Rural Builder

FEBRUARY 2025
Vol. 59, Issue 1

Serving The Construction Trade Since 1967
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UNDERSTANDING
R-VALUES

NOT YOUR FATHER'S MACHINE SHED:
HOW FARM STRUCTURES HAVE EVOLVED

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BY GARY REICHERT

New in 2026: The Rural Builder Show

I try to avoid publisher's letters when possible. Sometimes they are unavoidable because there is so much going on.

Last month we added audio to our magazine website, so you can listen to the articles. The next step is that our content will be listed in podcasts on Apple, Spotify, YouTube, and other locations. Where video is available, you will see the magazine pages, so you will see pictures, graphics, and the display ads within the print version of that article.

When you read this, the 2024-2025 CSI Survey will be closed, and we will be working on the 2025 CSI-Annual & Market Report. The objective of the CSI is to provide actionable business data. Sometimes we use our proprietary data to make strategic decisions for our magazines and shows.

We are making a huge change to the Garage, Shed & Carport Builder Show for 2026. The 2026 show will be in Gatlinburg, Tennessee, on January 21-22, 2026.

We partner our magazines and shows. The Construction Rollforming Show is partnered with Rollforming Magazine. The Post-Frame Builder Show is partnered with Frame Building News.

The 2026 show will be two shows in one location. The Rural Builder Show will be partnered with Rural Builder magazine, and the Garage, Shed & Carport Builder Show is partnered with its namesake magazine. The logo and branding will change to the Rural Builder Show and the Garage, Shed & Carport Builder Show.

A significant number of Rural Builder subscribers report that they also build sheds and portable buildings (53%). Many companies building with post- frame or metal frame include sheds and/or portable buildings in their portfolio. Combining the shows will benefit both exhibitors and attendees. Exhibitors and attendees will gain access to a larger and more varied spectrum of potential customers, while we maintain the quality and value for everyone.

The data we analyzed regarding who builds what type of construction is detailed in the CSI column on page 51.

Have a fantastic 2025.

— Gary Reichert, Publisher

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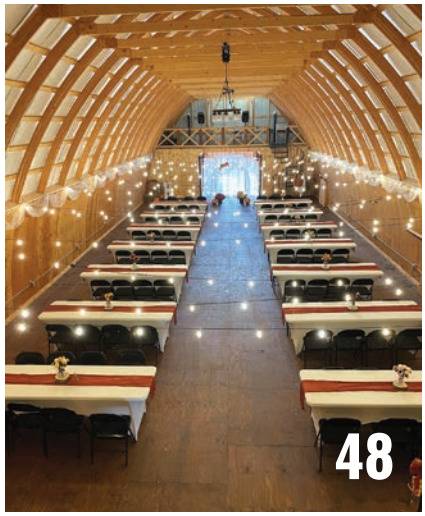

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The Symbal family's Wisconsin dairy barn converted into an event space. Project submitted by Hixwood.

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Rural Builder (ISSN: 0888-3025) (Volume 59, Issue 1) 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.

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Gary Reichert,
Publisher, Shield Wall Media

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WORK ETHIC CERTIFIED

You Don't Have to Go to College to Be Somebody

Commit to something bigger; put in some elbow grease and take pride in your life.

BY LINDA SCHMID

Growing up in Long Island, New York, Aaron Patti was exposed to the trades via his dad who was a Master Electrician and member of the Local 3 Union in New York City, but he never seriously considered entering the trades. Even when he worked with him in his high school summer years, he didn't consider becoming an electrician. After all, everyone knew that in order to be somebody you had to go to college. His brother went to medical school and became a doctor; his sister, a teacher, spent eight years in college. Aaron's mother wanted him to go to college, and teachers encouraged kids to plan on college so they could enjoy a satisfying and prosperous career.

Aaron, however, was becoming disenchanted with school. He had done well and even enjoyed it up to the last couple of years when he found that he did not enjoy classes such as trigonometry, which wasn't easy and besides, how was he going to need this in the real world, anyway?

So with mixed feelings, he signed up for community college, and a year in, he met the girl he knew he wanted to marry. In the meantime, he had started working for his uncle installing solar systems. When Aaron and his fiancé decided to move to Minnesota where she grew up, they decided to make some career changes. She started her own cleaning business, while he entered trade school, Northwest Technical College (NTC), to become more rounded.

TRADE SCHOOL AND SCHOLARSHIPS

While he was one of the older people in class, he found he bonded with his classmates and appreciated the help of his teachers. There were lectures and classroom work, and they were helpful, but Aaron loved the hands-on experience.

"Hands-on class experience is a great way to get safe training. It is the best place to make mistakes that you can learn from. If something goes 'boom,' you're in a controlled/safe environment and not in a customer's home," Aaron said. NTC trade school kept students apprised of scholarship opportunities. Aaron had grown up watching "Dirty Jobs," but he thought, "What is the likelihood that I will be one of the lucky few who wins a mikeroweWORKS Foundation scholarship?" But he applied anyway; he liked the pitch.

"Others offer scholarships saying, 'We might give you some money,'" Aaron said. "The mikeroweWORKS Foundation people said 'We might give you some money, but you are committing to something bigger than that. You are agreeing to getting down and dirty, putting some elbow grease in, and tak-

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 2,000 scholarships have been awarded to trade-school students who value hard work and taking personal responsibility. *Rural Builder* applauds these students and wants to acknowledge their choice to apply their talents to skilled trades. Thank you, mikeroweWORKS Foundation, for your continuing efforts to close the skills gap and "reconnect the average American with the value of a skilled workforce."

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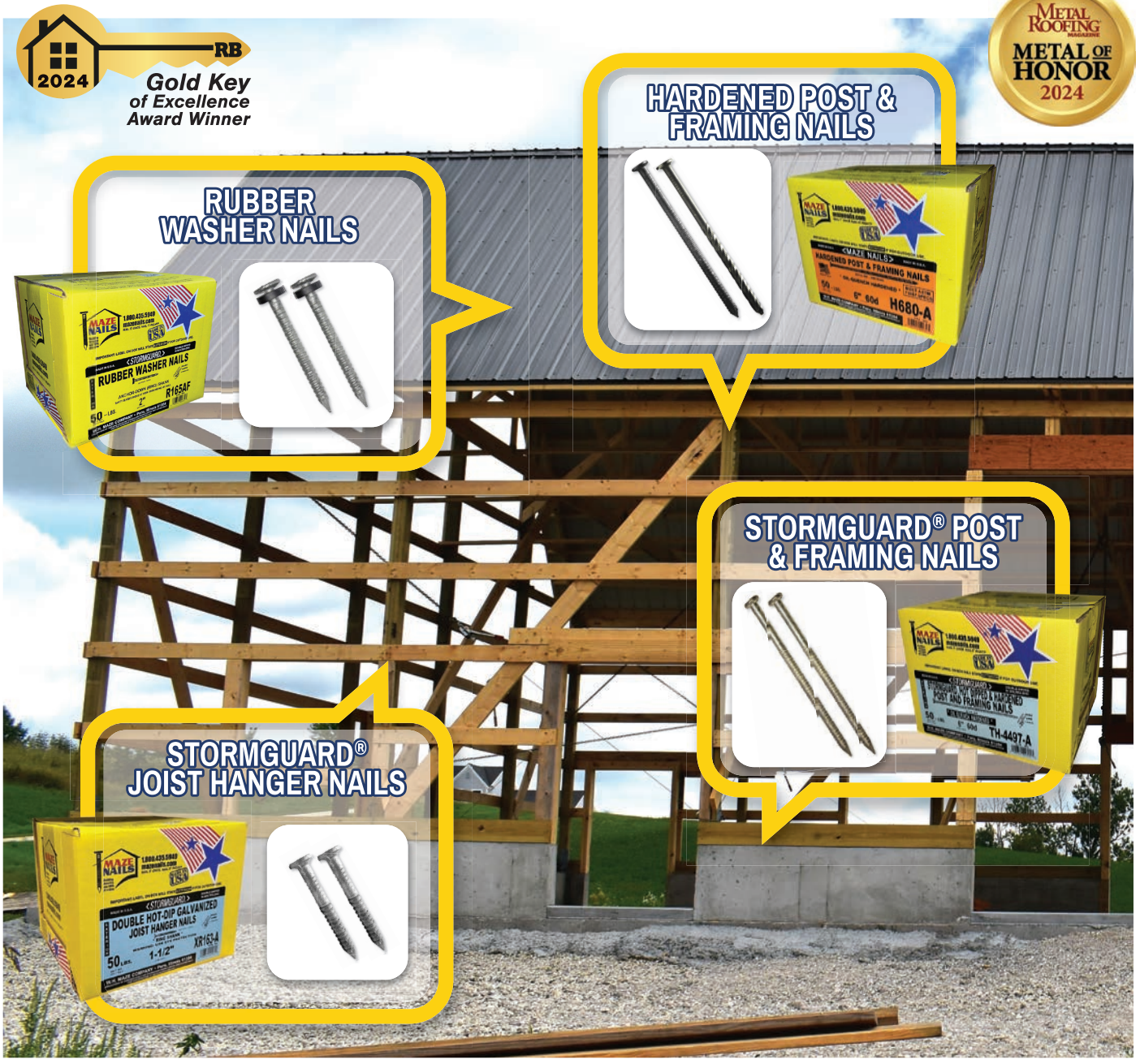

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Aaron Patti with son, Finley.

ing pride in your life.' I liked that; I committed."

When he and his wife had moved, Aaron left a great job in New York and went to no job in Minnesota, so between that and the brand-new cleaning business, money was not plentiful, and scholarship money was greatly prized.

"Receiving the scholarship was a huge encouragement; it felt like God wanted me to do this," Aaron said.

WORKING EXPERIENCE

When Aaron left the school with a two-year degree, he was eligible to take the journeyman electrician test. This is not the only route to a journeyman certification, a candidate can do a four-year apprenticeship, but Aaron encourages anyone interested in becoming an electrician to start with trade school. He believes in the education, and it helps you reach your goal faster.

After working in the field for a year, Aaron was ready; he took the Master Electrician test and became certified. Then he started his own company, AP Electric.

In January 2021, NTC reached out to him and asked him to take over for a teacher who needed to take some time off. He accepted. Aaron greatly enjoyed teaching for a few semesters, even writing his own curriculum and exams. However, once the original teacher was able to return, the job was over. Under normal circumstances, five years of experience as a Master Technician is needed to teach.

Making the most of his journey, Aaron has written a book to share his knowledge with those who come behind him: A Comprehensive Guide to Passing the Electrical Licensing Exam.

Aaron said, "The licensing exam is very hard. The exam is not about field work. It's about the code book, which is hard to read and understand. My book shows you how to navigate it," he added.

For every five electricians that retire, two people opt to become electricians. Then the question is: Are they certified electricians? This is important because it is required that every apprentice is supervised by a journeyman or master electrician, so more licensed electricians are needed.

