

Rural Builder

JULY 2024
Vol. 58, Issue 5



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EDITOR'S NOTE

BY DAN BROWNELL



A Golden Opportunity for Recognition

In this issue, we highlight the winners of our annual Gold Key of Excellence Awards. This is a major achievement because it's a recognition that a company has earned the trust of its customers. That's not an easy thing to do, as expectations for quality, value, and customer service seem to rise every year.

Years ago, before the internet, customers didn't have as much influence and power as they do now. Back then, they didn't have an easy means of expressing their opinions. They could talk to a manager in person or maybe write a letter to the company president, but it took more time and effort. But now, with the advent of digital customer reviews, giving instant feedback has become an ingrained part of our culture. Think how often we check online reviews before making a purchase.

I know someone who works at big-box hardware store. She's told me about their customer-service rating system that shoppers are encouraged to complete. The comments they share in those feedback forms have great power. Each day, sample comments are discussed in employee meetings and printed copies are

posted in employee areas for all workers to see. Sometimes the comments aren't fair, but they have a major impact on employee performance reviews anyway.

Of course, customer reviews play a bigger role in the business-to-consumer world than in our business-to-business environment, but the mindset does carry over, and because of that, businesses have come to expect more of their suppliers. That means suppliers have to work harder and harder to win over and retain their clients. With that in mind, we think it's more important than ever to recognize the companies that have met such a high standard. I may be biased, but our industry seems to set a high bar for quality and integrity to begin with, so those who have earned a vote of confidence from our readers are a cut above.

Some of our winners are veteran Gold Key Award winners with 40 or more Gold Keys! That's an amazing feat. We also have quite a few first-time winners this year. Take a look through our Gold Key Award section to read the details of what each company has to offer. In any case, congratulations to all!



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of Excellence
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Rural Builder (ISSN: 0888-3025) (Volume 58, Issue 5) is published ten times per year (February, March, May, June, July, August, September, Annual, October and December) by Shield Wall Media LLC, 150 Depot St., Iola, WI 54945. Periodical postage paid at Iola, WI, and at additional mailing offices. Canadian Agreement Number: 40665675. POSTMASTER: Send address changes to Rural Builder, Barb Prill, PO BOX 255, Iola, WI 54945. Copyright 2024 Shield Wall Media LLC. Rural Builder and its logo are registered trademarks. Other names and logos referred to or displayed in editorial or advertising content may be trademarked or copyright. Rural Builder assumes no responsibility for unsolicited materials sent to it. Publisher and advertisers are not liable for typographical errors that may appear in prices or descriptions in advertisements. Mailed free to rural contractors and their suppliers throughout North America. Others may subscribe: \$29.98 for 1 year, \$55.98 for 2 years, and \$79.98 for 3 years in the U.S.; \$39.98 for 1 year, \$74.98 for 2 years in Canada.

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Gary Reichert,
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Guaranteed Work for Life

The Trades Could Be Your Ticket!

BY LINDA SCHMID

Even in Chicago, a city with a strong tradition of pride in blue collar work and union workers, students can experience pressure to attend a traditional college, even if that is not their natural inclination. Andrew Florczyk had that experience.

Andrew grew up in Chicago, and as the only son of divorced parents who moved around a lot, Andrew wasn't sure what he wanted. He didn't care for book learning; he liked sports, trying out softball, basketball, and flag football, but in high school, he discovered he also liked art. The teachers were pushing college. It seemed that they were saying that if you didn't go to college and get a degree, then you wouldn't make any money, you wouldn't survive, you wouldn't be anybody.

In his final year of school, he started working at Walgreens and he stayed there for five and a half years, and he felt like he'd learned pretty much everything there was to learn. At that point a friend told him about an opening at TradeTec Skyline. He got the job, and after the first year he began training in IronCAD and attempted to move into the design portion of the industry. The need for an additional designer fell through and with two years at the company budget cuts left him unemployed.

TIME TO TRY THE TRADES

Andrew's dad stepped in at that point advising Andrew to get into a trade. "My dad was in the sheet metal trade, in the 73 sheet metal union. He's very pro-union," Andrew added.

"That's when it hit me," Andrew said, "if I got into HVAC, I

could count on my dad to answer any questions and help me through it. So I applied to the 73, HVAC and Pipefitters Union. I got into both," he added.

His dad got him a job with Joe, a buddy, to get some experience under his belt before he began an apprenticeship. He learned a lot about boilers working for Joe. While working days with Joe, Andrew took night classes four days a week at ETI School of Trades.



Andrew Florczyk and his dad, Andrew Sr.

He applied for and won the mikeroweWORKS scholarship, which helped with tuition. His dad provided half his tuition, and Andrew worked, so he was able to pay off the balance fairly quickly.

While classes at ETI were coming to an end, he interviewed and was accepted at ClimateTemp working in a warehouse position, but he was quickly promoted to an apprenticeship. This was a good situation for Andrew because he was in class one day a week and out in the field the other four days of the week. They more or less threw him in the deep end to see if he'd sink or swim, though he could call for help on troubleshooting.

Working his apprenticeship reinforced what he learned at UTI, and soon people came to rely on him to help with projects.

Midwest Mechanical bought ClimateTech, and while some of the people he had learned from moved on, Andrew enjoyed his work, and he says the company treated him well, keeping him busy and paying him slightly above scale. Then COVID reared its ugly head and classes were interrupted. However, pandemic or no pandemic, HVAC work moved on. Cancelled classes simply meant he had more time to learn in the field. When others went home to work or couldn't work, he was busy fixing heating sys-



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. Over 1,500 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."



When you work in HVAC, your view can change from day to day.

tems, air conditioners, boilers, and chillers. UV light was needed to mitigate microscopic contaminants, and thicker filters were installed. Sometimes getting supplies was a challenge, but having enough work never was. Andrew is happy to have found work that is so necessary, it will always be needed.

MOVING ON WHEN CLASS IS DONE

Andrew finished his apprenticeship last year. He said that at the end of it, you are assigned a job grade based on what kind of work you do. “C” cards are for are for 25-ton systems and below. “B” cards are for those who work on up to 50-ton systems, including commercial refrigeration, like he did. “A” cards are for workers who handle large systems upwards of 100 tons, including industrial work. There are incentives for attendance of further classes and training, and as you learn more, you make more.

“A shop will pay you over scale if you are experienced and good at what you do,” Andrew said. “Top dollar is \$55 per hour, but you can make up to 5% over that.”

“The truly awesome thing about this work,” Andrew said, “is once you think you’ve learned everything, there is still more to learn. Companies are redesigning systems for higher efficiency, which entails new technology. It is cool to see the advancements in heating and cooling. There are systems that transfer heat from one room to another; they measure the air temperature, moving some of the heated air to cooler rooms. There are so many advances in air conditioning and heating, such as inducer motors and safer and more reliable components. A person could specialize in control work, a subset of HVAC. You can specialize in the manufacturing sector. Some specialize in high efficiency boilers. I went to the East Coast for training, and I can now set up and troubleshoot those boilers.

“There are a million and one different things you can learn,” Andrew continued. “You can segue into other things, like ad-

vanced technology and electronics. If you prefer physical work, you can tear down boilers. The main reason I chose HVAC as a trade is because you get to learn about air flow, refrigerant, plumbing, water, pumps, pipethreading, and electricity. You have to be able to troubleshoot. Some machines have LEDs to tell you what is wrong but, with the older ones, you just have to figure it out. If you are doing installation, assembling sheet metal, you will learn about spec sheets and blueprints. You are never done learning.”

HOW DO YOU KNOW IF THE TRADES ARE FOR YOU?

Andrew’s first and most important advice for those interested in going into any trade is to always be aware of your surroundings, yourself, and others for safety’s sake. Tag out breakers and verify nothing is in the way, or something could explode. But don’t be afraid to get dirty; you may get some cuts and bruises, but if you are careful, they are minor.

If you think you might be interested in the trades, Andrew suggests starting by taking things apart and putting them back together again. You’ll learn about the components and what they do. Try to determine what is not working properly. Think outside the box.

You need to be able to move forward with your work even when the weather is not great. Sometimes you will have to work outside when it is raining or it is very hot or freezing cold, but when the weather is nice, it makes up for it Andrew said.

Finally, depending on the types of jobs you work on, you may end up spending a lot of time working alone, so if you don’t like that idea, this work may not be for you.

If you are the right person for the job, at the end of the day you will know that you have helped people and that is important.

Andrew said. “Having someone say, ‘thank you, thank you, thank you for fixing this for me, is the best feeling in the world.” **RB**

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Originally, we could only rely on feedback through the U.S. Postal Service. Now, in addition to "snail mail," we also use online voting and email voting to get our results.

This year, 12 companies join the "Gold Key Club" with their first-ever award: Apple Outdoor Supply, Coated Metals Group, Combilift, Englert Inc., FastenMaster, Frontier Metals,

Lakeside Fasteners, New Tech Machinery, Red Dot Products, Sharkskin, SteelGrip SAMP Inc., and True Metal Supply. PLUS, this year's honorary Gold Key of Service is awarded to the Building Talent Foundation, which encourages youth to enter construction fields and partners with companies for education and training.

Learn more in the pages ahead, as many of the companies share additional information about their products and services. In each case, the number of gold keys won correspond to the number of years the company has received the award.



CONGRATULATIONS to this year's winners!

42 GOLD KEYS

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41 GOLD KEYS

Maze Nails

40 GOLD KEYS

McElroy Metal
Wick Buildings

38 GOLD KEYS

A.J. Manufacturing Inc.

36 GOLD KEYS

Dynamic Fastener

33 GOLD KEYS

Metal Sales

22 GOLD KEYS

Everlast Roofing Inc.
Grabber Post Buildings, Inc.
MWI Components

21 GOLD KEYS

Palram Americas

18 GOLD KEYS

Atlas Building Products
Marco Industries
Triangle Fastener Corporation

15 GOLD KEYS

Chief Buildings
Levi's Building Components
Sherwin-Williams Coil Coatings

14 GOLD KEYS

Richland Laminated Columns

13 GOLD KEYS

Perma-Column LLC

12 GOLD KEYS

Mill Steel Company

11 GOLD KEYS

Bradbury Group
S-5!
Steel Dynamics

10 GOLD KEYS

Direct Metals Inc.
MFM Building Products
Post Protector

9 GOLD KEYS

Hershey's Metal Meister
rFoil Reflective Insulation

7 GOLD KEYS

Metal Rollforming Systems
Trac-Rite Doors

6 GOLD KEYS

ASC Machine Tools Inc.
DripStop™
United Steel Supply

3 GOLD KEYS

Beck America Inc.
Express Barns
Hixwood
Janus International Group
Snap-Z

2 GOLD KEYS

AceClamp
Golden Rule Fasteners
Malco Tools
Mid South Aluminum

1 GOLD KEY

Apple Outdoor Supply
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Combilift
Englert inc.
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Lakeside Fasteners
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We want to thank the builders, the contractors, and their customers for the continued trust and support they have shown in DRIPSTOP™.

As a builder or building owner, have you thought or received a call stating, **“It’s raining inside my building!”**

It is probably condensation. Once the building is up, the remedies are fewer, less effective, and more expensive. **THE KEY IS** to install panels with a condensation control membrane like **DRIPSTOP™** during construction.

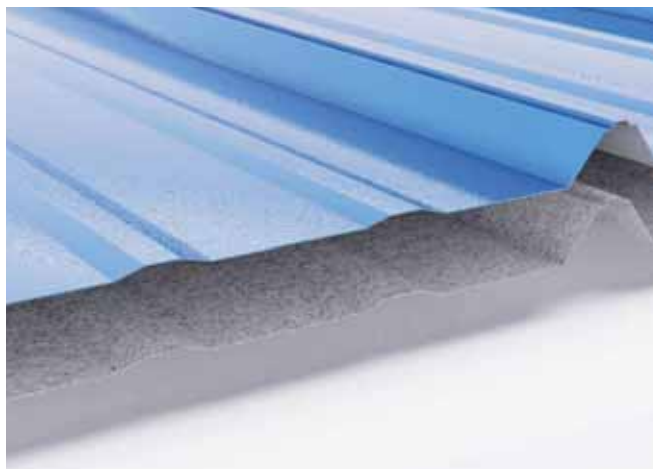
The reason your customers might not think about condensation until it’s too late is ... *They cannot see it, touch it, or feel it, until it is already a problem.* Understanding what causes condensation and the solution for it can be confusing. However, builders who educate their customers about condensation at the beginning of the construction process can avoid those angry phone calls or concerns.

What is condensation and where does it come from?

Moisture is in the air all around us almost always. Under the right conditions, that moist air can change its physical form from a gas to a liquid. Just like a glass of ice water sweats and leaves a ring on the table in the summer, bare metal roofing sweats under similar conditions. This is a simple fact of science, and it happens when warm, wet air meets a cold solid surface, then water droplets form, or condensate appears. It is almost unavoidable in most parts of the country due to seasonal climate and temperature changes.

Can it be stopped or prevented?

Traditionally, a layer of insulation has been used to prevent the warm moist air from reaching the cold metal panels. More recently, builders have found a new and different way to “control” the condensation, using a felt membrane to “catch” the moisture as it forms overnight, and then “release it” as the sun and air moves across the metal roofing panels during the day.



While insulation can be an effective solution, especially when installed to specifications; a condensation control membrane, like DRIPSTOP™, offers numerous advantages for both the builders and building owners. As the building is erected, DRIPSTOP™ arrives already installed on the metal panels; there is no time spent installing insulation. This increases job-site safety for the builder by eliminating blind steps to purlins covered with insulation. It also saves the time typically spent tacking that insulation down to the purlins. Since no insulation is being used, windy days become much less of a challenge. Once the building is complete and properly vented, birds will not peck holes, the DRIPSTOP™ will not sag or come down, and it will not require cleaning or maintenance; it is virtually worry-free. DRIPSTOP™ can help protect the steel from corrosion with its specially designed adhesive barrier. There is no reason why a properly installed and vented metal roof with DRIPSTOP™ will not look and act the same 20+ years down the road! **RB**

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Choose: 3/4", 1 1/4", 2", 3", 4", 5", 6", 8", or 10".



CST5: To fasten into metal .250" to .625" thickness. T-5. #14 diameter. 20 TPI. #3 square drive. Low clearance, extra wide 5/8" O.D. head provides greater bearing area that is useful when attaching standing seam clips or structural insulated panels (SIPs) or insulated metal panels (IMPs). They stock a CST5 #12X1 1/2" option as well.

Choose: 1 1/4", 2", 3", 4", 5", 6", 8" or 10".



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Dynamic Fastener's flagship products: D•F® screws, Dyna-Guard® snow retention system for metal roofs, Dyna-Clamps® to accommodate many different profiles of standing seam roofs and 145 million D•F® rivets in stock, of which over 100 million are pre-painted and stocked in bags of 250 pieces.

In addition to discussing screws and anchors, the guide provides prices and other information relating to flashings, sealants, insulation tapes, safety equipment, hand tools, power tools and more.

Their E-Commerce site has full online ordering capabilities allowing for 24-hour access. **RB**

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Source Farmhouse Brewery Chooses Englert Roofing for their Business.

Source Farmhouse Brewery, nestled in the rural town of Colt's Neck, NJ, is a remarkable establishment housed in a 130+-year-old barn that exudes timeless beauty and historical significance. Philip and Keri Petracca, the proud owners of this unique award-winning brewery, have taken great care to preserve the barn's original wood structure and ensure its historical charm remains intact. Alongside this restoration, the Petraccas had an equally important desire—to install a standing seam metal roof that would enhance the barn's aesthetic appeal while being easy to maintain.

To bring their vision to life, the Petraccas entrusted the responsibility to Leo Deborda, a skilled contractor from Leon Contractors LLC. Recognizing the significance of sourcing high-quality materials, the Petraccas clarified that quality, durability, and low maintenance were essential criteria for their chosen roofing option. After carefully deliberating and exploring various possibilities, Leo Deborda recommended Englert, a reputable supplier renowned for its exceptional materials.

The selection of Englert for Source Farmhouse Brewery's roof was a testament to the Petraccas' commitment to quality and longevity. Not only did they prioritize the barn's preservation, but they also sought a roofing solution that would stand the test of time without any issues. With Englert, the Petraccas found a perfect match, as the brand's products are well-known for their superior quality and authenticity.

The outstanding attention to detail of Source Farmhouse Brewery renovation, including its Englert roof, has garnered



Historic Preservation Awards from township and state and caught the attention of Forbes magazine (June 2021 feature) and Samantha Brown's Places to Love (Season 5 Episode 502), a popular two-time Emmy Award-winning PBS show. The brewery was featured in an episode highlighting

the best of New Jersey, where viewers were treated to a breathtaking aerial view, showcasing the captivating beauty of the Englert roof and its seamless integration with the barn's overall aesthetic.

Looking ahead, the Petraccas have ambitious expansion plans, and they wanted to ensure that any future additions seamlessly blended with the existing structure. With their trust firmly placed in the Englert brand and its exceptional track record, it was an obvious choice for the Petraccas to continue relying on Englert for

their present and future roofing needs. By doing so, they can confidently expand their beloved brewery while maintaining the cohesive and authentic atmosphere that has made Source Farmhouse Brewery a cherished destination. **RB**

Let Englert help you build your business.

Englert was built on the core principle of giving our customers the tools they need to succeed. Contact us to find out how we can help you.



Englert is recognized as a global leader in metal roofing and gutter systems. We pride ourselves on our commitment to product quality and customer service. Our team stands behind you every step of the way to make sure you can build your business into the best it can be. When you succeed, we succeed.



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EVERLAST ROOFING, INC.

WEBSITE: www.everlastroofing.com **PHONE:** 888-339-0059 toll free

REVOLUTIONIZING METAL ROOFING

In the world of metal roofing, Everlast Roofing continues to set the standard with its innovative approach and unwavering commitment to quality. The next generation of roofing begins with Everlast's dedication to developing products that endure even the harshest environments, ensuring superior performance and longevity.

ENGINEERING EXCELLENCE: THE EVERLAST II® OMNI PANEL

At the forefront of Everlast Roofing's exceptional product line is the Everlast II® OMNI panel, a revolutionary solution in the roofing industry. This panel is crafted with precision through the advanced Evercure® process, which utilizes heat forming to significantly minimize crazing and micro-fracturing—primary causes of premature rusting. By enhancing the panel's durability and extending its lifespan, this cutting-edge method makes the Everlast II® OMNI panel an ideal choice for any construction project. The panel's deep antisiphon groove greatly enhances water drainage and prevents leaks, ensuring that your roof stays strong and leak-free even in heavy rain. Additionally, the incorporation of CECI® technology on the cut edges provides discreet yet effective corrosion protection, significantly reducing the corrosion rate and preserving the panel's structural integrity over time.

