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**STATE OF THE
INDUSTRY**
WHERE ARE WE HEADED?

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EDITOR'S NOTE

BY LINDA SCHMID

What Is The State of the Industry?

We look to economics professors and analysts for answers about the state of the economy, but for predictions regarding the construction industry, we turn to you. The suppliers and contractors and folks who work in the industry are probably better indicators of where the industry is headed than economic experts who are trying to analyze the economy as a whole. At least, that's what we believe here at Shield Wall Media and that's why we asked you to take

a survey on that very subject. Though the response rates were not high, we did get some insight regarding peoples' perceptions of where the industry is headed.

See page 18 to find out what some of your peers say about the State of the Industry. For a look back at the industry, check out Flashback: 1974 on page 10.

Our Top 10 Product Winners are listed on page 24. Be sure to congratulate the suppliers if you talk to them.

We're trying something new this year: articles about interior options. See page 31 for our article about helping customers choose a countertop. More such articles are planned for the future, including lighting and flooring. Is this helpful? Are there more specific concerns you would like us to cover? Let us know what you think.

Linda Schmid, managing editor
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PUBLISHER'S NOTE

Welcome to the first issue of a brand new year!

The first issues of the year traditionally feature State of the Industry articles. For these articles we survey our readers, our advertisers and interview key personnel in our industry. The goal is to review the events of the previous year and anticipate the changes coming up. We typically stay general because it is the future, we can guess, but in reality, no one knows.

For a decision maker or business owner, good business intelligence and data is critical for planning. The ability to anticipate and manage upside and downside risks allows you to survive tough times and prosper in good times. The question is always "Where do I get this information?"

You have several resources; news,

data services and trade associations all conduct market research and attempt to measure trends. In this environment, we want to be your resource. We see one of our growth areas as data generation. We are in a unique position to measure our industry. In November we passed 100,000 subscriptions. No association or market data company has that potential sample size. (There are other factors, but sample size is a major factor deciding validity of the information collected.)

One of the things we use as a resource for the articles are current and previous surveys. Help us help you survive and prosper.

Please complete and respond to our surveys. The information you provide is

anonymous and will not divulge any proprietary information to your competitors. We will continue to share the information we collect, free of charge, to our readers.

I would also like to know what questions you would like us to ask. If you have a question, chances are you are not alone among our 100,000 subscribers. This goes back to our phrase of the day: Help us help you.

Starting in 2022, Shield Wall Media wants to be your resource for industry trends and data.

Have a happy, healthy, and prosperous 2022.

Gary Reichert, Publisher
gary@shieldwallmedia.com

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By Wick Buildings



MARCH PREVIEW

- In-Spiring Construction (Churches)
- New Work E • Vehicles
- Product Feature: Entry Doors

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Check our website:

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From Artist to Tradesperson

Creativity Put to Practical (and Fun!) Use

BY LINDA SCHMID

NOLEE ANDERSON NEVER DREAMT SHE'D grow up to be a carpenter. "I really had the best of both worlds," she said. "I grew up right outside Billings, Montana on a wheat farm, and I went to the big city school where there were so MANY opportunities: dance, ceramics, hockey, tennis, crafts, and more. Art was a big thing there, but no one ever encouraged me to take any trade classes like carpentry."

Anderson took classes in ceramics and painting, and when she graduated from high school in 2013 she considered going to art school or college, but she felt overwhelmed. She decided to take a gap year and moved to Nashville with friends. One gap year turned into three, while Anderson tried out service roles, lead family workshops at Cheekwood Gardens, and even designed jewelry in a studio.

Nashville was fun, but eventually Anderson decided it was time to go home and get on a career path. Back in Billings she enrolled at the University of Montana, but then she began looking at itineraries filled with classes she didn't want to take. Then she ran across the Department of Industrial Technology at Missoula College where she saw more hands-on classes, like diesel mechanic, welding, and carpentry. The college brought her in for a tour. "It was very cool. That tour altered my life entirely," she said.

Anderson signed up for a two-year degree in Sustainable Carpentry. "School was amazing!" Anderson stated, "I helped build a house, did concrete work, welding, basic carpentry, finish carpentry, and more." Since she was earning a sustainable carpentry degree, she learned about using alternate or unique materials, "which ended up being helpful when materials became scarce."

It wasn't just the skills she was learning that made Anderson love it. "I made friends and I had mentors that were preparing me for the working world and got me excited about going out to begin working. I think that a lot of people in other educational



Nolee Anderson on the jobsite.

degrees aren't excited about finding a job because they don't really feel prepared. I was; my classes had me doing the things I would do on the job." Anderson also liked the pricetag that went with her education since she had seen the costs associated with attending the 4-year university. Still, tuition, rent, tools and materials all have to be paid for.

Anderson didn't know about the mikeroweWORKS Foundation. Her dad saw an ad about it on the Discovery channel and suggested she apply; maybe she could get some help. "It was one of the easiest scholarships to apply for and definitely the 'funnest,'" she said. "You had to write a short essay, supply a few references, and create a video that showcased your personality."



As a result of a collaboration with mikeroweWORKS Foundation (www.mikeroweworks.org), *Rural Builder* is featuring profiles of Work Ethic Scholarship recipients in each of its issues. Hundreds of scholarships have been awarded to trade-school students who value hard work and taking personal responsibility. *Rural Builder* applauds these students and wants to acknowledge their choice to apply their talents to skilled trades. Thank you, mikeroweWORKS Foundation, for your continuing efforts to close the skills gap and "reconnect the average American with the value of a skilled workforce."



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Anderson leads Trade Workshops for Women through mikeroweWORKS

Being awarded the scholarship felt like winning the lottery, Anderson said. She called her dad and they went to lunch to celebrate.

Part of the agreement between the mikeroweWORKS Foundation and scholarship winners is that they must sign the S.W.E.A.T. pledge. Anderson felt good about the pledge; it mirrored things she had been taught growing up. "It was an easy pledge to take because I believe that hard workers have more luck"

The scholarship itself was different than many others; Anderson could decide for herself how best to use it. She paid tuition and bought tools for her second year of school.

"Great relationships and opportunities came from my involvement with the mikeroweWORKS Foundation; I can't say enough good things about it"

When Anderson graduated, debt-free, she got a job with a contractor who remodeled old Southern mansions in Nashville. Now Anderson is self-employed, working in trim carpentry, mainly on small residential projects.

"I am passionate about my work, and I am passionate about getting others passionate about it, too," she said.

Few young people seem to be passionate about working construction, as most employers know. Anderson thinks that the trades are having problems getting young people to join because there is a stigma around the trades. It's subtle, she says, but she was given the impression that the trades were for people who couldn't make it in college.

"So many kids never have the chance to find out how fulfilling it can be. They may have an uncle who works in the trades and he



Anderson excavating; she's done it all!

comes home tired and dirty. But they don't realize that he may be his own boss who sets his own hours, makes a good living, and never has to go to the gym because he's active on the job."

Anderson has participated in career days to encourage young people, especially women, to go into the trades. She believes that the more variety of people you have in the workplace, the more ideas, perspectives and different styles of problem solving you incorporate into the workplace. Women on the jobsite have elevated the work experience in her opinion.

Anderson's excitement about getting women involved in the industry is real; she has lead Joist Workshops, sponsored by the Wolverine Boot brand through the mikeroweWORKS Foundation. One workshop group built community picnic tables and the other made smaller, personal items. "It's great when you can get women comfortable in the workshop. They can do small things like hang their own curtains and fun things like making floating shelves." For Anderson, carpentry is very much a creative outlet, so in her spare time, if she isn't painting a picture, (yes, she still paints), she's probably helping a friend figure out how to make something they saw online. "The more ladies I get to try out carpentry, the more ladies I get to hang out with."

Although she isn't sure what the future will bring, she knows that tradeswork will always be a part of her life. And that she wants to teach more women trades skills, instilling confidence in them and in their own abilities to do things.

"Don't be afraid to try and fail," she advises. Persistence gets you success; sooner or later you find that you can build anything, and it's cool, and it's really, really fun!" **RB**

To find out about future Joist Workshops, follow @joistskills on Instagram or email Anderson at joistskills@gmail.com.



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Rural Builder was called Farm Building News in 1974. The magazine began in 1967 in a tabloid news format, but this was the first "magazine."

CAN YOU BELIEVE IT?

Rural Builder magazine has been around for fifty years! Well, actually 55 years. The original title wasn't Rural Builder, it was "Farm Building News," and, at that time, it was in newspaper form. In the spirit of full disclosure, the article we are reprinting is from 48 years ago, pulled from the first Farm Building News published in magazine form in 1974, because somewhere along the way, we lost our copies of those old newsheets.

We've chosen to reprint this article from the Jan/Feb/74 edition of Farm Building News as it seemed appropriate for the State of the Industry version of our magazine. Read on and see what was predicted and how that compares with the realities of the last half century.

Farm Building Outlook

as viewed from Capitol Hill, February 1974

BY FBN'S WASHINGTON CORRESPONDENTS

STEEL AND LUMBER SUPPLIES SEEM

sure to become a lot shorter than they are now. Some economists say the world will face a critical steel shortage by 1980. Others point out that the nation's lumber use is increasing much more rapidly than timber supplies.

Both developments would put a tighter crimp on farm builders' attempts to meet rising demand. Farm production will grow substantially during the decade ahead if farmers can get good prices and the necessary inputs, including farm buildings and equipment.

It's estimated that the world will require one billion net tons of steel per year by the end of this decade. Present world facilities will only turn out about 800 mil. tons. Just one company is building any kind of steel producing plant, and it will have only a one mil. ton capacity.

Presently there aren't any expansion plans brewing in the U.S., or any other country, to build facilities to crank out the extra 200-300 mil. tons necessary to avert a shortage by 1980.

With 1973 shipments in excess of 100 mil. tons, the U.S. didn't enjoy record profits with its record steel output. Such a profit lag, say analysts, will probably keep holding up investment in new steel mills, or expansion of existing facilities.

USE SHOULD STAY HIGH

Surveys of big steel users indicate no great overall slowdown in consumption throughout 1974. They predict that the current shortage of steel in the U.S. won't ease until at least mid-1974.

Steel requirements really picked up last year. Housing industries demanded more steel, as did shipbuilding and overall heavy construction. Markets simply can't get the steel they need, and some have gone to imports. Last year, U.S. steel imports were up 2%.



But U.S. users can't depend on overseas supplies to avert a possible shortage. Steel is tight worldwide, making it tough to get any from foreign markets, no matter what the price. They are going to satisfy their own needs first.

MORE LUMBER SUBSTITUTES

Timber supplies aren't growing as fast as lumber use. If the situation keeps tightening, analysts forecast that timber costs could sizzle. Farm builders may be using more imported lumber in the years ahead. But more likely, they'll be building with an increasing amount of other materials—such as plastics—instead of high-priced lumber.

Lumber shortages and high-priced import could be avoided, according to foresters and lumbermen. They agree that the U.S. could be producing twice the volume of timber grown today. But it would take much more intensive management of forest lands than is presently being applied.

All areas of woodland ownership, including private and National Forests, could produce this extra lumber. But to insure more timber output, adequate technical and financial assistance are needed.

Major possibilities for increased production are on the 60% of the nation's forest lands held by small private ownerships.

Timber supplies could also be stretched considerably by better and more complete use of timber presently harvested. Some forecasters believe that lumber supply-demand binds may force recovery of presently wasted tree parts for processing into wood products.



COLD FACTS ABOUT FUEL CRUNCH

Farm building demand looks good for both the short and long term. However, a forced slowdown could come if the farm economy runs out of gas because of the fuel shortage. To paraphrase Abraham Lincoln, "You can't *fuel* all of the people, all of the time."

But fooling with food production has taught government some well-remembered lessons. So Washington has promised agriculture a top spot in mandatory allocation programs for fuels.

Secretary of Agriculture Butz is pumping for a 3% to 4% increase in fuel for farmers in 1974. That's what possibly 10 to 12 mil. more acres may take. Insiders give Butz little chance at rounding up this much more gas and diesel fuel. Competition seems too great and supplies too slim.

Government could settle for perhaps four mil. acres less than its original expanded planting target. Much depends on whether non-ag fuel users convince

allocators not to use U.S. petroleum to grow food for foreign customers.

A squeeze on fuel-based fertilizers might also tie back next spring's anticipated planting boost. Pending the severity of the energy shortage, crop plans could be curtailed enough to limit increases in next summer's bin building.

One sure thing about spring fertilizer supplies is that they'll cost more. Price controls aggravated the fertilizer shortage. Manufacturers couldn't charge U.S. farmers the same prices that fertilizer was bringing on foreign markets. So U.S. demand was left standing empty-handed while American-made fertilizer filled overseas needs.

FERTILIZER PRICES SKYWARD BOUND

However, lifting the controls reversed the predicament. Fertilizer supplies are more available but still tight, while prices are jogging upward. Rates will likely soar even more by spring. Some farm managers predict that fertilizer could cost nearly 30¢ per bu. of corn per acre.

Experts fear that lack of fuel could idle ships, which would dim the prospects of rebuilding world grain stocks. The Federal Maritime Commission hints that all sea shipments, grain included, will be cut back by at least one fifth, maybe more. A growing number of vessels had already slowed down to fuel-saving speeds late last fall.

If the fuel situation tightens, and I have reasons to believe it will, all these expectations for farm production increases for next year won't be realized," says Laurel Meade, USDA's Export Marketing Service chief. "Farmers have got to know they will have the foreign market; otherwise, they will hold off increased plantings."

Keep in mind that dips in farm profits and subsequent cuts in farm building fueled by the energy shortage are only possibilities. Although the government is under pressure to use the fuel for non-farm purposes, it isn't likely to punt its plans for more grain, livestock and livestock product output in 1974.

Energy will have the Administration over a barrel this winter, but food cost complaints aren't likely to melt away. Developments this winter ought to indicate whether consumers are willing to shiver now in order to avert still higher food prices later.

You'll get your first official guide to plantings of major crops in USDA'S Jan. 22 Prospective Plantings Report. Another intentions report will be released in mid-March.

STRONG LIVESTOCK PRICE OUTLOOK

It doesn't appear that the gas or heating oil deficit will freeze farm building for the livestock industry. Rising costs and unpredictable prices smothered most thoughts about raising more hogs last year. But predictions for softer feed expenses and strong hog prices for 1974

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should perk up pork production ideas and hog building business later this year. Cattle feeding profits this winter ought to also step up construction of beef facilities.

USDA's livestock economists tell us there's a very large number of feeder cattle available to be put on feed. They say this could lead to a big boost in fed beef production by spring or summer.

MORE BOOMING PRICES IN 1974?

Big prices had net farm income hopping over \$25 bil. in 1973, more than \$5 bil. above the previous year. Forecasters expect 1974's gross farming receipts to rise on continuing bullish world grain trade and wind up above last year's record. But new farm profits are likely to slip a bit because of rising production costs.

Depending on how higher incomes, tight supplies, strong prices and input shortages nail together, farm builders seem likely to enjoy another booming business year in 1974.

THE STATE OF THE INDUSTRY AT THE BEGINNING OF 2022

Our steel demand is expected to rise to 1.92 billion tons in 2022, nearly double the amount predicted by the end of the 70s. We have been seeing shortages lately, largely due to the pandemic causing a slow-down in production. However, the outlook is that the use of steel will continue to climb, by about 2.2% over the next year according to the World Steel Association.

Today, the amount of standing timber in the United States is actually increasing, per the U.S. Department of Housing and Urban Development, due to tree farming. Yet, these trees do not provide the large-dimensioned lumber typically used for joists and rafters. According to the Center for Sustainable Systems at the University of Michigan, most commercial and industrial builds use structural steel and or concrete. Yet, the National Association of Home Builders states that 90% of homes built in 2019 were wood-framed.



SPECIFIC CONCERNS IN THE INDUSTRY

Barry Hoffman of Planet Saver Industries, manufacturers of Green Post™ doesn't actually remember much about the state of lumber back in 1974, since he was quite young at that time, just starting in another industry. However, he states that the industry did go through a period where plastic was substituted for structural timber in a number of areas in the USA, but now lumber is coming back.

"Today, as we experience supply shortages combined with exponential price increases on most to all products the same questions seem to come up. People ask: How is this justified?" Hoffman said.

Anirban Basu, chief economist for Associated Builders and Contractors and CEO of consulting firm Sage Policy Group, has made several predictions that pertain to the industry in 2022:

- Inflation (as measured by CPI-U) will be worse during the first half of the year than the second.
- More people will jump back into the labor force, with the labor force participation rate climbing back above 62%.
- Public nonresidential construction spending will increase at a faster rate

than private nonresidential construction spending, which will struggle to grow in inflation-adjusted terms.

- There won't be nearly as many ships waiting to unload their wares off the coast of California.
- Increases in construction input prices will be much less profound compared to 2021 (as measured by PPI).
- Office construction will remain weak.
- Single-family housing construction will emerge as one of the economy's strongest segments.

In regards to the new infrastructure bill he said, "I think that 2022 is going to be very busy for you all. Think very long and hard before you enter into contractual obligations. Make sure you build in enough margin and contingency."

Those predictions speak, for the most part, of a positive state of affairs in 2022. Only time will tell if they are correct.

Hoffman is sure that whatever challenges arise, the industry will thrive. He maintains that the construction industry folks are "resilient, dedicated, nose-to-the-grindstone individuals. As in past challenges the industry will continue to adjust, adapt and move forward with the goal of being stronger and better than before." **RB**

■ BHMA ISSUES REVISIONS TO PRODUCT STANDARDS

The Builders Hardware Manufacturers Association (BHMA®) recently announced the publication of revisions to nine product standards. All of the revisions have been approved by the American National Standards Institute (ANSI).

“BHMA reviews ANSI/BHMA product standards at least once every five years to ensure alignment with modern quality requirements in the builders hardware industry,” said BHMA Standards Director Michael Tierney. “This work ensures that our product standards continue to meet the ever-changing needs of both the public and our industry.”

The nine updated standards include:

- ANSI/BHMA A156.3: Exit Devices
- ANSI/BHMA A156.9: Cabinet Hardware
- ANSI/BHMA A156.18: Materials and Finishes
- ANSI/BHMA A156.36: Auxiliary Locks
- ANSI/BHMA A156.39: Residential Locksets and Latches
- ANSI/BHMA A156.40: Residential Deadbolts
- ANSI/BHMA A156.8: Door Controls – Overhead Stops and Holders

- ANSI/BHMA A156.15: Release Devices – Closer Holder, Electromagnetic and Electromechanical
- ANSI/BHMA A156.1: Butts and Hinges

A complete list of the updates made to each standard can be found on the BHMA Standard Updates page [buildershardware.com/ANSI-BHMA-Standards-Standards-Updates], and full standards are also available for purchase from the BHMA website [buildershardware.com].



■ HY-BRID LIFTS WELCOMES JAY SUGAR AS NEW PRESIDENT AND CEO

Hy-Brid Lifts by Custom Equipment, LLC has appointed Jay Sugar as its new President and CEO. Sugar brings over 20 years of industrial manufacturing experience to the organization and will

lead the overall direction and strategy of the company.

