

NATIONAL

# FRAME

B U I L D E R

M A G A Z I N E

JUNE 2021  
Vol. 2 No. 2



## RESEARCH & TECHNOLOGY

Surveying the Nature and Scope of Failures in Farm Buildings

## POST FRAME DESIGN

Most Farmers Don't Know Their Own (Barn's) Strength

## BUSINESS MANAGEMENT

Use Temporary Workers to Outsmart Construction Labor Shortages in 2021

## SAFETY UPDATE

COVID-19 Declared a National Emphasis Program by OSHA

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## WHAT IS IT?

The National Frame Building Association has entered into an agreement with the law firm of Auman, Mahan, and Furry to provide the NFBA membership with this unique service.

## HOW DO I USE THE PLAN?

Auman, Mahan, and Furry specializes in labor and employment law, discrimination, wage-hour, prevailing wage, workers' compensation, unemployment compensation, construction law, construction claims disputes, government contract disputes, occupational safety and health, pensions, fringe benefits, collective bargaining, litigation, and business law; including taxes and securities. The firm represents numerous business clients and various associations throughout the country, including NFBA.

## WHAT IF I NEED ADDITIONAL HELP?

If additional services are needed, members can either contact their own attorney or retain the services of an attorney at AMF at a preferred hourly rate. Court costs, filing fees, and miscellaneous disbursements would be paid for by the member, and itemized by the firm.

## WHAT DOES IT COVER?

The primary purpose of this service is to provide NFBA members the opportunity to discuss and identify legal problems, and to resolve general questions and concerns quickly through convenient access to specialized and qualified legal counsel. Each NFBA member is entitled to one 30 minute consultation per month either by telephone, email, or office conference, at no charge. It is understood that these consultations and conferences will be based on existing knowledge of the attorney without further research and analysis. When calling Auman, Mahan, and Furry, please ask for Gary Auman and identify yourself as a NFBA Member calling under the Legal Services Plan.

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## COVID-19 Declared a National Emphasis Program by OSHA

OSHA declared COVID-19 a National Emphasis Program (NEP). This action will focus increased attention on employers and their COVID-19 Pandemic Protection Programs. Not only will this increase the importance of having a Pandemic Protection Program, it also draws attention to the actions that may be taken by employers in retaliation to employees who file complaints against them.



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# A MESSAGE FROM OUTGOING PRESIDENT MATT GREINER



It has been an honor and privilege to serve as NFBA President for the last two years. Looking back at where we were when I started with NFBA and how far we have come in the face of so many challenges, I am overall pleased with what has been accomplished. During my time as both a board member and President, I believe my colleagues and I have managed to improve the overall health of our organization. Notably for me would be managing finances, forming the safety committee to improve post frame safety, and developing crew curriculum. We have accomplished these things in the face of controversy, pandemic, and management change.

It's been a fun learning experience. I have formed lasting relationships I value deeply. There is still much to accomplish; we have so much potential as an industry. I couldn't be more confident turning over the reins to someone other than Mark Billstrom. He has been an incredible colleague in so many ways. For the sake of brevity, a lesson learned from Mark, I'll end here with a big thank you to everyone that helped me through and guided me along. Notably my predecessors Todd Carlson and Ken Gieske, both true friends in the business, and finally, Gary Auman, for his principled guidance. Thank you everyone; I wish all the best to Mark during his tenure as President.

A stylized, handwritten signature of Matt Greiner in black ink.

**Matt Greiner**  
NFBA Past President  
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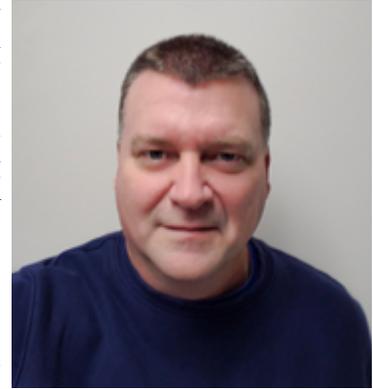
# A MESSAGE FROM

## MARK BILLSTROM PRESIDENT, NFBA BOARD OF DIRECTORS

First of all, a sincere thank you to Matt Greiner (Greiner Buildings, Inc.) and Todd Carlson (A.J. Manufacturing, Inc.) for their service to the National Frame Building Association; most recently as President and Past-President, respectively, of the NFBA Board of Directors. Board service is a substantial commitment and both of these men have been exemplary in demonstrating that commitment to serve our Association. They, and many others before them, have set a high standard for leading the NFBA Board. Please take the time to thank them for their service to the NFBA.

How many times recently have you read articles and comments lamenting the difficulties of 2020, and thankfulness that it is behind us? Not only is 2020 behind us, but now the first quarter of 2021 is also. Get fired up, because this year is shaping up to have some unique challenges of its own for operating a construction related business! Framing lumber, structural and panel wood products, steel, and most other building materials are experiencing record high prices and record low availability. Skilled craftspeople and general workforce people continue to be difficult to find and retain. Like it or not, we never stop learning how to adapt through experience. But, even with these current challenges, the demand for quality post frame construction is high. Some say it is as high as they have ever seen. With high demand comes an excellent opportunity to grow your business and promote the possibilities of post frame construction. I encourage you to stay diligent in pushing through the challenges and seize this opportunity.

The NFBA is your ally in growing your post frame business and promoting our industry to those less knowledgeable. Membership provides you with many benefits that



are not available to non-member suppliers and builders: Educational Information (for you, for your customers, for local code officials), Growth Benefits (visibility, networking, the annual Expo, referrals, resources) and Advocacy (support for your safety program, technical support, legal support, visibility, and promotion through various awards programs). If you are reading this as a non-member, or someone who has not yet renewed your membership, now is the time to engage with the NFBA. Your involvement is valued and appreciated. It's easy to become competitive in this industry that we've chosen as a career, but don't discount the real benefit of interacting (through the NFBA) with people who do what you do. There is strength in an Association.

A pandemic may have interrupted our 2021 Expo, but work is well underway for our 2022 Expo in January. We hope to see you there.

One more benefit of NFBA membership? This magazine. Thanks for reading.

