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The survey asked, “What changes did your company make in 2020 due to COVID-19?” One member responded, “Wrote articles for the SAIA magazine.” Yes! To those who have provided articles – thank you so much!

Don’t be bashful.
Informatve articles are always needed – and you don’t have to be a professional writer to provide one. Jim Boudreau, co-chair of the SAIA Suspended Scaffold Council, said it best during Committee Week: “If you’re not a writer, don’t be bashful. We’ll take your information; the magazine staff is happy to put it in the correct format and send it back to you for your review.”

Please don’t hesitate to submit article ideas – a few sentences, a slide presentation, case studies, or even bulleted points – that might make a good article. We’ll work with you on an article and include a short profile of your company and yourself. Also, please don’t hesitate to share your feedback on the magazine content. We will listen!

Committee Week Recap
Speaking of Committee Week, we did not want to delay this issue by including a recap of the week, which occurred as we were getting ready to go to press. Instead, a digital recap with a summary of the work done at the council meetings should be emailed by the end of May. It will be worth the wait!

I look forward to hearing from you! Stay safe.
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Our first-ever “hybrid” Committee Week went well for both in-person and virtual attendees. The Scaffold & Access Industry Association (SAIA) Board, Councils, and Committees were able to make the most of their time together, and I want to thank everyone who participated.

As the world slowly returns to “normal,” the World of Concrete (WOC) will once again take place, June 8-10, at Las Vegas. The SAIA will have an in-person presence as an exhibitor; you will be able to find our booth in the North Hall.

Our efforts to improve training on every front continue. The updating of the Canadian Journey Person Scaffold training program has been completed, and the SAIA is looking for more trainers to join us in teaching this program. Please contact Daphne Reitz, the SAIA Outreach Training Manager, for more information. Many thanks to all the volunteers who worked on this update!

In line with improving the Journey Person training program, the SAIA recently established a new council, the Canadian Council, led by Chair Rick McKinlay, P.M.P., Business Development/Regional Sales Manager, Tractel, and Co-Chair Christopher Jones, General Manager, Canada Scaffold Supply, Co., Ltd. This council will focus on providing resources for the Canadian provinces, and we are very grateful to Rick and Christopher for leading this effort. I join them in encouraging SAIA Canadian members to participate in this council. You can read more about the council’s purpose and goals in this issue.

The next opportunity for us all to come together as an association is the SAIA Annual Convention & Exposition, August 29-September 2 at the Hilton Cleveland Downtown. This annual event is the largest gathering of scaffold and access industry professionals in the world. Please mark your calendar and plan to join us – registration is open! The four days will include training courses, educational sessions, networking receptions, social events, and exhibits.

I look forward to seeing the advances in safety and training that will take place during this year as we work together to promote best practices in the industry. I hope to see you all in Cleveland. Please don’t hesitate to contact me with any questions or feedback.

Stay safe,

Michael Paladino
President
Eagle Scaffolding Services, Inc.

Tracy Dutting-Kane, P.E.
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Can scaffold equipment be shoring? Yes. Can shoring equipment be scaffolding? Yes. But how does the equipment know the difference? It doesn’t, but you do, or, if you own any scaffolding, you should know.

Scaffold frames are commonly recognized in the industry as a device that provides support for an elevated platform so workers can work at heights. Stacked and braced, the resulting structure can reach great heights and support multiple platforms. But did you know that the same frames and structure can be used to support loads such as wet concrete?

Shoring frames, on the other hand, are typically recognized as being much stronger than scaffold frames, which is normally true, and therefore must be used to support wet concrete or other loads. Shoring frames have larger diameter legs and therefore can carry more load than a scaffold frame, all else being equal. However, in reality, it doesn’t matter what you use to support either workers or concrete or anything else. You can use what manufacturers call scaffold frames to support concrete, or a building, and you can use what manufacturers call shoring frames to support an elevated work platform. Isn’t that amazing?

What does this mean to you? It means nothing if you don’t want to expand your horizons or expand the use of that equipment inventory setting in your yard, unused. Simply stated, if you have an inventory of what the manufacturer calls a scaffold frame, you also have an inventory of shoring equipment. And the opposite is also true. Although the manufacturer may call it a shoring frame, it may be scaffolding.

The difference is in the use of the equipment. If the frames are being used to support a temporary elevated platform used for supporting employees or materials or both, then it is a scaffold. On the other hand, if the frames are being used to temporarily support a load, such as wet concrete, then it is shoring. Frankly, the frame does not know if it is supporting bodies or concrete. In other words, if the platform is providing elevated access for workers, it is scaffolding, and if the platform is supporting a load other than workers and their materials, then it is shoring.

The significance of all this is that you must know what the equipment is being used for so you can apply the correct engineering principles, safety factors, codes, standards, and regulations. For example, if the frame you are climbing is used to support a work platform, then it is permissible to climb the frame provided the frame meets the requirements as an access frame. Climbing a frame used as shoring is a whole other matter. The federal Occupational Safety and Health Administration (OSHA) has opined that a shoring frame is a “walking/working surface,” and therefore personal fall protection is required when climbing the frame. If you are confused, imagine the compliance officer who doesn’t know there is a difference. To confuse the situation completely, the

If the platform is providing elevated access for workers, it is scaffolding, and if the platform is supporting a load other than workers and their materials, then it is shoring. You must know what the equipment is being used for so you can apply the correct engineering principles, safety factors, codes, standards, and regulations.
equipment can also be called falsework, which is normally what the shoring is called when it is used in bridge construction.

Shoring can also be used to support loads other than wet concrete. Shoring can be used to temporarily support a building, for example, while a column is moved or replaced. The shoring can be scaffold frames, as you may know them, or shoring frames, as you may know them, depending on the loads involved, the available equipment, and jobsite conditions.

When comparing a scaffold frame to a shoring frame, the engineering is not mysterious. The strength of the frame is based on several parameters, including the type of material, the dimensions of the frame leg, the shape of the frame leg, and the unbraced length. A simple comparison can be made when it is assumed that all those factors are the same except for the dimensions of the leg, that is, the diameter. The bigger the diameter, the more load the leg can carry. And since a scaffold frame leg is commonly 1.625 inches (41 millimeters) or thereabouts, and one type of shoring frame leg is 2.375 inches (60 millimeters) or thereabouts, which is bigger, the shoring frame can carry more load. And what good is all this if I don’t give you some values to illustrate my point? A scaffold frame leg will support about 8,000 pounds (3630 kilograms) when it collapses. Here is the disclaimer: These values are for comparison use only. Do not use them for design, or for that matter, anything else, since the values will change depending on the design of the frame, the dimensional parameters, manufacturing quality, the honesty of the manufacturer, the color of the paint, configuration of the frame, and a bunch of other stuff. Actually, the paint color has nothing to do with it. I just threw that in to make the article longer.

