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ON TRACK

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KOMATSU

Lowe Construction Co.

Michigan-based company specializes in deep underground heavy civil work

Tim Mattice, Vice President

Scott Bazinet, President

A Message from Continental Equipment Corporation

**Mark Kelso,
General Manager**

Never too busy for safety

Dear Valued Customer:

This time of year tends to be the busiest in the industry with lots of activity that involves manpower. It is easy to focus on the task at hand, but remember what's most important: your employees. I encourage you to review safety guidelines, from having the proper protection systems for your trenches to providing plenty of water and sunscreen to help your staff beat the heat.

To help get projects done on time, properly maintain your equipment. Fortunately, most new Komatsu machines come with complimentary Komatsu Care for the first three years or 2,000 hours. Our trained technicians perform the services at your convenience to help limit downtime — typically after normal work hours or when your equipment is not being used.

Komatsu Care also gives you certainty in your owning and operating costs. Learn about Komatsu's new program, Komatsu Care Plus Cost Per Hour, in this issue. We believe it's well worth the investment.

We hope you were able to attend CONEXPO-CON/AGG this past March, but if not, there's a recap of the event inside this issue that provides information about some of the machines that were on display, such as Komatsu's new PC210LCE electric excavator.

Plus, due to the growing demand for off-road trucks in construction, quarry and mining operations throughout North America, Komatsu is once again producing the popular HM400-5 articulated haul truck at its Chattanooga Manufacturing Operation in Tennessee. Check out the article for more information.

As always, if there is anything we can do for you, please feel free to contact us.

Sincerely,
Continental Equipment Corporation

Mark Kelso,
General Manager

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KOMATSU

Michigan-based Lowe Construction Co. specializes in deep underground heavy civil work

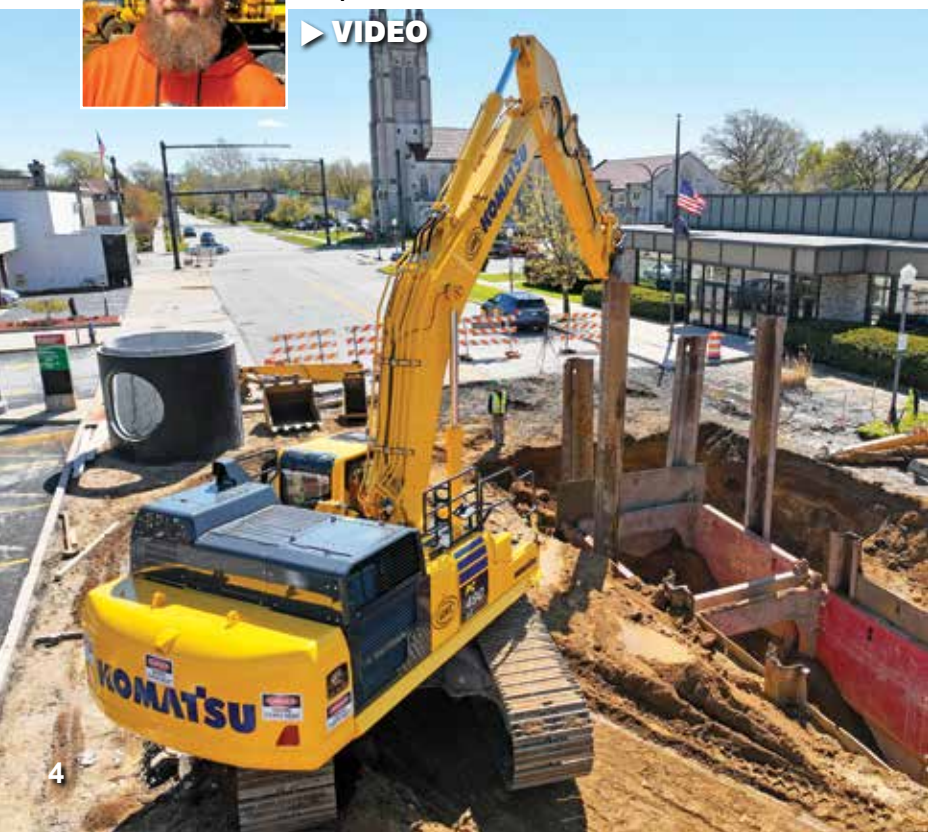
Scott Bazinet, President

Tim Mattice, Vice President

After returning from the Vietnam War, where he had served as a Navy Seabee, Dick Lowe joined his father's company and helped shift its focus from digging basements and putting in dry wells to deep underground heavy civil work. Today, Lowe Construction Co. is an industry leader in trenchless excavation techniques, such as boring and pipe jacking. Lowe Construction usually creates sheeted pits and uses a tunnel boring machine (TBM) to install underground civil, which is ideal for highly congested and trafficked locations.