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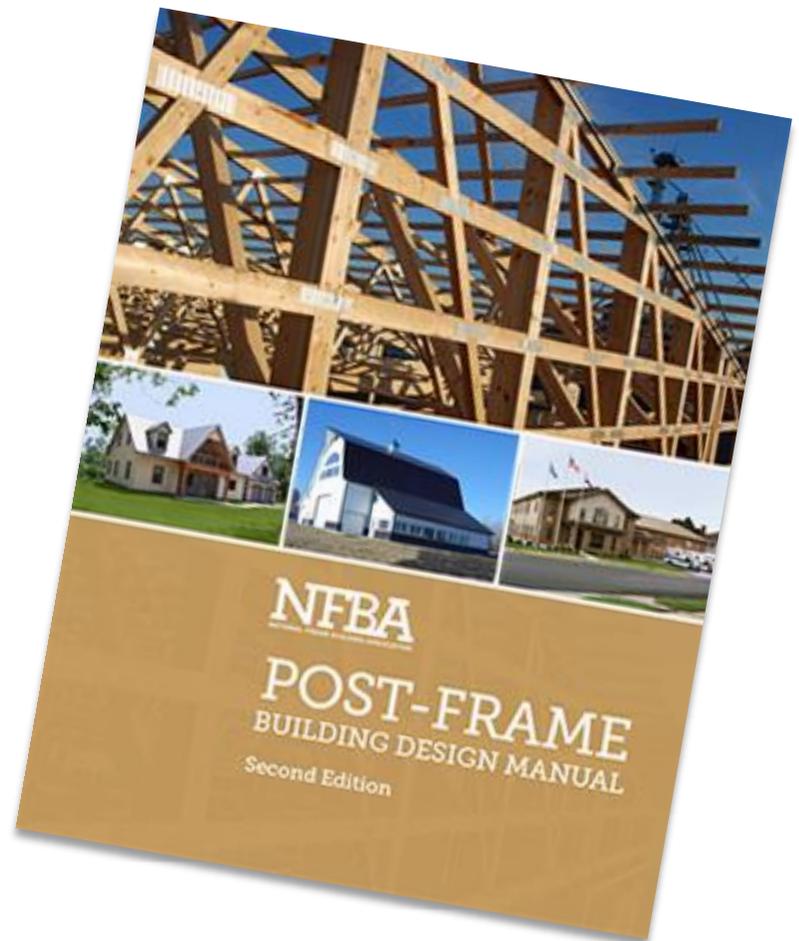
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# USE TEMPORARY WORKERS TO OUTSMART CONSTRUCTION LABOR SHORTAGES IN 2021

Contractors across the country have had to halt, postpone, or cancel projects due to the COVID-19 pandemic. Made up of 27% of all contractors nationwide, the effects of the pandemic were definitely felt in the Midwest.

Rich Oakes  
President of [GigSmart](#)



The Associated General Contractors of America found [52%](#) of construction firms are having a hard time filling hourly craft positions. Furthermore, there is no confirmed end in sight for these hiring challenges as new issues continue to plague the construction industry, like worker safety and uncertainty.

If you've experienced a labor shortage or are struggling to find qualified, skilled workers, you're not alone. Fortunately, skilled temporary workers can help construction companies not only survive the current market, but also thrive in it.

## Avoid turnover by combatting worker exhaustion

Worker shortages often lead companies to over-schedule workers in order to meet demanding construction schedules. According to the [ADP Workforce Vitality Index report](#), the Construction industry has a national average turnover rate of 58.4%. The top reason employees quit? [Forbes](#) says it's being overworked.

Companies can help prevent worker exhaustion, and improve worker retention, by utilizing temporary workers to supplement their existing workforce. This will ensure employees aren't working too many hours, providing permanent crew members the support they need to be successful while preventing worker exhaustion.

## Retain workers with specialized skills

While some construction jobs are similar in nature, other projects might require entirely different skills or

specialties. Because the nature of each task can greatly differ, firms struggle to fill key roles on jobsites. The most severe shortages [reported](#) were for general laborers, carpenters, heavy equipment operators, and truck drivers.

Don't risk turning jobs away. Temporary labor gives you a way to access specialized workers on-demand. Break your bid up into its individual components and identify the portions where temporary labor can be utilized. A fluid mix of full-time crew members with independent contractors will reduce overhead while giving you a highly skilled team, specialized in delivering the particular services aligned to your project.

## Hire the best fit

Have you ever hired someone who was not a good fit? Temporary labor reduces risk by allowing you to have a "trial run" with potential hires before offering them full-time positions. This allows you to evaluate worker performance, skill, and fit before hiring them as a permanent member of your team.

Temporary labor gives you a means to hire full-time workers with 100% confidence. GigSmart reported that in Q4 2020, the number of hourly shift workers converted to full-time employees increased 167%, confirming the desire for companies to retain top talent once identified.

## Stay flexible



2020 was a year unlike any other. In times of uncertainty, it might not be the time for your company to staff up with full-time employees.

Future project pipelines are thinning — [60%](#) report that projects have been postponed or cancelled due to the pandemic. We do not yet know what all of 2021 will hold for the construction industry and are still unsure of the long-term impacts of the pandemic.

Instead of staffing up your crew, formulate project-by-project teams utilizing temporary labor to fill in the gaps. By doing so, you can quickly scale teams based on your project needs.

Diversifying your construction staffing strategy by hiring a mix of W2 employees, third-party outsourced solutions, and independent contractors so that you're set up for long-term success.

### Utilize staffing platforms

Despite uncertainty, [40% of construction firms expect to recall and/or add employees in the next year](#). With an increasingly competitive hiring environment and shortage of qualified workers, staffing platforms can make the hiring process easier for you.

Traditional staffing agencies come at high costs and can lack skilled trade focus. Working with an agency is expensive and slow-moving. It can take 3-5 days to get a worker on-site, and once you have that worker, you'll end up paying a 45-60% markup on their hourly wage. This is a luxury that many companies cannot afford.

On the alternative, job sites like Craigslist do not provide worker vetting or accountability. While significantly cheaper than using staffing agencies, these types of sites require cumbersome manual overhead, as those in charge of hiring need time to sort through the flood of unvetted, non-standardized applications. It is also important to note the workers you hire through

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Craigslist are not insured or reviewed.

Modern hiring solutions, like [GigSmart Get Workers](#), can connect businesses with workers based on skills-matching for a low fee. With over 65,000 active construction workers available for hire, you gain fast access to qualified applicants — even for same-day shifts!

### Recap

Temporary workers can help keep your full-time employees happier, allow you to rapidly grow (or shrink) your crew based on project needs, give you better access to specialized skills, or provide an additional means to vet potential full-time hires.

Hiring temporary workers allows you to expand your candidate pool to the rapidly growing pool of millions of talented and experienced workers who are now contracting. Leverage these workers to combat the construction labor shortage and thrive in 2021.

About GigSmart 

[GigSmart](#) is a staffing company focused on providing modern solutions to meet the needs of a rapidly evolving economy. GigSmart's apps, *Get Workers* and *Get Gigs*, connect businesses and residential users looking for labor with local workers. The apps are available in all 50 states serving industries including construction, manufacturing, food service, delivery services, transportation, retail, customer service, and professional services.