Here is an interesting thought: If it is true that scaffolding can be shoring and shoring can be scaffolding, and both can be falsework, shouldn’t the Scaffold & Access Industry Association (SAIA) be called the Falsework Association? Perhaps not. Speaking of the SAIA, the association has a long and enduring relationship with the shoring industry. The Shoring Council was active at least 40 years ago and is active today, promoting the safe use of shoring equipment. If you want to learn more, share your expertise, and be involved, attend the “SSAIA” Shoring Council meetings. Yeah, I changed the name of the association, so it recognizes the hard-working members of the Shoring Council.

About the Author
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ACHIEVING CONCRETE DREAMS

THE GORDIE HOWE INTERNATIONAL BRIDGE PROJECT COMBINES CREATIVITY, ENGINEERING, AND SAFETY.

BY JERRY DOLLY
able-stayed bridges — where cables run from pylons to support the bridge deck — have become the go-to design for North American bridges. Their contemporary, minimalist appearance keeps the space more visually open and welcoming. They offer all the advantages of a suspension bridge but require less cable and are faster to build.

Modern architecture, however, presents new technical challenges, as is the case with the Gordie Howe International Bridge being erected between Detroit and Windsor, Ontario. The six-lane cable-stayed bridge will have a clear span of 835 meters (2,739 feet), the longest of any cable-stayed bridge in North America and is anchored at each end by 220-meter-tall (722-foot-tall) A-frame pylons. And therein lies the challenge.

“The pylon base has a unique geometry. It required formwork that could be ‘jumped’ and reused and three different configurations,” said Anthony DeFrancesco, a sales representative for Aluma Systems. “Each was a separate pour, and each pour required formwork flexibility.”

In addition, the construction elevator masts had to match the bridge pylon geometry, which includes a lower inclined structure, a curved portion, and then a vertical ascent. “We had to engineer a specialized elevator cabin with an automatic leveling mechanism to compensate for the changing mast angle,” said Alex Di Domenico, managing director of the Major Projects Group for BrandSafway. “This would ensure that the floor of the cabin remained horizontal no matter where it was on the inclined or curved sections.”

Team Effort

Several BrandSafway companies are working together to deliver comprehensive access, scaffolding, and forming solutions for the construction of the bridge. Aluma Systems by BrandSafway is providing formwork, falsework, stair towers, and access platforms
to support the concrete pours for the main pylon footings. This includes custom, preassembled formwork panels for the footings, caisson collars, crane foundations, pylon starters, and a base platform for access, storage, and temporary elevators surrounding each pylon.

AlumaSafway, another BrandSafway company, is providing access stairs as well as an elevator on the Canada bridge site in Windsor. BrandSafway is supplying the elevator on the United States bridge site in Detroit. The two elevators will provide access for on-site personnel along the height of the main pylons and to the jump form systems during construction.

**Solid Footing**

The pylon footings have an elongated octagonal shape with a total length of 20.8 meters (68.2 feet) and width of 18 meters (59 feet). The footing also rises in three sections with distinct geometries, a 3-meter (9.8 feet) straight wall, a 2-meter (6.6 feet) angled wall and then a final leg that angles as it transitions into the pylon leg.

Each section required its own separate pour. The first pour used 960 cubic meters (1,256 cubic yards) of concrete, or about 120 truckloads. Placing the concrete in stages provided thermal control as the concrete cured and allowed for the forms to be repositioned.

“Our global engineering team in Toronto combined a number of standard systems to create a hybrid solution to match the dynamic shape of the footing,” said DeFrancesco. The base of the system was Aluma Gang formwork, or an assembly of panels prefabricated from lightweight aluminum beams, steel walers, adjustable clamps, and high density overlay (HDO) plywood. The system assembled quickly, was easy to handle, and could be assembled in any length, height, or configuration required.

DeFrancesco noted that “The waler used has a number of holes along the length of the beam, allowing Aluma to effectively achieve the shape and construction method the client had requested.”

This flexibility was important, as the first was broken into two sections to be reused into the third pour, while the second pours each used three sections of panels to allow the client the ability to monitor and coordinate each pour sequence. With the unique shape of the footing, erecting the formwork in sections enabled better access for vibration.

“As the vibrating was taking place in one section, another panel was moved into place. The pour proceeded like clockwork for over 16 hours,” said DeFrancesco. “It required a lot of coordination between all the teams involved on site, as the process ensured that there was no honeycombing or breaks in the concrete. It cured out properly and gave a clean, seamless finish that looks like a single pour.”

The flexibility of the hybrid formwork was critical for managing the loads during the third pour. At this stage, the formwork for the first pour was completely removed. However, using a combination of vertical walers and diagonal braces, the forms for the third pour transferred the loads back to the formwork for the second pour.

While some of the connection nodes and smaller components were custom fabricated parts, most of the formwork used standard rental components.

**Safety as the Base**

Aluma Systems was also contracted to provide a scaffold-based access platform around the circumference of the footings, as well as four stair towers for each footing. To increase the load rating from the standard 25 pounds per square foot to 100 pounds per square foot, this scaffold featured aluminum strongbacks beneath double-deck planking and heavy-duty posts.

“The client’s primary objective was to ensure the safety of everyone on site. Stair towers were used instead of ladders whenever possible to ensure safer access. In addition, all designs were checked against installation by employees and engineers of both firms to ensure exact compliance of parts and dimensions,” said Robert Fallowfield, director of business development for Aluma Systems. “It was a pleasure to work with companies who share our commitment to safety as the first priority.”

The Windsor-Detroit Bridge Authority (WDBA, a Canadian Crown
corporation) is responsible for the delivery of the Gordie Howe International Bridge, through a public-private partnership. Its private-sector partner, Bridging North America, began working on the project in 2018.

The pours for all four footing platforms of the bridge began in August 2020 and were completed in November. Deliveries for the hoists began in May, and the hoists will remain in use until August 2023.

Rise Above

The A-frame pylons presented challenges for the engineers designing the elevator solution, because the pylons tilt at a 10-degree angle as they rise to an approximate height of 140 meters (459 feet). The midsection curves for about 25 meters (82 feet) before the final 50-meter (164-feet) rise straight up. A conventional hoist mast that maintains a constant angle would require extremely long ties and varying distances between the elevator cab and the formwork. The cab would remain fixed but tilted to maintain a reasonably level surface.