“We are extremely pleased to welcome Jay Sugar back to Custom Equipment, now in the role of President and CEO,” said Steve Ellis, Custom Equipment Chairman of the Board. “Jay is an accomplished leader and with his background in both engineering and operations, Jay brings a wide skill set to drive Custom Equipment forward in value creation and performance.”

Sugar possesses a knack for strategic guidance that allows him to sell into dealer networks, infiltrate new vertical markets and realize company goals. Not only does his analytical approach optimize resources and business systems, but his expertise helps companies pivot to meet future growth opportunities.

He is an industry veteran with more than 20 years of general management and executive experience in the industrial equipment sector. Sugar’s background includes a multitude of business areas—such as engineering, supply chain, finance, and sales—that give him a unique perspective on operations and management.

His dedication to manufacturing was clear from the start. Sugar earned an MBA in accounting and business management from Carnegie Mellon University, in addition to a bachelor’s degree in mechanical engineering from Rensselaer Polytechnic Institute.

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Sugar's career began on the shop floor where he went on to develop several startups into multi-million-dollar enterprises, holding positions such as General Manager, VP of Operations, VP of Industrial Sales and Executive VP along the way. He eventually joined the Custom Equipment team for a brief stint in 2019 to implement a new plant layout at the company's headquarters in Richfield, Wis.

"I'm looking forward to working with the strong leadership team at Custom Equipment again to help position the company for future growth," Sugar said. "Strategically expanding our product offerings and introducing new products will reinforce our commitment to implementing customer feedback and increase market share."

■ US LBM ACQUIRES THREE NEW BUSINESSES

US LBM (www.uslbm.com), a distributor of specialty building materials in the United States, acquired three businesses during the summer of 2021: North Georgia Building Supply and Junior's Building Materials in Georgia, and Massey Builders Supply in Virginia.

In Georgia, North Georgia Building Supply and Junior's Building Materials provide professional builders, remodelers and contractors with lumber and a broad mix of specialty materials. From its location in Buford, North Georgia supplies customers in the communities northeast of Atlanta with lumber, windows, doors, roofing, decking and drywall. Additionally, Junior's Building Materials serves customers in Chattanooga, Tenn. and northern Georgia from two locations in Rossville and Ringgold, Ga. Besides lumber and engineered wood products, Junior's product mix includes windows, doors, roofing, siding and millwork. Operating out of two locations in central Virginia is Massey Builders Supply. Founded in 1921, Massey supplies lumber and a wide range of specialty building products, including roofing, siding, doors, windows, decking, rail and millwork to professional builders and remodelers in

the greater Richmond region.

"North Georgia, Junior's and Massey all have exemplary reputations in their home markets, and we're pleased to welcome their teams to US LBM," said President and CEO L.T. Gibson. "All three of our new acquisitions have strong customer relationships and are market leading, full-line suppliers offering a robust mix of specialty building products, and their addition to our portfolio expands and strengthens our reach in multiple rapidly growing housing markets in the Mid-Atlantic and Southeast."

■ ASC BUILDING PRODUCTS LAUNCHES FREE PRODUCT AND COLOR VISUALIZER

ASC Building Products offers a free, online visualizer tool to aid in design and specification of metal roofing and siding products. This new addition to our online resources allows users to mix and match products and colors, visualizing them before they buy. New features include:

- AI feature
- 3D modeling
- 3D color and product rotation
- Comprehensive roof measurements
- Design Services feature to help with designing your next project

Users can upload their own photo or use one of the stock images available to start visualizing metal roofing and siding design ideas. The addition of Design Services allows for quick and easy 3D modeling of projects, while the comprehensive roofing report gives users vital measurements and specification information. All information is personalized to the individual's project.

■ BLUSKY ANNOUNCES MERGER WITH MENOLD CONSTRUCTION

BluSky Restoration Contractors, LLC, a leading national property restoration company in the U.S., announced a merger with Morton, Illinois-based Menold Construction and Restoration, Inc.

"Menold and its owners have an outstanding reputation in the restoration

community," said Drew Bisping, BluSky president. "Their company culture and ours align closely and we're excited about what we'll be able to accomplish together in Illinois as one team."

The merged companies will continue as BluSky Restoration Contractors, with 40 offices in 18 states. In addition to restoration services currently provided by Menold, BluSky plans to add commercial roofing and healthcare restoration business lines to Illinois markets.

Founded in 1977, Menold is a full-service restoration firm serving commercial and residential clients in central Illinois with offices in Peoria, Bloomington-Normal, and Champaign-Urbana. Menold chief executive officer Jeff Neihsouser will step away from day-to-day operations of the merged company and join the BluSky executive leadership team as senior vice president of operational review. Kent Stemper will continue as CEO of the merged firm.

"With over 40 years of success as Menold Construction and Restoration, we are excited to be able to provide stability and opportunity for years to come. Merging with BluSky presents significant opportunities for our clients and our team members," said Neihsouser. "We are exceptionally proud of our history of excellence, and equally excited about the future possibilities."

■ NEW ORLANDO TRAINING CENTER TO OPEN DOORS FOR CAREERS IN CONSTRUCTION

The Home Builders Institute (HBI) has announced the official opening of its new Orlando-based facility for training people for jobs in construction. The BuildStrong Academy of Orlando will train and place area students who want to pursue careers in the skilled trades for the building industry. Funded by The Home Depot Foundation, along with other private, public, and nonprofit sector partners, the program will be free to trainees.

Officials expect the training center to serve approximately 500 new trainees by

year-end 2022. The BuildStrong Academy of Orlando's training program guides participants through a step-by-step process designed to take them from beginners, with little-to-no trade skills, to tradespeople who are sought after by employers. Instructors will use HBI's industry-recognized curriculum, which is one of only three pre-apprenticeship programs recognized by the U.S. Department of Labor.

For more than 50 years, HBI has conducted programs across the U.S. training approximately 10,000 students each year through a variety of specialized programs. Officials of the Washington, DC-based nonprofit organization said they are taking a new approach in Orlando by managing a facility that instructs students in several construction trades under one roof.

"As openings in construction jobs increase and people are rethinking their careers, the times demand that we take an inventive approach to creating the skilled workers so badly needed in the building industry," said Ed Brady, HBI president and CEO, at a grand opening ceremony here. "Students at the BuildStrong Academy of Orlando will be exposed to the full spectrum of their opportunities in the construction trades."

The effort comes at a critical time. Every month of the past year, the construction industry has been short approximately 300,000 to 400,000 skilled workers, based on National Association of Home Builders (NAHB) analysis of U.S. Bureau of Labor Statistics data. Yet only a small percentage of young adults are pursuing careers in

construction, Brady said.

"This is the opportunity for new recruits to the industry to get in on the entry level, and receive hands-on training and placement into well-paid jobs," he said.



"We're excited to launch this academy program in Orlando and bring career opportunities to the area, in partnership with HBI," said Shannon Gerber, executive director of The Home Depot Foundation. "This program helps further our goal of supporting the next generation of tradespeople while diversifying the industry."

In addition to The Home Depot Foundation, the BuildStrong Academy of Orlando is funded by the Charles Koch Institute; West Fraser, a diversified wood products company based in Vancouver,

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Canada, and CareerSource Central Florida, the State of Florida's workforce development agency.

"The Academy will provide incredible training opportunities to develop skills, build careers, and create value in the construction industry," said Benjamin Colas, program officer at the Charles Koch Institute. "We're thrilled to support this proven model and excited for all to come."

"Many of those in this pandemic-driven economy workplace have been displaced or are reassessing what they will do for a living," said Ross Commerford, director of marketing and product development at West Fraser. "The Academy is for someone who might want a career as a skilled tradesperson in construction."

In advance of the grand opening, the center trained its first class of students who have since graduated. In June, they began a two-week, orientation session called the "residential introductory series." Once completed, they were able to progress to four weeks of skills training that resulted in an industry-recognized certification as a pre-apprentice. If they choose, the students could then enter a six-week-long program to be trained in carpentry skills.

www.OrlandoAcademy.hbi.org

■ SIMPSON STRONG-TIE UPDATES DESIGN GUIDE

Simpson Strong-Tie, a leader in engineered structural connectors and building solutions, published a new edition of its *Strong-Rod Design Guide* [www.strongtie.com/srs]. The reference helps engineers, architects, and builders achieve continuous load paths for multistory and mid-rise light-frame wood buildings.

Seismic and wind events are serious threats to the structural integrity of all wood-framed buildings. Straps, hurricane ties, and hold-downs are often sufficient for resisting shearwall overturn and roof-uplift forces for one- and two-story structures. Taller multistory structures frequently have more complicated

designs, including larger window and door openings, which create the need for continuous rod tiedown systems.

"With the increase in mid-rise and multistory construction, there has been a corresponding need for expert advice on how to incorporate continuous rod systems to account for lateral and uplift loads," says Sam Hensen, vice president of Connectors and Lateral Systems for Simpson Strong-Tie. "This new Strong-Rod Design Guide provides engineers and builders with an up-to-date and easy-to-understand resource for installing these systems efficiently and effectively."

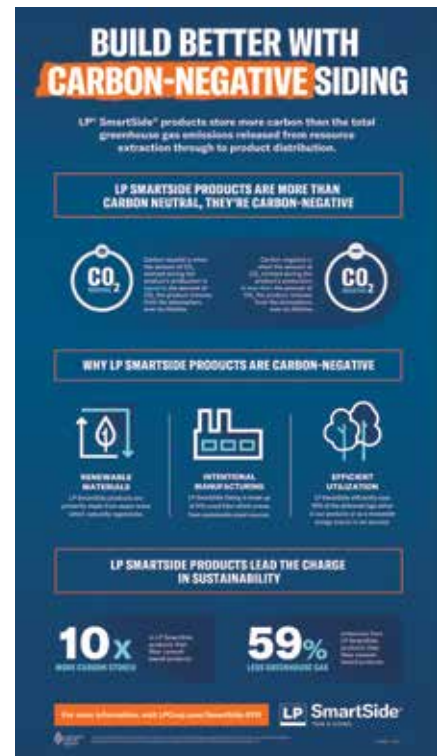
■ CALHOUN SUPER STRUCTURE EXPANDS PLANT

Calhoun Super Structure (www.calhounsuperstructure.com) is expanding its production plant in Goderich, Canada. The manufacturing company specializes in fabric building engineering, production and project management across North America. The family-owned company has advanced expertise in crafting agriculture structures, warehousing facilities, fertilizer storage, and salt sheds, among other structure types. The new 10,000-square-foot addition will allow for the complete manufacturing of steel frames. The company is poised to celebrate its 30th anniversary in January of 2022.

■ LP BUILDING SOLUTIONS ANNOUNCES FIRST LP® SMARTSIDE ENVIRONMENTAL PRODUCT DECLARATION

In honor of Sustainability Day, LP Building Solutions (LP) released LP® SmartSide® Trim & Siding's first-ever Environmental Product Declaration (EPD). The results showed that SmartSide stores more carbon than is released from the production and distribution of the product, making it one of the only carbon-negative siding products on the market.

The International EPD® System defines an EPD as "an independently verified and registered document that communicates transparent and comparable information



about the life cycle environmental impact of products in a credible way." LP conducted a Life Cycle Assessment (LCA) and used the findings to create LP SmartSide's first EPD, which highlights the climate-friendly attributes of LP's engineered wood siding and backs it up using third-party verified data.

The LCA found that LP SmartSide is classified as a carbon-negative exterior cladding product, which means more carbon is stored in the product than is released during raw material sourcing, manufacturing, and customer distribution. Unlike LP SmartSide, all the non-wood-based siding products analyzed had a higher net global warming potential (GWP). In fact, LP SmartSide stores 10 times more carbon than fiber cement-based products and emits 59% less greenhouse gas emissions during production.

"LP SmartSide products store carbon for generations, making them a smart choice as a sustainable building material," said LP Director of Sustainability and Public Policy Donna Kopecky. "When

customers choose sustainable wood building products over more energy-intensive building alternatives, such as concrete or steel, they are making more responsible, climate-friendly choices that can benefit the environment over the long term.”

“As LP continues its nearly 50-year tradition of sustainability leadership, the LP SmartSide Environmental Product Declaration shows the product’s positive environmental impact within the building industry and provides a valuable resource for the increasing number of building professionals who are making more environmentally conscious building product decisions,” said Executive Vice President of Siding Neil Sherman.

LP is committed to ensuring that all LP-manufactured products are made from sustainably sourced wood material. Verified annually against independent standards from the Sustainable Forestry Initiative® (SFI®) and the Programme for the Endorsement of Forest Certification (PEFC®), the company’s forest certification program highlights LP’s commitment to environmental sustainability. LP believes its work to build a better world is inextricably linked to protecting the environment, minimizing waste, supporting its communities, developing its employees, diversifying its workplace, and building economic prosperity for future generations.

lpcorp.com/sustainability.

BRADBURY HOSTS 300+ STUDENTS TO CELEBRATE MANUFACTURING DAY

The Bradbury Company invited students from 13 local schools for factory tours to celebrate Manufacturing Day in mid-October.

“We opened our doors for student tours to share opportunities for rewarding careers in manufacturing and highlight the advanced technology we utilize every day,” says Matt Werner, Senior Manager Sales & Marketing at The Bradbury Company. “Students received a full facilities tour,



along with a chance to compete in hands-on skills challenges and explore our career center booths.

“This was our biggest year yet. We had over 300 students tour from 13 local schools. We were also happy to invite our technical school partners, Hutchinson Community College and Flint Hills Technical College.”

Bradbury employees led tours and explained the manufacturing progression from concept to engineering design, fabrication, assembly and testing. Students viewed the fabrication shop, which

houses approximately 60 CNC machines, where Bradbury fabricates the major components required for the construction of Bradbury equipment.

Highlights of the tour included the Doosan lathe, which machines parts from 200 inches long to 30 inches in diameter, the induction heat treat center, the robotic welding cell and the high-definition plasma torch. Tour groups walked through the assembly area to observe the assembly of Bradbury custom-made machines and watched several roll forming lines running formed products. **RB**



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THE STATE OF THE INDUSTRY 2022

What's Going On?

BY LINDA SCHMID

THE PAST YEAR HAS BEEN by anybody's reckoning...different. We all know that business has had its share of challenges including trying to recover from shut-downs, deal with supply chain issues, a limited pool of available employees, and more. So what is going on at the outset of the new year...and where is it headed?

Let's see what industry professionals think. (Please note that the opinions expressed are those of the companies and people cited; they are not necessarily the views of Rural Builder or SWM.)

MCELROY METAL

Labor challenges are a common theme from builders around the country. Labor has been a challenge for several years now, and unfortunately builders will probably be challenged again in 2022. Fortunately, it appears that colleges and associations, such as the NFBA, are encouraging the construction trades as career choices and developing curriculums and tools to help train and educate.

Ken Gieseke, Vice President of Marketing at McElroy Metal, stated that they continue to see growth in the residential metal roofing segment. "Homeowners are becoming more educated about the benefits of metal roofing and have grown tired of regular replacement of conventional shingles. Metal roofing market share has grown the past several years, so more and more homeowners are being exposed to metal roofing, getting educated about metal roofing, and then installing metal roofing on their own homes."

This positive state of affairs gives Gieseke hope for the coming year. "We remain optimistic and believe the construction market will have another solid year in 2022," he said.

MFM BUILDING PRODUCTS CORP.

Price increases for raw materials have definitely affected

customers, according to David Delcoma, Product Marketing Manager at MFM. The company is not known for issuing price increases throughout the year, but 2020 and 2021 were a different story. "Every raw material we purchased has been subject to multiple price increases. Everything from the key ingredients in our mastic down to the packaging supplies have seen increases."

MFM is betting on the construction industry going strong in the coming year. Delcoma said, "MFM foresees another strong year in the construction industry, both residential and commercial. The slow down may occur in 2023." Of course, unforeseen outside forces can affect the industry. Delcoma put it this way: "For most manufacturers of building materials, natural disasters like hail, tornadoes, flooding, and hurricanes can drive product demand. Of course, these cannot be anticipated, but can have a major impact on the construction industry."

Throughout 2021 and 2022, product availability for builders and the corresponding increase of those items were a major hindrance to the construction industry. Delcoma continued, "At MFM, we understand the value of being able to deliver the product at a competitive price. We anticipate that builders will still be subject to longer lead times in 2022. However, MFM has placed a major focus on having inventory in stock for 2022. Builders need to anticipate these delays and work closely with their distributors to ensure that product is available when needed."



Ultra High School. PHOTO COURTESY OF MFM BUILDING PRODUCTS

Delcoma had further advice for builders: "Focus on product quality, availability, and cost. We've seen many projects waiting for months on one or two products that were delayed. A local house sat for over 12 weeks waiting on the windows and doors to arrive. Nothing else could move forward until these items arrived. A builder needs to be conscious of these unknown factors."

Changing prices may cause difficulties for builders in the next year. "Some raw material pricing has leveled off during 2021 Q4," Delcoma said, "whereas others seem to be just beginning. What is unfortunate is that many raw material suppliers will pass on an increase with very little warning, which hurts the manufacturer, distributor, contractor, and ultimately, the consumer. Our

suggestion is to assume that pricing will continue to increase and operate under that premise. Some customers have increased their orders to ensure product availability.”

Overall, MFM appears poised for good things to happen in the industry. “MFM underwent a 2021 Expansion Project to significantly increase our manufacturing capabilities for 2022. This in-excess of \$10 million dollar project includes a new warehouse facility, production equipment, support equipment, a new fulfillment center, and state-of-the-art Research and Development Laboratory.”

Besides facility expansion, MFM has other big plans in store. “MFM plans on introducing several new products in 2022 through our new Research & Development Laboratory. We are not at liberty to say what these products will be at this point,” Delcoma said, “but suffice to say that it will give our customers a wider selection of product offerings. MFM is unique in that we supply a complete envelope of waterproofing products from the rooftop to the foundation. These new product introductions will complement our existing product offerings.”

LEVI'S BUILDING COMPONENTS

Levi's is optimistic about the state of the industry. “We believe 2022 will continue to have strong demand for our industry. The popularity of metal roofing will drive new growth and we look for construction to remain up,” said Mike O'Hara, National Sales Manager.

At the same time, O'Hara acknowledges that there have been some negatives in the industry of late. Material pricing changes caused more administrative work for all. “Price changes trickle down from manufacturers to contractors at different rates,” he said, adding that he hopes these changes like freight, pricing, and other factors will settle down in 2022, but it could take another year.

Of their own reaction to these changes, O'Hara said, “Levi's has hired more reps, and we are always working to be a best in class supplier for the industry. We see good growth continuing in the Metal Roofing Industry,” said O'Hara. “We are always improving our Levi's experience for customers and our employees. Being thoughtful and acting quickly are hallmarks here at Levi's.”

“We have a strong pipeline of new products that will help customers solve problems,” O'Hara said that Shield Wall Media (publishers of Rural Builder magazine) will be promoting these new products when the time is right.