COMPREHENSIVE TESTING FOR SUPERIOR PERFORMANCE

Everlast Roofing's commitment to quality doesn't stop at innovative design and manufacturing techniques. The company is deeply invested in rigorous testing processes to ensure their products meet the highest standards. Partnering with state-of-the-art research and testing facilities, Everlast conducts comprehensive acceler-



ated laboratory corrosion testing. This is complemented by real-world and outdoor exposure assessments, ensuring that the Everlast II® OMNI panel can withstand diverse environmental conditions and continue to perform exceptionally well.

EXPANDING THE HORIZON: NEW TEXTURED FINISHES AND ACCESSORIES

Everlast Roofing is excited to introduce its new textured finish, Quartz, available in 16 vibrant colors. This new addition features the NexGen Super Durable Paint System, which includes a high-performing resin formulation designed to improve chalk and fade resistance, gloss retention, and color durability. The new finish also offers excellent resistance to atmospheric staining and dirt residue, ensuring your

roof maintains its aesthetic appeal for years to come.

In addition to roofing panels, Everlast provides top-notch gutter coils and rain-wear accessories to protect your home from rain and moisture. These include 15" and 11.75" gutter coils in both aluminum and steel substrates, along with a full line of accessories, ensuring comprehensive protection for your home.

VERSATILITY IN APPLICATION

Everlast Roofing's polycarbonate panels offer a perfect solution for outdoor living spaces. Whether you're looking to protect animals from inclement weather or enhance a patio, greenhouse, farm, building, or shed, these panels promise long-lasting quality and reliable protection.

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Offering products to the agricultural, commercial, architectural, and residential markets, Everlast Roofing, Inc. is your trusted partner for your next building project. Their innovative products and commitment to quality ensure that you can build with confidence, knowing that you are using materials that are built to last.

Scan the QR code to HEAR THE DIFFERENCE between the Everlast II® OMNI panel and its competitors. Discover why Everlast Roofing remains a leader in the industry, providing solutions that stand the test of time. **RB**



HEAR THE DIFFERENCE



Did you know that you can **HEAR THE DIFFERENCE** between the Everlast II® OMNI panel and our competitors' panel? Everlast's panel has both AZM® technology and superior thickness. Not only do you see the difference in quality, but you can hear it, too.

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JANUS INTERNATIONAL

WEBSITE: www.janusintl.com **PHONE:** 770-562-2850 **FAX:** 770-562-1991

Janus International Group, a leader in the self-storage, industrial, and commercial door industries, has grown significantly over the past two decades. Founder David Curtis started Janus International in 2002 with just 18 employees and his 3rd-generation steel roll-up door. He engineered this door as a maintenance-free dead axle design that eventually would set the bar for superior manufacturing.

Fast forward to 2024, and Janus International Group is now a global company recognized for more than roll-up doors. Their products and services include facility maintenance and improvement services, relocatable storage units, door replacement and self-storage restoration services, and facility automation solutions.

Today, Janus has almost 2,400 employees, more than 14,800 active customers, and has a presence in the UK, France, Poland, and Australia. Janus was named to the list of “America’s Most Successful Small-Cap Companies for 2024” by Forbes magazine, coming in at #24 out of nearly 100 companies screened. Inside Self-Storage (ISS) has recognized Janus with the ISS Best Self-Storage Door 14 times and as an 11-time winner for ISS Best Retrofitting/Refurbishing. Innovation and technology fuel advancements with products like their award-winning line from Nokē Smart Entry. This year, Janus introduced Nokē Ion™, an inside-the-door, magnetic, hardwired smart locking system. In addition, Janus’s Nokē Smart Entry platform also offers a high-tech, battery-powered external smart lock, known as Nokē ONE™. These two smart locking technologies, paired with a full suite of smart entry point products and mobile technology, offer a solution for all self-storage smart access applications.

When it comes to self-storage doors, Janus offers a full line of roll-up and swing storage unit doors in varying sizes for all types of self-storage facilities. Janus offers every model and size for commercial doors with over 30 color options to customize your roll-up door selection.

When you partner with Janus International, you partner with a company that takes your business seriously. Roll with Janus because quality and expert customer service are what they do best. **RB**





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To learn more about **JANUS DOORS**,
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KIRSCH BUILDING PRODUCTS

WEBSITE: www.sharkskinroof.com

PHONE: 877-742-7507

Project: St. Peters Cathedral, Erie, PA

Scope of works: Slate Re-Roof, Standing Seam Copper Roof, and Gutters Replacement

Contractor: A.W. Farrell & Son, Inc. Erie, Pennsylvania

Copper Roof and Gutters: Armor Fab, LLC, Erie, Pennsylvania. 30-SQ of Copper Roofing. 750' feet of gutter

Project Manager: Randy Pace

Assistant Project Manager: Tony Lazarony

Slate Foremen: Sean Irwin and Gary Fish, and Journeyman Paul Gibbs from Roofer's Local 210. 230-SQ of Slate

Copper Work Foremen: Kody Pace and Chris Hogue from Sheetmetal Local 12

In 1873 ground was broken to begin the building of the St. Peters Cathedral in Erie, Pennsylvania. A slate roof was installed on the steep pitches, along with a standing seam copper roof at lower pitches, and copper gutters set-into the stone perimeter of the roof.

Prior to the re-roof \$2 million in "gold leaf" was applied to the walls and ceilings inside the church. This meant the winter prior to the new roof installation the existing roof had to be protected. The re-roof began in the Spring of 2023, with the 150-year-old slate being removed first, as Sharkskin Ultra SA® was installed to protect the Cathedral.

Sharkskin Ultra SA® was chosen for the re-roof of the St. Peters Cathedral, in Erie, Pennsylvania, for its long term 50-year warranty and High-Temp rating under the new Greenstone Slate roof and Standing Seam Copper Roof. In addition, the Cathedral is approximately a little more than a mile from Lake Erie. Lake Erie is known for its strong "lake breeze" winds. The men from A.W. Farrell & Son, Inc., have experience with Sharkskin Ultra SA® and know once installed properly, it's not going to blow off.

In addition, the walking surface of the Sharkskin Ultra SA® provided the men setting the roof scaffolding, and roof jacks with



a safe walking surface. The scaffolding set directly on top of the Sharkskin Ultra SA® was leak-free during the roof installation. Sharkskin Ultra SA provided leak-free protection on the entire project from start to finish, as well as providing 12-Month UV Protection.

With the top of the Cathedral steeple at 300' and the distance to the top of the gutters at 80'-100', it was important that the project ran smoothly. Every pallet of slate had to be "ring tested," which means a hammer is used to test the slate, to make sure there are no cracks. The slate will ping in just the right way to confirm, soundness. In addition, slate was pulled from three separate pallets onto one, to maintain even color dispersion across the roof plane, to eliminate blotches of lighter and darker slates.

The standing seam copper roof panels and copper gutters were fabricated locally by Armor Fab, LLC, owned by Robert Pace. The copper gutters were made in 20' lengths and craned up to the roof. The on-site crane was invaluable for the installation of both the Copper Sheetmetal work and slate roof installation.

Another beautiful roof installation from the men at A.W. Farrell & Son, Inc. **RB**



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Mid-South Aluminum was founded over 30 years ago by Alan Sallee Sr. and his son Alan Sallee Jr. From the very beginning, their vision was to create a company that stood out for its commitment to quality, integrity, and exceptional service. In 2017, after decades of successful growth and innovation, they made the strategic decision to sell the company to Kripke Enterprises. This transition marked a new chapter for Mid-South Aluminum, allowing us to expand our reach and enhance our capabilities while staying true to our foundational values.

Since the acquisition by Kripke Enterprises, we have continued to operate with a steadfast commitment to the core values that have always defined us:

We do what we say: Our word is our

bond. We believe in delivering on our promises, maintaining transparency, and upholding the highest standards of honesty and reliability in all our dealings.

Relationships are the backbone of our business: We understand that our success is built on the strength of our relationships with customers, partners, and employees. We prioritize trust, respect, and collaboration, fostering connections that drive mutual growth and success.

We provide solutions: At Mid-South Aluminum, we are problem solvers at heart. We take pride in offering innovative and effective solutions tailored to meet the unique needs of our clients, ensuring their expectations are exceeded.

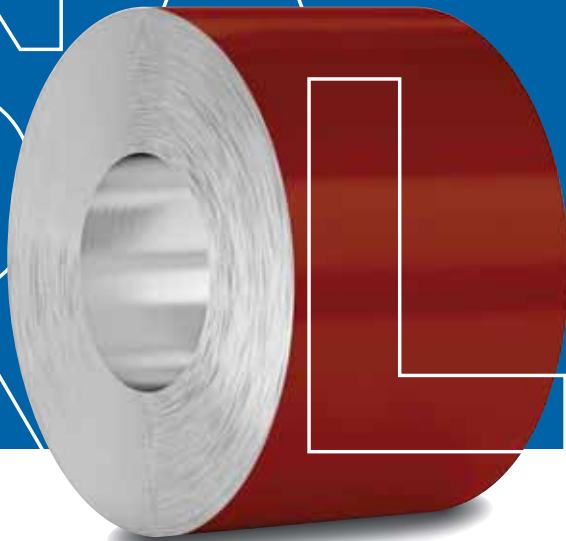
These principles guide every aspect of our operations and have allowed us to focus on supplying quality aluminum prod-

ucts across multiple industries. Our dedication to these values has also enabled us to provide a customer service experience that is truly second to none.

The team at Mid-South Aluminum would like to take this opportunity to say a heartfelt THANK YOU to the readers of Rural Builder magazine. It is because of your trust, loyalty, and continued support that we have been able to receive this prestigious award. Your recognition is a testament to the hard work and dedication of our entire team, and we are deeply grateful for the opportunity to serve you.

As we look to the future, we remain committed to our core values and to delivering the exceptional quality and service you have come to expect from Mid-South Aluminum. Thank you for being an integral part of our journey. **RB**

WE'RE ON A ROLL



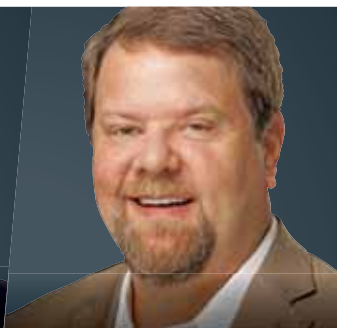
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Malco's modular Metal Benders form 0°-100° bends on straight or curved panels of any length on the jobsite. Use them for bends on flashing, roofing details, standing seam and exposed fastener metal roofing. Available in both narrow bearing stance and wide bearing stance models, both variations pair with a connector for a modular experience to create a 2-Station configuration.

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According to internal testing, Malco's Power Assisted Seamer is the fastest seaming machine on the market (max speed of 98 feet per minute), making it the perfect hand-held equipment for effortless seaming of 1" or 1.5" single and/or double mechanical lock standing-seam panels in one efficient operation.

The Power Assisted Cutters demo single or double mechanically locked standing-seam metal roofing panels, operated with a cordless drill from a standing position.

Designed for seaming both the first (90°) stage and second (180°) stage locks of a mechanical seam, Malco's Hand Seamer is recommended for closing panels by hand.

Trade pros in the field will find that this tool pairs perfectly with the Malco power assisted seamer to quickly and easily create

flawless seams. The replaceable PVC inserts prevent scratching on the painted panels for an excellent finished look. Additionally, the rubber grommets will help prevent the tool from slipping during the seam closing.

With the growth of rural building, trade pros need quality tools that get jobs done efficiently, without sacrificing quality or safety. That's why Malco is focused on providing innovative, specialized solutions for the industry.

*For more information, visit www.malcotools.com. **RB***



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- **Flexibility:** Nails come in various lengths, gauges and steel strengths offering flexibility to accommodate different wood types, thicknesses, and project requirements. Nails are very versatile when it comes to post construction applications. They require just a hammer and a skilled workman – no drills, batteries, electricity, or compressed air. So remote jobsites do not pose a problem.

- **Strength and Durability:** Nails provide excellent structural strength that can withstand the forces of wind, climate change and other environmental stresses common in outdoor construction. Shear values can be readily calculated to ensure dependable construction – and Maze ring shank nails hold tight in even the harsh-



est conditions. (Maze Nails invented ring shank and spiral shank nails in the 1930's – and they are still performing dependably almost 100 years later.)

- **Industrial Standards:** Nails have been the primary and trusted fastener in construction for centuries and are deeply ingrained in the industry practices and building codes. Quality builders are fa-



miliar with nails and trust the longevity and ease of application. Maze Post Frame Nails meet or exceed the standards set forth by ICC the International Code Council – proving that nails are an important part of post frame construction.

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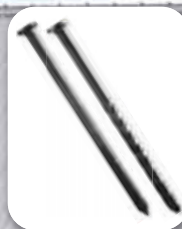
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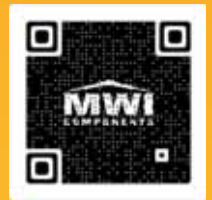
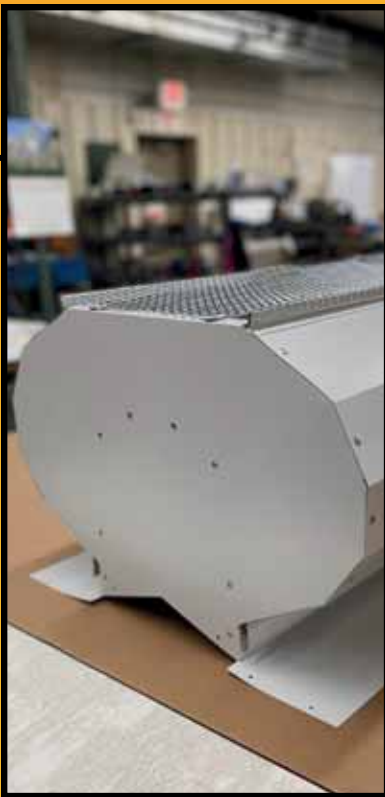
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Since 1985, we have been producing and delivering post frame materials that contribute to creating remarkable structures serving families and businesses across the United States and Canada. It is an honor to aid our customers to deliver the exact buildings their clients have envisioned. For this reason, we take great pride in sourcing nearly all our materials right here in the United States. To maintain our high standards, we pompously deliver our high-quality products within a week of ordering. Our customer service team is equipped with extensive industry knowledge to guide our customers through product selection, delivery, and installation processes of the project. We have been geared towards innovation since 1985, our goal is to make the installation and construction process easier and as efficient as possible for our customers.

Recently, our product range has expanded, aiming to be a one-stop destination in the post frame industry. We have introduced Building Accessories, including Pipe Boots and Underlayment, both are essential for roofing installations. Pipe Boots offer various options and color selections to fit and match any roof. These have an easy five-step installation process that will be efficient on the jobsite. Our newest addition, Underlayment, is available in four versions - Plasfelt®, Superior, Platinum, and High-Temp Epistik® SA-250.

Our most renown products that we manufacture at our facilities are Cupolas, Hardware & Track, Ridge Ventilation, Soffit and Trim Ventilation, Dutch & Arcadian Doors, Horse Stalls, and Reflective Insulation. We take pride in knowing we are creating a high-quality product that will be a great addition to any post frame building. Some other products we are thrilled to distribute are Polycarbonate & PVC panels. These have been proven to aid in the overall health and productivity of animals! Lastly, we have a line of Sealants & Retrofit products such as, Uni-Seal™, a valley and hip closure material, and the Labor Saver, an easy-to-use re-roofing tool to assist in the installation of a metal roof!

We are grateful for our customers' unwavering support over the past four decades and are committed to delivering exceptional experiences to each customer. Serving the rural building and post frame industry is a source of pride for us, and we express our heartfelt gratitude to our current and future valued customers. Thank you for giving us the honor of our 22nd consecutive Gold Key of Excellence award!





STEEL DYNAMICS

WEBSITE: www.steeldynamics.com **PHONE:** 800-799-8942

Steel Dynamics Wins Gold Key Award for Array of Finished Steel Products for Rural Projects

The Steel Dynamics Flat Roll Group recently accepted its 11th Rural Builder Gold Key Award, which honors excellence in product quality, variety, and customer service. Brian Smallwood, the SDI Market Manager of Construction, said, “The Gold Key Award is highly coveted by our team because it means that across America’s construction markets, customers know we are committed to the success of their projects.”

Steel Dynamics offers a complete inventory of finished steel products, making it a convenient one-stop source for the construction market. In addition to producing galvanized and Galfan® steel products, Steel Dynamics is known as the nation’s largest supplier of GALVALUME® steel sheet, which is the product of choice for roofs, siding, and other high-exposure construction projects.

Strong, beautiful, and rust-resistant, GALVALUME® steel sheet is up to four times more corrosion-resistant than galvanized steel, which is better suited for livestock applications. GALVALUME® steel sheet also boasts self-healing properties that deter red rust along cut or exposed edges. When considering its affordable price and lifespan of up to 50-plus years—without corroding—it’s easy to see why rural builders prefer GALVALUME® steel sheet.

The Steel Dynamics Flat Roll Group has the capacity to produce 1,000,000 tons of engineered, painted steel and currently operates six state-of-the-art metallic coating lines. The newest facility in Sinton, Texas, offers a variety of coatings, including an acrylic overcoat, for steel sheets up to 84 inches wide.

High demand for Steel Dynamics steel by builders in the U.S., Canada, and Mexico, has led the company to expand over the years. Steel Dynamics is now operating mills and finishing facilities in strategic locations throughout the US, from the east coast and mid-America, to the south and the west. This enables customers to get the products they need quickly and cost-effectively.

Answering market demand while exceeding customer expectations for painted steel products has been The Flat Roll Group’s primary pursuit for over two decades. Smallwood maintains that winning the Gold Key Award again makes his team proud and more driven than ever to continue serving markets well. “We are grateful to our customers for trusting us, and we have exciting product developments planned that will bring even more value to them,” said Smallwood. **RB**



Would You Believe It's Steel?

The authentic look of wood combined with the proven performance of steel with **Tru-Steel HD®** by Steel Dynamics.

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- High-definition printing with photo-realistic images up to 32 feet long, protected by an advanced clear coat
- Available in galvanized and Galvalume® steel sheet in a variety of patterns including Rough Sawn Cedar, Barnwood, and Realtree® Camouflage

Learn more at [SteelDynamics.com](https://www.steeldynamics.com) or contact your SDI representative.



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AVAILABLE!