“With the solution developed by the engineers, the cab follows the pylon and remains at a fixed distance of about 3.5 meters (11.5 feet) from the formwork system. As a result, we eliminated the need for adjustments every time we jump the form,” said Di Domenico. “The cab’s automatic leveling mechanism utilizes hydraulics and an inclinometer to pivot the angle of the cab so the floor remains level as the elevator progresses along the pylon.”

The elevator can support a load of 2,721 kilograms (nearly 3 tons). The cab interior measures about 1.5 by 2 by 3 meters (4.9 by 6.6 by 9.8 feet) and travels at a speed of 60 meters per minute (197 feet per minute) using a rack and pinion system. The roof of the cab features an integrated sliding cantilevered work platform on each side. They travel in and out to span the gap between the cab and the pylon, providing workers with access to install the mast ties and manage the forms.

The mast tower sections will be hoisted using a tower crane, but the mast ties and formwork will be done from the elevator. Further, the mast hoist/elevator system will be used for dismantling, because the tower crane may not be available during this time and it’s the safer, faster, and lower-cost option.

“The Gordie Howe International Bridge gave us the opportunity to work with some great partners to deliver safe and innovative solutions,” said Di Domenico.

About the Author

Jerry Dolly is General Manager of the Infrastructure Services Group at BrandSafway. Contact him at (518) 424-3054, ext. 2059.
PLANK SOLUTION FOR RISING COSTS

With the rising cost of wood, composite planking may be a solution to help projects stay profitable.

BY MATT MORGAN
With the housing market continuing to increase, wood product pricing is also increasing across all industries and markets. Areas of construction are seeing significant wood pricing increases, some doubling or more. For example, in some places, consumers were paying for plywood at $35 per sheet but are now paying over $50 per sheet. Customers of Scaffold & Access Industry Association (SAIA) members are experiencing this, and SAIA members themselves are seeing this cost increase with their scaffold grade planking.

The cost increase is causing a lot of stress to contractors, as wood products are used daily for typical scaffold exterior applications as well as for interior auditorium “dance floor” decks. Wood and laminated veneer lumber (LVL) plank already present some inherent challenges, and with the increasing pricing, a growing member base is looking for alternatives to traditional practices. For the past few years now, many have turned to steel and aluminum hook-on for their straight run applications but continue to utilize wood for masonry applications and those irregular shapes.

Composite Planking
Composite planking offers another alternative to wood planking. This planking is a pultruded product that has a shape derived from a combination of glass fibers and mesh reinforcement that is soaked in ultraviolet- and fire-retardant resins. These components have been used for years in permanent installations for offshore, chemical plants, and non-corrosive atmospheres, as they are non-conductive and non-corrosive.

Composite planking design dimensions, 1.5 inches by 9.5 inches, allow it to be used alongside many existing wood and LVL products. Customers do not have to discard their existing inventory; the composite planking is used the same way as wood plank products.

By utilizing the combination of glass fibers and mesh reinforcement, the plank has a higher rating than typical wood products. Composite planking has ratings of medium duty, 50 pounds per square foot (psf) at 10-foot spans or less, and heavy duty, 75 psf at 7-foot spans or less. At the published loads and spans, it has a safety factor of 4 to 1, a deflection that is less than length of span/60.
Composite allows for consistent deflection from plank to plank that provides a safer work deck.

per OSHA/ANSI standards. The plank has been third-party tested and certified to exceed Canadian standards for heavy duty rating and deflection less than length of span/80 for 7-foot spans.

There are no new processes for crews to learn with composite plank. They can nail and screw to it like wood. As with wood plank, crews should not drop plank, drive over it, or create saw cuts. Also like wood, the plank may need to be tied down to avoid movement. Composite is designed so that companies with large wood inventories can use it right alongside their current products. When using wood and composite on the same job, however, it is recommended that each bay is one or the other. This allows for consistency in deflection as older wood products tend to deflect differently than one another, where composite plank deflects consistently, no matter the age of the product.

Composite vs Wood/LVL Plank Manufacturing
The process of manufacturing traditional plank begins with locating Douglas fir or southern yellow pine in the forest. The timber is then cut down, transported to the mill, cut to size, graded, the corners chamfered, and the ends pinned and branded; at this point the product is ready for delivery to the distributor or end-user.

The process for manufacturing fiberglass plank is quite different. The three materials utilized in the pultrusion process for composite plank include unidirectional glass roving that runs the length of the profile; fiberglass mat, which is multidirectional reinforcement; and resin, which can be polyester or vinyl ester.

First, the glass is wet-out with the liquid resin and pulled into the heated die, then curing takes place. A catalyst is added and activated at about 200 F, and as the wet-out reinforcement passes through the heated die, the product changes from a liquid to a solid profile with all the reinforcement laminated within. While all of this is happening to the product exiting the die, it is pulled and then cut to the desired length on the line. A secondary process is used to apply a non-skid coating on one side for exterior scaffold applications. This coating is not required for interior or clean room applications.

While on the production line, the computer will be notified if the current run is not meeting the required specifications and a random product is chose for load testing. Testing is performed by the ISO 9001:2008 manufacturer for each production run to certify that the product meets or exceeds OSHA and ANSI standards.

Inspection, Maintenance, Storage
Protecting wood scaffold planks during storage requires maintaining proper air circulation around the planks. Proper stacking, as well as proper use and placement of dunnage and lath stickers, aids good air flow and keeps wood planks straight. Further considerations for wood plank storage include wax sealers, banding, insect and vegetation control, and inventory rotation.

The process to inspect, maintain, and store composite fiberglass plank is inherently simpler. The product needs to be inspected and, when it comes in and out of the yard, bundled neatly in similar sizes. Because the plank is waterproof, fire-resistant, UVA/B rays-resistant, and insect-proof, it can be stored inside or outside.

A Member Solution
Gene Morgan, CEO of Dallas-Fort Worth’s Mdm Scaffolding Services, Inc. (Mdm), and his wife Carol, president of Mdm, have been in business for 28 years, and are longtime members of the Scaffold & Access Industry Association (SAIA). For more than 10 years they have been working to provide the industry with an alternative to traditional wood plank products.

Carol Morgan explains Mdm’s main reason for the search for a new alternative: “We were seeking an alternative to using wood plank, which has such challenges as critical inspection time by yard and field crews, increased weight from moisture content and added costs for special storage needed to extend the life of our planks. Additionally, we wanted to grow our inventory and minimize the replacement of planks every year.”

