SAFETY ZONE

LEGAL

ISSUES

THE OFFICIAL MAGAZINE OF THE NATIONAL DEMOLITION ASSOCIATION

JULY/AUG 2018

BEATING THE

SSD DEMOLITION AND ENVIRONMENTAL DECONSTRUCTS THE ATLANTA HAWKS' ARENA

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A CONCRETE CHALLENGE

Renascent and CDI safely demolish and implode a 28-story office building in Kentucky, the thirdlargest concrete building imploded in the United States.



'ROCKFORD FALLS IS ON FIRE'

Neuber Demolition & Environmental Services carefully demolishes fire-damaged buildings on Brandywine Creek in Wilmington, Delaware.



GENERATION DECOMMISSION

Remedial Construction Services focuses on safety as it works to demolish a coal-fired power plant in Southern Nevada.





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SSD Demolition and Environmental slam-dunks the Philips Arena project deadline with a fleet of demolition machines.

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NDA BOARD OF DIRECTORS

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In 2014, the National Demolition Association made the decision to move to a new management company as part of the board of directors' strategic plan to take the association to the next level. With that move, Cheryl Caulfield became NDA's executive director, and, for the past four years, she and her team have dedicated themselves to achieving the organization's goals.

As most of you know, Cheryl is stepping down as NDA's executive director on Aug. 1, 2018, to pursue her MBA. We will truly miss her leadership and presence within the organization, but we also wish her the best in her future endeavors. I think I can speak for everyone when I say thank you for the direction you have provided these past years.

Under Cheryl's leadership, we've had a number of amazing conventions; we launched the Safety App; we had our first Live DEMOlition at our most recent annual meeting; we've increased the amount and quality of of education we provide; and so much more.

One of the many reasons NDA moved to an association management company was to alleviate members' concerns with change. The transition from Cheryl to NDA's new executive director, Jeff Lambert, will be seamless. Importantly, the staff team that has worked behind and along Cheryl will still be working diligently on all our initiatives.

Jeff is steadily being brought up to speed with NDA's goals and plans, and he has a great support system in doing so. Cheryl previously worked with Jeff at the Homebuilders Association, and he also comes with a background in the trade, having worked with the Associated Builders and Contractors (ABC) for many years. You will see that Jeff



Scott Knightly National Demolition Association

President

The staff team that has worked behind and along Cheryl will still be working diligently on all our initiatives.

has the background and skill set to help develop and deliver NDA's initiatives for years to come.

You have a chance to meet Jeff during NDA's next board meeting on Oct. 4-5 in Williamsburg, Virginia, and I highly encourage you do so. There's no better way to connect with fellow NDA members and stay engaged in the organization than attending these board meetings. You're a member of this community, and we want your voice heard.

Thanks again to Cheryl on behalf of me, the board of directors and our members. You put us in a great position to continue to succeed.

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A Bittersweet Goodbye

It's a bittersweet moment to say goodbye to you all after four years. It's bitter because I've enjoyed my time with NDA, and meeting and working with such great members has been so rewarding. But it's also sweet because I know NDA will continue to grow and advance under Jeff Lambert's leadership, and I'm excited to see where the organization goes.

Looking back, NDA has accomplished an incredible amount in a relatively short amount of time. In 2015, we established a Government Affairs Committee and hired a demolition lobbyist, Kevin McKenney. Since then, we have been making sure your needs are addressed on a federal level.

Just recently, we have been watching steel and aluminum tariffs and urging the administration to find a balance between protecting American industry and ensuring the costs for construction projects do not affect new business.

Also in 2015, we released refreshed Demolition Safety Talks, launched Demolition Training Online and even redesigned this very magazine, *DEMOLITION*.

In 2016, NDA partnered with World of Concrete in Las Vegas to promote our organization and membership. Also that year, we partnered with KHL to host the first World Demolition Summit in North America. 2016 also saw NDA's first-ever Estimating Course and robotics training at the 2016 convention.

In 2017, NDA was extremely proud to launch its Safety App, which gives members access to Demolition Safety Talks and the updated Safety Manual. (Check it out at www.demolitionassociation. com/safetyapp if you haven't yet.)



Cheryl Caulfield, IOM, CAE National Demolition Association

NDA has accomplished an incredible amount in a relatively short amount of time.

One of my favorite events from the past four years happened this year with the Live DEMOlition at Demolition Austin. Nineteen companies participated and showed off their equipment and capabilities in what was truly a groundbreaking event. Demolition Austin was one of our most successful conventions in years and a great turning point for NDA.

Everything the organization has done these four years has been to make your jobs and lives better. I know that will continue without me, but I will truly miss you all! NDA is a family, and I wish you all the best.

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SSD Demolition and Environmental slam-dunks the Philips Arena project deadline with a fleet of demolition machines

By Aaron Boernen



ust as basketball players often need to score big before the buzzer to win, the contractors completing the NBA's second-largest renovation ever need to work fast to make sure the athletes have a court on which

to compete.

The Atlanta Hawks announced a \$192.5 million re-imagination of the Philips Arena in downtown Atlanta in June 2017. The three-phase project involves rebuilding the interior of the building from the roofline to the baseline, as well as making major changes to the arena configuration. The result will be new amenities on every level of the arena, a tremendous amount of open and connected space, new video boards, improved sightlines and the first-ever bar on an NBA playing floor.

The Atlanta Hawks hired a team of general contractors comprised of Turner Construction Company, AECOM Hunt, SG Contracting and Bryson Constructors to oversee the project. The first phase was chiefly demolition focused, requiring, among other things, removing a six-level wall of suites on the arena's west side to make room for many of the improvements. Not only did the phase involve demolishing almost 3,000 tons of concrete, it also needed to be done in just 12 weeks to be ready for the new basketball season and upcoming concerts. Plus, unlike most projects where one contractor finishes and another begins, all contractors had to start working on the arena at the same time with no slack time built in.

