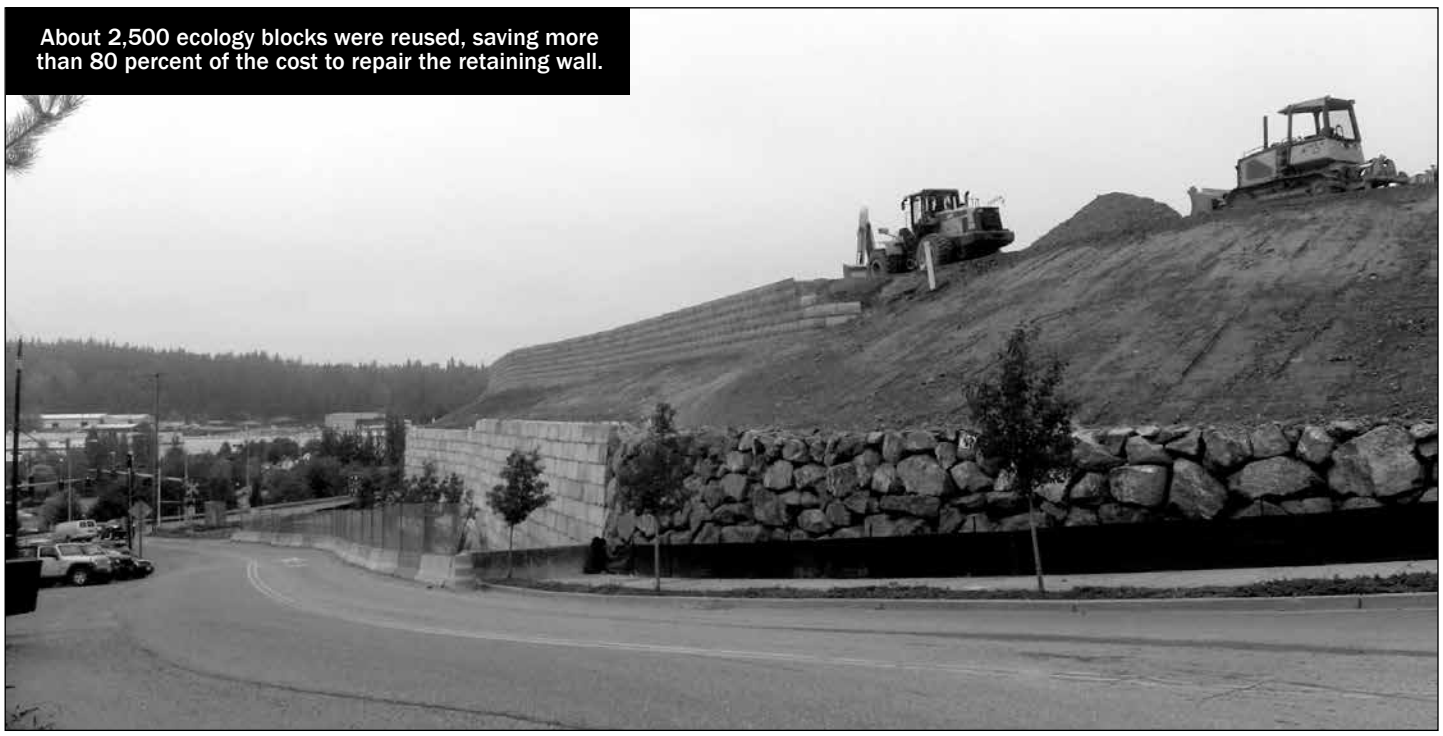
Donovan stayed within budget and schedule. There were no time-loss or medical incidents during the 9,928 hours worked.

AWARDS

INFRASTRUCTURE

Wellington Hills retaining wall
Donovan Brothers Construction

Engineer: Barghausen Consulting Engineers
Owner: OIBP Wellington Hills LLC



About 2,500 ecology blocks were reused, saving more than 80 percent of the cost to repair the retaining wall.

PHOTO FROM DONOVAN BROTHERS CONSTRUCTION

Working with Onward Investment, Donovan Brothers developed a cost-saving plan to rebuild a failing retaining wall.

Those cost savings enabled Onward Investment to be the winning bidder in bankruptcy court for the property. Then it took two years for the sale to get through the bankruptcy and allow Donovan to begin construction.

The previous owner had done all of the site work and built the 1,200-foot-long, 24-foot-high fabric-reinforced ecology block retaining wall that spanned the entire west side of the property. Due to several storm drainage problems, the site became saturated and the wall began to sag and tilt forward. The parking level above it settled and began to crack, and the northwest corner of one of the buildings had settled and was at risk for structural damage.

Crews worked almost seven days a week for six months to remove more than 120,000 cubic yards of weather-sensitive and wet material that was piled more than 160 feet high. Because of the weather sensitivity of the material and site, the new retaining wall needed to be completed before the winter rainy season.

The 2,500 existing ecology blocks were stockpiled and reused, saving more than 80 percent of the cost of repair that was anticipated by the bankruptcy court.

To solve the unconsolidated fill beneath the building, Donovan injected grout around the perimeter of the building. Working from the outside required only one footing inside the building to be treated, causing minimal disruption. The one day of inside work was done on a Saturday, making the fix cost-effective for the owner and avoiding disruption of the tenant's operation.

Once the wall work and grading were complete, Donovan rebuilt a detention pond and installed a new PVC liner.