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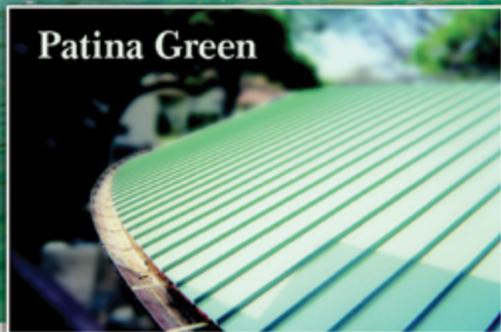
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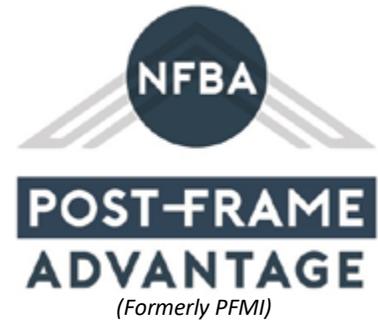
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# SURVEYING THE NATURE AND SCOPE OF FAILURES IN FARM BUILDINGS

Carl A. Duley  
Professor, UW-Madison Division of Extension  
Buffalo County Agricultural Agent



## Introduction:

I am a teacher, researcher, University Extension Professor, and a concerned citizen and supporter of farmers and rural life. I am not an engineer, a builder, or manufacturer. This is not intended to be a technical article; I will leave that to people who are qualified to publish the technical aspects of this issue. This article is intended to encourage a continuing discussion about the issue of farm structure failures and hopefully reach some solutions or steps to help prevent future failures.

Storm intensity seems to be increasing in Wisconsin including winter snowstorms. In the last 10 years, we have had numerous significant snow events that led to farm structure failures. I will concentrate on failures near my home office in Western Wisconsin, specifically in Buffalo County. Regional building failures in 2018-19 directly led to my involvement in conducting a building survey to study farm building failures.

I was invited to become involved with the Wisconsin Frame Builders Association (WFBA) Technical Committee by Aaron Halberg, Halberg Engineering, and Dr. David Bohnhoff, University of Wisconsin-Madison, both experts in post-frame design and with farm building failure investigation experience following heavy snow events in Wisconsin. The WFBA held a special meeting in the Spring of 2019 to discuss what happened that winter and why. Wisconsin, like many other agricultural states, does not require agricultural buildings to be

engineered or inspected (although some counties do have inspection requirements). This was a known issue, but could something be done to reduce farm building failures without creating a requirement for engineering and inspections?

## Changes Over Time:

Nothing has really changed since 2010 and millions of dollars have been lost and lives are being risked because many buildings are not designed adequately. Visiting with builders and engineers in Wisconsin it is apparent that this has been a problem for decades. Failures have been investigated by engineers and causes identified, but still, no solutions have been implemented. This study was intended to find solutions to this issue. Unfortunately, Covid got in the way of the individual interviews that are needed to accomplish all of the objectives.

## Situation:

Damage during the winter of 2009-10 was not widespread but rather limited to a narrow band in West Central Wisconsin. The snow was very wet and heavy with 10 -18 inches of new snow falling over an eight hour period, accompanied by winds blowing from the northwest at 30 -50 miles per hour. Eleven barns partially or totally collapsed in Buffalo County. These barns ranged from 9 months old to 30 years old.

2018-2019 brought heavy snows that accumulated on roofs. During February 2019, 45 inches of new snow fell, with high temperatures averaging



2009 Building Failure photo submitted by Dwayne Bundy

9 degrees below normal, low temperature average was 13 degrees below normal. The area had only two days above freezing in this stretch, February 3rd and 4th. On March 12th the area had 1.1 inches of rain adding weight to snow-covered roofs. (NOAA, Lock and Dam #4; Alma, WI) More than 100 farm structures failed in Buffalo County from March 12th to April 15th with an estimated financial loss of more than \$10,000,000. (STORM Disaster Reports, Buffalo County Farm Service Agency) The damage also spread beyond the county throughout the middle 1/3 of the state and had a severe economic and social impact on farmers in the region.

**Objectives of Study:**

- a. Determine the number of farms that experienced losses from farm building failures due to snow load.
- b. To determine the financial loss to farmers associated with farm building failures by comparing total financial loss with amount of financial loss covered by insurance.
- c. To assess the long-term durability of building materials in enclosed livestock environments (or high moisture environments?).
- d. Determine common characteristics of farm buildings failures and identify focus areas to reduce failures in current and future projects.

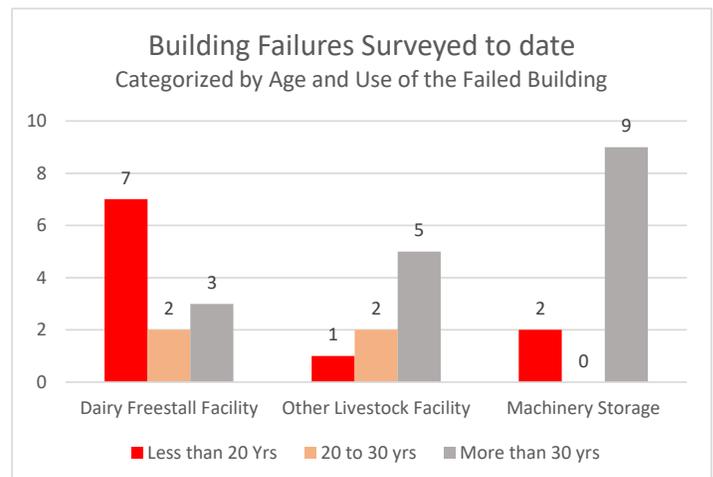
**Response:**

I met with the Wisconsin Frame Builders Association Technical committee and started discussions with Aaron Halberg of Halberg Engineering on what we needed to learn and what should be done to address the problem and prevent future failures. It became evident that information as to the extent of the problem was lacking, as was basic information on the characteristics of buildings that fail. A survey was

developed after receiving input from technical committee members of both the WFBA and the National Frame Building Association (NFBA), and distributed to farmers in Wisconsin through UW-Madison Division of Extension Agricultural Agents and through state media outlets.

**What has been learned so far:**

- 1. Insurance coverage for farm structures is much better in 2019 than in 2010. It appears that 2010 was a bit of a wakeup call for farmers. Many structures were not insured for snow load or were under insured (contents in the buildings may not have been insured) in 2010. Of the respondents in 2019/2020, only three structures were not covered for snow load failures and these were older facilities (built before 1970).
- 2. Age of the facility was not an overriding factor in building failures. This is especially evident in Livestock Facilities. Five of the livestock facilities reported were built in 2009 or later. (See Figure 1 and Table 1)



**Figure 1: Age of Farm Structures reported in the 2019-20 Survey**

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3. Facility design appears to make a difference. Of the facility failures reported, only one reported the farm structure was designed by a structural engineer and included a plan with an engineer's stamp.

[See Table 1 on page 19](#)

4. Anecdotal evidence from one-on-one conversations and two group meetings indicated that lenders feel barn failures are an insurance issue. Insurance companies did not indicate that the losses were a major concern. Many farmers, lenders and insurance representatives assume (incorrectly) that if a quality builder is used for their project, the structure itself will be designed and certified by a structural engineer.

5. Safety Issues: To this point, there are few reports of injuries or deaths due to farm structural failures, however.

- In 2019, one farmer fell through a skylight on the barn roof while removing snow from the roof (to prevent a possible failure) and died from the fall.
- In 2010, a father and son, were injured and hospitalized when more than 50% of their barn collapsed due to unbalanced load on the roof. (Dr. David Bohnhoff determined it was progressive collapse due to poor design)
- 235 cows died or were euthanized in 2019 due to barn failures along with over 4,000 sows, in Buffalo County. Additionally, an undetermined number of livestock were culled prematurely due to injury.
- Modern livestock farms have people working in them many hours per day, increasing the risks that human injuries may result if farm structures fail.