Atlanta-based demolition contractor and NDA member SSD Demolition and Environmental (SSD) bid on the project. The traditional method of wire-cutting chunks of concrete from the wall of suites and craning them out would take a long time and involve too much use of the general contractor's crane, which was needed for many parts of the project. Company planners proposed using innovative remote-controlled demolition machines to deconstruct each level, starting from the top and working their way down. The method would improve productivity over handheld tools, as well as keep workers safe from flying concrete and fall risks. The general contractor hired SSD based on its proposal.

"Our plan to use these specialized machines was what won us the project," says Gregory Gorman, SSD senior vice president. "The equipment is remarkably powerful for its size. Plus, the electric-powered machines eliminated the risk of exhaust fumes, which was a huge benefit for the interior demolition that was the bulk of our work."

The contractor purchased two Brokk 160 remote-controlled demolition machines, which were vital to their plan. The company learned about the manufacturer, Brokk, in 2017 during a difficult top-down demolition project. Research at the time determined that suspending one of the machines from a crane was the best way to complete a safe, controlled demolition. SSD rented one for the 2017 demolition and continued to regularly rent the equipment. Based on their experience over the years of renting, SSD management knew purchasing the machines would be a good investment.

When the first phase of construction began in June 2017, SSD crews moved quickly, starting demolition of soft ceilings, offices, ribbon boards, retractable seating, pre-cast seating and vomitory walls. Crews also installed scaffolding, as well as deflection shields and chutes, for rubble containment and removal.

Demolishing the concrete suites by the deadline required a strict six-day-a-week schedule with a 42-person crew rotating through two 10-hour shifts. Starting at the top level, the contractor placed one B160 at the north end of the stadium and the other at the south end. Two operators manned each machine — one using the remote control and one as a spotter. From there, operators worked their way toward the middle of the suites, demolishing concrete, pillars and utilities, as well as seating, handrails, floor and wall coverings, drywall and other items.

SSD used an Atlas Copeo SB 202 hydraulic breaker attachment, and the unique Brokk three-part arm design allowed them to take advantage of extended-reach capabilities and precise demolition. Operators switched to a steel-cutting attachment to cut through rebar, which reinforced much of the concrete. SSD President Michael Gorman said the attachment was a dramatic improvement over needing to cut with handheld torches.

"The Brokk salesman, John Haugabook, brought the attachment when he delivered the machine, anticipating our need to cut rebar," Gorman says. "We're glad he did. We tried the attachment, recognized the improvement to our process and bought it on the spot. Overall, the Brokk machines improve our productivity by as much as 50 percent."

At night, the second crew cleaned rubble from the level below the day's demolition areas. Workers loaded debris into hoppers by hand and with mini excavators and skid steers. A deflection field composed of plywood and scaffolding on the levels' edges provided both fall protection and a way to contain rubble. Workers also used debris chutes and a service elevator to remove material.

Each level took about a week to complete. The crews removed 300 to 410 cubic yards of concrete from each level. When the two Brokk machines met in the middle, the general contractor's 350-ton crane on the arena floor moved the B160s down to the next level to begin the process again.

SSD used the Brokk machines for about four weeks to completely remove the suites' walls. Beyond the suites, SSD





Workers used the Brokk 160 to demolish concrete, pillars and utilities as well as seating, handrails, drywall, floor and wall coverings and other items. Photo courtesy of Brokk.



Each level took about a week to complete. The crews removed 300 to 410 cubic yards of concrete from each. When the two Brokk machines met in the middle, a 350-ton crane on the arena floor moved the B160s down to the next level to begin the process again. Photo courtesy of Brokk.





SSD knew using remote-controlled demolition machines would improve productivity over handheld tools, as well as keep workers safe from flying concrete and fall risks. Photo courtesy of Brokk.



SSD used an Atlas Copco SB 202 hydraulic breaker attachment, and the unique Brokk three-part arm design allowed them to take advantage of extendedreach capabilities and precise demolition. Photo courtesy of Brokk.



160

SSD wrapped up its portion of the project in September after 74 days of work, three days ahead of schedule. In total, the contractor recycled 2,760 tons of concrete from nine arena levels. Photo courtesy of Brokk.

SSD used the Brokk machines for about four weeks to completely remove the suites' walls. Beyond the suites, SSD completed additional architectural and structural demolition of major arena components. This included removing concrete slabs and foundations as well as modifying raker beams and stairs. Photo courtesy of Brokk.



Watching a game at the arena will be different than any other building with a scoreboard three times the size of the previous scoreboard, four unique sponsor pavilions with monster-size screens, new concourse design and an improved food/drink experience. Photo courtesy of Atlanta Hawks Basketball Club.

PROJECT STATISTICS



74 DAYS

2,760 TONS CONCRETE RECYCLED



The \$192.5 million transformation will result in a completely new arena under the existing roof. The new arena is inspired by the Hawks mantra "True to Atlanta" and the connectivity of the Beltline. Photo courtesy of Atlanta Hawks Basketball Club.

completed additional architectural and structural demolition of major arena components. This included removing concrete slabs and foundations, as well as modifying raker beams and stairs.

SSD wrapped up its portion of the project in September after 74 days of work, three days ahead of schedule. In total, the contractor recycled 2,760 tons of concrete from nine arena levels.

Phase one construction wrapped up in late October — just in time for an Eagles concert and basketball season to begin. Work on phase two began in November 2017. Phases two and three involved additional architectural work and the bulk of the construction of the new amenities, additions and layout. The project was completed for the 2018-19 basketball season, coinciding with the Hawks' 50th anniversary in Atlanta.



Aaron Boerner is a writer for the construction, demolition, aggregates and mining industries.