The project included installation of drainage and fencing to the existing 26-foot-high rockery wall on the east side, as well as unclogging, videoing and repairing storm drainage piping.

The project was completed on time and on budget. In the 2,566 hours worked there were no time-loss or medical incidents.

MECHANICAL CONSTRUCTION

PLU swimming pool HVAC
Air Systems Engineering

Owner: Pacific Lutheran University
ABC members: Cornell Plumbing & Heating; Star Rentals

Interior ducts are made of fabric and suspended by stainless steel cables.

PHOTO FROM AIR SYSTEMS ENGINEERING

The Pacific Lutheran University swimming pool was closed for nine months after failed structural roof beams caused unsafe conditions. Once the roof beams were rebuilt, PLU discovered the root of the problem: high humidity caused by a failing 1965 HVAC system.

Air Systems Engineering did a design-build solution and the work was done in the summer of 2014.

The old system was costly to operate and some parts of it had failed, so the challenge was to fit new equipment in the existing space and develop a new distribution system.

Air Systems installed a 9,000-cubic-foot-per-minute DX dehumidification unit with heat recovery features to provide hot water to the pool, as well as custom features to insure the proper code-required amount of fresh air is delivered to the space. The unit was installed in the existing mechanical room with only inches of clearance.

The team also installed a new duct system connecting the mechanical room to the natatorium. A double-wall insulated duct with aluminum liner was made for the exterior application.

Inside the natatorium, crews installed a fabric duct hung by stainless steel cables. Outlets punched into the fabric were sized and spaced for proper air velocities, insuring that all glass surfaces around the perimeter are covered.

In addition, Air Systems replaced two locker room heating units and placed new duct work in the pool office. The team also sealed the relief openings used by the old displacement system to keep the new warm and dehumidified environment from leaking out.

Project challenges included a short construction schedule with long ordering lead times for many components, and working around other maintenance at the pool.

Interior pool ducting was finished in time for open swims and lessons in the summer. The rest was finished before fall classes began.

There were no injuries in 676.75 hours worked.

AWARDS

MULTIFAMILY CONSTRUCTION

Viva
Synergy Construction

Architect: BRCA
Engineer: Quantum Engineers
Owner: Alliance Residential
ABC members: Ahlers & Cressman; Construction Industry Training Council of Washington: Creative Surveillance Solutions; Dexter + Chaney; Merit Mechanical; Pacific One Construction; Propel Insurance; Safety Matters; Schmitz & Associates; Sound Glass Sales

Viva is a 105-unit apartment building on a 14,000-square-foot triangular lot at the intersection of Union and Madison streets in Seattle.

The six-story building has two levels of underground parking, street-level retail space and five levels of apartments above. The structure was constructed with three levels of post-tensioned concrete and five levels of wood framing. Its exterior cladding system includes a fluid-applied air and water barrier extending over the entire building surface, metal panel siding, and a storefront glazing system at the retail level.

Challenges started early during excavation, when a number of unknown underground structures were found and had to be removed, impacting the schedule and extending excavation into the wet winter months. The site had also been home to a gas station, leaving contaminated soil that needed to be removed and remediated.

To make up time, Synergy expedited the cast-in-place concrete schedule and increased wood framing crews that worked multiple shifts per day.

The site, in the heart of Capitol Hill and bordered on all three sides by busy arterials, had minimal space for staging, storage, or lay down during construction. Using the right of way meant renting it from the city at a premium price, so Synergy mitigated that cost by limiting the rented space to a single length of the project site and kept the remaining two sides open for pedestrian access.

The owner made significant design changes during the project, some that required long lead time deliveries. The team was able to present options to the owner to accommodate design changes to the lobby, modifying door and wall layouts, and adding access control and video monitoring.

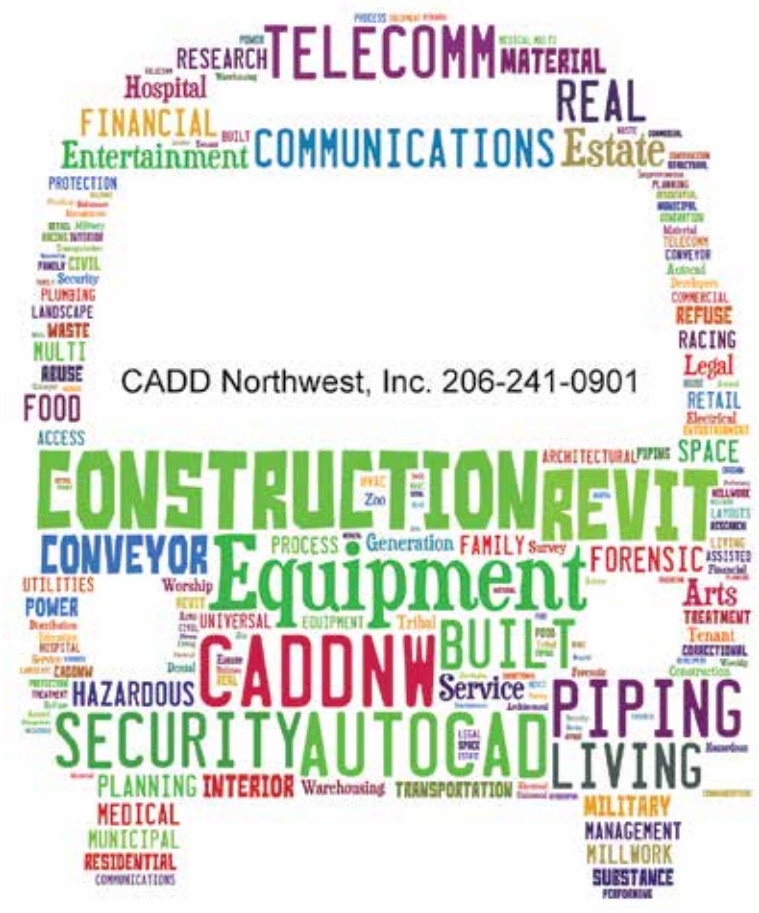
The project was completed on time and on budget, and there were no medical or time-loss incidents during 22,400 hours worked.