"Anything that cannot be open cut, we can bore underneath; that's what keeps us in business," stated Scott Bazinet, who joined the company in 1989 with an engineering background and was promoted to president about 18 years ago when the company's owner, Dick, wanted to step back. "I've been fortunate enough to hire good people who can help me, including Tim, who saved my life by joining us."

Foreman/operator Rusty Lowe places a support with a Komatsu PC490LC-11 excavator. "We lift a lot of heavy things that push the machine right to the limit," he said. "The Komatsu machines seem to have more lifting capacity and a smoother swing compared to some of the other machines."



Tim Mattice had worked at the company throughout college, and after earning a mechanical engineering degree, he got a job in the automotive industry before eventually returning to Lowe Construction, where he has been the vice president for about 15 years.

"I still get to entertain the engineering side as I help our guys repair, build or fabricate things while also overseeing projects," said Mattice. "There is always a need to fix something."

Unique projects

Lowe Construction typically takes on projects in a 250-mile radius around Horton, Mich., which includes Indianapolis and Detroit. Some of its notable job sites include the Notre Dame Stadium, the arena of the Detroit Red Wings, and the Detroit Tigers' baseball stadium.

"If you're in Southeast Michigan and you either drink the water or use the sewer, it's going to go through something that we've put in the ground because we've been around since 1976," said Bazinet. "For difficult or out-of-the-ordinary projects, people call us, and it is a source of pride to think that when you go to the Red Wings' arena that you're drinking water through something that we put in someplace."

Recently, Bazinet was approached to tackle a project in San Antonio, Texas, at Brooke Army Medical Center's Fisher House, which provides support to severely injured veterans and helps reintroduce them to their families. The facility needed a specialty contractor to bore in front of it, so occupants and visitors could still access the building. Despite the distance from its headquarters, Bazinet agreed to take on the job, but the operators quickly ran into an unusual problem.

"One day our crew was moving dirt, and one load started to smoke," revealed Bazinet. "We came to realize there were buried munitions from World War I on the site. We had to bore by that area because they were afraid to open cut because of a possible explosion. We had to install blast-proof glass on our excavator, so if we did hit a munition, and it exploded, it would protect our operator. It was an interesting job, and our guys were out there for three or four months."

With a Komatsu PC490LC-11 excavator, an operator piles a beam.

Equipment that exceeds

To keep its projects running, Lowe Construction relies on a fleet of Komatsu excavators, including PC300LC, PC350LC, PC360LC, PC450LC, and PC490LC-11 models.

"Our guys use the equipment hard," noted Bazinet. "We dig deep. We test the limits of the equipment — digging deep holes and lifting a lot of weight, such as pipe and boring equipment. We use the excavators as sheet pile drivers as well. All of our activities are taken care of by our operators. Our guys are very well-versed at what we do, so it increases our speed on the job site."

Bazinet added, "We've got quick-connects on all our machines, so we can swap right to a bucket and excavate the dirt as it's coming out of the boring machine. There's not as much hand shoveling as there used to be, which saves us time."

In addition to efficiency, reliability is another huge advantage of the Komatsu excavators.

"In our niche, there's only so many of us that do it, and our schedule is so jammed," explained Mattice. "If we have equipment down, it can ruin my schedule. If I have trucking lined up based on that job completing, and it doesn't happen, our logistics get backed up. With Komatsu equipment, we have had great reliability to avoid that."

Dependable service

To support and service its fleet, Lowe Construction depends on AIS/Continental Equipment Corp. (CEC) and Territory Manager John Doody.

"CEC takes very good care of us," said Bazinet. "They are great at responding to our needs, and John has been doing a great job. He checks on us and takes care of us. If we call him with an issue, he responds very quickly."

Last summer in Lansing, Mich., Lowe Construction had a railroad project that required AIS/CEC's support.