Renascent and CDI safely demolish and implode a 28-story office building in Kentucky, the third-largest concrete building imploded in the United States

By Katie Condon



he Frankfort Convention Center and Capital Plaza Tower in Frankfort, Kentucky, served as gathering place for a variety of groups, tourists and government employees.

Opening its doors in 1971, the convention center hosted an estimated 111,000 visitors. The Capital Plaza Tower, made for government officials in Kentucky's capital city, was constructed a year later, boasting 28 stories, concrete walls and a steel roof at an exterior height of 44.5 feet. With nearly 50 years of history, the buildings were becoming functionally obsolete; maintenance costs were rising along with safety concerns. The Capital Plaza Tower could no longer meet the growing demands of state and local government. After the Finance and Administration Cabinet's Department of Facilities and Support Services advocated for a new building, it was determined that the best move would be

to demolish the current structures and build contemporary, energy-efficient structures in their place.

Consequently, an asbestos abatement and demolition of the Capital Plaza area — including the convention center, retail area, parking garages and Plaza Tower — was ordered. In its place will be a new office building for state employees including a parking garage, to be complete in December 2019.

ASSEMBLING A TEAM OF EXPERTS

The Capital Plaza project was a P3 (Public Private Partnership) and had a variety of performance requirements. NDA member Renascent Inc., an Indiana-based demolition company specializing in safety and recycling, had to prove it was ready for the challenge. The team was asked to provide examples of similar projects in terms of size,



complexity and dollar value. Because the tower was to be the third-largest concrete building imploded in the United States, Renascent wanted to find implosion experts to join the team. The company partnered with fellow NDA member Controlled Demolition Inc. (CDI) for the demolition and implosion of the tower based off CDI's experience on comparable projects.

A SOLID DEMOLITION STRATEGY

Throughout the duration of this project, objectives and processes were very clear. Says Joshua Campbell, president of Renascent, "From day one on the project, there were two goals: 1) the abatement, soft demo, implosion prep and safe-controlled demolition of the tower; and 2) the demolition of the parking garages in the fall zone of the tower, preparation of crush concrete and aiding in the partial building of the proposed building pad prior to implosion."

Renascent was also sure to use the best tools for the project. For the structural demolition, 15 excavators were used, ranging in size from 1100s to 210s. Implosion prep tools included small skid loaders, saws and lifts.

While the majority of the project was smooth sailing, the team was met with an immense challenge. During the implosion prep of the building, it was difficult to weaken the center core, a thick and heavily reinforced 16-inch block

of cement. To make matters worse, the elevators and stairs were small and only had a 3,500 weight capacity, which restricted the size of equipment that was able to be used to remove the concrete. While some smaller equipment could fit on the elevators, they were generally ineffective at removing the concrete. Consequentially, as Campbell points out, "concrete sawing ended up being the most efficient method for removal of the concrete walls." The team used four electric wall saws to cut the concrete into 6,000-pound pieces. These pieces were rigged and lowered to the floor. Concrete from the upper floors that did not require removal from the building was left on the blast floors. Through these tactics, Renascent was able to effectively remove the concrete from the higher floors.

SAFETY FIRST

Renascent has made it clear that safety is a top priority, both for crew members and the local public, at every phase of the project. During the entire process, there were public notices, community outreach, and coordination with local officials and public safety officers. Prior to implosion, multiple meetings were held with public officials, life safety and utility companies. Weekly conference calls were scheduled to discuss open items and concerns as the project progressed. In order to minimize public exposure to the implosion process but also maintain transparency, a safety plan was developed that allowed view areas.

DEMOLITION AND IMPLOSION: STEP-BY-STEP

ASBESTOS ABATEMENT

SOFT DEMO OF THE ENTIRE TOWER, REMOVAL OF ALL CARPET, TRASH AND FIXTURES

UNIVERSAL WASTE REMOVAL, BULBS, BALLAST, SWITCHES, BATTERIES AND REFRIGERANT

> IMPLOSION PREP, INCLUDING THE WEAKENING OF THE 16-INCH THICK, CONCRETE CORE ON EIGHT LEVELS

DRILLING OF BLAST HOLES IN CORE AND COLUMNS

WRAPPING THE CORE AND COLUMNS WITH TWO LAYERS OF 12-OUNCE GEOTEXTILE AND TWO LAYERS OF 9G WIRE FABRIC

LOADING OF CHARGES

IMPLOSION

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THE NEW WORLD STANDARD





There were 45 workers on-site. With such a big crew, it was critical that the full team understand and prepare for all risks involved. To prepare, trained and experienced supervisors not only led daily safety meetings, but they also oversaw the work. The biggest safety concerns for crew members involved removal of large concrete sections of the center core of the building. "The slabs weighed 6,000 pounds each and had to be rigged and lowered to the floor," Campbell says. "The holes from removal, along with the windows that were removed from the blast floors, created significant fall hazards."

In order to mitigate the risk of falling, railing and cabling were installed on-site. Workers within these hazardous areas were required to be tied off. Other challenges included below-zero temperatures when the project started in January. Because the team was equipped to handle all of these foreseen and unforeseen dangers, Renascent was successful in creating a culture of safety.

RAMPING UP RECYCLING

Especially with today's environmental concerns, recycle and waste reduction have become top-of-mind issues for demolition and construction companies. Renascent ensured that as many materials as possible would be preserved or recycled.

"All of the ferrous and non-ferrous materials are being sold to local markets," Campbell says. "Concrete from the project is being crushed and reused as fill material for the new building." In addition, 4,000 square feet of the marble slabs within the entry way were safely and securely removed. This material will also be reused in the new building.

How was the team able to give back so much of the building? Materials were removed using magnets, excavators and hand labor. Thanks to its smart and relentless efforts, Renascent is excited to announce that the team will be able to recycle a projected 95 percent of the materials on the project once completed.