Viva was built on a tight Capitol Hill site.

PHOTO BY FRANCIS ZERA

Ductwork was painted to match the stained ceiling inside the 1920-vintage building.

PHOTO FROM SKI'S PAINTING



SPECIALTY CONTRACTING INTERIOR

Starbucks Reserve Roastery & Tasting Room
Ski's Painting

General contractor: JTM Construction
Architect: Graham Baba Architects
Owner: Starbucks
ABC member: Keithly Electric

The 1920 building that became the new Starbucks roastery previously housed a number of auto dealerships on Capitol Hill. Converting the building required contractors to take the interior of the building down to the bare structure, bringing it up to current code.

The project created Starbuck's fifth roasting plant that is coupled with a high-end retail venue.

Ski's Painting prepared the newly sandblasted original wood ceilings, walls, columns and concrete walls for finishes. Ski's then stained the old wood ceilings and columns, new teak windows plus teak stairs and doors.

The team applied a clear sealer to the concrete walls and painted all gypsum wallboard surfaces multiple times during the project due to color changes decided by the designers.

Ski's painted all the ductwork and associated cloud items at the ceiling — including the massive amounts of power and data conduit running to the equipment — with a color matching the stain of the reclaimed ceiling.

Due to multiple installations of various electrical, mechanical and plumbing items, the team had to re-mobilize almost daily throughout the four months to paint additional items installed out of sequence. This process was extremely challenging due to the staging areas, materials stocked on site and working around other trades.

One of the most labor-intensive portions of the job was in the section of the building where the parking was to be. It consisted of an old two-level wood loft that could accommodate 10 vehicles on each level. Ski's crews had to hand scrape all the walls and ceiling to remove old peeling paint from the surface. Because pressure washing or power equipment were not allowed, Ski's used a variety of hand scrapers and wide blades that the crew fashioned to be as productive as possible.

With all the complexity of this project, there were no medical or time-loss incidents in the 3,509 hours worked.

AWARDS

TENANT IMPROVEMENT

City North Apartments
Synergy Construction

Architect: Bumgardner
Owner: FSC Lake City Associates
ABC members: Ahlers & Cressman; Construction Industry Training Council of Washington; Creative Surveillance Solutions; Dexter + Chaney; Haggard Electrical Contractors; Pacific One Construction; Propel Insurance; Safety Matters; Schmitz & Associates

Planning and communication were keys to Synergy Construction completing the City North Apartments renovation in an occupied second floor tenant space one month ahead of schedule and on budget. That was despite the fact that the retail shops below and adjacent apartments were open during construction.

Before core drilling more than 90 holes in the existing 12-inch post-tension deck for electrical and plumbing, Synergy crews analyzed several X-ray images in conjunction with radar imagery. That process successfully avoided any incidents of drilling into existing tensioned cable. It also gave the team an additional week and enough cost savings to enable the client to switch from P-Lam to much more luxurious quartz finishes.

Drilling for nearly all holes took place over a Subway restaurant, fitness club, nail salon, office and parking garage.

Drilling was further complicated by the fact that some of the cores weighed up to 25 pounds and could not be pulled up, so they had to be dropped into the businesses below. This feat required careful coordination with the businesses to set up barricades and catch stations, as well as control the mud created in the process.