Initially, the Mdm team had difficulty finding a consistent alternative to traditional solid sawn and LVL options. After teaming up with an ISO 9001-2008 manufacturer, the company eventually landed on a composite product that exceeds Occupational Safety and Health Administration (OSHA) and American National Standards Institute (ANSI) standards. Ten years ago, Mdm launched NexGenPlank.

Carol Morgan said, “Since Mdm first switched over to composite there has been many positive modifications to the plank, thanks to our core customer base and our crews who used it internally. We significantly reduced the purchase of wood planks around the same time we came out with the composite plank and since then have switched primarily to all composite scaffold planking. In that time, we have grown our inventory and lost less than 4% over 10 years, which usually is from loss or abuse.”
The plank needs to be stacked in a designated area using proper dunnage to create easier stacking and handling with a forklift. The dunnage needs to be spaced correctly and on a mid-span at longer lengths to eliminate bowing.

**Selling Point for Higher Initial Costs**

1. **Safety:** Fiberglass planks feature more consistent deflection from board to board allowing crews to walk normally, which reduces the risk of tripping and falling. Additionally, the lighter, consistent weigh of each plank makes it easier and safer to handle during installation and dismantle.

2. **Productivity:** The plank is 25% lighter than wood/LVL plank, which results in increased productivity, particularly on high scaffolds, and reduces the dead load on scaffold legs. Inspection is also reduced to answering three questions:
   a. Does the plank have any structural damage – saw kerfs, bowing, or cracking?
   b. Does the plank exceed deflection standard when tested?
   c. Has there been any abuse to the plank (dropped, forklift cuts, driven over)?
   d. If damaged, cut to the next useable length or remove from services.

3. **Durability:** Composite plank has a longer product life and fire-retardant resins, self-extinguishes, is chemical resistant, has a non-slip coating, and is stronger the colder the temperature, yet meets strength and stiffness requirement at higher service temperatures.

4. **Storage:** Composite plank can be stored outside, and wood stocking strips are not required. Additionally, moisture content, insect damage, dry rot, etc. are not an issue.

5. **Depreciation:** Composite plank is a structural member. Pultruded shapes include wide flange, tubular, channel, etc., shapes for permanent installations. A five-year shape and corrosion warranty is included with purchase. Most companies treat wood scaffold plank as a consumable.

6. **Brand Identification:** Composite planks can often match its color to a company’s brand color.

7. **Sustainable:** This may be considered a LEED product considering it does not deplete the forests, and 25-30% more of it can be loaded on a truck, reducing fuel consumption.

**The Future of Scaffold Plank**

Composite planking offers businesses a new safe, lighter, and stronger plank product that is designed to increase productivity, is suitable for a variety of applications in commercial and industrial scaffolding access applications, and allows end users to continually add to their inventory versus constantly replacing.

**About the Author**

Matt Morgan is Vice President of Mdm Scaffolding, Inc. Contact him at mmorgan@mdmscaffolding.com or (817) 329-4994.
WHEN A GIRDER FAILS

AN INNOVATIVE SHORING SOLUTION SAVES THE DAY – IN ONLY FOUR DAYS.

BY LUKE GRIFFIS, P.E., S.E.
What do you do when a large glulam roof girder fails at your warehouse and you need to repair it? Generally, you could install a temporary shoring tower under the girder, hydraulically jack the girder back into place, and complete the repairs. But what if there is an extremely sensitive clean room beneath the girder that cannot be disturbed and therefore there is no space to install a typical shoring tower? When this situation arose recently at a warehouse in Sacramento, California, the owner reached out to Pinnacle Emergency Management to oversee an expeditious repair. Frank Towse of Skyline Scaffold and Luke Griffis of D.H. Charles Engineering were brought in to devise and design an innovative shoring solution to the problem. Since shoring from beneath was not an option, the decision was made to shore from above. This meant putting the shoring on the roof of the warehouse and suspending hangers down through the roof to support the girder. Quickly a plan was put into action to span a large steel I-beam from the existing interior steel column to the exterior concrete wall. With a span of 65 feet and a design load of 30,000 pounds to support, a large W24x162 steel I-beam needed to be procured. This presented a challenge in itself. Since a beam of roughly 70 feet long was required, it would be too long to transport to the jobsite in one piece on short notice. Two shorter W24x162 steel I-beams were located and shipped to the jobsite, where they were welded together to create the single 75-foot-long shoring beam that weighed over 6 tons. At this point the

Skyline Scaffold, Inc.

• SAIA Member

SkyLine Scaffold offers a diverse range of shoring and scaffold services, from simple net rentals of scaffold towers and trash chutes to full erection and dismantle services for large projects. Read more at http://skylinescaffold.com/.
A shoring beam was craned onto the roof and into position directly above the damaged roof girder. The suspension hangers to support the underside of the girder were comprised of 1-inch-diameter, high strength, all-thread rods and double c-channel beams. Initially the double c-channel beams were to be fabricated and welded from standard structural steel shapes. Due to the lead time for fabrication, however, pre-engineered EFCO 9x9 Super Stud beams were used instead of the channel beams. Having the beams readily available in nearby Stockton made it the obvious choice to save time and money.

Ultimately, it only took four days to have the shoring system designed and
installed. The shoring system allowed for the roof girder to be repositioned into its original location and repaired and for a new column to be added for additional support. Thanks to the team of scaffold specialists from the industry who were able to pool their resources and knowledge of shoring, the job was completed safely and quickly. Now the only question is: “What do you do with a 75-foot-long 6-ton beam after you no longer need it?”

About the Author

Luke Griffis, P.E., S.E., is Vice President of D.H. Charles Engineering, Inc. Reach him at luke@charlesengineering.com or (707) 537-8282.

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A MULTI-LEVEL RENOVATION WITH TIGHT SPACING REQUIRED A COMPLEX SHORING DESIGN.

BY MARK PALMATIER
et on the picturesque shores of the Puget Sound, the sprawling campus in North Seattle was originally constructed as an Amgen research site, designed for heavy science and all the equipment that came with that detailed mission. But in 2017, new owners brought a new vision, and so began the extensive project of converting what was once a locked-down laboratory into an open and inviting corporate headquarters. Numerous tasks were tackled at once, including the addition of two new pedestrian bridges designed to link three of the main campus buildings to help facilitate employee access and collaboration.

