



A PUBLICATION OF NIELSEN BUILDERS WINTER 2018



SAFETY FIRST

Nielsen Upholds OSHA
Safety Standards

PG 10

Technology: The Changing Future of
Safety in the Construction Industry

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NIELSEN

Corporate Mission Statement

Our Vision

Nielsen will be recognized as a premier construction organization with a commitment toward optimal performance in serving clients within the Commonwealth of Virginia. We will achieve this by consistently “striving for excellence” in providing professional building services.

Our Values

People

Nielsen recognizes that our people are the critical element in achieving our vision. We will support a team approach through open communication among all employees. We will promote the growth and empowerment of our people and commit to human resource practices based on standards of excellence, safety awareness, fair treatment and equal opportunity.

Total Client Satisfaction

Nielsen will build on our reputation and commit to exceed the expectations of our clients by maintaining the highest level of skill and responsibility in providing professional services. We will deliver a superior price/value relationship in providing quality construction services with a profit objective at a fair level.

Leadership

Nielsen is committed to being a leader in the construction industry through innovative construction techniques and product development. We will strive to be a caring corporate citizen in enhancing the community and environment in which we do business.

Quality Assurance

Nielsen Builders, Inc.'s commitment to quality assurance is based on responsible craftsmanship, leadership, innovation, safety awareness and employee satisfaction. Our guarantee to furnish our clients with a total quality product is the heart of our company's existence.

Equal Employment Opportunity Policy

It is the policy of Nielsen Builders, Inc. not to discriminate and to provide equal employment opportunity to all qualified persons regardless of race, color, sex, religion, national origin, disability, marital status, sexual orientation, gender identity or Vietnam-era veteran status. This policy is applied to all employment actions including but not limited to recruitment, hiring, upgrading, promotion, transfer, demotion, layoff, recall, termination, rates of pay, or other forms of compensation and selection for training including apprenticeship.

Nielsen Builders, Inc. is committed to the principles of affirmative action and equal employment opportunity. In order to ensure its dissemination and implementation throughout all levels of the company, Jean Hieber has been selected as Equal Employment Officer for Nielsen Builders, Inc.

In furtherance of our policy of affirmative action and equal employment opportunity, Nielsen Builders, Inc. has developed a written Executive Order Affirmative Action Program, which contains specific and results-oriented procedures to which Nielsen Builders, Inc. is committed to apply every good faith effort. Procedures without efforts to make them work are meaningless and effort undirected by specific and meaningful procedures is inadequate. Such elements of Nielsen Builders, Inc.'s Executive Order Affirmative Action Program will enable applicants and employees to know and avail themselves of its benefits. The policy is available for review, upon request, during normal business hours.

Applicants for employment and all employees are invited to become aware of the benefits provided by the Affirmative Action Program.



LETTER FROM THE PRESIDENT



Safety — a small word with a big meaning.

Every day, no matter what industry one works in, safety is a focal point in their job. Hazards range in extremity from industry to industry, but regardless, diminishing any danger is highly desirable for both employers and employees of all business cultures. In construction, it is inevitable that danger lurks on jobsites as a potential energy ready to turn kinetic at any time. Due to the nature of our work, that will never change, but learning how to recognize hazards and prevent them from causing a calamity is reasonably attainable. With simple implementations of safety training and maintenance exercises, danger can be reduced or even eliminated.

In our 12th year publishing this exciting magazine, our goal is to provide more insight on a topic relevant to us all. We know that each recipient of this magazine plays an important role in each of our project successes and want to thank everyone for the collective effort in remaining safe.

A special thanks to our safety department for all that they do keeping our employees trained and knowledgeable, staying up-to-date on all of the new practices and equipment and providing us with an incredible safety department.

Tony E. Biller
President/CEO



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Zach Lokey, Nielsen Builders

PUBLISHER

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Jason Blose

Nielsen Employee Spotlight

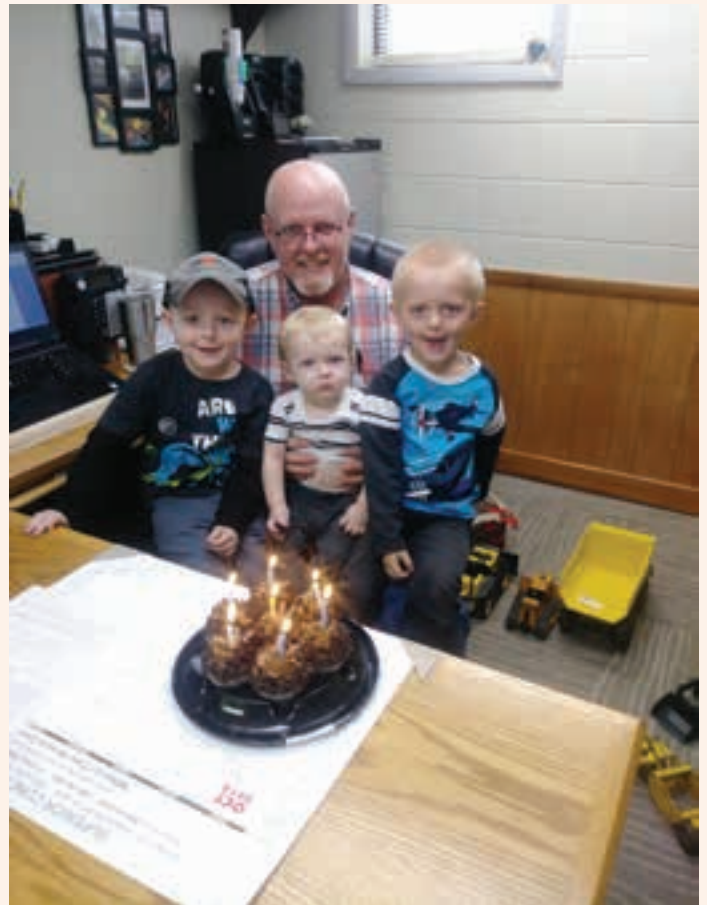
As a child, some people will talk about wanting to be like their father when they grow up. For Jason Blose, he took that dream and made it a reality. Starting on November 22, 1992, Jason began his career with Nielsen Builders, Inc. as a laborer working for his father, Paul, who was a superintendent at the time.

