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SMAC NEWS

Evaluating the Environmental Impact of Architectural Metals



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CEO UPDATE Aaron Hilger



SMACNA Government & Technical Updates & Engagement Opportunities

The first quarter is always busy at SMACNA. We have lots of association events, our technical department is out in force, labor is starting its bargaining season and the government relations team is focused on many regulatory issues.

We also have our board meeting and two of my favorite functions — the Chapter Executives Institute (CEI) and Association Leadership Meeting. The CEI meeting is an opportunity for chapter executives to learn from each other and from curated speakers on association management topics. We also review labor, government relations and upcoming SMACNA programming. Association Leadership is an opportunity

for local officers and executive directors to explore governance and leadership topics together in a collaborative environment. I encourage you to take part in the Association Leadership meeting if you are serving in a leadership role on a chapter board. Our next meeting will be in March of 2024. I am already working on the agenda and seeking ways to support chapters as part of our strategic plan.

Stan Kolbe and our government relations staff are preparing for the CEA meeting this May. It is wonderful to bring this meeting back to life, and we appreciate all of the support from members. Our government relations program is stronger

because of the many meetings we hold each year in Washington and in your local Congressional district. Many of our most active members attend the CEA meeting and also have great experiences meeting their representatives throughout the year. If your company has not yet signed a PAC authorization card, please consider doing so, and we can share even more details about the great work that is being done on your behalf. Now is a great time to engage as we seek to capitalize on the favorable regulatory environment. There are also issues, such as the extension of 179d that are





FROM THE PRESIDENT

Tony Kocurek

vital to the continued success of our members.

Our technical department is excited to report they are making progress on updates to several manuals and apps. Three manuals will be out for public review this year. This includes the HVAC Systems Duct Design Manual (revised

apps and making our manuals more user friendly.

The last item that I wanted to address is Indoor Air Quality and ventilation verification. We are seeing increasing opportunities for our members to expand their work into these areas. If you have not looked at doing ventilation verifica-



ASSOCIATION LEADERSHIP IS AN OPPORTUNITY FOR LOCAL OFFICERS AND THEIR EXECUTIVE DIRECTOR TO EXPLORE GOVERNANCE AND LEADERSHIP TOPICS TOGETHER IN A COLLABORATIVE ENVIRONMENT."

edition) in April; the Testing, Adjusting & Balancing Manual (revised edition) in May and Seismic Bracing Manual (revised edition) in late summer. We have also started updates to the Seismic Bracing Manual – HCAI Edition (formally OSH-PD). In addition to the review process, the Rectangular Industrial Duct Construction Standard (revised edition) will be ready by SMACNA Convention. The technical department also has two new apps coming this summer for Duct Sizing and Exhaust Duct Sizing. Technical manuals are part of our core offerings, and we are proud to create strong products for the industry. We also have a growing focus on

tion, I encourage you to do so, especially with all of the money flowing into school districts and public buildings. SMACNA's IAQ website will be up later this month. Please let us know if you do this work; you can choose it as a service in our "Find a Contractor" directory.

Thank you for being an engaged SMACNA member. Have a great construction season. ▼

Aaron Hilger is CEO of SMACNA, bringing more than two decades of executive association leadership to this role. Hilger is focused on building a stronger, more competitive environment for all SMACNA contractors.

The Challenges With Manning Megaprojects

With the pandemic entering a new phase, construction has boomed with what are now widely known as "megaprojects." Every day, it feels like there's a new stadium, microprocessor factory or some other massive project getting underway. The demand for this type of construction is quite real.

The federal government is in on this trend, too. The Biden Administration recently launched the Mega Construction Project Program. This initiative from the Department of Labor's Office of Federal Contract Compliance Programs (OFCCP) has increased the number of federal megaprojects available to SMACNA member companies.

The program's goal has been to ensure cooperation between the private and public sector to build the workforce needed for federal construction projects valued at \$35 million or more. To fulfill the workforce need, OFCCP said it plans to collaborate with the General Services Administration and the Department of Transportation to provide on-the-ground assistance to contractors and subcontractors for recruitment and provide additional support for outreach and education.

But many megaprojects face delays due to ongoing supply chain issues, a lack of skilled labor, and cost issues. McKinsey and Co. reports 98 percent of current megaprojects face cost overruns and delays of up to 20 months.

As the labor shortage continues to impact the industry, management of these megaprojects and meeting critical deadlines are becoming worries for many SMACNA contractors. SMACNA members are struggling to keep their current market share while handling these new megaprojects and balancing the manning of other work. While moving labor from smaller jobs to larger ones is a short-term solution, finding a long-term one is critical.

SMACNA has a Megaprojects Task Force on the case, brainstorming ideas and discussing solutions. BE4ALL is also conducting a Pedal to the Metal Large and Megaproject Survey to help the association gather the impact these large projects are having on contractors, as well as the overall market. The survey examines issues surrounding workforce recruitment, training and labor interactions. This is how the association can benefit its members by immediately creating a brain trust backed by research to ensure members have answers when they need them most.

If you're working on megaprojects and would like to share your challenges and solutions, send your thoughts to Nicole Wisniewski at nwisniewski@smacna.org. We will continue to share best practices on these projects and report on the task force's findings. ▼

Tony Kocurek, SMACNA President



Bringing Shade to Schools

Intech helps install sheet metal shade structures at California schools.

Last year, Intech Mechanical of Roseville, California, bid on a plumbing job for the Sacramento City Unified School District. To their surprise, a routine bathroom upgrade for several elementary school campuses led directly to a series of architectural sheet metal projects. Local 104 only knew about the sheet metal aspect of the work until Intech bid on the job. “This one didn’t have any HVAC or ductwork, and it didn’t have any roofing,” says Gary Myers, Intech’s vice president of marketing/business development. He worried that the carpenters, the ironworkers, or the roofing unions might claim the work. Still, none of them came to the planning meeting to dispute his bid. “It wasn’t on anybody’s radar.”

The project was called shade structure projects, with American Disabilities Act plumbing upgrades tacked on.

“We wouldn’t normally go after shade structures, but the project had a decent plumbing scope,” Myers explains. While Myers was evaluating the ADA aspect, his estimator asked if he wanted to also bid on the shade structures. “The general contractors were looking for somebody to take on that scope of work because they didn’t know who builds these particular structures.” Intech bid the labor for each shade structure separately at \$33,000 per project, adding up to just over \$250,000. The plumbing scope was about that much again.

The structures were like tinker toy sets. “They come pre-manufactured with directions and all the hardware,” he says. But Intech couldn’t simply slap the panels together and square them down. Each structure has a gable roof on four sides, which requires measuring and field cutting. “Metal roofing is fairly specialized, but my attitude is that my people are qualified to do just about anything.”

The shade structures are part of Sacramento’s COVID mitigation plan. “The intent of these structures is to create areas for the kids to eat lunch outdoors,” Myers says. “We have a lot of outdoor campuses in California. They’re not enclosed like you would need in a winter environment. Even on the worst days, kids can usually bundle up and go outdoors.”

The school district pre-purchased the steel columns of the shade structure from a company out of Indianapolis. The Indianapolis company paired their framework with a metal roofing system from a different manufacturer in



The shade structures are 60 feet by 30 feet and weigh 4,000 pounds each.



Northern California. All eight structures were 60 feet by 30 feet galvanized finished products, weighing about 4,000 pounds. The structures are mounted on 12-inch by 12-inch tube steel posts anchored into a 10-foot square concrete foundation. Buyers can choose from several pre-painted color schemes to match their properties.

Intech sent teams of two or three workers to each site. “We were working at two, sometimes three, schools at any given time,” Myers says. It took about four days to erect each frame, then five to six workdays to mount each roof, adding up to 10 days total per school. The first shipment arrived on December 10, but Intech didn’t finish the last one until early March because of weather delays. “We’ve had one of the wettest seasons we’ve seen in years.”

Intech’s biggest challenge was installing seven of these projects on occupied campuses. Any occupied site presents safety concerns, but Intech takes extra precautions to maintain safety around small children. “The actual worksites were fenced off by the general contractor,” Myers says. “Anytime somebody moved material or a piece of equipment in or out, or you did something that would create a hazard, you would have a separate person watch-

ing to ensure that children didn’t run up behind you. That’s standard for all our work at occupied campuses.”

These precautions were not enough for the eighth school, which has a very tight campus. “It was too cramped for us to set the structure

with the lift while the children were there,” Myers says. “We ended up doing that one over the Christmas break in a short window of time.

“WE HAVE A LOT OF OUTDOOR CAMPUSES IN CALIFORNIA. THEY’RE NOT ENCLOSED LIKE YOU WOULD NEED IN A WINTER ENVIRONMENT. BUT EVEN ON THE WORST DAYS, KIDS CAN USUALLY BUNDLE UP AND GO OUTDOORS.” —GARY MYERS

The manufacturer sells these shade structures nationwide, and Myers hears rumors that hundreds more are coming to schools near him. “I’m trying to find out where and when because I’d like to go after them. We’re constantly looking for more market share.”