Early on in the project, the general contractor brought in Darrell King of Performance Contracting, Inc. (PCI) to plan the myriad of shoring needs they would have throughout the project. In turn, PCI reached out to Mark Palmatier of D.H. Charles Engineering (DHC) as engineering consultants for the installation of the new pedestrian bridges. Connecting Buildings A, B, and C at the second level, the bridge installation would require the demolition of existing load bearing columns at the new bridge locations, with new steel beams taking their place. On paper, the scope was simple: Support the structure above the second level to allow for removal of the interfering column. But the devil is always in the details.

An important aspect of any structural shoring project is having a clear understanding of what is being supported. But this does not stop at the obvious beams or joists that need support. While it is tempting to focus on the immediate issue at hand (for example,
must remove column, therefore must support beams attached to column), it is vital to take a holistic view of any demolition concept. What may appear to be a straightforward shoring project could become increasingly complex when having to consider the loads of upper floors. In the case of multi-level buildings, any column removed on a lower floor will have a direct impact on the floors above, magnifying and potentially multiplying the loads that need to be supported.

This became the case for the column shoring under design. During the planning phase, a preliminary load analysis of the columns slated for removal was performed to help quantify the weight the shoring would need to support. It was determined that, once the second-level column was demolished, the shoring would need to support the third level, fourth level, and all rooftop mechanical equipment in the project area, as well as a fifth-level penthouse structure. With all factors taken into account, the design team was looking at needing to support a shoring load of nearly 280 kips. Not only was this a significantly higher shoring load, it also opened up questions about the strength of the existing structure to support loads of this magnitude and whether reshoring of the lower levels was necessary.

Coordinating closely with the general contractor, the existing structure’s Engineer of Record, and PCI, it was determined that the shoring loads would need to be reshored to grade to ensure the lower floors of the building were not damaged. DHC immediately began researching options for supporting a load of this magnitude within such a confined space. With overhead clearance varying from 14 to 17 feet between floors, cranes were not an option to aid in any heavy duty shoring tower construction. Additionally, due to the shoring being installed on the suspended slab of the second level, heavy equipment couldn’t be used to aid in the tower placement.
Lastly, due to the need for reshoring, whatever method was used would need to be replicated on three separate floors, each with their own shoring heights. The main parameters were therefore refined down to three main goals: strong, maneuverable, and modular. Drawing on a long history in heavy shoring design and coupling it with experience in falsework and formwork design, it was determined that a system primarily aimed at bridge construction could be the key.

With PCI taking charge of procuring the components, DHC focused on addressing how to adequately support the structure. It was clarified by the general contractor during the demolition planning phases that not only would the entire column at the second level be removed, but an additional 12 inches would be removed from the base of the third-level column on the level above to make room for the new steel beam being installed. While this did not change the overall weight that would need to be shored, it drastically changed the distribution of the weight. Having the 12-kip column hang from the fourth-level framing meant shoring was now necessary to help support that floor as well. Moreover, this high load hanging at the very end of the beam being supported greatly magnified the loading applied to the shoring.

After analyzing multiple shoring scenarios, a multi-tower and multi-tiered shoring system was determined to be the best solution. To help distribute the shoring load, two shoring towers were installed at each shored level. Not only did this solution aid in keeping a single tower from being overloaded, it also helped to keep deflection of the shored beam to a minimum. Once below the levels being directly shored, reshore towers were installed to transfer the collected load down to the basement slab on grade. Faced with the limitations of the working area, DHC worked closely with PCI to ensure the steel shoring beams were as strong as necessary but as light as possible. In some cases, two smaller, lighter beams were deemed a better solution over a single heavier beam due to the difficulties of moving material inside the building.

Ultimately, after months of planning and coordination, the shoring installation went smoothly and according to plan. The modular variability of the components allowed for the towers to be installed in each floor as anticipated with minimal adjustments. At the slab edges, cuplock scaffolding was installed as an additional safeguard to prevent any shifts of the exterior façade due to the demolition, again highlighting the versatile nature of modular scaffolding components.

Throughout the operation, from planning to the installation and on to the critical moments of demolition, the clear component that was the common denominator to the project’s success was clear communication. Without clear goals and requirements from the general contractor, PCI and DHC would not have been able to make key decisions on equipment. Without concise and frank discussions on equipment and feasibility, DHC and PCI would have never been able to settle on a shoring design that was both safe and efficient, which is always the ultimate goal.

About the Author
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UNITY ACROSS BORDERS

THE SA MAGAZINE RECENTLY HAD A CONVERSATION WITH THE CHAIR AND CO-CHAIR OF THE NEWLY FORMED SAIA CANADIAN COUNCIL. THIS ARTICLESHARESTHEIRTHOUGHTSONTHECOUNCIL’S PURPOSE AND GOALS.

BY CATHEE JOHNSON PHILLIPS
The Scaffold & Access Industry Association (SAIA) newly formed Canadian Council is led by Chair Rick McKinlay, P.M.P., Business Development/Regional Sales Manager, Tractel, and Co-Chair Christopher Jones, General Manager, Canada Scaffold Supply, Co., Ltd. The council’s primary mission is “to unify, represent, and enhance resources for each province in the scaffold and access industry across Canada.”

McKinlay said, “Chairing the newly formed Canadian Council with Christopher is an exciting new undertaking that we’re both looking forward to. From the talks that we’ve had in the past, we both feel similarly about the industry and where it is headed; we both also have similar visions about areas in which the new council will be able to help make improvements.”

Jones agreed and said, “There is an imaginary line between the U.S. and Canada in terms of regulations, which also differ from province to province. We are all doing the same thing, but it is the regulations and paper work that are different. This council will help us to come together, identify similarities and differences, and to improve safety across these borders.”

**Council Goals**

The establishment of the Canadian Council is timely; the SAIA and the Scaffold Industry Association of Canada (SIAC) – Ontario Chapter recently formed a new alliance. McKinlay has long had a vision to bring the SIAC – Ontario Chapter and the SAIA back into a closer and stronger working relationship. He wants to help the SAIA and SIAC leadership by making sure that Canadian issues and Canadian needs are communicated, understood, and addressed in any areas where they might be needed.

The council’s stated goals are:
- Review and modify all SAIA safety resources and make them relevant to each province;
- Complete an industry gap analysis; and
- Review and create training content to meet Canadian needs.

McKinlay said, “All of us want to make sure that the safety of the workers who use our equipment, as well as that of the general public, is kept as the highest priority. We all want to make sure that at the end of the day, we’ve left the industry a little better place than how we found it.”