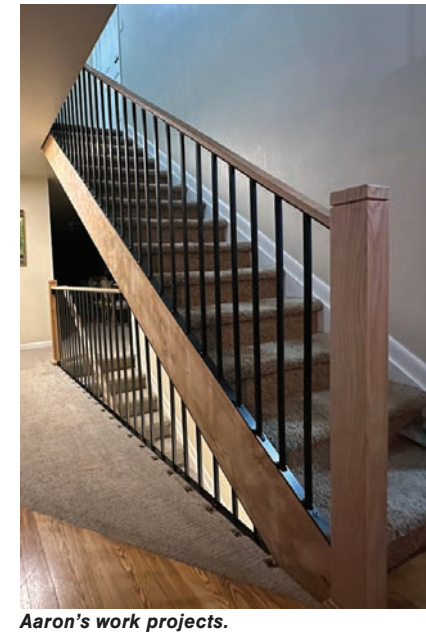
Being an electrician provides a great career and great money Aaron said.

"I love being an electrician; it is very satisfying," Aaron said. "There is a real need in every area; I don't even have to advertise. It is very satisfying because troubleshooting is like figuring out a puzzle. And I am helping people. Sometimes people are so happy because there hasn't been anyone around to help them for a while. Also, the money is good. People charge around $120 per hour in the nearest city. I don't charge that much, I don't need it," Aaron added.

He does mostly residential electric; he prefers it because it is more personal. His company has one work van, and he operates debt-free. Aaron wants to continue to grow his business organically and remain debt-free. Someday he would like to employ electricians and help them grow in skills and experience so they can become journeyman electricians, even master electricians. Most of all, he is passionate about serving the needs of the people in the local community.

SWITCHING ON THE LIGHT FOR YOUNG PEOPLE

How can we get the word out to young people about the opportunities available to them as electricians and other trades work? Aaron said we need to go where the kids are: TikTok. He said that kids spend a lot of time on Tik Tok, so if someone wanted to reach out to kids and tell them what kind of money they could be making without going to four years of school … that would be the forum. **RB**



Aaron's work projects.

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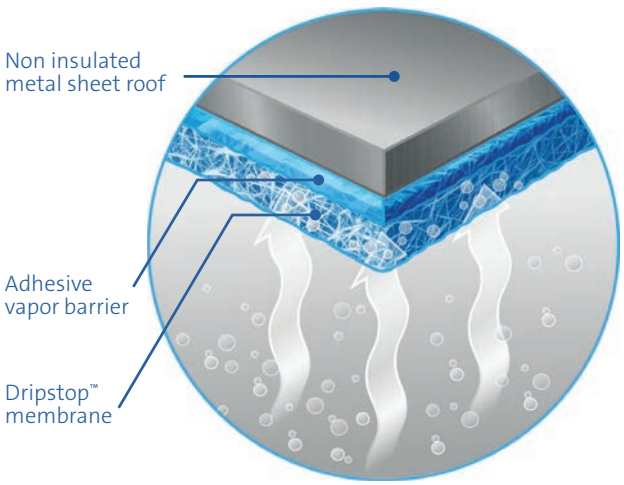

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CONSIDER THIS

BY DAN BROWNELL

Not Your Father's Machine Shed

Not all tension fabric buildings have a "hoop" frame like the small structure in the upper right corner. Some, like the large white building at center by Legacy Building Solutions, feature vertical walls and a flat, sloped roof made of rugged fabric.

How Agricultural Buildings Have Evolved

In 1988, General Motors introduced the iconic ad slogan "This is not your father's Oldsmobile" to convey to potential customers that its Oldsmobile line had greatly improved over the years to encourage them to take a fresh look at their cars. A similar slogan "This is not your father's machine shed" is fitting for modern agricultural buildings, which have also undergone a major evolution. But unlike Oldsmobile, which ceased production in 2004 after 106 years, the need for new farm buildings is still great.

America's demand for food has risen due growth in population and exports, but as farmers' profits have been squeezed, they've been forced to become more efficient, increasing production with less labor and lower costs. This, in turn, has led to changes in the design of ag buildings and the materials used to build them.

The transformation in farm buildings has been driven by many factors, such as changing demographics, the impact of cultural and environmental influences, skyrocketing farm costs, increasing pressure in domestic and international economics, incorporation of technology, the evolution of livestock management practices, and updated construction techniques and improved building materials.

DEMOGRAPHIC CHANGES IN THE GENERAL POPULATION AND ON THE FARM

The average age of the general American population has been increasing for decades, and that upward trend holds for American farmers as well. Agupdate.com reported that, based on data in the 2022 Census of Agriculture, the average age of U.S. farmer is now 58.1, which is 9.4 years older than in the 1945 Census.

Over the years, farm building layout and design has been improved to streamline workflows. This includes better site planning and ergonomic efficiencies to reduce wasted time and effort, which helps farmers of all ages but is especially helpful to those who are older because they tend to tire faster and injure more easily.

In addition, features that reduce work and strain and create more ergonomic work environments have been introduced in farm buildings, such as better lighting, remote openers for overhead doors, markings on floors to guide vehicles into parking spots, and non-slip and anti-fatigue floor mats. New and remodeled farm homes include accommodations such as ramps instead of stairs, wider doors, walk-in tubs and showers, and lever-style doorhandles rather than twist doorknobs to help farmers "age in place," so after they retire, they won't need to go to a nursing home, which can be both inconvenient and extremely expensive.

The U.S. is experiencing a labor shortage nationally and especially in rural areas because of lower population density and the movement of the younger generation from rural to urban areas. In farm families, the reluctance of younger generations to follow in their parents' footsteps and take over the farm is another contributing factor. With fewer workers available, farm building designs that improve workflow and efficiencies are even more critical.

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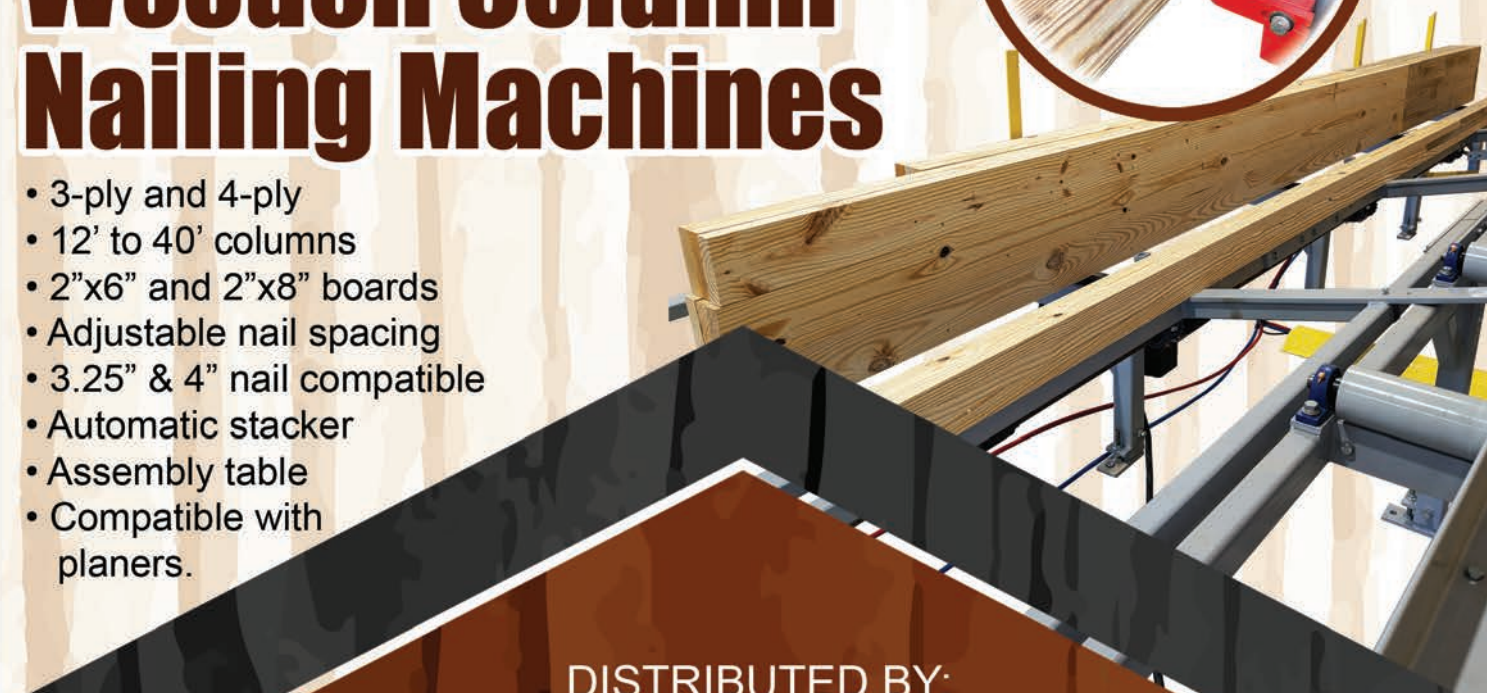

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ENVIRONMENTAL AND CULTURAL INFLUENCES

Farm structures are now being designed with more emphasis on energy conservation, using solar panels, wind turbines, LED lighting, geothermal energy, and high-performance Insulation such as spray foam and foam boards. Careful site planning is done to orient buildings to take advantage of natural lighting, airflow, and ventilation. In addition, automated environmental controls monitor and adjust temperature, humidity, and CO2 levels to reduce fluctuations, improve performance, and maximize energy efficiency.

Buildings are constructed using recyclable materials like steel and sustainably sourced wood. Rooftop rainwater harvesting systems and improved wastewater managements systems conserve water, which is especially helpful in drought-vulnerable areas. And as Bret Buelo of Wick Buildings (wickbuildings.com) pointed out, "In many areas, state DNR and national EPA regulations place limitations and requirements on water runoff and livestock waste management, which will impact building design and use."

Modern farming trends affect building designs in other ways too. According to the USDA's definition, free-range animal farming requires that structures provide animals with free access to the outdoors at least 50% of the day.

Farm-to-table and "locavore" movements have led to an increase in farm stores like Feltz's Dairy Store in Stevens Point, Wisconsin, a retail store located on a family farm that offers a wide variety of dairy products, meat, and produce grown on its own land. The store's website (feltzsdairystore.com) explains that "the store features viewing windows into the robot barn that allow visitors to observe the cows being milked, while enjoying an ice cream cone or some delicious fresh cheese curds. A viewing window is also featured into the cheese plant where visitors can view fresh cheese being made at certain times during the week." The store offers its visitors farm tours and hayrides as well.

This interaction with the public on farms is known as "agritourism," in which specially designed and equipped buildings host visitors who want to learn more about how farms operate. They cater to school field trips and provide interactive exhibits, educational events, multipurpose event spaces, and more. Because these facilities are open to the public, they must comply with state and local food handling regulations and federal ADA regulations regarding wheelchair access, restrooms, and more.

New trends in agriculture include vertical and Indoor farming with precisely regulated climate control. These controlled-environment agriculture (CEA) facilities grow produce using hydroponics, aeroponics, and LED lighting to maximize plant growth. This type of farming is economically suited best to urban areas because of their lack of farm acreage, denser population, and higher incomes that can more readily absorb higher produce prices.

INCREASING PRESSURE IN DOMESTIC AND INTERNATIONAL ECONOMICS

Skyrocketing farm costs have forced livestock producers to be more efficient with building space, leading to much larger structures and more compact housing of animals. This is known by various terms, such as intensive animal farming, concentrated animal feeding operations (CAFOs), macrofarms, megafarms, and factory farms. They typically use steel-framed structures and can have clear spans of up to 300 feet, far wider than wood post-frame buildings.