Cedar



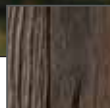
Rough Sawn
Cedar



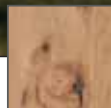
Rough Sawn
Cedar Dark Brown



Rough Sawn
Gray Cedar



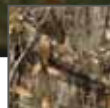
Barnwood Plank



Hickory



Pecky Cypress



Realtree®
Camouflage

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Butler, Indiana

COLUMBUS DIVISION
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Terre Haute, Indiana

THE TECHS DIVISION
Pittsburgh, Pennsylvania

SOUTHWEST-SINTON DIVISION
Sinton, Texas





UNITED STEEL SUPPLY

WEBSITE: unitedsteelsupply.com

PHONE: 512-263-0954



America's largest distributor of painted steel and Galvalume®, United Steel Supply is a company built on solid, dependable relationships combined with superior service. Conrad Farley, United Steel Supply Sales Manager, said those relationships are what makes this award so meaningful.

"The fact that this award came from our customers means a lot to us," he said. "We believe in long-term partnerships and in building value into every step of the process. We are so incredibly fortunate to be a part of our customers' business and thankful they allow us to help them."

Helping them means listening, supplying them with high quality products, and putting their needs first, whether they are looking for steel coil products for agricultural, residential, or commercial construction.

"Our dedicated employees are knowledgeable and friendly and combined with our JIT inventory, our service is second to none," Farley said. "We can usually supply you with coil within 24 hours. Our customers are our friends and partners in business, and we feel very blessed they trust us. Thank you to the customers who nominated us and to all who voted for United Steel Supply. We are truly humbled by your confidence."



Farley said the last few years have been challenging for everyone, making it even more important to have great partners.

"We appreciate that our customers recognized the difficulties and chose to travel the road with us," he said. "To the readers of Rural Builder who haven't partnered with us yet, we hope you will give us the opportunity to be part of your company's future and have a chance to understand our commitment to quality and service." **RB**



BUILDING FOR TOMORROW.

At United Steel Supply, our commitment to the metal roofing industry is second to none because it's the only segment we serve. We're dedicated to championing our industry's recovery — offering nationwide distribution, full slitting capabilities, just-in-time delivery and the highest quality Galvalume[®], galvanized and prepainted steel coils in the nation.

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A.J. MANUFACTURING, INC.

WEBSITE: www.ajdoor.com

PHONE: 800-328-9448 x49

FAX: 715-568-3099

Quality Doors and Windows for the Post-Frame Market

A.J. Manufacturing is honored to be recognized by our customers with another Gold Key Award. Our employees are thankful for the collaborative customer relationships and the trust that those customers have in A.J.'s products and services. Our entire team appreciates the opportunity to be an innovative partner to the post-frame industry and looks forward to meeting the continuously expanding needs of the industry.

A.J. Manufacturing's goal is to be easy to work with, deliver on-time, respond quickly to issues, and to be trusted as a supplier. If we do these things consistently, our customers can focus on their business




EZ FIT trim on a series 7100 door.



EZ-v trim on a Harmony window.

and customers. In addition to the basics, we are constantly looking to improve the quality and performance of our products while holding costs in-line. We expanded our door and window operations in response to increased customer demand for walk doors and Harmony™ windows with patented EZ-v™ trim and flashing — thank you for the support!

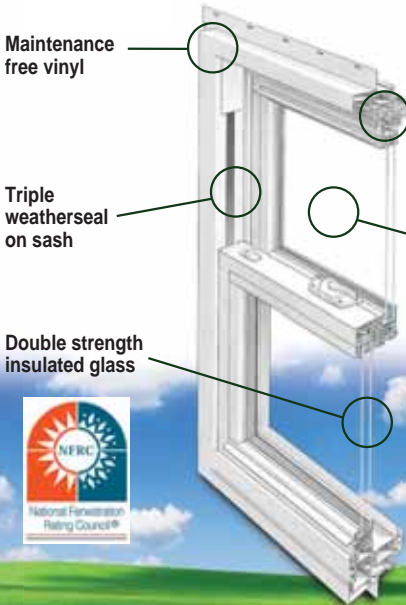
Quality materials, exceptional customer service, innovative designs, and a dedication to excellence are the principles that make up A.J.'s promise to continue to deliver value beyond customer's expectations. For more information about any of A.J.'s products call 1-800-328-9448 or visit ajdoor.com. **RB**



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- DOUBLE SLIDER
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ASC MACHINE TOOLS

WEBSITE: www.ascmt.com **PHONE:** 509-534-6600

WHICH PANEL ROLLFORMING LINE FITS MY NEEDS?

The decision to purchase the right Panel Rollforming Line for your current and future needs is not easy! Each configuration has advantages and disadvantages depending on the application and existing setup in your plant.

ASC is proud to offer three Panel Rollforming Lines, which all feature High Quality Cast Rollformer Stands and multiple Pre- and Post-Cut Options. All Lines come with a Touchscreen Controller with optional Upload/Download of Orders, and Remote Support.

1. The **ALPHA SERIES™** is a feed-to-stop Rollforming Line and the lower-cost option for customers with reduced production volumes. The Line features a close-coupled front end or a hydraulic Post-Cut Shear,



both keeping the line footprint under 40'!

2. The **SELECT SERIES™** is designed for customers with increased production needs and offers a variety of additional features to improve throughput and efficiency. Depending on the product and Cut-Off System, the Line offers production speeds between 150 and 250 fpm!



3. The **CLASSIC SERIES™** has been the strongest workhorse in the industry for decades! Paired with ASC's Mechanical Press, the line offers the highest Net Throughput speed in the Industry with up to 400 fpm on 10' panel lengths!



All of these lines are proudly designed and manufactured in the U.S. in Spokane, Washington, since 1949. **RB**



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MADE IN THE USA SINCE 1949

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TRIM LINES



DECKING LINES



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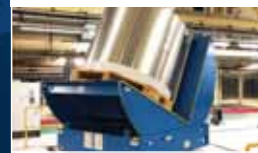
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ROLL UP DOOR LINES



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ROLL-UP STATIONS



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ATLAS BUILDING PRODUCTS

WEBSITE: www.atlasfasteners.com **PHONE:** 800-321-6977

“Invisible products, but noticeable service,” summarized Atlas Building Products company president Don Bratcher. Atlas Building Products specializes in accessory products like fasteners, sealant, venting, and closure, where the more invisible they are the better the product is. “As soon as someone notices or has to think too much about the fasteners attaching a metal roof, there’s a problem.”

Although their products may blend seamlessly into a finished roof, their service to their customers attracts attention. When asked what makes Atlas stand out in the marketplace, Bratcher said, “We have the capabilities, technical knowledge, and logistical footprint to successfully support our customer’s business needs nationwide; and 128 years of experience doing it.”

This commitment to service over the last century has propelled them to the forefront of the industry, positioning them as the leading provider of fasteners for the PEMB, Post Frame, and Component sectors in the USA.

Strategically positioned across three key locations, their fa-



ilities ensure swift and efficient delivery nationwide. Each Atlas site has the capability to streamline operations, from painting, packaging, and shipping of fasteners, to cutting closures to meet specialized requirements promptly. At their headquarters in Ashland, Ohio, they also manufacture high quality fasteners. To learn more about Atlas, visit their website at atlasfasteners.com.

We are honored to present Atlas Building Products with their 18th Gold Key of Excellence award. This is an amazing testament to their impact on our industry. Please join us in congratulating Atlas. **RB**

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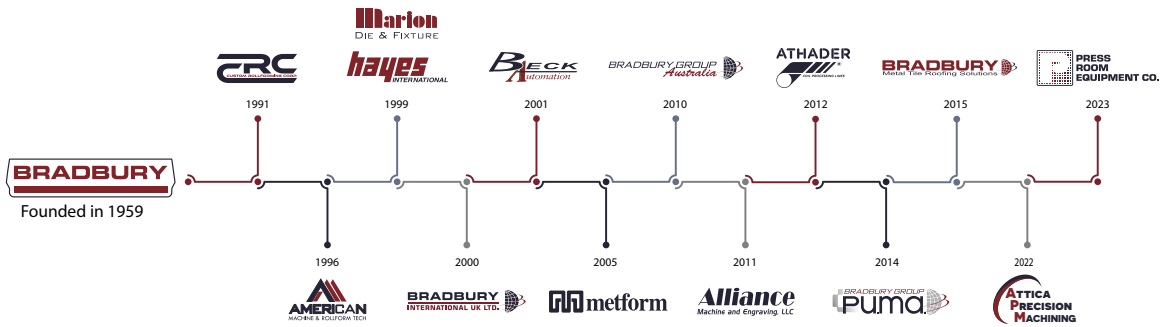
THE BRADBURY GROUP

WEBSITE: Bradburygroup.com **PHONE:** 620-345-6394

Floyd Bradbury took a bold leap of faith when he founded The Bradbury Co., Inc. 65 years ago in Moundridge, Kansas. Starting as a small business rollforming parts for local farmers and customers, it soon evolved into a manufacturer of rollforming equipment that would transform the

industry. Over the years, Bradbury expanded globally and diversified its product portfolio through strategic acquisitions and ventures. Today, the Bradbury facility in Moundridge serves as the world headquarters for The Bradbury Group, a family of manufacturing companies that has delivered metal processing equipment

to customers in over eighty countries. Little did Floyd know that the company he started in a small creamery building would one day be a global powerhouse, leading the rollforming and coil processing industries with innovative equipment, outstanding employees, and valued customer relationships. **RB**



LOOKING BACK. MOVING FORWARD.



65 YEARS OF INNOVATION AND TRUST



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LIFTING INNOVATION

COMBILIFT LIFTING INNOVATION

WEBSITE: www.combilift.com

PHONE: 877-266-2456

Combilift has revolutionized the material-handling sector by providing custom-made and space-saving solutions to your problems for 25 years.

The Irish manufacturer offers a wide range of multi-directional forklifts, pedestrian stackers, sideloaders, narrow aisle articulated trucks, container loaders, and straddle carriers with capacities ranging from 2,200 lbs to 200,000 lbs.

Catering to all types of industries, Combilift has a strong presence in the construction sector and offers customizable attachments to fit your specific needs.

Combilift's innovative products are designed to handle long and awkward loads while navigating tight spaces. This helps improve operational efficiency, safety, and storage space optimization. Additionally, their robust design enables them to work both indoors and outdoors, on semi-rough terrains, and in all weather conditions. *For more information, you can contact us at : Combilift.com / +1 877 2662456* **RB**



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Combilift's range of multidirectional forklifts, pedestrian reach trucks, straddle carriers and container loaders will allow you to maximize the capacity, improve efficiency and enhance the safety of your facility.

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DIRECT METALS, INC.

WEBSITE: www.directmetalsinc.com

PHONE: 855-800-8878

FAX: 239-599-8545

DIRECT METALS INC. (DMI) is a supplier of fasteners, closure strips, and other building accessories for the steel-frame, post-frame, industrial and residential building industries. A core tenet of the DMI philosophy is to market products that enhance the value of any building project. Key products include the PANCLIP Pancake and Wafer head fasteners along with panel clips for standing seam metal roof systems. These fasteners pass rigid Dade County specifications for use in high-corrosion areas.

Building owners and homeowners today demand more quality in the fasteners and accessories that have become a more

important part of their commercial or residential metal roof project. Corrosion resistance is a key concern. DMI Carbon steel screws are standard with a 1000-hour rated corrosion resistant coating. The DMI exclusive 304 SS cap SCAMP screws are essential to keep intact a 40-year metal panel warranty. The SCAMP is Dade County listed. Powder coated color matching is available for many standard industry panel colors.

DMI is a supplier to the nation's largest roofing supply companies. The BULLET BOOT roof vent pipe and GOOSENECK stove and dryer vent flashings carry a 35-year warranty, color match a shingle roof and are Florida Building Code approved.

Other building accessories include 304 and 316 SS rivets, BUTYL*ROLL tape mastic and tube sealants, EPDM pipe flashings, foil insulation, solid and vented closure strips and rolls and the most extensive polycarbonate panel line available for sidelight and skylight applications.

In 4th quarter 2024, DMI will introduce its own design WOODZIP & STEELZIP fasteners for post-frame & steel-frame applications. Paired with the 304 SS Cap SCAMP, this will form the most corrosion resistant line of carbon steel & long-life fasteners in the industry. DMI again thanks the readers of RURAL BUILDER for this GOLD KEY award. **RB**

SINGLE SOURCE

PANCLIP



SCAMP



Whether a metal roof is standing seam or exposed fastener, DMI has the high quality products for a successful roof project.

- PANCLIP low-profile Pancake & Wafer Head standing seam roof screws & panel clips for SNAP-LOCK & MECHANICAL LOCK profiles.
- SCAMP 304 SS Cap Type 17 & SD Points for Post-Frame & Steel-Frame metal building applications have a 40 year warranty.
- PANCLIP & SCAMP Fasteners meet Dade County, FL specifications for coastal, high-corrosion applications.
- Accessories such as Pipe Flashings, Butyl Mastic & tube sealants, 304 SS Rivets, solid & vented foam closure strips round out the product line.



WITH EVERYTHING BUT THE COIL, DMI IS THE COMPLETE SOURCE FOR THE METAL ROOFING MANUFACTURER.

• All DMI products are sold through an authorized distributor network •

CALL 855-800-8878 • www.directmetalsinc.com



GOLDEN RULE FASTENERS

WEBSITE: www.goldenrulefastenersinc.com **PHONE:** 334-283-4030

Thank you for selecting Golden Rule Fasteners as a 2024 Gold Key of Excellence award winner. At Golden Rule, we work with suppliers from the U.S. and Taiwan to provide the best products available. We develop innovative new designs that move the industry forward, make the job easier, and provide a more aesthetically pleasing finished product.

We have over 20,000 square feet of warehouse space stocked full of inventory. Our extensive inventory and exceptional service allow our customers to stock less and free up hard-earned money for other areas of their business. Most orders ship

the same day that they are placed. We are truly honored to receive this award and

will continue to work hard to remain one of the top suppliers in the industry. **RB**



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- ◆Deck Screws
- ◆Metal Building Screws
- ◆Rivets
- ◆Butyl Tape
- ◆Caulk
- ◆Pipe Flashings
- ◆Solid Foam Closure Strips
- ◆Vented Closure
- ◆Ridge Vent Material
- ◆Nutsetters & Bits
- ◆Peel & Seal



Ph: (334) 283-4030

Fax: (334) 283-4032

WEB: www.goldenrulefastenersinc.com

Email: info@goldenrulefastenersinc.com



GRABER POST BUILDINGS, INC.

WEBSITE: www.graberpost.com

PHONE: 800-264-5013

Neatly tucked away down an old country road just outside of Montgomery, Indiana, sits the impressive Graber Post Buildings sales office and manufacturing complex. Forged from humble and modest beginnings, in 1973 Glen Graber started GPB with the help of three other Amish carpenters. His purpose was to provide for his entire family.

As a skilled carpenter, Graber knew that providing the best quality materials and craftsmanship while erecting post-frame buildings would be a key factor to his success. In 1987, the supply chain issues helped him make one of his biggest business decisions ever. He invested in a computerized rollformer to produce his own siding and roofing panels. It was a major risk in the early stages of his business venture, but it yielded great opportunities for future growth. And it did just that.

Today, Graber Post Buildings has grown year after year while building on the same core values that Mr. Graber set in place from day one: providing the best building materials at a fair and competitive price. GPB has over 30 subcontracting crews to build buildings

and install metal roofs in a two-hour radius of Montgomery, Indiana. We stock and distribute every item needed for post/stud frame buildings and metal roofs. We build custom wood trusses, laminated columns, five metal siding/roofing profiles, metal trims, windows, doors, overhead doors, and any other imaginable items you may need.

Residential post-frame buildings or “shouses/barndominiums” have become the popular topic the last few years. To help the design process, our website features a design tool that allows you to come up with your own custom design that can then be submitted for a free, no-obligation quote. We also feature a color visualizer that will help aid in picking the perfect color combination for your next build. Finally, to help with design inspiration, we have a gallery with all our top projects to give you great ideas/tips to include in your next build. For your next garage, shop, shouse, or metal roof please give us a call and see how we can help you save money while getting the building or roof that you’ve always dreamed of. To learn more about our company visit www.graberpost.com. **RB**

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HIXWOOD

WEBSITE: www.hixwood.com

PHONE: 715-644-0765

FAX: 715-644-0994

From Hixwood Metal LLC's beginning 26 years ago, we have built our brand based on that all-important idea of premium quality because we know it is all-important to you.

Getting your project done right — and done on time — is important to you. It's important to us, too. See why Hixwood is the preferred partner of contractors and individual builders alike.

PREMIUM MATERIALS & SERVICE

Super Rib 100-28 ga. G-100 galvanized has been our hallmark product for decades, and our state-of-the-art machines will produce custom trims designed by our customers. We know metal, so when you call, you will be talking to an expert who knows the product and can efficiently and accurately help you with your order. We are your supplier of choice for premium quality materials, delivered in a timely manner.



TESTIMONIALS

Don't ask us; ask our customers. "Hixwood Metal has continuously delivered high quality products in a very timely manner, allowing me to focus on running the business."

"I have been purchasing from Hixwood for the last 10 years. The quality is superior and you can typically place a large order and get it delivered or pick it up the next day!"

"Trust Hixwood to get quality products on the ground when you need them, and with piggy-back forklift trucks it makes everything more efficient for the contractor."

Whether it's post-frame, or an agricultural building like a pole barn, or a commercial construction, trust Hixwood to be your building supplier and partner as we've been doing the past 26 years. **RB**



*Thank you
to all readers
for honoring us with the Gold Key award.*

From our grassroots heritage to our current footprint, covering the Midwest to Eastern United States, we are here to serve you! We can meet all your postframe building needs, complete packages OR if you roll your own, we stock the full spectrum of coil.



715-644-0765 — Fax: 715-644-0994





LAKESIDE CONSTRUCTION FASTENERS

WEBSITE: www.lakeside-fasteners.com

PHONE: 800-537-4160

Celebrating 10 Years of Innovation

At Lakeside Construction Fasteners, we pride ourselves on delivering exceptional products and outstanding customer service. As a family-owned company initiated by John Lane and led by CEO Kyle Lane and President Eric Velliquette, we understand the importance of quality. With an extensive range of metal building fasteners, roof boots, flashings, butyl tapes, sealants, underlayment, and venting foam solutions, we have everything needed for metal building applications. That's why we source the finest materials and use state-of-the-art manufacturing processes, ensuring the durability and performance of our products.

LCF offers a vast selection of metal building fasteners developed since 2014. Whether for commercial or residential use, they provide secure, long-lasting connections. From self-tapping and self-drilling fasteners to specialized options like T17 FASTLOK™ and T17 WOOD-X™, LCF has the right “alternative solution” for every application.