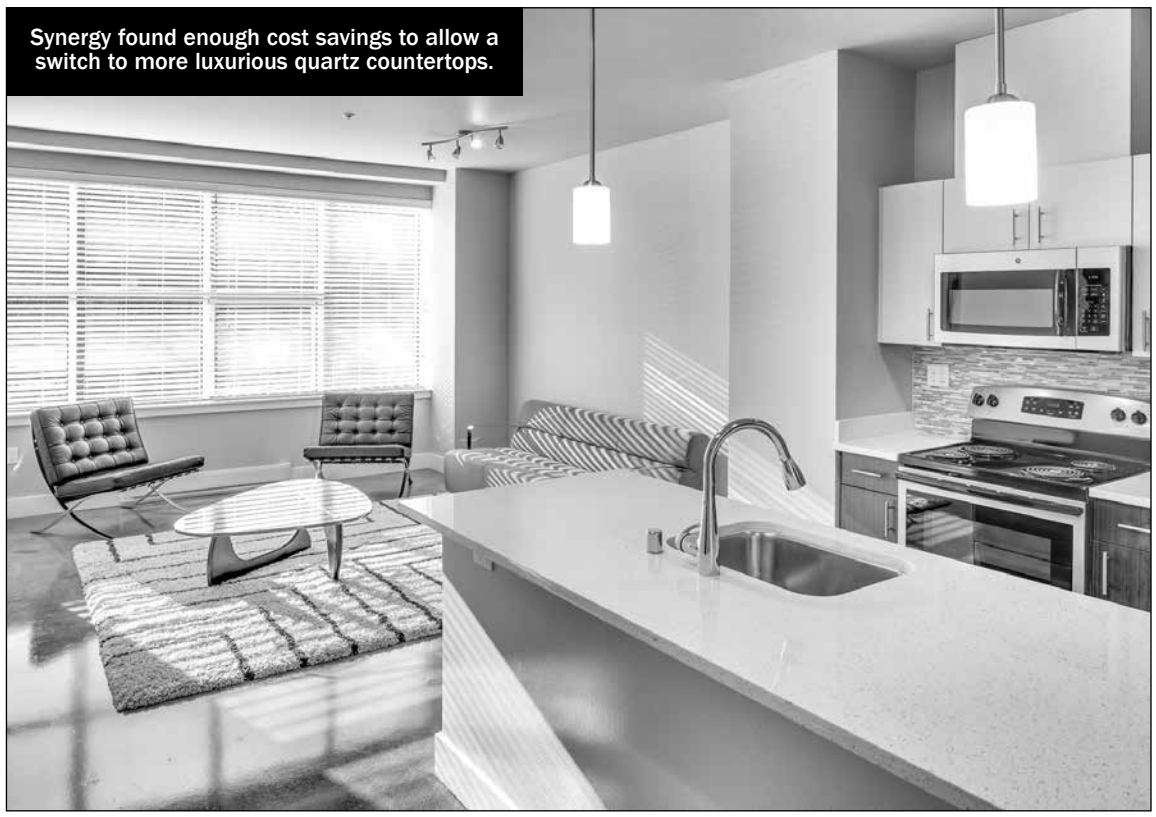
Synergy's on-site supervisor served as the single point of contact for those impacted by construction, answering questions and making certain that people were consulted about the work being done.

The worksite was on a busy street corner so both vehicular and pedestrian traffic had to be considered, prompting Synergy's team members to develop parking solutions for all tenants and an adjacent construction project.

The limited working space and accelerated schedule required all trades to work as one unit. Several safety and installation meetings were held each week so that all trades were oriented to the fluid working environment.

The project was completed on budget, per the original scope, and Synergy was instrumental in saving money for the owner in several areas.

There were no medical or time-loss incidents during the 2,655 hours worked.



Synergy found enough cost savings to allow a switch to more luxurious quartz countertops.

PHOTO BY FRANCIS ZERA

SURVEYS

HIGH COUNTRY CONTRACTORS & DEVELOPERS

Specialty: Multifamily, mixed-use and renovation
Management: Paul Lyman, president
Founded: 1994
Headquarters: Renton
2014 revenues: N/A
Projected 2015 revenues: N/A
Current project: Stencil, a 41-unit apartment building at 2407 E. Union St., Seattle

As president of High Country Contractors & Developers, Paul Lyman has found the sweet spot in the Seattle construction industry.

During the 2008 recession and subsequent few years, Lyman said High Country Contractors & Developers scaled back his company size and waited out the tough times.

"We had a couple jobs in our backlog that just carried us through," Lyman said. "But we had to get smarter about things and reduce our manpower."

Fast-forward to 2012, and Lyman said he responded to the rebounding economy by ramping up staff levels and expanding the scope of his company's work.

Lyman said his revenue growth between 2012 and 2013 was about 30 percent, and another 30 percent jump between 2013 and 2014. Overall, he said revenue has jumped about 80 percent from 2012 to 2015.

"There's just a lot of people building," Lyman said about the rebounding Seattle economy. "We do a lot of renovations of existing buildings and new construction."

High Country has profited from the continued build-out in what Lyman calls "secondary markets" with in-fill projects such as Seattle's Central District. High Country is building a 41-unit apartment building at 2407 E. Union St. called Stencil.

Lyman said interest is building in areas like the Central District because they are a "stone's throw away" from larger trendy areas and the fact that "everyone wants to live in the Seattle area."

In West Seattle, High Country completed Elan 41, which is a 78-unit project that included exterior cladding and interior renovation.

The 20-year-old company has toughed-out highs and lows in the local building industry by staying diversified, Lyman said.

"The types of projects we're doing have a lot higher revenue," he said, comparing the company's work today with its work in its early days.

Lyman said the company will continue to expand in the next few years, as it has a diversity of projects in the hopper, he said.

High Country Contractors & Developers is working on the 41-unit Stencil apartments in Seattle.

IMAGE BY JOHNSTON ARCHITECTS

SURVEYS

HOWARD S. WRIGHT

Specialty: Commercial, high-tech, health care, justice, multi-family housing, aviation
Management: Dan Peyovich, Washington division president
Founded: 1885
Local office: Seattle
2014 revenues: $3.9 billion company-wide
Projected 2015 revenues: $4.6 billion company-wide
Current projects: Harrison Medical Center expansion, Silverdale; King County Children and Family Justice Center, Seattle; 1007 Stewart St. office building, Seattle

Howard S. Wright's Dan Peyovich weighed in on the popularity of his office's wellness room and the company's acquisition by construction giant Balfour Beatty.

Q: Which market sector is most active for you right now?

A: We have a great mix of ground-up office, health care, interior projects and public work. This diverse portfolio gives our people more choices in which to learn and grow, and provides our clients with teams who leverage diverse experience for the best solutions.