In large, intensive farm operations, biosecurity is especially important to prevent the spread of animal diseases such as swine fever and avian flu. This requires restricted access areas, quarantine zones, sanitation stations, and controlled ventilation to reduce cross-contamination. These giant farms produce large amounts of animal waste that is often handled using specially designed structures for processing and storage and some are used for composting or producing biogas.

Farm buildings are now often built for multipurpose use, such as for animal sheltering, grain drying and storage, and machine storage. They may be much larger to allow additional flexibility and more space for more and larger farm machinery. Modern combines for instance, need higher shed doors than their predecessors. And as smaller family farms are sold to large corporate farms, the operations need more machines to manage the additional acreage.

These larger buildings often include innovative designs to maximize their use, such as climate-controlled offices, mezzanines for additional storage or workspace, and concrete slab floors with radiant floor heat. Some large-scale operations with a lot of machinery have a mechanic's pit for easier access to equipment for maintenance and repair.

IMPROVED CONSTRUCTION METHODS AND BUILDING MATERIALS

New farm buildings are generally built to higher standards than in past generations. Improved engineering, design, and construction methods make them sturdier and able to withstand higher winds and heavier snow loading.

Older post-frame buildings often have structural issues because of rotting posts. "Round pole" buildings using repurposed telephone poles are few and far between now," Buelo said. "More often the ones that are still around displaying this issue are the solid column buildings. The problem with the solid columns, either 6" or 8", where you may see rotting is that the wood treatment did not penetrate all the way to the interior of the column. This problem is usually seen in high moisture soils, situations where water runoff from the roof or surrounding terrain is not properly managed, or where it is in contact with animal waste."

Newer post-frame buildings, however, are made from pre-engineered kits and use pressure-treated square or rectangular glulam or nail-lam posts assembled from dimensional lumber that has had knots and other defects cut out. Their multiply structure makes the wood more consistent throughout and is resistant to cracking, splitting, twisting, and warping, and is dimensionally stable. In addition, these engineered-wood posts are protected from rot by being pressure treated, incorporating plastic sleeves around their base to create a barrier between wood and soil, or placing them on top of a concrete post for a permanent foundation.

Some farm buildings use cold-framed steel (CFS) or structural steel framing, which is stronger than wood, and is rot-, mold-, termite-, and fire-resistant.

Tension fabric buildings have evolved greatly as well over the years. According to Adam Laidlaw, project and design consultant for Legacy Building Solutions (legacybuildingsolutions.com), "Tension fabric buildings have come a long way from the 'hoop' structures that were common in various agricultural applications. With the rigid-frame, I-beam engineering concept that Legacy Building Solutions uses, a building design can be fully customized from the beginning for the customer's intended use." In addition, the coverings are very durable. "PVC fabric is naturally corrosion-resistant, making it a much better option than metal buildings for fertilizer storage and other corrosive environments," Laidlaw said. "Legacy Building Solutions protects the building frame and other metal components with epoxy paint to completely seal off corrosive elements from impacting the structure."

Advancements in building science have led to construction materials that are more durable and feature more options in colors, textures, and designs. This includes roofing, cladding, windows, entry doors, overhead doors, posts, trusses, ventilation, insulation, fasteners, adhesives, sealants, caulks, and finish materials such as coatings, paints, and stains.

CONCLUSION

Modern farm buildings look much different from those built in past generations because they are different. They have drastically improved in design, materials, construction methods, and in safety efficiency, ergonomics, and environmental considerations. With continuing research and development, these improvements are bound to continue, and we can only imagine what the next generation of farm buildings will feature. **RB**

SOURCES

- Burrow's Post-Frame Supply (burrows-supply.com)
- Graber Post Buildings (graberpost.com)
- Hixwood (hixwood.com)
- Legacy Building Solutions (legacybuildingsolutions.com)
- Lester Buildings (lesterbuildings.com)
- Perma-Column (permacolumn.com)
- Post Protector (postprotector.com)
- Starwood Rafters (starwoodrafters.com)
- Stockade Buildings (stockadebuildingsinc.com)
- Wick Buildings (wickbuildings.com)

BY COMBILIFT

Make Forklift Safety a Priority

Steps to Preventing Injuries on the Jobsite

A report released by OSHA (osha.org) estimates that 35,000 serious injuries and 62,000 non-serious injuries involving forklifts occur annually. Construction sites can be potentially dangerous due to the presence of substantial building materials, as well as heavy-duty machinery.

Choosing the right piece of material handling equipment for loads and facilities is a decision not to be made lightly. While there are several factors to take into consideration, such as effective and efficient handling, financial cost, and sustainability, safety should be a top priority on the list. To maintain a safe work environment, it's paramount to understand why these accidents happen, the factors that can contribute to them and, most importantly, how they can be prevented.

PREVENT ROLLOVERS AND TIPPING INCIDENTS

According to OSHA's directives, the safest place for the driver to be is strapped into the seat with a seat belt. This practice is crucial, as one of the most serious types of forklift accidents involves forklift rollovers or tipping incidents. To ensure this practice, a simple switch can be fitted under the seat with a sensor that detects whether the operator is seated and prevents the forklift from starting unless the seatbelt is fastened. Making this a standard feature in all forklifts could prevent serious injuries or even fatalities in case of a forklift rollover. Tipover can be prevented by following OSHA standards, which mandate keeping the load as close to the ground as possible during travel as well as keeping the forklift mast fully in.

Multidirectional forklift models, such as those built by Irish-based manufacturer Combilift, are designed to travel sideways while handling long loads such as timber panels. The sideways function eliminates the need for overhead carrying while navigating tight spaces, which significantly

A forklift that's designed to travel sideways can handle long loads more sately.

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reduces the risk of injury. An additional safety feature is that these forklifts are built with a low center of gravity, allowing for a low-to-the-ground movement of a load. An integrated platform provides a stable base for resting the load during transportation.

Other common causes of forklift tipping over include poorly balanced loads and overloading. It is of utmost importance for forklift operators to be aware of the type of load they are handling, its load center and overall weight, and the height it needs to be lifted. Equally important is their understanding of the type of forklift they are operating and its specific characteristics and load chart, as there might be different types of forklifts with different load capacities within the same facility.

An anti-overload device enables the operator to avoid overloading. If the strain gauge detects an overload situation, it will trigger an audible alarm and will disable lifting.

AVOID OVERLOADS

Fitting a forklift with an anti-overload device such as the Combi-SafeLift will enable operators to avoid the pitfalls of potential overloading, which can have serious consequences if it occurs. This simple and cost-effective system consists of a strain sensor on the mast section and a lift cutout valve on the hydraulic line to disable lifting if the unit is potentially overloaded. An audible alarm warns the operator of an overload situation, and a load moment indicator is fitted to the dashboard in the cab. The operator can instantly see from the green, amber, and red "traffic light" signalling when there is a risk of overloading or when the forks are not fully engaged, for example, and take appropriate action.

A swiveling forklift seat provides the operator better visibility with reduced fatigue and strain to reduce accidents.

IMPROVE VISIBILITY

Another reason why forklift accidents can occur is due to obstructed sightlines. Some common causes that can block the driver's line of sight include driving with elevated forks or carrying oversized loads, such as timber trusses and other materials found on construction sites. A sideways mode addresses this issue, as operators are able to transport long and oversized loads low to the ground, offering an exceptional view of potential dangers. To maximize visibility, they also feature a high-positioned offset driver cab, providing forklift drivers with an excellent vision of the load, forks, and surrounding areas, increasing safety and reducing the risk of accidents and product damage. This feature offers significant advantages compared to conventional forklifts, in which the cabin and driver's seat are positioned in the center and behind the mast, creating blind spots and obstructing the operator's visibility.

DECREASE OPERATOR STRESS AND FATIGUE

OSHA reports that long work hours

may increase the risk of injuries and accidents and can contribute to poor health and worker fatigue. These issues, which are particularly common in today's busy work environment, can lead to a further source of forklift accidents. While implementing shorter shifts or providing workers with more break time can be a solution, it is not always feasible and easy to achieve. As forklift drivers usually need to operate for extended periods, a more feasible solution is to prioritize their comfort and minimize strain to prevent fatigue.

The elevated position of ergonomically designed cabs ensures that the driver's line of sight is not impeded. This, together with full suspension seats and intuitive and ergonomically positioned controls, can lead to an improvement in driver's confidence and comfort, making for a stress-free in-cab environment. While it is paramount to always look in the direction of travel when driving a forklift, this can also contribute to driver strain, particularly when travelling in reverse.

Combilift's autoswivel seat automatically engages and swivels the seat and armrest 15° to the right or left to accord with the direction of travel selected by the operator, significantly reducing driver strain.

INCREASE TRAINING

Ensuring forklift safety is crucial in any workplace, particularly in construction sites where other heavy machinery is also used. Equally important is the implementation of more operator training and forklift operation procedures which, according to OSHA, could reduce accidents by 70%. Adhering to OSHA directives and standards and selecting the material handling equipment best suited to the needs will ensure the safety and productivity of the workforce. **RB**

Combilift *(Combilift.com) is the largest manufacturer of multidirectional, sideloading, and articulated forklifts globally. It become the world's fastest-growing forklift manufacturer, exporting to more than 85 countries, with more than 85,000 trucks in use worldwide, delivering customization and adaptability to the diverse needs of every customer.*

This is an example of a dangerous practice that can cause tipover. OSHA standards mandate keeping the load as close to the ground as possible during travel to prevent an accident.

BY JACOB PRATER

Collecting Quality Survey Data

Gathering and Analyzing Survey Responses Accurately Is Critical to Compiling Useful Construction Data

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People in fields such as economics, science, and politics often try to make predictions. Whether they're about market shifts, consumer demand, manufacturing capacity, or growth in new areas, those who can predict change accurately have an advantage. This applies to the construction industry, where businesses need to make major decisions based on survey responses. But the reports are only as good ast the quality of the information gathered and its analysis.

The validity of predictions is determined by how well the information is gathered and analyzed. Because good decisions are based on good information, collecting reliable, valid data is critically important.

RELIABILITY VERSUS VALIDITY

The terms "reliable" and "valid" are related but refer to two different concepts. "Reliable" data refers to its reproducibility. In other words, it is data that, when measured repeatedly, produces a consistent result.

"Valid" data, on the other hand, describes the result that was intended to be measured. The reliability of data and its validity are sometimes difficult to determine without other data to compare to, but there are some methods. Whether a researcher can make those comparisons or not, it is possible to collect good, useful data.

COLLECTING GOOD DATA USING SAMPLES

Collecting good data requires some idea of the total group or population intended to predict from and then capturing information from a smaller group or subset within it to get a "snapshot" of the whole. This is a representative sample that should be selected randomly. If a researcher wants to avoid bias (capturing a sample that is skewed toward or away from some demographic and thus not representative of the whole group or population), why not just get the whole population to respond? That would be ideal, but it is usually too difficult or expensive to accomplish.

AVOIDING BIAS AND COMPARING WITH OTHER SAMPLES

There are some classic examples of incorrect predictions based on biased sampling that illustrate how easy it is to make a mistake. For example, in 1936, Literary Digest incorrectly predicted that Roosevelt would lose the presidential election by inadvertently introducing a bias toward affluent Americans by sending out surveys based on vehicle registrations, among other things. These past mistakes show that researchers must be aware of how a sample can include known or unknown bias, so they proceed with caution. Comparison to other studies or surveys with different sampling groups and methodologies can help validate a data set.