### What can be Done?

In this section, I ask what can be done beyond regulating all farm structures.

#### Mandatory Structural Design:

I understand that requiring all farm structures to be reviewed and be designed by a structural design engineer would ultimately make structures safer, but at what cost? I have heard about delays in projects, high cost for reviews, lack of inspection or enforcement, etc. but maybe this is the only answer.

#### Incentive Programs:

Currently, there has been limited success using an incentive program to lower insurance premiums or improve financing terms for structurally engineered farm buildings. Such programs have been tried in Minnesota, but the practice does not appear to be gaining widespread adoption.

#### Questions begging for an Educated Response:

Many farmers assume their builders are using a structurally engineered design. They also assume a building is designed by a structural engineer if it is built with engineered trusses. These

**Table 1: Detail of Farm Structures Reported in 2019-20 Survey**

Facility Use	Year of Failure	Year Constructed	Designed By	Size (feet)	% Damage
Dairy Freestall Facilities	2010	2009	Builder	112 X 410	10
Dairy Freestall Facilities	2010	2017	Builder	84 X 300	
Dairy Freestall Facilities	2018	1998	Builder		50
Dairy Freestall Facilities	2019	2000	Builder	106 X 800	80
Dairy Freestall Facilities	2019	1990	Builder	100 X 320	5
Dairy Freestall Facilities	2019	1967	Builder	44 X 104	100
Dairy Freestall Facilities	2019	1980	Lumber Yard	70 X 200	50
Dairy Freestall Facilities	2019	2009	Builder	120 X 200	5
Dairy Freestall Facilities	2019	2004	Lumber Yard	104 X 184	30
Dairy Freestall Facilities	2019	1985	Lumber Yard	60 X 100	100
Dairy Freestall Facilities	2019	2015	Builder	108 X 510	25
Dairy Freestall Facilities	2019	2003	Builder	103 X 144	40
Other Livestock Facilities	2018	1986	Builder	20 X 60	100
Other Livestock Facilities*	2018	1985	Engineer	12 X 70	70
Other Livestock Facilities	2018	1955	Builder	40 X 90	25
Other Livestock Facilities	2019	1975	Lumber Yard	60 X 200	30
Other Livestock Facilities	2019	1995	Builder	23 X 72	20
Other Livestock Facilities	2019	2015	Builder	160 X 630	50
Other Livestock Facilities	2019	1994	Builder	50 X 65	80
Machine Storage Facility	2019	2015	Builder	60 X 120	80
Machine Storage Facility	2019	1975	Lumber Yard	45 X 80	80
Machine Storage Facility	2019	1979	Builder	30 X 60	80
Machine Storage Facility	2019	1974	Builder	54 X 105	2
Machine Storage Facility	2019	1979	Lumber Yard	55 X 160	50
Machine Storage Facility	2019		Lumber Yard	40 X 80	80
Machine Storage Facility	2019	1980	Lumber Yard	60 X 160	100
Machine Storage Facility	2019	1960	Lumber Yard	40 X 102	10
Machine Storage Facility	2019	1976	Lumber Yard	48 X 128	25
Machine Storage Facility**	2019	2015	Home Built	40 X 50	100
Machine Storage Facility	2019	1974	Lumber Yard	40 X 60	100
Machine Storage Facility	2019	1978	Lumber Yard	56 X 112	20

\*Only facility that was reported as being designed by an engineer

\*\*Fabric Structure

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Old Barn vs New Barns



and many other misunderstandings should be addressed to reduce future barn failures.

- How do farmers learn to understand the value of engineered structures and not just taking the low bid for a building?
- What is the additional cost of a properly engineered building versus one that is not (initial versus long term)?
- What is the reasonable lifespan for a structural designed farm building (30, 40 or 50 years)?
- Who should drive a statewide or national educational response and should farm buildings be treated like other commercial structures?



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**Summary and Unresolved Questions**

Farmers cannot afford to re-build all existing buildings to bring their facilities up to current standards supported by engineering. Is it possible for existing buildings to be improved to meet current snow and wind loads? The need is related to climate change and increasing extreme weather events including wind, rain, and snow events. Is there a program the Frame Building Associations can implement to bring facilities up to a standard that meets the needs of 2021 and beyond? Is there a possibility for state or federal project funds to develop a farm structure improvement plan? Will insurance companies, agriculture lenders, and farm safety professionals all help in this effort?

Today, farm structures are occupied a greater percentage of time than they were 20 years ago. Many livestock barns now have people working inside of them 18 hours a day or more, thus raising the risk of personal injury should a failure occur. Owners have a responsibility of providing a safe environment for their families, their employees and themselves.

Farmers are inherently optimistic, if not, they would never plant a crop a year following a drought. We have already forgot about 2010 and 2019 and say it won't happen again. This may be too optimistic as the story of the person who fell off a 20-story building and was heard to say as they passed the eighth floor, "So far so good!" **It is time to make a change and be realistic about the issue of farm structural failures and the**

**increasing likelihood that building failures will lead to loss of life, in addition to continued financial losses apparently absorbed through the insurance industry.**

*About Carl Duley:*

*Carl Duley has served as Buffalo County's Agriculture Agent since 1985. He has recently been promoted to Professor. Crop Production and Management is his primary area of focus. Carl has provided leadership helping establish the Buffalo County Barley Society in 2014 where he continues to serve as local advisor today. His leadership roles in Extension include: the Dean's Faculty Tenure Advisory Committee; DALs Standards, Rank & Promotion Committee; and Chair of the Extension FARM Team Management Assessment Center.*

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# CYBER SECURITY: RANSOMWARE IN 2021

Jack Gerbs  
Quanexus



Ransomware attacks were on the rise in 2020, and all indicators suggest the trend will continue in the new year. Ransomware is a form of malware designed to encrypt files on a device, rendering any files and the systems that rely on them unusable. Malicious actors then demand ransom in exchange for decryption.

The most common methods used to spread ransomware are visiting a compromised website or clicking on a malicious link or attachment in an email. We saw a dramatic increase in ransomware when users went remote last April, but experts expect the number of attacks to continue to grow. Statistically 40% of victims pay the ransom, and criminals used 2020 to perfect tactics. Basically, all metrics tracking ransomware increased dramatically in 2020. In Q3 of 2020 we saw a 50% increase in ransomware attacks compared to the first six months of the year.

- The average cost per incident increased from \$5,900 in 2019 to \$8,100 in 2020.
- The average loss caused by downtime from a ransomware attack increased from \$141,000 in 2019 to \$283,000 in 2020.
- The estimated total cost of ransomware attacks almost doubled year over year increasing from \$11.5 billion in 2019 to \$20 billion in 2020.
- Often small and medium sized businesses are targeted because many of them do not have the resources to defend against an attack. Small

businesses accounted for 43% of all cyber-attacks in 2020, and 70% of small businesses say they are not prepared to deal with a cyber-attack.