Q: Is there a sector that's due to slow down or pick up?

A: We don't foresee drastic movement in any of these markets in the near term.

Q: Are there parts of your business you're looking to expand?

A: With our diversified portfolio, we are looking for gradual growth across all of our major sectors.

Q: How many employees do you have? Will that change over the next year or two?

A: About 100 salaried staff. We've grown around 10 percent over the past year and are projecting growth of around 10 percent again this year.

Q: What's new since being acquired by Balfour Beatty in 2011?

A: It's been fantastic for our people and our business. As a Balfour Beatty company, we are able to provide our people opportunities that didn't exist before. Whether it's a new role scaling innovation, opportunities in different locations, or enhanced local opportunities as a result of leveraging our national portfolio and clients, we continue to challenge and support our people in both their personal and professional development.

On the business side, we provide our clients with national services and expertise to suit their needs, and can leverage our entire company to bring the right experts to the right projects.

Q: What are the biggest challenges you're facing now?

A: Design and construction in Seattle are getting busy quickly. This limits subcontractor capacity for new projects and also manpower from both a staff and craft perspective.

The biggest challenge continues to be finding quality talent at all of these levels. We are spending significant time with universities and local trade organizations on recruiting people into construction, both in the field and office — still, we foresee a significant gap between need and talent available in the coming years.

Q: Your new Seattle headquarters has a wellness room where employees can unwind. Which gets more use, the pingpong table or the Xboxes?

A: It's a tie! Our people use the pingpong table constantly, but families use the Xboxes the most. On an afternoon you might find someone's children in playing Xbox when a spouse had to drop them off to go somewhere.

We love having the energy in the office, and easing our people's day everywhere we can. We've recently upgraded the wellness room to include yoga through CorePower Yoga, and boxing training with the addition of a heavy bag — it's a blast!

Howard S. Wright has started a 21-story office for Trammell Crow Co. in the Denny Triangle. The tower is in the center.

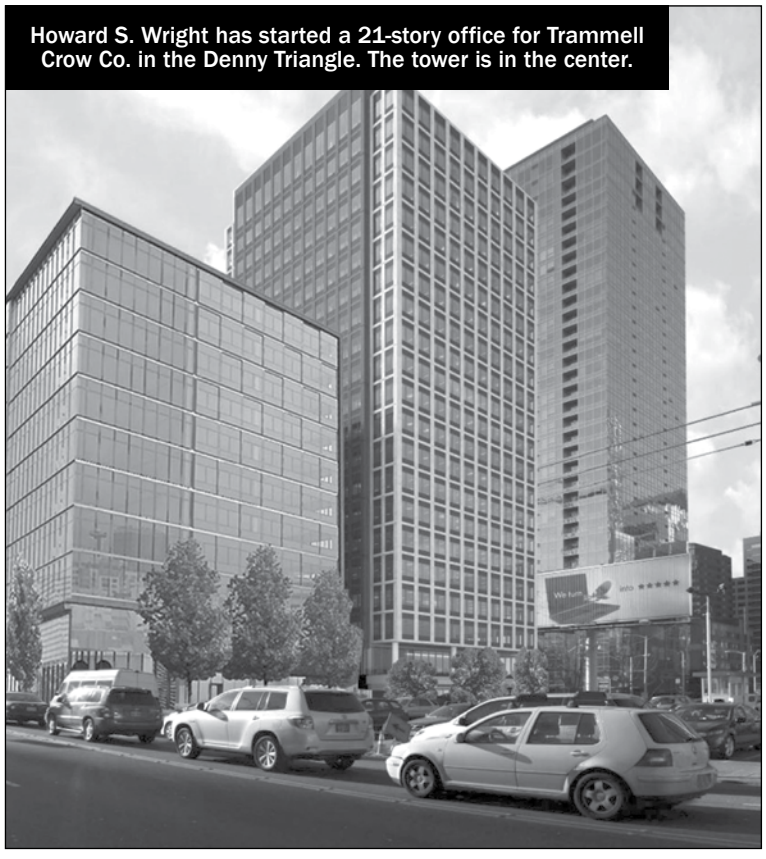


IMAGE FROM HOWARD S. WRIGHT

SURVEYS

SELLEN CONSTRUCTION

Specialty: General construction
Management: Bob McCleskey, CEO; Wilf Wainhouse, COO; Scott Redman, president
Founded: 1944
Headquarters: Seattle
2014 revenue: $456 million
Projected 2015 revenue: $700 million
Current projects: Amazon blocks 14 and 19; Pike Place Market WaterFront; Ninth and Lenora and Eighth and Virginia apartment towers; KEXP at Seattle Center; Eighth Avenue and Howell Street R.C. Hedreen Co. hotel; Madison Centre; Urban Union; Centre 425; Museum of Flight Covered Air Park; MultiCare Health System Covington (phase two); Second Avenue and Pike Street Tower; 4545 Roosevelt Way

Sellen is building the MarketFront project, which will connect the downtown core to the waterfront.

IMAGE COURTESY OF THE MILLER HULL PARTNERSHIP

Sellen Construction is building several projects that will transform Seattle. It is working in new neighborhoods like the Denny Triangle, where it is building two high-rise apartment buildings and Amazon.com's new headquarters. It is also working on improving signature Seattle spaces like the Pike Place Market and KEXP's headquarters.