"We were going under a railroad, and we started to have some problems with our excavator," said Bazinet. "We had to get AIS's attention because we can't stop

Discover more at CECOnTrack.com

Continued . . .

‘There are a lot of projects in the future’

. . . continued

(L-R) Lowe Construction’s Scott Bazinet, AIS/CEC’s John Doody, and Lowe Construction’s Tim Mattice collaborate to ensure Lowe Construction continues to meet its goals. “John has been doing a great job,” said Bazinet. “He checks on us and takes care of us. If we call him with an issue, he responds very quickly.”

under a railroad. Once you’re going, you’ve got to go 24 hours a day until you exit their property on the other side of the track. We had to move another machine in there while they were working on our machine. We use AIS’s mechanics a lot. They’re very responsive to us. They do a good job.”

AIS/CEC also keeps parts readily available for Lowe Construction’s Komatsu equipment.

“They have the type of support that I know I can call up for a part, and they have a great network of dealerships,” said Mattice. “If they don’t have it here, they can get it, or we can go pick it up at another store. That keeps our fleet up and running.”

For the better

Moving forward, Lowe Construction wants to continue to meet the challenges of the industry.

“There are a lot of projects in the future,” said Bazinet. “We want to continue to take pride in our work and develop our community for the better.” ■

An operator uses a Komatsu PC490LC-11 excavator to lower sheeting into a pit.

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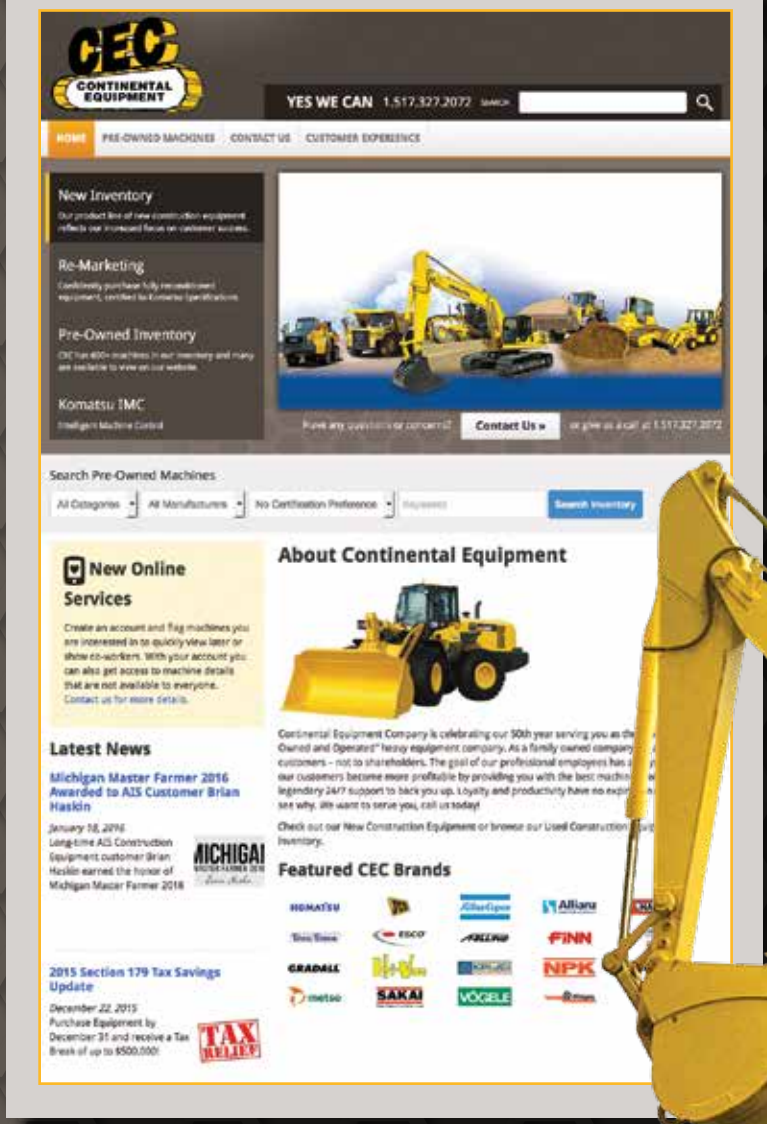