IT Security demands change quickly, and many small to medium sized businesses are not able to keep up on their own. Take the time to find a reputable company to help you bridge the IT gap. You may also want to look into purchasing Cyber Security Liability Insurance. The investment up front on prevention may just save you from an expensive loss down the road.





Photo by Mark Stebnicki from Pexels

# MOST FARMERS DON'T KNOW THEIR OWN (BARN'S) STRENGTH

A dairy farmer from Jackson County, Wisconsin called me this winter with some structural concerns about his Freestall dairy barn. Specifically, he observed some truss web members bowing out of plane by an estimated 6" to 8" (YIKES!).

Aaron Halberg, P.E.  
Professional Engineer  
and NFBA Editorial  
Committee Chair



After some phone discussions and a review of his truss design drawing from the 2014 drawings, we determined the trouble was because the web lateral restraints did not include any diagonal bracing which is required to make them effective against bowing. It was obvious to me that adding diagonal bracing to meet BCSI and TPI guidelines would be required, but he also wanted to gain more confidence in the situation, so he hired me to visit his barn to make sure we had correctly identified the extent of the problem and to ensure he knew how repairs should be made.

Before visiting, I noticed there was likely a problem with the truss design loads. The truss design drawing included the information shown in this box:

“psf” is Pounds per Square Foot.  
“GSL” is Ground Snow Load.  
“TCDL” and “BCDL” are Top /  
Bottom Chord Dead Load. The  
immediate concern for me was

Loading (psf)	
GSL:	35
TCDL:	5
BCDL:	5

the appearance of Ground Snow Load, not Roof Snow Load or Top Chord Live Load, so I suspected right away that this truss was likely designed for something much less than 45psf total load (35 + 5 + 5).

The truss design notes stated the truss was designed with user defined input: 35psf ground snow load, Terrain Category C, Exposure Category: Partially

Exposed ( $C_e = 1.0$ ), Building Category: I ( $I_s = 0.8$ ), Thermal Condition: attic ventilated ( $C_t = 1.1$ ), Unobstructed Slippery surface. Using these factors and ASCE 7 equations results in a Roof Snow Load ( $P_s$ ) of 20 psf, about the equivalent of 1ft of “nominal” density snow (snow density varies widely).

When I explained that the truss design loads applied several reductions to the Ground Snow Load, the farmer was immediately concerned: “What do you mean, ‘reductions’?!?” I explained such adjustments can be legitimately used in the design process, but the reality is the truss design included some “technically” allowed adjustments I did not agree with. More importantly, this discussion should have taken place with his builder and building designer when the design process first began. He should have also had some education on the factors and been given input on which adjustments are used for his building. After all, it ends up being a roof over HIS head and HIS livelihood if something goes wrong.

Despite some disagreement with the adjustments, the starting point is the Ground Snow Load, and the 35psf starting point for this project should have been 50psf for this location (see Figure 1). The builder may have requested a “35psf truss” (intending roof snow load), but the request appears to have been supplied as 35psf “Ground” snow load, transformed to 20psf roof snow load. Any

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building designer worth his wages would confirm that the snow and wind loads used in the roof truss and building design are appropriate for the location before the trusses are manufactured.

Besides the incorrect Ground Snow Load, the truss should not have used a slippery roof surface assumption because a large area of the barn was tied into the milking parlor in a T-shape with two large valleys on the Freestall barn preventing snow sliding from the roof through a wedging action of the two roof slopes coming together. In addition, they create a 3-dimensional “pocket” where snow commonly drifts in and accumulates in these valleys resulting in a roof snow load that is much more than the calculated roof snow load, possibly by a factor of TWO (or more), based on my observations of snow on roofs over many Northern Wisconsin winters. Just changing the GSL to 50psf and removing the slippery roof assumption would have raised the sloped roof snow load from 20psf to 30.8psf, something much more reasonable as a “minimum” design load appropriate for this area.

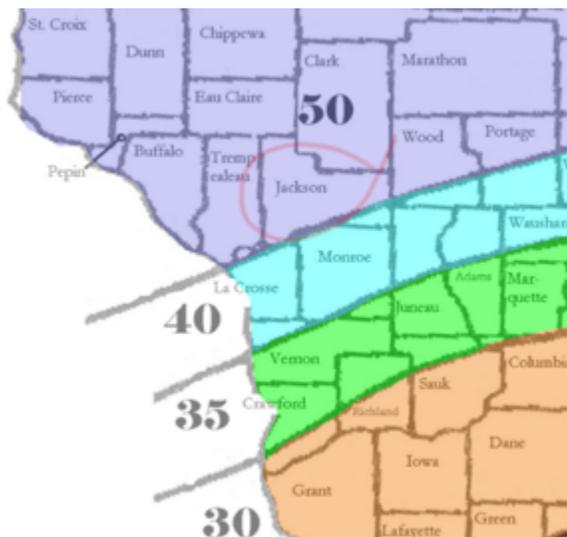


Figure 1 – A portion of Wisconsin's Ground Snow Load Contours from ASCE 7 shows most of Jackson County is clearly in a 50 psf region (not the 35 psf used)

In addition, this farmer should have considered increased safety factors by changing the risk category from “I” (suitable for unoccupied buildings) to category “II” (suitable for occupied buildings) since he and his employees spend significant time in this building and his livestock is continuously in this building. This additional change would result in a calculated roof snow load of 38.5psf. Nearly DOUBLE

the roof snow load his trusses were designed for, and this still does not include the suggested increase advisable for the valleys.

Building owners and their builders or building designers SHOULD have a crucial conversation on the design values for their building before any materials are purchased and ensure that the roof snow load is not LESS than what the owner desires after they understand their options. This farmer (along with many, many others) had no idea that his building was designed for such a small amount of snow.

According to the Truss Plate Institute standard TPI-1, the BUILDING designer (NOT the truss designer) is responsible for establishing the proper building design loads, confirming adequate connections and supports, provide truss bracing requirements (see TPI-1, Chapter 2 – Responsibilities). When you see a truss design “stamped” with an engineer's seal, they are NOT certifying the building design, only the design of the truss component to resist the specified loads if installed and supported and braced per the plans sealed by the Building Designer (a different engineer, typically). An engineered truss system supported by a NON-engineered building system will perform much like a building where nothing at all is engineered.

When the farmer realized the trusses were designed for only 20psf snow, he jested that he wasn't sure if he was lucky his building was still standing or if he would have been better off with a collapse so he could have started over with a building designed for a better snow load. Assuming nobody would have gotten hurt in the collapse, I am not sure either. As it is, I will do my best to work with this farmer to reinforce his trusses before next winter arrives, but it is a much more difficult process with less certain results than a building designed correctly at the outset.

Please keep in mind that this particular building had issues with the design snow load and a lack of truss bracing, but if a competent engineer had been employed in the project, he or she would have verified many other building design features, components, and connections to ensure the constructed building is reliable for the owner's needs in the decades to come.