Over a span of 20 years, Blose transitioned from laborer to foreman to superintendent before becoming safety director at the beginning of 2013. He credits a lot of his skills to coworkers Noah George, Jackie Howdyshell and David Meadows, who took him under their wings and taught him how to finish concrete, install door hardware, hang doors properly, finish carpentry and much more.

Upon accepting the position of safety director, Blose still remains busy on jobsites, just with different tasks compared to his past. An ordinary day for him consists of performing project safety audits, administering employee safety trainings, writing and updating safety programs, keeping up with OSHA and VOSH regulations, as well as DEQ and state fire codes. In addition, he is also in charge of manpower distribution amongst all of our projects and conducting project safety hazard analysis to develop solutions to any hypothetical dangers.

Outside of work, though, Blose loves spending time with his family, especially his four grandchildren, Jameson, Brayden, Abel and Easton. Ranging in age from 1-5 years-old, they sure know how to keep their “Grandpaw” on his toes! When he’s not with his family, he enjoys being outdoors hunting, fishing, woodworking and simply spending as much time in the woods as he can. A little over a year ago, he picked up a new hobby, blacksmithing. For him, that has been very rewarding and he says he has trouble keeping up with orders for knives and other forged items that people ask him to make. As if he could not be any busier, he also owns and operates his own catering company throughout the summer months. Needless to say, Blose does not run out of activities in his spare time, but for him, he would not have it any other way.

In November of 2007, Blose met the apple of his eye, Susan, whom he married in February 2008. About seven years after tying the knot, he and Susan decided to pack up their lives and move from Elkton, Virginia to Mathias, West Virginia. He has two children, a son, Shawn, and daughter, Brittany.



One day, Blose hopes to build and pastor an old time country church. That seems fitting because he has a wondrous ability to preach, and quite a history with ministry. In the past, he has filled in as a relief pastor, helped with grief counseling, preached at funerals, and is actually a certified ordained minister. In fact, he preached at his daughter’s wedding, and at his mother’s wedding to his stepfather! Without question, Blose has a vision, and rises at any occasion to be involved.

OSHA's Respirable Crystalline Silica Standard for Construction

Workers who are exposed to respirable crystalline silica dust are at increased risk of developing serious silica-related diseases. OSHA's standard requires employers to take steps to protect workers from exposure to respirable crystalline silica.

What is Respirable Crystalline Silica?

Crystalline silica is a common mineral that is found in construction materials such as sand, stone, concrete, brick, and mortar. When workers cut, grind, drill, or crush materials that contain crystalline silica, very small dust particles are created. These tiny particles (known as "respirable" particles) can travel deep into workers' lungs and cause silicosis, an incurable and sometimes deadly lung disease. Respirable crystalline silica also causes lung cancer, other potentially debilitating respiratory diseases such as chronic obstructive pulmonary disease, and kidney disease. In most cases, these diseases occur after years of exposure to respirable crystalline silica.

How are Construction Workers Exposed to Respirable Crystalline Silica?

Exposure to respirable crystalline silica can occur during common construction tasks, such as using masonry saws, grinders, drills, jackhammers and handheld powered chipping tools; operating vehicle-mounted drilling rigs; milling; operating crushing machines; using heavy equipment for demolition or certain other tasks; and during abrasive blasting and tunneling operations. About two million construction workers are exposed to respirable crystalline silica in over 600,000 workplaces.

What Does the Standard Require?

The standard (29 CFR 1926.1153) requires employers to limit worker exposures to respirable crystalline silica and to take other steps to protect workers. Employers can either use a control method laid out in **Table 1** of the construction standard, or they can measure workers' exposure to silica and independently decide which dust controls work best to limit exposures in their workplaces to the permissible exposure limit (PEL).

What is Table 1?

Table 1 matches 18 common construction tasks with effective dust control methods, such as using water to keep dust from getting into the air or using a vacuum dust collection system to capture dust. In

some operations, respirators may also be needed. Employers who follow **Table 1** correctly are not required to measure workers' exposure to silica from those tasks and are not subject to the PEL.