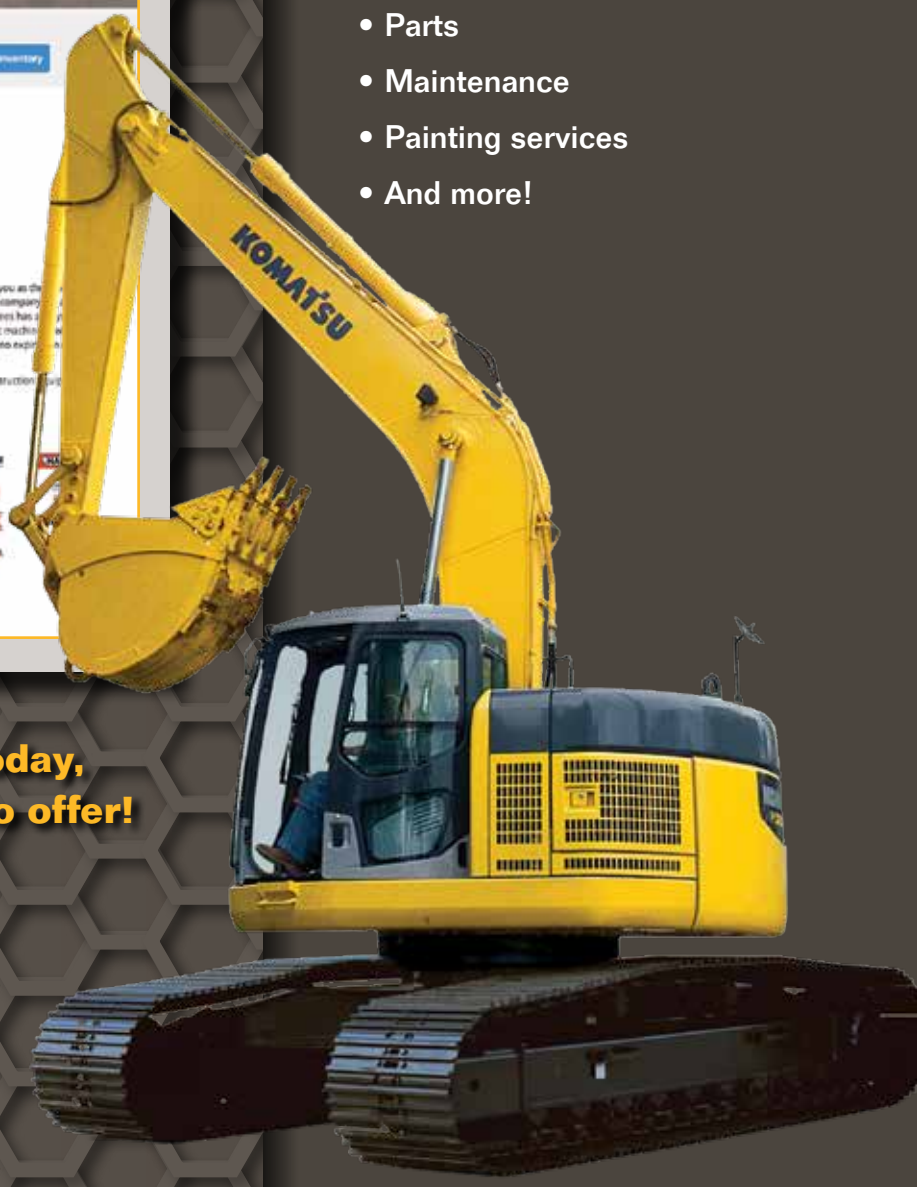

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CONEXPO-CON/AGG 2023 attendees see the future of construction as manufacturers highlight electric equipment

Watch the video

Electric! That describes both the atmosphere and an abundance of new machines at CONEXPO-CON/AGG 2023, which was held March 14-18 in Las Vegas. With an eye toward sustainability, a host of manufacturers across multiple industries debuted electric and autonomous equipment designed to reduce fuel usage and carbon footprints.

A record crowd of more than 139,000 people attended North America's largest equipment show, which was co-located with the International Fluid Power Exposition (IFPE) at the Las Vegas Convention Center. More than 2,400 exhibitors from 36 countries were spread out across approximately 3 million square feet of exhibit space, which was about 10% larger than the previous show in 2020.

"The innovations in the construction industry unveiled this week will play a role in helping construction professionals drive meaningful and sustainable economic growth," said CONEXPO-CON/AGG Chair Phil Kelliher. "Live events in the construction industry are very important, because you can see, touch and experience the products. That value was reaffirmed this past week across the show floor."