O'Hara believes the biggest challenges that builders will face in 2022 are being able to estimate jobs and work through the backlog with everchanging pricing and product availability. Overcommunicating with customers about realistic timelines will continue to be very important. Positivity, internally and externally, while thoughtfully planning their crew's time is key.

Another concern regarding prices that O'Hara sees is that some builders are not passing any of the cost increases on to customers. “Their backlog may be three to four months out, but they have already quoted pricing. This could lead to trouble down the line when the company is not profitable.”

CHIEF BUILDINGS

Construction will not be down. It will either maintain the current level or be up overall, according to Brian Shelten, Marketing Manager at Chief Buildings. “As a building supplier, we have seen no appreciable change to the steady need for more infrastructure in the US. COGS is up and the price we sell at is up, and that is the same for everyone in the industry. The volume of actual product is up some, but not at the same magnitude as the rise in dollars,” he said.

With the passing of the recent infrastructure bill, Shelton maintains that the expected government spending may reallocate the already limited resources from one sector to another, so it will be difficult to forecast any “growth” stemming directly from that. Plus, we may not see any of those dollars in 2022 since it will just be too early for those government spending programs to hit the ground.

That said, commercial warehousing and industrial facilities are possibly the brightest stars. Shelten said, “There is a greater need than ever to re-shore product manufacturing and warehousing to the US market. Expect that market sector to keep pace or increase.”

Shelten doesn't expect the labor shortage and supply chain issues to disappear anytime soon. “With a long-standing cultural shift from promoting careers in the trades to focusing more on white collar or “service” or “social” centered careers, there is no quick fix to the shortage of tradesmen in the US,” he said. “It took decades to get us where we are now. The younger generations, and particularly the demographic that might entertain the trades, are more prone to work multiple ‘side gigs’ than to commit to a singular career-type of work situation that would mean learning and mastering a skillset.”

Shelten also warns that waiting 6, 9, or 12 months to start a building project in 2022 will almost certainly guarantee higher prices and longer lead times. If you can wait years, at least 2-3 years, then the story could be different.

His advice for end users: “Lock in quoted rates as soon as you can. Make sure there are provisions in your contracts to protect you against unforeseen circumstances that will affect your contracted dollars. Since the contractors are trying to protect themselves as well, this will remain a very touchy and sore point for all parties involved. Remaining flexible may be the best way to mitigate the damages from those unavoidable hiccups that are inherent to construction; accepting schedule changes, allowing

Propane Council

by Bryan Cordill

Over the past few years, the Propane Education & Research Council (PERC) has taken note of a few growing trends, which we see continuing into 2022 and beyond. Notably, the growing demand for energy efficiency and affordability; the prioritization of resiliency and backup power; and the preference of gas-powered cooking in kitchen remodels.



Bryan Cordill

Builders and remodelers in-the-know on customer preferences—and the energy sources, appliances, and systems that can best serve them—will set themselves up for success in 2022. Customers prefer energy efficient appliances, resulting in lower energy bills.

The demand for sustainable and energy efficient homes has grown over the past several years and is expected to continue growing significantly in 2022 and beyond, according to construction professionals surveyed in a study by Harris Insights & Analytics LLC. The survey consisted of feedback from 2,200 U.S. residents who said they would soon buy, remodel, or build a home, as well as 200 construction professionals.

When asked about adding a new appliance or replacing a current one, consideration for energy-efficient appliances was almost unanimous across all audiences, with 91 percent of residents buying and building a home, 92 percent of residents remodeling a home, and 95 percent of construction professionals expressing interest. Cost savings is typically the driving factor for seeking energy efficient appliances and systems.

Propane can deliver many solutions that homeowners want, including energy efficient appliances and, subsequently, reduced energy bills—all without sacrificing environmental impact. These capabilities extend to several major systems including heating, water heating, cooking, clothes dryers, and more. The installation of tankless water heaters continues to be popular among homeowners thanks to their cost savings and long service life.

The housing market has priced out a number of buyers, driving homeowners to deploy remodel projects and updates in existing homes instead of moving. As homeowners transform their house into their dream home, cooking appliances and kitchen remodels are often at the top of the list. Whether powering cooking appliances indoors or outdoors, propane offers the performance, versatility, and lower energy bills customers want.

Additionally, using an affordable energy source, like propane, can give homeowners peace of mind knowing they'll see annual cost savings compared with appliances powered by electricity. A 2020 analysis from the Department of Energy (DOE) found that the energy costs of propane (\$18.81 per million Btu) are less than half that of electricity (\$38.28 per million Btu).

Americans are seeking reliable energy sources and home backup power. Recent rolling blackouts in California, Hurricane Ida, and the winter storm in Texas have increased Americans' desire not to be tied to a single energy source, or to rely entirely on our aging electric grid.

Power outages can impact a variety of systems in the home, including smoke and fire alarms, refrigeration units, heating and cooling systems, health and safety equipment, and many other applications. Helping customers select reliable backup power allows them to avoid unplanned power outages, continue operating appliances in their home, and ultimately save money and stress. This is especially important for customers who rely on electricity to power medical equipment or work from home and need uninterrupted power.

Propane has an indefinite shelf life and can be stored for extremely long periods without degrading, whereas diesel degrades over time. Propane tanks can provide scalable on-site storage for backup power systems of any size. On-site fuel storage is an important consideration and can help ensure that the generator is ready to operate and won't be subject to upstream fuel reliability issues.

Bryan Cordill is director of residential and commercial business development for the Propane Education & Research Council. He can be reached at bryan.cordill@propane.com.

substitutions, and maintaining amenable relationships with the contractors will help when others will hold fast to drawing lines in the sand. You might find that an even better product can be had in the timeframe you need it if you keep the communication lines open and are willing to negotiate. Accepting a delivery months before you need the product is never the best plan, but it could mean saving the whole project if you can take it and store it securely.”

As for the future of their own business, Chief Buildings may be resurrecting some retired products due to current and expected future supply chain issues. That remains to be seen. Beyond that, they see good things coming. “Chief Buildings has opted to reinvest in the company for 2022. There will be some exciting news coming very quickly in the new year,” Shelten said.

S-5!

For some in our industry, with the onset of COVID-19, it appeared as though the greatest economic boom period in history was coming to an abrupt standstill. At S-5! we quickly shifted in the wake of the pandemic. We put our heads together, mobilized, got creative and activated a plan to not only keep our business afloat, but to thrive and be well-positioned for the future. And by year end, we saw strong double-digit growth.

Most folks in the industry agree there will be a construction slowdown in 2022 as compared to 2021. We aren't experiencing those indicators but we hope things return to a manageable level, so we can catch up. We expect strong double-digit growth again.

TURNING PROBLEMS INTO OPPORTUNITIES IN 2021

Instead of looking for problems in the midst of the pandemic, we looked for opportunity. That opportunity was (and still is) out there—to respond to the near term, manage differently and plan for the longer term. Just shift thinking, re-direct resources, re-invest and prepare for the (new and increased) demand.

Within the health crisis, we got creative with our sales process and came up with new ways to stay in front of customers, educate and train them. We used the time to survey our customers and gather some insightful feedback. We expanded our marketing efforts, improved our processes and invented new things.

At the onset of this pandemic, we learned what to do and not to do; we gained knowledge and understanding of how to plan better for the future. Most importantly, we prepared for the pent-up demand we had predicted.

CONSTRUCTION UP OR DOWN IN 2022?

The increase or decrease in the rate of construction has much to do with the fiscal policies of the Fed, the government in general



and what happens with the Build Back Better Act by the time it works its way through the U.S. Senate. These are all external forces beyond our control.

Our economy is in a very volatile state because the Fed and administration are being irresponsible with the supply of money. The Fed sets interest rates to control inflation. But not now. Inflation is rampant and the Fed keeps suppressing interest rates. So, a lot depends on public policy regarding money supply.

The other issue is the dollar losing value (you only need to go to the supermarket for proof), but other currencies are losing value as fast or faster. It doesn't seem to be slowing things down as consumer credit is expanding (and spending along with it). There was such a pent-up demand from 2020 when it was hard to get anything built so businesses and families are doing what they have to do—buying what they need regardless of cost.

SUPPLY AVAILABILITY AND COSTS GOING FORWARD

At S-5!, we have seen cost escalation and constrained availability like we have never seen in five decades, mostly due to the fallout from the pandemic. Companies had shut down production and inventories became decimated. Extreme weather events in 2021 also did not help. The response from buyers was some degree of over-reaction. Spontaneous reactions propelled by fear and fueled by federal debt burdens and cheap credit alter rational logic.

Throughout the course of the pandemic, steel production companies had major shutdowns. That's raw material at its source. Other mills beyond steel, like aluminum, stainless, lumber and consumer goods had shutdowns as well (both domestic and foreign). The result is an increase in demand along with a decrease in supply. Because of this, "too much money was chasing too few goods" (Warren Buffet's definition of inflation). Costs should

begin to decrease by Q2, 3 and 4 2022 as raw material producers get geared up and freight channels loosen.

With the deceleration of construction on the heels of projects previously on hold and now being completed, several factors will work together to levelize costs and bring them down a bit. As far as supply availability, from a company perspective, we haven't waited to find alternative sources. We have those sources on board now and are still able to maintain our long-standing relationships with key suppliers and customers. They understand our situation. They are in the same boat trying to meet the demand. One of our key suppliers for raw material (we are one of their largest customers) recently said to us, "help us out and find a secondary supplier because we just can't meet your demand."

THE LABOR SHORTAGE

The labor shortage should improve in mid-2022 since the generous benefits provided by the federal government have ended. S-5! has experienced the labor shortage firsthand at our manufacturing plant with competition from government-subsidized income paying so many to stay at home. As a result, companies like ours have had to shift and invest more in their people—providing growth opportunities, leadership training and job security. These are not bad things.

That said, the hesitancy and low rates of vaccination among construction workers (compared to other occupations) are likely to present some ongoing issues with labor shortages. We are not reducing our labor force but are further automating processes to reduce dependence on direct labor while re-assigning the labor that we have to increase production overall. In so doing, we are increasing efficiencies. Again, not bad things.

With a strong balance sheet and income statements, we have stayed out of debt. And with some of the changes that the health crises precipitated, we will come through these times a better, more efficient company. Many others will as well.

IN CONCLUSION

Suppliers and our survey respondents have indicated that the biggest issues people are anticipating in 2022 are product availability and pricing. Their secondary concern seems to be the labor shortage, particularly with the lack of experience and work ethics along with overall limited applicants. People are also concerned with the federal response to changes in the economy.

The good news is that in spite of the problems, people seem optimistic about the construction industry in general, particularly in regard to residential and commercial projects. The outlook for agricultural building seems to be that it may remain the same or decrease a little.

Many companies are ramping up for a lot of work, investing in tools and vehicles, and suppliers are expanding production. However, if you find your company is held back by a lack of product availability, maybe you need a Plan B. See page 63. **RB**

Fish for Job Candidates With The Right Bait

WHAT DOES YOUR IDEAL ESTIMATOR, designer, sawyer, or production line employee look like — beyond their skills? Attracting the best candidates is a lot like fishing. You have to use the right bait. To get the right candidates' attention, first you must clearly define the knowledge, skills, the competencies, and the ideal behavioral and cognitive attributes you need in a role.

Defining the ideal behavioral and cognitive strengths required to be successful in your unique company culture, and then measuring how people fit (or don't fit) that ideal job model will help you make more effective hiring decisions *and* help your managers to better train and communicate with their people every day. As an example, Business Results clients use job assessments to understand what your company needs strategically to accomplish your goals.

Here are three short examples of the job model and the behavioral language (the bait) we weaved to attract job candidates

(the right fish) who are more likely to be successful.

Figure 1: This fast-growing firm is looking for an independent self-starter who is driven to proactively help resolve customers' problems. Every day is different with new opportunities to trouble-shoot issues to the best resolution for the client.

Figure 2: The successful candidate will be an assertive, practical problem-solver driven to get things done, quickly and correctly. The duties of this job require a high degree of expertise and skill in maintaining established standards of quality and accuracy. Drive, determination and a self-disciplined approach are required to achieve expected results.

Figure 3: Are you a reliable team player? We need organized, supportive employees who will carefully adhere to very clearly-

Figure 1

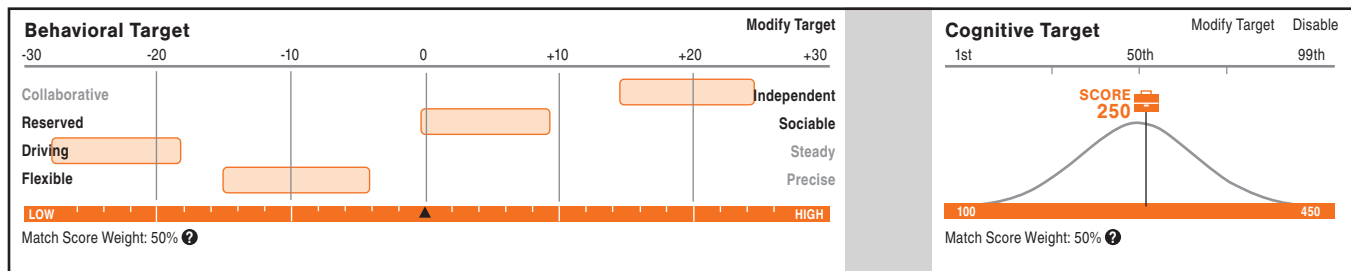


Figure 2

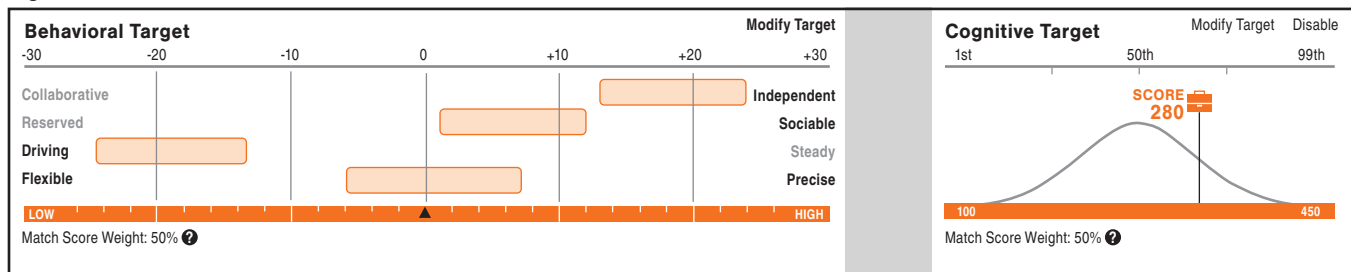
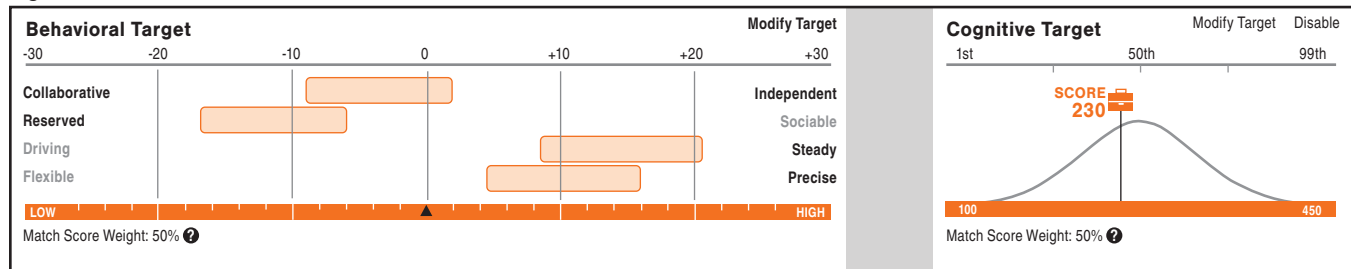


Figure 3



defined tasks that result in the same outcomes every day. The successful candidates must have very strong attention to detail while working at a steady, consistent pace.

JOB DESCRIPTION BEFORE AND AFTER

Once you have an ideal job model created, adding that behavioral language into the job description to help attract candidates is critical. If you are using assessment, you'll want to gather both the behavioral and cognitive data of all candidates as soon as they apply to understand how they fit or don't fit to your ideal model of success.

Here's a portion of a recent Before and After the job description:

Job Description Before:

Ensure distribution and customer management and further expansion of sales activities in territory. Determine ways in which our company can help our customers grow.

- Collaborate with senior executives to create a sales and marketing plan to establish and execute sales targets for the region
- Network within the region to develop new leads and create and maintain customer relationships
- Oversee the regional dealers
- Create quotations and sales orders with required information
- Visit current and potential customers' facilities to learn their businesses and recommend products

Job Description After:

Independently ensure successful distribution and customer management while competitively expanding sales activities in territory. Determine creative and practical ways in which we can help our customers grow.

- Positively collaborate with senior executives to create a winning sales and marketing plan to establish and execute sales targets for the region
- Persuasively create new connections within the region by networking to develop new leads, and maintain customer relationships
- Oversee the regional dealers including goal setting, coaching, and practical performance management planning
- Create quotations and sales orders with required information and be able to fluently and articulately communicate the information with many different types of buyers and clients
- Frequently visit current and potential customers' facilities to learn their businesses and recommend products


MANAGE EFFECTIVELY

Each of the successful candidates for the above jobs are managed, motivated and communicated with very differently. One-size fits all management styles do not work. And because the Bureau of Labor Statistics data show that when the Quits rate

remains consistently high, companies need to be very aware their rock stars might leave them if they aren't being properly managed. Managers and leaders at all levels must know how to best give direction, offer feedback and even give kudos to each person in a way that will positively charge them, rather than de-motivate them. Do you know how to best work with, teach and guide each individual on your team every day? Training is the fastest way for your managers to drive your business objectives.

And it all starts with having a clearly-defined plan for workforce growth allowing you and your leadership team to more quickly achieve Business Results. **RB**


Dolly Penland, President & CEO of Business Results [<https://www.businessresultslc.com>], a PI® Certified Partner and Talent Optimization consultancy, and a CATIL® Certified Partner, works with organizations helping them to hire and manage their talent to their highest potential. She specializes in multiple areas including helping businesses grow sales, reduce turnover and develop leaders.





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Give us a call for all your coil and building accessory needs!

The Top ~~10~~ 12 Products of 2021

The Rural Builder Staff is happy to announce the products our readers have deemed the most useful. Of course, we usually have 10 top products, but this year we had 2 ties, so check out the Top 12 Products of 2021!



#1. COLORGARD BY S-5!

Rooftop avalanches cause hundreds of millions of dollars in property damage, personal injury and fatalities each year, creating potential liability for building owners and contractors. S-5! has mastered the art and science of mitigating this hazard since 1992 with a variety of fully engineered snow guard systems.

S-5!'s ColorGard® with VersaBracket™ 47 is the ultimate snow guard solution for trapezoidal rib, exposed-fastened metal roofs and is the only system on the market designed and engineered on a site-specific basis.

