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ON THE COVER

A POSTMODERN MAKEOVER IN PORTLAND
CAREFUL ATTENTION TO DETAIL REQUIRED
By Melinda Zimmerman-Smith

FEATURES

FLYING HIGH AT HARBOR VILLAGE
GAMBLE ON HOISTS PAYS OFF
By Troy Palmer

2019 ANNUAL CONVENTION & EXHIBITION SPONSORS AND EXHIBITORS

EDITORIAL
By Cathee Johnson Phillips

PRESIDENT'S DESK
BEHIND THE SCENES
By James L. Holcomb

TECHNICALLY SPEAKING
DO YOU KNOW SCAFFOLDING?
By David H. Glabe, P.E.

SAFETY SCORECARD
EXPIRATION DATES FOR FALL PROTECTION EQUIPMENT
By Brian K. Haddle, ASP

IN THE FIELD
ELIMINATE, GUARD, WARN
By Grant Frame

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Industry News
Memorial
Advertising Index
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CALLING ALL WOMEN IN THE INDUSTRY

Cathee Johnson Phillips

Since 1996, women have comprised about 9% of the construction labor force, according to U.S. Department of Labor statistics. There are other statistics about women in construction and related fields, including the scaffold and access industry – but what’s the story behind the numbers? How do women begin working in the scaffold and access industry? And, how can the industry can draw more women into the workforce?

The Scaffold & Access (SA) Magazine is currently interviewing women in the scaffold and access industry to learn their stories. It's easy to participate, and every person will have the opportunity to review their portion of the article before it goes to press.

Simply type up a few sentences (or as many as you like) in response to the following questions and email them to cathee@saiaonline.org.

1. How long have you been working in the scaffold & access industry?
2. Please tell us how you became involved in the industry.
3. What challenges have you experienced as a woman in the industry? How did you meet those challenges?
4. What have you enjoyed the most about working in the industry?
5. Do you have any advice for women seeking to join the workforce?
6. On a side note, have you found it difficult to find appropriate attire to wear on the job? If so, how have you dealt with that?
7. Finally, please give your name and title as you would like it to be used in the article.

We’ll follow up with everyone who sends in responses. My thanks to those of you who have already returned responses to me; I’ll be getting back to you soon. Gentlemen, we don’t want you to feel left out. We invite you to share comments, too.

We so appreciate all those who are willing to be interviewed or who write articles and columns for the magazine. All of us at SA Magazine hope you enjoy this issue and find the content relevant for your own career or company. Be sure to read both the articles and columns and let us know what you think. We look forward to hearing from you soon!

Sincerely,
Cathee Johnson Phillips

P.S. And, please consider taking a few minutes to complete the SA Magazine Reader Survey at https://www.surveymonkey.com/s/SAIAreadersurvey. That will help us to serve you better. Thank you!

The SA Magazine is currently interviewing women in the SAIA and the industry for an upcoming special feature. We would like to explore how women begin working in the industry and how the industry can draw more women into the workforce. To participate, contact the editor via email, cathee@saiaonline.org.

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Celebrating 90 YEARS
Collectively, Scaffold & Access Industry Association (SAIA) members provide a wealth of scaffold and access knowledge that helps business owners run a safer and more profitable company. The SAIA Annual Convention & Exposition brings members and friends together to carry on a tradition of collaboration that has increased safety on job sites across the world.

One of the hallmarks of the SAIA Annual Convention is offering training in best practices, and the 2019 convention is no exception, offering the Train the Trainer Facilitator Skills Workshop and Competent Person Training (CPT) for Frame, Suspended, and System Scaffolds. These interactive sessions generate productive conversations that help students to bring their lessons home.

The association’s tradition of collaboration fosters innovation. SAIA members rise to the occasion when complex projects and new technology bring challenges in providing safe and efficient access for workers. They willingly share their solutions with each other at the convention, Committee Week, and other events and explore different ways to do so.

This year, new educational tracks have been designed to accommodate different interests, including Soft Skills, Technical, and Professional Tracks. The topics are varied and relevant and provide concrete takeaways for attendees.

Customer Forums are also new this year. The forums give attendees one-on-one time with the exhibitors in a learning environment.

All the convention sessions, both traditional and new, offer the best opportunities in the industry for enriching your knowledge of safe practices and emerging technologies. Many thanks to the recently formed Program Planning Committee, chaired by Ali Hajighafouri, for its time and work in planning the content and sessions.