Sellen President Scott Redman answered questions about the construction market. Answers are edited for style and length.

Q: What are the biggest trends and issues in the industry?

A: Over the next few years, the real estate and construction market will continue to improve and jobs will continue to grow.

The extensive growth, however, brings many challenges. Cost escalation will increase. Locally sourced materials will rise in price due to supply and demand. Tower cranes specifically are in short supply and will see a jump in pricing in 2015.

Subcontractor capacity and financial capability is a major concern. The industry can expect to see a 4 percent to 6 percent cost increase in subcontracted work this year.

Additionally, companies should expect labor shortages and reduced productivity. Specifically, labor availability will be tight for carpenters, laborers, cement masons, sheet metal workers and electricians.

Q: How will MarketFront affect downtown and the Pike Place Market?

A: The MarketFront project is an idea that has been talked about for the past 40 years. Finally, Seattle will be able to provide residents and visitors with a connection from the downtown core to the waterfront. This will not only lead to increased customers for downtown and waterfront businesses, but it will also provide Seattleites with a dynamic new public amenity.

The MarketFront will preserve and strengthen Pike Place Market's cultural heritage for generations to come. We love working on important projects like this that are truly building community.

Q: Which sectors are you excited about and which are you avoiding?

A: Sellen has always built a variety of project types. Right now, we're building a lot of office, high-rise residential and health care projects. One market that's especially dynamic and interesting to us is tenant improvements. We have great teams that excel at that type of work.

With so many companies expanding here or moving to Seattle, we're excited to partner with them and help build some really great new spaces. We don't avoid any specific project types. Instead, we focus on clients with whom we have great relationships and then make sure we have the right teams available to build almost anything they might need.

Q: How does your firm use green practices?

A: We have been committed to sustainable design and building practices since the mid-90s. We have dedicated in-house LEED and sustainability resources with expertise in preconstruction,

SELLEN — PAGE 24

SCHUCHART

Specialty: General construction
Management: George Schuchart, president; Bob Gregorini, vice president; Casey Schuchart, division manager
Founded: 1988
Headquarters: Seattle
2014 revenues: $60 million
Projected 2015 revenues: $80 million
Current projects: Eastside Prep School Science & Gym Building, Redmond; Chihuly Garden and Glass structure, Seattle; tenant improvements for Paladino & Co. in Seattle

George Schuchart, president of Schuchart, answered written questions from the DJC about his firm and trends and issues in the industry.

Q: What trends are you seeing?

A: Our industry is very active because of a seemingly insatiable appetite for high-quality assets in the Puget Sound marketplace. Leading indicators we track indicate demand will continue. These economic conditions create an environment where resources, such as labor, material and equipment, may more quickly reach capacity and lead to incremental project risk.

As a general contractor our primary project responsibility is managing risk. Our company monitors the marketplace closely and in doing so, we gain a deeper understanding of the current resources and the timing of the remaining capacity. We designate contingency plans to mitigate the impact of risk, such as changes in material availability, on a client's project.

Q: What kinds of sustainable practices are you using?

A: In constructing the Bullitt Center — the world's first living office building — our firm gained a deeper understanding of leading sustainability strategies and has applied those and other green strategies we developed to other projects.

Our approach to sustainability and how we do the work make up another box of tools we deploy to satisfy our clients' desires. We find creative ways to build while limiting impacts to the environment, such as by assisting in the selection of toxic-free products and materials.

We inform clients about the costs and benefits of sustainable strategies so they can decide how they want to proceed. And we believe project teams are inclined to make smart decisions if they understand those costs and benefits.

Q: How has your company changed over the last five years?

A: Our company changed more in the past five years than any time in its 26-year existence. We are thrilled with the talent we have been able to attract. It has meant going places we haven't been before compensation-wise, but we've learned that upping our game pays off handsomely.

Adding key positions within the organization also gave us a sophistication and discipline that we kick ourselves for not doing sooner.

One of our better decisions was committing to a full-time general superintendent. Prior to that, we placed the responsibility of safety and manpower onto one individual; now we have a full-time safety director and a full-time general superintendent. Our safety rating, or experience modification factor, determined by Labor & Industries is as low as it can be, and is largely owing to our stringent safety practices.

Also, formalizing a divisional structure within the company, and promoting key individuals to division management positions in the industrial, building and tenant improvement markets has given us the focus and accountability that was missing before.

Q: How does Seattle stack up to other markets?

A: I was a member of the downtown Seattle Rotary many years ago. I'll never forget the large turnout to hear the French minister of economic development talk about opportunities in his country. He was amazed how anxious U.S. companies were to expand operations into France saying, "You don't get it; the whole world wants get into the U.S."

The point being that the best opportunities for American companies are right here at home.

That is how I feel about our Seattle market. We have strayed from home a couple of times, but always came back with our tail between our legs. I think the contractor that understands this best is Sellen; to my knowledge they only have the Seattle office. I'll bet their local backlog is greater than the combined backlog of the next two largest contractors in town.

Q: Which of your services are in highest demand, and why?

A: Our company is experiencing relative balance across the three operating divisions — industrial, building and tenant improvement — which indicates that construction-related services are in demand from multiple sectors in our industry. Historically, our firm has seen strength in two of our divisions while the third lagged.