ColorGard provides the safety and serviceability you need while complementing the look of your roof, with a clean appearance and perfect color and finish-matching, all designed to last the life of the roof.

Extensively tested for load-to-failure results, S-5! ColorGard includes an industry-leading, lifetime product warranty. Visit www.s-5.com for more information.



#2. 138T AND 238T SYMMETRICAL STANDING SEAM PANELS BY MCELROY METAL

Chosen by the readers of Metal Roofing Magazine as a Top 10 Product in 2021, McElroy Metal's 138T and 238T symmetrical standing seam panels have changed the way the industry recovers old failing roofing. The 138T provides a long-term and economical solution for commercial building owners and homeowners in need of a new roof as it installs directly over existing shingles. The patented clips create an energy saving above sheathing ventilation (ASV) airspace between the existing roof and the new 138T roof. The 238T standing seam roofing system is setting a new standard for performance in a metal over metal recover with ease of installation, outstanding wind uplift and strength characteristics, individual panel replacement capability and jobsite roll forming for long length panels.

Since 1963, McElroy Metal has served the construction industry with quality products and excellent customer service. The family-owned components manufacturer is headquartered

TOP 10 Products of 2021

in Bossier City, La., and has 13 manufacturing facilities across the United States. Quality, service and performance have been the cornerstones of McElroy Metal's business philosophy and have contributed to the success of the company through the years. As a preferred service provider, these values will continue to be at the forefront of McElroy Metal's model along with a strong focus on the customer. More information can be found at www.mcelroymetal.com.



#3. UPLIFT PLATES BY LEVI'S BUILDING COMPONENTS

Stronger Than Rebar – Quicker Than Rebar – Better Than Rebar!

Uplift Plate™ is a revolutionary new product that saves post frame builders time and money, while exceeding the uplift requirements; it's the new way to anchor your post frame buildings. This state-of-the-art design securely anchors posts to concrete without requiring time-consuming drilling. These inexpensive plates are field applied with just a framing hammer, eliminating the extra tools and time associated with rebar or other uplift techniques. Simply hammer the plates onto the post and it's ready to set in the ground for the concrete pour.

In order to anchor a post properly, you need to make sure the post and the concrete are fused for life. Older techniques involve drilling holes through

the post and pounding in a piece of rebar, or nailing a piece of wood to the post. Either one is only as strong as the material used to join it.



WINDOWWRAP® PSX-20 FLASHING TAPE BY MFM BUILDING PRODUCTS

WindowWrap® PSX-20 is a self-adhering window and door flashing tape used to prevent the infiltration of moisture, air and noise into the building structure by eliminating these critical leak points. WindowWrap® PSX-20 is constructed of a tough, aluminized polymer film coated with a specially formulated adhesive system to stand up to UV exposure until the final cladding system is installed. The silver polymer construction resists exposure to ultraviolet rays and can be exposed for 180 days. The flashing tape self-seals around fasteners to maintain a waterproof barrier against the elements. WindowWrap® PSX-20 is suitable for new construction or renovation projects, and is a proven performer to reduce expensive call backs. WindowWrap® PSX-20 is available in 3", 4", 6", 9" and 12" widths by 100' roll sizes. The 4", 6" and 9" products are also available in labeled and shrink-wrapped rolls for retail display. WindowWrap® PSX-20 meets ICC-ES AC148, AAMA 711, LA County (LARC/LABC) and State of California (CRC/CBC) standards through independent, third-party testing to ensure product quality and performance. Made in the USA and comes with a 10-year warranty.

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TO SERVE YOU
EVEN BETTER!

**TOP 10
PRODUCT**



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Since 1966

ChiefBuildings.com

Trusted. Tested. True.®

Riding Arenas • Equipment Sheds • Agricultural Buildings • Materials Storage • Livestock Facilities



POLYCARBONATE SKYLIGHTS BY MWI COMPONENTS

The MWI Components team is overjoyed to receive the Top 10 Product Award for our polycarbonate (translucent panels)! Over the last few years, we have seen this commodity grow in popularity, and we are proud to continue to service our customers as demand holds strong.

At MWI, we strongly believe in providing products with lasting value. Products like our Polycarbonate Skylight are practical, cost efficient and ideal for a wide range of projects. Naturally daylit buildings not only create a pleasant and improved environment for livestock, but they also have significantly lower running costs and are more energy efficient than those buildings relying on artificial light sources.

Install Polycarbonate Skylights as roof lights or vertical sidelights to match the aesthetic and natural lighting objective you desire. At MWI Components, we offer a variety of lengths and colors. Choose from our clear, opal, solar grey or soft white. Because each color features a different light transmission and solar heat gain, you will be able to select the ideal environment for your next build. Plus, our 7 profiles will allow you to select the rib you desire:

- Classic AG Panel
- Heavy Duty Classic AG Panel
- Pro Panel
- Ridge Light
- CD 2000
- Commercial Grade R Panel
- Heavy Duty 1/16" R Panel

We would like to thank our MWI

enthusiasts for their support as we continue producing quality products to assist builders and bring post-frame visions to life. www.mwicomponents.com.



BUILDING PACKAGES BY CHIEF BUILDINGS

Our partners and customers choose Chief for numerous reasons, but seven stand out most prominently.

1. A Trusted partner is everything.

Our loyal customers have put their trust in us because we consistently deliver on our promises.

2. Products that have been Tested over time.

Chief has been producing high quality products and services for over 65 years.

3. A company that stays True to putting people first.

Our goal is to provide unparalleled personal attention to meeting the needs of our customers and stakeholders alike.

4. Family Owned

Chief is not steered by outside investors. Our strategic decisions protect the future of our business without compromising on our family driven values.

5. Honesty

Chief keeps our values top of mind and reflects on them to guide our decisions and actions.

6. Growth Oriented

Manufacturing is our core competency, and with an inherently entrepreneurial spirit, Chief has experienced solid, steady growth since opening our doors in 1954.

7. Diversification

The diversification of our 7 strategic

business units creates balance and stability no matter the headwinds we face.

Trusted. Tested. True.

www.chiefbuildings.com



CUPOLAS BY MWI COMPONENTS

We have manufactured cupolas since 1985, so a Top 10 Product Award for these decorative elements is very special to our team. We provide a variety of sizes including: 24x24, 36x36, 48x48, 66x66-inch square cupolas, as well as 48 and 84-inch octagon cupolas. Our 24", 36" and 48" square cupolas ship knocked-down, while the 66" square, 48" octagon and 84" octagon cupolas ship assembled.

We are proud to offer MWI cupolas in over 100 standard colors plus Kynar. Aluminum or copper weathervanes are available in varying sizes and styles, as well, so you can achieve the aesthetic you desire.

If you would like to go the DIY route by building your own wooden curb, you may choose between our standard and premium flashing sets. Those looking for an upgrade will appreciate the MWI Universal Base. The Universal Base ships assembled (separate from the roof and side assembly), and it eliminates the need to build your own wooden curb onsite. This option is a huge time saver and provides a clean finish to your decorative element! You can learn more about our cupolas and other products at mwicomponents.com.

We would like to thank all MWI supporters for their encouragement as we continue producing quality

products to assist builders and bring post-frame visions to life. Visit www.mwicomponents.com.



COIL COATINGS BY SHERWIN-WILLIAMS

Sherwin-Williams Coil Coatings, formerly Valspar, offers a full range of high-performance architectural metal coatings in PVDF, SMP, and polyester formulas. Fluoron is its flagship coating, with 70% PVDF resins, offering premium protection against harmful UV rays, chalk, fade and chemical degradation. WeatherXL, the next generation enhanced silicone polyester coating, protects against weathering for years. WeatherXL Crinkle Finish coating offers a unique textured appearance. Each is extremely durable with excellent film adhesion integrity. Visit www.sherwin-williams.com.



DOORS BY MWI COMPONENTS

We, MWI Components, are honored to receive the Top 10

Product Award for our doors. We believe in providing quality products to the post-frame industry, and awards such as these continue to motivate us in our quest.

Doors are a leading aesthetic (and functional) feature you can add to your build; therefore, we offer several door options: Dutch Doors (and Fixed Dutch Doors), Double Dutch Doors, French Doors, Arcadian Slider Half Light and Double Buck Doors, Bale Doors and Bale Windows.

Our Dutch and Bale Doors can be ordered as one assembled piece or in kit form. We also provide the option of knocked-down or welded frame (prepped with hinges). Our color-matched hardware will aid in providing the best possible aesthetic for your structure. Speaking of color, we offer thousands of color combinations!

Tips for MWI Dutch Doors Installation:

1. Frame opening needs to be plumb and square at 49 1/8" +1/16"/-0" wide X 87 3/8" high
2. When specifying the swing of the door
 - i. Left Hand Swing = swings out to the left as viewed from the outside



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Sealing pipes, cables, conduit, wire, solar, refrigeration lines, venting. Etc.,

ROHS, REACH, DFARS COMPLIANCE



UNIVERSAL Master Flash®

2 Compounds:

13 EPDM Colors or High Temp Silicone

10 Sizes - Pipe Range:

Fits: 1/8" to 20" Pipes • Base Ranges: 4" to 25-1/4"



STANDARD Master Flash®

2 Compounds:

10 EPDM Colors or High Temp Silicone

15 Sizes - Pipe Range:

Fits: 1/8" to 39-1/2" Pipes • Base Ranges: 2-1/4" to 44"



MASTER SEAL® Bonded Washers

Facing Materials:

EPDM • Neoprene • Silicone • Fluorosilicone • Vitons Non-Elastomeric • Etc.

Backing Materials:

Galvanized Steel • Aluminum • Stainless Steel • 316 Stainless Steel
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Roof Pitch Calculator
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ii. Right Hand Swing = swings out to the right as viewed from the outside

3. Attach bottom door panel to frame before top panel. Top panel's bottom hinge is left loose for access to bottom panel

MWT's Arcadian Sliding Doors will bring a pop of attention to your entry or exit. Find these beauties in 26 standard sizes and as single or split doors. You can also choose between double cross-buck or half-light options. Again, choose between fully assembled or kit form doors and thousands of color combinations! We also offer the Arcadian Sabre Slim—an exterior, lockable latch, with keyed entry. This polished, chrome-plated handle functions even when the exterior handle is locked—keeping you safe and looking great at the same time!

Tips for MWI Arcadian Sliding Doors Installation:

1. When ordering, identify door size as Width x Height, and allow for adequate door overlap to the rough opening at the Track Board (Header) and each Jamb

2. A flat clean surface should be used for door assembly

3. Check square of door rails by measuring diagonally and matching up the measurement

4. Start positioning box girts from the bottom of the door and work up to ensure all plywood seams are backed up by a box girt and anchored securely

5. To prevent unsightly issues from projecting through the sheet metal cladding, if required, spend time on the seams—leveling, flattening, sanding; then blow off dust for best adhesion results

6. Windows provided in Half Light Kits are sized 3/4" under rough opening size

7. Dry fit sheet metal inserts, and mark out locations prior to gluing inserts in position

8. To ensure good water shed, sheet metal inserts should be installed starting at the bottom and overlapping while working toward the top

Visit www.mwicomponents.com.



BUTYL RUBBER SEALANT TAPE
BY GSSI SEALANTS

For over 35 years GSSI Sealants has manufactured butyl based sealants for the metal building and construction industry. Our MB-10A is a premier elastomeric butyl rubber sealant designed to the critical requirements of metal buildings and roofing. It is preferred due to its excellent adhesive and cohesive strength, low temperature flexibility and affordable price. It is produced in all common sizes and profiles. See our website, www.gssisealants.com, for data sheets and tape sizes. We will put you in touch with an area distributor that can quickly supply you for your next project. We are grateful for the recognition from the Rural Builder community.



MASTER FLASH
BY AZTEC WASHER COMPANY

Our unique process bonds a strong backing material to a resilient facing material, so the Aztec Master Seal performs a function that neither material could perform alone. Where sealing challenges are presented, the conical design directs the flow of the elastomeric portion toward problem areas. When problems call for cushioning or vibration control, the facing

material will also provide the solution. Visit www.aztecwasher.com.



rFOIL
BY DIRECT METALS INC.

rFoil is a high efficiency, lightweight and cost effective reflective metalized insulation roll adhered to a single or double layer of polyethylene bubbles that provides consistent control of heat gain or loss. It is designed for a wide range of applications including residential and commercial metal roofing, pre-engineered steel buildings, post frame construction/pole barns, animal confinement buildings and mini storage. Other popular DIY applications include garage door and water heater insulation. Benefits include convenient roll sizes, cost efficiency, and ease of installation. It reflects 96% of radiant energy and has a Class A/Class 1 fire rating. As a vapor barrier, it prevents condensation problems & does not promote nesting of insects or rodents. It does not compress, collapse or disintegrate due to moisture. R-Value stays consistent over time when used with a proper air space, allowing design criteria to remain intact for the life of the building. Some blanket insulation density can be reduced by over 35% in the first two years after installation. rFoil is manufactured in North America, and is ICC and RIMA certified for quality and performance. rFoil is available in a foil/white or foil/foil combination and has a UV resistant coating to protect against de-lamination. A square un-taped edge is standard. A taped edge product is available, which helps to reduce installation time on open purlins. www.directmetals.com **RB**

Choose the Right Sealant

for a metal roof project

METAL IS A DURABLE MATERIAL. That's why offering a 25-year warranty on a metal roof is a no-brainer. But while it's easy for the metal panels to pull off this kind of longevity, it's not always so easy for the sealant keeping them in place while providing an attractive, water-tight seal.

That's where you need to apply some real thought. Here's what to consider when choosing from the five types of sealants ...

WATER-BASED SEALANTS

These include latex and acrylic sealants, which are great for general construction purposes requiring easy application and smooth tooling. But their formulation requires water, and what does water do? Right! It evaporates while curing. This evaporation will naturally cause the sealant to shrink. In fact, it can shrink up to 40% — to nearly half the size as when it was gunned out — which then leads to cracking.

Shrunk and cracked sealant does not add up to a long performance life, and you're sure to get an earful about the shoddy appearance. (And if clouds are gathering during installation? Don't even think about it! Latex and acrylics can wash away if it rains within forty-eight hours after application.)

SOLVENT-BASED SEALANTS

Solvent-based sealants can offer more durability than water-based ones, though they will also encounter unwanted shrinkage and cracking due to evaporation while curing. Moreover, they are hard to work with, especially in cold weather—each drop in degree makes the mix stiffen that much more, leading to cramps in your straining trigger fingers.

Even harder is the clean-up, with sticky sealant ending up all over your hands.

POLYURETHANE SEALANTS

These ultra-tough sealants certainly have their place, but it isn't on a metal roof. As with a solvent-based sealant, a polyurethane one is hard to work with and stiffens in cold weather. Further, they do not adhere well to metal, and will pull away. So they require a primer, which adds an extra step and an extra expense.

MODIFIED SILICONE SEALANTS

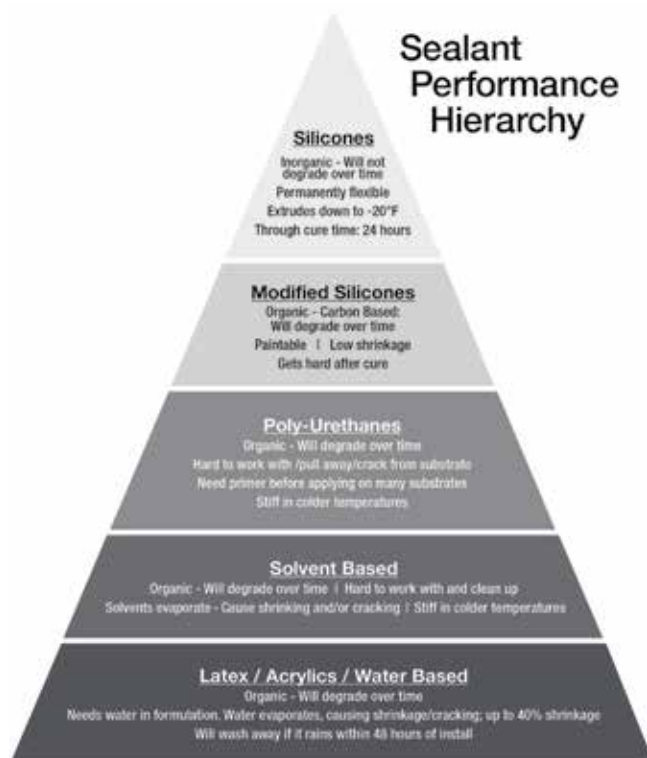
These can provide added flexibility, for less shrinkage. Plus, they are paintable. Indeed, there are many fine modified silicones on the market. But though commonly referred to as a 'silicone,' just get down to the molecular level and you'll see the backbone

of this category of sealant is actually urethane ... with silicone 'caps' on each end of the molecular chains. So, all scientific mumbo-jumbo aside, it's really more of a 'siliconized urethane.' It will still be susceptible to UV degradation and chalking.

SUNBLOCK FOR SEALANT

Apply a water-based, solvent-based, or modified-silicone to your metal roof ... and you'd better put down the caulk gun and pick up a paint roller. Without a coat of paint, it will be like going without sunblock, although painting a metal panel may not be the best option either; please read the warranty. Without paint, these organic sealants are susceptible to UV light, which will break them down and cause cracking and chalking.

A MAINTENANCE-FREE METAL ROOF



Silicone can offer the longevity and appearance you need to see your warranty through to the end — and even beyond.

"But," you may be thinking, "silicone won't stick, right?" Wrong. Silicone will adhere properly to metal if you pick the silicone with the right chemistry.



WANTED!

Contractors and construction professionals cite locating skilled trades people as one of the major challenges to running their businesses.

Readers of Rural Builder, Metal Roofing Magazine, Frame Building News, Rollforming Magazine, Garage, Shed & Carport Builder and Roofing Elements Magazine use our publications to stay current in industry developments and best practices.

REACH THE CONSTRUCTION PROFESSIONALS WHO READ OUR MAGAZINES TO FILL YOUR VACANT POSITIONS.

Gary Reichert – gary@shieldwallmedia.com – 715-252-6360

If you're looking at an acetoxysilicone, you're looking at a silicone made of a chemical that will lower PH levels. This creates an acetic acid while curing, which can lead to acid etching of paint, creating rust lines around beads ... and even deter from adhering to certain metals.

Unsure if the silicone in your gun is made of acetoxysilicone? Just take a whiff. If the silicone emits a vinegary smell, you have an acetoxysilicone which is not appropriate for use on metal.