AVOIDING CONFIRMATION BIAS IN SURVEYS

One way to get a representative sample is through surveys. Survey data can be useful, but it must be kept in context. First, a survey will need to cast a wider net than the representative sample size because it is nearly impossible to get a 100% response rate. Second, those who do respond are often in groups that are either already favorable or have an axe to grind. Or perhaps all those who respond are interested, while those who are not interested don't respond. Third, the questions chosen and how those questions are worded is crucial, as respondents can interpret questions differently.

Researchers can be tempted to ask questions that might confirm what they already think rather than provide the information that is actually desired. This is known as "confirmation bias." For these reasons, it is helpful to have an experienced, impartial third-party review a survey and its questions to help weed out poorly worded questions and design the survey so information is gathered in an unbiased process. If a disinterested third party isn't available to review a survey, researchers may instead use a few trusted sources and run a test survey before launching it on a large scale.

STRATEGIES FOR PROMPTING A GOOD SURVEY RESPONSE RATE

How do researchers get a good response rate to a survey? This is challenging. They can certainly send out more surveys, but sometimes incentives help. Another tactic is to make the survey brief and easy to access and respond to. The downside is that the

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survey may not get the most useful information that way.

Designing a survey to reach a highly engaged group is another strategy to produce a quality survey with a good response rate, but that data isn't necessarily reflective of an entire population. But then, that population may be those whose opinion matters the most to the researcher.

DETERMINING SAMPLE SIZE

What is a representative sample size? This varies and is never easy to define without knowledge of the population. That might sound like a bit of a circular explanation, and it is, but let's start by defining what is not a good sample size. If there are 10,000 people in a population but only 10 are surveyed, that won't produce good results. Surveying 500 is an improvement, but even more will lead to better data. A response rate of 5% to 30% is good, with more than 50% considered fantastic.

A good survey should try to get the largest sample possible at a reasonable cost. If a survey reveals what a whole population thinks, then the researcher can interpolate what a few random samples of different sizes are likely to say and compare them to the population. From there, the researcher can determine the probability that a sample of a particular size will respond the same way as the population.

When that probability is at a comfortable level — say 90% to 95% — then that's the sample size to use. That is, of course, in hindsight. If there isn't a history of population outcomes and sample responses, then it is best to just acquire the largest, most representative sample possible. That said, there are ways to check that the sample is at least consistent with itself.

For example, let's say a survey was conducted with 1,000 responses received from a pool of 10,000 surveyed, and 500 random responses were analyzed to determine a specific response, such as agricultural market growth nationally and in the Midwest. This becomes the prediction or "model."

The model can then be tested with random samplings of different sizes from the remaining 500 responses. This technique can be used to internally test the consistency of the data, which helps validate the results. A bonus is that the researcher can get a good idea of what a representative sample is if it produces responses with a 95% confidence level that are consistent with the model — from the 500 responses that were excluded from the model — at a particular sample size.

ANALYZING THE DATA

Once data has been acquired, the researcher must take care to analyze it objectively. An interesting example of analysis without proper reflection (and perhaps incompletely done) is that of "New Coke." in the mid-1980s, the Coca-Cola Company created a new formula and rebranding in response to external feedback from the heavily marketed Pepsi Challenge television ad campaign, as well as internal company taste tests. These blind taste tests suggested that people preferred a sweeter beverage more like Pepsi. New Coke was created in response, but it failed miserably, not because the taste testers were wrong, but because loyal Coca-Cola customers didn't want a different product.

THE IMPORTANCE OF COLLECTING DEMOGRAPHIC DATA

Survey researchers need to carefully determine what the data actually says — and equally important — what it doesn't say. For example, let's say a large group of contractors is surveyed and most responded that they were experiencing a significant increase in building contracts. This could mean that a lot of construction is taking place. But a closer examination might reveal that only smaller contractors were responding this way. This may indicate that the market conditions are very different for companies who primarily sell products to large commercial builders and contractors.

This is why a superficial analysis that reports only how most survey takers have responded can lead to overgeneralization and assumptions that produce inaccurate results. Complex and sometimes seemingly contradictory data are known as "confounding variables." Because of their confusing interrelationships and interactions, it can be challenging to isolate them. Therefore, it is important to analyze data as thoroughly as possible.

A detailed analysis can be planned from the beginning of a survey by collecting basic demographic data about the respondents, such as contractor size or whether the contractor is residential or commercial. A simple way to do this is to look at survey responses in categories within the demographic data. For this example, it could involve analyzing the number of building contracts based on contractor size. If the demographic data isn't available, then this factor would remain hidden, and the data could be misinterpreted. Analyzing data both as a whole and by demographic category can prove useful, especially when the story isn't clear on first examination.

Collecting demographic data in a survey could also help determine if the sample obtained is at least capturing the population one is hoping to predict. If a survey turns up only responses from predominantly commercial construction, but the researchers were trying to capture residential, agricultural, and industrial as well, then it is clear that the sampling was biased. If instead, a researcher can compare the demographic data to known demographic information from another unrelated study or survey, and the demographic information is similar, then there is a good chance the data is not biased, at least for those demographics.

THE CHALLENGE OF CONDUCTING AN UNBIASED SURVEY

The final hurdle in researchers collecting good data is administering a survey well; that is, without bias. The challenge is in determining not only what is asked, but how it is asked, and drawing out, in a neutral manner, the intended information. This requires self-reflection and impartial communication.

Self-reflection is difficult for some researchers because they need to be willing to hear opinions or information they may not

like. They must put aside their own biases and reject emotional responses. To do this, questions need to be carefully crafted to avoid leading respondents to answer in a certain way.

THE RISK OF ASKING EMOTION-BASED QUESTIONS

A study of some political surveys can be a masterclass in how to ask questions poorly. They sometimes present a simplistic question that appeals to emotion rather than intellect to get a desired response. This is an attempt to change a survey respondent's opinion, rather than to try to determine their current opinion. The order in which questions are asked can also have an impact on the results of a survey. That's because previous questions can influence how a respondent answers later questions.

THE PROS AND CONS OF MULTIMODE SURVEYS

The method or mode in which a researcher conducts a survey matters. Multimode surveys have been effective where initial contacts are made through a particular survey mode, such as by mail. All those who respond by mail are then taken off the survey list and the remaining pool of non-respondents are sent an email. Some will respond to email and are then removed from the survey list. The remaining nonrespondents might receive a phone call or text.

Multimode response can be effective at driving up response rates, thus getting a better sample and better data but shouldn't be used often, as it tends to make respondents feel pressured. A less aggressive version can begin with one mode and ask respondents to share their preferred response mode, which could be used for future surveys.

If multimode is used, a researcher would be wise to check if responses are comparable by survey mode among demographic groups, while also evaluating whether there are greater response rates to certain modes among various demographic groups. The urge to use the simplest, fastest survey method that gets the most responses should be weighed carefully to avoid a bias toward the most accessible respondents.

CONCLUSION

A well-crafted and properly administered survey with a response from an engaged group can produce good data. If the resulting data is analyzed carefully and impartially, it can produce accurate information that can be very helpful in making well-informed decisions. **RB**

BY LINDA SCHMID

True Metal Supply sells steel trusses, lumber, metal roofing, and siding, etc. and complete building kits to builders and DIYers across the nation.

True Metal Supply Is in the Customer Service Industry

Metal Roofing Is Their Main Product.

PLANTING SEEDS

Adam Clark and Mason Burchette had worked in the metal industry for years when they decided to open their own metal shop in Knoxville, Tennessee, in February 2022. They saw that the industry was underserved and thought they could be part of the solution.

The partners were very intentional about the business they were building. They started with the name and spelled out what the company's shared values were to be. TRUE stands for Trust, Respect, Uprightness, and Excellence.

Mason Burchette, True Metal Supply Owner

Adam Clark, True Metal Supply Owner

In the beginning it was rough. With only three employees, Clark, Burchette, and Blake Gibson were the manufacturing department, sales, delivery, etc. They did it all. While it was hard, it was also very fulfilling, because they were building something that was truly theirs, heart and soul.

NURTURING AND GROWING

The company now has 26 employees, and they sell their products nationwide. Their biggest market niches are roofers, builders, and DIYers. They offer metal siding, building accessories, and pole barn kits. However, metal roofing comprises the vast majority of their sales. They have three profiles of standing seam and three through-fastened profiles, plus seven metal shingle styles.

Burchette likes to think that their success has largely been because of their early investment in marketing; they brought on a Marketing Manager, Shannon Clark, who has been a great help getting out the word about True Metal Supply.

Nurturing and growing the company is synonymous with nurturing and growing their relationships with customers, vendors, and everyone they come in contact with.

"We strive to make each experience relational rather than transactional," Burchette said. "We become friends with our customers. For instance, we had a contractor who was in a jam; he needed to move his materials from one location to another, so we moved them for him. These were materials he purchased

True Metal Supply manufacturers and supplies metal roofing nationwide. Featured: Matte Black TrueLock 175 Standing Seam metal roofing from True Metal Supply.

elsewhere, but he needed help, so we helped him. He has been a valued customer ever since."

According to Burchette, there have been employee challenges along the way, such as knowing when to hire. Hiring prematurely can put a strain on finances, while delaying too long places undue pressure on existing staff. Then there is the question of who to hire.

"We have an intentional culture here, so vetting people is important," Burchette said. "Faith in Christ and his teachings drive us, so while people do not have to share our faith to work here, they do have to share our values."

When both Burchette and Clark interview candidates, they grade them first based on "GWC." This translates to, "Do they GET it? Do they WANT it? Do they have the CAPACITY to do it?" If they pass this test, then Burchette and Clark explain what TRUE stands for, and they gauge the candidate's sincerity based on their dedication to these principles.

These values inform the keys to good business: People before profits. Treat people right in every interaction. Burchette says it is important to stay humble and remember that the opportunity to serve people has come from God — and it is a blessing.

True Metal Supply is located in Knoxville, TN (1745 Louisville Dr), where the Frame Building Expo will be held in April 2025.

MOVING INTO THE FUTURE

"The current business climate is very encouraging," Burchette said. "People seem optimistic about the economy, and we expect an extended period of success for the metal industry over the next few years," he added. Along with the trend of moving toward metal exteriors, Burchette sees that people are excited about textured coatings and wood prints.

True Metal Supply is focused on growing and helping their customers grow along with them. They look forward to expanding their manufacturing footprint and product lines through research and surveys to ensure that they are responsive to customers' needs.

Clark and Burchette also wanted to extend their thanks to their employees who all work together to make it happen.

"Behind all the dedicated employees are families who have been very supportive, and both Adam and I are grateful," Burchette said. RB

BY DAVE NAVRAT

PHOTO COURTESY OF GRABER POST BUILDINGS, INC.

Barndominium Construction Lending

Common Questions and Answers

Builders regularly ask me if their customers can get financing for a barndominium construction project. The answer is yes. I am a nationwide barndominium construction lender who spends 100% of my workday providing customers with financing for the construction of the barndominium as well as for the permanent loan. I have been providing barndominium lending for many years.

In this article, I provide answers to frequently asked questions regarding barndominium construction lending. Many of these answers will vary depending on the lender you choose. I will provide important information from my experience as well as insights I have gained from competitive lenders. You can use these questions and answers as a guideline for communication with the lender of your choice.