Overall, the Renascent team is happy with the results of the project. "With the hard work and coordination of the owner, contractor, subcontractors, supervision and workers, the future building pad area was prepared, and the safe controlled demolition of the tower took place in March," Campbell says. Everyone is looking forward to seeing the modern, safe and efficient building being constructed in its place.



PROJECT STATISTICS

16-INCH

28-STOR

BLOCKS OF CEMENT AT CENTER CORE OF BUILDING



RECYCLE RATE

45 WORKERS

ON-SITE



During the industrial revolution, early manufacturers harnessed hydropower from Brandywine Creek to drive the production of goods. 12 568

11 1

Rockford Talasis

Neuber Demolition & Environmental Services carefully demolishes fire-damaged buildings on Brandywine Creek in Wilmington, Delaware

By Alexa Schlosser

he elevation of Brandywine Creek drops over 150 feet between Chadd's Ford, Pennsylvania, and Wilmington, Delaware. During the industrial revolution, early man-

ufacturers harnessed that hydropower to drive the production of goods. Mills began popping up along the mouth of the Brandywine starting in the late 1600s and, in 1831, Joseph Bancroft opened a textile mill that would, by 1930, become one of the largest cotton finishing factories in the world.

Bancroft Mills closed in 1961, and the building was acquired by Wilmington Piece Dye Company, which eventually folded in 2003. After that, a new property owner took over with plans of redeveloping the site into luxury townhomes and condos called The Overlook at Rockford Falls.

NDA member Neuber Demolition & Environmental Services, a Pennsylvania corporation, heard of the redevelopment plans and reached out with a bid. The company had performed chemical cleanup there about a decade ago and is well known in the area as a full-service demolition and environmental company.

"We were working out the details of our proposal with the client when the phone rang and the property owner said 'Hey, Rockford Falls is on fire," says Chris D'Orazio, operations manager at Neuber.

A SLOW START

After the buildings caught fire, "there was a little bit of downtime because the fire department had to complete their investigation," D'Orazio says. Neuber had already submitted a competitive bid, but it became more competitive after the fire due to its experience dealing with asbestos. Neuber's crews are crosstrained as equipment operators and asbestos abatement technicians.

The project officially started on Jan. 17, 2017. Neuber had to alter its demolition strategy to accommodate for the compromised structural integrity of the fire-damaged buildings.

The location of the structures on Brandywine Creek made maneuvering through the job site particularly difficult.

"What you're used to in normal demolition with a structure is significantly changed during a fire," D'Orazio says. "That caused insight on how we could demo safely. We had to be careful and set up differently because our crews would be demolishing one area, then a wall would collapse a hundred feet away. The structures had been exposed to such high temperatures, the concrete mortar and structural steel had been compromised."

The team also had to work closely with the Delaware Department of Natural Resources and Environmental Control to

ensure the demolition plan was safe for both the surrounding area and Neuber employees.

"We had to do some deposit samples to see where the debris would go, provide the PPE for employees so they weren't being compromised and use misters for the dust because we didn't want to contaminate any of the surrounding areas," D'Orazio says.

GOING IN

The strategy for taking down the fire-damaged structures was to start at

Neuber had to alter its demolition strategy to accommodate for the compromised structural integrity of the fire-damaged buildings.





one end of the site, thereby creating access for removing waste, as the area was very narrow. They worked toward the fire damaged building, allowing them to fall into their footprint. After that, the crews would clean and segregate recyclable materials, and the remainder would be shipped off as comingled waste product.

"Most of the weight was combined with asbestos," D'Orazio says.

The buildings that weren't damaged by the fire still brought their own set of challenges.

"A very difficult area of concern was a five-story building that was cantilevered 15 feet out over top of the Brandywine Creek, so that was a tricky one trying not to have a five-story building fall into a stream right next to the building," D'Orazio says.

"Our crews went into the non-firedamaged buildings nd completed the removal of the asbesto and HAZMAT, then gutted all the interior components so that what remained was only the slab and the structure. We were able to piece that down inside the job site without that going into the Brandywine using our 65-foot high reach."

OTHER CHALLENGES

In addition to dealing with fire-damaged buildings, Neuber encountered a couple other unique challenges on this job. The location of the structures on Brandywine Creek made maneuvering through the job site particularly difficult. "We only had access from one direction because you basically had a river on one side, townhomes on the back side and rock on the other side," D'Orazio says. "It wasn't like a normal demolition project where you have room. It was basically like working in an alleyway."

Another concern on the project was a deteriorating 200-foot brick stack.

"The most effective and safest method was implosion. Mechanical demolition or even by hand can put different stressors on the structures and ultimately put everyone at risk, including townhomes adjacent to the site," D'Orazio says. "If you beat on something over and over again, it has a tendency to do different things. This way, it was a controlled implosion that fell right onto the job site. We had no issues whatsoever."

It was Neuber's first implosion, and they worked with fellow NDA member Controlled Demolition Inc. to bring down the stack safely. "Working with Mark Loizeaux and his crew was an experience," D'Orazio says. "They were a key part of that stack coming down safely."

Toward the end of the project, Neuber had to make it through one more roadblock: crushing the blue granite stone comprising most of the buildings.

"Crushers don't like blue granite," D'Orazio says. "It was rough on the crushers. It was so sharp it would actually rip our belts once it went through the crusher. We had to re-crush a lot of the stone. That was toward the end of the project and almost set us back on the project timeline."

Luckily, Neuber was able to finish the job on time with zero injuries.



Alexa Schlosser is the editor-inchief of *DEMOLITION* magazine. Do you have an interesting story to share? Email her at aschlosser@ demolitionassociation.com.

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Remedial Construction Services focuses on safety as it works to demolish a coal-fired power plant in Southern Nevada

GIGIGIS

By Alexa Schlosser



n March 2017, after over 50 years in operation, the Reid Gardner Generating Station was disconnected from the grid. Reid Gardner was a 557-megawatt coalfired power plant on 480 acres located about 50 miles northeast of Las Vegas, Nevada. It is owned by NV Energy (NVE), which serves more than 90 percent of the state's population.