Venting foam solutions are essential for maintaining proper airflow and preventing moisture buildup. Innovative venting foam solutions, such as SC110VENT, SC110VENT-R, and SC110VENT-FLEX, provide efficient ventilation while keeping out debris and pests. Our roof boots,

flashings, and butyl tapes are engineered to provide superior building protection. From weatherproofing sealants to reliable underlayment materials, they're designed to enhance the durability and efficiency of your projects.

LCF is part of the Lakeside Group of Companies, which includes Lakeside Metal Specialties, our parent company, Lakeside Transportation, and Lakeside Poly-VENTCO. This group gives customers an advantage the competition can't match.

Contact us through our AI driven new website (www.lakeside-fasteners.com) and allow LCF to help you achieve success as a customer-partner! **RB**

Gold Key of Excellence Award Winner

Lakeside Construction Fasteners Earns Prestigious 2024 Gold Key Award!

Lakeside Construction Fasteners is proud to announce that we have received the esteemed 2024 Gold Key of Excellence Award. This marks our first Gold Key award, recognizing our commitment to providing quality products and exceptional service. The Gold Key program, featured in Rural Builder Magazine, honors companies that builders appreciate for their outstanding contributions to the industry.

Receiving this award places Lakeside Construction Fasteners among the elite in our field. To commemorate this achievement, we will be featured in the July edition of Rural Builder Magazine and have received a commemorative plaque. We are thrilled to share this honor with our clients and partners and will proudly display the Gold Key logo throughout the year.

800-537-4160
www.lakeside-fasteners.com

LAKESIDE
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MARCO INDUSTRIES

WEBSITE: www.marcoindustries.com **PHONE:** 800-800-8590

We make the best roofing ventilation and accessories for metal roofs — period. With the most tested and certified products on the market, you can trust our solutions to perform in even the harshest conditions, protecting your roof and everything underneath.

INVESTING IN QUALITY

For more than 30 years, we've assembled the best people and capabilities in order to deliver superior quality and performance. But earning multiple Top 10 Product awards, *Rural Builder's* Gold Key of Excellence awards and more aren't the goal. Customer satisfaction is. That's why, in addition to industry-leading testing and cer-

tifications, we invest in innovative design and manufacturing, including the only specialized non-woven material manufacturing capabilities in the industry. This competitive advantage allows us to use specially formulated polyester in our ventilation products — manufactured from recycled material — to prevent moisture absorption and hold together to help keep out pests. (Polyurethane products soak up water, causing them to constantly expand and contract, eventually disintegrating.)

PERFECTLY POSITIONED TO DELIVER

Our corporate headquarters and almost 220,000 square feet of made-in-the-USA manufacturing and warehousing are cen-

trally located in Tulsa, Oklahoma. From here, and through five distribution facilities across North America, we deliver Marco quality coast to coast.

THE WEATHER-TITE™ SYSTEM

Only Marco offers the Weather-Tite™ System, a comprehensive line of metal roofing solutions that offers easy installation, remarkable building ventilation, lower utility costs, extreme durability and outstanding warranties. In short, quality metal roofing products that are economically and ecologically smart. That's why customers trust Marco products to deliver the industry standard in performance and reliability, time after time, through all kinds of weather. **RB**

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METAL ROLLFORMING SYSTEMS

WEBSITE: www.mrsrollform.com **PHONE:** 888-284-6794 **FAX:** 509-467-5631

Metal Rollforming Systems (MRS) is excited and honored to receive our seventh Gold Key of Excellence award. MRS has been producing roll formers since 1993 and strives to create the best roll former for our customers. Metal Rollforming Systems aims to be your one-stop shop for all your roll forming needs, allowing you to save time and money when purchasing a roll former. Along with our complete roll former panel lines, we specialize in custom trim profiles along with all the needed accessories to complete your metal panel needs.

Our most recent roll former design is

our Patriot Rollforming Line. With an integrated shear and modular die set, any number of profiles can be run on a single machine. This offers our customers flexibility for their production while costing less than our standard lines. The Patriot Line can also be reconstructed into a slit and recoil line, which is ideal for trim and snap-loc panel manufacturing.

We pride ourselves on our technical support for our customers. Our customers' success is our success. Our business is based largely on repeat customers and referrals, and we are honored that our customers speak so highly of us. We live under the philosophy that, "Service is the lifeblood of

our organization. Everything flows from it and is nourished by it. Customer service is not a department; it's an attitude."

We strive to make the best experience for our customers and to make them confident they've purchased the right roll former from the right company.

Metal Rollforming Systems has grown from a single man building roll formers to an 100-person crew. Our complete in-house design and production allows our team to keep precision control over each aspect of the manufacturing process. This assures us that each roll former is done right and will be reliable for our customers for many years to come. **RB**



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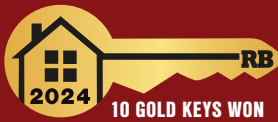


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WEBSITE: www.mfmbp.com **PHONE:** 800-882-7663 **FAX:** 740-622-6161



Versatile Self-Adhering Waterproofing Membrane

Peel & Seal®, manufactured by MFM Building Products is a self-adhering, 45-mil membrane designed specifically for low slope roofing and general flashing applications. The single-ply membrane adheres direct to the substrate and provides a long-lasting, durable, maintenance-free roofing surface.

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- Aggressively adheres direct to the surface
- Designed to be left exposed to the elements
- Ideal for hundreds of waterproofing applications
- 10-year warranty

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Free Sample

To request a free Peel & Seal® sample, visit www.mfmbp.com or call 800-882-7663. **RB**



PALRAM AMERICAS

WEBSITE: www.palram.com/us **PHONE:** 800-999-9459

With over 60 years of thermoplastic experience, Palram is a leading manufacturer of Polycarbonate and PVC sheets. Combining our rich history, rigorous manufacturing standards and commitment to superior service, we've become a trusted partner to markets spanning construction and architecture, agriculture, and home and outdoor living.

Palram is a leader in daylighting and interior wall cladding solutions. In addition to our popular SUNSKY® corrugated polycarbonate panels for skylights and sidelights, Palram's new EZ Glaze polycarbonate panels offer a sleek, glass-like appearance for covering patios, decks and pergolas.

To eliminate the need for drywall, spackle and paint, Palram's DURACLAD® Multiwall Interlocking PVC panels are ideal for interior walls and ceilings. DURACLAD can be fastened directly to studs, and feature tongue-and-groove edges for fast installation and a smooth and hygienic finish able to withstand aggressive chemicals and cleaning. NEW Designer Series is available in a white shiplap design with the look and feel of real wood! Custom designs are also available.

Palclad Pro PVC wall and ceiling panels are an attractive, easy-to-install, and cost-effective alternative to FRP. Panels are fiberglass-free, have a 5-year warranty, and will not fiberbloom. These durable, low-maintenance panels are Class A fire-rated, 100% recyclable, Clean Air Gold Certified and USDA/FDA compliant.

For a highly effective and chemical resistant liner panel, Palram's AG-TUF corrugated PVC panels are maintenance-free and ideal for agricultural interior cladding.

Palram Americas is proud to receive another Gold Key of Excellence award and pledges to continue to provide the highest standards of products and service. **RB**

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NEW EZ GLAZE Roof Panel



NEW!



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SUNSKY is the leading corrugated polycarbonate product for skylights, sidelights, complete roofs, and cladding. SUNSKY has 20 times greater impact resistance than FRP, plus a lower yellowing index and the highest light transmission.

DURACLAD®

DURACLAD Multiwall Interlocking PVC interior wall & ceiling panels have a tongue-and-groove design allowing for quick installation. Chemical and water resistant. Available in bright white and NEW white shiplap Designer Series.

PALCLAD® PRO

These solid PVC wall cladding panels are a cost-effective alternative to FRP. PALCLAD PRO contains no fiberglass, has a 5-year warranty, and is Class A fire-rated. Also, chemical and water resistant.



To learn more, contact your local distributor or call 800-999-9459. Or visit us at: palram.com/us





PERMA-COLUMN

WEBSITE: www.permacolumn.com **PHONE:** 800-622-7190

Pro Builders know how to build better, build stronger, and build to last

Pro Builders understand what it takes to rise above the status quo in post-frame construction. Committed to their craft, they insist on permanent foundation solutions that enable their structures to endure for generations. Pro Builders embrace innovation and engineering, demonstrating their drive to deliver unrivaled customer satisfaction.

Perma-Column® stands by builders who strive to elevate their business and stands with consumers who want to protect their building investment. We pride ourselves on the quality, design, and engineering of our 100% American-made post-frame foundation solutions.

Perma-Column precast concrete columns elevate wood columns out of the ground in post-frame construction, eliminating the risk of rot. Sturdi-Wall® and Sturdi-Wall® Plus heavy-duty anchor brackets connect post-frame structures to poured concrete foundations. Perma-Column removes the potential for rot, decay, structural instability, and costly repairs.

Pro Builders and consumers trust Perma-Column foundation solutions. The patented Perma-Column family of products is certified by the International Code Council Evaluation Service (ICC-ES) to meet the International Building Code® (IBC) and the International Residential

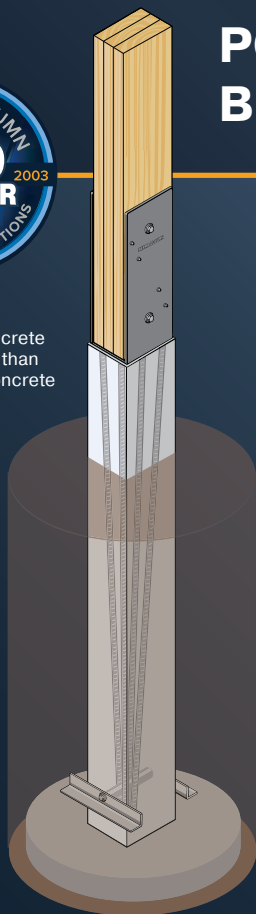
Code® (IRC). That means quicker permits and approvals — and therefore accelerated project timelines.

Permanent foundation solutions can provide consumers with elevated potential for financing. Whether you call it a pole barn or a post-frame building, you will invest a significant amount of money in its construction. A critical question remains. The life of the building — and the investment made in it — rests on your choice of foundation. Is your foundation permanent or temporary? Go with the choice Pro Builders make. Build better. Build stronger. Build to last. Build with Perma-Column. **RB**

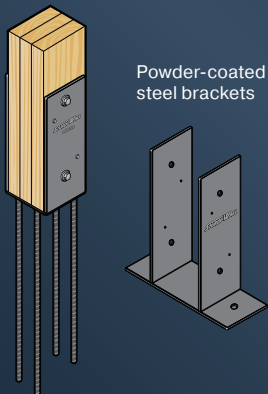


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Elevate your building projects with engineered foundation solutions that combine the economy of post-frame construction with the durability of a concrete foundation.

- Eliminate wood in the ground
- Maximize post-frame building life
- ICC-ES-certified code compliant

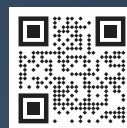
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Certified by the International Code Council to meet residential and building codes



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PLYCO CORPORATION

WEBSITE: www.plyco.com **PHONE:** 800-558-5895 **FAX:** 800-257-5926

When discussing the energy efficiencies of walk doors in post frame or “red iron” metal buildings, many people assume there is not much of a differentiation between door types and therefore little thought is done for the entry doors. In other words, the thinking is that most doors are very similar in construction, gauges, and door cores, so there is no need to look at performance or tested data results.

Plyco has historically been very aggressive for third party testing and registration for many of its doors. In more recent times, due to energy costs and clean climate objectives, a greater emphasis is now on thermal performance. This makes sense — every building owner or homeowner should

be concerned about the insulating properties of the building envelope.

Those that do look at each category in more detail find ways to provide higher performing products and walk doors are no different. The starting point for door would be the door panel itself. Common exterior doors use a styrene core which has an R value of 4 to 6. Better or “best” doors will have a poured in place polyurethane core, which because of it being liquid at the time of application fills all the door cavities and ultimately typically more than doubles the R value to about 12. But that is only a portion of the story. The weather seal, threshold/sweep, and “fit” will also play a big role in the amount of air or water infiltration. All of

this is captured in much greater way with the NFRC 100 testing for the entire door system, which also provides a much better indication of real-world results.

How does the Plyco 92 door achieve such high tested U values? The 92 door has an “Everlast” G60 galvanized, pre-painted steel door panel with a poured-in-place polyurethane core, along with a heavy extruded full aluminum “storefront” type of frame. The door, frame, and threshold all have a “true” polyurethane thermal break barrier which provides the basis for the tremendous U values.

The world of energy efficiency of doors can be a bit complicated. More information can be provided by contacting Tom Granitz at tgranitz@plyco.com. **RB**

.24 Series 92
Total Opening U-Value -
NFRC 100

- 11 smooth & 5 new textured color panels and 5 base frame colors available for a stylish look on any building
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- Wide range of lite kits and hardware options



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ColorGard® by S-5!

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Safely Melt Snow off Your Metal Roof With Snow Guards



Gold Key of Excellence Award Winner



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CONCEALOR® Pancake Head Screws: For SSR clip attachment in lengths up to 9”.

BLAZER® Drill Screws: Available with the patented VRT® Back-Out Resistant Thread Technology for attaching panels to steel in lengths up to 10”.

ULTRA1000® Silicone Sealant: Provides the superior UV protection. Available in colors to match most metal panels and trim.

APS500® Advanced Polymer Sealant:

Widely specified and is available in over 24 standard colors.

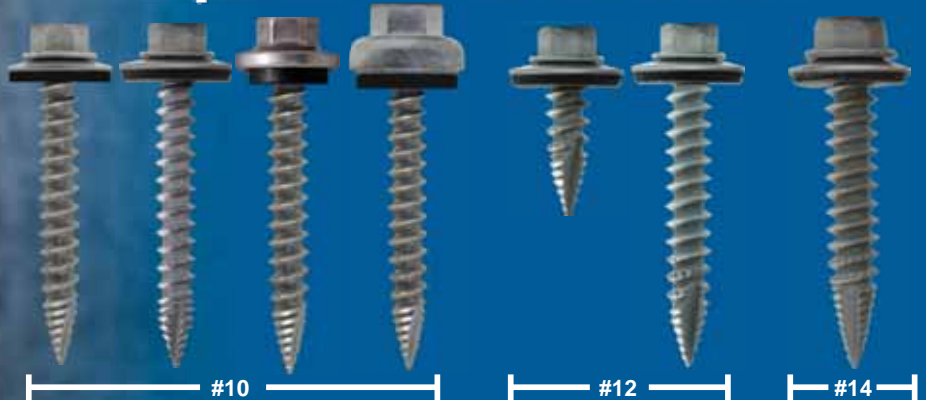
TFC BUTYL™: Available in tubes and tape for exceptional performance in panel laps.

KALIDA-KOTE™ Painted Screws, Rivets and Closures: The largest selection of painted screws and rivets to match many popular colors of panels.

DeWALT® power tools and accessories.

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These are no ordinary post frame screws



- Low-angle thread helps prevent over-driving the washer and increases resistance to back-out
- #10, #12, #14 | Steel with TRI-SEAL | Stainless Steel ZAC Zinc Cap Head | Stainless Cap Head
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TRAC-RITE

WEBSITE: www.tracrite.com
PHONE: 800-448-8979



For over 40 years, Trac-Rite Door has set the standard for quality and reliability in the steel roll-up door industry. As a proud 7 year Gold Key Winner, Trac-Rite reaffirms its status as a leader in the field.

Founded on the principles of unmatched performance, superior value, and customer-centric services, Trac-Rite has carved its niche as an industry leader. The company's product line is extensive, addressing diverse needs from self-storage facilities to agricultural settings, each door not just meeting but exceeding expectations in aesthetics, durability, and functionality.

The award as a Gold Key winner can be attributed to Trac-Rite's dedication to comprehensive solutions and vertical integration. Unlike many competitors, Trac-Rite offers everything from curtain doors to complete partition systems, ensuring that every customer finds precisely what they need within one robust portfolio. This seamless, integrated approach simplifies the buying process, enhances customer satisfaction, and fosters trust.

Trac-Rite's impact is widespread, with a robust presence across the U.S., Canada, and parts of Latin America. Recent expansions include two new distribution centers in Wisconsin and Alabama, significantly boosting the company's logistical capabilities and reaffirming its position as North America's second-largest door manufacturer.

This year's Gold Key accolade is not just a recognition but a testament to Trac-Rite's relentless pursuit of excellence and innovation. As we move forward, Trac-Rite remains committed to setting industry benchmarks, ensuring every roll-up door from our factories embodies our legacy of quality. Trust Trac-Rite to secure your spaces, because when it comes to dependable closures, our doors are always open to excellence. **RB**



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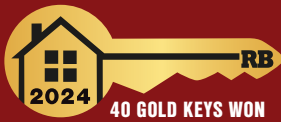
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WEBSITE: www.wickbuildings.com **PHONE:** 855-438-9425



Your Dreams – Our Building Expertise.

With the sale of over 75,000 buildings to date, Wick Buildings has steadily grown to become one of the nation's largest producers of post-frame buildings, including sophisticated animal confinement systems, horse housing facilities, on-farm livestock and storage buildings, suburban structures and professionally engineered commercial and light industrial buildings.

Flexible Design. One of our biggest advantages is design flexibility, both outside and inside. With a clear-span capability of 100' in width, Wick Buildings can incorporate interior build-outs and the addition of wings and leans for additional space.

Energy Efficiency. Energy efficiency is a hallmark of Wick Buildings. Wall and roof steel "cool colors" can be selected with sun reflectivity in mind to reduce roof temperatures up to 100°F. With several ceiling insulation options and insulated flush wall configurations, interiors are cozy, draft-free and ready for interior build-out.

Customization. Wick works with independent builders to customize each design around the needs of the buyer and local building codes. Wick Buildings' Licensed Professional Engineers can provide stamped plans for code approvals.

High-Quality Materials. High tensile steel (80,000 PSI) on the exterior, G-90 zinc coating for corrosion resistance, and a finish with Ceram-a-Star 1050 Paint System for long-lasting beauty.

Technology and Support. Our state-of-the-art 3D visualization and pricing tools allow you to design it right from the start. Your support team at Wick helps reduce your time spent in nonproductive activities. Sell more and make more money with Wick Buildings. **RB**

QUALITY, VALUE & SERVICE

Your customer expects the best from you.
You should expect the same from your building partner.
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Building Talent Foundation

www.buildingtf.org



WHAT BUILDING TALENT FOUNDATION DOES

Building Talent Foundation (BTF) is a national non-profit organization founded by the Leading Builders of America, with a purpose to address the acute and persistent talent shortage across residential construction. BTF's mission is to advance the education, training and career progression of young people and people from underrepresented groups, helping them develop into skilled technical workers and business owners in residential construction.