“Helping to increase relevant training opportunities in Canada is the most important thing we can do,” said Jones. “Through working towards fulfilling these goals, the council will become a strong voice for safety and education.”

It will be a big task, which both men recognize. The newly formed council has not yet formalized priorities for the coming year, but McKinlay expects that the initial side-by-side gap analysis would be the logical starting point. The analysis will look at differences in regulations and training requirements from province to province and provide input to other activities. Both leaders have the experience and connections to oversee this project.

Meet Rick McKinlay

McKinlay, whose office is in Scarborough, Ontario, has been in the scaffold and access industry for 12 years. His main area of focus has been suspended access, from an equipment manufacturer’s perspective, and he has had a number of roles in sales and marketing, project management, and general management.

He said, “Soon after joining the industry, I noticed the positive way that relationships formed between manufacturers and suppliers, as well as the camaraderie that can exist amongst competitors. It’s very different and refreshing compared to the automotive industry, where I had been up until that point.”

The Canada Safety Landscape

By Rick McKinlay

In Canada, the industry association has been and remains very fragmented, with separate and independent chapters having been set up in various regions. The SIAC has been working towards a form of a unified association that maintains the regional focus but shares resources to avoid duplicate efforts and gain benefits through leveraging the unique strengths of each of the regions. A unified association is expected to carry a larger voice than the current structure.

Occupational health and safety legislation in Canada is provincially-mandated; there is no federal governing authority. As such, each province and territory has developed its own occupational health and safety legislation – some are similar, where others can be dramatically different.
One of the first things that he did was to get involved with the SAIA: “It gave me a great vehicle to really begin getting to know others in the industry. Many of the relationships that have been fostered along the way have turned into lasting friendships – you know, working hard and competing against one another during the day and then going out for an enjoyable evening of dinner and drinks together afterwards.”

McKinlay has been an active member of the SAIA and SIAC – Ontario Chapter since 2009. He has served on the SAIA Board of Directors since 2016 and served as a Board Appointee on the Executive Committee from 2018 to 2020. Tractel has been a long-time member and supporter of the SAIA, going back to the “Swing Stage Limited” days and the early days of the association.

McKinlay is also active with the SIAC.

The Benefits of the SAIA-SIAC Alliance
By Rick McKinlay

Both the SAIA and the SIAC can benefit from shared contributions such as:

A better understanding of the differences in regulations and training requirements from region to region for the various types of scaffold and access, in the form of a side-by-side analysis. This would also be helpful for member companies who are considering expansion into other markets.

A unified or adaptable training program for each of the access equipment types that can be delivered and will be applicable to each of the regions. SAIA can increase its volume and relevance in these markets; member companies will no longer need to take on the challenge of developing their own internal training programs.

Unified or adaptable safety resources, such as codes of safe practice and inspection checklists, that can be made available to members for handy reference.  

He has served on the SIAC Board of Directors and its Executive Committee since 2015 and as the Board president since 2019. Through the Ontario Chapter, he also participates in a Provincial Labour-Management Committee for the Scaffold and Access Equipment Sector. The committee works directly with industry experts from both labor and management, alongside government representatives, to raise and resolve health and safety issues that are affecting the industry and having a direct impact on job sites in the Province.

Meet Christopher Jones
Jones, whose office is in Richmond, British Columbia, was a carpenter and foreman by trade when he entered the scaffold and access industry 15 years ago. Since 2012 he has served as general manager of Canada Scaffold Supply, Co., Ltd. His expertise within the construction services industry includes specialty contractor operations, complex project management, cost estimating, procurement management, and cost control systems. He oversees the company’s scaffolding and structural steel and construction business in Western Canada. He also provides leadership for the implementation of the organizational strategy within British Columbia, related to safety and all aspects of sales and service operations.

“Our company is fairly unique and well-rounded in the services we offer, from shoring and suspended scaffold installations to structural steel fabrication and frame scaffold rentals,” he said. “In everything, safety is a priority. We want to do all that we can to make sure that our workers go home safe at night.”

Jones highly values the SAIA training programs. He first became involved with the SAIA when he attended the 2017 Annual Convention & Exposition in Montreal, Québec.

“The SAIA Competent Person Training brings a whole new level to employee training,” he said. “So, I’m very excited about the new SAIA University Journeyperson Scaffold Training for Canadian workers. The three-year course means that new employees can receive training before they go out in the field, then receive more training while they work in the field for a year – and go back to school again during the second and third years of their employment.”

The Journeyperson program consists of three levels of training: Level 1 (1st Year Apprentice), Level 2 (2nd Year Apprentice), and Specialty Level (3rd Year Apprentice). This program also requires documented hours worked for each level of proficiency completed.

“It’s something very new and cutting edge in Canada,” he said. “I will be gone long before this type of training becomes the norm, but I believe the council’s efforts will help to increase awareness of the importance of establishing cohesive and relevant training across the country.”

Call to Action
McKinlay encourages Canadian members to join the council: “I highly recommend getting involved with the various activities, events, and councils/committees in the association. You really do get out of it what you put into it, so why not roll up the sleeves a little and dig in? You have knowledge and perspective that will definitely be of benefit.”

Canadian members are invited to reach out to the council leaders for more information. Contact McKinlay via email, rick.mckinlay@tractel.com, or phone, (416) 522-8923. Contact Jones via email, cjones@canadascaffold.com, or phone, (604) 324-7691, extension 2001.
Become a Journeyperson professional today!

Scaffold professionals who continually work in the industry erecting and dismantling scaffolds of various types, regardless of height or configuration, need proper training. The Journeyperson Program consists of three levels of training: Level 1 (1st Year Apprentice), Level 2 (2nd Year Apprentice), and Specialty Level (3rd Year Apprentice). This program also requires documented hours worked for each level of proficiency completed. This program is offered in Canada only.

Learn about SAIAU:

saiaonline.org/benefitsoftraining
SEATTLE CENTER ARENA

The 2020 Scaffold & Access Industry Association (SAIA) Shoring Project of the Year Award was presented to D.H. Charles Engineering, Inc. for the Seattle Center Arena Project.

By Mark Palmatier
Originally built in 1962, the Seattle Center Arena (originally known as Key Arena) is located in the heart of the historic Queen Anne district of Seattle. To take advantage of its prime but densely populated location, the arena was built down into the ground, with a pavilion-like sloping roof that has become a staple of the Seattle skyline. As part of a $700 million remodel, the entire interior structure was demolished and rebuilt from the ground up. With the majority of the arena built underground, this meant that the existing concrete retaining walls would no longer have the concrete floors to support them and would require soil anchors to be installed for support.