WHAT A LOAN CAN INCLUDE

What is allowed to be included in a barndominium construction loan? This is an important question to ask your lender. Will the lender allow the construction loan to include the purchase of land? How do they handle any existing land loans? Are "exterior" items allowed to be included in the construction loan, such as detached buildings, installation of driveways, septic systems, drill-

ing water wells, pulling power to the property, fencing, ponds, etc.? Will the bank allow specialty items such as solar panels and in-floor radiant heating systems?

For my bank, the short answer is that the construction loan can include pretty much whatever it takes to get the customer's property in the desired condition. This includes the complete build of the home and may also include the purchase of land, installing such things as a driveway, water well, septic system, pulling power to the property, solar panels, fencing, and pond.

PERMISSIONS AND REQUIREMENTS

What are the permissions and requirements? There are three permissions that I am most often asked about that are important to your customers:

1. Can I serve as the general contractor?
2. Can I live on-site?
3. Can I do any of the work myself?

I find it is not often lenders allow these three permissions, but some lenders will do so. With the exception of the state of Texas, some lenders may allow the customer to serve as general contractor, provided the customer confirms they have the skills and knowledge to do so. Many customers may want to live on-site during the construction period in a recreation vehicle.

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As for doing any of the construction, many lenders require the

PHOTO COURTESY OF WICK BUILDINGS

complete building of the home to be done by professionals. A few lenders may allow the customer to do some work. For example, the bank may require all work up to and including the installation of interior walls (usually drywall) to be outsourced to professionals, but then allow the customer to do finish work such as painting walls, installing flooring, installing trim, and hanging fixtures and cabinets.

FACTORS AFFECTING ELIGIBILITY

What are the eligibility requirements? Keep in mind that construction loans involve more risk than a home purchase loan. With a construction loan, the home is a work in process. Once it is a single-family, owner-occupied home, however, the risk decreases significantly. As risk increases, eligibility requirements increase. Banks tend to look at four financial factors when determining eligibility and assessing risk:

1. Bank Balances. We often say that "cash is king." Your customers will need to show sufficient funds to cover down payment and closing costs. It is helpful to have additional funds in checking, savings, and investment accounts, including retirement funds.

2. Down Payment. Banks will vary on the required down payment. I have seen as low as 15% for a barndominium construction loan. Some lenders will allow non-cash sources of down payment, such as equity in the land and equity in the current home, provided that your customer plans to sell the home prior to obtaining a permanent loan at the end of the construction period.

3. Credit Score. Lenders will vary on what they allow. I often hear a 700-credit score minimum for a construction loan.

4. Debt-to-Income Ratio. For construction loans, it is common to also consider the permanent loan requirements, i.e., the loan your customer has at the end of the construction period that includes both interest and principal as part of the loan payment. The most common source of permanent loans is through Fannie Mae.

I most often hear about a 43% debt-to-income requirement for construction loans. Simply take all monthly debt payments from all sources such as auto loans, instalment loans, credit card balances, student loans, alimony, child support, etc. and divide by the total monthly income from all sources. Some banks will exclude payments for the customer's current home, provided they plan to sell the home prior to obtaining a permanent loan.

COMMON COMPONENTS OF A LOAN

What are common components of a

barndominium construction loan? For most lenders, it is common to have a construction loan period to build the barndominium, followed by a permanent loan. Construction loans are usually interest-only payments based on the average drawn balance for any given month. The loan amount is just an upper limit that cannot be exceeded. Many lenders will allow extensions, such as 90-day extensions at the end of the loan term for a minimal fee. Upon completion of the build, the goal for most customers is to get a permanent loan where the customer begins making principal and interest payments that may also include escrows for taxes and insurance. Permanent loan options vary among lenders.

BUILDING REQUIREMENTS AND RESTRICTIONS

What are the building requirements/restrictions? Banks will vary on building requirements/restrictions. The key is marketability. It is common for lenders to require certain minimum ratios for finished living area compared to unfinished living area (shop and garage space). It is common to require at least 60% finished living area under one roof. You can count finished basements and finished second stories. Porches/porticos and any detached buildings are usually not considered in the ratio. It is also common for lenders to require the value of the home to be a certain percent of the value of the property. If the customer's land is valued at $600,000 and you are building a $300,000 home, it will appear to be more of a land loan than a barndominium construction loan.

INFORMATION NEEDED BEFORE CONTACTING A LENDER

What should I have available before contacting a lender? It is helpful for your customers to have some land and build information ready prior to contacting a lender. For land, be prepared with the date acquired or to be acquired, the number of acres, the purchase price (if purchased within that last few years), estimated market value, and the loan balance, if any. For the build, you mainly need planned square feet by category: finished living area by floor, unfinished shop/garage/storage space, and covered porches space. The actual plans may change as your customer gathers cost information but, for the initial call with the lender, it is helpful to have approximate square foot numbers and a single number estimated/budgeted cost for the entire build, including both the home and all improvements to the property.

CONCLUSION

Barndominium construction lending is available nationwide. It is important to find a lender with barndominium construction experience. Your customers should be able to get competitive/similar loan terms to that of the more traditional stick-built homes. **RB**

Dave Navrat *is a barndominium construction loan officer at First Federal Bank of Kansas City. Dave has been working with builders and families to coordinate barndo loans for many years and has helped facilitate numerous barndominium construction loans across the United States. First Federal (ffbkc.com) is a bank dedicated to helping people build a better financial future. We empower customers with financial literacy, personal and business banking accounts, and lending options.*

BY NICK WARRICK

OSHA and ASTM Standards for PPE

How to Choose the Right Workwear for Safety Compliance

Industries like construction, manufacturing, and rural building are risky, and workplace accidents are often commonplace. According to the U.S. Bureau of Labor Statistics, the construction sector alone accounts for over 46% of all fatal slips, trips, and falls.

Given the high stakes, it's no wonder regulatory bodies like the Occupational Safety and Health Administration (OSHA) and the American Society for Testing and Materials (ASTM) provide essential safety guidelines. In part, those guidelines specify how workers should use personal protective equipment (PPE) and workwear.

In addition to adhering to OSHA and ASTM guidelines, selecting a trustworthy PPE supplier can help you secure your workers' safety. American-made workwear is often known for its superior quality and durability, making it a wise investment for employers who need long-lasting PPE. Designed to meet rigorous standards, it provides consistent protection in unpredictable environments.

This guide explains these standards, with specifics on selecting the appropriate workwear to protect workers and meet compliance rules.

WHAT ARE OSHA STANDARDS FOR WORKWEAR?

Established under the Occupational Safety and Health Act of 1970, OSHA is a key player in establishing and maintaining safe and healthy workplaces. OSHA has checks and balances in place to prevent workplace illnesses, injuries, and fatalities. Toward that end, the agency ensures

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workers have the right PPE best suited to their work environments.

PRACTICAL APPLICATIONS OF OSHA STANDARDS

For industries like construction, where injury risks are higher, OSHA mandates certain types of PPE designed to protect workers from common workplace hazards. The PPE must not only be readily available but must also meet or exceed the standards set by the American National Standards Institute. Depending on the job, PPE may include:

- Eye, face, head, hand, and foot protection
- Respiratory protection
- Head protection
- Electrical protective equipment
- Personal fall protection systems

OSHA also specifies guidelines for implementing PPE. Employers are responsible for conducting risk assessments, selecting the appropriate PPE for the job, ensuring employees abide by PPE requirements, and more. While the guidelines can be overwhelming, it's essential to comply with them to keep workers safe and avoid costly fines and other consequences.

WHAT IS ASTM, AND HOW DOES IT DIFFER FROM OSHA?

While OSHA sets legally mandated requirements for workplace safety, including PPE, ASTM focuses on voluntary consensus standards. These standards specify performance criteria and testing methods for materials used in PPE, including the physical, mechanical, and chemical makeup of fabrics, fibers, and textiles.

With ASTM, there are clear standards for testing and evaluating textiles. From wool, cotton, and other natural fibers to synthetic materials like glass strands, each type of material should meet performance and safety requirements. This rigorous process ensures that PPE can perform optimally in hazardous situations, whether a fire, chemical exposure, or a low-visibility environment.

While following ASTM protocols may be voluntary, doing so can help employers provide the safest possible working environment for employees. Knowing how PPE performs in real-world scenarios enables employers to choose the most appropriate PPE for each role — from construction workers using heavy equipment to rural builders exposed to unpredictable weather conditions.

HOW OSHA AND ASTM COMPLEMENT EACH OTHER

OSHA regulations focus on ensuring that employers provide the necessary PPE to protect workers from potential hazards. However, OSHA does not typically detail

the performance requirements for specific protective gear.

In contrast, ASTM standards aim to put PPE to the test — like a crash test for a vehicle. After all, providing PPE isn't just about checking off a box for compliance. It's about shielding workers from the dangers they encounter every day on the job.

When you know how PPE holds up against flames, chemicals, electrical hazards, and other threats, you can equip workers with workwear designed to withstand the specific demands of each environment.

Additionally, adhering to both OSHA and ASTM standards will give you greater peace of mind, knowing your workers have a complete line of defense against a wide range of risks. Ultimately, you'll ensure the PPE will perform effectively under stress, safeguarding employees in even the most dangerous conditions.

CHOOSING THE RIGHT WORKWEAR FOR SAFETY COMPLIANCE

Selecting the right workwear for your crew should start with a detailed workplace risk assessment. Identifying potential hazards will help you determine what type of protective clothing your workers need.

CHOOSING APPROPRIATE WORKWEAR MATERIALS

Use your risk assessment to determine the right materials for your PPE, such as flame-resistant, moisture-wicking, or chemical-resistant fabrics. You can look to various ASTM standards to identify the most appropriate PPE for various situations. For example, ASTM F903-24 tests how well materials resist liquids.

ENSURING PROPER FIT AND COMFORT

Consider durability, breathability, and tear resistance, too. Although personal protection is the primary goal, you'll want your workers to be comfortable on the job. Workwear that fits well and doesn't restrict movement will help your workers move freely and avoid getting injured.

REGULAR MAINTENANCE AND INSPECTION

Your safety compliance tasks don't end with purchasing the right workwear. OSHA mandates regular inspections of PPE and replacement of any damaged or worn PPE. With proper care and maintenance, you can extend the life of workwear while offering protection and meeting safety standards.

WHY AMERICAN-MADE WORKWEAR IS A SMART CHOICE FOR SAFETY COMPLIANCE

Whether you need flame-resistant workwear or high-visibility clothing, familiarizing yourself with safety standards and committing to regular inspections will help you keep your crew safe. With American-made workwear, you get the added benefit of reliability, durability, and a commitment to ethical manufacturing that meets the highest safety standards. **RB**

Nick Warrick *is the Sales Manager at All Seasons Uniforms. With over 15 years of experience in the work uniform business, he has worked with over 100 clients across 20 different industries. Holding bachelor's degrees in both Business Administration and Information Technology, Warrick revamped the company's online presence, offering its customers a new uniform shopping experience.*

BY DAN BROWNELL

Understanding R-Values

How Structural Elements and Building Codes Relate to Insulation Effectiveness

The importance of insulating buildings correctly can't be overstated, given high energy costs and the stringent building codes that regulate insulation. A key element in completing an insulation job properly is understanding R-values and how they relate to aspects such as U-factors, building codes, energy codes, climate zones, building envelope components, insulation types, proper installation techniques, thermal bridging, air infiltration, and documentation and verification of code adherence.