Building Talent Foundation works to bring together resources, and efforts of builders, trade partners, suppliers, and manufacturers, and all their educational partners to rebuild the residential construction workforce. It starts with education training providers and recruiting partners, BTF facilitates the engagement of builders and trades with secondary schools, post-secondary schools, colleges, and nonprofit organizations with a workforce focus to promote the construction industry as a career choice. BTF then helps to connect these students to internships, apprenticeships, training, and employment opportunities so they can find the training and jobs to jumpstart their residential construction careers.

Building Talent Foundation's labor market assessment study identified three clusters of challenges in residential construction:

- The need for more talent entering training and jobs in the sector
- A disconnect between education, training programs, and employers
- A high turnover rate of newly hired employees among trade contractors

Rebuilding the Residential Construction Workforce Through Partnerships

BTF is committed to its vision of creating a sustainable workforce in the housing sector by 2030. To achieve its vision, BTF has implemented three distinct programs: Building Talent Pipeline, Building Talent Connections, and Building Talent Engagement.

PILLAR 1. BUILDING TALENT PIPELINE

Promoting homebuilding as a career choice. This program promotes and reframes careers in skilled trades, increases the number of young people and people from underrepresented groups choosing those careers, and improves their vocational skills and employment prospects.

Young people interact with construction professionals, learn about career pathways, get hands-on experience in building projects, and connect with possible future employers. Educators interact with industry partners and enrich their curricula with up-to-date information and practical exercises.

Builders and trades engage with future job candidates, impart their pride and joy of building homes to the next generation, and influence skills taught in CTE courses.

PILLAR 2. BUILDING TALENT CONNECTIONS

Linking candidates to employment and career opportunities in the homebuilding sector. This program strengthens and scales employment in the homebuilding sector, while supporting education and training partners in aligning skills development programs with employers' hiring needs.

BTF connects employers with job seekers by facilitating partnerships with training providers where job seekers are gaining



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2024 Gold Key of Service Award

BTF Changed Yaritza's Life



From US Navy to Construction House Lead at Habitat of Humanity

Meet Yaritza, a true inspiration. As a **US Navy** veteran and a devoted mom to her 18-month-old, she knows the value of hard work and dedication. With a passion for building and working with her hands, Yaritza decided to take her skills to the next level and further her education at **Home Builders Institute** where she was connected with **Building Talent Foundation** in Houston, TX. BTF helped Yaritza land a job as a Construction House Lead for **Habitat for Humanity**. She's using her talent and expertise to help provide affordable housing for those in need, and she's making a real difference in her community. Yaritza's strong work ethic, training, and desire to make a positive impact in her community have set her on the path to achieving her dreams of home ownership.



the skills the employers need in their workforce. These talent connections are geared towards building employment and business ownership in our industry, while improving collaboration between employers, educators, and jobseekers.

PILLAR 3. BUILDING TALENT ENGAGEMENT

BTF collaborates with trades to enhance their ability to recruit, hire, develop, engage, and retain diverse talent in the housing sector, by leveraging technology and advancing the professional development of people managers.

BTF supports the business growth of its trade partners and the industry's workforce practices in residential construction while also fostering professional development, entrepreneurship, and career advancement among the industry's workers and business owners.

BTF'S VISION: BUILDING A SUSTAINABLE WORKFORCE

A sustainable workforce is one that is valued by employers, well-trained and supported, engaged with colleagues and

the industry at-large, safe and healthy both in and out of work, resilient to changes, diverse and representative of the broader local and national workforce, and treated and compensated fairly by employers. BTF believes that a thriving workforce that reflects all those characteristics can only exist within a well-functioning ecosystem of responsible employers, committed educators, and supportive, growth-oriented policies.

The supply of skilled, career-minded workers must meet employers' hiring needs, industry leaders must collaborate with educators to consistently raise employees' and firms' standards of excellence, and talented individuals must be able to embark on rewarding careers. Building Talent Foundation is committed to creating engaged workers, in thriving, home-building careers, with its network of supportive, creative partners.

BTF'S RESULTS:

Pillar 1. Building Talent Pipeline
In just the past two and a half years, BTF has engaged more than 140,000 job seekers and career explorers through career events, soft skills training and hiring

BTF Changed Jayden's Life



From Student to CDL Truck Driver in Charleston, SC

Jayden faced an uphill challenge as a newly graduated CDL Class A driver from **Miller Motte Technical College**: finding a job right after school. Despite his eagerness to kickstart his career, Jayden encountered many rejections due to his lack of experience.

Determined, Jayden sought assistance from **Building Talent Foundation (BTF)**. From the very beginning, Jayden's BTF career coach provided support and gave him hope. BTF stayed in regular contact, offered guidance, and shared multiple job openings, believing in Jayden's potential.

Finally, with the help of **Building Talent Foundation**, Jayden achieved his long-awaited dream: a position at **ABC Supply**. This opportunity held great significance for him because it was the one company willing to take a chance on him - a driver straight out of trucking school. Filled with gratitude, Jayden made a promise - to work hard and make **BTF** and **ABC Supply** proud.



"Building Talent Foundation helped change my life in the biggest way possible. I can't thank you guys enough!"



events throughout its 20 markets across the U.S., promoting the idea of making homebuilding a career of choice.

Pillar 2. Building Talent Connections
Since programs launched in 2020, BTF has connected talent with employers, bringing 2,885 people into jobs in the construction industry. And so far in 2024, 1 out of 10 people connected with jobs have been veterans.

Pillar 3. Building Talent Engagement
BTF supports the growth of trade partners with diverse talent. So far in 2024, 16.9% of BTF's placements have been women (compared to the 4% share of women working in front line jobs in construction in the United States), 74.5% of BTF's placements have been people of color (compared to the 41% share of people of color working in the construction industry), and 71.6% have been people under 30 years old. **RB**

Join BTF in building a sustainable workforce for the future.

- Follow BTF on Facebook, Twitter, LinkedIn, and Instagram.
- Sign up for BTF news at www.buildingtf.org
- Partner with BTF to make a difference.

2024 Gold Key of Excellence Award Winner

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www.chiefbuildings.com

Radiant Floor Heat

What Customers Need to Know

Radiant floor heat can be an excellent choice for residences and some commercial and agricultural buildings, but customers should have a good understanding of all their options and of the pros and cons of radiant floor heat to make an informed choice.

Although radiant floor heat has been around for decades, it's still not universally known or understood, but it's becoming more and more popular as the benefits spread by word of mouth. Scott Patton, founder and owner of Indiana Warm Floors (indianawarmfloors.com), said potential customers hear about radiant heat and are intrigued. "Typically, it seems like somebody has heard about it through either a friend or a relative that had the system, so they look into it, and they say, 'Hey, my buddy or my brother-in-law has this. I wanted to see about doing it at my place.' And all they know is that it's a lot more comfortable and efficient than a conventional forced-air system."

SUPERIOR COMFORT

Radiant heat is considered more comfortable than forced air heat because, rather than just heating the air in a room, it heats the objects in the room directly, which creates a steadier, more consistent warmth. Plus, it heats joints and bodily fluids directly, promoting mobility.

"The comfort is the thing that's kind of hard to convey," Patton said, "but once you've walked into a house and all the floors are warm, people just look at each other and say, 'Oh my gosh, the floor is so amazing, why wouldn't everybody build a house with floor heat?'"

HEALTHIER HEAT

Radiant heat is quiet and healthier because it doesn't stir up dry dusty air and allergens. "With a regular furnace," Patton said,

"you've got a blower kicking on and off all the time and making air noise, blowing around dry, dusty air, where radiant floor heat has been deemed to be the healthiest heating system because you don't have dry, dusty air getting blown around the house."

Radiant heat is also better for humidity levels. "The humidity stays at a really good level because you don't have that air getting blown around that's drying out the air," Patton said. "So, there's really no need for a humidifier in the home. When the furnace heats up that air, the air expands, and it drives away the moisture. I continually hear about people with a bloody nose or dry nose or whatever, who have a hot air furnace, but with the radiant heat, it heats the objects and doesn't heat the air where it drives the moisture away. So, you maintain the 30 to 40% humidity without buying a humidifier."

ZONED CONTROL

Patton pointed out that customers appreciate that, unlike with forced air heat, radiant heat allows them to tailor heat to different areas of a structure. "There's typically three to five zones in a residential home," he said. "The garage might be at 50 degrees, the basement at 65, the main level at 68, the bathroom at 75. The bedrooms — especially the master bedroom — are often in a separate zone, so they can turn the heat down or off for cool sleeping. So, you can get the comfort and the control you want in each area, and that's what people really like."

LOWER OPERATING COST, ESPECIALLY FOR LARGER SPACES

One of the biggest advantages of hydronic radiant heat is that it is cheaper to run than forced air heat. "Typically for residential you have about a 25% savings for operating a radiant heating system, versus forced air heating," Patton said. "And when you

get into commercial, those savings are even greater because, typically, with commercial you have higher ceilings, or the buildings are larger. So, there's more space for heat loss in those commercial applications. If you think about these 30-foot ceilings, if you use a hot air furnace, the hot air gets lightweight like helium, so it's 90 degrees at the ceiling and the floor is still cold, and your feet are cold, and the heat never shuts off.

"With radiant heat, we put the heat in the floor, and it stays right there. The air doesn't get hot and go to the ceiling. So, you're standing on the BTUs that you're paying for. And I think that's probably why the majority of the heating systems in Europe are radiant heat because their utility costs over there are three to five times more than they are here."

Because hydronic radiant heat efficiently heats large spaces, it's ideal for larger residences and commercial spaces. "A boiler system that will heat a 1,200 square-foot home is the exact same system that can heat all the way up to roughly 13,000 square feet. So, whether your home is 1,000 square feet or 13,000 square feet, that same boiler module that's going to be on the wall with the plumbing is going to be roughly the same. So that's the capacity of that unit. And most of the time we use a combi boiler that also generates hot water for showers, so it's got a dual function. The homeowner likes to hear that because they don't have to have a separate big, bulky hot water heater or even another tankless heater on the wall. It's all in one central unit."

This means that owners can heat their garage, too, something that's generally not feasible with forced air heating. "Typically, the boiler in the whole system can do it with or without the garage. The only additional expense at that point is the extra cost of the PEX and insulation for the garage. You already have the same investment in your boiler so, incrementally, it's a very nice welcome option that people love," Patton said.

"With that, even in cold weather you





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can use the garage to wax the car or use it as a bonus room for the holidays. The kids can ride bikes out there, but they can just keep it a set at 50 degrees if they want, just to melt the snow and ice off and keep the garage nice," he said.

This explains why radiant heat is so popular in larger homes and combo shop/homes. "Barndominiums have been a very strong segment of our business for the last five years," Patton said. "We must have a dozen of them going right now. People are building 2,000 or 3,000 square-foot living areas in a 4,000 or 5,000 square-foot 'barn' and call it a barndominium. People are buying property out in the sticks and putting up their barn and they've got room for their toys. The husband is asking his wife to move into a barn, and she's saying not without warm floors, so it's a win-win."

FAST INSTALLATION

While installing the pipes, valves, controls, and boiler for hydronic radiant heat looks complicated and big job, it's actually a pretty fast job. "A lot of people are surprised about how quickly our company does the installs," Patton said. "Typically, all the pipe is installed in one day and then the boiler is installed in an-

other day. So it's really just a two-day process."

THE DOWNSIDE: A HIGHER INITIAL COST

Since radiant floor heating systems don't use ductwork, a separate system needs to be added for cooling, which may mean a central heating/cooling air system needs to be installed. "Because of that," Patton explained, "there is some redundancy because we are providing all the heat in the floor. But then we still need a duct system, which a lot of times, the blower for the duct system is the furnace. But it can also blow out warm air, which is desirable in spring and the fall, when you just want to add a little heat to the house without actually turning the floors on because it might be a mild day when you have the windows open in the afternoon. But you do have that expense of the furnace and the ductwork on top of the radiant heat, so that's where the extra cost comes in. But people are willing to pay for it because they want the comfort and efficiency."

Adding a central air system isn't the only option, however. "We actually offer products like an air-to-water heat pump that can provide heating and cooling to both the radiant heat and the air handler for the air conditioning," Patton said. "So, there are different options for every situation out there. It doesn't always have to be a gas-fired boiler or an electric boiler."

CONCLUSION

"I've been installing radiant heat since 1979, when I started the company," Patton said. "Each year, it becomes more and more popular. People experience it and they just can't believe every house doesn't have it. They like the efficiency, the control, and the quietness, and there is just the overall comfort, and a lot of people are keying into the health."

When customers have radiant heat installed, they're following new trends for the interior. They tend not to do traditional flooring. "They're building new homes, and they're not putting in any carpet," Patton explained. "They're just doing stained or painted concrete floors." Most people who don't know about radiant floor heat think you have to have plush carpet to have warm floors, but that's not true with radiant heat. Not having carpet makes it easier to have clean floors because bare floors are easier to clean. "People just love the cleanliness and the health aspect."

The extra initial cost of the radiant heat installation is made up over the long term by the lower operating cost. "The energy savings will pay for the extra expense over a period of time, and people don't really care about that so much," Patton said. "They just want to know it does pay for itself eventually, and they really want the comfort and the control."

Whether customers decide to invest in radiant heating or not, they should choose at the very beginning of the planning because some options are one-shot only, as it may be prohibitively expensive or impossible to change after construction is complete.

"I typically get all positive feedback on the radiant heat," Patton

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said, “but sometimes the customer will skip doing their garage, or they’ll limit themselves by only doing two zones to try to save a little bit of money on the front end, and they always — I mean it’s a guarantee — they always come back and say ‘I should have just done the four zones or I should have done the garage, too, because I mean this is unreal comfort.’

OTHER RESOURCES

- energy.gov/energysaver/radiant-heat-ing

ADVANTAGES OF RADIANT FLOOR HEAT

- Radiant floor heat is a good option for additions where it’s not feasible to connect to the current heating system.
- Radiant floor heat is better for rooms with high ceilings and with doors or windows. Radiant heat doesn’t heat air, but rather the objects in a room. When heat in the space is held by air rather than the objects in a room, the heat can rapidly flow out of an open space with the air flow.
- Radiant floor heat creates even heat throughout a space, including vertically from floor to ceiling. This avoids hot and cold spots, allowing better comfort and control of heating, allowing for a lower thermostat setting.
- Unlike forced air, radiant floor heat is silent, and no heat is lost in air ducts.
- Radiant floor heat makes it easier to create controlled heat zones, which means less wasted heat. The thermostat can be

used at a lower setting and provides more comfort.

- With installation of radiant floor heat, concrete will retain heat for a long time after heat is turned off.
- Radiant floor heat works well under ceramic and porcelain tile, stone, and marble because they conduct heat well and don’t expand or contract, so they’re resistant to cracking. These non-porous materials are often used in bathrooms and kitchens rather than carpet because they’re waterproof but are cold to the feet if not heated.
- For people with allergies, radiant floor heat is better than forced air heat because there’s no moving air to stir up dust and other allergens. Also, hard surfaces don’t retain dust.
- Radiant floor heat improves comfort and mobility because it heats joints and

bodily fluid directly.

- With radiant floor heat, no floor or wall space is taken up as it is with radiators, air vents, a fireplace, or wood stove. This also allows more flexibility in arranging furniture, since there’s nothing to be blocked.

DISADVANTAGES OF RADIANT FLOOR HEAT

- Radiant floor heat is slower to heat spaces.
- Heavy carpet doesn’t as work well with radiant floor heat because it’s not a good heat conductor. It acts like an insulator blocking heat distribution, although this can be overcome with system design.
- With radiant floor heat, caution needs to be used when installing a nailed-down floor, such as a hardwood floor because nails that are too long or misplaced could

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damage wires used for electrical radiant floor heat or puncture water tubes used in hydronic radiant floor heat.

- Radiant floor heat may have a higher upfront installation cost than a furnace.
- Hydronic radiant floor heat requires pumps, valves, and other parts that require periodic maintenance.
- With radiant floor heat, any needed repairs may be expensive because the systems are located within the floor and are not easily accessible.
- A conventional central air conditioning system relies on ductwork, which isn't used for radiant floor heating, so a separate cooling system might need to be used when relying on radiant floor heat.
- In a room with a large window or many windows, passive solar heat might overheat a room with radiant floor heat. The fluctuating nature of solar heat may make it hard to regulate temperature in a room with radiant floor heat.

ELECTRIC RADIANT FLOOR HEAT VS. HYDRONIC FLOOR HEAT

The two most common types of radiant floor heating systems



are electric and hydronic. Each has pros and cons that should be carefully considered. The following section points out the advantages and disadvantages of each.

ADVANTAGES OF ELECTRIC RADIANT FLOOR HEAT

- Electric systems are less expensive and faster to install.
- Electric systems can create zones for individual rooms and smaller areas, such as kitchens, bathrooms, bedrooms, and offices. This makes it easier to heat just the areas needed, and timers or programmable thermostats can be used to fine-tune heating even more to reduce electricity use and cost.
- Electric systems are better suited for homes than for agricultural and commercial structures.
- Electric systems heat a floating floor faster than hydronic systems heat a concrete slab because, normally, electric cable is added directly under the tile.

DISADVANTAGES OF ELECTRIC RADIANT FLOOR HEAT

- Electric systems are more expensive to run.
- Electric systems are less efficient and effective for large spaces.
- Electric systems don't hold heat as well because the floor materials they heat dissipate warmth faster.

ADVANTAGES OF HYDRONIC FLOOR HEATING

- Hydronic systems cost less to run and are more cost-efficient to heat per square foot.
- Hydronic systems are more efficient and economical for heating larger areas and whole buildings.
- Hydronic systems embedded in a concrete slab hold heat longer.
- Hydronic systems are commonly used to melt snow and ice on walks and driveways.

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DISADVANTAGES OF HYDRONIC FLOOR HEAT

- Hydronic systems are more complex and require more hardware, so they're slightly more expensive and time-consuming to install.
- Hydronic systems need a boiler system, which means there must be adequate space for the system to be installed.
- Hydronic systems need regular maintenance, which adds more cost.

DECIDING ON THE BEST OPTION

A customer who has decided on radiant floor heat may need help choosing between electric or hydronic floor heat. Warmup, a manufacturer of radiant floor heat products, has an online decision-making flowchart that can help. Find the chart at warmup.com/blog/which-underfloor-heating-is-best-for-me.

WET INSTALLATIONS VS. DRY INSTALLATIONS

Both types of radiant floor heat systems — hydronic and electric — can be classified as either wet installation or dry installation.