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# INSIDE THE FRAME

# JOSEPH SHIMP

Each Issue of Frame Builder Magazine will feature an article by National Frame Builder Magazine Editor, Rachel Pinkus, giving an inside, personal look at the lives of one of the many volunteer members that dedicate their time and treasure to NFBA and the post-frame industry.

BY Rachel Pinkus  
National Frame Builder Editor



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Joe grew up in Ephrata, PA, located in Lancaster County. His family currently lives in the Cocalico School District, which neighbors the town he grew up in. He graduated from Ephrata Senior High School and was a member of the Future Farmers of America. Joe then attended Berks Tech and earned an Associate's Degree in Industrial Technology and he also attended Albright College and earned a Bachelor's degree in Business Administration. He has been married to his wife, Crystal, for 16 years. "We

attended the same High School and started dating when she was a Senior and I was one year graduated. Crystal teaches at a School of Health Sciences and we both enjoy many of the same hobbies and interests. We have one 9 year old son, Jake, who loves the outdoors, eating lobster, and spending time swimming in our pool. He is very athletic and especially likes wrestling and football." Says Joe.

Joe enjoys travelling both in the US and abroad and also outdoor activities like hiking, fishing, and time at the cabin. In his spare time, Joe coaches youth wrestling and greatly enjoy the sport at all levels, following it closely, including at the college level. He also enjoys football, especially watching his son on the youth team, following their local Cocalico High School Team, and Penn State (And the BIG10 division overall).

Joe also serves as the Board Treasurer of REAL Life Community Services, a Christian faith based community organization that supports the many needs of the community in which he lives in and the surrounding area. "In addition, we enjoy volunteering our time and donating

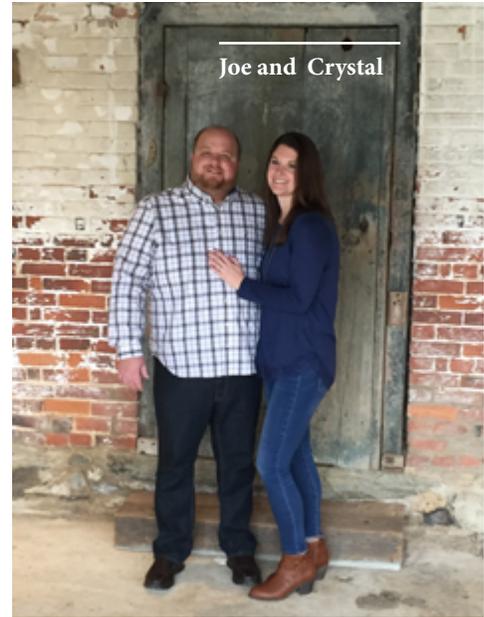
to the local youth sports organizations to encourage more involvement and participation in activities that promote mentorship and structure. We've also hosted foreign exchange students from Norway and Spain."

While Joe does not have any family in the post frame business, he does have family in construction and the building trades. "I was working as an estimating professional in the Commercial and Institutional Construction Industry and was looking for opportunities to grow my responsibility and career. I interviewed for a Sr. Estimator position in what was the Doubletree commercial division of Conestoga, which was still adapting and developing commercial post frame solutions to government, commercial, and industrial type customers. I took over that Division eventually, and then as time progressed we phased out the separate brand name and moved the entire org under the Conestoga Building/Construction brand which is how we operate today, specializing in everything from custom residential garages to major commercial projects. As the company grew and developed, so did my position, I am currently serving as President and oversee the entire business operation."

Joe is currently serving on the NFBA Board of Directors as Secretary/Treasurer. "The NFBA has greatly benefited Conestoga for many years. This includes the many training opportunities, which I have personally attended as well, and also the opportunity to creatively engage others who are in the same industry. It has also helped Conestoga be better recognized, by being a participant in the industry association and give our company credibility. I think many times, a company or the individuals working there start to put themselves in a "box", forgetting that there are others out there doing very similar work and experiencing the same challenges or opportunities. When you participate in an org, such as the NFBA, you are reminded, and inspired, that there is a great resource in the collective group."



Shimp Family spending time in the Great Outdoors



Joe and Crystal



Family and Football



Joe & Crystal at Beaver Stadium for a PSU Game



For more than 40 years, the National Frame Building Association (NFBA) has represented the interests of builders, suppliers, distributors, academics, and code and design professionals serving the U.S. post-frame industry. Its mission is to lead and support members in their efforts to promote the growth and expansion of post-frame construction projects.

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| <input type="checkbox"/> Fasteners                  | <input type="checkbox"/> Roofing    | <input type="checkbox"/> Other                 |
| <input type="checkbox"/> Siding                     |                                     |  |

**Branch/Dealer Membership (Dealer 1st Year Only)**       \$100

Above, write the name and location of the parent NFBA member company's head office.

**Design/Code Professional Membership**       \$120

Please indicate below which services you offer:

- Academic     Engineering     Architecture     Design Consulting  
 Structural Analysis    Other: \_\_\_\_\_

Please indicate the types of structures you can work on:

- Agricultural Buildings       Commercial Buildings  
 Residential Buildings       Industrial Buildings  
 Horse Barns/Facilities       Suburban Garages  
 Institutions (churches, schools, public buildings)

**Academic Membership**       \$100

**Associate Membership**       \$325

**Section A Total \$** \_\_\_\_\_

## Additional Company Contacts

Company Owner's Name \_\_\_\_\_  
E-mail \_\_\_\_\_  
Marketing Contact Name \_\_\_\_\_  
E-mail \_\_\_\_\_  
Technical Contact Name \_\_\_\_\_  
E-mail \_\_\_\_\_

## B. Unified Chapter Dues (Mandatory)

Companies located in unified chapter states must pay an additional \$25 for chapter membership. These companies will hold membership in both their local chapter and the national organization. If you are located in a unified chapter state, please select your local chapter:

- Atlantic Northeast (CT, MA, ME, NH, NJ, NY, PA, RI, VT)**       \$25  
**Mid Atlantic (DE, MD, NC, SC, VA, WV)**       \$25  
**Heartland (AR, KS, LA, MO, OK, TX)**       \$25

**Section B Total \$** \_\_\_\_\_

## C. Statewide Listing (Optional)

Please indicate on the line below the additional statewide listings you would like to purchase. (Cost for each additional listing is \$100.)

\_\_\_\_\_ additional listing(s) at \$100 each

**Section C Total \$** \_\_\_\_\_

## D. Gold Club Contribution (Optional)

NFBA Gold Club Members support the industry by making post-frame research and engineering possible. Membership is voluntary and is open year round. Members are recognized at the annual trade show and on the NFBA website.

50% of annual dues (not to exceed \$500)      \$ \_\_\_\_\_

**Section D Total \$** \_\_\_\_\_

**Total of sections A, B, C, and D**      \$ \_\_\_\_\_

The undersigned hereby certifies that the above information is true and that, if accepted for membership by the National Frame Building Association, I/we will abide by the bylaws of the association and voluntarily agree to adhere to the association's Standards of Professional Conduct.