The plant consisted of four units, three of which were shut down a few years prior as a result of state legislation passed in 2013 that required the elimination of coal-fueled energy in Southern Nevada.

"Like the majority of coal-fueled power plants being demolished in the United States and Canada, age, efficiency, economic factors (inexpensive natural gas) and public policy played a role in why it is being demolished," says Joe Vendetti, vice president of decommissioning and demolition at Remedial Construction Services, L.P. (RECON).

RECON, an NDA member, was one of numerous national demolition contractors to competitively bid on the NVE project. After considerable review and demolition team interviews, RECON was selected as the contractor for the demolition, based on the company's safety record, technical proposal, proposed schedule, project team experience and price.



The project kicked off in February 2018 and is estimated to take between 16 and 21 months to complete. RECON will be performing asbestos abatement, demolition and universal waste removal.

DEMOLITION PROCESS

- 1. Pre-mobilization involving hundreds of submittals and plans.
- Mobilization of personnel and equipment, which includes one on-site project manager, one on-site construction manager, one

on-site superintendent, two safety officers, one scale attendant and one administrative assistant. Craft personnel include eight heavy equipment operators, 10 laborer/ burners and two truck drivers.



- Asbestos abatement of units 1-4, including stacks, is being completed by 28 asbestos laborers, two asbestos supervisors and two safety officers with a specific focus on asbestos abatement.
- 4. Investment and asset recovery includes around 500,000 pounds of non-ferrous material that will be

harvested by the end of June 2018.

- 5. All outlying structures (conveyors, ash silos, precipitators, scrubbers, etc.) are being demolished by heavy equipment.
- 6. Explosive felling of units 1-4 and stacks 1-4.

"RECON's only demolition strategy is to perform every aspect of this project as safely as possible," Vendetti says. "This includes explosive felling of larger items (hung boilers and stacks) and limiting laborer hours and exposure of employees by performing as much conventional demolition as possible with extremely large excavators."

The biggest challenge Vendetti foresees is the climate in Southern Nevada. "It can get to be over 110 degrees during hot summertime afternoon hours. With cooler early morning temperatures, abatement starts at 4 a.m., while noisier demolition shifts start at 6:30 a.m. []



Alexa Schlosser is the editor-inchief of *DEMOLITION* magazine. Do you have an interesting story to share? Email her at aschlosser@ demolitionassociation.com.



Pollution Exposures for Demolition Contractors: Do You Know All the Risks?

By Bill Pritchard



he demolition industry has a long tradition of being aware of and responsible for the many challenging exposures their work represents. Often dealing with complex processes

and engineering issues, successful demolition contractors understand where the risks are and what needs to be done to minimize or avoid them. In today's world, heightened environmental concerns are creating new and challenging exposures for contractors to address. Understanding these and how to transfer as much of that risk as possible will be erucial to contractors moving forward.

Global concerns regarding environmental impacts are being discussed not just on the world stage, but in the cities and neighborhoods of our country as well. The public is more aware of and anxious about potential environmental exposures than ever before. Whether it is the quality of water we drink or the air we breathe, people are concerned about the health and safety of their families. It is becoming increasingly common for individuals to take action against contractors they fear might be impacting their lives, whether the risk is substantiated or not.

At the same time that awareness is increasing, insurance coverage to protect contractors is getting more complicated. The standard Commercial General Liability (CGL) policy form is no longer adequate to fully protect a demolition firm from the wide-ranging environmental exposures they face. Modified language in the forms, along with commonly used endorsements, strip most — if not all — of the pollution coverage from these forms. There is, however, a segment of the industry built around these complex coverages that can fill the gaps left by the CGL form.

THE RANGE OF EXPOSURES

For a contractor to properly manage their environmental risk, the first step is to know where it comes from. There is a wide range of exposures demolition contractors face. Many in the demolition industry see their environmental exposures coming from three places: residual asbestos in buildings, lead paint in buildings and excavation of storage tanks — both known and unknown. While these are all valid concerns, the exposures run much deeper.

Insurance policies define pollutants as being substances that are injurious to the environment, without necessarily being toxic. So, while poisons and toxic waste are obvious pollutants, the exposure is far broader. Smoke, vapor, soot, fumes, and other airborne or thermal irritants are generally excluded as pollutants from CGL policies. The release, escape or migration of materials into a place where they do environmental damage are pollutants. Considering this language, smoke from a fire at a site is a pollutant. The runoff of silt or sediment at a job site is a pollutant. Milk dumped from a tanker truck into a storm drain is a pollution release.

Examples of these exposures exist at every stage of a project. One significant pollution exposure for a demolition firm is the release or escape of contaminants they bring to the job site. The actual demolition operation requires workers and machinery, and the machinery requires fuel to run, as well as oils, lubricants and solvents for maintenance. These materials create a residual pollutant in the form of exhaust. For example, a spill from a skid tank can create a costly cleanup, while the fumes from a generator can impact a neighboring building, entering their air handling system. Any chemicals, solvents, lubricating fluids, fuels or other materials brought to a job site can be released into the environment and cause a pollution incident. While these may seem like unlikely scenarios, they happen every day.

OTHER POLLUTION CONDITIONS

The demolition activities themselves can ereate pollution conditions, as well. The release of unidentified asbestos into the environment is a significant risk, as is the release of lead dust. Non-hazardous dust can be an airborne irritant and, as such, can be the basis for third-party claims against the contractor from a neighbor for cleanup costs or bodily injury. As mentioned previously, it is not the hazardous nature of the material itself that makes it a pollution issue; rather, it is the exclusion from the CGL policy that creates that exposure.