INORGANIC OXIME SILICONE

This particular compound provides superior adhesion to metal. And the inorganic chemistry making up oxime silicone allows light rays to pass right through it, doing no damage. It simply won't degrade. Some long-lasting oxime silicones can extrude down to -20°F. remaining permanently flexible without fading, chalking or cracking. There is one drawback: it's not paintable. Look for translucent and color matching choices. **RB**

Brad Macoubrie is the Building Systems National Sales Manager at Novagard (www.novagard.com)



Whether your metal roofing or metal building project is new construction or replacement, make sure you specify the most versatile long-life fastener available today—

#12 SCAMP STEELZIP/WOODZIP

- 304SS Cap & EPDM washer combination provides lifetime protection for your metal roof. WOODZIP SCAMP includes a 304 SS/EPDM bonded washer for enhanced strip out prevention in light density wood.
- WOODZIP HI-LO Type 17 thread design is larger than traditional #12 diameter. It is designed for maximum strip out in OSB & other light density wood.
- #12 WOODZIP is an excellent choice for new construction or replacement of #9/#10 fasteners that have loosened.
- 5/16" HWH provides exceptional pullover strength versus a traditional 1/4" HWH on metal to wood screws.



MARION COUNTY FLORIDA



- STEELZIP self-drilling point is designed to drill 10-16 gauge steel purlins consistently with no "point walking". The 1/4" diameter stitch screw securely fastens 26 gauge side laps & other light gauge trim.
- DMG85 corrosion resistant coating over zinc plating provides additional protection on fastener shank. Meets Dade County, FL requirements for corrosion protection. Both parts are ideal for coastal high corrosion areas & are available in many powder coated colors for additional protection.



Butcher Block Countertop

COUNTER Proposals

What Are Your Customers Looking For in a Countertop?

WHEN IT COMES TO KITCHEN countertops, the possibilities are almost endless, but the most important consideration for you is what your client is expecting from a countertop. Are they looking for something with a wow factor? Are they looking for something that will not melt if they leave a hot kettle on it? Are they dealing with a limited budget but still want to avoid laminate?

Ed Rogers, executive vice president of quartz manufacturer Vadara said, “Consumers now are becoming more educated before they ever leave the house as to the type of product they want and how they need to take care of it.”

Consumers have a range of products to consider, from quartz and natural stone to concrete and ceramic tile to butcher block. Each material has its respective pros and cons. However, contractors should ensure clients know how each performs before choosing a surfacing material.

Following are some of the most common countertop materials used in kitchen and bath design.

QUARTZ COUNTERTOPS

Attractive and requiring only minimal maintenance, quartz has become the go-to countertop material for many designers. An engineered mix of ground quartz and resin, quartz surfacing materials are not only exceptionally durable but are also scratch-, stain- and heat-resistant, making them a highly desirable option.

Quartz features artfully handcrafted designs and veining that mimic the look of natural stone, and it is available in a range of aesthetically pleasing colors, patterns, finishes, and edge treatments. It is also an ideal option when the need to book match is a critical design element – for example, on an island with a waterfall feature.



Quartz Countertop



Concrete Countertop

Because it is non-porous, quartz does not have to be sealed like granite and marble. Additionally, it will not harbor bacteria or viruses, making it one of the most hygienic countertop options available. However, if your client has budget constraints, they may want to consider an option like ceramic tile.

“Quartz, in general, has always been a durable and low maintenance option for countertops,” Rogers notes.

NATURAL STONE

Natural stones such as granite, marble, and soapstone continue to be a popular option for countertops amongst consumers. No two slabs are the same, which is perfect for those who prefer a one-of-a-kind look.

Strong and sturdy, and available in many different colors and patterns, granite has long been a favored countertop material. If maintained, a hot pan will not harm it. However, it is best to let your client know that it requires regular sealing, and, in addition, granite may crack and chip.

Beautiful, luxurious, and sophisticated, marble is often used in limited areas in kitchens, like islands and baking areas, due to its susceptibility to staining and scratching. While it is unlikely to chip or crack, its elegance and durability come with a price tag to match.

Often seen in historic homes, soapstone is also common in modern applications. It is usually gray and features a very smooth, silky feel. Soapstone can darken and scratch over time, but many homeowners find the antique-like patina appealing. Because it is non-porous, it is not likely to stain and is heat resistant.



Tile Waterfall Feature

CONCRETE

In addition to complementing a range of design aesthetics, concrete countertops offer durability and ease of maintenance.

A variety of textures, colors, and patterns are available with unique edge profiles, the ability to add embedded materials or polish the surface for a shiny finish. A versatile design option, concrete can even be customized to replicate the look of granite, marble, or wood.

While countertops crafted from cement will last for many years, they are vulnerable to stains. It's best to inform a client that this type of countertop requires regular reapplication of sealer and wax to protect the surface and that any spills need prompt cleaning to avoid staining. In addition, concrete countertops are handcrafted, making them a more costly surfacing option.

WOOD/BUTCHER BLOCK

Classic and timeless, butcher block countertops consist of individual wooden strips that have been fused together into a slab. Butcher block offers a warm, inviting look and is available in a wide range of wood species and grain patterns, each providing distinctive character.

It is important to inform clients that wood can hold germs and is prone to staining and may warp when exposed to moisture. Therefore, it is crucial to seal butcher block countertops immediately following installation and then on a routine basis afterward.

In addition, as one of the softer countertop materials, butcher block is vulnerable to scratches and dents. Fortunately, however, they are easy to restore by simply sanding the surface with fine sandpaper and then reoiling.

CERAMIC AND PORCELAIN TILE

Durable, heat-resistant, and easy to clean, ceramic and porcelain tile is notably less expensive than natural stone, quartz, and other solid surface countertops.

Porcelain tiles offer a growing number of design options, in-



Granite Sample



Concrete Sample



Marble Sample

cluding tiles that mimic the appearance of wood, marble, and even leather. A variety of colors, styles, and sizes are available, making this one of the most versatile countertop materials.

Ceramic tile is impervious to heat and water, and when properly glazed, won't stain. However, the grout can stain and be challenging to clean. It is also important to be mindful that tile is brittle and can crack under impact.

SOLID CHOICES

When consulting with homeowners about surfacing materials for kitchen countertops, it is essential to consider characteristics beyond the look and feel of the material, such as durability, heat- and stain resistance, maintenance requirements, and affordability. It is easier than ever before to find countertops that are not only stylish and functional but that offer the performance that consumers expect. **RB**

Shallowly Embedded Anchors

IN THE LAST FEW YEARS, Simpson Strong-Tie has heard from a number of structural engineers expressing frustration with the lack of performance data for shallowly embedded, post-installed anchors (shallow anchors). Engineers of Record (EOR) have identified a common application for shallow anchors as those related to attachment of sill plates for structural and nonstructural wall-to-podium slab connections. One dilemma faced by the EORs originates in their desire to prevent damage to concrete podium slab reinforcement, especially where reinforcement is located close to the slab's top surface to resist negative bending moments. EORs further indicate that shallow anchors are frequently needed for the following attachments: hanging MEP fixtures; attaching nonstructural components associated with tenant improvements; and anchoring light equipment.

ADDRESSING THE PROBLEM

Problem solving is in the DNA of Simpson Strong-Tie. Our engineering team didn't hesitate to see this as an opportunity to come up with a solution. We investigated how to address this apparent deficiency in post-installed anchor performance data. We reviewed relevant test and qualification standards for post-installed anchors and polled the specifier community for critical details related to the challenge. Questions such as "What is the limit of acceptable embedment depth?" "What type and magnitude of loading need be accommodated?" and "What type of post-installed anchor is most desired?" required answers.

Our team polled structural engineers across the United States for answers to these questions. The largest percentage of respondents indicated they most

frequently encountered the need for shallow anchors in concrete-on-metal-deck and elevated, post-tensioned slab construction. Over 70% of respondents indicated they were comfortable specifying drill depths not greater than 1" and that they either preferred mechanical screw anchors or had no preference regarding post-installed anchor type. Fifty-three percent of respondents desired tension performance and shear performance within the range of 200–500 lb. per anchor. Finally, a significant majority of respondents believed that inclusion of shallow-anchor performance data in an Evaluation Report issued by an accredited agency was mandatory.

TESTING APPROACH

To fulfill EOR requests for inclusion of performance data into an Evaluation Report, we approached testing in accordance with ICC-ES AC193 (AC193),

"Acceptance Criteria for Mechanical Anchors in Concrete Elements," Appendix A5, "Requirements for the Qualification and Design of Shallow Anchors." In addition to Appendix A5 requirements that shallow anchors be tested and assessed in accordance with Table 4.2 of AC193, and used and designed in accordance with ACI 318-14 (Chapter 17), Appendix A5 imposes the following additional conditions:

1. Installation of shallow anchors shall be limited to formed concrete surfaces (A.5.1.3).
2. Use of shallow anchors shall be limited to installations with dry, interior exposure (A.5.1.4).
3. Anchors qualified as shallow anchors shall be limited to support of nonstructural elements (A.5.1.5).
4. Anchors qualified as shallow anchors are limited to a minimum spacing distance

Shear Design Strengths for Single, 3/8-inch Dia., Titen HD at 1-inch Nominal Embedment Depth in Normal Weight Concrete

Anchor Dia. (in.)	Embed. Depth h_{nom} (in.)	Min. Conc. Thick. h_{min} (in.)	Edge Distance $C_{a,\text{min}}$ (in.)	Anchor Spacing S (in.)	Conc. Strength f'_c (psi)	Uncracked Conc.		Cracked Conc.	
						SD Level (lbs.)	ASD Level Wind (lbs.)	SD Level (lbs.)	ASD Level Wind (lbs.)
3/8	1	4	2 3/4	4	3000	204	122	144	86
					4000	235	141	167	100
					5000	263	158	186	112
					6000	288	173	204	122
					7000	311	187	207	124
					8000	333	200	207	124

1. Shear design strengths are based on the strength design provisions of ACI 318-14. Shear pryout strength governs tabulated values with the exception of shaded cells which are governed by steel strength.
2. Tabulated values are for anchor-to-concrete connection based on min. conc. thickness, edge distance, and anchor spacing listed. The capacity of fixture must be calculated separately.
3. Tabulated values are limited to dry, interior, non-structural applications.
4. ASD Level Wind loads are calculated using a conversion factor: $\alpha = 1.67$ (1.0/0.6)

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of no less than $4h_{ef}$ and a minimum edge distance of no less than $2h_{ef}$ (A.5.1.6).

The first and third conditions appear to be the most restrictive when considering the use of shallow anchors for shearwall sill plate anchorage.

With the possible exception of precast concrete slab elements, it's prudent for the EOR to give due consideration to the quality of concrete at a finished surface and its impact on the reliability of shallow anchor performance. The quality of unformed concrete surfaces is most certainly affected by concrete mix ratios, ambient conditions, the specified concrete finishing and curing procedures, and how strictly these specifications are executed in the field. Additionally, finished concrete surfaces may be the most susceptible to surface deficiencies such as cracking, crazing, blistering, delamination, and spalling. Interestingly, the preliminary test results indicated no discernible difference in performance between shallow anchors installed in formed surfaces and those installed in unformed or hand-troweled surfaces.

While consideration of shallow-anchor performance data for nonstructural components is clearly permitted by AC193 Annex A5, the attachment of shearwall sill plates is undeniably a structural anchorage. We requested an explanation of the basis of Condition 3 from ICC-ES and their response was that the restriction originates from the lack of test data related to tension performance of shallow anchors under sustained loading. One could argue that utilization of shallow anchors for in-plane, shear-force transfer from a sill plate to concrete is neither a tension nor a sustained loading application. Here, too, the EOR must apply his or her own engineering judgment as to the suitability of specifying shallow anchors based on performance obtained via testing per Annex A5 for any structural anchorage.

TESTING RESULTS

To date, our shallow-anchor performance data has focused on shear performance. The results of the Simpson Strong-Tie laboratory testing program on 1/4"- and 3/8"-diameter Titen HD® (THD) shallow anchors may be found

on pages 9 and 10 of TEB-A-THD20_R2, "Titen HD Design Information – Concrete." [TEB-A-THD20_R2 (TEB) may be found at strongtie.com.] The Shear Strength Design Data table on page 9 of TEB is limited to shear performance data with the exception that the Effectiveness Factors (K_{uncr} and K_{cr}), needed for tension concrete breakout calculations, are included to permit shear concrete pryout calculations. As indicated in footnote 5, this data is presently not included in the Titen HD Evaluation Report (ESR-2713).

Shear performance data for a few selected combinations of edge distance and spacing may be found on Page 10 of TEB. The tabulated data has been calculated for 2,500 psi normal-weight concrete, and, accordingly, higher-strength concrete will produce increased design strength values. Performance for the 3/8"-diameter THD is generally lesser than that for the 1/4"-diameter Titen HD due to its shorter effective embedment depth (h_{ef}).

When considering use of shallow anchors for structural or nonstructural walls with stud spacing of 16" on center, a quantity of five total anchors between studs is a feasible, maximum anchor quantity (approximately 3" spacing). Based on performance tabulated in the TEB, the shear design strength of the 1/4"-diameter THD at such spacing could perhaps produce as much as 770 lb. per linear ft. and 995 lb. per linear ft. of in-plane shear force transfer in cracked and uncracked concrete service conditions, respectively. (Note: parallel-to-grain sill/sole plate or CFS track strength may limit in-plane shear performance and must be calculated separately.)

Shear Design Strengths for Single, 1/4-inch Dia., Titen HD at 1-inch Nominal Embedment Depth in Normal Weight Concrete

Anchor Dia. (in.)	Nom. Embed. Depth h_{nom} (in.)	Min. Conc. Thick. h_{min} (in.)	Edge Distance $C_{a,min}$ (in.)	Anchor Spacing S (in.)	Conc. Strength f'_c (psi)	Uncracked Conc		Cracked Conc.	
						SD Level (lbs.)	ASD Level Wind (lbs.)	SD Level (lbs.)	ASD Level Wind (lbs.)
1/4	1	3 1/4	2 3/4	4	3000	292	175	226	136
					4000	338	203	261	157
					5000	378	227	292	175
					6000	414	248	320	192
					7000	447	268	346	208
					8000	478	287	369	221

1. Shear design strengths are based on the strength design provisions of ACI 318-14. Shear pryout strength governs tabulated values.
2. Tabulated values are for anchor-to-concrete connection based on min. conc. thickness, edge distance, and anchor spacing listed. The capacity of fixture must be calculated separately.
3. Tabulated values are limited to dry, interior, non-structural applications.
4. ASD Level Wind loads are calculated using a conversion factor: $\alpha = 1.67$ (1.0/0.6)

SHEAR DESIGN STRENGTH DATA TABLES

The tables provide shear performance data for single 1/4"- and 3/8"-diameter THD anchors at higher concrete compressive strengths (3,000 psi to 8,000 psi). The tables are developed with in-plane, sill plate or CFS track anchorage in mind (shear parallel to edge) but are

also valid as shear-parallel-to-edge values even at each anchor's minimum qualified edge distance of 1.33" (1/4" THD) and 0.98" (3/8" THD). Shear design strengths perpendicular to edge should be calculated and considered when resistance to out-of-place loading, acting towards a concrete edge, is required.

Tabulated shear design strengths are governed by the shear concrete pryout failure mode, and this will be true in most instances with the following exceptions:

- Steel strength in shear in cracked concrete governs 3/8"-diameter THD shear performance at concrete compressive strengths above 6,000 psi (highlighted in blue).
- Shear concrete breakout failure mode (perpendicular to concrete edge) may govern design strength for shear applied perpendicular to the concrete edge as anchor edge distance and spacing approach minimum qualified values.

Tabulated shear performance data

from the tables may be used to calculate per-linear-foot shear strength values, such as for the following shallow-anchor parameters: 1/4"- diameter THD, spaced at 4" on center, in cracked 4,000 psi, NWC..... $\phi V_{uw} = 3 \times 261 \text{ lb.} = 783 \text{ lb. per ln. ft.}$

Where..... ϕV_{uw} = Shear strength per linear foot of wall: 1/4" THD-to-concrete connection.

An ASD-level equivalent may be calculated by assuming 100% wind load and referencing performance values in the table's ASD-Level-Wind Column: $3 \times 157 \text{ lb.} = 471 \text{ lb. per ln. ft.}$

Assuming uncracked concrete service conditions raises the ultimate performance by approximately 30% to $3 \times 338 \text{ lb.} = 1,014 \text{ lbs. per ln. ft.}$, and an equivalent ASD-Level-Wind allowable capacity: $3 \times 203 \text{ lb.} = 609 \text{ lb. per ln. ft.}$

Simpson Strong-Tie shallow-anchor shear performance for 1/4" and 3/8" Titen HD anchor screws provides design

professionals with shear design strengths that may be considered for a variety of nonstructural anchorage applications, including transferring wood sole plate and cold-formed steel track shear forces to concrete in the absence of other options. Tabulated values should be viewed as guide performance data that may vary depending on concrete surface curing and finishing operations insofar as they affect the concrete quality within the top 1" of the concrete's surface. We're eager to receive comments and feedback related to the shallow-anchor performance data included in TEB-A-THD20_R2 and this article before seeking inclusion of the data into ICC ES ESR-2713. **RB**

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Building Better with Cold Formed Steel

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IN THE AUTUMN OF 2017 a small startup company in Sundance, Wyoming attempted something new. The company is called Straight Cold Rolling, LLC and they wanted to build a 60'x140' pole-barn style building using cold formed steel.