The general contractor pointed out a similar school project last week, and Intech is well-positioned to win the bidding process. “I’m looking at a couple right now,” Myers says. “They’re the exact same structure from the same exact manufacturer, and I now know exactly what it cost to install it. I can put out a number and be confident that I can repeat it.” ▼



Big Clients Require Big Partners

JPMorgan Chase & Co.'s global headquarters becomes AABCO's next commercial HVAC client in NYC.

AABCO Sheet Metal Co., Inc. of Maspeth, New York, specializes in meeting the unique needs of commercial towers that exceed 850 feet, including the new supertalls that dot the New York City skyline. They have honed their expertise by installing air distribution systems for most of the commercial towers that have been built in New York City over the last 20 years. AABCO clients include titans like the Bank of America, Goldman Sachs, both towers of Manhattan West, One Vanderbilt, and the tallest building in the western hemisphere: the One World Trade Center or Freedom Tower. Now AABCO is adding the JPMorgan Chase & Co.'s new global headquarters, a 2.8-million-square-foot facility, to that illustrious roster.

The 70-story tower is going up at 270 Park Avenue, New York, the same lot where JPMorgan Chase & Co.'s

previous headquarters stood. The neighborhood has been a commercial hub since the completion of Grand Central Terminal in 1913. "What's interesting about this project is that it's literally on top of the north end of Grand Central Station," says Richard Minieri, president of AABCO's affiliate, ASM Mechanical Systems, in Maspeth, New York. The site is bounded by Park Avenue and Madison Avenue, with East 47th and East 48th Streets on either side. "It takes up one square block, so it's a massive project in the middle of New York City. JPMorgan Chase's name is renowned around the world, and to be part of this project is really special. It's also our forte."

The heart of Manhattan is full of high rises, but at 1,388 feet, the new JPMorgan Chase building will tower over most of its neighbors. Its final height will be over twice as high as the building it's replacing and just 400



When finished, the JPMorgan Chase & Co.'s 70-story tower will be twice as high as the building it's replacing.

THE HEART OF MANHATTAN IS FULL OF HIGH RISES, BUT AT 1,388 FEET, THE NEW JPMORGAN CHASE BUILDING WILL TOWER OVER MOST OF ITS NEIGHBORS. ITS FINAL HEIGHT WILL BE OVER TWICE AS HIGH AS THE BUILDING IT'S REPLACING AND JUST 400 FEET SHORT OF THE ONE WORLD TRADE CENTER.

design to finish. "We can only move as quickly as the building goes up," Minieri says. The general contractor allowed AABCO to start installing once the building was 10 stories high, and the AABCO team works within five stories of the top. "As the building grows, and we cover more floors, we can get 30 to 40 people onsite. Think about the active work area like an accordion that stretches to have more coverage." For efficiency, AABCO matches the pace of work to the overall building construction. "We stay as close to the top as we can to minimize our

feet short of the One World Trade Center.

Giant clients require giant partners, so AABCO fabricates all duct in-house. "Some of the ductwork exceeds 12 feet wide and 7 feet high," Minieri says. This project will demand about 4 million pounds of duct. It will keep 50 to 60 sheet metal workers busy fabricating for 18 to 24 months. "We're using all different kinds of metals, 22- to 16-gauge galvanized steel, 16-gauge stainless steel, 10-gauge black iron, as well as aluminum ductwork."

The AABCO shop is only 5 or 6 miles from 270 Park Avenue. Still, transporting 4 million pounds of metal any distance takes planning and care. "It's not easy to stack the duct on the truck because of its bulk," Minieri says. Each shipment requires loading/unloading crews at three locations: a team at the shop to load the truck, a team at the bottom of the building site to move materials from the truck to the Alimak lift, and a team at the actual worksite to unload the lift and distribute the metal. Access to the lift is on a tight schedule. "We are not the only contractor on the job, so the vertical transportation is everyone's vertical transportation."

The whole project will take about three years from

exposure." The tower is about 30 percent complete.

A suggestion Minieri made for One World Trade Center, the Freedom Tower, influenced the JPMorgan Chase project. "In New York, we have the greatest engineers in the world," he says. "Once in a while, they call us because of our experience." Minieri brings a practical perspective to planning sessions. "They've got to allow their designs to be built." When he checked over the plans for the Freedom Tower, he noticed a riser in the middle of a massive shaft, where it was inaccessible. "They asked what we needed to install this type of riser in the shaft, and I told them to put some steel girders on every other floor." The girders give sheet metal workers locations to attach the lifts and scaffolding they need to work this riser. The engineers followed a similar design for the JPMorgan Chase project.

This project is on an unusual plan, with a centralized HVAC system. Instead of scattering mechanical rooms throughout the facility, AABCO is installing 15 mechanical floors. "There are no offices on those floors; they are just strictly mechanical rooms," Minieri says. "If you think about the project footprint, these rooms are huge. Each level is 1 square block of machines." ▼



Sheet Metal Werks Shifts Field Hours to Shop Hours

The Illinois company saved significant man-hours by planning ahead.

In this industry, we all know that time is money. Finding ways to think outside the box and reduce man-hours is the key to profitability — and happy clients. Sheet Metal Werks, a full-service fabricator in Arlington Heights, Illinois, recently demonstrated how pre-planning can make a world of difference.

The scope of the project consisted of approximately 170 feet of R-12 ThermaDuct with dimensions of 148 inches by 60 inches. The ThermaDuct was to be lifted and installed onto a rooftop feeding two make-up air units that would supply a large manufacturing company in Harvey, Illinois.

Given the size of this ductwork, this accomplishment was no small feat. But superintendent John Crne says that

it all came back to doing more planning in the shop — as opposed to in the field where you're working on a rooftop and out in the elements.

Logistically getting the material to the site initially led the company toward stacking it on flatbed trucks to save on shipping. But had the company stopped the thought process there, they would never have seen the tremendous back-end efficiency.

"We realized that if we put more coordination and planning into assembling ductwork and sending it in larger sections that the contractor would pay more upfront but really save on the back end," Crne says. "Whenever you can coordinate and do more planning in



A large manufacturing company in Harvey, Illinois, needed 170 feet of R-12 ThermaDuct with dimensions of 148 inches by 60 inches. Sheet Metal Werks had to lift and install the pieces onto a rooftop feeding two air units.



the shop — where you're working in a controlled environment — that's a win."

According to Crne, had they shipped ductwork to the site as initially planned, it would have required 29 crane picks—which they brought down to 12. Had they lifted individually, they would have had 27 connections to complete on the roof—which was brought down to only 10.

"Reducing the work in the field made this project turnkey," continues Crne. "We did all the supports, the connections, and weatherproof covers. And we were able to eliminate the insulation subcontractor coming out after the installation. That three-hour window was from the time we hoisted the first section to the completion."

Crne says that the lightweight material allowed them to land each section on a roof rail and then push and connect as they moved down the line. It was as streamlined as a project can get. The total weight of the ThermaDuct was only 1,900 pounds versus 5,400 pounds if it were to be done in Galvanized metal.

"We really put a lot of emphasis on upfront coordination and planning with the customer," Crne says. "We're looking at how we can save the end user time and money, as well as make them more profitable. When the contractor is more profitable, so are we."

In this case, the installing contractor was Midwest Mechanical — a company that Sheet Metal Werks has partnered with for decades. A good working relationship with the contractor is always critical, adds Crne.

"I would say that the spooling of the material was a key to the success of this project," Crne says. "The ThermaDuct had built-in lifting lugs, fully sealed connections, as well as all the struts and supports that would usually be installed in the field. Because it was so lightweight, they slid onto the rails easily and then it was a drop-and-go situation. There was no circling back. We finished each section as we went, which really streamlined the entire process."

This was also a result of forethought and planning, with the spacing of the roof rails kept just right to keep things moving.