Signature \_\_\_\_\_

Date \_\_\_\_\_

Payment Information (select one):

- Check enclosed     Visa     MasterCard     AMEX     Discover

Name on card (please print) \_\_\_\_\_

Account Number \_\_\_\_\_

Expiration Date \_\_\_\_\_

Billing Zip Code \_\_\_\_\_

Signature \_\_\_\_\_



## **STAN KIPPENBROCK OF BLITZ BUILDERS SHELBYVILLE, KY**

Congratulations to NFBA “Crew Foreman of the Month” for March, Stan Kippenbrock of Blitz Builders in Shelbyville, KY

Stan Kippenbrock started with Blitz Builders over 40 years ago at their Huntingburg, IN office. In 1987, Stan and his wife Kathy moved to Brownsburg, IN and opened the Brownsburg office where he is in charge of managing all the crews as well as training new employees and helping them to follow safety protocol on the jobsites.

He is also the lead person to contact the customer at the start of a construction project and the one that stays in touch with the customer through the completion of the project. Stan excels at managing large projects keeping the material staged for the next phase of the job and working with the men to keep the project flowing without down time. “The knowledge and experience that he brings to the job is outstanding,” says David Ross.

Stan has built a strong reputation and work ethic with the customers. Repeat customers have requested Stan to come back over the years to add on to existing structures or build new structures

for them. “They like having the comfort of working with someone that they know and trust.” says David Ross. “And best of all he is an outstanding individual to work with.”

Stan is one of 19 kids and has raised 6 kids of his own with all of them going to college. His wife Kathy is a Registered Nurse, their son, Luke, is a Physicist, Jason is a Doctor, Grant is a Chemist, Neal is a Civil Engineer, Reid is a Computer Scientist and their daughter, Maria, is attending Purdue University.





## DAN WHITE OF JAYBIRD, LLC OMAHA, NE

Congratulations to NFBA “Crew Foreman of the Month” for April, Dan White of Jaybird, LLC in Omaha, NE

Dan White has been with Jaybird, LLC going on 6 years. He continues to complete projects on-time while also helping with recruiting, marketing, and employee retention. “From time to time, Dan has even played the part of a calming mediator between customer, contractor, and salesperson.” says Jay Hoelsing.

Dan and his crew are currently working on an Astro Building in Valley Nebraska. The building will be 42 x 72 x 12.5. This building will include a partition wall for a living area, steel liner, windows, doors, cupolas, and a 9 x 27 inset porch. “Dan does a great job keeping the crew motivated even during the extreme climate changes throughout the year in Nebraska. If it’s cold it is most likely windy, and if it’s warm there is 3-6 inches of mud.” says Jay.



Reno Project After

The Centers for Disease Control and Prevention (CDC) has issued new guidance relating to recommended precautions for people who are fully vaccinated, which is applicable to activities outside of healthcare and a few other environments. OSHA is reviewing the recent CDC guidance and will update our materials accordingly. Until those updates are complete, please refer to the [CDC guidance](#) for information on measures appropriate to protect fully vaccinated workers.



# OSHA DIRECTION

U.S. DEPARTMENT OF LABOR

Occupational Safety and Health Administration

<b>DIRECTIVE NUMBER:</b> DIR 2021-01 (CPL-03)	<b>EFFECTIVE DATE:</b> March 12, 2021
<b>SUBJECT:</b> National Emphasis Program – Coronavirus Disease 2019 (COVID-19)	

## ABSTRACT

### Purpose:

This Direction describes policies and procedures for implementing a National Emphasis Program (NEP) to ensure that employees in high-hazard industries or work tasks are protected from the hazard of contracting SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2), the cause of Coronavirus Disease 2019 (COVID-19). The NEP augments OSHA's efforts addressing unprogrammed COVID-19-related activities, *e.g.*, complaints, referrals, and severe incident reports, by adding a component to target specific high-hazard industries or activities where this hazard is prevalent. The NEP targets establishments that have workers with increased potential exposure to this hazard, and that puts the largest number of workers at serious risk. In addition, this NEP includes an added focus to ensure that workers are protected from retaliation, and are accomplishing this by preventing retaliation where possible, distributing anti-retaliation information during inspections, and outreach opportunities, as well as promptly referring allegations of retaliation to the Whistleblower Protection Program.

### Scope:

This Direction applies OSHA-wide.

### References:

[Presidential Executive Order on Protecting Worker Health and Safety](#), January 21, 2021.

Section 5(a)(1) of the Occupational Safety and Health Act (OSH Act), [29 U.S.C. § 654](#).

OSHA Instruction, [CPL 02-00-164](#), *Field Operations Manual (FOM)*, April 14, 2020.

OSHA Instruction, [CPL 02-03-007](#), *Whistleblower Investigations Manual*, January 28, 2016.

OSHA Guidance, [Protecting Workers: Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace](#), January 29, 2021.

(See [Section III](#) for additional references.)

### Cancellations:

None.

# COVID-19 DECLARED A NATIONAL EMPHASIS PROGRAM BY OSHA

Quite a bit has been happening since my last safety update article so, let me bring you up to date with what has been happening with OSHA. As I sit down to write this article, I want to consider some changes that have been occurring in OSHA.

BY Gary Auman  
Auman, Mahan, & Furry



First, about six weeks ago, OSHA declared COVID-19 a National Emphasis Program (NEP). This action will focus increased attention on employers and their COVID-19 Pandemic Protection Programs. Not only will this increase the importance of having a Pandemic Protection Program, it also draws attention to the actions that may be taken by employers in retaliation to employees who file complaints against them. This could also be what employees perceive as a lack of attention by the employer to protect them, the employees, from COVID-19. I am sure you are thinking, “but I would never retaliate against one of my employees because I determined that they directed OSHA to me by making such a complaint.” However, you must remember that retaliation can take many forms and that it is more than employee termination or demotion. It can be any action that you take against an employee that the employee perceives is connected to a complaint that they made to OSHA.

## **What value do you place on your employees or those who work for you?**

The NEP also gives OSHA probable cause to visit your worksite and at least demand to see your COVID-19 Protection Program. Remember that the COVID-19 NEP covers all industries so

OSHA may use it to gain entry to your construction site, your shop, warehouse, or your office area. If you are confronted with such a visit under the NEP, which you do not feel is justified, be sure to contact your counsel before giving OSHA access to your work area. Remember, while such an inspection begins under the NEP, it can be expanded if the compliance officer conducting the inspection sees anything else that he/she believes is an OSHA violation or an unsafe condition.

At about the same time OSHA was declaring COVID-19 to be an NEP, President Biden appointed Doug Parker, to head OSHA. Mr. Parker was, at the time of his appointment, the head of Cal OSHA. I have read several short commentaries on Mr. Parker’s appointment, a few of which have been titled “There is a New Sheriff in Town.” I think some of these sentiments have arisen because of Cal OSHA’s safety enforcement reputation. Cal OSHA also has a very broad standard on heat illness prevention and an Emergency Temporary Standard on COVID-19. I believe there is a belief that with Mr. Parker becoming the Administrator of OSHA that we are going to see some new standard development (especially for COVID-19 and heat illness prevention); as well as an increase

continued on page: 40

continued from page: 39



in enforcement inspections.