They used a new automation technology from SmartBuild Systems™ (SBS) that allowed them to roll every piece of framing material off a single roll forming machine. These were not 'dumb' parts like they could purchase from a typical steel stud manufacturer; each part was precut to length, prepunched at connection locations, and uniquely labelled. Parts were bundled together and the entire framing package fit on a single truck. At the job site, the pieces were assembled into wall and truss components. They fit together

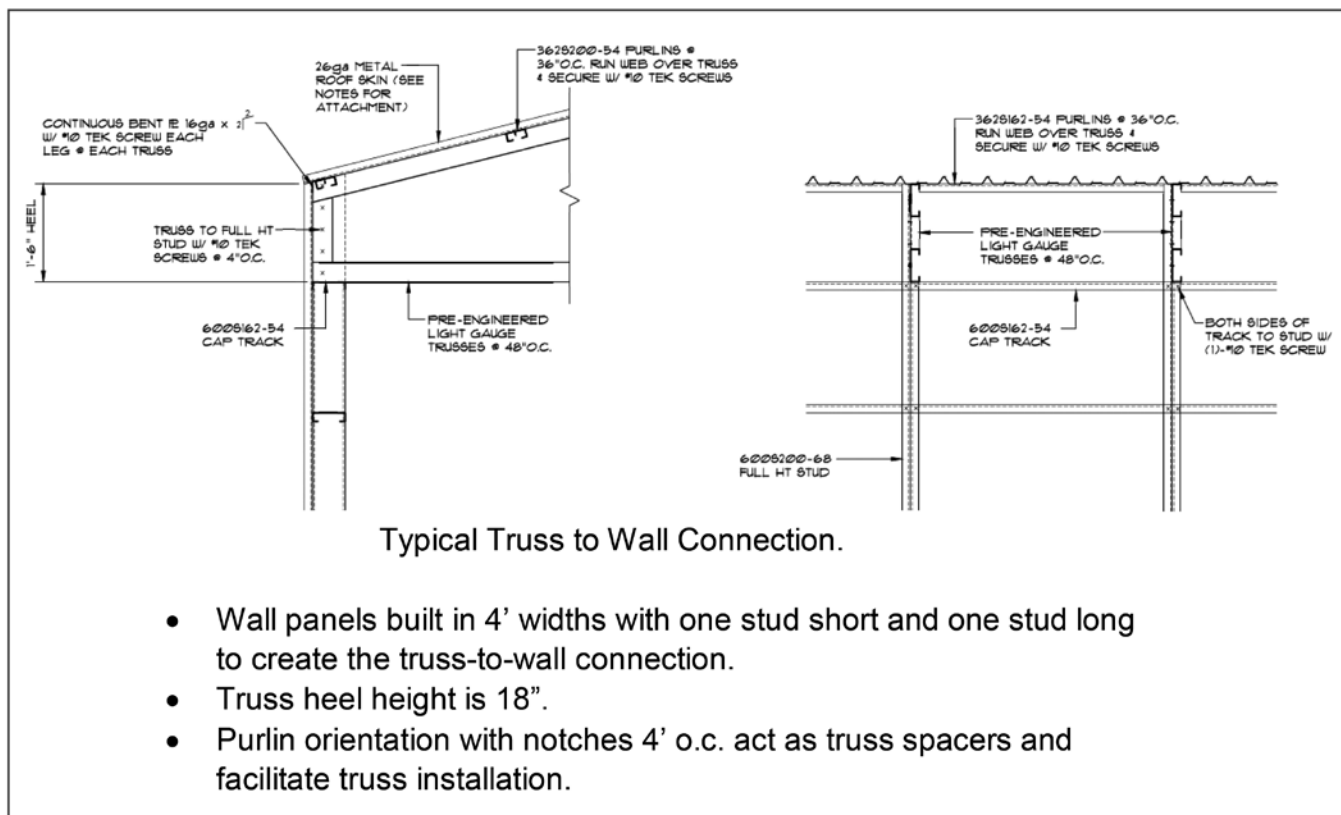
like 'Tinker Toys'. There was no measuring or marking required to assemble; only to verify dimensions. There was no saw on the job site (no cutting), only several screw guns. A crew of 4 untrained laborers was instantly productive because the parts were perfectly made.

How did they do this? Using powerful SmartBuild software, the structural plans were drawn up in the 3d design software. Wall columns and girts were formed into panels. Trusses were designed to a 60 ft clear span. Each wall panel and truss was QC'd in the software for geometry and fit. Then every piece of material was loaded into a data file that fed into special roll-forming machinery. The machine took raw coils of steel and formed them into the pieces specified by the data file.

The results were startling. Cost of raw materials plus the manufacturing labor to roll-form and bundle the parts was competitive with the cost of an equivalent wood building. This was unexpected because the cost of cold formed steel building materials in other market segments usually exceeds the cost of wood materials. An even bigger surprise emerged in the field labor costs. Because the pieces were fabricated to fit together without measuring, marking, or cutting in the field, an untrained crew erected the building as quickly or more quickly than a trained crew could build a wood pole barn.

FRAMING DESIGN

The building was designed to support up to four independent commercial





spaces. The building dimensions were 60 ft by 140 ft and the south wall included (4) 12-ft overhead doors each with an adjacent entry door. Wall height was 16 feet and the roof slope was 4:12. There were no roof overhangs.

The framing solution included several features to ease the construction process. Wall panels were designed in 4-foot sections. On one end of the panel, the vertical stud (14ga) terminated inside the top track; at the other end, the vertical stud (also 14ga) extended through the top track an additional 18 inches. As two panels were placed side by side, the 14ga end studs were fastened in the field forming an I-shape. The short stud became the bearing point for the truss above (also spaced 4-foot on center), and the long stud provided a connection for the truss (heel height 18 inches) that also formed a moment-resisting connection for the building frame.

ENGINEERING

Structural engineering was completed by Krivonen Associates in Billings, Montana. The building was designed under IBC2012 with a ground snow load of 30 psf and ultimate wind speed of 120 mph. An interior shear wall was required to support the 140' diaphragm in the transverse direction, and diaphragm

connection details were included.

The builder desired a concrete floor so this foundation consisted of a 4" slab with 18" wide x 24" deep thickened edge footings using (3) #4 reinforcing bars top and bottom. Wall panels were fastened to the foundation using 5/8" x 8" anchors at 32 ioc, and holddown devices were installed at the corners.

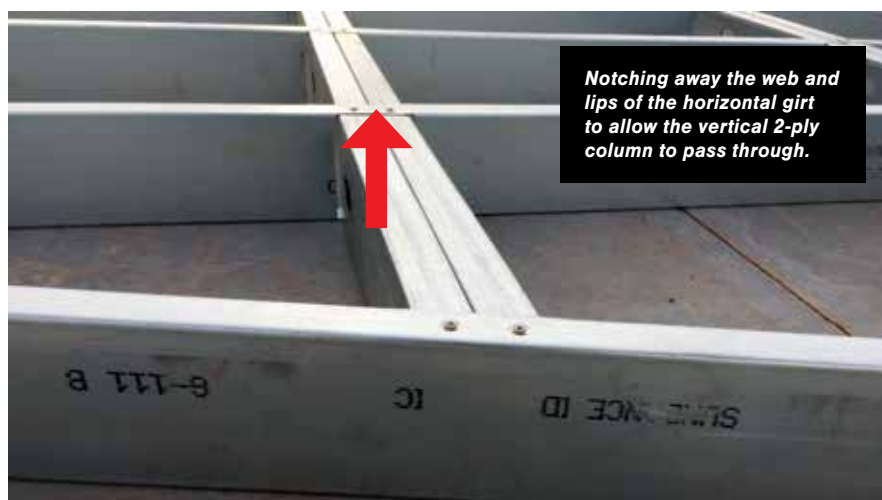
Since not all buildings require a concrete floor, additional foundation options are currently under investigation, such as a strip footing or perhaps a concrete pier system which the wall columns would stand on, anchored with steel holddown devices.

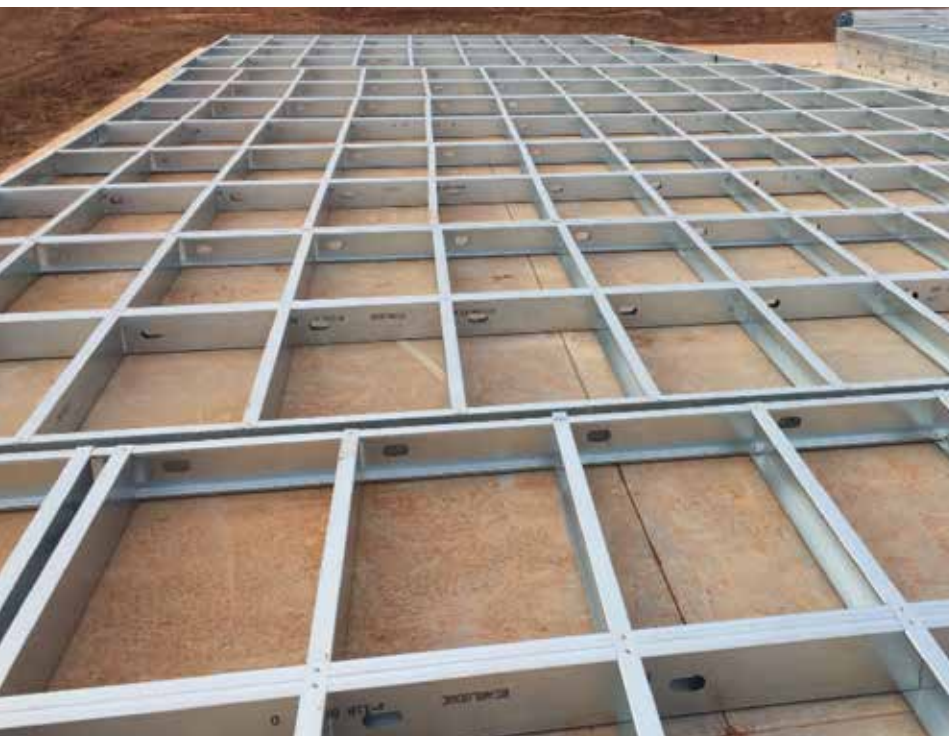
Trusses were designed using powerful

truss design software and a proprietary truss system called KeyTruss that utilizes standard cee shapes with special notching and piece marking to facilitate fabrication. Trusses were spaced 4 ft on center and beneath each truss was a column built from a back-to-back cee stud. Trusses were designed with a 60-ft clear span and a heel height of 18 inches to form the connection with the wall panel. Trusses were designed with 2-inch flanges, which eliminated the need for any web bracing. Truss chords were 6" 14ga cee shapes (600S200-68) with special notching of the flanges to receive the webs at each joint. Truss webs were 3 5/8" cee shapes and varied between 18ga and 16ga (362S200-54 and 362S200-43). Truss purlins were made from 3 5/8" 16ga cee shapes (362S200-54) oriented face down with notching to receive the trusses. Purlins were spaced at 36 inches on center.

Columns were formed by joining two 6" 14ga cee shapes (600S200-68) to form an I-section.

Columns were spaced 4 ft on center to align with the trusses above. Wider wall panels with wider truss spacings are also possible. The top and bottom tracks of the wall panels were made of 6" 16ga shapes (600T150-54) with dimples that matched the vertical columns. The dimples allowed the tracks and columns to snap together even before screwing off the connection. Wall girts were made of 6" 18ga cee shapes





(600S200-43) and had special notching to remove the web and lips where the columns passed through. This detail allowed for a strong material that could also receive the exterior sheathing as well as interior sheathing. Wall girts were spaced at 24 inches on center.

MATERIALS LIST

The materials were manufactured in Marion, Kansas. Special roll forming machinery was used to convert raw coils of steel into the smart pieces that formed the building. Every stick for every wall and truss was a highly processed piece with custom marking and notching.

The weight of all materials including walls, girts, truss chords and webs, roof purlins, and permanent bracing added up to 42,000 lbs. Since the pieces can be bundled together in a compact fashion, the entire job fit on one truck and the truck was weighted out, then shipped to the job site in Wyoming.

CONSTRUCTION

Bundles of materials were delivered to site where the slab had already been poured and prepped. All the wall panels and trusses were assembled on site.

Since all the pieces were cut to length, pre-punched with pilot holes and dimples, and had customized markings, the wall and truss components went together like ‘Tinker Toys’. A crew of four workers who previously had no construction building experience, plus one experienced supervisor, rapidly assembled all the walls and trusses and erected the building.

There was no need to field cut the component parts because each piece had come off the machinery pre-cut to the exact length. Field cutting was only needed for temporary wall braces, etc.

No jiggling was required for building trusses. The trusses were self-jiggling, using alignment holes and notches in the chords to properly build each truss. Crew members built the first truss using the pilot holes and checked measurements against the construction drawings. The crew

Roof Trusses

Top Chords	600S200-68
Bottom Chords	600S200-68
Webs	362S200-54 & 362S200-43
Roof Purlins	362S200-54
Bottom Chord Bracing	362S200-43
Web Bracing	none required
End Wall Bracing	362S200-54
Permanent Bracing (per BCSI)	362S200-43

Walls

Wall Studs	600S200-68
Wall Plates	600T150-54
Wall Girts	600S200-43
X-bracing	None required - sheathing to provide shear resistance
12' Garage Door Headers	HSS8x6x1/4" or (2) 1200 S300-68
Oddball bracing + nailers	362S162-43

Cost Comparisons

	Steel	Wood Package 1	Wood Package 2
Posts, Girts, Headers and Other Framing including Member Connections	\$9,819.00	\$15,800.00	\$9,992.00
Trusses, Purlins and Roof Bracing including Truss Connections	\$22,200.00	\$13,500.00	\$20,286.00
MATERIAL TOTAL	\$32,019.00	\$29,300.00	\$30,278.00
Field Labor	\$20,000.00	\$24,650.00	\$22,000.00
TOTAL	\$52,019.00	\$53,950.00	\$52,278.00

squared one end of the truss, then screwed off the rest of the required fasteners. Once the first truss was confirmed, it was used as a template for other trusses, which themselves were first set together using the pilot holes and then screwed off.

COST COMPARISON

Material costs and field labor costs were tracked throughout the process. Two competitive bids were procured from leading pole barn manufacturers using wood framing. In comparing the costs of the framing, here's how the numbers stacked up. The steel frame solution generated a combination of labor and materials that is lower than the wood solution.

CONCLUSION

A 60'x140' pole barn style building was designed and engineered using a new building methodology. Advanced automation software for building design and truss engineering, combined with special roll forming machinery, created a new building system that went together in the field perfectly, like an Ikea product. The combined cost of materials and field labor was less than a similar wood-framed pole barn. **RB**



Light Commercial

Light Commercial Buildings that Welcome the Crowd



The new Amelia Earhart hangar facility in Atchison, Kansas, will serve as a museum, airport terminal, and community space.

PHOTO COURTESY OF SCHWEISS DOORS

THE AMELIA EARHART HANGAR MUSEUM

Visiting the Amelia Earhart Hangar Museum and her nearby birthplace home museum in Atchison, Kansas, provides the opportunity to go back in time when the most famous female pilot, who some would argue was more acclaimed than Charles Lindbergh, began her dreams to take to the sky.

The star attraction of the hangar museum is the last surviving Lockheed Electra 10-E airplane, one of only 14 ever made. It is identical to the aircraft Earhart flew on her fateful journey and attempt to be the first woman to ever circumnavigate the world. It is named Muriel after Amelia Earhart's younger sister, Grace Muriel Earhart Morrissey.

Given the special nature of the woman this museum commemorates, the building should be special too. The new multi-purpose hangar facility will not only serve as a museum, but as an airport terminal and community gathering space. To preserve the history of Amelia Earhart, the 16,800-square-foot beautiful 1920-30s style hangar museum is located at the Atchison Amelia Earhart Memorial Airport.

It has a Schweiss Doors bifold liftstrap door with automatic latches and three large windows located high on the upper half of



The new, multi-purpose Amelia Earhart hangar facility in Atchison, Kan., will serve as a museum, airport terminal and community space

PHOTO COURTESY OF SCHWEISS DOORS

the door for natural lighting. The door measures 69 feet, 4 inches by 19 feet, 7 inches.

"The door is awesome and has been wonderful for us," says Allison Balderrama, museum director. "We've used it a lot to bring in larger deliveries. It runs perfectly every time and it's very easy to be able to tell people how to operate it, because there are different people here that have access to the building"

The hangar museum contracted with Al J. Mueller Construction

of St. Joseph, Missouri, for the design-build construction of a pre-engineered metal building that will house the museum, hangar space, viewing mezzanine, lobby, storage/prep bay, offices, pilots' lounge, conference and community room. The door was installed by DH Pace Door company of Olathe, Kansas.

Hausman says his company was the design-build contractor on the job, setting in motion the initial design and then working in conjunction with Creal, Clark & Seifert Architects/Engineers of St. Joseph, for the final design work.

In the legacy of the famed aviatrix, the Amelia Earhart Hangar Museum will educate, inspire and empower all generations in the pursuit of flight. In the summer of 2016, the Atchison Amelia Earhart Foundation acquired Muriel (the plane). The hangar museum's vision is robust to develop an aviation museum within the Atchison Amelia Earhart Airport to showcase Muriel while creating an educational and visitor experience that honors the accomplishments of Earhart.

Phase 2: With the hangar museum built, the next step in its vision is to build the exhibits and have inspiration come alive. The hangar museum plans will offer: Thirteen interactive exhibits and activations, a virtual reality flight simulator, scale model of Muriel's cockpit, historic correspondence and collectibles that have shaped the history of flight and a large collection of Earhart artifacts.

Phase 3: Exhibits and activations are slated to be installed and fully open to the public in the spring of 2022. Until then, the hangar museum is open by appointment only. In the spirit of dreaming big, their hope is to bring wonder and educational opportunities to children and classrooms around the country. The foundation has created two teacher's guides that are available through the hangar museum's office.

After years of dreaming and planning, the vision to formulate the Amelia Earhart Hangar Museum is nearly a reality and should be near completion in the spring 2022. The interior of the hangar museum still has exhibits yet to be installed, but at this time, is open for tours by appointment. Appointments can be made by calling (314) 753-8312 during regular business hours, 9 a.m. to 5 p.m., Monday through Friday.

BOYNE VALLEY VINEYARD

The tasting room at Boyne Valley Vineyards offers patrons way more than a place to sip wine. The monitor style barn's high ceilings, stunning interior wood finishes, and warm atmosphere help create a truly memorable experience.

The winery owners had a bold project vision. A post-frame structure—and some painstaking engineering—brought it to life.

The Petoskey Wine Region of Northern Michigan already boasted more than a dozen wineries. That's a big reason why Boyne Valley Vineyards owners Tom and Christi Mahaney wanted a tasting room that would truly stand out from the others.

The owners had great ideas. But they also needed the right ex-



Boyne Valley Vineyards. PHOTO COURTESY OF WICK BUILDINGS



Boyne Valley Tasting Room. PHOTO COURTESY OF WICK BUILDINGS

pertise to engineer and construct a year-round commercial building in rural Northern Michigan—a hilly region with notoriously sandy soil and ground snow loads of 70 pounds per square foot.

The rural location meant no access to public utilities. The tasting room would be relying on well and septic.

At the same time, a basic project goal was to create a gorgeous—and spacious—establishment. But not so spacious that the square footage would require a fire suppression system to meet township codes.

The situation demanded meticulous engineering.

“Wick did a phenomenal job at engineering this project right down to the square foot, including how much space the bar would take up inside that facility so that it would qualify for a maximum occupancy of 99 people,” said Keith Pinkelman of Lynnman Construction.

You may see a monitor style barn now and then. But it’s doubtful you’ve ever seen the kind of trusses that are inside this one.

The owners wanted to achieve a special open feeling for the interior space. A big part of making that possible was with the use of 9-foot span trusses for the main structure—plus another set of unique 3-ply trusses for the raised center ceiling. All were wrapped in weathered wood.

“I’ve done other monitors where it’s all one-piece trusses for the whole building. That was not the case here. The approach presented a number of unusual engineering and construction challenges that we were able to overcome,” said Pinkelman. Lynnman Construction was the general contractor for the project, and Welch Builders completed the general labor construction.

“You just don’t build a lot of buildings like this. The owners went over the top in so many ways. And the results were awesome. The place has this atmosphere, this powerful aura, that people really respond to,” Pinkelman said.

NIAGARA UNIVERSITY DINING HALL

This project entailed the complete renovation and expansion of Clet Dining Hall on Niagara University and Campus. The existing renovated space was 14,500 sq. ft. The addition included 6,625 sq. ft, a pre-engineered structure clad in faux stone and glass.

This project was completed under the firm name BHNT Architects, prior to BHNT being acquired by LaBella Associates. They worked collaboratively with the owner to improve the overall dining experience and to meet the increased demands for on-campus events and banquet facilities. The design features a number of improvements including an open kitchen concept with presentation cooking and serving areas. New seating options include banquette/booth seating, and a mix of round, rectangular and square tables and chairs.