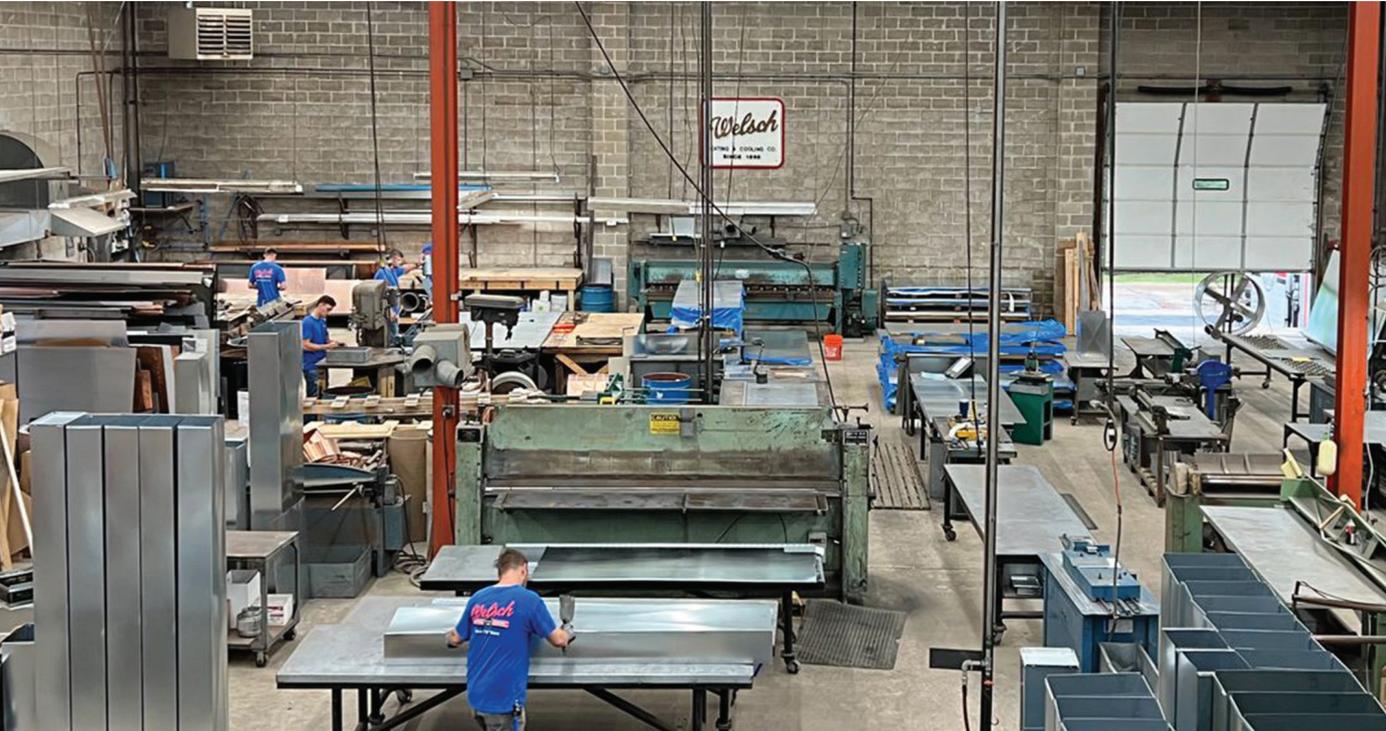
"It all comes back to the fact that we were focused on

FINDING WAYS TO THINK OUTSIDE THE BOX AND REDUCE MAN-HOURS IS THE KEY TO PROFITABILITY AND HAPPY CLIENTS. SHEET METAL WERKS, A FULL-SERVICE FABRICATOR IN ARLINGTON HEIGHTS, ILLINOIS, RECENTLY DEMONSTRATED HOW PRE-PLANNING CAN MAKE A WORLD OF DIFFERENCE.

taking away field labor hours wherever we could," Crne says. "By moving those field labor hours into the shop, it's always more productive and efficient. Had we not planned, and the roof rails were not spaced in a way that helped pull the connections, we would have added time back into the field."

Crne says that the best lesson to come out of this project is that pre-planning and coordination are worth the effort. Any time you can add upfront cost to save on the back end of a project is always going to be more profitable for the contractor.

"I have been with Sheet Metal Werks for over 20 years and have witnessed firsthand how much our industry has changed," he sums up. "This ThermaDuct project was a great example of how we can truly shift those field hours into the shop. This is something we take great pride in, which ultimately makes our contractors more competitive, as well as continuing to help streamline project completion." ▼



Going to Market

With advertising, 128-year-old Welsch Heating & Cooling Co. isn't afraid to try new ways to reach their customers — as long as they work.

When Welsch Furnace was founded in 1895, the only marketing the company did was paint its name on the side of a horse-drawn wagon.

The wagon held parts and tools for installing and repairing potbelly stoves around St. Louis.

Almost 130 years later, marketing for the residential firm, now called Welsch Heating & Cooling Co., is a little more sophisticated — just like the HVAC equipment it sells and services throughout the region.

Today's customers might see the Welsch name attached to an email. Or they may click on the company's Google ad when they're searching for a repair contractor.

If the marketing methods are more advanced, the goal hasn't changed: To keep the Welsch name prominent in the minds of the 2.8 million people who call St. Louis home.

In an industry where many homeowners focus on price, it's not always easy to stand out, says company President George "Butch" Welsch. The 81-year-old is the fourth generation of the Welsch family to head the company.

MARKETING HAS GOTTEN COMPLICATED

In addition, HVAC marketing has gone from a simple choice — how big of an ad to buy — to a complex decision encompassing demographics, internet search engines and website blogs.

"It used to be when you were in the heating and air conditioning business, you'd put an ad in the Yellow Pages and maybe the daily newspaper," Welsch says. "You could pretty much hit practically anybody in your market. Those days are long gone. It's a different market now, and it keeps changing."

But Welsch says his family's company has done its best to keep up with technology while not abandoning the traditional advertising options that have helped it build a base of 16,000 active customers. That's why St. Louis residents still see the company's name on roadside billboards and hear it announced on public address systems as a sponsor of family nights at local theaters.

"We still like billboards," Welsch says. "And the reason we still like billboards is there are still a lot of cars on the



Some of Welsch's most reliable marketing tactics include billboards, online ads and positive company reviews.

uses some of its \$250,000 annual marketing budget on pay-per-click (PPC) online advertising. With it, companies like Welsch pay to get their listings in a prominent spot on search engines like Google or social media platforms such as Facebook. Then they pay an additional fee whenever someone taps — or “clicks” — on the ads.

That makes results easy to measure.

“We get a pretty good return on investment with that, although it’s been decreasing,” Welsch says. “So we’re debating whether or not we’re going to stick with that one.”

HVAC MARKETING HAS GONE FROM A SIMPLE CHOICE — HOW BIG OF AN AD TO BUY — TO A COMPLEX DECISION ENCOMPASSING DEMOGRAPHICS, INTERNET SEARCH ENGINES AND WEBSITE BLOGS.

He points out that the company’s website has also become an important marketing tool. When the temperature in St. Louis rises, so does traffic to its website.

“That’s how I knew that yesterday was an extremely hot day in St. Louis,” Welsch says. “We had 17 service requests through our website and this is during the day when we’re open. It was just amazing,” Welsch says.

POSITIVE ONLINE REVIEWS ARE CRITICAL

And, hopefully, he adds, some of those customers will leave a good review on sites like Google or Yelp.com after the service call. With many potential customers doing internet research before hiring a contractor, positive online reviews have become essential. Welsch Heating requests satisfied customers leave a review and showcases those comments on its website.

However, despite all the advertising avenues available today, Welsch says his company still struggles with figuring out the best investments. It’s been an issue for a long time.

“I wish we had better answers,” he says. “There was a saying in our business, even back in the old days, that 50 percent of advertising worked. If we had any idea which 50 percent, we could get rid of the other 50 percent. The problem is it’s about the same way now.”

However, Welsch is quick to add he’s not complaining. Business is good.

“Right now, we’re in a mode where it seems to be working, so we are happy,” he says. ▼



road. It’s one thing that they can’t turn off. They can’t change to another channel.

“Our basic message is very simple on them,” he says. “Have (our) name as big as possible. It’s for name recognition. We’re not trying to get people to call us from the billboard. When the time comes, and they need heating or air conditioning services, they remember that they saw the name “Welsch.”

ONLINE ADS DRIVE CUSTOMERS TO THE COMPANY’S WEBSITE

To reach potential customers who may pay more attention to their smartphones than billboards, Welsch Heating



For this art wall at HBKU Doha University's student center, Zahner engineered and manufactured the painted aluminum panels and substructure in Kansas City and shipped the completed pieces to Doha, Qatar, where local installers placed the large metal plates on both the interior and exterior frameworks.

On the cover of SMACNews is the Virginia Commonwealth University. Zahner worked with Steven Holl Architects to develop the design.



COVER STORY

Evaluating the Environmental Impact of Architectural Metals

Zahner talks about how the Life Cycle Assessment accounts for the environmental impact of metal material from its initial extraction through manufacture and use and on to the end of its designed useful life.

Sustainability discussions are increasingly relevant in the construction industry, as greater attention is being placed on how the embodied carbon (or carbon footprint) of buildings and their materials can be measured and reduced through recycling opportunities.

The Life Cycle Assessment (LCA) standard is one method of examining the environmental effects of a material or product over its life cycle. It supports better material selection and design decisions.

Metals specific to Zahner projects, such as aluminum, copper, zinc, and iron (stainless steel and weathering steel), are examined as an aggregate group rather than an individual metal and as a material rather than a product.