WET INSTALLATIONS

Wet installations are those in which the hydronic water tubes or electric wires are embedded in wet concrete, floor leveling compound, or thinset, which then dries and cures. Heat is transferred directly from the water tube or wire into the material, which in turn heats the floor. Because of the density of the material, it heats slower but holds heat longer.

DRY INSTALLATIONS


In dry installations, the water tubes or electric wires are typically placed in a cavity between plywood or other structural materials, leaving an air space around the tubes or wires. The tubes or wires heat the air, which then heats the floor. However, some companies place water tubes in an aluminum plate to help dissipate the heat and diffuse it more evenly throughout the floor. This type of system, with less thermal mass than concrete, heats faster, but doesn't hold heat as well, so it cools faster. It also needs higher heat to reach and sustain the desired temperature. **RB**


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
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Be Aware of BOI

5 Fast Facts About Beneficial Ownership Information Reporting

Key Insights

The Corporate Transparency Tax Act is designed to help the U.S. government collect information to prevent use of the U.S. financial system for illicit activities.

All domestic entities and any foreign entity registered to do

business in the United States must report beneficial ownership information.

The reporting is complex and there are penalties for non-compliance. Be aware of your BOI reporting requirements.

Many businesses must soon report new beneficial ownership information (BOI) to the U.S. government. Our earlier article [<https://blogs.claconnect.com/realestate/beneficial-ownership-information-reporting/>] covered a high-level overview of BOI reporting requirements, and now we're sharing important updates to help you clarify your responsibilities. Read on for five fast facts.

BACKGROUND

In 2021, Congress enacted the Corporate Transparency Tax Act (CTA), which establishes uniform BOI reporting requirements for certain types of corporations, limited liability companies, and other similar entities created in or registered to do business in the United States.

The CTA is designed to help the U.S. government collect information necessary to prevent bad actors from using the U.S. financial system to facilitate money laundering, tax evasion, human and drug trafficking, and other illicit activities.

The CTA authorizes the Financial Crimes Enforcement Network (FinCEN), a bureau of the U.S. Treasury, to collect and disclose BOI information to authorized government authorities and financial institutions. Since CTA's enactment, FinCEN has issued implementing regula-

tions — the basics of which are discussed briefly below.

CliftonLarsonAllen will not advise on or assist with BOI reporting preparation. We recommend that you reach out to your attorney for assistance in complying with these filings.

Reporting companies created or registered to do business before January 1, 2024, must file initial BOI reports with FinCEN on or before January 1, 2025.

5 FAST BOI REPORTING FAQs

1. What companies will be required to report BOI to FinCEN?

All domestic entities and any foreign entity registered to do business in the United States. Entities subject to BOI reporting include a corporation, limited liability company, or any other entity created by the filing of a document with the secretary of state or similar office in the United States.

2. Are there exemptions from BOI reporting?

Yes, FinCEN notes 23 BOI reporting exemptions.

Perhaps the most common exception to BOI reporting is the large operating company exemption. Generally, a company meets this exemption if it has at least 20 full-time employees, more than \$5 million in gross receipts or sales, and an operating presence at a physical office within the United States. For purposes of the \$5 million threshold, the threshold is measured as gross receipts or sales net of allowances on Forms 1120, 1120-S, 1065, or other equivalent tax return. It should be noted, however, that the 20-employee threshold is not applied on a consolidated basis. As a result, a parent company filer of a con-



solidated C corporation tax return must itself have 20 or more full-time employees to meet the large operating company exception.

Other exemptions apply to Section 501(c)(3) tax-exempt entities and certain types of regulated financial companies.

3. When does BOI reporting start?

Reporting companies created or registered to do business before January 1, 2024, must file initial BOI reports with FinCEN on or before January 1, 2025. Reporting companies created or registered to do business on or after January 1, 2024, will have 90 days from creation or registration to file their initial BOI reports. Any changes to previously reported BOI must be reported to FinCEN within 30 days.

4. What information does a reporting company disclose to FinCEN?

A reporting company must report:

- Legal name
- Any trade, doing business as, or trading as names
- The current street address of its U.S. place of business, jurisdiction of formation or registration
- IRS taxpayer identification number
- Type of BOI filing (i.e., initial report, a

correction of a prior report, or an update to a prior report).

In addition, for each individual who is a beneficial owner or company applicant, the reporting company must report:

- Individual's name
- Date of birth
- Address
- Unique identifying number from an



The Financial Crimes Enforcement Network has published the brochure "An Introduction to Beneficial Ownership Information Reporting," which can be downloaded at <http://tinyurl.com/3und37eh>.

acceptable identification document (e.g., driver's license, passport, etc.)

- Name of the state or jurisdiction that issued the identification document.


A beneficial owner is an individual who either directly or indirectly (1) exercises substantial control over the reporting company (e.g., a senior officer or key decision-maker), or (2) owns or controls at least 25% of the reporting company's ownership interests. A corporate entity owner is "looked through" to its ultimate owners for purposes of determining the 25% ownership test.

Although not required, many filers are encouraged to obtain FinCEN identifiers to help facilitate filing this information.

There is no fee to file BOI reports with FinCEN.

5. Are there penalties for failing to file BOI reports with FinCEN?

Yes, be aware of BOI filing penalties. A person who willfully fails to comply with BOI reporting may be subject to civil penalties of \$500 per day and criminal penalties including a \$10,000 fine and/or up to two years of imprisonment. **RB**

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VENTILATION FOR LIVESTOCK BUILDINGS

With any type of building, ventilation is an important factor. When that building is inhabited by livestock or people, then ventilation becomes even more important. While the usual custom for people in buildings might be relatively low density, livestock can be a different story. When there is a high density of livestock, adequate ventilation needs to ensure that there is no accumulation of dangerous gases, while also retaining or releasing heat and releasing water vapor.

Depending on the type of animals, density of animals, manure handling, and bedding use, the needs for ventilation will change and thus dictate how aggressive the ventilation system needs to be. Old barns with cupolas show one of the ways that ventilation was used in multiuse (hay storage, animals, equipment) buildings in the past. These old barns usually had only a few animals in them and were mostly for storage of equipment and hay, so they had relatively low ventilation requirements. Today's livestock operations often need a bit more.

Make no mistake, there is no better ventilation than fresh air and sunshine, as that is what most animals are adapted to, but this may not be achievable in all climates or circumstances, especially where high productivity is concerned. Getting as close to this ideal of fresh air and sunshine as possible should be the goal with any livestock building. This said, there are



Old barns with cupolas show one of the ways that ventilation was used in multiuse (hay storage, animals, equipment) buildings in the past. These old barns usually had only a few animals in them and were mostly for storage of equipment and hay, so they had relatively low ventilation requirements. Today's livestock operations often need a bit more.

a variety of ways to move air through a building to accommodate the ventilation needs of livestock. The range of possible ventilation methods varies from passive to active (mechanical) and centralized to zonal. Ventilation systems may use aspects of all these approaches and may be computerized and automated as well.

Bedding and manure handling will affect the accumulation of ammonia in a building and dictate some aspects of the ventilation system. If manure is flushed or quickly removed from a building, this may be less of an issue, but where bedding is used and manure may accumulate, it's

important to control the accumulation of ammonia. Controlling ammonia is likely more important in poultry than other animals, although hogs may be a close second. Adequate bedding use can reduce the amount of ammonia produced by manure and urine, but it isn't likely to completely eliminate it. As such, some ventilation may help.

While all of this may seem complicated, the good news is that there are folks who research the needs for livestock ventilation and package that information for easy use. The quickest way to find the information needed is likely from a state's exten-

sion service. They list recommendations for a variety of types of livestock as well as some different approaches for active or passive ventilation.

A quick example from South Dakota State Extension with calving barns shows that with 40 cow calf pairs in a building, an active ventilation system needs to move 2,040 cubic feet of air per minute (CFM). This information helps determine the size and number of fans to use. Then a decision must be made to use ventilation that's crossflow (side to side in the building) or tunnel (along the long axis of the building).

Alternatively, the extension says that natural ventilation could be used by incorporating 2" of continuous ridge vent opening for every 10 feet of building width, along with 1 inch of continuous eave opening for every 10 feet of building width on each side wall. That's really moving a lot of air! To put this in perspective, the University of Wisconsin Extension suggests that the air in a dairy barn should be replaced every 15 minutes in the winter and every 1 to 1.5 minutes in the summer. Again, that's a lot of air movement!

Because of the varying needs of ventilation between seasons, it's ideal to have an approach that can really control between large ventilation rates and slower ones. This can be done with many fans that can be turned on and off or with a few fans and the addition of side curtains (or doors and windows) that can be opened when there are larger ventilation needs.

When designing a building and ventilation system, some important considerations are energy reliability and cost and the location. If natural ventilation can be used in the building design, then there won't be a recurring cost of energy or a potential disaster if power is lost.

The location, however, could prevent the ability to rely completely on natural (passive) ventilation. If the building site



A high value or more sensitive operation on the farm (think babies) might dictate greater control and a more active system, while a less sensitive livestock population (adults or larger animals) or life stage might allow for a passive or natural ventilation system.

is blocked from prevailing winds, then it likely can't rely on just natural ventilation. Additionally, there is a drawback to natural ventilation in that there is less control and, thus, it may sometimes overventilate (think too much airflow and thus heat loss in the winter) or underventilate (on a hot, still day).




When there is a high density of livestock, adequate ventilation needs to ensure that there is no accumulation of dangerous gases, while also retaining or releasing heat and releasing water vapor.

Putting all this together is why it's really common to see a variety of ventilation systems on farms and even a variety of systems on a single farm. A high value or more sensitive operation on the farm (think babies) might dictate greater control and a more active system, while a less sensitive livestock population (adults or larger animals) or life stage might allow for a passive or natural ventilation system.

The greatest utility comes from hybrid

systems that can be adapted. A building designed for natural ventilation with side curtains (or doors or windows) and exhaust fans offers the most flexibility for any particular ventilation need. If this is used in a very large building, it can be taken a step further and allow for zonal ventilation control with multiple side curtains, internal baffles (big hanging curtains), and fans or banks of fans that can be individually controlled. A zonal system like this makes it possible to have one large building while optimizing the conditions for different ventilation needs for different groups of animals and keep down energy costs at the same time.

Whatever ventilation system is used, it's very important that the efficiency of the system is maintained. Dirty fans or vent louvers and clogged vents won't do the job they were designed to do. All parts of the ventilation system need to be kept clean and clear and fans should be kept operating properly (no loose belts). Take note of any condensation, mold, or other moisture issues as these are indicators that something isn't going as it should in the ventilation system. **RB**

 Check out Rural Builder Magazine online: www.ruralbuildermagazine.com



Breathe Easier: Fans on the Farm

Clearing the Air on the Attributes and Advantages of Ag/Rural Building Fans

Agricultural/rural building fans aid production, reduce energy costs, and improve air quality. Ventilating down, up, and out in all directions with fans keeps air fresh and helps people and animals feel more comfortable. Fans enhance ventilation in agricultural structures by removing stagnant air, humidity, and airborne pathogens while reducing the risk of mold and disease development. They lower the risk

of heat stress and maintain temperatures for optimal crop growth and increased animal production. Increased airflow helps keep flies off animals and also keeps crop infestations at bay.

FAN TYPES

Pressurizing fans will force fresh air into the structure and aid in removal of heat, humidity, and noxious gases. Recirculation fans create airflow at various

speeds depending on temperature and bring fresh air to the animal-occupied zone. Exhaust fans can remove heat, humidity, and noxious gases by causing a pressure differential between outside and inside the facility.

“High-volume, low-speed (HVLS) fans are one of the three main recirculation-type fans,” said Dr. Mike Wolf, consulting veterinarian, VES-Artex. “They come in various diameters and depending on the



space to mount them will determine the diameter to be used. They destratify the air layers by mixing air vertically. Hot air tends to be high and cold air is low; this helps even out the temperature gradient. They also create velocity at the floor level, but the width of the pattern at floor level is easily disrupted by any objects or animals close to the floor. They can be run at variable speeds.”

Fans can be installed or portable. With a portable fan used for cooling, Nicholas Wilson, ventilation territory manager for Canarm AgSystems/Faromor said, “Most of the time, the producer will likely be behind the ball getting it in place and turning it on before an animal feels heat stress, ultimately affecting growth. When fans are permanently installed and wired with a thermostat, the thermostat triggers the moment heat reaches a point that could start the process of heat stress and eliminating future health problems.”

Michael Lavender, regional sales manager, at Hunter Industrial & Commercial said the major differences in fans for rural/ag buildings lie in their design and purpose. “HVLS fans stand out due to their ability to move large volumes of air at low speeds, providing consistent and



gentle airflow with minimal noise. In contrast, circulation fans, like barrel fans, operate at higher speeds, creating a more

targeted airflow and generating a lot of noise. Builders need to consider the size, layout, and purpose of the building when choosing between these fan types.”

Wilson cited a situation where he was group penning dairy cows. “We tend to use HVLS, as the downdraft and mushroom air pattern will fill a large open area. When looking at long rows of side-by-side stalls, a 54” panel fan every 50 feet would blow air directly across the back of the cows. The focus of circulation in dairy is for hot weather cooling. In a poultry building the size, shape and height of a building differs from other animal housing. We direct the air through the barn, creating velocity cooling and will also mix the air for equal heat spread in cooler weather.”

INSTALLATION TIPS

Correct fan installation in rural/ag buildings involves strategic placement to optimize layout. Builders should also be aware of the type of building, size (including ceiling height), available power to operate selected fans, and application use. Lavender said to ensure successful fan installation, correct mounting heights and spacing is crucial. “Consulting with manufacturers or experts can provide valuable insights into the ideal





fan configuration for specific agricultural settings.”

Wilson agreed that working with a reputable manufacturer or dealer will provide the builder with a plan for fan placement. He said the key is “keeping the job moving and getting to completion sooner. [This] is always better than waiting for your customer to choose fans and tell you where to place them.”

Fans selected for ag/rural applications must be mounted at OSHA required heights. “This height must not cause restriction of air flow to the fan’s inlet,” Wolf said. “The fan should be 1.5 times the fan’s diameter from any restriction to optimize intake flow. The structure must be capable of withstanding the additional weight to the roof members. Installation costs are generally lower for larger fans since fewer labor units are needed and wiring costs are also reduced.”

UPSELLING FANS

There are opportunities for rural/ag builders to upsell fans and general air movement. One of the most obvious is emphasizing the long-term cost savings and improved air quality that HVLS

fans bring to agricultural environments.

“Improvements in energy-efficient motors, variable speed controls, and materials of construction are several ideas to consider,” said Glen Kelly, regional sales manager at Patterson Fan Co. “With the use of stainless steel, galvanized steel, and high-impact polypropylene housings, you can expect fans to perform better in harsher environments.”

Wolf said to best upsell fans, builders should know the purpose of the building because the ventilation options depend on this purpose. “Is it a farm shop that needs air exchange for noxious fumes in one area for painting or welding? Is it to redistribute HVAC throughout the worker zone? Is a heat exchanger needed to conserve HVAC energy? If it’s for animal housing, what type of animal species, breed, production purpose, age group, and anticipated numbers of animal units are to occupy the structure? Having a more complete equipment offering allows selling a package deal. It is highly advisable to work with a reputable equipment supply company that understands the type of building you intend to construct. Understanding where it’s located, local weather

Ag/Rural Fans and Energy Conservation

Strategically place HVLS ceiling fans throughout an agricultural facility and turn them on at a slow speed in the forward direction. The warm air trapped near the ceiling will circulate down to the facility’s floor, creating a comfortable workspace for employees. These large ceiling fans work to bring down the lost heat near the ceiling toward the facility floor, without creating a chilly breeze. Over time, a continuous mixing of air will promote a more uniform temperature profile from floor to ceiling... this is known as destratification, and is the key to lowering heating costs in the winter. More warmth at floor level means thermostat set points are maintained for longer intervals. Heating cycles shorten in both frequency and duration, adding dollars back to your bottom line. Realized savings could be 25-30% or more!

—Glen Kelly, regional sales manager at Patterson Fan Co.





conditions, and how the barn is oriented will affect ventilation challenges and solutions.”

Wilson said include a complete ventilation package in your building proposals. “Including circulation fans can elevate your company to turnkey operation status. When you connect with a manufacturer or dealer to help properly size any ventilation system, your building proposal can increase and reduce stress to the customer who will inevitably have to pick a ventilation system at some point anyway.”

Showcasing fan advancements is a way to upsell. Kelly said recent fan developments are the cost and availability of variable speed motors and controllers. “This allows the fans to be controlled and operated at a desirable speed to meet certain application requirements, such as maintaining a specific humidity level in the space.”

Wolf agreed the movement to direct drive DC motors, which eliminate belts, pulleys and tensioners, is an important design advancement. “[This] greatly reduces maintenance costs; higher motor efficiencies are common. Sophistication of control units is becoming necessary but at lower costs.”

Advancements in smart fan technologies with automated controls offer improved energy efficiency. These innovations address the challenges of temperature control, ventilation, and energy conservation in rural/ag buildings. The trend toward sustainable and eco-friendly solutions is gaining momentum, with fans designed to reduce energy consumption and environmental impact. Lavender said his company’s HVLS fans have intuitive controls that allow users to manage a network of fans all from one location, and automatically adjust for temperature changes.

Older ag fans that have had years of wear and tear negatively affect efficiency and create much higher energy costs. When fans cease to operate properly and safely, you’ll want to replace and then upsell them. “It’s always good practice to re-evaluate the use of the space, in case any changes have occurred within your facility, to select the best fan for that application,” Kelly said. “We recommend hiring a qualified electrical or mechanical contractor to perform the replacement work. Fans that are 30-plus years old should be replaced with equipment that has become more energy efficient.” **RB**

Resources

Canarm AgSystems/Faromor
Brockville, Ontario, Canada
(800) 267-4427
www.canarm.ca

Hunter Industrial & Commercial
Smyrna, Tennessee
(844) 691-3267
www.hunterfan.com

Patterson Fan Co.
Blythewood, South Carolina
(803) 691-4750
www.pattersonfan.com

VES-Artex
Chippewa Falls, Wisconsin
(888) 622-2999
www.ves-artex.com



How to Store and Install Structural Insulated Panels (SIPs)

The award-winning Neuman Farm Shop project in Cottonwood, Minnesota. This multifunctional agricultural facility, designed for farm equipment storage, maintenance, and repair, uses SIPs for both walls and roofs.