The new dining addition has seating for 250 for sit-down dining which can also be used as a theater-style set-up for 278,

with a projector and large presentation screen. Large windows throughout allow students to take in the beauty of the historic campus. The space is equipped with mobile device charging stations, digital televisions and displays, and focuses on energy efficiency.

The design and construction required close coordination with Metz Culinary Management, Tallinger Associates, BHS Food Service Solutions, and the builder, John W. Danforth Company.

William T. Hovey, AIA, Lead Architect, said, “The end result was transformational for food and hospitality delivery for the University and a gratifying result for me as an Architect.” **RB**



Clet Dining Hall. PHOTO BY JAMES CAVANAUGH, COURTESY OF LA BELLA ASSOCIATES



PHOTO BY JAMES CAVANAUGH, COURTESY OF LA BELLA ASSOCIATES



PHOTO BY JAMES CAVANAUGH, COURTESY OF LA BELLA ASSOCIATES

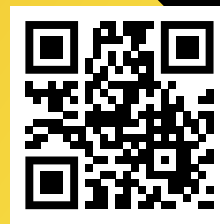
Do you have a project that you are proud of?

Share it with Rural Builder! See the form on page 59 requesting basic information and send it to me, Linda@shieldwallmedia.com.

YOUR VOTE COUNTS!

GOLD KEY

of Excellence Awards

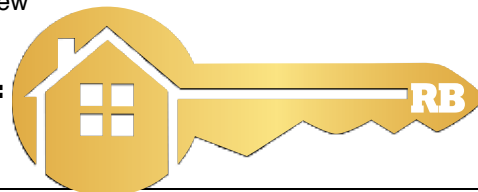


**VOTE
ONLINE**

In July, *Rural Builder* magazine will present its **Gold Key of Excellence Awards** for the 40th time. Help us determine the names of suppliers of building materials and/or construction equipment who do the best job of providing you with all of the services and products you need to run your business successfully. **Take a minute to submit your vote today.** You can select up to three suppliers from the following list or nominate someone new in the spaces provided below.

CRITERIA TO CONSIDER WHEN MAKING YOUR CHOICES INCLUDE:

- Quality of customer service
- Product quality
- Within budget
- On-time delivery
- Warranty procedures
- No surprises



- | | | |
|--|--|--|
| <input type="checkbox"/> A.J. Manufacturing | <input type="checkbox"/> H&H Metals | <input type="checkbox"/> Reed's Metals |
| <input type="checkbox"/> ABC Supply | <input type="checkbox"/> Hershey's the Metal Meister | <input type="checkbox"/> Richland Laminated Columns |
| <input type="checkbox"/> Acu-Form | <input type="checkbox"/> Hixwood Metal | <input type="checkbox"/> RigidPly Rafters |
| <input type="checkbox"/> AkzoNobel Coatings | <input type="checkbox"/> I Beam Sliding Doors | <input type="checkbox"/> Roll Former Corp. |
| <input type="checkbox"/> Arcitell | <input type="checkbox"/> Janus International | <input type="checkbox"/> Royal Crowne Cupolas |
| <input type="checkbox"/> ASC Machine Tools | <input type="checkbox"/> Kevmar | <input type="checkbox"/> S-5! |
| <input type="checkbox"/> Atlas Bolt & Screw | <input type="checkbox"/> Klauer Manufacturing Co. | <input type="checkbox"/> Safe-Way Garage Doors |
| <input type="checkbox"/> Becker Specialty Corporation | <input type="checkbox"/> Leland Industries | <input type="checkbox"/> Sherwin-Williams Coatings |
| <input type="checkbox"/> Beck America (Fasco) | <input type="checkbox"/> Levi's Building Components | <input type="checkbox"/> Sioux Steel |
| <input type="checkbox"/> Bradbury Company | <input type="checkbox"/> Malco Tools | <input type="checkbox"/> Snap-Z |
| <input type="checkbox"/> Building Products Development | <input type="checkbox"/> Marco Industries | <input type="checkbox"/> ST Fastening Systems |
| <input type="checkbox"/> Chief Buildings | <input type="checkbox"/> Marion Manufacturing | <input type="checkbox"/> Starwood Rafters |
| <input type="checkbox"/> Covertch/rFoil | <input type="checkbox"/> Maze Nails | <input type="checkbox"/> Steel Dynamics |
| <input type="checkbox"/> DECRA Roofing Systems | <input type="checkbox"/> McElroy Metal | <input type="checkbox"/> Stockade Buildings |
| <input type="checkbox"/> Direct Metals Inc. (DMI) | <input type="checkbox"/> Menards | <input type="checkbox"/> Sukup Manufacturing |
| <input type="checkbox"/> DripStop | <input type="checkbox"/> Metal Rollforming Systems | <input type="checkbox"/> Swenson Shear |
| <input type="checkbox"/> Dynamic Fastener | <input type="checkbox"/> MFM Building Products | <input type="checkbox"/> Trac-Rite Doors |
| <input type="checkbox"/> East Coast Fasteners | <input type="checkbox"/> Mill Steel | <input type="checkbox"/> Triangle Fastener Corporation |
| <input type="checkbox"/> Everlast Roofing, Inc. | <input type="checkbox"/> MWI Components | <input type="checkbox"/> United Steel Supply |
| <input type="checkbox"/> Express Barns | <input type="checkbox"/> Palram Americas | <input type="checkbox"/> Union Corrugating Co. |
| <input type="checkbox"/> Extrutech Plastics (EPI) | <input type="checkbox"/> Perma-Column | <input type="checkbox"/> Varco Pruden Buildings |
| <input type="checkbox"/> Fasteners Direct | <input type="checkbox"/> Petersen (PAC-CLAD) | <input type="checkbox"/> Ventco |
| <input type="checkbox"/> Footing Pad by AG-CO | <input type="checkbox"/> Plasti-Sleeve | <input type="checkbox"/> Wick Buildings |
| <input type="checkbox"/> Graber Post Buildings | <input type="checkbox"/> Plyco Corporation | |
| <input type="checkbox"/> GSSI Sealants | <input type="checkbox"/> Post Protector | |

Can't find your favorite suppliers above?

Then nominate up to three suppliers in the spaces provided below.

1. Company Name & Location _____

2. Company Name & Location _____

3. Company Name & Location _____

Your name: _____

Company: _____ Location: _____

(Your information will remain confidential.)

**PLEASE
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The Colors of 2022

The Choices Your Customers Will Look For



RUTHANN HANLON OF PPG GAVE

a color presentation at the Garage, Shed and Carport Builder Show in South Bend, Indiana in November. The psychological aspects involved with the color of siding your client chooses are interesting. For instance, did you know that gray is out because people's mood and outlook are lifting; they're becoming more hopeful. So goodbye safe, neutral, not-very-cheerful gray. No offense to gray intended...it can be used to stunning effect, but it was hanging out around the top of the colors-used chart for years. Many homeowners are moving on. And here is what the color experts say they are moving to.

PPG'S COLOR OF THE YEAR

After a year of stay-at-home orders and too few IRL (in-real-life) moments in 2020 and 2021, homeowners, designers, architects and facility managers are craving authenticity, nature and meaningful human interaction after living in a mostly digital world. Our 2022 Color of the Year is Olive Sprig (PPG1125-4), an elegant, grounded, versatile and highly-adaptable grey-green. This color represents regrowth in a post-pandemic world and mimics nature's resiliency.

Olive Sprig is a relaxed, but enticing green that emulates the feeling of soothing aloe vera or a fragrant plant – brightening any space with organic liveliness. A versatile color that lives well inside or outside, Olive Sprig blends in with nearly any environment.”

“As many of us know following a year of lockdown, the easiest way to shift your mindset is to change your environment. While we begin to trade sweatpants for strappy shoes, recipes for reservations, and a night in for a night out, our paint color preferences are shifting too, in both residential and commercial spaces,” said



PPG's Olive Sprig: is naturally lovely.

Amy Donato, senior color marketing manager, PPG paint.

Lending itself to be paired with natural materials, Olive Sprig looks beautiful alongside unique architectural elements and furniture with curved forms to create a comfortable and grounded space. The color can help create a sanctuary in a bedroom, encourage focus in an office, offer the perfect neutral backdrop in a retail or restaurant, and create a grounded getaway in hotels. Olive Sprig also pairs beautifully with brass accents and wood tones on an island or lower kitchen cabinets. Homeowners, designers, architects, and other customers of professional painters can also gather inspiration from this color through the use of floor-to-ceiling emerald tiles in a bathroom, incorporating a luxe velvet green couch in the living room, or immersing the home in plants in a variety of shapes, colors and sizes.

In addition, after the rise of working from home and remote learning, home-

owners have shifted away from open concept living spaces to individual rooms in order to create privacy and compartmentalize working life from personal. For those in need of a little more separation, painting a wall or nook a different color from the rest of the room is a simple, affordable project that can instantly transform a space and help create boundaries in your home that will change and adapt as our lives do.

As part of PPG's annual Global Color Forecasting Workshop, the company's experts uncovered that consumers are more inclined to adopt more colorful selections after difficult inflection points throughout history, often seen during the Roaring Twenties or after the Great Depression. As part of this cyclical history, PPG is seeing post-pandemic optimism infiltrating commercial and residential design spaces so many can create a sense of escapism. Just as trends in the 1920s were marked by opulence, metallics, rich woods, layers,

moody colors and angular shapes, today's home décor is drawing inspiration from the Antiquity, Baroque and Renaissance eras of art, sculpture and architectural forms. This colorful embrace is thought to reflect an optimistic rebellion, a sign of personal expression or soothing self-care.

Speaking of optimistic colors, Behr Paint has also chosen a shade of green as color of the year.

BEHR PAINT'S COLOR OF THE YEAR

"Breezeway" is the perfect connection where a breath of fresh air meets a coat of fresh paint. The tranquil tone launches with BEHR DYNASTY™—our most innovative new product in company history.

Breezeway MQ3-21 is an approachable but noticeable color. The silvery green shade with cool undertones, part of the BEHR® 2022 Color Trends Palette, is inspired by the earth's beauty and mimics naturally stunning sea glass found on the shore of salty beaches.

Breezeway evokes feelings of coolness and peace while representing a desire to move forward and discover newfound passions. Leading you from one place to the next, the color catches your attention and is an open invitation to experience the world with a fresh perspective, both within the home and beyond your front door.

"A new year brings the opportunity to embrace a sense of renewal and pursue untapped passions," says Erika Woelfel, vice president of color and creative services at Behr Paint Company. "Whether it's lacing up our hiking boots, or breaking out the gardening tools, Breezeway inspires us to fully embrace the hobbies or adventures, both near and far, that excite us. We look forward to a color that welcomes a hopeful sense of renewal, restoration and healing."

Breezeway will be available in the brand's newest product innovation, BEHR DYNASTY™. The most advanced paint in company history, it's a four-in-one product that offers DIYers, Pro painters and design professionals a unique product

to deliver beautiful and durable results. It's the most stain repellent, scuff-resistant- fast drying one-coat coverage paint all in one can within the BEHR product portfolio.

"BEHR DYNASTY is the result of our relentless drive to improve the painting experience, providing our most advanced paint ever with the rich color of BEHR® paints," said Jodi Allen, Global Chief



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Marketing Officer at Behr Paint Company. “We are confident this new formula will provide everything paint professionals, designers and DIYers want in both performance and color.”

“BEHR DYNASTY offers our most stain repellent, scuff-resistant, fast-drying one-coat coverage paint all in one can,” said Jeff Kinnaird, EVP of merchandising for The Home Depot. “We believe this is the most innovative paint offering in years through our exclusive relationship with BEHR, and we’re thrilled to offer this innovation to our customers.”

Designers and do-it-yourselfers alike will love Breezeway’s versatility, moving easily from casual to coastal and modern to vintage styling. The peaceful hue awakens the spirit of the home without overpowering the space, and pairs perfectly with many other colors of the newly revealed BEHR® 2022 Color Trends palette, including the timelessness of Whisper White HDC-MD-08, and the bold terracotta red of Perfect Penny S180-6. Alongside Breezeway, the palette’s 20 soothing colors inspire us to enter the new year on a hopeful note, while still centering the home as an ultimate safe-haven and oasis.

Now let’s discover how Sherwin-Williams welcomes in a new feeling.



Sherwin-Williams’s Color of the Year: Evergreen Fog feels welcoming.

SHERWIN-WILLIAMS COLOR OF THE YEAR

Easily hit the refresh button on any residential, commercial or architectural space with Evergreen Fog, a simple, sophisticated color that is both calming and composed with just a touch of organic lushness.



Behr’s Color of the Year: Breezeway feels cool and sophisticated.

Our 2022 Color of the Year is a versatile and calming hue of gorgeous green-meets-gray, with just a bit of blue, depending on the light. It’s a simple but sophisticated wash of beautiful color for any exterior space. It allows you to truly discover the balance between the familiar and the fantastical—between seeking sun and rooting deeply. In the soft organic shade of Evergreen Fog, we find meaning, a place to heal, a lasting peace.

Miller Paint’s color of the year is a little different from the colors we’ve seen so far, but just as fresh and natural as the others.



Miller’s joyful color of the year: Desirée.

MILLER PAINT

Miller Paint deems ‘Desirée’ the Color of the Year for 2022.

The Pacific Northwest leader in paint manufacturing announces a warm, energetic hue for home decor that is ideal for both indoor and outdoor spaces. A softly shaded orchid hue that is reminiscent of the first signs of spring, Desirée was inspired by a renewed connection to the natural world.

Miller believes that as we heal from the pandemic, we are more in touch with our humanity, deepest desires, and personal fulfillment. A collective wish for new beginnings leads us to thoughtful hues that support renewal, reflection, and a sense of

optimism. Our Color of the Year, Desireé | 1219 — a softly-shaded orchid hue — goes deep within, in order to lift us out.

Now we turn to AkzoNobel and we find another natural color on the horizon.

AZKONOBEL

The forecast calls for Bright Skies™ in 2022, with the reveal of AkzoNobel's Color of the Year. The airy, light blue feels like the breath of fresh air we all need.

After a spell of feeling shut in, people are craving expansion. Extensive global trend research conducted by a team of in-house paints and coatings color experts and international design professionals reveals that we want open air, connections to the great outdoors and a fresh approach to everything.

Many events over the past two years have thrown the social, economic and environmental aspects of our lives into sharper focus. We're reassessing what really matters: family, friends, home and the world around us.

"In 2022, Bright Skies will help us embrace new ideas and shape a new future," says Heleen van Gent, Creative Director of AkzoNobel's Global Aesthetic Center. "The color reflects the limitless skies above us, giving us the space to redefine the role of our homes, nature, the arts and new voices in our lives. As consumers look to express themselves and transform their spaces, our aim as color experts is to inspire their color confidence."

Finally, Dunn-Edwards has come up with a color that feels both nature-inspired and timeless.

DUNN-EDWARDS COLOR OF THE YEAR

"Art and Craft" channels shades of the 1970s, Old World Sophistication, and the Sumptuousness of Suede. This autumnal hue is a warm and earthy shade that allows for a large range of play with creativity and change.

"Optimism means embracing reality and new opportunities. We see our color and design choices mirroring our inner



Dunn-Edwards' color of the year brings an elegant touch to a room.

needs as we are challenged to build new paths," said Sara McLean, Color Expert and Stylist for Dunn-Edwards. "Art and Craft is a timeless shade that embodies both the past as well as the optimism and excitement of the future."

Art and Craft (DET682) is represented in Dunn-Edwards 2022 color + design trends story "Naturrensing." This trend highlights the need to cut back on clutter, refocus on what's essential and get in touch with our earth-loving roots.

Art and Craft is a nature-based hue that is moody and complex yet versatile. Its sophistication complements surrounding colors, acting as a foundation and tying other colors together. To achieve this, try Dunn-Edwards suggested color scheme of Art and Craft (DET682), Cotton Club (DET431) and Gypsum Rose (DET452).

Emerging from quarantine brought a new admiration and wonderment for nature and human connection, and Art and Craft meets the needs of those seeking calm and adventure alike. Earthy neutrals and warm tones connect us with the reality around us. Whether it's the chocolate

brown hills or rocky mountain paths, we feel the most connected when we're outside. This is our Mother Earth.

A new generation of designers are giving classics a modern spin with the cottagecore and light and dark academia aesthetics. We see a resurgence of traditional colors from these slower time periods, including browns consisting of umbers, ochres, walnuts, and clay browns.

Also inspired by the 70s bohemian flair and folkloric design, Art and Craft connects to trends of earthy hues through fashion, furniture, and design. Pulling from the whimsical country style, prairie gardens, and organic hues of the time, we continue to trend forward showcasing the best of this free-flowing decade.

Art and Craft is a grounding color that taps into nourishing, stabilizing, and calming atmospheres. As an alternative to black, brown is softer and warmer, generating feelings of wholesomeness. The color connects directly with nature and its peaceful elements.

"This is a versatile color that we expect to see applied across a variety of industries and disciplines throughout 2022," said McLean. "I see bohemian glamour and a touch of autumn in Paris. Art and Craft is truly a down-to-earth color that signifies stability, comfort, and calm, a color that expresses what we all seek right now." **RB**



AkzoNobel's Bright Skies is like a breath of fresh air.



■ PYRAMEX GOGGLES® ATREX™ EYEWEAR

Safety and style come together in the Pyramex Atrex™ eyewear which looks like sunglasses but offers protection against all the on-site elements.

The Atrex glasses feature soft foam padding that keep out airborne debris and wind, providing protection against even the finest particles or eye-drying winds and creates a comfortable environment for the wearer's eyes. It also prevents peripheral light intrusion, for superior optical clarity in all conditions. Ultra-lightweight, the frames are constructed of hard-wearing polycarbonate; the nose piece is made from thermoplastic rubbers (tPr); the temples are co-injected with polycarbonate and thermoplastic elastomer foam for comfort.

A variety of frame and anti-fog lens combinations are available. A restraining strap can be added for convenience. All glasses meet stringent ANSI Z87 safety standards for high-impact protection as well as CAN/CSA performance standards for eye and face protection. The glasses are UV rated and have visible light filters to keep harmful rays from affecting your sight.

www.pyramexsafety.com



■ CARLISLE WIDE PLANK FLOORING

Carlisle Wide Plank Floors has added new floors to the Tranquil Collection, a series of on-trend, artisan-crafted flooring designs that honor the best of nature. Carlisle offers wide plank hardwood flooring for residential and commercial spaces, and has added two new floors to the Tranquil Collection, a series of on-

trend flooring designs that honor the best of nature. The popular collection pairs the organic character of White Oak with a subtle wash of layered color in warm, modern tones and a smooth, super matte finish – imbuing the surface with richness and dimensionality.

The newest additions to the Tranquil Collection include:

- Elysian. White tones buffed over nutty brown wood results in a mix of pleasing cooler tones, imparting an unexpected sense of comfort and warmth.
- Refuge. A subtle creamy glaze contrasts with the warm cocoa undertones of the wood to create an effortless blend of light and medium neutral tones.