Sometimes referred to as “cradle-to-grave” analysis, the Life Cycle Assessment examines material from its initial extraction, through manufacture and use, and on to the end of its designed useful life. For metals, useful life generally means when the building or structure is no longer functional.

FROM MINERAL ORE TO RECYCLED MATERIAL

While there are nuances in each metal, the path they take through the various life cycle stages are similar. All metals originate as mineral ores extracted from the earth and retain an intrinsic value regardless of form as long as they are not laminated to plastics or foams.

All manufacturing facilities that work with metals have a robust recycling operation that captures off fall and shavings

from the processing of the metal. This scrap developed during manufacturing has a value that adds to the bottom line.

Lastly, metals are relatively heavy compared to other building products. Still their resilience allows for reduced packaging (and the ability to maximize truck or container loads).

METAL’S UNRIVALED USEFUL LIFE

Metal has a longer useful life than other materials. Metal surfaces and structures offer a resilience that withstands the confrontations posed by the weather and human interface.

Metal roofs outlast all other roofing materials. Metal walls will outlast all other materials when correctly designed. And while surface coatings such as paints may fade or chalk over, the metal will last.



The Chrysalis Amphitheater at Symphony Woods Park in Columbia, Maryland, is made of tubular steel knit together to form a structure that houses a pavilion and stage for performances.



The facade of this Gulf Islands residence features Zahner's solanum steel.



Consider the DeYoung Museum of Art in San Francisco, California. An earthquake damaged it when it was made of stone.

For all its strength and durability, stone lacks resilience and cannot be recycled. Some of the stone was repurposed after the original museum's demolition, but much went to the landfill.

The new DeYoung Museum is clad in copper. Mismanufactured, damaged or scrap sections of the copper were recycled, as well as all the perforations. And because copper is more resilient, it will not crack during earthquakes.

Several hundred years from now, when the building's life is over, the copper will be recycled into new copper.

FIVE STAGES OF LIFE

The Life Cycle Assessment considers five distinct stages in

the life of a product. Each stage of the assessment compiles the inputs required from the environment. These inputs include energy, water, packaging materials such as wood, and temporary protective coatings.

Additionally, each stage records any detrimental outputs into the environment. These outputs include landfill waste, air quality effects from dust or VOCs released, and water quality effects such as silt, pH-altering chemistry and contamination.

STAGE 1: RAW MATERIAL EXTRACTION

INPUTS

- Energy
- Water

OUTPUTS

- Dust particles
- Contaminated water
- Mine tailings



The renovations Hayward Field at the University of Oregon from 2018-2020 included the addition of a 9-story tower at the northeast corner of the stadium. This landmark was inspired by the Olympic torch and pays tribute to the university's legacy depicting five Oregon track and field icons. Zahner engineered and fabricated 15,815 square feet of aluminum ImageWall panels for this design.

from ore requires an extensive amount of energy. Extraction equipment consists of large earth-moving machines, and transportation from the site requires dozens of massive trucks.

The extraction process requires an input of water in the floatation and separation of the ore. Once contaminated with various substances, this water is held in containment ponds and can be considered an output.

Air quality from the dust released in the excavation process and emissions from smelting operations are additional undesirable outputs from the extraction process. However, most mining operations are remote, so the risks of dust are concentrated near the mine.

THE ENIGMA OF METAL EXTRACTION

The extraction of ore to generate new metal is, without question, the most detrimental stage to the environment in the Life Cycle Assessment. This introduces a conundrum, as the produced metal has the potential to exist in useful forms indefinitely after this extraction.

Energy used to transform a mineral substance into a refined metal remains 'locked' into the material. Corrosion of metals occurs slowly, and for most metals used in architecture, this corrosion adds a protective layer that resists further change.

What's more, recycling metals has become an industry unto itself. It keeps metals out of landfills and is of such importance that scrap values are established as a market (metal scrap is a traded commodity).

Recycling metals can replace mining and the detrimental characteristics that mining possesses. And it can restore physical and mechanical properties to the point where there is no distinction between recycled and virgin metal.

The energy needed to recycle and restore metal is considerably less than energy used in the extraction process. There is no damage to the land, and you can

Metal ores make up the majority of substances extracted from the earth. Several tons of overburden and rock are excavated for every ton of ore extracted.

Regulations on mining operations vary between countries. Unfortunately, most mining operations have moved offshore to developing countries (where regulations are loose).

High operating standards are in place in North America, driven by environmental and labor laws. The Surface Mining

and Reclamation Act (SMARA) requires the reclamation of the mined land.

The Mines of Spain recreational area outside of Dubuque, Iowa, is an example of reclaimed land. Large lead mining operations occurred here in the 19th and early 20th centuries.

In the 1970s, the community and the Department of Natural Resources purchased the property and created a park and wildlife habitat that flourishes today.

The extraction of metal

Metal is a Low Waste, Sustainable Building Material

Sustainability is more than just an industry buzzword at Zahner. It's a daily commitment to preserving and protecting the natural resources we've been entrusted with and using them responsibly in the built environment.

As building materials go, metals of all kinds are some of the most sustainable building materials available when considering their accessibility and recyclability. Not only are these materials environmentally responsible, but they are also economically strategic in their costs, longevity and durability.

Metal is lightweight, fire-resistant, and more durable than stone, wood or plastic. It's also not susceptible to rot, insects or mold. Metal roofs and facades have been used for centuries in world architecture and are likely to be used for centuries more.

In addition to its beauty and durability, metal has other advantages as well when it comes to labor efficiency and construction waste.

Metal fabrication and assembly is usually done off site in controlled environments where milling, welding, surface treatments, and patinas can be carefully applied, recycled and remediated. Constructing with metal components normally results in less than 2 percent of construction waste, all of which can be recycled. Wood construction, on the other hand, can result in as much as 20 percent of construction waste, most of which typically ends up in landfills.

In terms of recyclability, metals such as steel, aluminum, and copper, once extracted in their pure mineral forms, can be used, and recycled indefinitely. Metal recycling can occur over and over without any change or diminishment of the metal's properties. In fact, the three metals of steel, aluminum, and copper together are the most recycled materials in the world, surpassing all the tonnage of glass, plastic and paper combined.

DEMONSTRATING AND INVESTING IN SUSTAINABILITY BEST PRACTICES.

At Zahner, we strive to always meet and exceed environmental protection guidelines and standards, and we invest in the necessary operational controls and technologies needed to achieve those standards.

To that end, we're proud to report that our manufacturing facility in Grand Prairie, Texas, was recently recognized for the seventh year in a row for its 100% compliance with pretreatment and environmental requirements related to effluent discharge limits, reporting requirements, stormwater discharge permit regulations and cross connection requirements.

This award requires discipline and constant vigilance. The Zahner Grand Prairie facility is audited several times a year by city and water authority officials who conduct both scheduled and surprise inspections. It only takes one deficiency in documentation, testing or operations to become ineligible for the award.

Our Grand Prairie facility is also the site of our latest investment in green manufacturing technologies, as it recently installed a new wastewater ion exchange system.

Water used in the production process for our world-renowned Surfaces must be treated and neutralized. In the past, these processing wastewaters have been collected in bulk containers and



This picture shows how zinc can be transformed with different oxides.

trucked away for safe disposal. While a common practice among manufacturers, it still results in thousands of pounds of wastewater that must be transported by rail, truck and other modes that consume fossil fuels.

With the new ion exchange system, rinse waters from patina baths are now recirculated and deionized to remove harmful solvents and turn them into an estimated 20lbs. of dry waste per year, as opposed to the tens of thousands of pounds of wastewater that were previously generated annually.

The benefits of the new system are numerous: less fresh water is needed, wastewater storage and hauling are reduced and gray water management is simplified.

ONGOING COMMITMENT TO SUSTAINABILITY STEWARDSHIP.

We've actively developed and cultivated environmental health and welfare best practices in our fabrication, supply chain and operational standards. Here are a few additional examples of the steps we've taken to reinforce environmental protection and safe manufacturing:

- **Clean Water:** We seek to eliminate all preventable stressors on local water supplies by reusing and recycling wastewater used in cleaning, finishing and patination.
- **Construction Waste Reduction:** We use nested and programmatically defined cutting and crating practices, which reduce waste and shipping. All metal offcuts, including milling scraps and filings are collected and recycled.
- **Clean Machining:** We use recycled water for CNC water jet-cutting operations that filters out waste and recycles garnet.
- **Wood Recycling:** Wood crates used for shipping are collected and recycled. Zahner-designed reusable crates made of metal, rubber and wood are also being used wherever possible.

When it comes to sustainability, metal is a positive choice for designers seeking a dynamic, durable and beautiful material option for roofs, facades, interior accents and artwork. The aesthetic and cost benefits, combined with its infinite recyclability, make metal one of the greenest options available in the marketplace today.