Due to the construction sequencing, a micro piling drill rig was driven onto and deployed on the Main Concourse level of the arena. The weight of the drill rig exceeded the strength of the slab, so vertical shoring was needed to help strengthen the concrete slab.

In May 2019, D.H. Charles Engineering, Inc. (DHC) was contacted by Performance Contracting, Inc. (PCI) in Auburn, Washington, to assist in the structural shoring of the existing slab. Due to the rapid pace of the construction schedule, any shoring installed could not impede the work progressing at the event level just below. This was most critical at the event level’s 24-foot-wide ramp, which served as the
DHC representative Mark Palmatier, P.E., was met on site by Darrell King of PCI as well as representatives of both the general contractor, Mortenson, and the structural engineer for the structure, KPFF. The site to be shored was walked extensively, with each party noting critical locations that needed to be shored, to be left open for access, or had obstructions to work around. KPFF made it clear the Main Concourse slab above the event level ramp needed to be shored to support the drill rig. At the same time, Mortenson was adamant that the ramp had to stay open and unimpeded so that construction would stay on schedule. With demolition well underway, the ramp saw a constant stream of dump trucks as material was moved out of the stadium. The scope was to design a shoring system that fully supported the upper slab while taking up no space on the floor below.

To keep the demolition process moving smoothly throughout the shoring operation, there was constant communication between DHC, the scaffolding contractor, PCI, the general contractor, Mortenson, and even the demolition sub-contractor, Rhine. When it became clear that keeping the entire ramp section open would be vital to the project, DHC brought RMD Kwikform into the conversation. KPFF had provided shoring requirements, including maximum allowed spacing of the shoring, as well as a required load of 18,000 pounds that, due to the roaming nature of the drilling rig, could be placed anywhere within the scope area of the Main Concourse. These parameters would be used as a launching point for what would become an iterative design process. The same afternoon as the initial job walk, preliminary analysis was performed, and a rough conceptual layout of the shoring was sent out to all parties for feedback. It was at this point that Rhine was brought into the loop to ensure the shoring did not impede on the demolition process.

With so little space to work with, clearances had to first be verified in the field and then compared to the equipment available. After some careful consideration in the field, it was determined that the original requirement of leaving at least a 12-foot-wide section of the ramp open for trucks and equipment outlined by Rhine would not be adequate. The dump trucks needed every inch of space to make it down and around the curved, 24-foot-wide ramp.

After exploring some options, the team determined that the most feasible way to adequately support the Main Concourse slab while simultaneously leaving the ramp open would be to essentially build a “tunnel” in the
shoring. The slab itself would be shored up using modular cuplok scaffolding, which would then be set onto large steel beams spanning the width of the access ramp. It was at this point DHC reached out to KPFF for clarification on the provided shoring loads. With an 18-kip load requirement, the size of the steel beams needed were a concern. After confirming the type of drill rig that would be used, DHC performed a detailed moving load analysis of the drill rig to model the loading that would be applied to the shoring. By modeling how the load would spread through the slab to the various shoring posts, it was determined the worst-case point load would not exceed 6,300 pounds. This drastically reduced the load on each shoring beam, allowing for the use of lighter, more easily erectable beams.

Due to the slab above the ramp dropping as the ramp descended, as well as the presence of concrete beams at awkward angles, the modular, flexible nature of cuplock scaffold was used to its fullest as the main support of the Main Concourse slab. To support the steel beams on either side of the ramp, RMD Kwikform Super Slims were used as vertical post shores. While originally designed for use in falsework and concrete wall-pouring applications, this formwork material had high axial capacity. Additionally, DHC had experience in using it in shoring applications. By bracing them to each other, as well as anchoring them to concrete wall and ramp for stability, a stable base for the shoring tunnel was created that took up less than a foot of width. Once fully installed, the tunnel shoring allowed for the tie back installation to successfully move forward without any hinderance to the demolition work.

At the event level, a similar solution was deployed. Where possible, cuplock towers were used to directly support the slab above. Where a drive lane was needed, shoring towers were used to support steel beams spanning over the event level floor. Set on the steel beams was more cuplock scaffolding, installed tight to the slab above. The versatility of modular scaffolding as shoring was on full display throughout the project.

This project used a combination of standard modular scaffolding with more unconventional shoring equipment to create a safe shoring system that also provided the contractor with the necessary room to continue work. The shoring was completely removed in December 2019.

About the Author
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THE IMPACT OF COVID-19

A survey conducted by the Scaffold & Access Industry Association (SAIA) asked members about their response to the COVID-19 pandemic.

By Cathee Johnson Phillips
During the first quarter of 2021, the Scaffold & Access Industry Association (SAIA) conducted a survey of its members about the impact of the coronavirus on their businesses. The results reflect the resiliency of the industry in meeting the challenges of the pandemic.

Based on the survey results, member response to the pandemic was generally three-pronged: (1) Keep workers safe by following recommended and/or mandated federal, state, and local protocols; (2) Allow more employees to work at home; and (3) Control operating expenses. Several members reported following the protocols recommended by the Center for Disease Control and Prevention (CDC), such as temperature checks, social distancing, limiting travel, and wearing face coverings and personal protective equipment (PPE). Many companies stopped in-person visits to current or potential clients and moved to online communication, while reducing inventory and, in a few cases, non-essential staff.

One member reported: “For around four months, we reduced to a four-day work week and all employees took a pay cut in order to avoid lay-offs and retain all employees. This has returned to normal.”

When asked which changes to operations due to COVID-19 will continue in 2021, most of the survey participants said that they plan to continue following the protocols as recommended by the CDC and state and local governments. Responses differed, however, as to whether to invest in new markets or continue to hold operating expenses down. While some said that they planned to expand
into new markets, one respondent echoed others by writing: “Try to forecast a bit more conservatively with purchasing (etc.) … to make more conservative moves during this uncertain time.”

**Optimistic about 2021**

After a challenging year of working during a pandemic, SAIA members are mostly optimistic about 2021. A little over half of the responding members expect that from 25% to 50% of their business activities will see an increase in sales/revenue. The majority, or 42%, of the members expect to maintain their net profit, and 34% are projecting that their net profit will increase. On the other hand, 24% are projecting a decrease in net profit.

**Who responded?**

A total of 283 members responded to the survey. Of those responding, 232 (82%) were Regular members, 33 (12%) were Affiliate members, and 18 (6%) were Allied members. Nearly half, or 47%, of all members reported their industry type as both scaffold and access, 43% as scaffold only, and 10% as access only. Figure 1 reflects the primary scopes of business represented by the respondents, who were asked to identify all that applied.