Table 1 Example: Handheld Power Saws

If workers are sawing silica-containing materials, they can use a saw with a built-in system that applies water to the saw blade. The water limits the amount of respirable crystalline silica that gets into the air.

Table 1: Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica

Equipment/ Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hrs/ shift	> 4 hrs/ shift
Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	APF 10
		APF 10	APF 10

Excerpt from Table 1 in 29 CFR 1926.1153

In this example, if a worker uses the saw outdoors for four hours or less per day, no respirator would be needed. If a worker uses the saw for more than four

hours per day or any time indoors, he or she would need to use a respirator with an assigned protection factor (APF) of at least 10, such as a NIOSH-certified filtering facepiece respirator that covers the nose and mouth (sometimes referred to as a dust mask). See the respiratory protection standard (29 CFR 1910.134) for information on APFs.

Alternative Exposure Control Methods

Employers who do not fully implement the control methods on Table 1 must:

- **Determine the amount of silica that workers are exposed to** if it is, or may reasonably be expected to be, at or above the **action level of 25 µg/m³** (micrograms of silica per cubic meter of air), averaged over an 8-hour day;
- Protect workers from respirable crystalline silica exposures above the **PEL of 50 µg/m³**, averaged over an 8-hour day;
- Use **dust controls** and safer work methods to protect workers from silica exposures above the PEL; and
- Provide **respirators** to workers when dust controls and safer work methods cannot limit exposures to the PEL.

What Else Does the Standard Require?

Regardless of which exposure control method is used, all construction employers covered by the standard are required to:

- Establish and implement a **written exposure control plan** that identifies tasks that involve exposure and methods used to protect workers, including procedures to restrict access to work areas where high exposures may occur;
- Designate a **competent person** to implement the written exposure control plan;
- Restrict **housekeeping** practices that expose workers to silica, such as use of compressed air without a ventilation system to capture the dust and dry sweeping, where effective, safe alternatives are available;
- Offer **medical exams**—including chest X-rays and lung function tests—every three years for workers who are required by the standard to

wear a respirator for 30 or more days per year;

- **Train workers** on the health effects of silica exposure, workplace tasks that can expose them to silica, and ways to limit exposure; and
- **Keep records** of workers' silica exposure and medical exams.

Additional Information

Additional information on OSHA's silica standard can be found at www.osha.gov/silica.

OSHA can provide compliance assistance through a variety of programs, including technical assistance about effective safety and health programs, workplace consultations, and training and education.

OSHA's On-Site Consultation Program offers free, confidential occupational safety and health services to small and medium-sized businesses in all states and several territories across the country, with priority given to high-hazard worksites. On-Site consultation services are separate from enforcement and do not result in penalties or citations. Consultants from state agencies or universities work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing and improving safety and health management systems. To locate the OSHA On-Site Consultation Program nearest you, call 1-800-321-OSHA or visit www.osha.gov/consultation.

How to Contact OSHA

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.



Applying water to the blade of a handheld power saw reduces the amount of dust created when cutting.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.



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Occupational
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DSG FS-3681 12/2017

Nielsen Upholds OSHA Safety Standards

by Zach Lokey, Business Development Representative, Nielsen Builders

Imagine this: It is the year 1911 in busy New York City, where a company by the name of Triangle Shirtwaist Company operates a large-scale garment factory. It is a normal Saturday at the factory when a small fire ignites in a rag bin on one of the top three floors. The on-duty manager attempts to put the fire out with a nearby fire hose, but is unsuccessful because of the rotted hose and rusted water shut-off valve. Now, the fire is growing just as quickly as the panic amongst the employees as they all begin to scramble, looking for a way out. The elevator can only take 12 people at a time, so the large majority of employees are flooding the stairwells since the only fire escape had already collapsed in rescue efforts. As they all frantically reach the exits at the bottom, their nightmare only gets worse because the doors are locked as a preventative measure against theft. The employees who made it to the bottom of the stairs thinking they are safe are now trapped with no way out. In a matter of minutes — 18 to be exact — one of the worst incidents to ever happen in American industrial history occurred. Out of 500 workers in the factory that day, 146 perished in the fire that was completely preventable, as most of the victims died because of neglected safety practices.

The importance of that story is that it was the shifting point for safety in American workplaces. Prior to that event, safety regulations were nonexistent. Therefore, most companies — Triangle Shirtwaist Company, in this instance — disregarded attention to workplace safety because they carried no obligation to enforce it. Had it been the opposite, 146 of the lives lost on March 25, 1911, could have been saved, and instead of this story being a case for reform, it could have been a testament to the value of enacting safety practices much sooner.

Fortunately, on December 29, 1970, President Richard Nixon saw benefit in implementing a federal act designed to enforce safe workplaces for employees, and he



signed the OSH Act, also known as Public Law 91-596. Just months after President Nixon signed the OSH Act, on April 28, 1971, the Occupational Safety and Health Administration (OSHA) was created. With the purpose of serving the nation's workplace safety needs, OSHA has since made an incredibly valuable impact across the nation.