After years of urban migration, rural America is experiencing a surprising reversal. According to the U.S. Department of Agriculture's Economic Research Service report, "Rural America at a Glance (2023 edition)", nonmetropolitan counties saw a surge of over 684,000 new residents from mid-2020 to 2022. This marks a significant shift from the previous decade's near-zero growth rates. Many factors can be attributed to this move. Declining poverty rates and an increase in job opportunities within these areas are making them more attractive. Additionally, the post-pandemic rise of remote work has allowed many city dwellers to embrace a more rural lifestyle, which offers greater space and a potentially lower cost of living.

This shift presents a golden opportunity for builders and contractors in the region but also some challenges. It can translate to more work but they will need to meet the growing need for infrastructure and housing while navigating a national labor shortage. Adding to this complexity, the emphasis on sustainable construction practices and stringent building standards demands innovative solutions. Rising to the challenge, many professionals are putting advanced and efficient construction methods to the test.

Builders and contractors in rural America are increasingly turning to the tried-and-true Structural Insulated Panels (SIPs) to help them build faster while also elevating their building's performance. A forward-thinking approach to construction, SIPs are engineered panels featuring a rigid foam insulation core sandwiched between structural facings, typically oriented strand board (OSB). Incredibly versatile, SIPs can be used in walls, roofs and floors in large sizes up to 8 feet x 24 feet and in thicknesses ranging from 4-½ inches to 15 inches, meeting varied project requirements.

UNLOCKING INSTALLATION EFFICIENCY WITH SIPs

Manufactured under factory-controlled conditions, SIPs offer a distinct advantage over traditional stick-built methods. One of the most compelling benefits of SIPs is their ability to expedite construction. Unlike traditional methods that require on-site framing, SIPs arrive prefabricated, ready for immediate installation. This significantly reduces framing time, translating to faster project completion.

This level of efficiency was on display during the construction of the award-winning Neuman Farm Shop project in Cottonwood, Minnesota. This multifunc-

tional agricultural facility, designed for farm equipment storage, maintenance, and repair, uses SIPs for both walls and roofs. The prefabricated nature of SIPs streamlined the construction process, helping the building team bring the project to completion one month ahead of schedule. The time efficiency translated to significant cost savings on labor and overall project expenses.

LEVERAGING SIPs TO CREATE A VIRTUALLY AIRTIGHT BUILDING ENVELOPE

While speed is a major benefit, there's another reason SIPs are becoming increasingly popular in rural areas: energy efficiency. This is a key factor for professionals building in counties experiencing temperature extremes, from the scorching summers of the Midwest to the harsh winters of the North. Unlike traditional construction practices that can succumb to thermal bridging, SIPs' composite makeup minimizes air leakage and heat transfer.

When the Department of Energy's Oak Ridge National Laboratory (ORNL) tested a SIP building with a stick-framed building, it found the SIP structure was 15 times more airtight. Consequently, SIP structures can achieve stable interior environments and superior thermal per-

formance, regardless of the climate outside. This leads to significant energy and cost savings on utility bills throughout the year. SIP structures' air impermeability is also beneficial in rural areas that have higher concentrations of dust, pollens and other allergens from surrounding fields and farms. The airtightness also keeps unwanted farm odors (manure or burning smells) from entering the building, helping builders create a cleaner, healthier and more pleasant environment inside.

By tapping into SIP's ability to create a high-performing envelope, builders and contractors can showcase their commitment to environmental responsibility, attracting clients seeking energy-efficient structures. This is exactly what the project team at the Neuman Farm Shop did. They capitalized on SIPs' superior insulation properties to ensure energy efficiency while providing the desired temperature stability year-round and occupant comfort.

HOW TO HANDLE AND STORE SIPS

To fully realize the performance potential of SIPs, proper handling and storage throughout the construction process is critical. Here are some best practices for rural builders and contractors to keep top of mind:

- **Handling:** SIPs come in various sizes and their weight can vary accordingly. While smaller SIPs can be handled with manpower alone, larger ones require a crane or forklift for safe and efficient movement. Plan deliveries and have the necessary equipment on hand to avoid any potential damage during unloading.
- **Organizing:** For a smooth and efficient building process, keeping SIPs organized is important. Dedicate a level storage area and arrange SIPs by floor or section for easy identification and retrieval when needed. Ensure all identifying marks or labels are readily visible when stacking SIPs.
- **Protecting:** If left unattended, SIPs are susceptible to damage from rain, snow, and extended sun exposure. This can compromise their insulative properties and structural integrity. To prevent this,

never store SIPs in direct contact with the ground. Elevate them on a level surface using appropriate support structures (ensure 3-inch ground clearance) and always cover them with a loose tarp or sheet of poly when stored on-site.

- **Supporting:** When storing SIPs, the number of support points depends on their size. Use two stickers for eight-foot-long SIPs. Longer SIPs (12-16 feet) require three support points. For even greater lengths, maintain a maximum distance of six to eight feet between support points to prevent sagging and potential damage.

HOW TO INSTALL SIPS RIGHT

Installing SIPs correctly is central to achieving an air-tight envelope. Here are some common considerations for contractors and builders:

- **Set Wall Plates Carefully:** Because SIP facers provide the strength for SIP walls, it is crucial to fully support SIPs with sill plates, typically attached to the building's foundation. During installation, slip or slide the SIP over the bottom plate and ensure that both sides of the outer OSB edges at the bottom of the SIP are adequately supported on the sill plate.
- **Capillary Break:** Create a capillary break between the bottom edges of the SIP and the concrete foundation underneath to prevent moisture transfer.
- **Install in Sequence:** Install SIPs in a designated order. Mark sill plates beforehand to indicate where SIP edges should fall. When setting walls and roofs, it is recommended to start from corners or valleys and work outwards. This approach prevents contractors from getting stuck in a corner later in the process.
- **Corner Management:** At wall corners, there will be situations where one SIP "stops short" and the other "flies by". Be sure to distinguish between the two to ensure both walls have the correct final length or one wall will be too long and the other too short.
- **Cut Precisely:** Exercise extreme caution when cutting SIPs. For instance, never make horizontal cuts on SIP wall facers for electrical wiring installations. Similarly, consult a SIP manufacturer before making

any cuts to roof or floor SIP facers.

- **Seal Right:** SIP joints must be thoroughly sealed to ensure there is no air infiltration from the outside or exfiltration from the inside. To deliver efficient results, it is crucial to follow the manufacturer's recommended joint sealing techniques. Experts recommend sealing the joints with proper flashing and sealants as you work, especially around rough openings and penetrations.
- **Accommodate Services:** While installing plumbing within interior SIP walls, furr out sections to make space for pipes, if necessary.
- **Pest Control:** For a lasting structure, install standard deterrents such as insect clips and flashing to resist termites and carpenter ants.

BUILD FASTER AND SMARTER WITH SIPS

SIPs represent a powerful tool for builders and contractors navigating the evolving construction landscape. Their ability to expedite construction, enhance energy efficiency and promote sustainable building practices makes them a game-changer in meeting the need for infrastructural development and housing in rural areas. By embracing SIPs, builders and contractors can not only meet the growing needs of rural communities but also establish themselves as leaders in efficient and sustainable construction.

ABOUT THE AUTHOR

Jack Armstrong is the Executive Director/COO for the Structural Insulated Panel Association (SIPA). He's been on the SIPA board since the mid-2000s and transitioned to leadership in 2014. Jack worked for the BASF chemical company for 24 years, focusing on energy efficiency and durability for sustainable construction in the built environment. Jack grew up riding horses in the rural countryside on his family's 600-acre Angus cattle ranch outside of Hugo, Oklahoma. He can be reached at jack@sips.org. **RB**



BY RURAL BUILDER STAFF

■ METALCON UNVEILS 2024 KEYNOTE SPEAKER LINEUP

METALCON, the only global event dedicated exclusively to the application of metal in design and construction, has announced its keynote speakers for this year's annual conference and tradeshow in Atlanta from Wed., Oct. 30 – Fri., Nov. 1, 2024.

Former National Football League Most Valuable Player and Super Bowl Champion quarterback, Joe Theismann, joins us this year as the keynote speaker on Wed., Oct. 30 at 9 a.m.

In his keynote, Theismann outlines the game plan that brought him success, both on and off the field. As an entrepreneur and the former star quarterback for the Washington Redskins, he reveals his Game Plan for Success by drawing parallels between winning in football and in business.

Then, on Thurs. Oct. 31 at 9 a.m., Dr. Anirban Basu, Chairman & CEO of Sage Policy Group, Inc., a Baltimore-based economic and policy consulting firm, presents The Good, The Bad, & The Ugly: Financial Outlook and Trends for Metal Construction.

Named one of Maryland's 50 most influential people by Maryland newspaper, The Daily Record and one of the region's 20 most powerful business leaders by the Baltimore Business Journal, Basu will provide and in-depth analysis of major factors

shaping economic outcomes, including interest rates, global geopolitical conflict, wage dynamics, business confidence, demographics, rising consumer debt levels and a presidential election — all conspiring to produce an economic downturn in 2025. He will provide a forecast for the coming year, highlighting the major risks that construction industry stakeholders will likely encounter and if 2025 should be a good year for the metal construction and design industry.

For more information or to register, visit metalcon.com.



Perry Wilson, master carpenter and founder of If I Had a Hammer, working with youth to improve their math skills.

■ NCCER AND IF I HAD A HAMMER, INC. PARTNER TO BOOST MATH COMPREHENSION

The National Center for Construction Education and Research (NCCER) and If I Had A Hammer, Inc. have partnered to expand access to the HammerMath® and HammerBuild® programs aimed to increase math comprehension through en-

gaging applied math education, exercises and projects. Statistics show declining math scores amongst secondary students nationwide including a reported 7-point decrease in average test scores during the 2022–23 school year for 13-year-olds. In addition, the Northwest Evaluation Association has stated math performance among elementary and middle-school students has fallen by 6 to 15 percent below pre-pandemic growth rates.

This partnership aims to shift the downward trend by providing NCCER-accredited high schools with free access to the online HammerMath learning platform and HammerBuild. The HammerBuild is an immersive educational experience where students build a small house in one day while learning the value of applied math, goal setting, teamwork, and workforce skills. The beauty of the house is that once it is built the first time, it can be taken apart and built again and again to engage more students and help them better understand math concepts.

Both programs were developed by master carpenter and entrepreneur Perry Wilson. Wilson struggled with dyslexia in school but found success in learning math on the job and has been bringing those practical skills to the classroom for over 30 years.


“I failed the fifth grade and barely made it out of high school due to dyslexia,” says Wilson. “I became a carpenter, and construction changed my life! When I worked with math on the job instead of taking math in the classroom, I got it! It’s also important to me that all students understand the world of opportunities available in the construction industry, from carpenters to drone operators to underwater welding to design; the opportunities are endless.”

Through his company, If I Had A Hammer, Inc., Wilson has already impacted over one million students from K-12, adults, and justice-involved individuals in the U.S., Canada, and Puerto Rico. His approach was recognized by The New York Times as one of the top new education programs in the country, and a study by the University of Kentucky found that





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students using HammerMath scored at the 99th percentile in math gains on the National MAP test. Now NCCER wants to bring this success to construction classrooms across the country by offering it with their Core and Carpentry programs.

“The HammerMath system not only makes learning critical math skills more accessible but also encourages young people to explore construction career paths,” says NCCER President and CEO Boyd Worsham. “Students are the future of our industry, and we are proud to offer this additional learning solution to our accredited high schools at no cost. Every student should know how to read a tape measure — it’s the most universal tool in our industry.”

For more information, visit ifhadahammer.com.

■ WICK BUILDINGS TO BUILD NEXT GENERATION FACILITY IN MAZOMANIE, WISCONSIN

Wick Buildings, Inc. will break ground on a new production and office complex on June 6, 2024. The property is located on the western edge of Mazomanie at 425 Wick Drive, just off of Highway 14, and is expected to be completed and occupied starting the summer of 2025.

Consolidating multiple production and warehouse units into a single 90,000 square foot production facility and 12,000 square foot warehouse will allow Wick Buildings to achieve improved production efficiencies, better logistics and simplified material handling. The attached 15,000 square foot two-story office will provide innovative workspaces for a cross-functional team of employees.

“While our current campus has served Wick well over the years, we are looking forward to the growth and innovation a state-of-the-art production and work environment will bring,” said Allan Breidenbach, president and general manager of Wick Buildings, Inc. “John F. Wick started this company 70 years ago in Mazomanie. It seems only fitting to break ground this year on a facility that will launch us into

the next 70 years, and will be located on Wick Drive in Mazomanie.”

“As a majority employee-owned organization, our team takes pride in delivering high quality products and customer satisfaction on each and every job we deliver, and they are thrilled to know that we will be working out of a facility that will ensure we can do that for years to come,” adds Breidenbach.

In continuous operations since 1954 and with more than 80,000 buildings completed, Wick Buildings provides post-frame structures for agricultural, dairy, equine, residential, personal storage, municipal, commercial, and light industrial markets. Wick Buildings are sold by independent builders and built by independent builders and Wick crews who live and work in their local communities. Allan Breidenbach joined Wick Buildings in November 2018 as president, having spent his career in a variety of leadership positions in construction and construction materials companies.

■ PROVIA PARTNERS WITH FLEXSCREEN

ProVia, a leading building products manufacturer based in the heart of Ohio’s Amish Country, proudly announces its partnership with FlexScreen as a licensee. With over 47 years of industry expertise, ProVia is renowned for its unwavering commitment to quality, service, and atten-

tion to detail, making this collaboration a natural fit for both companies.

FlexScreen, the innovative pioneer in window screen technology, has revolutionized the industry with its flexible and durable screens. Under this partnership, ProVia will integrate the manufacturing of FlexScreen products at its window manufacturing facility, further enhancing its ability to deliver superior quality and meet customer demands promptly.

“At ProVia, our vision is to be the premier building products manufacturer, providing unmatched quality and service,” said Freddie Miller, Vice President of Supply Chain at ProVia. “We knew we had a winning product that customers would love with FlexScreen, and this licensing agreement enables us to vertically integrate product manufacturing at our window facility. This partnership increases our ability to meet customer lead time commitments and take quality control to the next level.”

FlexScreen Inventor and CEO Joe Altieri expressed his delight regarding the partnership, stating, “We are so happy to collaborate with a great company like ProVia. They are known for their integrity, quality, and dedication to fostering a positive work environment. We have a shared commitment to innovation, and it’s an honor to partner with them. I look forward to all that we will accomplish together.” **RB**

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If your company has developed a new product for builders or contractors, email a new product announcement to one of the contacts listed below for possible publication in our business-to-business magazines.

Include a clear, high resolution image of the product (no logos or advertisements), along with a brief description of your product and the problems it solves.

Submission is not a guarantee of publication. We reserve the right to edit all submissions for content, length, and clarity.



Metal Roofing Magazine; Frame Building News; Roofing Elements Magazine; Rollforming Magazine:
Karen Knapstein – karen@shieldwallmedia.com • 715-513-6767

Rural Builder; Garage, Shed & Carport Builder:
Dan Brownell – dan@shieldwallmedia.com • 920-264-0787

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NEW PRODUCTS



S-51 Unwells New Clamp for Riverlock Profiles
 S-51, the inventor of engineered, manufactured, metal roof attachments, introduced its new S-5-RC™ clamp for attaching a wide range of roofing accessories to the Riverlock™ metal roof profile. The two-piece design of the S-5-RC interfaces with the rib geometry and creates a mechanical interlock strong enough to mount most rooftop applications with certified holding strength, protecting the roof from corrosion and preserving the metal panels' thermal cycling characteristics. Applicable for small- and large-scale industrial, commercial and institutional projects, the clamp can be installed anywhere along the seam for placement flexibility. Installers can utilize the S-5-RC with rails or pair the clamp with the S-51 PVKIT™ solar solution for streamlined rail-less and penetration-free solar mounting to save time and money. Made of high-tensile structural aluminum to match Riverlock's long-lasting performance, the S-5-RC requires no maintenance or reinspection and is warranted for the life of the roof.

New Stanley's Control-Lock™ Tape Measures
 Stanley has released the new Control-Lock tape measures that feature an integrated finger brake, providing users with maximum control and protection when extending and retracting the blade. Coming in lengths of 12, 16, 25, 26, and 30 feet, they're made to reach out to 12 feet. Features listed:
 • An integrated finger brake that provides improved control of the blade when measuring and retracting



Malco Products Expands Line of C-RHEX Drivers
 Malco Products, SBC, one of the nation's leading solution developers and manufacturers of a variety of high-quality tools for the building trades, today launched an extension of its line of award-winning, Clearable, Reversible Magnetic Hex Drivers: the Building Construction Series, which features deeper sockets for installing fasteners with higher head heights such as concrete anchors, pole barn screws and other common fasteners for roofing, siding and gutter applications. The C-RHEX Building Construction Series models are available in six lengths from 2" through 12". Reversible 1/4" and 5/16" hex sockets allow for quick changes between sizes, and the Building Construction Series drivers are designed to work effectively with painted fasteners, as well as specialized pulls in the internal sockets prevents fastener sticking. End-users can save valuable time and effort by having access to two reversible hex sizes in one driver with color-coded grooves for easy identification. These drivers are built with S2 hardened steel



Bosch: New Cordless Rotary Hammer Has Corded Power
 Bosch has released a new cordless rotary hammer that it says has the power of a corded tool. The concrete rotary hammer is called the Proxactar 18V SDS-max 1.5/16" Rotary Hammer (GBH18V-40C) and outperforms its corded counterpart, the Bosch 11264EVs, according to Bosch. Features listed:
 Cordless Design: Delivers corded hammer performance, with 6.7 Ft.-lbs. of impact energy (EPTA) powered by a single 18V CORE18V 8 Ah or 12Ah battery, making concrete work easier. KickBack Control: Reduces the risk of sudden tool reactions in binding conditions. Soft Start and Controlled RPM: Adjusts the tool rpm and bpm for more controlled drilling and chiseling applications when working with softer materials like brick and tile. Anti-Vibration System: Helps to reduce tool vibration, due to the longer air cushion built into the hammer tube and dampers added in the handle. Lock-On/Off Button: Keeps the tool running when locked on (hammer mode only) and helps prevent accidental activation of the tool trigger when locked off.



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NEW PRODUCTS

BY RURAL BUILDER STAFF

■ CENTRAL STATES UNVEILS STEEL BOARD & BATTEN SIDING IN PAINTED AND WOOD-GRAIN FINISHES

Central States, a manufacturer of metal building components, roofing, and buildings, has introduced its latest offering, Central States Board & Batten siding. Residential contractors and custom home builders, homeowners, commercial building owners, and architects and designers can now utilize the strength and durability of metal while imparting a welcoming and enduring character and delivering lasting value in 15 painted and three wood-grain finishes.