There are so many people who make our Annual Convention & Exposition possible. We are grateful to the sponsors and exhibitors for their contributions. The SAIA Board of Directors, Executive Committee, Councils, Committees, and staff work together throughout the year to keep the association moving forward and to expand our reach as a safety leader for the industry. Thank you all!

Finally, many thanks to our membership for their support and participation. You are the SAIA. None of this would be possible without you!
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This could be a difficult question to answer, particularly if you don’t know scaffolding! It’s one of those classic situations of not knowing what you don’t know and thinking that you know what you know. Did you follow that?

Scaffolding is essential equipment in construction. Workers cannot accomplish their work without some type of temporary elevated platform so that structures can be constructed. In fact, scaffolding has been successfully used for centuries. Unfortunately, scaffolding has been used unsuccessfully on more than a few occasions, leading to injuries, deaths, bankruptcy, fines, and lawsuits. So, what’s the problem? Is it due to poor equipment, improper scaffold installation, careless use, lousy attitudes, or – all of the above? Statistics show that scaffold accidents are typically due to either poor construction or poor use. To avoid a calamity on the jobsite, here are a few things to look for.

Training: A company can have the best equipment, the best construction, and all the safety policies and methods – and still have problems if the employees are not properly trained. In fact, the U.S. Occupational Safety & Health Administration (OSHA) has specific regulations regarding scaffold training. For users, it is expected that these workers will be trained in fall, falling object, access, electrocution, and overload hazards. For erectors, training must include additional requirements including proper erection techniques, design criteria, scaffold load-carrying capacity, and the intended scaffold use. And finally, for those who forget their training, retraining in the hazards is required.

Scaffold Capacity: There is a limit to how much a scaffold can hold, and that limit may be considerably less than what you think. Remember, overload is not the same as failure. Just because the scaffold is still supporting all that material placed on it doesn’t mean it isn’t overloaded. Since scaffolds are required to support four times the anticipated load, an overload may mean you are cheating. Keep in mind that, while the capacity of a frame scaffold varies significantly, depending on the frame style and manufacturer, a reasonable leg-load capacity is 2,000 pounds. That doesn’t mean you can stick 2,000 pounds of materials on the scaffold since the weight of the scaffold equipment, the workers, and the platforms must also be considered. However, most safety personnel and compliance officers have no idea if the scaffold is overloaded, so you may not get cited for infractions.

Electrocution: Don’t mess with electricity – you normally never get a second chance. Assume all lines are energized and stay at least 10 feet away unless you know how much electricity is in the line. Even then, stay 10 feet away, if not further. Call the power company; they will help you.

Platforms: Each platform has to extend from the face of work to the guardrail system, leaving no more than one inch between planks. Most scaffold users use solid sawn scaffold plank, laminated veneer lumber (LVL), or fabricated decks. Traditionally, the plank spans no more than 10 feet. Check with the manufacturerupplier for solid sawn and LVL plank capacity. When using fabricated decks, such as aluminum hook decks, limit the load to what is indicated on the deck, usually 50 or 75 pounds per square foot. (Multiplying the width of the deck by the length times the load rating will equal the total load that can be put on the deck. For example, for a 20-inch-wide, 7-foot-long deck rated at 50 pounds per square foot, the total capacity is 580 pounds spread out over the deck.) Overhang the plank at least six inches but normally not more than twelve inches (Figure 1). On hook plank, check the hooks for cracks or damage. By the way, there is no such thing as an “OSHA-approved” plank.

Foundations: A scaffold is only as good as the foundation. If you are sinking up to your knees in mud, so will your scaffold. Most scaffold erectors evaluate the suitability of the foundation based on experience, which appears to be acceptable to most folks. What is not acceptable is using a
perfectly good 2x10 wood plank for a sill and then using it as part of a future platform. Never use a plank in a platform when it has been used as a sill. For most tubular welded frame scaffolds, where the leg load is typically about 2,000 pounds, and the soil capacity is a typical 2,000 pounds per square foot, a 2x10 wood plank, 24-inches long, will suffice. If in doubt, talk to someone who knows dirt!

Scaffold Stability: Scaffolds have been known to fall over, and if you happen to be on it when that happens, the experience will not be an enjoyable one. Scaffolds are considered stable if the height is not more than four times the width (three times in California). Therefore, on a typical 5-foot-wide scaffold, it must be tied to the wall at 20 feet. After that, the ties can be spaced up to 26 feet with the last tie near the top of the scaffold, no more than 20 feet down (on a 5-foot-wide scaffold). Horizontally, tie the scaffold at each end and no more than 30 feet in between. If you plan on enclosing the scaffold, don’t use these tie spacings. Contact an engineer who can calculate the wind loads.