In the construction industry, it is inevitable that workers will face hazards simply because of the nature of the job. With all of the moving machines, confined spaces, heights, equipment and more on a jobsite, the presence of danger will always exist. Luckily, that is where OSHA steps in with its stringent regulations, useful resources and intensive trainings, all aimed at promoting safety knowledge and awareness.

As two of the most popular training programs in the construction industry, the OSHA 10-Hour and OSHA 30-Hour courses are designed specifically to teach employees about the dangers of construction and how to be aware of their surroundings. Safety is not something to jeopardize, and advocating for safe practices is something

PLAN

ahead to get the job done safely.

PROVIDE

the right equipment.

TRAIN

everyone to use the equipment safely.

that Nielsen prides itself on. We have an extensive emphasis on all aspects of safety and strive to create the safest environments for all of our employees.

In fact, we provide proper training to each of our employees before they are permitted to work. Our initial training consists of administering a series of safety videos and tests, and then enrolling employees in either OSHA 10-Hour or OSHA 30-Hour classes. Additionally, each week, employees participate in toolbox talks that focus on randomly selected topics of workplace safety. Upon completion of those discussions, they submit the form back to our main office, where they are rewarded with safety points. After accumulating a certain amount of points, employees are then able to redeem them for a reward. This incentive offers positive reinforcement and ensures employees participate in weekly safety talks.

Whether lengthy or brief, ongoing safety training benefits the individual and the company as a whole. Finding creative ways to engage employees has proven successful and worthwhile. Nielsen will always be an advocate for workplace safety and continue to participate in raising awareness amongst our employees on how to work safely.

Source:

History.com Editors. "Triangle Shirtwaist Factory Fire." History, A&E Television Networks, 2 Dec. 2009, www.history.com/topics/early-20th-century-us/triangle-shirtwaist-fire.



Implement PPE Against Hazards

Safety is a priority no matter the situation. Even though some people are risk takers and enjoy the thrill of adventure, their wild side would be considerably different if the experience did not involve some sort of safety precautions; for example, skydivers, who go thousands of feet in the air to jump out of an airplane, rely solely on their parachute to guide them safely back to the ground. Chances are if something was wrong with their parachute, they would not go forward with jumping because they know their likelihood of landing safely would decrease exponentially, if not completely. Comparatively, the same prediction goes for construction-related personal protective equipment (PPE), which users wear with expectations that it will keep them safe at work.


Accidents are unpredictable and can transpire in the blink of an eye, especially in construction, where the presence of hazardous situations exists indefinitely. Simple distractions and unforeseeable calamities go hand-in-hand when it comes to causes of accidents. Most of the time, distractions are the most common cause, but it is not unusual for a mishap of the unpredictable nature to happen. That is why the usage of PPE is so important and required to be used for everyone who steps on a jobsite, employee or not.

With focus on protecting the head, body, eyes and face, hands and arms, feet and legs, ears and hearing, respiratory system and more, PPE varies in form. Additionally, each form has its own catalogue of classes that provide different levels of protection within each of those focal points. For instance, hardhats/helmets, which are designed specifically to protect the user's head, have three different classes: Class G (formerly Class A), Class E (formerly Class B) and Class C. All three helmets protect the

user's head but differ in which hazards they are certified to protect against, such as impact resistance and electrical conductivity. Using appropriate PPE is essential for being protected, so users need to confirm that what they are using is designed for the task that they are facing.


As part of OSHA's requirements for employers, appropriate PPE must be provided to all employees. The only time an employer is not required to do so is when an employee purposely damages his/her equipment or loses it. Over time, wear and tear progressively deteriorates the strength of certain PPE, causing it to be more of a threat than protection. Using a compromised piece of safety equipment, no matter how unnoticeable the defect, can lead to a gruesome result; therefore inspecting PPE before use is imperative. Should any type of malfunction or flaw be found during pre-use inspection, that piece of PPE is to be withdrawn from service and replaced with new. Risking someone's safety with a piece of compromised PPE is not worth it; to err on the side of caution is a much better stance. Besides, routine maintenance and cleaning is simple and provides longer lasting PPE and increased ability to withstand the scenarios it may face.

At Nielsen, we continually enforce the usage of PPE amongst all parties on our jobsites. In fact, our safety director and his associate are continually traveling from site to site enforcing this rule. Identifying all of the hazards on a jobsite is difficult, thus posing an extreme threat to those who are not adequately equipped. Mandatory safety equipment includes hardhats/helmets, gloves, proper work boots, safety glasses and fluorescent-colored apparel. All of these are simple pieces of PPE, but they save lives every day — which is why we place such an emphasis on using it.



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TECHNOLOGY

THE CHANGING FUTURE OF SAFETY IN THE CONSTRUCTION INDUSTRY

by Zach Lokey, Business Development Representative, Nielsen Builders

Cutting-edge technology is something that continues to radiate with popularity as it is introduced. Every day, it seems as if something more advanced, higher-grade or better than ever before is created, which, in hindsight, is great. In today's world, a lot of business is conducted through and reliant on technology, so the constant breakthroughs are remarkably important. Arguably, one of the more significant beneficiaries of consistent developments in technology is safety, especially in construction.