Our clients continue to want to engage our project teams early in the project delivery process; more and more of our clients understand the tremendous value added through early engagement. The demand for pre-construction services in the early engagement phases now seems to include three-dimensional modeling, sustainability analysis and real-time estimating; services which not too long ago seemed to be more the exception than the rule.

SURVEYS

MCKINSTRY

Specialty: Mechanical and electrical contracting; energy and facility services
Management: Brian Antonsen, business unit manager, Western Washington construction; Michael Frank, director of engineering; Kristina Sing, engineering manager
Founded: 1960
Headquarters: Seattle
2014 revenues: $573 million
Projected 2015 revenues: $575 million
Current projects: Mechanical, electrical and fire protection for Seattle Children's Hospital 1915 Terry building; designed system that uses waste heat from the Westin Exchange Building data center to heat offices across the street; design-build mechanical and plumbing for Stone 34 office building in Seattle

Heidi de Laubenfels, McKinstry vice president, external relations and communications, answered written questions from the DJC about McKinstry and trends and issues in the industry.

Q: What's the most exciting innovation you've recently come across?

A: We're particularly excited about the district energy project in the Denny Triangle area of Seattle. Capturing waste heat for re-use isn't new; in fact, McKinstry has a small version of the same system in our own data center. What is new is the cooperation between the energy supplier (the data center) and the user (the office building), which are different entities. Collaboration with the city of Seattle was also key in making this technical solution come to life.

McKinstry is working on several other energy recycling opportunities in Seattle. Dense, energy-intensive, mixed-use environments — such as cities — are fertile ground for recycling energy. We hope our district energy project catalyzes a shift in the way communities think about energy use and policy that shapes it.

Q: What hurdles does your industry face?

A: Despite recent efforts to move toward more integrated delivery approaches, the construction industry still remains siloed and inefficient. We believe that we can come together as an industry and do what's in the best interest of our clients, which will ultimately serve all of us.

We also see tremendous opportunity in making our built environment itself more efficient. Currently, energy performance contracting work revolves around the public sector, but we see opportunities for growth in the private commercial sector.

Q: What trends are you seeing?

A: Many of our clients are faced with significant backlogs of deferred maintenance and declining budgets, and are looking for guaranteed outcomes like predictable project schedules, firm budgets and manageable costs for future operations and maintenance of increasingly complex buildings.

McKinstry provided design-build mechanical and plumbing for Stone34, which is designed to the standards of Seattle's Deep Green Pilot Program.

PHOTO COURTESY OF MCKINSTRY

Thoughtful approaches to public-private partnership models are emerging. Project delivery methods that encourage integration and collaboration are gaining momentum, and new decision-making models that incorporate a total-cost-of-ownership mentality are providing an enhanced level of certainty for owners as they weigh investment decisions. We expect to see the market for efficiently designed, built, operated and optimized buildings continue to grow — through energy savings performance contracting, as well as design/build and other mechanisms.

Q: How has your company changed over the last five years?

A: Over the last five years, McKinstry's geographic diversity has continued to grow. One-third of our revenue now comes from outside the Pacific Northwest. We also successfully integrated our Service, Energy Management, and Facility Management lines of business, building a reputation as one of the leading data-center facility managers in the country.

Our major project construction team continued to look for new and innovative approaches to drive waste out of the construction process. Over the past five years, it has proven the value of off-site fabrication and the feasibility of integrating trades to build more efficiently, and has made a strong case for increased collaboration across the industry.

Q: How does Seattle stack up to other markets?

A: Seattle has a lot going for it. It's surrounded by an amazing natural landscape, its economy is booming, and good, living-wage jobs are plentiful. The area's strong sense of environmental stewardship also drives progressive practices.

Seattle sports a local government that's willing to try new things. For example, the city has one of the most stringent energy codes in the country, and it's on track to meet the state goal of improving energy efficiency 70 percent by 2030.

Other examples include public energy disclosure by all commercial buildings over a certain size; Seattle City Light's "Pay for Performance" pilot, where the utility pays out rebates for actual — rather than expected — energy saved; and the Deep Green Pilot Program, which helps bring high-performance buildings like Stone34 to market.

GLY CONSTRUCTION

Specialty: Commercial office, health care, technology, life science, interiors and special projects, senior living, education
Management: Jim Karambelas, president and CEO
Founded: 1967
Headquarters: Bellevue
2014 revenues: $433 million
Projected 2015 revenues: $620 million
Current projects: Lincoln Square expansion, Bellevue; Bothell City Hall; 500 Fairview life-sciences research building, Seattle

Jim Karambelas of GLY responded to questions about what the future holds for the company.

Q: What's your business outlook for the next few years?

A: GLY's revenue stream will likely peak in 2015 at approximately $620 million, which we believe coincides with the peak of the current local economic growth cycle. We're starting to see our backlog softening late 2016 into 2017. What's not clear yet is the steepness of the curve of a potential softening economic cycle in 2017 and beyond.

Q: Is there anything clients are asking for now that they weren't a decade ago?

A: The conversation is similar but different. In the past it was more about faster, better and cheaper. Today we're being asked to drive more efficiency across all aspects of project delivery in terms of time, cost and quality.

This is a different conversation, requiring the optimization of technology, innovation, ingenuity, collaboration and teamwork. At GLY we positioned our firm to respond ahead of the curve, anticipating where the industry was headed — we're hiring top-of-class engineers, architects, construction managers and tradespeople who have tremendous technical aptitude, a desire to be hands-on builders, use technology for the purpose of creating efficiency and accuracy, and are team players who put our clients' and design partners' interests first.