“The Central States Board & Batten product is beautiful, easy to install, and is something we are excited to offer to our clients,” said Jonathan Bucher, VP at Stoneburner Inc. “We sell a good amount of wood board and batten, but have been looking for years for a more durable, maintenance-free option. This product exceeds our expectations! Our initial installations look great and will last a lifetime.”

Steel board and batten is a cost-effective siding solution with superior durability over comparable systems, as it brings a lifetime warranty and classic aesthetic to residential and commercial structures. The rising trend in residential design, leaning towards modern farmhouse or industrial chic aesthetics, has made this profile increasingly attractive to individuals who may not have previously considered metal siding or those whose communities might have restricted the use of metal siding in the past.

Metal board and batten eliminates the need for painting or repainting throughout its lifespan. As one of the most environmentally-friendly building materials, metal is 100% recyclable, and dissipates heat, contributing to cooler interiors. The Central States Board & Batten stands out for homeowners and designers alike, offering custom lengths up to 30' in versatile widths up to 25.25". Crafted from 26-gauge steel, one of the heaviest gauges

available, it combines durability with field workability.

In addition to the 15 solid-painted and textured color options, Central States Board & Batten is available in three realistic woodgrain prints: Dark Oak, Barnwood (a gray weathered look), and Hickory.

Central States backs the durability of steel Board & Batten siding with a lifetime warranty on its painted products and a 20-year warranty on the woodgrain options.

The product is currently available for sale in the following states: NY, OH, PA, NJ, MD, DE, NC, SC, TN, KY, WV, GA, VA, and FL. For more information about Central States Board & Batten visit <https://centralstatesco.com>.



Perma R structural sheathing.

■ PERMA R PRODUCTS INTRODUCES NEW, LIGHTWEIGHT STRUCTURAL SHEATHING

Perma R Products has announced the latest additions to its family of innovative building solutions — the Perma R Brace and Perma R Brace SIB. These two new lightweight structural sheathing products are specifically designed to meet the demands of today's building codes, offering unparalleled convenience and cost savings.

At half the weight of typical oriented strand board (OSB), the Perma R Brace and Perma R Brace SIB make installation a breeze. With their lightweight composition, contractors can now complete projects more efficiently, saving both time and labor. This means reduced construction costs and increased productivity for

builders and contractors alike.

They also offer a significant advantage when it comes to price stability. Unlike traditional OSB, which is prone to price fluctuations, these new products provide a reliable and consistent pricing structure. This stability ensures that builders can accurately forecast project costs, eliminating any unexpected budgetary surprises.

Perma R Products is committed to delivering innovative solutions that address the evolving needs of the construction industry. With the introduction of the Perma R Brace and Perma R Brace SIB, we continue to uphold our reputation as a trusted provider of high-quality building materials.

For more information about the Perma R Brace and Perma R Brace SIB, visit permarproducts.com. **RB**

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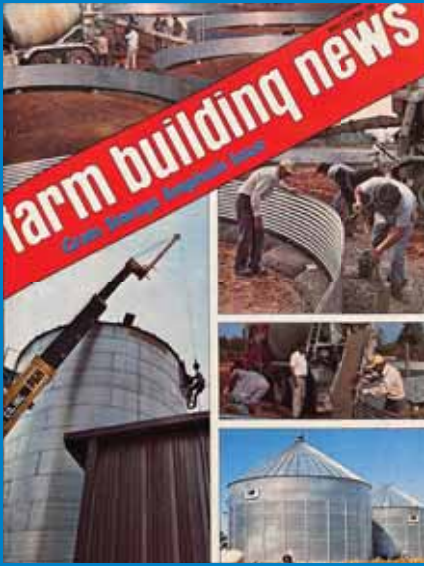
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Farm Building News, May/June 1976

FOR 50+ YEARS RURAL BUILDER has been providing the news, trends and resources builders need. Prior to the January 1974 edition, "Farm Building News," as it was called, was in newspaper form. However, those old papers are not to be found in our Shield Wall library. We would love to see some of them... it's our lost heritage! If you have one/some of them please **drop a line to me: dan@shieldwallmedia.com**. We'll publish a brief news story about you, your organization, and your projects in return!

Heat From Machine Shed Dries Grain in Nearby Bin

By Karl Ohm III

Solar heating scares off a lot of people... but here's a simple system of collecting heat under a metal machine shed roof to dry the grain in an adjacent bin.

Not too many years ago, farmers dried their grain in the field – right on the stalk or stem – rather than in a storage bin.

Unknowingly, those farmers were already pioneering in what we now call "solar energy". Little did they know that years later their early use of solar energy would make common such terms as "solar cells", "solar heat collectors" and even "NASA".

While there aren't many people who look kindly on higher energy costs, those increasing costs can be given credit for sparking serious interest in solar energy from a bigger slice of agri-business people.

A couple of years ago, only agricultural engineers took its potential seriously. Now, many see the sun as an efficient means of supplying heat. In fact they've now learned that heat can be collected to supplement gas or electric heaters in low-temperature grain drying operation.

How can it be done? Let's take a look at a solar grain drying system that's been in operation for over 2 years in Green Lake County, Wisconsin.

In 1974, Bernard Bauman and his sons, Barry and Kalton, decided their farm needed a new machine shed and grain bin. They wanted a grain bin for drying shelled corn to support their hog finishing operation. But Barry, a University of Wisconsin agricultural engineer graduate, also thought that this would be an ideal time to put solar grain drying to the real test – a highly practical one, right on their farm.

The new grain bin was constructed adjacent to the machine shed. Then, by installing a false ceiling along with ducts under the machine shed's metal roof, sun heated air could be channeled to the fan on the grain bin. These large volumes of warm air would be collected to supplement the electric heaters.

So with that in mind, the Baumans contacted Westra Agri-Builders, Waupun, Wisconsin which supplied them with a Butler grain bin and a Butler Farmstead building for a machine shed.

"When I talked with Don White at Westra, I specified two things in the shed's construction," explains Barry. "I wanted an unpainted galvanized metal roof along with purlin and I-beam framing."

GALVANIZED FLUTED ROOF

Barry points out that he wanted a galvanized major ribbed or fluted roof because as it weathers it absorbs more solar heat than a smooth, shiny surface.

Barry also added that a ribbed surface tends to transfer the heat better, since this type of surface causes air turbulence when the fan is turned on. The purlins were necessary so that air ducts could be built directly beneath the roof.

The resulting machine shed measures 75 ft. long 60 ft. wide and 16 ft. high at the eaves with the roof tapering about 13 in. to the center peak. Its roof line lies in an east-west direction in order to maximize the hours of sunlight striking the roof.

The shed's low profile roof was covered with channeled unpainted, galvanized metal with major ribs on 12-in. centers.



The Baumans needed a new machine shed and grain bin. Placing the bin adjacent to the machine shed, they could tap solar energy to dry grain.

Two pole I-beams were used in framing along with purlins, spaced 5 ft. apart, for the roof support.

The grain bin was then built next to the machine shed, near the southeast corner. The bin measures 27 ft. diameter by 18 ft. high and holds 8,320 bu. of shelled corn.

BUILDS FALSE CEILING

About 11 ft. was provided between the bin and shed to make room for the drying fan, electric heaters and necessary duct transition.

But the heart of this solar drying system lies underneath the machine shed's metal roof.

With the help of agricultural engineers Gene Shove, University of Illinois, and Marshall Finner, University of Wisconsin, the Baumans designed and built a false ceiling and air ducts. The false ceiling covers a 1,500 sq. ft. area on the easterly one-third of the building.

It was constructed by first bolting 2 x 4s (lengthwise) along the 8-in.-deep purlins. Then, 1 x 4s furring strips were secured (crosswise) on which 1/4-in.-thick, untempered 4 x 8-ft. masonite panels were nailed to cover the framing.

Along the east end, inside the machine shed, a common duct, 40 in. wide x 18 in. deep was built below the purlins. This duct serves to channel heated air from the false ceiling area into a vertical duct along the shed's southeast corner.

This 4-ft.-sq. outlet duct extends downward from the false ceiling to the shed's gravel floor line. Just above the floor line, there's a 12 in. x 42 in. opening in the metal sidewall which heads the heated air into the bin's fan duct.

INSTALLS FANS AND HEATER

"The outlet duct to the bin should be larger than the grain bin's fan duct," says Barry. "The size is important, because if the outlet is too small, you restrict the air flow."

To draw off the sun-warmed air inside the shed, a 27-in. vane-axial (10 hp) fan was installed, which can move about 15,000 cfm (cubic feet per minute) of pre-heated air below the bin's perforated floor. When needed for added heat, a two-stage, 12/20 kw electric heater at the fan's inlet can be used.

Barry also wired in thermocouples at various locations around the shed and

bin which were used to record temperature changes during grain drying periods. Some thermocouples record outside air temperature, others record temperatures inside the bin ducts, as well as the roof. Kilowatt hour meters were also installed to measure how much electricity would be used by the fan and auxiliary electric heaters.

The system was completed in time for the harvest season. Barry recalls that it was a wet season, and one in which they started drying their corn later than normal.

"We started to dry our corn on November 3 after we had about 6 in. of grain in the bin," says Barry. "We added the last batch of wet, shelled corn on Nov. 25, and during this filling period we were able to stay ahead of the drying front with 1 to 3 ft. of corn. This seemed to work out well.

"Only the fan was used during the first 10 days of drying," Barry adds. "If outside or bin exhaust air temperatures dropped below 32 degrees F, the fan was turned off. I can remember on Nov. 12 our corn started to freeze when temperatures dropped lower than expected. We plan to prevent

this from happening next year by hooking up a thermostat to run the auxiliary heaters at about 35 degrees.”

FANS AND HEATER USED WHEN NEEDED

The fan and electric heaters in the 20 kw stage were operated round-the-clock for only 2 days up until Nov. 24. From Nov. 24 to Jan. 10, the fan and electric heaters were used periodically to keep both the fan outlet and bin exhaust temperatures about 32 degrees.

On Jan. 10, when the outside temperature dropped below 32 degrees F, Baumans turned the fan on for 5 hours without any electric heat to cool the grain down. That concluded their drying period.

“We totaled about 672 hours in drying time,” Barry notes. “Our bin was about half full and on Jan. 13, I took moisture samples of grain at foot intervals.

“The moisture ranged from 13.6% at the floor to 18% at the surface, but including the other samples, the moisture averaged out to 14.7%. We did have some problems with re-wetting when the fan was run on very humid, cloudless days or nights.”

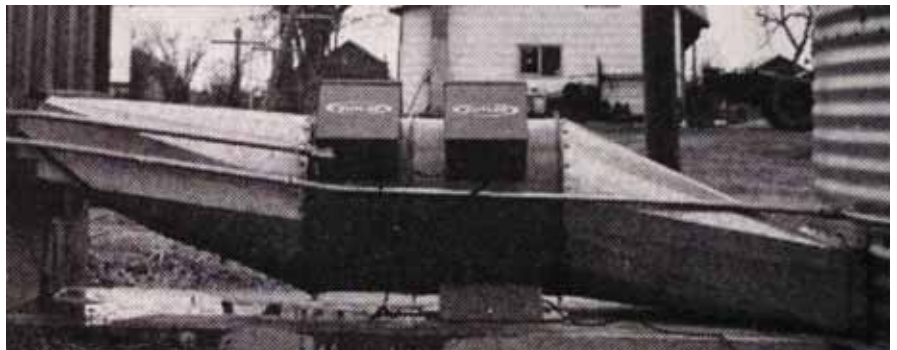
Barry estimates that the equivalence of 5752 kilowatt hours was supplied by the solar heat collected from the metal shed during the first season. He figures at 2.55 cents per kwh this represents \$146.68 in electrical expenses alone that was saved for the first year’s operation.

“We only spent around \$460 to modify our shed,” Barry says. “What we saved in electric bills has already paid for one-third of our total material costs.”

REPORT ON COSTS

During the 1975 drying season, Barry reported a \$120 savings with their solar heat collector and their total electric costs (fan and heaters) were \$10. This represents about 3720 kwh of electric energy at 3.23 cents per kwh.

However, last year the Baumans made a few improvements to their operation which helped reduce their drying time



Connecting link between machine and grain bin transfers warm air with fans.

and costs.

Baumans added a time controlled 2-auger stirring device (David Mfg. Co.) in the grain bin. This increased the air volume delivered by the fan since the static pressure could be lowered inside the bin. They also installed a combination thermostat-humidistat to turn on the electric heaters when temperatures dropped below 35 degrees or when the relative humidity climbed above 65%. Along the south wall of the shed, Baumans put up 384 sq. ft. of paneling which was connected to vertical duct. Barry wants to find out how much added heat can be gained by using a portion of the south wall.

During the first year’s trial, Barry noticed that the south wall would warm up to 40 degrees on a sunny day when outside temperatures were 8 to 10 degrees. However, last year the roof absorbed twice as much heat energy. This occurred because the roof had a chance to weather.

SMALL SIDEWALL HEATING

“The energy gain along the south wall last year wasn’t as great as I expected,” says Barry. “It appears that more work needs to be done on air inlets along this wall to maximize heat gains. I also think it’s possible to set up another adjacent bin, but we would have to extend our false ceiling farther to collect enough heat.”

“A stirring device and a thermostat-humidistat control makes a low-temperature operation more efficient,” Barry says. “Our drying time and costs have dropped considerably ever since we installed them.

“Last year, we only used 1677 kwh on the fan compared to 6720 kwh in 1974. And only 294 kwh were used for the electric heaters compared to 5760 kwh in 1974.”

CONTROLS SAVE OPERATOR’S TIME

Barry feels that a thermostat-humidistat control helps reduce actual operator time. Without it, an operator must spend too much time checking weather conditions.

According to Barry’s figures, the total drying energy decreased from 0.399 kwh/bu. pt. of moisture removed in 1974 to 0.248 in 1975. This represents 1 cent per bu. pt. of moisture in 1974 compared to .8 cents per bu. pt. of moisture in 1975.

“I think this happened because no night time drying was done during our 1975 drying season,” he says. “Thus, we had very little or no re-wetting of the corn at lower levels like we had in 1974.”

The Baumans seem quite satisfied with their solar grain drying system. With just 2 years in operation, they have recovered 58% of their material costs used to install the ducts and false ceiling. And who really knows how much fuel costs will be 10 years from now?

In a sense, we may be turning back the clock. But this new approach to utilizing solar energy might just write another important chapter in United States agricultural history. And why not, since nothing would be possible without the most abundant resource we have – the sun. **RB**



Aviary

National Barn Company – Central Division

National Barn Company completed this raised center aisle building consisting of a 56'x60' main building and an 8' wide entry porch, its fourth custom structure for Hill Country Aviaries LLC, one of the last remaining large-scale operations of its kind in Texas, which continues to expand. Originally established in 1970, this facility has modernized its housing concepts to adapt to the ever-changing Texas climate while simultaneously expanding its venture. Over the past 20 years, National Barn Company has been the preferred builder to meet the customer's growing needs, thanks to flexible designs and quick construction process. **RB**

THE DETAILS:

Size: 56'x60' with 8' wide entry porch

Roof Pitch: 3/12

Doors: Mueller, front double door
Plyco Corporation, rear-entry door series 20

Posts: Burrows Post-Frame Supply, solid 6"x6" treated wood posts

Roof Panels: Burrows Post-Frame Supply, 26ga Quadra lock plus metal sheathing for roof and gable ends

Trusses: Burrows Post-Frame Supply, raised center-aisle trusses

For more information:
www.nationalbarnco.com

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First CSI Annual & Market Report On Its Way Soon

Help Improve Future Reports by Participating in Surveys

As of writing this, the first CSI Annual & Market Report is being sent to the printer. Because of the timing, the Annual may be included with this issue.

July 2 will be the fifth anniversary of our acquiring the Construction Division from the previous owner, F+W Media. In that time, we have expanded into multiple related markets. These include roll forming, sheds and portable buildings, and cold-formed metal. Adding these to the audiences from our legacy magazines, there seemed to be one frustrating point spread across the markets: a lack of actionable data.

We were asked to participate in market surveys by sharing our lists. At that time, the combined subscription list for our magazines was almost 60,000. Performing the due diligence revealed that some of the surveys had contact lists of under 100 people. Not 100 responses, but under 100 people on the list to receive the survey. Our experience told us there had to be a better way.

We experience about a 6% completion rate for the recipients of the survey; naturally, the more the better. Our surveys are still growing, and we are refining our best practices regarding survey content and generating responses.

This year we received 302 responses to our survey. Not earth shattering, but enough to generate data with a reasonable confidence level.

Typically, market reports are sold as proprietary and cost recipients several hundred to several thousand dollars. We are providing it to all our subscribers free of charge.

If you see value in data for our markets and use this information in any way, please help us improve for the 2025 CSI Annual. There are a few simple things you can do:

First and foremost, take the survey. The more responses we have, the more complete the data. The 2024 Annual is admittedly weaker in some geographic regions and some market segments. More responses solve this concern.

Second, tell people and share this information. The more

people who know about this, the more people can benefit from the information and take the survey. We are publishing and distributing the report free to subscribers so the information can be shared and help grow our corner of the construction industry.

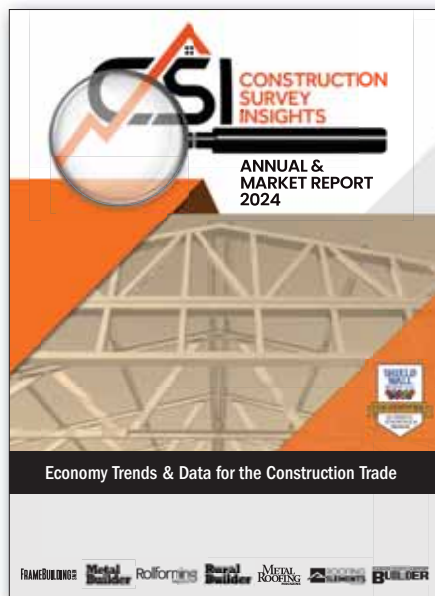
Third, suggest topic areas or questions we should add to the survey. My email and phone number are all over our publications and I appreciate feedback.

Last, but certainly not least, consider sponsoring a section. If you look at the metrics (cost per thousand), this is the most cost-effective product we have to reach our audience.

Collecting, curating, printing, and distributing the data is expensive. I personally want to express sincere gratitude to the sponsors who helped us make this

possible and our advertisers. Without your support, we could not make this type of investment in the industries we all serve.

Thank you for your confidence and support as we continue to grow and support our industries. **RB**



If you like the CSI columns or find the information useful, help us help you.

Please complete the Shield Wall Media construction industry survey and share it with your colleagues. A larger survey sample generates more reliable data.



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