Unbeknownst to some, the construction industry has a huge emphasis on progressively enhancing all aspects of safety. Workplace accidents happen far too often in this industry, and finding safer ways to work is a common goal of everyone within it. Fortunately, with technology, that goal is achievable. Through the means of mobile devices, applications, the internet and other electronic devices, safety will forever be modifiable.

With direct connection to one another, mobile devices, applications and the internet assist safety personnel with enforcement. In the past, during site visits, safety officials would have to either write down notes or rely on memory to fill out proper documentation once they got back to their offices. The risk with that approach is that it allowed for error and missed details because of the idle time between sites and offices. Now, with the help of mobile devices, such as smartphones and tablets, the internet and applications, safety personnel can



"...Safety personnel can make on-the-spot documentation and upload it instantaneously for all necessary parties to access."

make on-the-spot documentation and upload it instantaneously for all necessary parties to access.

In addition to mobile devices, a couple of other electronic devices that aid in jobsite safety, courtesy of advancements in technology, are virtual reality and drones. What was once a fantasy has now become a reality and proves its

worth regularly. Oftentimes referred to as VR, virtual reality has shaken up the industry with its growing popularity. More commonly associated with video games, the construction industry has found a way to take VR and make it its own. Much like the idea of watching a reality-altering video, construction workers are able to program a VR headset to display details of the project they are working



on. For example, with heating, ventilation and air conditioning (HVAC), users can put on the headset, walk through a building, and see the location of ducts, air handlers and much more. Additionally, it is possible to program a VR headset to display a building with the details that designers imagined, helping builders see layouts and details more clearly than on paper. With the help of VR, being proactive and anticipating where certain features of the project go allow workers to develop better plans on how to safely complete tasks.

Drones, much like VR, assist employees in preparing and planning the best routes to work. From start to finish, drones can assist in surveying projects from an eye-in-the-sky viewpoint. Certain angles on projects in the past have been nearly impossible to access because of the height and danger created getting there. With drones, pilots can fly the

From start to finish, drones can assist in surveying projects from an eye-in-the-sky viewpoint. Certain angles on projects in the past have been nearly impossible to access because of the height and danger created getting there.

miniature aircrafts to designated spots with minimal danger. While keeping the pilot on the ground, drones can capture and send live feeds back to the control panel so that inspections can be completed, hazards can be spotted and progress photos can be taken. Limiting the amount of human interaction with potentially dangerous situations in high elevations is favorable, and drones help do that.

All in all, technology is a beautiful resource that promotes ever-changing capabilities in safety. How the construction industry operates today is vastly different from in the past. The introduction of drones, VR, mobile devices, internet, applications and much more will continue to lead the way in promoting safe workplaces. We think we have seen it all, but the future still holds groundbreaking discoveries yet to be invented.



FATAL FOUR

by Zach Lokey, Business Development Representative, Nielsen Builders

The phone rings, and upon answering, the voice on the other end relays a message. Suddenly the phone drops to the floor and silence overcomes the room. Shortly after, panic begins to set in, and quick footsteps shuffle around until the loud slam of the door echoes and the roar of the engine quickly fades away into the distance.

The phone call that nobody ever wants to receive is the one about a fatality. According to the Occupational Safety and Health Administration (OSHA), from its most recent study on the year 2016, 4,693 worker fatalities happened in the private sector alone, and of that total, 991 fatalities were related to construction.

Responsible for nearly 64 percent of construction-related fatalities are the infamous “Fatal Four,” which include falls, struck by object, electrocutions and caught-in/between scenarios. Each classification in this dreadful grouping has proven to be deadly and the most common causes amongst workplace fatalities in the construction industry.

Falling is an accident that can be easily prevented with specially designed equipment. Harnesses, railing, hole coverings and tie-offs are four of the most popular preventative items that employees use as they begin working around elevated areas. Falls are probably the most common within the Fatal Four, but are quite possibly the easiest to prevent. When working above ground level, workers are required to tie off when working from a lift or on a level with no railings. If they are tied off, which means that they have a weight-appropriate harness and strap attached to a sturdy bearing point, should they fall, their personal protective equipment (PPE) will prevent them from falling all the way to the ground, thus eliminating the chance of serious injury. That is why our superintendents, project managers and safety directors all enforce strict guidelines when working from above.

Attention is the best protection against becoming a victim of struck-by scenarios, but reflective PPE and avoiding the path of moving objects is also very important. When

entering a jobsite, it is mandatory that all inhabitants wear some type of fluorescent American National Standards Institute (ANSI) certified apparel. Embedded amongst each piece of ANSI-certified PPE are reflective components that flash or glow so that the user is visible to everyone amidst the conditions of the site. Without reflective PPE, struck-by accidents could become much more dominant within the Fatal Four, especially since heavy machinery and vehicles are consistently a factor of construction.

Caught-in/between accidents can happen in the blink of an eye without the proper protective system in place. The most commonly seen caught-in/between hazard is collapsed trenches, but working around rotating or suspended equipment and exposure to pinch points also creates a large element of danger, too. This type of hazard can range from fingers getting caught between two objects that came together, to workers getting buried entirely within a collapsed trench. Regardless, neither usually end well, so taking all necessary precautions is of utmost importance.