In addition to pollutants that may be part of the structure itself are those in the property on which the structure stands. Tearing out of foundations and moving heavy equipment can lead to releases from unknown storage tanks, breaking of sewage or water pipes, and other damage to things that might not be the focus of the demo job itself. These can lead to third-party claims for bodily injury or property damage as they migrate off-site. Another consideration of this is exacerbation of an existing pollution. There have been many cases where the contractor moves soil as part of their work, only to find out later the soil was contaminated before they got there. The very act of moving the soil made them an operator and transporter under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) legislation.

While contractors work hard to be sure their people are doing their jobs carefully, they also bear responsibility for the subcontractors they hire. If the subcontractor causes a pollution event, the demo contractor needs to hope their pollution coverage is adequate and that the limits are still available to respond to the claim. The correct coverage for the demo contractor will protect them from that exposure.

Exposure also exists in the disposal of waste materials from the site. If the demo contractor arranges for the disposal of the waste, and the site to which they have taken it has a pollution problem in the future, the demo contractor can be pulled into the claim.

Transportation of materials to and from the job site, including waste away

from the site, also presents a pollution exposure. Overturn of a truck into a stream can be an environmental hazard, regardless of what is in the truck.

A final area the contractor needs to consider is the environmental exposure presented by their owned sites. Storage of heavy equipment, maintenance operations, stockpiling of materials and other operations can all impact the property over time. Gradual, insidious leaks can accumulate in the property, creating a significant pollution problem. Neighbors can file third-party claims for damages, or if the contractor tries to sell the site at some point in the future, that gradual contamination can present a significant financial burden.

As demolition contractors consider the above exposures, they need to think in terms of mitigation of these risks, as well as the potential to transfer them. Properly constructed insurance programs can do a great deal to minimize the financial risk to the contractor. Good risk management, coupled with the correct insurance coverage, is the best way for demolition contractors to manage their exposures and still be responsive to the communities they serve.



Bill Pritchard is the founder and president of Beacon Hill Associates. He is a third-generation insurance professional and has been active in the industry since 1985. He holds the Environmental Risk Management

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Cornish, Zack, Hill & Associates Inc. and Beacon Hill Associates Inc. work in partnership to provide demolition contractors with the coverages needed to address pollution exposures. For more information, please contact Kathy Zack at kzack@cornishzack. com or call 248-353-5850.

The Buzz About Safety Buzzwords

By Joshua Estrin, Ph.D.



uzzwords continue to be a challenge across the demolition workforce continuum. While the precise definition of the term is rarely agreed upon, buzzwords support the

ambiguous expressions of an important idea or concept in an engaging and often entertaining manner. Therefore, workplace buzzwords that set aside the normal rules and expectations of the English language in favor of obtuse expressions are neither helpful nor effective, and can in fact be dangerous. The industry must get beyond safety strategies based on a "buzz" that cannot be operationalized effectively and instead focus on terms measured in a reliable manner creating a strong culture and climate of safety.

If the safety of a workforce is made a priority and not simply an afterthought, it requires approaching safety from a top-down, bottom-up approach. Safety cannot be haphazardly addressed by a series of disjointed, and often outdated, buzzwords that may appear functional and even progressive, but when implemented are not sustainable, reliable or operational. Buzzwords put the worker at risk and undermine even the most well intentioned safety-related efforts.

STAYING RELEVANT

"Toolbox Talks," "Safety Roundups" and "Tailgate Talks" must move away from captivating titles and unnecessary discussion, as these do not support a safe job site. Applicable content is the key. Although creating a sense of community in the workplace is important, any deviation from the real focus of these meetings is simply risking what they were created



to avoid: accidents, injuries and, in the worst-case scenario, death.

Generalities often mislead, giving the appearance of a strong culture and climate of safety, but they are unproductive. Discussions must be site-specific. Detailed information must be tailored to each job site, or accidents will occur. Wearing protective eyewear is certainly important, but on a project where most of the workforce will be operating large machinery, it should not be the main focus of any safety discussion. Equally unproductive are excessive amounts of time spent on topics concerning hygiene, hydration and getting enough sleep. These topics make for appealing flyers and may allow the worker to vent, joke or bond, but safety is a science and must be discussed tactically, unobstructed by statements that cannot be measured.

The statement "We worry about you," when used as an opening for a safety meeting, is a pleasantry. However, it must be followed up by specific means and methods that are codified in contracts, policies and procedures that take caring for the safety of each worker to a level that can be quantified and operationalized.

Those in charge must take the time to make sure that any discussion regarding safety is audience appropriate, relevant to The industry must get beyond safety strategies based on a **"buzz"** that cannot be operationalized effectively and instead focus on terms measured in a reliable manner creating a strong culture and climate of safety.

the tasks at hand and free of buzzwords that weaken worker safety because they do nothing to ensure the workplace is free of unforeseen acts, unforeseen conditions or a combination of both.

The following are some examples of buzzwords that may appear useful but do not promote a proactive culture and climate of safety.

The buzz: Working safely each day keeps the doctor away.

The problem: What exactly does "working safely" mean? Without guidelines and expectations, safety is not measurable and will not keep the worker safe.

The buzz: Have both eyes on safety or be blinded by bad habits.

The problem: This lacks specificity and undermines the culture and climate of safety.

The buzz: Stay alert today. Go home uninjured tonight.

The problem: Remaining alert is only part of the safety equation, but workers need specific hazards they will face to be highlighted.

The buzz: The door to safety swings on the hinges hung off of common sense.

The problem: There is no way to measure common sense, so there is no place for it

when creating a strong culture and climate of safety.

The buzz: Think positive thoughts accidents are all about your attitude. The problem: Positive thinking does not keep the worker safe.

A COMPLEX RELATIONSHIP

The relationship between safety culture and safety climate is complex, leaving no room for buzzwords. While safety continues to be a topic of intense interest in the demolition industry, it must be explored objectively and without deviation from the singular goal of keeping the worker safe.