THE RELATIONSHIP BETWEEN R-VALUES AND U-FACTORS

R-values are a measure of resistance of heat flow and are used to indicate the effectiveness of individual insulation products. U-factors, on the other hand, are more general in that they measure the overall heat transfer through entire building component assemblies, including windows, doors, skylights, and structural elements. David Tomchak, Director of Marketing for Bay Insulation Systems (bayinsulation.com), summarized it this way: "R-value relates to specific insulation products while U-factor relates to insulation assemblies."

Thermal insulation, such as fiberglass batting, reduces heat transfer primarily through conduction and convection, whereas reflective insulation (like that insulation seen above), reduces heat transfer by reflecting radiant heat.
REFLECTIVE INSULATION MANUFACTURERS ASSOCIATION INTERNATIONAL (RIMA-1)

R-values are generally more familiar and better understood, in part because they're more intuitive. That's because their ratings correlate more logically with their performance. R-value ratings increase as insulation effectiveness increases, whereas U-factor can be confusing because rating numbers decrease as the insulation performance of the building component assemblies increase. This means R-values are better than U-factors for marketing purposes.

According to GreenBuildingAdvisor's web article "Understanding R-Value," prior to 1945, the insulation industry relied on U-factors but eventually replaced them with R-values to boost sales. The article states that "because many people assume that high numbers on a scale are 'better' than sparse numbers, insulation manufacturers found it hard to market insulation by bragging about low U-factors. So the R-value — which is simply the inverse of U-factor — was proposed by Everett Shuman, the director of Penn State's Building Research Institute. Since R = 1/U, the higher the R-value, the better the insulation" (greenbuildingadvisor.com/article/understanding-r-value)."

As previously mentioned, R-values only measure insulation materials of individual components and not entire structural assemblies, which include areas with less insulation, such as windows, doors, skylights, and service openings for wires and pipes, etc. R-values also don't account for thermal bridging. Thermal bridging occurs when components such as wood 2"x4" wall studs create a break in interior insulation. The break allows the wood, which has a much lower R-value than the insulation around it, to conduct heat between the interior and exterior of the building. A similar effect takes place with air infiltration, caused by any openings in the building envelope, such as gaps in insulation around conduits or other materials passing through exterior walls.

The limited scope of R-values mean that they don't provide an overall measure of a structure's insulation. Even if maximum insulation is used and it's installed perfectly, the areas that aren't covered by insulation can still leak a tremendous amount of heat, much like leaving a car window open while the heater is on. That's why U-factors are also important. They measure the effectiveness of a building's insulation system as a whole.

FACTORS AFFECTING INSULATION

• Climate Zones

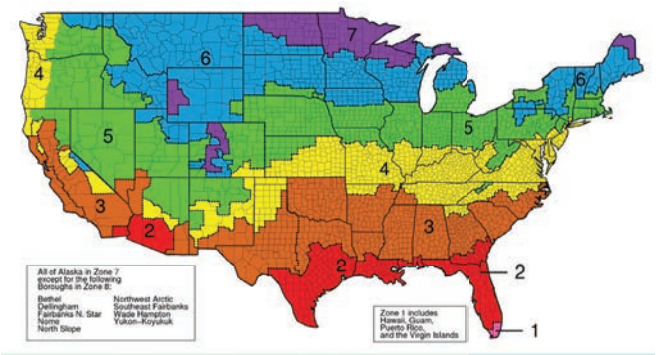
The IRC and IECC use a map of the U.S. designating eight zones with R-value requirements. Colder climates require higher R-values, while warmer climates require lower R-values.

• Energy Codes and Green Building Programs

ASHRAE, the American Society of Heating, Refrigerating, and Air-Conditioning Engineers — a private, non-government organization — publishes energy standards for buildings that aren't mandatory on their own, but have been adopted as code by some

state and local governments. Energy Star or Leadership in Energy and Environmental Design (LEED) certification programs sometimes recommend or require higher-than-minimum R-values.

"Typically, to determine what insulation is required," Tomchak explained, "the factors you need to consider are climate zone and what the local and/or state municipalities have adopted as code, including the year. Most locales use either the ASHRAE 90.1 Standard or the IECC. However, the locale will state the year of the code or standard they've adopted. Both ASHRAE 90.1 and the IECC publish a new standard every three years. However, they don't do it concurrently or communicate directly with each other. They are two different bodies. Therefore, it is important to understand what may have changed from IECC 2012 to IECC 2015 to IECC 2018 to IECC 2021 to IECC 2024; or from ASHRAE 90.1-2013 to ASHRAE 90.1-2016 to ASHRAE 90.1-2019 to ASHRAE 90.1-2022, etc."



Energy Star Recommended Insulation Map
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY - ENERGY STAR, PUBLIC DOMAIN, VIA WIKIMEDIA COMMONS

• Building Envelope Components

Building codes not only vary by climate zone but also for various parts of the building envelope, such as attics, exterior walls, ceilings, floors, basements, and crawl spaces. For example, a floor in Climate Zone 1 might require R13, while the same floor in Climate Zone 7 and 8 might require R38.

• Insulation Types and Installation

"To understand your insulation needs," Tomchak said, "you'll

need to know what you're insulating, the climate zone, and the code or standard adopted by the local jurisdictions. From there, the code or standard adopted will specify what U-factor you'll need to comply with. From there, the code or standard will provide a list of 'acceptable' types of insulation assemblies with various combinations of R-values, etc."

There are two main types of insulation: thermal and reflective. Both reduce heat transfer, but in different ways. Thermal insulation, such as fiberglass batting, reduces heat transfer primarily through conduction and convection, whereas reflective insulation reduces heat transfer by reflecting radiant heat.

David Yarbrough at R&D Services, Inc., a consultant for Reflective Insulation Manufacturers Association International (RIMA-I), explained: "Reflective insulations (RIs) and assemblies have thermal resistance (R-values) like all insulation products used in buildings. Reflective insulation performance is based on a significant reduction in heat transfer by thermal radiation (one of the three modes of heat transfer). The important physical properties for RIs are low emittance (low emittance means a surface gives off very little heat) and high reflectance (high reflectance means a surface rejects incoming heat). RIs are installed in enclosed regions to form one or more enclosed reflective air spaces."

The type of insulation affects the method of installation, as its effectiveness and susceptibility to compromise or failure is affected by the specific material and its characteristics. For example, spray foam is applied as a thick liquid that's resistant to compression after it dries to a solid. But it must be applied at a consistent predetermined thickness to meet code. Fiberglass, on the other hand, is manufactured with a consistent thickness, but is soft and pliable, making it susceptible to compression, which reduces its effectiveness. Both spray foam and fiberglass are susceptible to gaps in installation, which could prevent them from meeting code.

Spray foam is applied as a thick liquid that's resistant to compression after it dries to a solid. But it must be applied at a consistent predetermined thickness to meet code.
ANATOLIY_GLEB-STOCK.ADOBE.COM

DOCUMENTATION AND VERIFICATION

Tomchak said, "Most reputable insulation suppliers and manufacturers will have a third-party laboratory mark on its product label that certifies the R-value. As an example, for fiberglass insulation, one of the most commonly seen marks is Home Innovation Research Labs' (homeinnovation.com/services/certification)."

Tomchak elaborated on the requirements for documentation and verification with this excerpt from IECC, Chapter 3, Section C303:

C303.1.1 Building thermal envelope insulation

An R-value identification mark shall be applied by the manufacturer to each piece of building thermal envelope insulation 12

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inches (305mm) or greater in width. Alternatively, the insulation installers shall provide a certification listing the type, manufacturer and R-value of insulation installed in each element of the building thermal envelope. For blown-in or sprayed fiberglass and cellulose insulation, the initial installed thickness, settled thickness, settled R-value, installed density, coverage area and number of bags installed shall be listed on the certification. For sprayed polyurethane foam (SPF) insulation, the installed thickness of the areas covered and R-value of installed thickness shall be listed on the certification. For insulated siding, the R-value shall be labeled on the product's package and shall be listed on the certification. The insulation installer shall sign, date and post the certification in a conspicuous location on the job site.

Building codes not only vary by climate zone but also for various parts of the building envelope. For example, a floor in Climate Zone 1 might require R13, while the same floor in Climate Zone 7 and 8 might require R38. AKEKSS-STOCK.ADOBE.COM

CONCLUSION

Insulation building and energy codes, driven by financial, political, and environmental pressures, are becoming more stringent by the year. But as Tomchak pointed out, not all new energy codes are universally authoritative. "Just because new energy codes are established, it doesn't automatically mean that they must be followed," he said. "It is the local and state jurisdictions that decide what to adopt, being code or standard, and applicable date of that code or standard." Builders need to remain up to date with changes in insulation materials and their local and state codes to stay compliant and competitive in their business. **RB**

RESOURCES

- Bay Insulation Systems (bayinsulation.com)
- Northwestern Ohio Foam Products, Inc. - NOFP (nofp.com)
- Reflective Insulation Manufacturers Association International (rimainternational.org)
- Thermal Design (thermaldesign.com)

Test Standards for Certifying R-Values

According to Tomchak, "The ASTM C518 (Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus) is the generally accepted test used for R-value, as well as ASTM C177 (Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus). However, this won't necessarily be shown on any product label. It most likely would be found in the manufacturer's data sheets for their products. The R-value on the label should be backed or "certified" by a third-party independent lab, with that lab's mark on the label as well. Home Innovation Research Labs' is just one example. (homeinnovation.com/services/certification/lab_certified_products).

The ASTM C518 test involves placing an insulation sample between a cold plate and a hot plate in a specially designed and calibrated testing machine. Detailed information about the test can be found on the ASTM.org website at astm.org/standards/c518. According to the information published on the webpage, the test adheres includes the following methods and criteria in the "Scope" section of the test standard document:

"1.4 The heat flow meter apparatus establishes steady state one-dimensional heat flux through a test specimen between two parallel plates at constant but different temperatures. By appropriate calibration of the heat flux transducer(s) with calibration standards and by measurement of the plate temperatures and plate separation. Fourier's law of heat conduction is used to calculate thermal conductivity, and thermal resistivity or thermal resistance and thermal conductance.

1.6 This test method is applicable to the measurement of thermal transmission through a wide range of specimen properties and environmental conditions. The method has been used at ambient conditions of 10 to 40°C with thicknesses up to approximately 250 mm, and with plate temperatures from –195°C to 540°C at 25-mm thickness.

1.8 To meet the requirements of this test method the thermal resistance of the test specimen shall be greater than 0.10 m2·K/W in the direction of the heat flow and edge heat losses shall be controlled, using edge insulation, or a guard heater, or both."

BY RURAL BUILDER STAFF

■ MFM BUILDING PRODUCTS ANNOUNCES NEW EXPANSION PROJECT

MFM Building Products, a manufacturer of a full envelope of waterproofing and weather barrier products for the building industry, has broken ground on a new warehouse expansion project that will lead to further expansion in 2025.

Shown (left to right) is David Delcoma, Operations Manager; Tony Reis, President; Paul Bratton, MFM Project Manager.

The 33,000 square foot expansion is being constructed at the company's Brewer Lane warehouse, also located in Coshocton. The new building will adjoin the existing facility that currently houses MFM finished goods. The new space will provide the needed inventory space for raw materials as the company continues to grow. The expansion will also free up space in the company's manufacturing facility for the addition of several new production lines in Q3 of 2025.

The 11-acre Brewer Lane site is located 2.5 miles from the main Corporate Campus and manufacturing operation. The site can also accommodate future expansion projects for years to come.