The rule of thumb is not to enter a trench five feet deep or more without specially engineered trench boxes in place. Trench boxes maintain a safe work area by supporting the walls of a trench and not giving the walls any opportunity to collapse. To avoid the use of trench boxes, though, another safe option is to gradually slope the ground away from the center to prevent the likelihood of cave-ins. Without steep walls to collapse, cave-ins cannot happen. For all of the other hazards with caught-in/between, personal awareness and discipline can be very effective safety measures. Not putting hands, feet and bodies in questionable areas, avoiding rotating parts,

focusing on surrounding elements, locking out equipment before working on and never working below suspended objects summarizes the rest of the preventative practices that can save lives in this domain.

Electricity, on the other hand, is invisible to the eye but poses one of the most dangerous threats amongst the Fatal Four: electrocution. Created by contact with a live current of raging electrical energy, victims of electrocution or electric shock receive a shock throughout their body with outcomes ranging from painful jolts to death.

The good news is that electrocutions are very much preventable. With the use of ground fault circuit interrupters (GFCI's), properly marking areas with possible electrical hazards, working with nonconductive tools, not using equipment with exposed wires and being aware of the surroundings, workers decrease exposure to electrical mishaps exponentially. The list of precautions does not end there, though, because before work at a project can begin, it is mandatory to locate all existing power lines above and below ground. This knowledge makes it easier to avoid accidental contact during necessary alterations to the power grid before and during work.

Although more than just the Fatal Four have ties to workplace fatalities, the core four scenarios mentioned here rank statistically as the highest. With the help of revolutionary safety equipment and practices, the ultimate goal to reduce the frequency and extremity of workplace accidents is achievable. Too many haunting stories of workplace fatalities related to the Fatal Four circulate regularly, but with everyone working together, preventing more of those stories is possible.

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PROJECT PORTRAITS

ARIAKE PHASE 2

Client: Ariake Phase 2
Location: Harrisonburg, Virginia
Architect: Gaines Group
Contract: \$6.6 million
Completed: June 2018



SPECIAL FEATURES

Over the course of two phases, Ariake USA in Harrisonburg, Virginia, has expanded their broth and seasoning manufacturing facility into a much more spacious operation. Phase One required the demolition and relocation of the existing loading dock that was sitting in the proposed location of Phase Two. The scope of work included a 10-foot high loading dock to allow waste materials to be dumped into a hopper-style truck. The loading dock was covered by a canopy to allow for 24/7/365 operations.

Phase Two was a 20,000-square-foot insulated panel addition to the existing facility. The foundation walls were 10 feet above

finish grade, and the steel structure measured 42 feet above finished floor. Within the addition, a 6,000-square-foot mezzanine increased the plant's production space and allowed the operation of 25-foot vessels. A membrane roofing system protects the internal features from all external conditions, as it rests upon a deck of steel bar joists and provides a surface within the parapet walls. Although, internally, special considerations had to be made for the finishes due to the fear of rust deriving from the sanitization chemicals used for cleaning; the majority of finishes were to be stainless steel, and a special epoxy floor coating was applied to combat the sanitization chemical's ability to rust.

The sitework consisted of several utility relocations, stormwater management, a new fire hydrant and a new fire lane to circle the building. Nutrient Credits were purchased to satisfy the water quality requirement, and the existing detention pond was expanded to meet the stormwater detention requirement.

DAYTON LEARNING CENTER/ ROCKINGHAM ACADEMY

Client: Rockingham County Public Schools
Location: Harrisonburg, Virginia
Architect: Architecture, Inc.
Contract: \$4.6 million
Completed: 2018



SPECIAL FEATURES

Originally named the Dayton Learning Center, the Rockingham Academy resides between the Massanutten Technical Center and newly remodeled Pleasant Valley Elementary School in Harrisonburg, Virginia. Rockingham Academy, which originally operated out of Dayton, Virginia, has been around for many years and was due for some major renovations. Instead of renovating the existing facility, the most appropriate option was to build new.

As part of the Rockingham County School System, this facility will house the local Alternative Education Program for all four middle and high schools in the area. With the area rapidly growing and more educational space needed, the Rockingham Academy provides a clear solution for that issue.

Comprised of 15 new classrooms, a gymnasium/multi-purpose room, special education room, administrative offices and a nurse's clinical room, this alternative education facility is nothing short of adequate. In addition to all of those components that make up the Rockingham

Academy, it also features a teaching kitchen, technology shop, computer lab, media center, teacher's workroom and kitchenette, and 13 water closets.

Structurally, this new building consists of a concrete slab-on-grade, CMU load-bearing walls, steel bar joists and roof deck, membrane roofing, and a brick-faced exterior. The interior of the Rockingham Academy is complemented with painted CMU walls, wooden cabinets produced by Legacy Cabinets & Millwork Co. (a division of Nielsen Builders), laminate countertops, acoustical ceilings, a fully equipped gymnasium with basketball goals and VCT flooring.

The Rockingham Academy is a project that will serve the Rockingham County School System for many years to come. It sits in a nearly perfect central location, with 3.53 acres of land, and has been designed to accommodate the constantly growing population in the area. Needless to say, this facility has been well designed and thought out for future adaptability.