Sustainable focus

Komatsu introduced innovative electric products such as the 20-ton PC210LCE electric excavator that features Proterra's lithium-ion battery technology. It has 451 kilowatt hours (kWh) of battery capacity that offer up to 8 hours of operating time, depending on workload conditions and application.

Suitable for a diverse range of workplaces, including indoors, the Komatsu PC30E electric mini excavator with a 35-kWH battery and a 17.4-kilowatt electric motor was on display. The PC30E is designed to be fast-charged, and it offers quiet and simple operation with zero emissions and no vibrations.

Attendees had the opportunity to see Komatsu's smallest electric excavator — the PC01E electric micro excavator. Developed jointly with Honda, it is powered by portable and swappable mobile batteries. The new machine is designed for confined spaces in landscaping, agriculture and construction.

Komatsu's vision for the swappable battery system is to scale up the technology for use in larger micro excavator models. The PC210LCE,

At CONEXPO-CON/AGG 2023, Komatsu introduced innovative new electric products such as the 20-ton PC210LCE electric excavator that features Proterra's lithium-ion battery technology.

In addition to electric equipment, Komatsu showcased its new PC900LC-11 excavator, which was paired with a Komatsu HM400-5 articulated truck.

PC30E and PC01E will be available in select markets later this year.

Komatsu also showcased three types of charging infrastructure, as well as its WA electric wheel loader prototype with a chassis based on the WA70. The wheel loader prototype utilizes an "intelligent electrification system" that features an electric traction motor, lift, tilt and steering cylinders, power electronics, a system control computer, a battery, and a battery management system.

In addition to electric equipment, Komatsu highlighted its HB365LC-3 hybrid excavator designed for high production and efficiency with low fuel consumption. Its hybrid system can provide an additional 70 horsepower on demand and allows operators to be up to 15% more productive in Power mode. The hybrid's environmentally friendly operation offers up to 20% more fuel efficiency and 20% less carbon dioxide emissions compared to the standard PC360LC-11.

Also on display was Komatsu's suite of Smart Construction solutions — Dashboard, Design, Drone, Field, Fleet, Office, Remote and Retrofit — designed to optimize the job site, as well as its new Smart Quarry solutions that help increase efficiency, improve production, and maintain a high level of performance, such as Smart Quarry Site and Smart Quarry Study.

Lastly, Komatsu featured its Intelligent Machine Control (IMC) 2.0 dozers and excavators, along with the new PC900LC-11 excavator, and other construction and forestry machines.

"We had a lot of great conversations at the show and really wanted customers to take away that we are committed to working with them to create value together," said Komatsu's Brandon Rakers, Senior Product Manager for Technology Business Solutions. "CONEXPO gives us the opportunity to show attendees how Komatsu can be an end-to-end solutions provider with equipment and digital tools that can help increase efficiency and reduce costs."

CONEXPO-CON/AGG is scheduled to return to the Las Vegas Convention Center March 3-7, 2026. ■

Learn more about Komatsu at CONEXPO: https://www.komatsu.com/events/conexpo/?utm_source=Komatsu&utm_medium=PressRelease&utm_campaign=ConExpo2023&utm_content=pc900

Learn more

Continued . . .

‘It's been a great time’

. . . continued

Electric experience at CONEXPO

“This is our first CONEXPO experience. It’s mind-boggling how large it is, but that’s why we came. We wanted to know what’s coming, so we can gear our business around where the industry is going.”
– Sy Kirby, Sy-Con Excexcavation & Utilities

“It’s a chance to see what’s new in equipment and how it could possibly help our business. I ran a simulator that was just like actually operating a real truck. It would be great for teaching new drivers.” ***– Jesse Cummings, Scott Schofield Construction Inc.***

“We see CONEXPO as an opportunity to experience a little more outside of what we do every day. It’s been a great time.” ***– Jon Martzall, Iron Eagle Excavating***

Raymond Labush represented McNally Nimmergood at CONEXPO-CON/AGG 2023.

Manufacturer representatives were on hand to answer attendees’ questions about equipment and technology. “CONEXPO gives us the opportunity to show attendees how Komatsu can be an end-to-end solutions provider with equipment and digital tools that can help increase efficiency and reduce costs,” said Komatsu’s Brandon Rakers, Senior Product Manager for Technology Business Solutions (pictured above, right).