Falling Object Protection: This is easy. Don’t let anyone under the scaffold where they can get beamed on the head or shoulders by a dropped item. If you must have someone work under you, then use whatever it takes to stop materials, your lunch bucket, or anything else from becoming missiles. If you decide to use toe boards, make sure they are at least 3-1/2 inches tall, tight to the platform, and can hold at least 50 pounds.

Access: When the distance from the ground to the platform, or between platforms, exceeds 24 inches, the platforms must have at least one form of access, usually a ladder, a frame you can climb, or a stairway. It is common for scaffold users to climb the frames. This is acceptable provided the rungs are at least 8 inches long, the rungs are uniformly spaced, and the space between rungs is no more than 16-3/4 inches (Figure 2). Don’t forget that this also applies to the vertical distance between the platform and the work platform on the side brackets (out-riggers). Here is where it can get difficult. Scaffold erectors are allowed to climb frames where the rungs are wide enough for a handhold and foot-space, and the distance between rungs is no more than 22 inches. This means that the erectors can climb most open/walk-thru frames. Unfortunately, if you are not an erector, you cannot climb those frames even if you climbed them as an erector in an earlier life, or even earlier in the day!

Fall Protection: This should be a no-brainer, particularly since it is easy for safety personnel/compliance officers to spot violations from the ground or comfort of their vehicle. If they can spot it, so should you be able to spot it. Simply stated, fall protection is required once the platform is more than 10 feet above (or less depending on the state/province and the employer) the level below. No playing games here – falls are the major cause of injuries or death. And, there is no reason for it. It is easy to install guardrails in most instances, and when it is difficult, or impossible, then personal fall protection systems can be used. And what’s more, the scaffold itself can be designed to be used as an anchor for a fall arrest system, even for the scaffold erectors.

If the numbers work, cross-braces can be used as part of the guardrail system. The cross-brace may be used as either the top- or mid-rail, but never both. In some instances, the cross-brace can be used as neither. And don’t forget, when you remove the rails to load the platform, the exposed employees must be protected against falls, typically by utilizing a fall arrest system, or perhaps a fall restraint system.

Tape Measure: Experience indicates that those who are responsible for the enforcement of applicable regulations, but who don’t know the regulations or subject matter, resort to the use of tape measures to ensure regulatory compliance. Think about it: is it not easier to see if the plank overhang is at least six inches than calculating the load on the scaffold? Is it not easier to measure the first step at 24 inches than it is to see the bracing is correct? So, if nothing else, make sure the numbers are correct, especially the 36-inch extension on the portable ladder. Everyone seems to be looking for that one, even when no hazard exists.

This is a quick discussion addressing some of the common safety aspects of scaffolding. The OSHA Department of Training & Education developed, based on statistics, the “Five Most Serious Hazards” that work well when evaluating a scaffold. The five hazards are: Falls; Unsafe Access; Struck by Falling Objects; Electrocution; and Scaffold Collapse. Note that the first letter of each hazard spells “fuses,” an easy way to remember the hazards.

About the Author
David H. Glabe, P.E., is President of Glabe Consulting Services Inc. and Founder and Partner of DH Glabe and Associates. Glabe is SAIA’s Regulatory Liaison. Contact him at dhg@glabeconsulting.com.
Do fall protection harnesses and lanyards have expiration dates? The short answer is Yes -- and No.

First, according to the American National Standards Institute (ANSI) the equipment must be checked and inspected by “another” competent person, as defined by the Occupational Safety and Health Administration (OSHA), other than the user, at least every 12 months OR as directed by the manufacturer. Many manufacturers require inspection every six months. Plus, the equipment must be visually inspected DAILY prior to use by the person using it!

Second, the equipment must not have ANY defects. If it does, it must be removed from service. OSHA regulations state that, upon inspection failure, a safety harness “must be withdrawn from service immediately, and should be tagged or marked as unusable, or destroyed.”

**BETTER SAFE THAN SORRY**

Many have heard or been told that fall protection equipment should be removed from service after five years. However, this is not an ANSI or OSHA requirement. A harness that is properly maintained and/or a seldom used safety harness or lanyard can remain serviceable well beyond five years. It is still commonly recommended to remove them from service after five years of “use.” A good reason for this is that one cannot determine the condition of the internal components even though an external inspection shows no signs of damage or wear. The user may also want to remove fall protection equipment from service sooner if it has a warranty period that is based on the date of manufacture or date of sale. As with all items regarding personnel safety, it is far better to be safe than sorry.