GRAPHIC PACKAGING EXPANSION 2017

Client: Graphic Packaging International
Location: Staunton, Virginia
Architect: McKinney & Company
Contract: \$2.8 million
Completed: October 2017



SPECIAL FEATURES

With a strong need for more space, Graphic Packaging International, Inc. teamed up with Nielsen Builders to find the solution. This new 26,000-square-foot warehouse constructed from tilted-up concrete wall panels became the answer. In addition to the warehouse, another 4,000-square-foot, tilt-up baler room was erected to connect the new warehouse and the already-existing building together.

Within the walls of the new warehouse, an office area, breakroom, restroom and six loading bays reside, aside from the massive storage area. All six loading bays, collectively, are extended with a 60-foot concrete apron attached to an adjacent 75-foot drivable ramp. Upon the completion of the baler room and relocation of the baler dust collector, a new cafeteria was constructed. On the

roof of the warehouse, 24 prismatic skylights were implanted, and white painted roof decking was used to increase the amount of natural light entering into the building. Together, the skylights and the white roof decking contribute to the energy efficiency of the building. Internally, to aid air circulation, three 8-foot diameter fans were installed near the loading area. These fans will keep temperatures satisfyingly appropriate for both employees and products.

Around the lower side of the property, where the new warehouse stands, a 420-by-14-foot segmented block retaining wall was implemented. Two smaller but very similar retaining walls were then added to support a new 12-space parking lot. Additional sitework on the property included storm sewer piping, heavy-duty asphalt pavement, and new curb and guttering.

HARDY COUNTY PUBLIC LIBRARY

Client: Hardy County
Location: Moorefield, West Virginia
Architect: Design Concepts
Contract: \$1.3 million
Completed: February 2018

SPECIAL FEATURES

Located just off of North Main Street in Moorefield, West Virginia, the Hardy County Library stands, and has stood, for many years. As a sanctuary for the community to gather and expand its horizons through literature, the facility has always been important to maintain.

In 2017, we began work with the Hardy County Library to expand its current operating space and restore a new look with fresh appeal. In the original facility, we renovated 9,000 square feet of space, as well as built a 1,000-square-foot addition. For the exterior of the building, we replaced the original roof with new shingles, enhanced the entrance features and reworked the front façade. On the interior, we removed everything from carpet and bookshelves to the lighting fixtures and finishes. Upon completing the removal of all interior pieces, we then replaced them with new.

That was not all, though; prior to construction, the Hardy County Library had purchased its neighboring building with the idea of turning it into much-needed additional operating space. From there, we transformed the former jewelry store into what is now the archives and office area for the library today.



Initially, the remodeling of what used to be Puffenberger's Jewelry Store started by gutting it entirely and cutting out doorways to allow passage from one building to the other. Once everything was stripped out of the former jewelry store, we began reconstructing it to mirror the existing library's design, including the façade. Unified finishes, brand-new HVAC, electrical and plumbing were all installed; the idea was to take this old building and resurrect it into something vibrant.

All in all, this project was one that essentially turned two buildings into one with an end result of increased square footage. The Hardy County Library can now thrive once again with a new look, updated features and highly sought space.

PROJECT PORTRAITS

JMU GIBBONS HALL DOOR PACKAGE

Client: James Madison University
Location: Harrisonburg, Virginia
Architect: Moseley Architects
Contract: \$419,000
Completed: 2018



SPECIAL FEATURES

Located in the heart of James Madison University, we completed a project through our partner, Skanska, to supply and install all of the doors, frames and hardware needed for the modernization of JMU Gibbons Hall. Over the course of four months, starting in November 2017 and finishing in February 2018, this new, three-story dining hall stands completely revitalized and is complemented by multiple restaurant chains and campus dining facilities.

With an open floor plan for large dining areas, numerous kitchen areas and even a small office area resting on the third floor, the

amount of doors needed to suit this exquisite design numbered more than 200. Within those 200-plus doors, there were many different types, depending on the location and application that the doors were to provide. To install these doors, frames and necessary hardware packages, we had to work carefully within the already-established framing while achieving perfect alignment.

Because of the large variety of doors needed throughout the building, this project required extreme focus and attention. With constant review of the drawings to determine locations and types needed for said locations, we were able to complete this project very efficiently.

JOHN W. WAYLAND ELEMENTARY SCHOOL RENOVATIONS

Client: Rockingham County Public Schools
Location: Bridgewater, Virginia
Architect: Architecture, Inc.
Contract: \$9.1 million
Completed: 2018



SPECIAL FEATURES

In this much-needed renovation project, John W. Wayland Elementary School underwent a total reconditioning. Upon many years of operation and limited updating to the school, a series of needs became very noticeable. After starting in the spring of 2017 and finishing in the fall of 2018, those needs became nonexistent.

With an HVAC system more than 50 years old and a 15-year-old chiller, heating and cooling the school was a choice of one or the other. This exhausted HVAC system was not nearly as effective as it could be, and replacing it with a new, more efficient system was at the forefront. We completely gutted the retired HVAC system from the school and installed a new and improved system that enabled users to partition it on demand, something the old system was not capable of.