The reality is that both fatal and catastrophic injuries are well above the national average. Finding solutions that address safety issues and challenges should be rewarded and supported, but superficial verbiage must not be tolerated in any discussion focused on worker safety.



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professor at Columbia University in New York City and can be reached at joshua@sa-estrin.com.

Cool It! Avoiding OSHA Heat Illness Liability

By Mark A. Lies II and Patrick D. Joyce



he arrival of summer means beaches, BBQs and baseball. It also means hot weather, humidity and the potential danger presented by heat illness. Whether you work climbing

towers, at a construction site or inside a warehouse, you may be at risk of experiencing the effects of heat on the human body.

Since 2012, the Occupational Safety and Health Administration (OSHA) has aggressively used the General Duty Clause, Section 5(a)(1) of the Occupational Safety and Health Act, based on injuries and illnesses due to heat illness. In doing so, OSHA has focused its efforts on employers in the tower industry, construction industry, foundry operators, chemical producers and employers in warm climates. Unfortunately, because OSHA does not have a heat illness standard, employers are left in the cold as to what they should do to mitigate risk and safeguard employees from the effects of heat. This article discusses the issue of heat illness, OSHA's guidance on heat illness, and how to prepare and protect employees from the hazard of heat.

A recent landmark decision from the Occupational Safety and Health Review Commission in Secretary of Labor v. Aldridge Electric Company, Docket No. 13-2119, is a must-read for all employers who have potential employee heat exposure in their workplaces. After an 18-day trial, the administrative law judge issued a 54-page opinion vacating one OSHA General Duty Clause citation involving a national electrical contractor arising from a workplace accident.

WHAT IS "HEAT"?

The term "heat" is comprised of two main components: 1) environmental or ambient heat; and 2) metabolic heat.

Environmental or ambient heat is the heat that we all experience due to the natural environment. Factors impacting environmental or ambient heat include ambient temperature, wind, humidity, solar irradiance and cloud coverage. Metabolic heat is heat generated internally within the human body. The harder a person works, the more metabolic heat is generated. An individual's body mass, weight, age, sex and medical history can all impact the amount of metabolic heat generated during any particular task.

WHAT IS "HEAT ILLNESS"?

We need heat to survive, particularly during winter. As a result, heat is not always a hazard. Rather, heat becomes a hazard when it is "excessive" and the human body is unable to dissipate heat quickly enough.

Heat illness is complex, largely because of personal variability, as well as a number of external parameters that affect the individual and their response to the environment they are in. There are several types of heat illness: heat rash, heat cramps, heat syncope, heat exhaustion and heat stroke.

Heat Rash

Heat rash occurs when an individual sweats in areas of restrictive clothing. Its symptoms usually involve prickly, itchy and sometimes painful red bumps.

Heat Cramps

Heat cramps are muscle cramps usually caused by performing hard physical labor in a hot environment and have been attributed to an electrolyte imbalance caused by sweating: Excessive sweating depletes the body's salt and moisture levels. Heat cramps often occur in the back and leg muscles. Treatment for heat cramps includes having an individual rest in a cool and/ or shaded area and providing water and electrolytes.

Heat Syncope

Heat syncope occurs when an individual faints or experiences episodes of dizziness due to prolonged standing or sudden rising from a sitting or lying position during hot weather. Dehydration may contribute to heat syncope.

Heat Exhaustion

Heat exhaustion is an illness that occurs when a body overheats but the core body temperature does not rise above 101 degrees Fahrenheit. The signs and symptoms of heat exhaustion are heavy sweating, headache, nausea, fatigue, vomiting, vertigo, weakness, thirst and giddiness. Workers suffering from heat exhaustion should be removed from the hot environment and placed in a cool and shaded area, given fluid replacement and encouraged to get adequate rest.

Heat Stroke

Heat stroke, the most severe form of heat illness, occurs when the body's temperature regulation system fails and body temperature rises to critical levels above 101 degrees Fahrenheit. Heat stroke is caused by a combination of highly variable factors, and its occurrence is difficult to predict. The primary signs and symptoms of heat stroke are confusion, irrational behavior, loss of consciousness, convulsions, a lack of sweating (usually), hot and/ or dry skin, and an abnormally high body temperature. Workers experiencing heat stroke require immediate advanced medical attention.

WHAT DOES OSHA SAY ABOUT HEAT ILLNESS?

OSHA Has No Heat Illness Standard

Because Federal OSHA does not have a heat illness standard, it relies on the General Duty Clause to cite employers in cases related to heat illness. To prove a Section 5(a)(1) violation, OSHA must establish: 1) a condition or activity in the workplace created a hazard; 2) the employer or its industry recognized the hazard; 3) the hazard was likely to cause death or serious physical harm; and 4) feasible means existed to eliminate or materially reduce the hazard. A hazard under Section 5(a)(1) cannot be established based on a "freakish or unforeseeable death."

State Heat Illness Programs

Currently, only two OSHA state-plan states have heat illness standards: California and Washington.

Federal OSHA's Guidance On Heat Illness

In 2012, OSHA implemented its Campaign to Prevent Heat Illness in Outdoor Workers, through its "Water. Rest.Shade." program. Based largely upon California OSHA's heat illness regulation, "Water.Rest.Shade." focuses on the heat index to advise employers on suggested precautions. As guidance, OSHA has provided employers "Using the Heat Index: A Guide for Employers," ("Heat Index Guide") informing

OSHA'S HEAT INDEX GUIDE IS BASED ON FOUR DIFFERENT HEAT INDEX LEVELS:

HEAT INDEX	RISK LEVEL	PRECAUTIONS
Less than 91°F	Lower (Caution)	Basic heat safety and planning
91° to 103°F	Moderate	Implement precautions and heighten awareness
103° to 115°F	High	Additional precautions to protect workers
Greater than 115°F	Very High to Extreme	Triggers even more aggressively protective measures

employers on how to use the heat index to determine "when extra precautions are needed at a worksite to protect workers from environmental contributions to heat-related illness."