The new DeYoung Museum of Art in San Francisco, California, is clad in copper. Some of the copper came from mismanufactured, damaged or scrap sections of copper that were recycled and reused.

find recycling centers in every sizable city around the globe. No other material used in construction can make this claim.

STAGE 2: MANUFACTURING INPUTS

- Energy
- OUTPUTS**
- Temporary packaging material

There are two distinct phases of the manufacturing stage.

During phase one, the large metal mill takes the refined metal and scrap, adjusts the alloy needed, and turns it into base shapes and wrought forms.

The second phase of the manufacturing stage takes place at the smaller shop or plant that receives the metal forms. Here, the metal is worked into panels, handrails, column covers and other items used in construction.

During phase one, an input

of heat energy and mechanical energy is required at the mill to create the base metal forms.

Scrap metal is processed using induction furnaces. These systems distribute the heat energy with high efficiency using electricity. Induction furnaces reduce waste energy, do not produce any gasses and can generate electrical energy through renewable sources.

Once melted, the metal scrap or ingots are transformed into large slabs or cylinders before they are shaped under mechanical pressure into plates, sheet metal coils, wire, extrusions and other structural forms.

These base metal forms may now continue to the next destination, where transporting, stocking and distribution are maximized on flatbed vehicles or containers on a rail.

After arriving at phase two of the manufacturing process, the energy requirements drop significantly. The required inputs are mainly limited to forklifts and large shaping machinery.

For the average-size factory, the energy required to shear, laser cut, weld, press form, stamp, forge or extrude is equivalent to the energy needed to operate several homes at best.

Material outputs include wood for the skids and crating, plastic films for protecting the surface, steel banding and cardboard.

Water is required for some of the finishing operations. But at Zahner, the water is purified and recycled through reverse ionization, so it is not considered a negative output.

Of all the outputs, plastic film is the most problematic. It protects the finished surface, but becomes landfill material for a very long time.

STAGE 3: TRANSPORTATION AND DISTRIBUTION INPUTS

- Energy
- OUTPUTS**
- Packaging materials

Transportation from the mill to distribution centers is similar

Exploring metal's role in sustainable architecture

Metals are different from nearly all other materials used in our built environment. Once the useful life has ended, the metal is collected and recycled. During the recycling, the metal is remelted and reshaped, gaining back all of its original mechanical properties. Essentially, the metal is reborn to take on a new form and purpose.

Metals are the only material used in constructing our world that can be used over and over again — forever.

Let's look at the five most common metals used in architecture today and their sustainability advantages.

ALUMINUM

The collection, shredding and melting of aluminum returns more than 65 percent of this metal back into the marketplace each year.

Aluminum recycling is an extremely important aspect of metal production as well. It effectively keeps costs down and reduces harm to the environment.

In the United States, 80 percent of the aluminum produced is from recycling.

COPPER

More than ever, copper is in high demand. The metal is corrosion-resistant and conducts heat and electricity efficiently, making it highly desirable for the explosion of technological applications in today's world.

Copper has demonstrated health-related benefits as well. In the last several decades, there has been substantial testing on the efficacy of various surfaces and wipes to eliminate harmful bacteria. Copper and copper alloys have performed extremely well.

STAINLESS STEEL

Stainless steel alloys are considered hygienic and are acceptable for drinking water, food preparation, dairy operations and medical devices including implants. It is used in hospitals, clean rooms, restaurants, bathrooms and more.

Stainless steel doesn't promote bacterial growth, nor does it provide a surface for bacteria to collect and flourish. Most stainless steel surfaces are as easy to clean as glass or ceramic surfaces.

Recycling of stainless steel has grown dramatically and has become the main raw source of the metal. The International Stainless Steel Forum states that objects today made of stainless steel have an average recycling content of approximately 60 percent.

STEEL

In the built world, iron is ubiquitous. It offers longevity and can be melted and reused indefinitely. The recycling of iron and steel is well-established across the globe.

Specialized mills with electric arc furnaces have helped increase the demand for recycling, as well as reduced the energy consumption of steel production. The energy required to recycle scrap is approximately a third of the energy required from the ore production route.

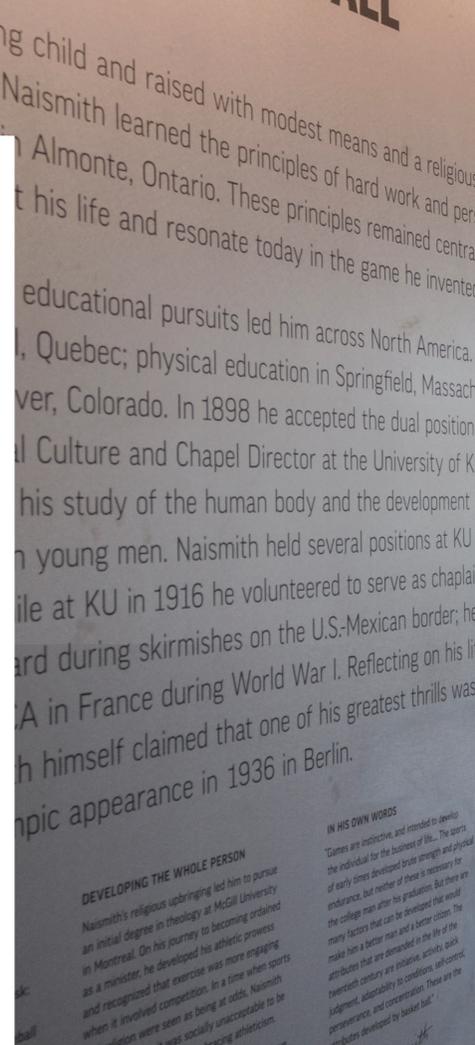
ZINC

Today, using zinc as a steel coating in the process known as galvanizing is considered an environmental and sustainable coating process. There are no VOCs (volatile organic compounds) released during the process. Furthermore, it results in a steel product that will last longer and have far less maintenance when properly done as compared to paint coatings. The initial cost of galvanizing is very low as well.

On top of this, steel and zinc can be recovered and recycled. Recycling of existing zinc currently stands at about 30 percent. It is expected to increase as new systems of recovery bring the cost of recycling down. Recycling zinc from sheet, scrap zinc and stamped zinc is relatively straightforward. As the steel is heated, the zinc melts and vaporizes. From the vapors, the zinc is removed and repurposed. Another method is clearing the zinc by leaching the metal with acid and electrowinning it to recover it from the acid bath.

MATERIAL	SUSTAINABILITY CHARACTERISTICS
Metals	You can recycle metals indefinitely. They retain their physical and mechanical properties. Scrap has value and a robust market exists for recycling.
Glass	Bottle glass can be recycled and repurposed, but not plate glass. There is no scrap value and no market for scrap glass.
Concrete	Concrete can be crushed and repurposed, but it is expensive and requires a high level of energy. There is no scrap value.
Stone	Stone can be repurposed if salvaged or crushed. No scrap market exists and, as a result, there is little scrap value.
Asphalt	Asphalt can be repurposed, but it is expensive to do so. There is no scrap value.
Paper	There is a limit on how many times paper can be recycled. There is no scrap value.
Plastic	There is a limit on how many times plastic can be recycled. It loses mechanical properties as it is remelted. There is no scrap value.
Fiberglass	Fiberglass cannot be recycled, and it has no scrap value.
Gypsum board	Gypsum board can be recycled, but most of it ends up in the landfill. It has no scrap value.
Composite panels	There is no market or process in place to recycle composite panels, so they end up in landfills. This includes metal-faced panels. There is no scrap value.
Carpet	Carpet has no scrap value and ends up in landfills.
Wood	A small portion of the market is repurposed, most of the materials end up in landfills. It is biodegradable and a renewable resource.

Weathering steel, with its copper-bearing properties, forms its own distinctive oxide barrier over the surface like that seen below and far right at Stanford University.



Cold weather, wind, sunlight, rain, pollution and other external conditions have little effect on metal surfaces when produced and installed correctly.

According to the Aluminum Association, 75 percent of the aluminum produced in the United States is still in use today. Copper roofs installed on structures in Europe have performed well for centuries. In fact, metals often outlast the structures they clad, with few maintenance requirements necessary.

High-performance paint finishes applied to metal can be thermal set without altering the metal. Or they can be left natural and unpainted to capture substances deemed pollutants in our air and turn them into protective layers.

Exposed copper develops its green-blue color after it captures sulfur from the air. This mineral layer adds natural beauty and an inert surface that resists change, similar to zinc, which weathers over time by combining with

to other products in the industry.

Zahner pre-assembles our metal components into large sections to reduce crate and packaging waste. Our materials are lightweight and require less fuel to deliver.

At this stage, metals are not that much different than other materials. Transportation may even be less costly due to the weight and durability of metal products.

STAGE 4: CONSTRUCTION AND USE

INPUTS

- Energy – Low

OUTPUTS

- Packaging material to the landfill

The fourth stage in the life cycle of metals is where they truly excel. Metals resist change, have better resilience and come in a variety of forms.