**Business/Production Shutdowns**

Affiliate members suffered more business or production shutdowns than either Regular or Allied members. Fully 79% of the Affiliate members reported shutdowns, with 26% of Regular members and 22% of Allied members reporting shutdowns. Most of the shutdowns were for less than 3 months, although 6% of Regular members and 13% of Affiliate members reported that their businesses were still shut down at the time of the survey.

For Regular members, 55% saw shutdowns of erection and assembly, 45% of sales, and 41% of product production, among other business activities. Interestingly, while only 27% of Regular members reported a shutdown in training, 70% of Affiliate members reported a shutdown in training. A little over 52% of Affiliate members reported shutdowns in commercial projects or jobsite/field work.
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Impact on Revenue and Profit

Members were asked, “What percentage of your sales/revenue was impacted from the shutdown?” and “What percentage of your net profit/bottom line was impacted from the shutdown?” Nearly 80% of Regular and Affiliate members reported that 50% or less of their sales/revenue and their net profit/bottom line were impacted. Some companies were harder hit – 15% of Regular members and 29% of Affiliate members reported that over 50% of their sales/revenue was impacted, and 24% of Regular members and 19% of Affiliate members reported that over 50% of their net profit was impacted.

Change of Scope

The majority, 73%, of all members did not report any changes to their scope of business during the pandemic. Overall, 20% added new sectors of business, while 7% eliminated some sectors of their businesses.

Staying the Course

Based on the survey results, almost all the survey participants were diligent about reducing employees’ exposure to the coronavirus in 2020. At the same time, they worked as diligently to sustain their business through the pandemic. For the most part, SAIA members are optimistic about the future of their companies and the scaffold and access industry.

To learn more about SAIA membership offerings, visit the SAIA website, https://www.saiaonline.org/membership.
JLG LAUNCHES "ACCESS YOUR WORLD" EXPERIENCE

JLG Industries, Inc., an Oshkosh Corporation company [NYSE: OSK] and global manufacturer of mobile elevating work platforms (MEWPs) and telehandlers, announces the launch of “Access Your World,” an on-demand digital experience that showcases how JLG is elevating access in the areas of productivity, safety, and technology through virtual job sites. The virtual job sites feature JLG products and services across multiple applications and stages of construction.

In addition to featuring virtual job sites, the “Access Your World” event offers equipment owners and end-users the opportunity to view virtual walk-around videos, download product information and apps, view 3D hydraulic schematics, order parts, sign up for training, schedule meetings, and ask questions of JLG experts, offering a healthy mix of virtual and person-to-person interaction.

This highly interactive and dynamic experience will evolve over the next six months to include additional job sites that feature a variety of products and content for users to explore. Register and enter JLG’s “Access Your World” experience today at https://jlg-experience.virtualevents-hub.com/.

IN MEMORY OF FRED VON HERRMANN

Frederick Howell “Fred” von Herrmann of Homewood passed away on Monday, the 26th of April, 2021. He was 74 years of age. Born in Birmingham, Alabama on the 20th of August 1946, Fred was the son of Charles Frederick von Herrmann, Jr. and Vivian Howell von Herrmann. He earned his electrical engineering degree from Georgia Institute of Technology in 1968 and currently served as president of the Von Corporation.

He was preceded in death by his parents and by his son, Charles Andrew von Herrmann. He is survived by his wife of 47 years, Betty von Herrmann; two sons, Martin von Herrmann (Andrea) and Peter von Herrmann (Amanda); two grandchildren, Julia and David von Herrmann; two brothers, Lewis von Herrmann of Florence, Alabama and Ben von Herrmann; sister, Vivian Graham; and a host of nieces and nephews.

He was a member of Trinity United Methodist Church and was a U.S. Army veteran. He was active in and served as past chair of several national and international standardization committees of organizations such as the American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), and Institute of Electrical and Electronic Engineers (IEEE).

In lieu of usual remembrances, memorials honoring the life of Fred von Herrmann may be directed to an organization in which he supported and served as a Boy Scout leader, The Greater Alabama Council, Boy Scouts of America, located at 516 Liberty Parkway, Vestavia Hills, Alabama 35242 or to the Music Program at Trinity United Methodist Church located at 1400 Oxmoor Road, Homewood, Alabama 35209.
The SAIA Annual Convention & Exposition brings together the largest gathering of scaffold and access industry professionals. The Convention features industry-focused educational sessions and showcases the nation’s top scaffold and access exhibitors. This yearly event is also one of the best opportunities for members to converge face-to-face in one location to voice concerns, share opinions and expertise, discuss best practices, and make decisions about the Association, their industry, and related topics.

MARK YOUR CALENDARS!
For more information visit: www.saiaonline.org/2021annualconvention
SKY PRO ANNOUNCES NEW PRODUCT

Sky Pro Automated Window & Façade Cleaning Technology recently announced its newest product, the Sky Pro Skyscraper Cleaning System. The system can be retrofitted on existing scaffolding, building maintenance units (BMUs), or monorail systems or constructed into a new building. The rotating brush moves from side to side quickly and profitably cleaning not only windows but also the building exterior surface. This system is operated by a minimum of one person on the platform, and most systems will pay for themselves in less than a year.

The cleaning technology behind the Sky Pro systems is similar to carwash technology. The water used during operation of a Sky Pro system runs through a reverse osmosis de-ionized (RO/DI) water filtration system, which removes minerals and other matter from the water, resulting in spot free windows without the need to manually dry the windows. For more information, visit www.skypro.com.

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DRONE INSPECTIONS ARE COMING

Digitaltrends.com reported in an article posted on April 2, 2021, that inspections “that require daaredevil feats such as climbing to dizzying heights, braving high temperatures, or otherwise risking life and limb by entering inhospitable environments” may soon be done by drones. The article noted that a “Norwegian startup called ScoutDI (the DI stands for Drone Inspection) has developed unmanned aerial vehicles (UAVs)” to inspect the “liquid-conveying tanks used on tanker ships for potentially damaging cracks.”

The drone is a tethered system that uses advanced laser sensors to build a 3D map of its surroundings. The inspection uses onboard 4K cameras, alongside 3D tagging on an associated map, to be able to spot potential problems that may need to be the subject of maintenance. The Scout 137 drone is already being used by customers in Norway, Singapore, and Indonesia. Read more at digitaltrends.com.

MAY/JUNE 2021
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