Harnesses and lanyards are shipped with the manufacturer’s instructions for use, inspection, and cleaning. The manufacture will also give a usable time period for the equipment. These instructions must be understood and followed by users. All too frequently the instructions are discarded by the wearer as soon as the harness
is removed from the packaging. If this is the case, wearers should contact the manufacturer for replacement instructions. This can sometimes be done through the manufacturer’s website.

When not in use, fall protection equipment along with other personal protection equipment (PPE) should be stored at room temperature away from chemicals, moisture, and ultra-violet light, or sunlight.

Even while following these instructions, it may still necessitate removing the harness or lanyard from service prior to any life expectancy guideline, simply due to the normal wear and tear of everyday use. Inversely, staying within all manufacturer’s and regulatory guidelines for the inspection and maintenance of the equipment may greatly extend its useful life.

ANSI and OSHA standards also require that users remove equipment from service if it has been subject to the forces of arresting a fall. The ANSI standards state that “fall protection equipment shall be removed from service upon evidence of defects, damage or deterioration; once it has been subjected to impact loading; or upon expiration of the manufacturer’s specified service life, whichever comes first.”

Most manufacturers have engineered in a lot of excess capacity. Even the common use and degradation expected in a five-year period would not necessarily mean that the equipment is worn out on the first day of the sixth year. By the same token, most harnesses used daily in the construction industry will not last five years. The average scaffold will go through a harness in about three years, some a bit more and some a bit less. At the same time, a harness that is used by managers who are not in the field often and that is properly stored between uses could theoretically last a lifetime.

**BOTTOM LINE**

Ultimately, the decision to continue to use a harness that is aging is a judgement call based on the inspection of the competent person who does the regular inspection and the instructions from the manufacturer in the operator’s manual for the harness. It is the responsibility of that competent person and the user to determine when a harness or lanyard is no longer serviceable and when it should be removed from service. Of course, as with all safety related equipment, when in doubt, throw it out!

**ABOUT THE AUTHOR**

Brian K. Haddle is the Safety Manager for Stone Mountain Access Systems, Inc., and an Accredited Instructor for the Scaffold & Access Industry Association. He can be reached at bhaddle@stonemountainaccess.com.
On my hardhat is a sticker of a rattlesnake inside a triangle with the words, Eliminate, Guard, Warn. The rattlesnake, looking poised and ready to strike, is a menacing metaphor for the hazardous conditions encountered on jobsites, scaffold yards, and roadways across the county. Many of these hazards are more dangerous and deadly than a rattlesnake yet receive hardly, if any, fanfare daily. In the scaffold world things can change in a matter of milliseconds. One missed tie, one unprotected edge, or one distracted worker can be the difference between life and death if not identified and mitigated.

Picture this: you are hiking with your family in a remote wooded location. As the trail narrows, just around the bend, you stumble upon a snake. Both you and the snake are startled. You quickly step back. The snake coils, rears up, and readies itself to strike. You are not scared of snakes, quite the opposite, but you understand the hazards of a rattlesnake bite and the logistics of hiking once bitten. You turn to your family and point out the snake. You look for other trail options to bypass the snake and choose an alternate path. You warn all those in your hiking party of the snake and the possibilities of others going forward. Perhaps you even pick up a long stick to aid you on your way. In essence, you identified a hazard and worked through the progressions of an Eliminate, Guard, Warn strategy of controlling hazardous conditions on your hike with your family.

Applying the hierarchy of controls to the identified hazard, the best defense against the rattlesnake on the trail would be to eliminate it. Since the snake can’t be eliminated safely, we might choose to substitute another route to bypass the snake all together. We might choose to put up signage to warn other hikers. We might warn others on the trail by word of mouth, and on future hikes, we might choose bite-resistant boots made to protect against snake bites. We would have to do something because we can all agree that doing nothing would be crazy.

The construction environment is no different than the wooded hiking trail. While most sites do not have rattlesnakes in the footpath, some have unprotected leading edges, trip hazards, falling objects, other contractors, etc. Processes, especially in the scaffold industry, pose as common practices but, in all reality, act as unseen rattlesnakes hidden in plain sight. Take the age-old process of chain-lining material. Seen as a common practice by many, chain-lining scaffold material to heights puts dropped objects into play, puts team members in the line of fire, and when the material is dropped, exposes everyone below to serious injury or fatality (SIF) potential. It’s important to note that regardless of the experience of the team, the pre-task planning employed on the project, and the type of material involved, someone will drop something at some point because people are fallible. It’s not a matter of if something will be dropped, it’s a matter of when and how bad the result. We can’t do what we have always done. A rope and pulley, a mechanical hoist, or a transport platform would eliminate the hazard by removing people from the line of fire and, provided the material is rigged correctly, remove the dropped object hazard as well.
The best way to avoid hazards in the workplace is to eliminate them whenever possible. By eliminating the hazards there is no chance that anyone in the work area can be injured by that hazard. When we eliminate leading edge issues by installing guardrails, we no longer have people exposed to falls. When we eliminate the hazard, we have planned for the hazard, identified the hazard in the workplace, and figured out a different way to do the work with the hazard no longer in play.