At CONEXPO-CON/AGG 2023, McGuirk Sand-Gravel’s Tyler McGuirk, Shawn McBride, and Seth Wisney saw the latest developments in technology at Komatsu’s booth.

Compton Inc.’s Henry Compton, Troy Doffing, Chase Webb, Todd Buter, and Marc Compton checked out a Komatsu HB365LC hybrid excavator at CONEXPO-CON/AGG 2023.

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Construction equipment electrification: a glimpse into the future of the electric job site

Andrew Earing, Director of Tracked Products and Service, Komatsu

From electric vehicles (EVs) to mining equipment, the shift toward an electric-powered world to reduce carbon emissions — including construction equipment electrification — has already begun.

The Bipartisan Infrastructure Law, which President Joe Biden signed in November of 2021, includes an investment of up to $7.5 billion for EV charging stations to help build out a national network of 500,000 EV chargers.

Additionally, the Bipartisan Infrastructure Law created a joint office between the Departments of Energy and Transportation to collaborate with local communities and provide technical assistance to support the creation and development of EV charging infrastructure.

Actions are being taken at the state level as well. The California Air Resources Board announced the Advanced Clean Cars II rule in August of 2022 that codified Governor Gavin Newsom's climate goals for the state. The rule established that all new cars and light trucks sold in California must be zero-emission vehicles by 2035.

"While electrification is at the forefront of everyone's mind due to automotive, our equipment on the construction site is often creating that infrastructure for electric automobiles," remarked Andrew Earing, Director of Tracked Products and Service at Komatsu.

An operator places a battery in an electric Komatsu machine. "While electrification is at the forefront of everyone's mind due to automotive, our equipment on the construction site is often creating that infrastructure for electric automobiles," remarked Andrew Earing, Director of Tracked Products and Service at Komatsu.

"There are challenges, and we have solutions to those challenges that we are exploring, but it's not going to be a one-size-fits-all solution for the various applications and the various sizes of the products that we provide."

The electric advantage

Komatsu recently showcased a PC210LCE electric excavator and a fully electric compact wheel loader prototype at Bauma 2022, an international trade fair that was held in Munich, Germany, as well as CONEXPO-CON/AGG 2023 in Las Vegas.

In a press release, Seiichi Fuchita, Chief Technology Officer and President of the Development Division at Komatsu, noted that for Komatsu to reach its target of reducing the CO2 emissions of products in use by 50% by 2030 (from 2010 levels), and "to achieve carbon neutrality by the end of 2050, we are looking for promising technologies from suppliers to accelerate our electric machine development."

"Industries including construction are trending in the direction of carbon neutrality," added Earing. "We want to be a leader. We are a technology leader when it comes to construction and mining equipment. We feel that electrification is one viable option in the construction space."

With the PC210LCE, Komatsu created an electric excavator from a popular size class.

"We wanted to introduce the 20-ton size class, because it opens us up to a lot of different operating applications and environments," explained Earing. "They're going to be used indoors and outdoors. It's a very diverse size class, and we wanted to get a much better understanding of all those applications and how they work with electrification."

In 2023, the PC210LCE will begin to see real work on the job site.

"In North America, we are going to conduct a pilot program where we will work with many of our customers to jointly test not only this machine, but the solutions for our customers' applications to better understand the benefits to them, and how we can help meet their needs," said Earing.

Meanwhile, a Komatsu electric wheel loader prototype, created in collaboration with Moog, is currently undergoing further tests to enhance and showcase the advantages of a fully electric

Komatsu's PC210LCE electric excavator provides immediate advantages over a combustion machine, such as better air quality and reduced noise. "It can operate in areas where it may not have been able to operate before, and for longer durations," said Andrew Earing, Director of Tracked Products and Service at Komatsu.

machine, such as increasing its operating cycle, adding assist functions, and creating a comfortable environment for the operator. The wheel loader also has sensors to add automation capabilities.

Compared to its combustion predecessors, electric machinery provides two immediate advantages: better air quality and noise reduction.

"With a zero-emissions machine, it allows the flexibility for that piece of equipment to operate indoors without harming the air quality around it," said Earing. "It can now operate in areas where it may not have been able to before and for longer durations. When you have a traditional emissions vehicle operating indoors, air quality has to be monitored, and sometimes the machine must be shut down for extended periods of time to let emissions dissipate."