With an expected rise in enrollment at the school, more classroom space was needed as well. To satisfy that need, we were able to

take various areas within the school and remodel them to create new classrooms, all while maintaining proper space for important other needs such as storage and offices.

All around the facility, we removed and replaced all windows, repainted the internalities, laid new carpet and installed new ceilings, exterior doors, and lighting. Our work did not stop there, though — we also removed the existing roof and replaced it entirely. Minor repairs were made to some of the existing sidewalks and ramps, but the mostly new sidewalks were poured.

A small addition was also in the plans for this school. On the north side of the school, we constructed an expansion to the kitchen that offered more storage space and a nice locker room for the cafeteria employees, and, most importantly, created more work room. In the same area, a new loading dock was built, too. For ease of access to incoming shipments, the new loading dock was positioned directly outside the northwest side of the kitchen.

PLEASANT VALLEY ELEMENTARY SCHOOL RENOVATIONS

Client: Rockingham County Public Schools
Location: Harrisonburg, Virginia
Architect: Architecture, Inc.
Contract: \$6.6 million
Completed: August 2018

SPECIAL FEATURES

Pleasant Valley Elementary School (PVES), one of 15 total elementary schools within Rockingham County Public Schools (RCPS), was originally built in 1963. To date, after an addition in 1967, no further significant projects were completed besides minor upgrades to keep the school running. All of that was soon to change when advertisements were released detailing plans of renovations that the school was soon to undergo.

Modernizing the school became a vision for RCPS in 2016 and a reality in 2018. After just shy of a year and a half of construction, a lot of change was brought to this elementary school, as all renovations finished up. The scope of work included a new HVAC system, new windows, exterior doors, lighting, floors, ceilings, electric circuits, ceramic tile wainscoting in the hallways, painting, asbestos abatement, and kitchen and restroom renovations.

To put the need for modernization into perspective, though, up to the point of project completion, the school had been operating an HVAC

system that was more than 50 years old. The original, two-pipe system could not be partitioned, so no matter what, when one room needed to be warmed or cooled, the rest of the building had to follow suit. Not just that, but replacement parts for the former system were beginning to get harder and harder to find since it was over half a century old. So understandably, with the school starting to experience more issues than success with their HVAC system, implementing a new one was a highly favorable solution.

Comparable to the energy efficiency that the new HVAC system offers, the installation of new windows, doors and lighting also help with developing long-term cost savings, too. Becoming more energy efficient is a trend that has become increasingly popular over the years, and one that RCPS continues to display a commitment toward. For PVES, by equipping the school with some of the latest appliances and fixtures, their sustainability will be resoundingly rewarding.

As for the other parts of the renovation, they may not have aided as much in energy efficiency, but they took a school that is 55 years old, and gave it a fresh, new, vibrant look. Now upon entering the school, bright colors line the hallways from ceramic tiles and paint, restrooms are equipped with updated appliances, the ceilings have new panels and the kitchen is larger than ever before.

This project as a whole has given a fresh breath to a school that was beginning to show its age. PVES has been a part of this community for a long time, and now, with all of the work that has been completed, it will be able to be a part of this community for a long time more. Preserving history was a focal point on this project, and after completing it in 2018, we did just that.

UVA IVY STACKS EXPANSION

Client: University of Virginia
Location: Charlottesville, Virginia
Architect: UVA FP&C Design Group
Contract: \$5,146,000
Completed: April 2018

SPECIAL FEATURES

As one of the homes for the University of Virginia's Library collection, Ivy Stacks stores some of the most significant literature owned by the university. Before construction, Ivy Stacks was limited to 12,545-square-feet worth of warehousing space, and with continual additions to their collection, a need for more storage space had risen. Thus, a 12,734-square-foot addition was constructed.

The building addition was designed in two distinct parts, the Stack House and Head House additions. The Stack House addition consisted of 21 approximately 45-foot-tall composite, concrete, tilt-up panels, creating roughly 10,000 square feet more warehousing space. Each panel displays distinct designs on the exterior because of the form liners and extensive reveals that we used while casting them. For the Head House addition, which stands only two stories tall, steel framing and an exterior insulation and finish system (EIFS) were used to construct the shell.

Because the books remained in the existing building throughout the entire project, the mechanical and fire sprinkler systems had to



remain active even though they were both being completely replaced. To allow for the transition between past and present systems, a temporary fire pump and mechanical system had to be utilized. It cannot be stressed enough that keeping the facility functional was essential for success.

To achieve optimum preservation, though, the interior of Ivy Stacks will be kept at 50 degrees Fahrenheit and 50 percent humidity. Since the parameters of this facility's climate are so unusual, the new, very complex, mechanical system was exclusively designed for this facility. The typical mechanical system is not usually programmed for parameters like that, so specially made components had to be incorporated.

On top of the addition, this LEED-Certified project consisted of installing solar panels on the roof, renovations to the existing facility and relocation of a fire sprinkler pump house. Work did not stop there, though, because we expanded the parking lot and replaced all of the underground utilities, including installation of a new underground box culvert to reduce the intensity of rainwater runoff during storms.



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