When elimination is not possible, guarding is the next best choice in protecting yourself from hazards in the workplace. Some guarding controls that could protect you from hazardous conditions include physical barriers like barricades, guarding around moving parts, and toe-boards on elevated work platforms to prevent objects from falling from height. There are many other possible guarding controls that could be used depending on the specific hazard identified.

When total elimination of hazards is not possible, warn others of the hazards that exist in your workplace and avoid them. Tell everyone on the site. Whether a scaffold builder, mason, electrician, or plumber, we are a brotherhood and sisterhood of craftsmen building the country and moving it forward. Many of us share resources, customers, and contacts, so the culture of safety you build in your workforce might save the life of someone working in another trade on the same worksite. Safety is a mindset that must infiltrate the minds of everyone, from your newest team member to your most tenured member. It must be fostered by leadership and prioritized by everyone in the organization. It can’t be lip-service.

Eliminate, Guard, Warn. Why? Because we value safety above anything else.

ABOUT THE AUTHOR
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FLYING HIGH AT HARBOR VILLAGE – GAMBLE ON HOISTS PAYS OFF

THE TREKKER GROUP’S DECISION TO PURCHASE CONSTRUCTION HOISTS PAID OFF IN SIGNIFICANTLY REDUCED LABOR COSTS AND INCREASED SAFETY.

BY TROY PALMER

PHOTOS COURTESY OF MICAH TURNER / TREKKER GROUP
Contractors that strive to be competitive and grow their business constantly have to explore new technology and methods in order to maximize efficiency, productivity, and profitability.

The use of various types of construction hoists – from portable wire rope hoists to scaffolding hoists to larger rack and pinion hoists – has been on the rise in the industry as contractors look for ways to better handle the movement of material on multi-story projects. For some, they are looking to improve job site safety and reduce the risk of injury by reducing the amount of material being handled by hand and passed up and down in a man line. For others, it is simply a matter of helping them manage their labor force as they take on larger projects and get busier.

Investing in new equipment to improve efficiency is sometimes an unavoidable cost of doing business, and often it comes down to a difficult decision based on the expected benefits or return on investment (ROI) that the equipment will provide. Will the equipment perform as advertised? Will it be easy enough to use? Will employees be willing to learn how to do things differently and give the new equipment a fair try?

A Gamble on Construction Hoists

In most cases it is not realistic to purchase equipment and expect to get a 100% immediate ROI. Once in a while, this can happen if the equipment in question is a perfect fit for a particular project and provides a solution with a

This photo, captured by a drone and taken from over the water, shows the entire back side of the project with scaffold. That entire section was put in place by two six-man crews (using the two hoists) in 28 days. This was 17 days less than the 45-day time frame that Trekker was given by the customer.
significant impact on the overall project’s timeline and overhead. That is what happened when the Trekker Group made the decision to invest in a pair of construction hoists to help them complete a large-scale scaffolding project with a tight timeline.

Trekker Group’s Access Division recently took on a project at Harbor Village Condominiums in Panama City, Florida. Due to the layout of the building, Trekker bid the 10-story project based on a plan to build it out in 200-feet sections, 10 sections in total. The original plan called for 16 workers to build each 200-foot section, with each section scheduled to take around 10 days.

The distance between the location of the project in the Florida Panhandle and their nearest office in central Florida presented some daunting logistical challenges and overhead costs when considering travel,
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www.saiaonline.org/presidentsgala
Trekker’s Access Division Manager Micah Turner realized that they needed to explore possible ways to reduce the number of employees they would have to have on site in order to keep their overhead at a manageable level. He had some familiarity with the Beta Max Maxial Track Hoists and had heard they were an efficient way to tackle material movement on multi-story scaffold projects. After some additional research, he purchased two of the hoists to use on the Harbor View project with the hopes of reducing the number of workers they would have to send to Panama City.