An etched aluminum plate.

atmospheric carbon and turning a dark gray in color.

The energy requirements to build with metal products are minimal compared to other options.

Metals are stronger yet lighter than most materials. They can offer a more economical structure (greater spans with minimized support attachments). No water nor sacrificial material other than packaging is involved.

FINAL STAGE: RE-USE, RECYCLE, DISPOSAL

INPUTS

- Energy

OUTPUTS

- New metal for reuse

This last stage in the life cycle assessment is where metals have no equal. Metals — and only metals — can be used indefinitely as building materials.

Metal recycling is a burgeoning business. When metals are recycled, the original mechanical

properties are restored. Energy is needed in the recycling process but at levels far less than at the extraction stage.

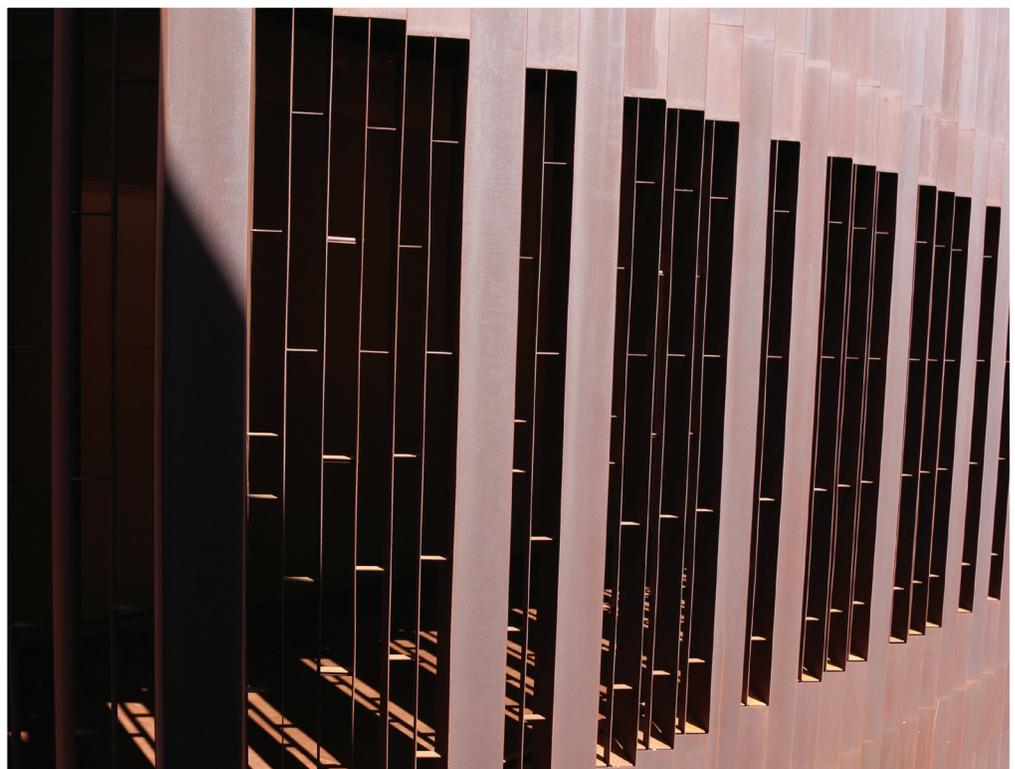
The United States has become a major secondary producer, meaning new products are often created from recycled metal scrap than virgin metal ore.

When evaluating metals in this stage, it should be assessed

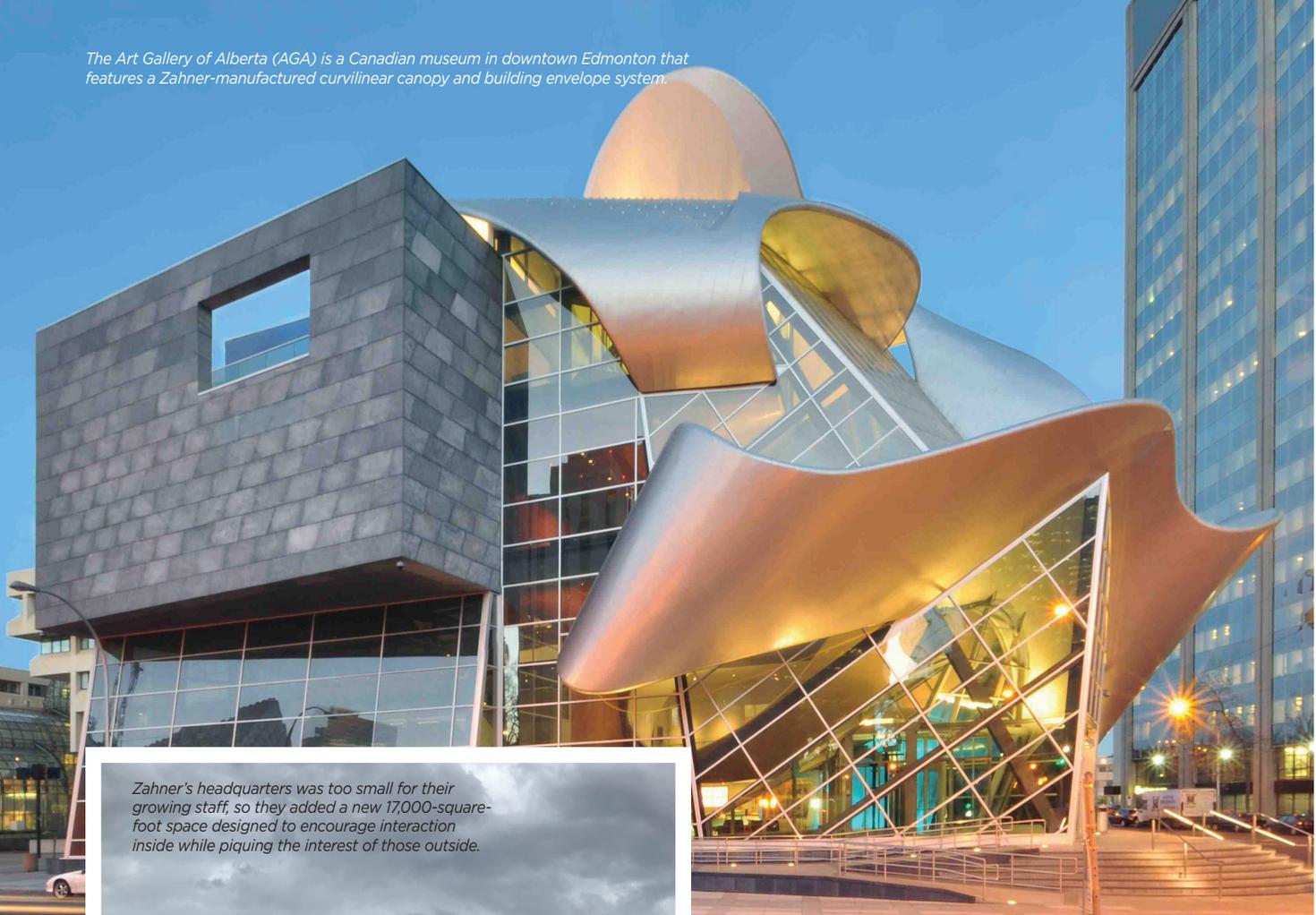
with a reduction of the extraction stage because it replaces the need for extraction.

Recycled metal has all the properties of metal made from raw material extraction but at a much lower energy input. Little to no water is required.

On the output side, there is little waste, dust or damage to our water systems to produce



The Art Gallery of Alberta (AGA) is a Canadian museum in downtown Edmonton that features a Zahner-manufactured curvilinear canopy and building envelope system.



Zahner's headquarters was too small for their growing staff, so they added a new 17,000-square-foot space designed to encourage interaction inside while piquing the interest of those outside.



recycled metals. Except for removing paints from metals, the air quality is not affected.

FINAL SUMMARY: LIFE CYCLE ASSESSMENT COMPARATIVE SCORECARD

One can see that on a scorecard summary, recycled metal has the lowest (best) score. (See scorecard below). While metal extracted from ore is rivaled only by wood.

The significant advantages of metal in the construction and use phase, combined with the

benefits of recycling, offset the initial environmental disadvantages of extraction.

One can conclude that architectural metals offer a sustainable edge when it comes to designing and building with the environment in mind. ▼

This article was written by L. William Zahner. Zahner has produced an Architectural Metal Series, published by John Wiley and Sons. Check it out at www.azahner.com/resources/publications.