■ OWENS CORNING ROOFING INTRODUCES EXCLUSIVE CCN PARTNERSHIP PROGRAM

Owens Corning and the Certified Contractors Network (CCN) are partnering to help roofing and home improvement contractors scale their businesses and drive sustainable growth. The CCN Partnership Program is exclusive to Owens Corning Roofing Contractor Network (OCCN) members and includes one-on-one coaching, member roundtable discussions, and targeted training to drive continuous improvement across the contractor's business. Tailored to the roofing and home improvement industry, the CCN Partnership delivers best-in-class coaching designed to help improve performance in critical areas including business planning, operations, financial statements, sales management, marketing and more.

The partnership provides OCCN members with unlimited access to a full-course curriculum at a deeply subsidized rate – 60% off the list price for the first year of membership. Curriculum modules help members transform their businesses by systematically improving systems and processes. Content addresses macro-issues, like lead-generation, that affect the entire enterprise, as well as specific functions, such as scheduling protocols and checklists.

CCN Vice President Gary Cohen said that CCN helps contractors implement proven systems and processes designed to achieve revenue and net profit results. "Many members joined CCN with modest revenues and by fully engaging in our proven processes, have achieved robust sales with net profits of 15% to 20%," he said. Cohen added that CCN emphasizes frequency and continuous improvement, through a strategy that leverages coaching to keep members engaged. "We are thrilled about our partnership with Owens Corning. Our goal is to help Owens Corning Roofing Contractor Network members achieve measurable results in the first 90 days, and then we systematically tackle each area of the business to further improve performance," Cohen said. The strategy aims to help business owners focus on vision and strategy, as their teams cultivate the capabilities and confidence to manage different parts of the business.

In addition to education, the CCN Partnership Program provides members with access to digital roundtable discussions and limited tickets to three annual conferences. The full-course curriculum also includes National Association of the Remodeling Industry (NARI) bootcamps, which award certificates of completion to participants successfully finishing each bootcamp. **RB**

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In July, *Rural Builder* magazine will present its **Gold Key of Excellence Awards** for the 42nd time. Help us determine the names of suppliers of building materials and/or construction equipment who do the best job of providing you with all of the services and products you need to run your business successfully. You can select up to three suppliers from the following list or nominate someone new in the spaces provided below. **TAKE A MINUTE TO SUBMIT YOUR VOTE TODAY!**

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❑ Beck America Inc.
❑ Best Buy Metals Knoxville
❑ Bradbury Group
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❑ Burrow's Post Frame Supply
❑ Capitol Forest Products
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❑ Deliverance Powered Safety Hammers LLC
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❑ Dutch Tech Inc.
❑ Dynamic Fastener
❑ East Coast Fasteners
❑ Englert Inc.
❑ Everlast Roofing, Inc.
❑ Express Barns
❑ FastenMaster
❑ FootingPad
❑ Frontier Metals
❑ Golden Rule Fasteners
❑ Graber Post Buildings Inc.
❑ Hershey's Metal Meister
❑ HD Quality Builders
❑ Hitz Halter
❑ Hixwood
❑ I Beam Sliding Doors
❑ Janus International Group
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❑ Marion Manufacturing
❑ Maze Nails
❑ Metal Sales
❑ McElroy Metal
❑ Metal Rollforming Systems
❑ MFM Building Products
❑ Mid South Aluminum
❑ Mill Steel Company
❑ MWI Components
❑ New Tech Machinery
❑ Palram Americas
❑ Perma-Column LLC
❑ Pine Hill Trailers
❑ Planet Saver Industries/ GreenPost
❑ Plyco Corporation
❑ Post Protector
❑ Progressive Metals
❑ Red Dot Products
❑ RetroFitClip
❑ rFoil Reflective Insulation
❑ Richland Laminated Columns
❑ Rigidply Rafters
❑ Roll Former Corp. LLC
❑ Roper Whitney
❑ Royal Crowne Cupolas
❑ S-5!
❑ Shed Windows & More
❑ Sherwin-Williams Coatings
❑ Smart Build Systems
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❑ Starwood Rafters
❑ Stockade Buildings
❑ Stoll Metal Works
❑ SWI Machinery
❑ T&H Lemont
❑ Thermal Building Concepts
❑ Timber Technologies Solutions
❑ Trac-Rite Doors
❑ Triangle Fastener Corporation
❑ Tri-State Lumber
❑ True Metal Supply
❑ United Steel Supply
❑ Ventco by Lakeside
❑ W.E.H. Supply
❑ Wick Buildings
❑ Wildcat LLC

Can't find your favorite suppliers above? Then nominate a supplier in the space provided below. (Company Name, Location & Website)

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EVENTS CALENDAR

BY RURAL BUILDER STAFF

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

2025

Feb 17-20, 2025
FGIA Annual Conference
Hyatt Regency Orlando, Florida.
fgiaonline.org

Feb 19-21, 2025
International Roofing Expo (IRE)
Henry B. González Convention Center, San Antonio, Texas.
theroofingexpo.com/en/home.html

Feb 25-27, 2025
National Association of Homebuilders (NAHB) — International Builders' Show (IBS) 2025
Las Vegas Convention Center (LVCC), Las Vegas, Nevada.
buildersshow.com

Feb 25-27, 2025
ABC Convention 2025
Mandalay Bay Resort & Casino, Las Vegas, Nevada.
abcconvention.abc.org

April 2-4, 2025
Frame Building Expo (FBE)
Hilton Knoxville, Knoxville, Tennessee.
nfba.org

Apr 8-10, 2025
AGC Annual Convention
Hilton Columbus Downtown, Hyatt Regency Columbus, and Greater Columbus Convention Center, Columbus, Ohio.
convention.agc.org

June 4-6, 2025
Florida Roofing & Sheet Metal Expo
Gaylord Palms Convention Center, Kissimmee, Florida.
floridaroof.com

June 25-26, 2025
Post-Frame Builder Show
Spooky Nook Sports Lancaster, Manheim, Pennsylvania.
postframebuildershow.com

Oct 1-2, 2025
Construction Rollforming Show
Dayton Convention Center, Dayton, Ohio.
constructionrollformingshow.com

Oct 21-23, 2025
METALCON
Las Vegas Convention Center, Las Vegas, Nevada.
metalcon.com

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Greenville Convention Center, Greenville, SC

garageshedcarportshow.com

FROM THE PUBLISHER OF FRAME BUILDING NEWS

2025 POST-FRAME BUILDER SHOW

JUNE 25-26, 2025

Spooky Nook Sports Lancaster, Manheim, PA

postframebuildershow.com

FROM THE PUBLISHER OF ROLLFORMING MAGAZINE

2025 Construction Rollforming Show

OCTOBER 1-2, 2025

Dayton Convention Center, Dayton, OH

constructionrollformingshow.com

For More Information Contact Missy Beyer:

missy@shieldwallmedia.com ▪ PH 920-216-3007 ▪ FAX 1-715-277-8680

BY RURAL BUILDER STAFF

ASTA AMERICA INTRODUCES TWO HIGH-PERFORMANCE ROLLING STEEL PRODUCTS

ASTA America by Janus International, a leading provider of commercial rolling steel slat doors and commercial roll-up sheet doors for over 30 years, introduces two new high performance door solutions to enhance a variety of applications requiring higher cycle applications and high performance.

The ASTA America 400 and 800 Series High Performance Door Systems offer increased strength and reliability and are innovative choices for customers seeking maximum performance. These high-performance door systems combine the proven product features of ASTA's 400 Series Service Doors and 800 Series Rolling Grilles with the efficiency of a high-performance operator with enhanced safety features.

The 400HP Series High Performance Door System is engineered for durability, security, and seamless fast-moving operation up to 24 inches per second in the open direction. The 400HP Door System provides increased protection and operational efficiency for any industrial, commercial, or high-cycle application requiring higher performance.

The 800HP Series High Performance Grille System provides improved operational benefits in high performance rolling grille systems. Designed to outperform traditional coiling grilles, it operates at an opening speed of up to 24 inches per second and closes at 12 inches per second, providing swift access. The 800HP Series is designed for parking garages, hospitals, pharmacies, schools and universities, retail outlets, and restaurants requiring higher cycle applications. Additionally, high security loading bays, sallyports, and climate-controlled environments are appropriate applications for the 800 HP Series.

MALCO TOOLS LAUNCHES 7-IN-1 C-RHEX FLIP BIT SERIES

Malco Tools, one of the nation's leading solution developers and manufacturers of a variety of high-quality tools for the HVAC and building construction trades, has announced the launch of its 7-in-1 C-RHEX® Flip Bit Series, built with high-quality materials for superior durability to set the industry standard for performance and quality.

Malco Tools' 7-in-1 C-RHEX® Flip Bit Series.

The new bit series is compatible with any impact driver or Malco's CONNEXT3® handle (sold separately), and is designed with seven built-in essential functions for the trade pro. Sockets fit snugly on the driver shaft for more secure operation and storage, and the 7-in-1 Flip Bit is engineered to make driving fasteners more secure with a strong magnet that reduces wobbling, slipping, and tipping out, so any job gets done correctly and efficiently. There are three integrated driver head options, including #2 Phillips, #2 Robertson (square), and T25 (star).

Malco's portfolio of high-quality cleanable, reversible C-RHEX® drivers allows trade pros to quickly change between six-different hex sizes and eliminate troublesome buildup of metal shavings from the socket and magnet with the swipe of a glove or towel while the driver shank remains installed in the drill chuck.

Gray's insulated hand tools features a two-layer orange and yellow protection system that serves as a visual safety indicator.

GRAY TOOLS ANNOUNCES FULL LINE OF INSULATED HAND TOOLS

Gray Tools has released a full line of insulated hand tools to meet the growing needs of commercial and residential electricians, industrial maintenance professionals, mobile/field service technicians, and electric vehicle (EV) mechanics. The assortment consists of more than 275 products, including both sets and loose tools, with new tools continuing to be added as Gray expands the line. Each tool goes through a lengthy, labor-intensive process to ensure maximum protection for the operator up to 1,000 VAC.

Gray's insulated line includes ratchets, sockets, wrenches, screwdrivers, nut drivers, pliers, hex keys and hacksaws, as well as a selection of uncommon tools. Various styles and sizes, including SAE and metric, are available to meet a range of jobsite requirements. Each tool features a dual-colored insulation that serves as a visual safety indicator. If the outer orange layer of insulation becomes damaged, an inner yellow layer alerts the user that the tool is no longer safe for use.

Gray's rigorous multi-step insulation process is designed to meet or exceed ASTM F1505 standards for insulating adhesion, dielectric properties, flammability and durability. When the process is completed, each tool is charged with 10,000 volts of energy for 180 seconds to ensure its insulation resists potential electric shock. Other tests are performed to verify the flame resistance and durability of the insulating material.

Gray's full line of insulated tools is manufactured in North America and backed by a limited lifetime warranty. RB

BY RURAL BUILDER STAFF

Rural Builder July 2001 Issue

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!

Time to Go Forward ...With Design Build

By Jeffrey L. Beard
President and CEO
Design-Build Institute of America

Interest in and use of design-build method of project delivery is growing dramatically. Today, design-build is the project delivery method of choice on more than 30 percent of the non-residential construction projects in the United States. Since 1985, the use of design-build has grown substantially, particularly in the private sector, and is being used in a wide array of commercial and institutional applications including hospitals, educational facilities, office buildings, retail centers, and hotels.