ROI Exceeds $150,000

This turned out to be an extremely good decision. Turner said, “By using the hoists we were able to complete the first 200-section in one week with a crew of...”
only six men. Under normal circumstances with this building cut up the way it was it would have taken us around 10 days with 16 workers, so we were able to cut that down by at least three days even though we used 10 fewer workers. We saw around $40,000 in savings just on the labor alone for the first section. Thus far, we have seen labor savings on this project in excess of $150,000."

By utilizing hoists to move material between the ground level and working height, scaffold companies are able to reduce or eliminate the use of “daisy-chain” man-lines and are able to utilize their workers for tasks other than just passing material up and down all day.

According to Turner, Trekker has just over 40,000 pieces of scaffold on this project. Of that, approximately 32,000 of those pieces were sent up on the hoists. Specifically designed for scaffolding, the Maxial Track Hoists can be unpacked and installed on the scaffolding by two
people in about 20 minutes. The primary components of these hoists are:

- Track sections, made from lightweight, aircraft-grade aluminum.
- Universal carriage, a chassis-type carriage that travels up and down on the track and accommodates several different lifting “baskets” designed to hold system or frame scaffold, insulation, planks, and other general materials.
- Motor pack, with cable coming off a drum that is mounted on the base section of track.
- Sliding head, which houses a pulley that is mounted on the track above the deck being serviced. The cable that comes off the drum at the base of the system runs up through the pulley in the sliding head and back down where it is attached to the universal carriage. The sliding head is moved and mounted higher up as the scaffold goes up and track sections are added to the hoist system.

**ROI in Increased Safety**

In addition to reducing labor costs and streamlining the movement of material, the use of hoists significantly reduces the risk of injury on the job due to dropped material, repetitive movement, pulled muscles, and fatigue. The bottom line is that the more pieces of material that are handled by more people, the higher the risk of dropped material and injury. Using hoists to move material up and down the scaffold significantly reduces those risks.

Turner said, “There is no doubt that using hoists has increased safety on the job. That is a significant benefit.”

The decision that Trekker Distributor Scaffold made not only to invest in purchasing hoists but also to embrace a new way of doing things has paid off in more ways than they even dared to hope for.

Turner said, “Needless to say, the hoists have changed the way we bid and perform projects and the culture of our scaffold labor force. I’ve also noticed that when our customers see how we are using the hoists, it gives them confidence in our ability to handle large projects and to stay on or even ahead of schedule.”

Construction hoists of all shapes and sizes can be utilized to streamline material handling and movement, and, as illustrated in this case, if the right type of hoist is employed on the right type of project, it can truly be a game-changer.

**About the Author**

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A POSTMODERN MAKEOVER IN PORTLAND

PROVIDING ACCESS FOR THE RECONSTRUCTION OF A POSTMODERN BUILDING REQUIRES CAREFUL ATTENTION TO DETAIL.

BY MELINDA ZIMMERMAN-SMITH

The Portlandia Building in downtown Portland, Oregon, is famous for its architectural appearance. Built in 1982 and designed by architect Michael Graves, the building is considered to be the first major building designed in postmodern style, a style that later led to Spain’s Guggenheim and Chicago’s Thompson Center. Portlandia is particularly well known, but often for all the wrong reasons. The controversial building has been called “train wreck-ugly,” “famously reviled,” and “almost universally-hated” and was even selected by Travel + Leisure Magazine as one of the ugliest in the world.
Despite its critics, the 15-story municipal office building has won awards as a breakthrough example of postmodernism. But there was nothing award-winning about its structure, exterior, and operational systems. The building was in severe need of an overhaul, and repairs alone would not be able to address all of the issues. In 2017, the City of Portland opted to reconstruct the building while also addressing the seismic deficiencies and water intrusion problems that have existed since the building was completed.

Realizing the Original Vision

The goal of the $195 million reconstruction of the Portlandia building, led by DLR Group and Howard S Wright/ Balfor Beatty Construction, is not only to fix the issues that have plagued the building for decades but to maintain the facade design by Michael Graves while realizing the late architect’s original vision.
According to the City of Portland’s website: “The project includes a thoughtful reconstruction of the building exterior that will keep the weather out of the building while respecting the historical significance of the original design. Additionally, the building’s operational systems and seismic structure will be modernized.”

Due to the varying complexity of the project, Howard S Wright Construction contacted Hydro Rents North West based in Vancouver, Washington, to help provide access to the exterior for both the demolition phase of the existing façade, as well as the installation of large panels designed to recreate the original Michael Graves exterior design. The reconstruction of the building was a tough proposal. The building...
presented several challenges that had to be solved, including its city-center location, necessary scheduling sequence, the limited delivery and lay down area, the limited locations to install wall ties, the access around the large and historical statue of Portlandia, and minority apprenticeship goals required by the City of Portland.