Life Cycle Assessment Comparative Scorecard

	METAL FROM ORE	RECYCLED METAL	WOOD	GLASS	STONE	TERRA COTTA	GFRC
Raw Material Extraction	5	2	2	4	4	3	3
Manufacturing	3	3	3	4	4	3	3
Distribution & Transportation	3	3	2	4	4	3	3
Construction & Use	2	2	3	3	3	4	4
Reuse, Recycle & Disposal	2	2	3	5	4	5	5
Score (lower is better)	15	12	13	20	19	18	18



SMACNA at the White House & SMACNA Endorses Bipartisan Bill on Substance Abuse

SMACNA was asked to be part of a policy roundtable on supply chain for highly efficient heat pumps and related decarbonization technologies that are key parts of whole house retrofits. SMACNA's Executive Director of Government & Political Affairs, Stan Kolbe, joined incoming SMART President Mike Coleman at the off-the-record policy discussion in April. This roundtable was closed to the press and public to foster candid dialogue.

At the roundtable, the White House and Energy Secretary Granholm convened heat pump manufacturer, contractor and distributor executives and labor leaders to discuss how America can lead in growing the global clean energy economy by investing in America's workers and creating good, union jobs here at home.

The discussion focused on how pairing public and private investments with new Inflation Reduction Act, Bipartisan Infrastructure Law and Defense Production Act programs — such as tax credits, rebates, grants and loans — will spur deployment of and help meet residential and commercial demand for heat pumps. Taken together, these efforts will also support good jobs, boost American competitiveness, reduce emissions and lower energy costs for families and small businesses.

Executives and labor leaders discussed how supply and demand side signals from the private and public sectors can spur even more investment in heat pump manufacturing, while scaling workforce development and training.

America's manufacturing resurgence continues, as the Biden-Harris Administration is committed to working with key partners to reap the economic and pollution-reduction benefits of investing in an American-made clean energy economy.

SMACNA ENDORSES BILL ON SUBSTANCE ABUSE (S. 644/H.R. 1359).

Major identical bipartisan bills were just introduced to assist workers and others suffering from opioid and related substance abuse in their communities with the support of trained medical professionals. The Senate bill, S. 644, the Modernizing Opioid Treatment Access Act (MOTA), was sponsored by Sen-

SMACNA MEMBERS HAVE LONG ENCOURAGED ... SUBSTANCE ABUSE ASSESSMENT AND TREATMENT PROGRAMS, AS WELL AS OUTREACH INITIATIVES. OUR ASSOCIATION PROVIDES ... RESOURCES ON MENTAL HEALTH, SUICIDE AND DRUGS AND ALCOHOL PREVENTION.

ator Ed Markey (D-MA) and Senator Rand Paul (R-KY). The bill would increase access to care for people, often in the workforce, experiencing opioid use disorder (OUD) by reforming outdated regulations governing the prescription and dispensing of methadone and related effective medications for treatment and recovery. This long overdue legislation was introduced March 2nd and co-sponsored by Senators Sanders (I-VT), Braun (R-IN), Booker (D-NJ) and Hassan (D-NH).

In the House, H.R. 1359, the Modernizing Opioid Treatment Access Act (MOTA), was sponsored by Rep. Don Norcross (D-NJ-1) and Rep. Don Bacon (R-NE-2). This long overdue legislation was introduced March 6th and cosponsored by Reps. Fitzpatrick (R-PA-1), Tonko (D-NY-20), Kim (D-NJ-3), Kuster (D-NH-2), Trone (D-MD-6) and Pettersen (D-CO-7).

As we know, the construction industry has one of the highest injury rates in the U.S., and opioids have commonly been prescribed to

construction workers to treat the pain caused by these occupational injuries. Construction workers are at greater risk for overdose, with studies — most recently in both Massachusetts and Ohio — showing that they were seven times more likely to die of opioid-related overdoses than the average worker. Since use of opioids has led to addiction and overdose deaths, it is important for workers and employers, as well as policy makers, to understand the risks and needed alternatives.

SMACNA members have long encouraged and supported established substance abuse assessment and treatment programs, as well as outreach initiatives across the nation. Our association and its hundreds of chapters provide our member firms resources on mental health, suicide and drugs and alcohol

prevention. We are also members of the Construction Alliance for Suicide Prevention. In addition, we make available support toolkits that include fact sheets, safety talks, reports and more. A significant number of our corporate members implement a workplace program on opioids from the National Safety Council. Further, SMACNA provides support for the Center for Construction Research and Training, which provides resources to the Prevent Opioid Deaths in the Construction Industry (PODCI) program.

Status: Both bills are awaiting hearings and SMACNA has urged all members of Congress to co-sponsor this legislation and seek its amending to any related bills advancing in Congress. I have met with many of the House sponsors individually on H.R. 1359 and have contacted Senate sponsors as well. Further I have reached out to our industry management and labor partners to seek their help in gaining greater momentum for both bipartisan bills. ▼



CYBERSECURITY

Nick Espinosa

How to Prepare Your Business for Cyberattacks

Bulletproofing your business against a cyberattack can help protect you from today's threats. Here are the most urgent items to put on your list to quickly prepare your business.

UPDATE ALL CRITICAL INFRASTRUCTURE, OPERATING SYSTEMS AND SOFTWARE.

We primarily update or patch our computers, phones, wireless access points and everything else to fix a known vulnerability. Ignoring or skipping updates makes hacking into your life much easier. A couple of years ago, we were called into a SMACNA member company due to a data breach where the attacker exploited a known vulnerability in their firewall and got in. If that member had simply kept their firewall up to date, we would have never gotten that call.

ENABLE MULTIFACTOR AUTHENTICATION (MFA) ON EVERYTHING YOU CAN.

Gone are the days of only having a username and password to protect assets like email. Now, we're using Multifactor Authentication (and more) to protect our logins. MFA is free for most platforms, like Microsoft Office 365. Studies have shown that using MFA with an authenticator app has thwarted over 99 percent of account compromises targeting Office 365 accounts.

ENSURE ALL DEVICES HAVE THREAT DETECTION.

If I break into your network, I will start inventorying everything connected. If I'm able to find a computer without an Endpoint Detection Response (formerly antivirus) agent, I will then use that to leverage my attacks. Make sure everything has threat detection — no exceptions!

DOUBLE CHECK YOUR BACKUPS.

Periodically test your backups' recovery capabilities to ensure they're backing up everything they need to. Also, have onsite backups (if you have onsite servers that need backing up) and send backups to the cloud, as they are much harder to attack. Encrypt your backups so they can't be stolen and ransomed against you.

ALERT EMPLOYEES TO MAINTAIN VIGILANCE AND LOOK FOR THREATS.

Education is beyond important for a sound defensive strategy. Ensure all employees are properly trained to spot phishing emails, bad sites and more. Also make sure the training is role-based. Individuals with access to things like money need training at least once a month via phishing testing and subsequent training if they fail to spot and block the phishing attempts.

GEO BLOCK FIREWALLS AND IDENTITY MANAGEMENT SYSTEMS.

Many firewalls and identity management systems give an organization the ability to block all traffic coming to their systems. Don't have clients or business interests in Russia? Then why can Russia see your firewall when you can tell your firewall to turn into a black hole for all internet traffic except for traffic from countries where you do business? Why do your company logins work in Russia as well? Make sure those are locked to where you are geographically.

INDUSTRIAL CONTROL SYSTEMS SHOULD BE TESTED TO ENSURE THEY WORK OFFLINE.

If the internet goes down, does the HVAC controller stop working? That was a problem with Google Nest devices in many homes. Google had a major outage, and people couldn't use their thermostats to heat or cool their homes while they were down. Can your customer's buildings still heat and cool without internet? If there are other critical industrial control systems at play, can they also work offline?

These are only the most critical steps to securing your business from an impending cyberattack. We don't know how far the current war in Ukraine will escalate, but if Russia must retaliate against the West, their best bet is to launch infrastructure attacks against us all. Following these basic steps will make your business that much harder to hit. ▼

Nick Espinosa is a cybersecurity expert, working with companies to design custom cyberdefense strategies. Learn more at www.securityfanatics.com.



FINANCIAL STEWARDSHIP

Ronald J. Eagar

Top Contractor Strategies for 2023, Part 2

In the last issue of *SMACNews*, I presented the first five of Grassi's Top 10 Contractor Strategies for 2023. Those approaches to purchasing, procurement, prequalification, increased costs and project management are designed to cut through the noise of today's disruptive market and help contractors chart a confident course through this new year.

In this article, we will look at the next five strategies to prevent contractor failure and capitalize on the opportunities we believe will emerge this year.

6. Cybersecurity. While the construction industry may be a late adopter of cyber and information security protocols, it is never too late to promote awareness throughout the organization and foster an environment where it is OK to be skeptical of an email, a request from a new face on the construction site or a new vendor payment process. Ensure that you and your management team know what to do if your company experiences a cyberattack. Have formal policies and procedures to monitor cyber risk, including exercises such as penetration testing, and conduct regular employee training. Leverage a third-party provider to run crisis management and have a designated cyber expert on staff.