Q: What's something unusual or challenging you've worked on?

A: GLY Lincoln Square expansion team's successful completion of two 13,500-cubic-yard continuous mat-foundation pours within 30 days of one another.

Each required a synchronized effort consisting of three 12-hour shifts, over 200 GLY and subcontractor staff, seven concrete pumps, five batch plants and 21 hours of continuous concrete pouring. We achieved this without injury or disruption to the overall operation. We're very proud of our (Lincoln Square expansion) team, who coordinated these efforts flawlessly.

Q: How much of your work involves public or institutional projects?

A: At the moment about 7 percent, although we envision moving more into the public sector as public procurement methodologies change, the relationship with the owner becomes more like the private sector and the selection process is more qualitative than quantitative.

Design-build delivery is likely to be undertaken more frequently in the public sector, and GLY is well-suited and skilled for this type of work.

Q: GLY is working on a number of large projects. What's the bigger challenge: managing or staffing them?

A: Staffing is not as much of an issue because we carefully and conservatively manage the volume of our work commitment — we do not take on more than we can reasonably staff.

The more significant issue is over-commitment within the subcontractor community. Selecting subcontractors early in the process, ensuring they have capacity and appropriate financial strength, thoroughly researching the delivery chain, in-depth questioning, and managing every step of the procurement process very carefully is the only way to ensure timely and efficient project delivery for our clients.

Q: Name a construction industry trend you find heartening, and one you find worrisome.

A: The transformation of project delivery is very exciting. New technologies are allowing us to work ever more collaboratively with our design partners. We're developing highly resolved field drawings for construction early in the design process using 3-D drawing technology, and lean planning techniques are allowing us to become more integral to the design coordination process — to build more efficiently and creatively. Working in this manner, the entire team is more focused on construction details, being great builders, accomplishing assembly line-like planning and delivery with time less focused on needless administrative and change order processes.

Forecasting future economic cycles across all industries will continue to be a complex and challenging issue to tackle. As we plan for the future, having a diversified resume will be increasingly important to offsetting recessionary periods while taking advantage of growth periods specific to different industries' economic cycles.

SURVEYS

ALSTON CONSTRUCTION

Specialty: General contracting, construction management and design-build of industrial, commercial, healthcare, education, retail and government projects
Management: Kevin Stilwell, vice president and general manager of Seattle office
Founded: 1986
Headquarters: Sacramento, California, with a Seattle office
2014 revenues: N/A
Projected 2015: revenues: N/A
Current projects: Seattle office opened in March

The DJC asked Kevin Stilwell about Alston's move into the Seattle market.

Q: How has the move been going?
A: We formally opened an office in Seattle in March. However, we have been monitoring the market and keeping in touch with some of our clients and business partners with a presence in Seattle for some time. We are building our team with local construction veterans who know the market and many of the critical players. It is still early in the process, but we have already made key hires and are tracking promising leads. We feel we have gotten off to a great start in Seattle.

Q: What was your company's focus prior to entering Seattle?
A: We perform general contracting, construction management and design-build for industrial, commercial, healthcare, education, retail and government markets. In Seattle, our initial focus is industrial projects, as this is Alston's core strength.

Through our relationships with clients and consultants, our focus inevitably broadens into commercial office, retail tenant improvements and other segments.

Alston has completed more than $2.5 billion in industrial/manufacturing projects encompassing more than 30 states and totaling more than 70 million square feet. This includes more than 600 completed projects, with contracts from $250,000 to $100 million.

Q: What are some of the challenges in the Seattle market?
A: Being still relatively new to the Seattle market, we haven't yet experienced any specific challenges that we inevitably will face. However, like other competitive, mature markets that we work in, we will develop a broad network of trusted business partners who share our core values of quality, safety and service.

Q: Compared with 2011, how much has your business grown?
A: Alston has achieved substantial revenue growth in the past year to 18 months. Certainly market conditions have played a role in the growth of many businesses over the past few years, including Alston. We derive roughly 80 percent of our work from repeat clients.

Q: How does the next year look in terms of business growth?
A: We are very optimistic that with the talent of our local staff, combined with our organizational core values, our integration and strength in the market will quickly be established, and our growth will be steady and in accordance with our business goals.

SELLEN

CONTINUED FROM PAGE 22

new construction and existing buildings. We are also focusing on re-certifying our own office space and greening up our operations to ensure Sellen continues to walk the talk. Responsibility is one of our core values, and sustainability is a big piece of that.

Q: How are rising construction costs affecting Sellen?
A: The construction industry is beginning to face shortages of materials and skilled labor, putting further pressure on the cost of both.

Fortunately, a little industriousness and proactive planning can go a long way in reducing the risks. We strive to stay current with local and global market pricing to provide accurate estimates. Our project teams are using tight job controls and early procurement to secure materials that are in high demand, such as tower cranes.

With this volatility, awarding subcontracts requires an extra level of due diligence to check subcontractor financial capacity. Additionally, the abundance of work allows subcontractors to be selective in which projects they pursue — a luxury they haven't had since 2008.

Early subcontractor commitments are essential to ensure subcontractor capacity, as are enhanced subcontractor risk mitigation strategies such as subcontractor default insurance. Staying proactive on all fronts is crucial to eliminating surprises.