**Makeover by Mast Climber**

“Because the exterior was prone to leaking, a new glass-panelized system had to be installed,” said Steve Wobber, president of Hydro Rents NW. “The exterior needed to be recreated, but the access to the building was extremely tricky. The job required multiple mast climbers and the help of a tower crane to drop in the panels, story by story.”

While the renovation aims to maintain the postmodern architectural style, the team has had to change some of the building materials to better endure the Pacific Northwest weather and earthquakes. Large terra cotta tiles are replacing the original teal-colored tiles of the lower three floors, and the existing painted concrete facade is now covered by a new aluminum rainscreen cladding. The narrow dark tinted windows are being replaced with clear glass windows, and the stucco garlands on the side of the building are being rebuilt using formed aluminum.

“The architectural team had to be really sensitive to the historical aspects of the building,” said Wobber. “There was concern that the replacement of the building’s material would threaten its landmark status, so all the details are being treated with tremendous care.”

A total of 11 mast climbers are being used for the project, including 10 Hydro Mobile F300 Series mast climbers that were selected for their climbing speed as well as their split tower flexibility. They allowed for longer bridges to span tough areas and

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Liberty’s Little Sister

The building’s postmodern style is not the only historic and challenging aspect of the property’s reconstruction. There is also the massive hammered-copper statue of the Queen of Commerce, Portlandia herself.

At 37 feet, Portlandia is the second largest copper statue in the world, following the Statue of Liberty. She sits kneeling above the entrance of the Portlandia Building, welcoming passersby. The design was based on the 1878 design of the Seal of Oregon to reflect the origins of the city, its culture, the agricultural base, and industry.

“The statue’s location and size added to the access complexity of the project,” said Wobber. “Portlandia needed to be worked around carefully, and the position on the narrow-lined street made it especially difficult.”

Precarious Positioning

Because of the limited access to the building, each mast climber bridge section had to be pre-built in Hydro Rents’ own Vancouver yard, and then shipped to the site to be immediately lifted into position by the tower crane.

“In some cases, long ‘Super Bridges’ were used to span over the Portlandia statue, as well as an open area next to the tower crane,” said Wobber. “These bridges could not be transported pre-assembled due to their length and had to be transported in sections. Because there was almost zero lay down area, the super bridges were assem-
bled on the roof and then flown into place by tower crane.”

The motor units were installed on the third-floor roof mezzanine and shored to the ground level. The bridges had to be positioned to allow for demolition as well as installation of the glass panels. There were also decorative medallions that had to be removed and installed.

“Installing that bridge over Portlandia also presented a challenge,” said Wobber. “The statue had to be protected during construction. The Portlandia statue was spanned by using a mobile unit in conjunction with a large super bridge.”

Access to the protective cover over the statue did not extend all the way to the façade wall. The team had to lay out the mast towers to not only allow the bridge to be installed, but also center the mast on the window frames. The towers had to be positioned at a specific location with only a one-fourth-inch tolerance.

The Ties That Bind

The mast tie assemblies presented even more difficulties for the team. The existing façade had to be removed, and the new full-story panels had to be installed in their place.

“There was a specific tie schedule that had to be followed,” said Wobber. “In order to solve this dilemma, we met with the construction team to arrive at a solution that worked for everyone.”

The team believed that the best tie point would be to tie into the window openings at each level, but the windows didn’t continue to the top of the building. The solution was to come up with unique tie types: one through the window using an I-beam spanning the window; one that was attached to the parapet; a mast-on-mast elevated tie system; and other field anchors in locations that worked with areas on the panels that could be patched.
The schedule had to allow for wall ties to be removed intermediately as the panels were installed and then reinstalled. Once all the panels were installed on an elevation, the system was disassembled from the mast climber, and the glass was installed to complete the façade.

The next challenge was to ensure that the towers and wall ties aligned perfectly with the windows. “Some window openings were only 24 inches, so the unit placement and tower position were critical,” said Wobber.

The narrow openings needed to utilize a mast-on-mast tie system that was 23-1/2 inches wide. The solution was to have special bridges made to allow the towers to hit the center mark at each opening. A series of bridge sizes ranging from 18 inches to 42 inches were specially built by Hydro Mobile to solve this issue.

Portland’s Workforce Program
An opportunity arose with the City of Portland’s new Workforce Program, developed to help minorities gain employment within the labor unions. Each contractor on the project had to have a minimum of 20 percent of total hours with minority apprentices. Hydro Rents NW recruited workers who fit this category, and the workers completed the company’s training program for erectors and dismantlers.