Design-Build is a process that was applied as early as 1800 B.C. in ancient Mesopotamia when the Code of Hammurabi assigned master builders with absolute responsibility for both design and construction. Today, we are seeing a resurgence in the use of design-build, as owners and today's "master builders" strive to deliver capital facilities which serve as bottom-line assets in an ever-increasing competitive marketplace.

Historically, master builders readily accepted the duty of serving as architect, engineer, and builder, assuming responsibility for every aspect of the project and commanding the services of multitudes of skilled craftsmen. Many of the great buildings of ancient Greece, such as the Parthenon and the Theatre of Dionysius, stand today as monuments to the hard work and talent of the early builders, as well as the viability of the single-source design-build approach.

With time, however, the responsibilities for design and construction began to separate, particularly in the United States.

The design-build method is being employed on an incredibly diverse array of projects, including room additions and remodelings like this one in suburban Washington, D.C.

While single-source responsibility was used in the United States for many petrochemical facilities in the mid-1900s, the real resurgence of interest in design-build within America has occurred primarily over the last decade.

What is a project delivery method? The answer is a comprehensive process including planning, design, construction, and other services, necessary for organizing, executing, and completing a building or other project. Examples of project delivery systems for capital facilities include the "traditional" design-bid-build approach in which the project owner commissions an architect or engineer to pre-

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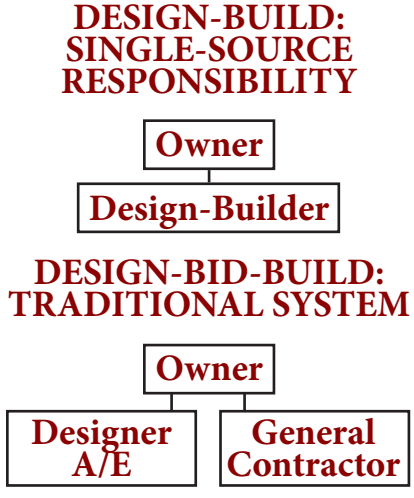
pare drawings and specifications under a design contract, and subsequently selects a construction contractor by competitive bidding (or negotiation) to build the facility under a construction contract.

Another system is the construction management method in which an owner engages an architect/engineer (A/E) for design and a construction manager to coordinate the delivery process. The contracts for such ancillary consulting or subcontractor services can either be with the construction manager or directly with the owner.

Another project delivery method, the design-build method, occurs when one entity (design-builder) forges a single contract with the owner to provide architectural/engineering design services and construction services. (Design-build is also known as design-construct and single source responsibility.)



There are many benefits with the use of the design-build method of project delivery, including these:

- Singular responsibility
- Quality
- Cost savings
- Time savings
- Potential for reduced administrative burden
- Earlier guaranteed cost
- Improved risk management

What's the key in successfully accomplishing design-build, and how can it be advanced? The answer to this question is: First and foremost, focus on the owners. These words of advice from the Design-Build Institute of Americas' fifth chairman of the board, Don Warren, president of Suitt Construction Company, were given to DBIA's members and staff at the organization's first meeting in 1993, and continue to guide, not only DBIA's operations today, but those of many successful design-builders, no matter how large or small they are.

This focus on the total need of the facility owner continues to distinguish DBIA members from their competitors, most of whom concentrate on their core competency which is dictated by their learned profession or trade. By contrast, DBIA members typically have always had an eye on the external exigencies of meeting the marketplace, on understanding the owner's business drivers, and delivering the most efficient solution. Going forward, an aspiring competitor in the design-build marketplace needs to assess what that firm has already done for its customers, and then determine how the organization can add further value for the customer.

Through strong leadership of Rik Kunnath, CEO of Pankow Builders Ltd., DBIA's second chairman, DBIA created and published the Design-Build Manual of Practice. This flagship publication has an entire section devoted to owners' design-build project implementation guidelines. Similarly, DBIA started an owner's on-site training program through the leadership and encouragement of 2001 Vice Chairman Mark Shambaugh, president of Shambaugh and Son. The first owner's on-site was provided to Eli Lilly & Company, and the program has since been reprised for many other project owners of varying sizes.

A DBIA survey of owners' needs during the mid-1990s revealed a number of products and services that owners recognized as the tools needed to properly implement design-build programs. Among those tools were a family of multi-disciplinary design-build contracts, studies revealing the statistical advantages of design-build delivery, a master guide performance specification system, and increased educational programming. These tools are available within the industry. Going forward, some others that should be developed for design-builders of all sizes include:

- Programming/Performance Specifying Template — A tool that will allow the synthesis of owner/user requirements to build a design-build RFP or project manual, and that will allow a feedback loop that tests the project results for "fitness for purpose."
- Integrated Insurance Product — An insurance product that comprehensively takes into consideration a design-build entity's risks and exposures and realistically insures against potential losses.
- Guidance and Risk Identification and Pricing — An examination of potential risks on a design-build project that will provide a starting point for both owners and design-builders to properly ascertain, value, and assign risk and responsibility to attain the most efficient and fair contracts.
- Technology Benchmarking — Asking owners and designer-builders to look at the utility of their technology investments, and to find ways to link and integrate hardware, software, and data systems for the betterment of the integrated process.
- Multi-Disciplinary Design-Build Curriculum — Describing, in a living document, the courses, training, and competencies needed for tomorrow's designer-builder, including professional design, construction management, business, and related core topics.
- Performance Codes and Standards — Reaching out to the building and zoning code community to align owner's development needs with concerns of safety officials, and meaningfully participating in the development of national and international design, construction, and operating performance standards.

With the development of these tools, design-build practitioners and owners can focus on the successful development of projects via the design-build method of project delivery. RB

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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.

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WHAT WE NEED:

- Three to five high-resolution (print quality) photos of the finished project.
- A list of major components, with their manufacturer and relevant details like size/model/type. The digital submission form provides the fields to be filled in.
- A brief description of the project, with information such as special features and how it meets the customer's needs.

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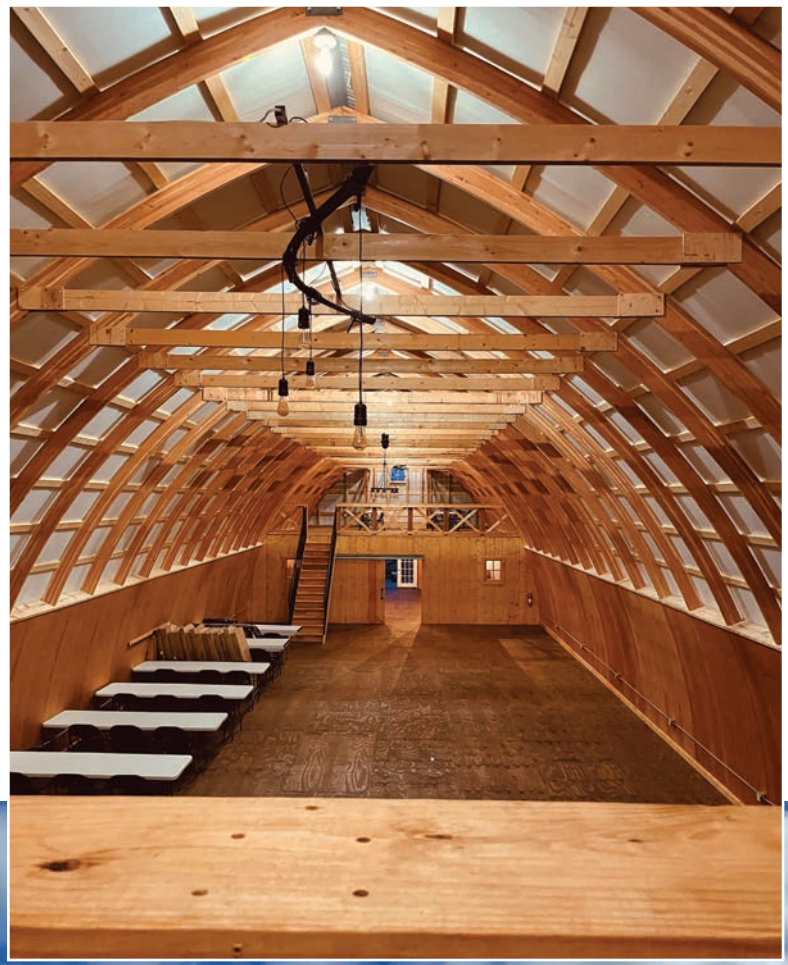

THE DETAILS:

Size: 32” x 124”

Trusses: Starwood Rafters, 4’ o.c., laminated

Walls: Cement block

Roof Panels/Shingles: Hixwood steel, residential 6” 28ga., black

Wall Panels/Siding: Hixwood steel, Super-Rib 60 29ga., white

Walk Doors: Plyco

Windows: Silverline

CONSTRUCTION SURVEY INSIGHTS

A Shield Wall Media Builder Trend:

More Builders Go from Big to Small Than from Small to Big

One of the trends that crosses our magazine titles is small contractors trying to do what they need to be successful. That often includes multiple types of construction. The industry data shows some interesting trends. One is that it appears easier to migrate from larger buildings or general construction to smaller buildings and sheds than the other way.

Some examples:

- Of respondents listing post-frame as their primary business, 32% built sheds.
- Of respondents listing cold-formed metal buildings as their primary business, 29% built sheds.
- Of respondents listing pre-engineered metal buildings as their primary business, 23% built sheds.
- Of respondents listing general roofing as their primary business, 12% built sheds.

Conversely, of respondents listing sheds as their primary business:

- 11% built post-frame.
- 0% built cold formed metal buildings.
- 0% built pre-engineered metal buildings.
- 0% did general roofing.

The one construction method that bucks the trend is wood-framed (stick-built) construction:

- 16% of respondents listing wood-framed as their primary business built sheds.
- 33% of respondents listing sheds as their primary business built wood-framed.

It will be interesting to watch how these trends develop over time with the increasing market share and new applications for post-frame and cold-formed metal construction. **RB**

Which of these building types do you participate in?

Which of these best describes your primary area of construction?	General Roofing	Metal Roofing	Other Roofing (Gutters)	Post-Frame	Metal Building (Cold-Formed)
General Roofing		53%	28%	20%	19%
Metal Roofing	21%		30%	23%	19%
Other Roofing (gutters)	25%	33%		17%	8%
Post Frame	16%	44%	8%		8%
Metal Building (cold-formed)	29%	57%	29%	14%	
Metal Building (Pre-engineered)	31%	23%	31%	8%	54%
Roll forming or metal forming	14%	64%	29%	36%	36%
Wood framed (stick built)	39%	29%	21%	32%	13%
Other Building (sheds and carports)	0%	22%	0%	11%	0%

Which of these best describes your primary area of construction?	Metal Building (pre-engineered)	Roll forming or metal forming	Wood framed (stick built)	Other Building (sheds and carports)
General Roofing	22%	19%	18%	12%
Metal Roofing	19%	26%	2%	9%
Other Roofing (gutters)	8%	8%	0%	0%
Post Frame	16%	16%	40%	32%
Metal Building (cold-formed)	57%	29%	43%	29%
Metal Building (Pre-engineered)		38%	8%	23%
Roll forming or metal forming	29%		14%	14%
Wood framed (stick built)	13%	5%		16%
Other Building (sheds and carports)	0%	0%	33%	

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