Interestingly, shortly after the announcement of Mr. Parker's appointment, which at the time of writing this article was still awaiting Senate confirmation, an Emergency Temporary Standard (ETS) was drafted, which has already been sent to the Office of Management and the Budget for approval. An ETS does not proceed through the same rule making process as does a non-emergency standard. There are more stringent criteria for such a standard, and I question whether COVID-19 can meet that test? An ETS takes effect immediately until it is superseded by a permanent standard. To promulgate an ETS OSHA must determine that workers are in grave danger due to exposure to toxic substances or agents determined to be toxic or physically harmful. The concept is that an ETS is needed to adequately protect the workers. I think that an ETS would have met these requirements a year ago, but now, with effective vaccines available to just about everyone, I am not sure that an ETS can be justified. Still, I think that after having not done much of anything definite for over a year, OSHA will move forward on the ETS. Usually, the ETS is used as a model for a permanent standard,

which should be adopted within six months after the effective date of the ETS. An ETS is subject to challenge in an appropriate Federal Court of Appeals.

Recently OSHA has been addressing recordkeeping requirements for any employees who receive adverse side effects from receiving the COVID-19 vaccine. I feel that the simplest way to look at recordability is to distinguish between a vaccination mandated by the employer and one that was only encouraged by the employer. Clearly, if you "require" your employees to be vaccinated you will have to record any side effects that qualify for inclusion on your OSHA 300 log under the OSHA recordkeeping requirements found in 29 CFR 1904. The same is not true if you only encourage employees to get the vaccine, as long as employees who chose not to get it suffer no adverse consequences because of their refusal to be vaccinated. I believe this will be true, even if you take steps to "make it easy" for employees to get the vaccine.

With everything that is going on with regards to COVID-19, we may lose sight of the fact that there are many other obligations employers have

to protect the safety and health of their employees. DO NOT forget that YOU are always responsible for the safety and health of your employees while they are working for you. While you cannot ignore your responsibility for all applicable safety compliance such as fall protection and PPE, as we head into summer and warmer weather, you need to be “dusting off” your heat illness prevention program. Retrain your supervisors and your crews on what they need to do to protect themselves from the dangers of working in a high heat index environment. As I have reviewed the heat illness protection programs of several construction industry employers, I have frequently felt that more than half of them do not understand what they need to do to protect their employees from heat illnesses. Employers need to comply with what OSHA believes are their obligations under the General Duty Clause. OSHA has identified five feasible steps to protect employees by adopting a NIOSH (National Institute for Occupational Safety and Health) Criteria Document of several years ago. Those five steps are:

1. Provide for acclimatization of employees new to working in a high heat index environment (or to your company) or who are returning to such an environment after a period of time away from such an environment.
2. Establish a work/rest regimen (based to the heat index) to provide employees with adequate rest breaks based on the heat index.
3. Establish a hydration schedule for employees and encourage them to adequately hydrate on the established schedule, again based on the heat index.
4. Establish cooling off areas in close proximity to the worksite and make them available to employees during rest breaks or whenever an employee needs to take advantage of them because of the effects of the high heat index.
5. Train employees on the illnesses which can



occur when working in a high heat index environment, the symptoms of those illnesses, how to identify the symptoms in themselves and others and the first aid steps to take whenever they are aware that they or another employee is exhibiting those symptoms.

Remember, protecting your employees is your responsibility. In addition, you need to confirm that your site supervisors are aware that it is their responsibility to ensure compliance with the five steps above. I suggest that you require your supervisors to download the OSHA Heat App on their Smart phones and use it to assist them in complying with your heat illness prevention program. a safe worksite all the time also complying with the applicable OSHA standards?” If you feel you are providing effective safety, but that you may not be in full compliance with applicable OSHA standards, consider applying for a variance. In my next article I hope to provide you with more information on the procedure for obtaining a variance, among other safety-related matters..

*About the author:* Gary Auman is a Partner in the law firm of Auman, Mahan & Furry in Dayton, Ohio ([www.amfd Dayton.com](http://www.amfd Dayton.com)) and has over forty years of experience in OSHA compliance and litigation matters. Gary serves as General Counsel for many State, Regional and National Associations. He can be reached at [gwa@amfd Dayton.com](mailto:gwa@amfd Dayton.com).



# WHATS NEXT

SAFETY UPDATE



**JUN  
23<sup>RD</sup>**

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**NFBA WEBINAR**  
 ARCHITECTURAL ALTERNATIVES FOR POST-FRAME BUILDING SYSTEMS  
 1:00PM - 2:00PM CENTRAL  
 ONLINE  
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[www.nfba.org/index.php/calendar](http://www.nfba.org/index.php/calendar)



**JUL  
14<sup>TH</sup>**

**NFBA WEBINARS**

**NFBA WEBINAR**  
 MODERN POST-FRAME STRUCTURAL DESIGN PRACTICE: AN INTRODUCTION DETAILS  
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**JUL  
28<sup>TH</sup>**

**NFBA WEBINARS**

**NFBA WEBINAR**  
 DIAPHRAGM DESIGN OF POST FRAME USING SWAY & SHEAR MODIFIERS – ENGINEERING DETAILS  
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**AUG  
11<sup>TH</sup>**

**NFBA WEBINARS**

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 DIAPHRAGM DESIGN OF POST FRAME USING DAFI – ENGINEERING DETAILS  
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**AUG  
25<sup>TH</sup>**

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 SIMPLIFIED METHOD FOR SHALLOW POST AND PIER FOUNDATION DESIGN  
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**SEP  
8<sup>TH</sup>**

**NFBA WEBINARS**

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 UNIVERSAL METHOD FOR SHALLOW POST AND PIER FOUNDATION DESIGN  
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**SEP  
22<sup>ND</sup>**

**NFBA WEBINARS**

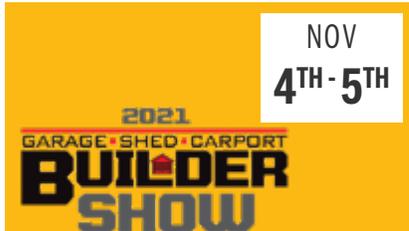
**NFBA WEBINAR**  
 SHALLOW POST AND PIER FOUNDATION DESIGN AID FOR ARCHITECTS  
 1:00PM - 2:00PM CENTRAL  
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**OCT  
13<sup>TH</sup>**

**NFBA WEBINARS**

**NFBA WEBINAR**  
 INTRO TO POST-FRAME BUILDING SYSTEMS FOR ARCHITECTS  
 1:00PM - 2:00PM CENTRAL  
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**NOV  
4<sup>TH</sup> - 5<sup>TH</sup>**

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