Developed in response to frequent client requests for minor modifications to existing Collection floors, Elysian and Refuge were inspired by two of Carlisle's popular floors – Winter Light and Sincerity.

Elysian and Refuge are offered in ¾-inch plank thickness and in 2- to 12-foot lengths, with a choice of solid or engineered construction. Each 8-inch wide Signature Grade plank is sustainably sourced and carefully hand selected by Carlisle craftsmen.

www.wideplankflooring.com



■ UPDATED MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDING AND OTHER STRUCTURES, ASCE/SEI 7-22 STANDARD

This national standard is the American Society of Civil Engineers' (ASCE) most widely used standard and is an integral part of building codes in the United States and around the globe. Structural engineers, architects, and those engaged

in preparing and administering local building codes will find the 2022 edition of the structural load requirements essential to their practice.

"Civil engineers are responsible for the design of the buildings and structures we work, live, and play in every day, and we must ensure those structures are safe for the public," said Tom Smith, ASCE Executive Director. "With weather hazards becoming more extreme, this updated standard is essential to improve the resilience of our communities."

"For more than 20 years, U.S. building codes have relied on the ASCE 7 standard as the authoritative source for specification of loads and related criteria used by engineers to design safe, economical, and reliable structures. Every six years, hundreds of volunteer professional civil and structural engineers, researchers, building officials, and construction professionals collaborate to update the standard, acknowledging new engineering research, evolving construction techniques, and society's changing expectations and concerns," said Ronald Hamburger, P.E., S.E., F.S.E.I., Senior Principal with Simpson Gumpertz & Heger, Inc., and chair of the ASCE 7-22 committee. "The 2022 edition includes first-ever criteria for tornado-resistant design and substantial improvements to the design criteria for atmospheric icing, earthquake, tsunami, rain, snow, and wind."

The 2022 edition of ASCE 7, which supersedes ASCE/SEI 7-16, provides the most up-to-date and coordinated loading provisions for general structural design. Informed by past events including Hurricane Michael in 2018 and the Joplin Tornado in 2011, this standard prescribes design loads for all hazards including soil, flood, tsunami, snow, rain, atmospheric ice, seismic, wind, and fire, as well as how to evaluate load combinations. ASCE/SEI 7-22 is different from past versions because, for the first time, the digital data is available via open access from the ASCE 7 Hazard Tool so that anyone can view the hazards that are relevant to their local community.

Environmental hazards used for building design were all updated, specifically including new wind speeds along the hurricane coastline, improved tsunami run up for highly populated west coast locations, increased accuracy of seismic design criteria, new national snow design data, risk specific atmospheric ice criteria, and a completely new chapter for tornado loads. In addition, ASCE 7-22 modernizes design requirements for cutting edge mass timber systems and composite concrete and steel systems, as well as for big box stores/warehouses, ground mounted solar facilities, and elevated buildings.

In addition to the print version of ASCE 7-22 — available as a two-volume paperback set or as a PDF — ASCE 7 Online is a subscription service that provides digital access to ASCE/SEI 7-22, as well as to the previous 2016 and 2010 editions, with enhanced features that make it faster and easier to work in the Standard. Functionality exclusive to ASCE 7 Online includes: side-by-side display of the provisions and commentary; redlining to track changes between editions; real-time updates of supplements and errata; two-level corporate vs. personal annotations; and toggling between Customary and SI unit measurements. Corporate subscriptions are available.

www.asce.org/asce-7



■ SUPERIOR SNAP-TITE PVC COLUMNS

Superior Aluminum introduces the industry's first and only PVC Column Wrap that doesn't require PVC Glue (or any other adhesive methodology). With its patent pending design, Snap-Tite™ PVC Column Wraps create stunning scenes with simple and quick installation!

Snap-Tite PVC Columns slash installation time. Ideal for new construction or renovation, these PVC columns do not require glue, banding, or curing time, so they allow contractors to quickly complete the task and move on to the next punch list item.

Snap-Tite™ comes in smooth and wood grain designs to match any home's exterior trim for a simple yet modern look. They come in a standard white finish, weather resistant, so no painting is required. However, all PVC Column Wraps can be painted with 100% acrylic exterior paint or acrylic with urethane additive paint, both with a Light Reflective Value (LRV) of greater than 55. This allows for near limitless customization.

<http://www.wideplankflooring.com>



■ INSPIRE HP SOLAR AIR HEATING WALL PANEL

ATAS International is proud to introduce InSpire HP, their new high-performance solar air heating wall panel. This panel has an optical coating that is applied to the surface of the aluminum used to manufacture the panels. It reduces thermal radiation losses down from 95% for a 70% PVDF paint finish, to as low as 3% for InSpire HP. Painted surfaces typically emit as much heat as they absorb. The blue color of InSpire HP is the optical outcome of the selective coating process, and is the only color currently offered. The color uniformity of the selective surface is like anodized and natural metals.

InSpire HP has completed full ICC-SRCC certification, as has the traditional InSpire panel with the 70% PVDF paint finish. The Solar Rating & Certification Corporation (ICC-SRCC™) is the leading and only certifier and standards developer for solar heating and cooling

products in North America. ICC-SRCC is accredited to ISO/IEC 17065 as a certification body for renewable energy products. Thermal and structural testing to achieve the InSpire HP SRCC certification was performed at Fraunhofer Institute in Freiburg, Germany, one of SRCC's most reputable accredited labs. Furthermore, a total of 1,900 hours of testing was performed under harsh humid conditions at 170°F at a university laboratory, to establish longevity of the surface. The InSpire HP performance indicated that the surface would effectively keep emissivity very low for decades, based upon accelerated test data, and there shouldn't be any perceivable deterioration during a lifetime.

Due to InSpire HP's outstanding performance, the return on investment could be as low as five years for retrofit projects and, as always, show positive cash flow from day one for new construction projects. That ROI period will vary, based upon several factors, such as the building's orientation, geographical location, current heating source, quantity of InSpire HP panels, volume of fresh air exchanges required, etc. A free RETScreen Expert analysis can be performed by ATAS to determine a project's feasibility. RETScreen Expert is a Clean Energy Management Software system for energy efficiency, renewable energy, and cogeneration project feasibility analysis.

Weather-resistant InSpire HP panels can be exposed to the outdoor environment without cover. Surface marks and fingerprints can be washed away, and the panels are installed easily.

Christian Vachon, Director of Solar Technology at ATAS, stated, "Because we reach such high temperatures above ambient (90°F as opposed to 50°F for painted surfaces), InSpire HP can be used as a heating system on its own, either for buildings or processes. This opens a whole new world of possibilities for the solar air heating market. In the current energy transition towards clean energy, we can play an even greater role."

www.inspirewall.com



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Please describe why this person should receive the Shield Wall Media Building Progress Award.
How have they influenced or advanced the construction industry?

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Email the completed form to one of the editors.

Questions? Contact an editor:

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Linda Schmid: 920-659-6319; linda@shieldwallmedia.com

Mail To:
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ATTN: Editors – Building Progress
PO Box 255
Iola WI 54945

CALENDAR

BY RURAL BUILDER STAFF

MARCH

March 9-11

Self-Storage Association Spring Conference & Trade Show 2022, Orlando, Florida; www.selfstorage.org

APRIL

April 5-6

Roofing Day in DC
Grand Hyatt Washington, Washington, D.C.; nrca.net/advocacy/roofingday

April 24-26

National Coil Coating Association Annual Meeting, Sonoma, California; www.coilcoating.org

April 27-29

Metal Building Contractors & Erectors Association Conference 2022, Tucson, Arizona; www.mbcea.org

MAY

May 3-5

FABTECH Mexico, Monterrey; <https://mexico.fabtechexpo.com>

JUNE

June 13-15

Metal Construction Association (MCA) Summer Meeting, Rosemont, Illinois; www.metalconstruction.org

AUGUST

Aug. 16-20

National Association Of Women In Construction's (NAWIC) Annual Meeting And Educational Conference; www.nawic.org

OCTOBER

Oct. 12-14

METALCON, Indiana Convention Center, Indianapolis, Indiana; www.metalcon.com

Oct. 26-27

Construction Rollforming Show, Ernest N. Morial Convention Center, New Orleans; www.constructionrollformingshow.com

NOVEMBER

Nov. 8-10

FABTECH, Georgia World Congress Center, Atlanta; www.fabtechexpo.com

RB

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check with the show producer to confirm there have been no changes to event dates, venue, or show hours.

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INCLUDE ALL THAT APPLY:

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Posts _____	_____
_____	_____
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Please fill in all fields relevant to your project and send completed form to
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Building the Foundation For Solar Energy

Two Case Studies

MCELROY METAL IN BOSSIER CITY, LA

TAKING ADVANTAGE OF LOCAL AND federal incentives to help pay for the project, McElroy Metal added solar panels to its manufacturing plant in Sunnyvale, Texas.

McElroy Metal, based in Bossier City, Louisiana, has now added solar panels to four of its manufacturing sites. In addition to the most recent Sunnyvale project, McElroy has completed successful solar panel installations in Peachtree, Georgia, Adelanto, California, and Clinton, Illinois.

SOLAR PANEL INSTALLATION ON A STANDING SEAM ROOF

“Installing solar panels on a standing seam roof like the one produced by McElroy Metal is the most cost-effective way to complete a solar installation,” says Mark Rangel, Executive Vice President of Commercial Business Development and Preconstruction at Spier Commercial & Industrial of New Braunfels, Texas. “We do flat roof installations, ground installations, carport installations, every kind of installation imaginable and installing on a standing seam roof is always the most cost-effective.”

Spier installed a 165kW grid-tied photovoltaic (PV) distributed generation (DG) rooftop system at McElroy Metal’s Sunnyvale plant. The Seraphim Energy panels were installed on a recent addition to the facility, which was topped with McElroy



Solar Project at McElroy Metal. PHOTOS COURTESY OF MCELROY METAL.

Metal’s 238T symmetrical standing seam panels. The panels were fastened to the standing seam roof with products from S-5!. The project contained 352 470-watt solar panels, which will produce approximately 261,574 kWh each year. The system is estimated to reduce the facility’s grid energy usage by 46 percent.

“We’re very excited about the addition of solar panels to a fourth manufacturing facility,” says Ken Gieseke, Vice President – Marketing at McElroy Metal. “Once we did the math, calculated the return on the investment, it simply made sense to install the solar panels. McElroy Metal remains dedicated to being an advocate for solar energy.”

SOLAR ENERGY INCENTIVES

Rangel says local and federal incentives paid for approximately 80 percent of the solar installation and that the return on investment will be about five years – for a system that is expected to last 25 years.

PARTNERS IN RAISING THE BAR

“McElroy Metal has been a respected and premier metal roof and component manufacturer for three generations,” says Rob Haddock, founder and CEO of S-5!. “Just like S-5!, they got there by setting the highest standards of quality and integrity for themselves and for their vendors. They are a valued S-5! customer and distribution partner, but also industry advocates and activists. This is their fourth S-5! solarized project. I am sure we both look forward to the next one.”



McElroy's 238T symmetrical standing seam system does not have male and female seams, but is comprised of panels with matching left and right seams. The panels are joined with a mechanically seamed cap. The panels are non-directional and can be installed left to right, right to left or even center to right or left. In addition to installation benefits, symmetrical panels offer easy individual panel removal and replacement for easy plenum access. Panels can even be re-installed, requiring only the purchase and installation of a new cap.

Since 1963, McElroy Metal has served the construction industry with quality products and excellent customer service. The family-owned components manufacturer is headquartered in Bossier City, Louisiana, and has 13 manufacturing facilities across the United States. Quality, service and performance have been the cornerstone of McElroy Metal's business philosophy and have contributed to the success of the company through the years. As a preferred service provider, these values will continue to be at the forefront of McElroy Metal's model along with a strong focus on the customer. More information can be found at <https://www.mcelroymetal.com>.

"Once we did the math, calculated the return on the investment, it simply made sense to install the solar panels. McElroy Metal remains dedicated to being an advocate for solar energy."

**-Ken Gieseke, Vice President
Marketing at McElroy Metal**

OCEAN REEF CLUB AT KEY LARGO

Located on the northernmost tip of Key Largo in the Florida Keys, Ocean Reef Club is one of the country's most comprehensive private club communities, offering 1,700 waterfront estates, private homes, condominiums and an oceanfront inn.

The club is equipped with a fully staffed medical center; a full-service spa and salon; gourmet grocery store; cooking school; nature center; cultural center; veterinary care center; dining and shopping options; an independent pre-K-8th grade school; as well as its own private airport. Ocean Reef offers a vast array of leisure amenities, including a 175-slip mega-yacht marina



Solar Project at Ocean Reef Club. PHOTO COURTESY OF S-5I

for boating, fishing and diving; two 18-hole championship golf courses; world-class tennis and lawn sports; jogging and cycling paths; and unlimited children's activities and programming.

On the grounds of the resort is a 6,400-square-foot reverse osmosis water plant featuring 58 kWp of solar PV secured to its Dean Steel Building Rib-12 roof using the S-5-PVKIT®2.0 and the RibBracket™ III. The solar installation is predicted to save the resort on average \$1,000 per month on its electric bills.

THE CHALLENGE

The club is located on a private peninsula beside America's only living reef, bound on three sides by water and on the fourth side by federal and state lands. The area is subject to 180 mph, Category 5 hurricane winds, making installation of a low-profile, roof-mounted system essential.

EPC Contractor, SALT Energy was challenged with installing the solar adjacent to the local airport's runway (just 150 feet away) so a glint and glare analysis was required. The findings and resulting action items from this assessment would ensure the reflection produced by the solar PV would not visually impact pilots or air-traffic controllers.

Additionally, the logistics of delivering materials in this part of the country is challenging because of its remote location. And, since it is a private, gated community, the owners wished to limit the number of delivery trucks coming and going through the gates.

THE SOLUTION

Utilizing the only south-facing roof available, SALT Energy installed the latest technology, high-efficiency SunPower A-Series 440W modules to maximize the solar output in the space allotted.



Solar Project at Ocean Reef Club. PHOTO COURTESY OF S-5!

PROJECT STATS

- **EPC Contractor:** SALT Energy
- **Roof manufacturer:** Dean Steel Buildings, Inc.
- **Module manufacturer:** SunPower
- **Inverter manufacturer:** SMA Solar
- **Roof Measured:** 40' x 80' Solar Zone
- **Roof Pitch:** 2/12
- **PV Array Size:** 58.08 kW-DC; (132)-440W modules
- **S-5! PVKIT®2.0** (530)
- **S-5! RibBracket™ III** (530)

The modules were secured to the Dean Steel Building Rib-12 roof using the PVKIT solar mounting solution along with S-5!'s RibBracket III.

Together, the S-5! products provided a low-profile design solution with minimal equipment on the roof to achieve a design strong enough to withstand the area's high wind loads. With a fully engineered design, three to five module clamps per side depending on wind zone of the roof (six to 10 points of attachment per module), 15% of the dead load of rail-mounting, and more uniform wind load distribution to the roof structure, this array welcomes any Category 5 Hurricane challenge.

The logistics challenge was also overcome because the entire solar mounting solution of 240 pounds fit into the trunk of a passenger car, whereas a truck and flatbed trailer would have been required for a traditional railed system. **RB**

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Rob is a director of the Metal Roof Advisory Group and CEO and founder of S-5! He is an award-winning metal roof expert and has worked in the industry for five decades as a laborer, then contractor, forensic consultant, technical author, educator and innovator. He is (at heart) a problem-solver, holds 60+ patents and first innovated the concept of seam clamps to attach roof accessories to standing seam roof profiles—just solving another problem.

You Need a Plan B

The Start of a New Year is a Great Time to Develop a Back-Up Plan

ONE THING I HAVE LEARNED in life is to always have a Plan B. Things don't always go the way you think they will. The pandemic is a stark reminder. For some, with the onset of COVID-19, it appeared as though the greatest economic boom period in history had come to a complete standstill. And today, with increasing costs of goods and raw materials, supply chain backlogs and the labor shortage, it can still feel like an uphill battle. So, it is imperative to have a Plan B. Not having a Plan B can cause unnecessary stress and anguish that affects both your personal and business relationships. Who wants that?

In the wake of the pandemic, the S-5! team put our heads together, mobilized, got creative and activated a plan to not only keep our business afloat but to thrive and be well-positioned for the future. Our Plan B was to kick off a series of educational webinars and video conferences to stay in front of customers and provide education and training opportunities. We introduced

down production and inventories became decimated. That's raw material at its source. Other mills beyond steel, like aluminum, stainless, lumber and consumer goods shut down as well (both domestic and foreign). The result was an increase in demand along with a decrease in supply.

At S-5!, we experienced this first hand. Our key suppliers for raw materials suffered shortages. So, back to Plan B! How would we source alternative suppliers when we have spent the last 30+ years establishing long-standing relationships with our existing suppliers?

Well, it begins with some honest conversation. And as it turned out, they understood our situation. Matter of fact, they were in the same boat—trying to meet the demand (we are one of their largest customers). They said to us, "...help us out and find a secondary supplier because we just can't meet your demand." So, after much research and testing, we have onboarded those additional raw material suppliers but are still able to maintain strong relationships with existing key suppliers and customers. We just got creative, shifted thinking and developed new relationships without compromising the old.

Although for some, Plan B can get in the way of loyalty, I learned along the way, it is foolish not to have a Plan B. You can get trapped in tunnel vision, driving down the road. Just look at the map and figure out a different route. You have to do what you have to do to get where you are going.

For example, one of our European distributors is moving 60% of product by air freight now because the cost to ship via containers has more than tripled. He has now doubled his business by air freight. He's doing what he has to do to get product to his customers. It goes back to shifting thinking, breaking conventions, being flexible and going with the flow.

Additionally, Plan B can present opportunities. Throughout the health crisis, we have looked for opportunities instead of problems. Those opportunities were (and still are) out there—to respond to the near term, manage differently and plan for the longer term. Just shift thinking, re-direct resources, re-invest and prepare for the (new and increased) demand. Make sure you have a Plan B. **RB**



a more user-friendly website with revamped content, up-to-date information and additional resources, including a new resource center, a new training center and a host of new web-based tools to assist our customers. That plan was a true team effort and worked well for us.

Then, the next challenge was upon us. Like all sectors of the economy, our industry has seen raw material price increases. Steel companies had shut

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BY GRABER POST BUILDINGS, INC.



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THE DETAILS:

Building Size: 81' x 148' x 16' w/ Wrap-Around Porch

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MATERIALS:

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G-Rib-29 Gauge, 40-year AkzoNobel 1050

Siding-Dark Red, Roof-Shiny Black,

Trim-Shiny Black, Wainscot-Shiny Black

Columns: GPB Columns: 3-Ply 2x 8

Overhead Door:

C.H.I Insulated Door with Liftmaster Opener, 14 x 14.

Fasteners: ST Fastening Systems

Snow Guard: GPB Snow Block

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GPB 6" Seamless Gutters, Color Matched

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3x3 with louvers

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