7. Cash Flow Forecasting & Operating Budgets. This strategy makes the list every year but is even more critical in today's economic climate. Cash flow can be the silent killer of any business. By implementing and employing a project-centric cash flow forecast and operating budget process, the contractor can identify where projects (and the company) will experience cash surpluses/deficits and understand how this will impact the entire business. These reports should be fluid, cover a six- to 24-month outlook, and provide your financial leadership with a deeper insight into the company. Ensure you make changes in real time to address potential cash shortfalls and project profitability matters. The power of this strategy is when a constrained period is identified; management will be able to take the necessary steps to identify other sources of cash flow that will carry operations. Your bank or other financial institution will be much more receptive to a forward-looking request than a last-minute one.

8. Financial Reporting & Key Performance Indicators. For the construction contractor, financial reporting on the company-wide and project level must be the foundation

of every business decision upper management makes. Real-time and accurate financial reporting will help the contractor identify issues early so he or she can have a chance to remediate them contemporaneously — not only on a specific job but for many jobs and estimates looking forward. Benchmarking your company to construction industry key performance indicators ("KPIs") can help you identify if a certain metric is above or below the industry average.

9. Income Tax Planning. In an industry where "cash is king," a proactive income tax deferral strategy becomes an effective means to maintain corporate capital. Based on the tax reporting method of the contractor and the types of contracts a construction company performs under, there are opportunities to employ an accepted income tax reporting method as the basis of a deferral strategy. And even if a contractor is already utilizing an accepted deferral methodology, the strategy could shift to accelerating the recognition of income under today's favorable rates before they sunset at the end of 2025.

10. Succession & Estate Planning. This is one of the more overlooked topics for many construction company leaders, not because it is unimportant but because it demands extra time. Having a succession plan in place to identify, engage and create success for the next executive is imperative. In an industry where there is a skilled labor shortage, not to mention the Great Resignation, a formalized and practiced succession plan acts as a differentiator for future-facing contractors. In terms of wealth preservation, owners of construction companies still have the opportunity to transfer highly valuable/appreciable assets out of their estates, tax-free. By utilizing the lifetime gift tax exemption, which is \$12,920,000 per individual for 2023, an owner can move the ownership of the company to the next generation while controlling the tax implications. This type of planning is not a one-shot deal and does require regular review and updating.

While not an all-inclusive list, these 10 issues are sure to continue to impact the construction contractor in the office and on the job site. Success this year can be achieved through continued dialogue with your people and professionals as the operating landscape continues to evolve, better access to real-time project data (financial and non-financial) that will enable you to make critical job decisions in

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LEGAL

Grant Collins

Understanding The Notice Requirements In Your CBA

For contractors with collective bargaining agreements (CBAs) expiring in 2023, it is important to remember that most CBAs, including the Standard Form, include an “evergreen” or “automatic renewal” clause. The clause provides that the CBA will be automatically renewed (usually from year to year) unless one party gives notice (usually more than 60 or 90 days) prior to the contract expiration date of its intent to terminate the contract and/or reopen the contract in order to renegotiate a new agreement.

AUTOMATIC RENEWAL CLAUSES

At the outset, it is important to note that the language used in automatic renewal clauses varies. Whether the notice is sufficient to prevent the automatic renewal will depend on the specific language used in the contract.

For example, Article XVII, Section 1 of the Standard Form provides as follows:

This Agreement and Addenda . . . shall become effective on the _____ day of _____ [month], _____ [year] and remain in full force and effect until the _____ day of _____ [month], _____ [year] ***and shall continue in force from year to year thereafter unless written notice of reopening is given not less than ninety (90) days prior to the expiration date.***

This means that the party intending to reopen the CBA must provide the other party with “**written notice**” of such intent at least **90 days** prior to expiration. If neither party gives notice, then the current contract “renews” (or rolls over) for one year.

“DATE OF RECEIPT” IS KEY

Importantly, the timeliness of such notices is governed by the “**date of receipt**” and **not** the “**date of mailing**.” While there may be an exception for an unanticipated delay that is beyond the control of the party, the Board has made clear that waiting to the last minute to mail the notice is **not** a valid excuse.

CALCULATING THE DEADLINE

To calculate the deadline, count backwards from the last day that the CBA remains in effect (called the “termination day”). Be sure to **include** the last day (or “termination day”) in your calculation.

Consider the following examples if the CBA contains the same 90-day notice period required by Article XVII, Section 1 of the Standard Form:

Expiration Date	Deadline for Receipt of Notice
Friday, June 1, 2023	Friday, March 30 (90 days prior to June 1) If notice is not “ received ” by Friday, June 1, 2023, then, on June 2, 2023, the CBA would renew for one year (i.e., until June 1, 2024).
Tuesday, August 1, 2023	Tuesday, May 3 (90 days prior to August 1) If notice is not “ received ” by Tuesday, August 1, 2023, then, on August 2, the CBA would renew for one year (i.e., until August 1, 2024).

WHAT HAPPENS IF NO NOTICE IS PROVIDED?

If neither party provides the required notice (or if the notice is untimely), then the CBA’s term is extended for the term specified in the clause. For example, Article XVII, Section 1 of the Standard Form provides that the CBA is renewed for a period of one year.

If a CBA is automatically renewed, there would be no changes to the agreement. Thus, there would be no increases (or decreases) in any of the wages, benefits or other terms and conditions set forth in the renewed agreement. The no-strike clause would also continue to apply until the renewal term expires.

The parties can mutually agree to “reopen” the renewed contract prior to expiration of the renewed term. But unless the CBA includes Article X, Section 8, if the parties agree to formally “reopen” the contract, then the union would have the ability to go on strike if the parties

SMACNA 2023 Associate Members

PREMIER PARTNERS



GOLD



SILVER



BRONZE



fail to reach an agreement. Thus, rather than formally “reopen” a renewed contract, a contractor could instead only agree to “discuss” certain items, such as a wage increase, during the term of a closed contract.

As you can see, there are a number of legal and practical considerations when dealing with a missed deadline and a potentially renewed agreement. Thus, if there is any doubt regarding whether the deadline was missed, the contractor should reach out to SMACNA’s labor relations department to discuss the issue and determine how to best proceed. ▼

Grant Collins is an MSBA-certified specialist in both traditional labor law and employment law at Felhaber Larson. Grant’s traditional labor practice involves preparing for and serving as chief spokesperson for collective bargaining, advising employers on their rights and obligations under collective bargaining agreements and the National Labor Relations Act (NLRA) and representing employers in grievance arbitrations and unfair labor practice charges before the National Labor Relations Board. Reach him at gcollins@felhaber.com or through www.felhaber.com.

FINANCIAL STEWARDSHIP

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the moment and an emphasis on conserving corporate capital while being open to new opportunities and the right type of growth. As we move farther away from 2022, a year that saw some reactive decisions, the construction industry has the opportunity to proactively script and plan 2023.

For more information on these strategies and putting them to use for your company, please contact Ronald Eagar, construction partner at Grassi Advisors & Accountants, at reagar@grassicpas.com.

SMACNA’s Associate Member program provides an opportunity for industry service providers and suppliers to build lasting partnerships with our industry-leading contractors.

To learn more about becoming an Associate Member, visit smacna.org/associatemembership or contact Dustin Berger at dberger@smacna.org.



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SMACNA CALENDAR

MAY

May 21-24

Financial Boot Camp
Tempe, AZ

JUNE

June 4-6

Council of Chapter
Representatives Meeting
Newport, RI

SEPTEMBER

September 17-20

Project Managers
Institute
Aurora, CO

OCTOBER

October 1-4

Financial Boot Camp
Rosemont, IL

October 15-18

2023 SMACNA
Annual Convention
Phoenix, AZ

NOVEMBER

November 5-7

Planning Your Exit
and Business Valuation
San Diego, CA

November 12-15

Project Managers
Institute
Seattle, WA

November 13-14

FAB Forum
Indianapolis, IN

DECEMBER

December 10-12

Council of Chapter Representatives
Meeting
Scottsdale, AZ

Welcome New SMACNA Members

ACCO Engineered Systems	Toledo, OH
AirPro Mechanical Inc.	Tipp City, OH
A.W. Farrell & Son, Inc.	Dunkirk, NY
Bay City Mechanical	Vista, CA
Ducted Air Systems	Warwick, RI
Dunbar Mechanical Inc.	Scottsdale, AZ
GTS HVAC Inc.	Brooklyn Center, MN
Kemp & Hilton Inc.	West Valley City, UT
Melkay	Evansville, IN
Precision Test & Balance Inc.	Mineola, NY
Prime Metal Products	Scottsbluff, NE
Schmolck Mechanical Contractors, LLC	Sitka, AK
STS Sheetmetal Inc.	Vineland, NJ
TAB Systems Inc.	West Berlin, NJ
Quality Mechanical Services	Harvey, IL

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