The Heat Index Guide is "advisory in nature and informational in content," and, as such, is not a law or regulation that employers are required to follow.

In evaluating the heat index, OSHA recommends that employers use the National Oceanic and Atmospheric Administration (NOAA) heat index chart, taking into account the relative temperature and humidity levels to determine where it falls on the chart.

Heat index values were designed for shady, light wind conditions, and exposure to full sunshine can increase heat index values by up to 15 degrees Fahrenheit. Though the Heat Index Guide states that full sunshine can increase the heat index values, OSHA has not provided any scientific basis for such a conclusion. Moreover, OSHA does not provide any definition as to what "direct" or "full sunshine" means, how employers should add "up to 15 degrees Fahrenheit" based on the sunshine, or when it should be applied. OSHA also does not provide any definition for "shady" or "light wind conditions."

What does OSHA Want Employers to Do?

OSHA's Heat Index Guide provides what would seem to be relatively straightforward directions as to what employers should do at any particular heat index. Unfortunately, OSHA has shown a tendency to claim that suggested protections at higher temperatures should be used at lower temperatures based on vague and undefined conditions of "strenuous work," "full sunshine" and "light wind." Despite OSHA's inconsistency on these issues, the Heat Index Guide provides the following suggestions for employers:

- Develop a heat illness prevention program.
- Provide employees training on the heat illness prevention program, including how to recognize, prevent and treat heat illness.
- Develop a system to monitor weather conditions on, at least, a daily basis, and, preferably, multiple times per day.
- Provide water, shaded areas and cooling stations for employees.
- Develop an emergency response plan in the event an employee suffers from heat illness.

- Acclimatize new and returning workers.
- Develop work/rest regimens for when the heat index is elevated.
- Actively supervise employees to evaluate for signs and symptoms of heat illness.
- Perform physiological monitoring.

What Is Acclimatization?

The Heat Index Guide states that, under certain temperature conditions, new workers, or workers returning from time away from work, should be acclimatized to the level of work. Acclimatization is the process by which individuals physiologically adjust to warmer or colder temperatures. For instance, you may notice that when you travel to a warm location for vacation, you tend to sweat more at the beginning of the vacation than you do at the end of the vacation.

Unfortunately, what is considered the correct pace to acclimatize workers remains unclear. The Heat Index Guide suggests 50 percent work per hour for the first day, 60 percent the second day and so on until you reach 100 percent. However, some of OSHA's compliance officers and experts have asserted that acclimatization should begin at 20 percent work per hour (or 12 minutes per hour) and gradually increase from there.

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Another issue that remains unclear is at what temperature employers should implement an acclimatization program. Under the current Heat Index Guide, OSHA inconsistently states that acclimatization may be required even if the heat index is below 91 degrees Fahrenheit. In fact, some OSHA compliance officers and experts have asserted that acclimatization should occur no matter what the ambient temperature is.

Yet another issue for employers occurs where employees return to work from an extended absence, whether due to injury, the holidays or vacation. The Heat Index Guide states that acclimatization may be necessary if an existing employee is returning from an absence of two weeks or more. On the other hand, some of OSHA's compliance officers and experts have asserted acclimatization should occur if an employee has been gone for three or more days. In other words, any time an employee has an extended weekend, they would need to be re-acclimatized.

What Are Regimented Work/Rest Regimens?

Similar to but distinct from acelimatization is a structured work/rest regimen, a defined process requiring employees to rest a certain amount of time per hour. For instance, depending on the conditions, an employer should establish work/rest regimens where an employee works 45, 30 or 15 minutes per hour, and then takes a break for 15, 30 or 45 minutes per hour.

Although it may seem like telling employees to take a break during a hot day whenever they experience a need to temporarily rest would be sufficient, OSHA has taken the stance that employers need to take affirmative action to ensure that employees take mandatory breaks. This involves requiring employees to sign sheets identifying when their breaks start and stop, supervisors actively monitoring the sheets to ensure the appropriate amount of breaks of sufficient duration are taken, and disciplining employees who fail to take the required amount of break.

How Can Active Supervision Occur?

The Heat Index Guide does not specifically indicate how employers should actively supervise their employees. Nonetheless, it is advisable for employers to implement a "buddy system," where employees are not left alone so a coworker(s) can identify if someone is suffering from heat illness and bring it to the attention of a supervisor. Also, employers have used, with great success, programs to identify new or recently returned employees, such as colored hard hats, colored vests and other markers to easily identify employees who may need closer observation and acclimatization.

What is Physiological Monitoring?

The Heat Index Guide recommends that employers perform physiological monitoring of employers at "hot worksites." Specifically, OSHA recommends employers conduct heat exposure history evaluations, monitor employee heart rates, perform oral temperature readings, conduct body weight and body water loss measurements, perform blood pressure readings and perform respiratory rate analyses. In other words, OSHA has asked employers to medically evaluate employees on a daily basis to determine which employees have "risk factors" that may make them more susceptible to heat illness.

CONCLUSION

Because OSHA has decided to rely on the General Duty Clause to enforce cases related to heat illness, there is no answer for all circumstances as to what employers should do to ensure they remain fully compliant. In fact, as the recent Aldridge Electric Co. decision shows, no matter how thorough an employer's heat illness prevention program is, OSHA will still issue a citation, even if an unavoidable incident occurs.

Employers must take proactive steps in the face of OSHA's use of the General Duty Clause for heat-related illness enforcement. Taking such steps now may allow the employer to avoid costly enforcement and litigation in the future.

If you would like further information, please contact Mark A. Lies, II at **mlies@seyfarth.com**, or Patrick D. Joyce at **pjoyce@seyfarth.com**.

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