“We reached the 20-percent goal with competent, trained workers who will hopefully become long term employees,” said Wobber.

The Big Question
The three-year project is expected to be completed near the end of 2020. The Portlandia statue, still covered by a shroud to protect it from potential damage during the work, is due to remain covered until November of this year.
According to Wobber, the project is going well: “Teaming up closely with Project Manager Doug Greenwalt and Project Engineer Gabriel Acosta, both of Howard S Wright/Balfour Beatty, has made a huge difference in the whole operation running smoothly.”

But the big question on Portland’s mind is: Will the reconstruction change the postmodern appearance of the historical Portlandia Building? “Portland will be happy to know the original appearance has been preserved,” said Wobber.

Or, maybe they won’t.

About the Author
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**INFORMATION REQUESTED ON TABLE 1 OF THE SILICA STANDARD FOR CONSTRUCTION**

The U.S. Department of Labor’s Occupational Safety and Health Administration (OSHA) is requesting information and comment on Table 1 of the agency’s Respirable Crystalline Silica Standard for Construction. OSHA seeks information on additional engineering and work practice control methods to effectively limit exposure to silica for the equipment and tasks currently listed on Table 1. The agency is also requesting information about other construction equipment and tasks that generate silica that it should consider adding to Table 1, along with information about their associated engineering and work practice control methods.

In addition, OSHA is seeking comments about whether to revise paragraph (a)(3) of the Respirable Crystalline Silica Standard for General Industry to broaden the circumstances under which general industry and maritime employers would be permitted to comply with Table 1 of the silica standard for construction.

Information submitted will allow OSHA to consider new developments and enhanced control methods for equipment that generates exposures to silica and provide additional data on exposures to silica from equipment and tasks using a variety of control methods under different workplace conditions. Expanding Table 1 to include additional engineering and work practice control methods, equipment, and tasks could provide employers with more flexibility and reduce regulatory burdens while maintaining protections for employees.

If information submitted in response to this request indicates that revisions to the silica standards are needed, the agency will then publish the proposed revisions in the Federal Register for public comment.

Comments must be submitted by October 14, 2019. Comments and materials may be submitted electronically at http://www.regulations.gov, the Federal e-Rulemaking Portal, or by facsimile or mail. See the Federal Register notice for submission details.
CELEBRATING JAY KINDER

The Strong Man family lost its founder, president, and leader, Jay Kinder. He passed away on June 24th with his wife, Elaine, by his side. The two grew Strong Man from their garage to the successful business it is today.

“Jay has been my partner through it all, and his loss is the hardest thing I have ever faced,” said Elaine Kinder. “In all aspects of my life, both at home and in business, Jay has been my mentor. His ever-present kindness and respect for others is something I have always admired. My life without my partner will be forever different, but his spirit is something that will live on through me and our family every day.”

Jay Kinder’s constant dedication to service and his customers are at the foundation of Strong Man’s success. He made Strong Man a cutting-edge company, always with the newest technology and highest quality products, while never sacrificing service, a mantra he maintained throughout his entire career.

He always said, though, that his wife Elaine was the real source of his success. She stepped in during the early stages of growing the business by overseeing the finances, and today still serves as the Strong Man secretary and treasurer. As he always said, “we’re the luckiest two people in the world.”

The entire Strong Man family is deeply saddened by this loss. As the company’s leader for over 40 years, his presence and guidance are already missed. Strong Man will carry on his legacy, putting customers first and maintaining a dedication to service and the highest quality materials, now under the guidance of Rafael Martinez. As current vice president of Strong Man, Martinez will assume Jay Kinder’s role as president.

With over 30 years of experience in corporate environments and years of dedication to Strong Man, Martinez knows the business and is ready to oversee the company’s further success.

“I can’t imagine Strong Man without Jay; from the first day we met, Jay and I had an instant connection, brought together by our love for good food,” said Martinez. “In my years at Strong Man, that connection grew and grew. I’m ready to honor and continue Jay’s legacy at Strong Man, something I am immensely proud to do.”
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Montreal-based AGF Access Group, Inc., has been selected by Ship Channel Constructors (SCC) to provide access equipment for the construction of the massive, new twin span stay-cable Sam Houston Ship Channel Bridge in Harris County, Texas. AGF Access Group’s Major Projects team, along with its Hydro Mobile and Winsafe manufacturing divisions, have developed a variety of standard and customized access solutions to be used during the next six years of the bridge’s construction and demolition.

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