Metropolitan and urban worksites are often accompanied with restrictions for when a contractor can work — in part to reduce noise pollution for the populace.

"That's why urban environments are another application for electric machines," Earing continued. "It's not only due to exhaust emissions, but also because of sound emissions. Going with an electrified machine, which has near zero sound emissions, allows for an extended operating window for our contractors and customers."

Bridging the gap to construction equipment electrification

While combustion engines will remain crucial to the development of electric infrastructure, there is currently hybrid machinery available to help the transition between 100% combustion and 100% construction equipment electrification.

Komatsu released its first hybrid excavator in 2008, and its most recent model, the HB365LC-3, entered the market in 2017.

"The HB365LC-3 offers increased fuel efficiency without sacrificing power. A topper on the cake is the added benefit of reduced emissions that lowers your carbon footprint and promotes sustainability," said Kurt Moncini, Senior Product Manager at Komatsu. "Based on the Environmental Protection Agency's CO2 formula, the hybrid potentially offers up to a 20% reduction in CO2 emissions compared to the standard PC360LC-11."

The force behind the excavator's fuel savings is its electric swing motor, which offers a glimpse into the capabilities of future electric excavators. The electric swing motor captures and regenerates energy as the upper structure slows down and converts it to electric energy.

Kurt Moncini, Senior Product Manager, Komatsu

Continued . . .

‘Swing is fully electric’

. . . continued

Moncini explained, “It’s using energy that would normally be wasted and makes it available to do work, contributing to increased efficiency and decreased diesel usage.”

The energy captured during each swing braking cycle is stored in the HB365LC-3’s ultracapacitor. Each time the excavator swings, the capacitor discharges electric power to the electric swing motor.

“A traditional battery requires time for the chemical process that releases electricity to occur,” stated Moncini. “The heavy work nature of construction equipment places a much faster demand on power transfer. The ultracapacitor’s ability to store and discharge energy quickly makes it ideal.”

He added, “Since swing is fully electric, all available engine power can go to the boom, arm and bucket when bringing a loaded bucket out of the ground and over a truck, spoil pile or hopper. This creates a faster cycle time and a very quick, responsive swing.”

In addition to powering the swing motor, the ultracapacitor sends electric energy to the engine via the motor-generator. This energy is used to accelerate the engine from an ultra-low idle speed of 700 revolutions per minute (rpm) and improve hydraulic response.

It is this technology that can likely be applied to future electric excavator models to extend battery life and increase power.

“Komatsu has the technology to not only capture but also supply energy into an electric swing motor, which gives the HB365LC-3 up to an additional 70 horsepower that it can use for efficiency needs or even use for additional performance needs depending on the customer’s application,” said Earing.

Steps toward carbon neutrality

Complete construction equipment electrification and hybrids are at the forefront of construction’s push toward carbon neutrality, but electrification is just a part of what the industry sees as a solution to meeting carbon goals.

“We’re not just exploring electrification — we’re also exploring other technologies that are out there such as hydrogen fuel cells and clean fuels,” said Earing. “We’re looking at all of these options because we’re making sure that we have the right solution for the right job site and customer application.”

Earing concluded, “In the future, I would say that the trends that we see in carbon neutral machines will depend on the machine application, plus size and weight. With different sizes, there are going to be different technologies that suit those machines.” ■

Hybrid equipment, such as the Komatsu HB365LC-3 excavator, bridges the gap between combustion and electric machinery. “The HB365LC-3 offers increased fuel efficiency without sacrificing power. A topper on the cake is the added benefit of reduced emissions that lowers your carbon footprint and promotes sustainability,” said Kurt Moncini, Senior Product Manager at Komatsu.

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Smart Construction solutions, IMC help Castle's Renewable Energy Division move earth faster with decreased costs

Chris Scheve, Vice President, Renewable Energy

Joel Brewton, Vice President of Asset Management & Centralized Services

The company known today simply as Castle was originally founded as Progressive Pipeline in 1999 by Mike Castle Sr. His business focused on providing service to the oil and gas industry with jobs done with integrity, on time and on budget. That strategy proved highly successful, and within three years, the company landed its first multimillion-dollar contract, which led to the creation of more divisions within the firm.

In addition to Pipeline, Castle's divisions now include an Integrity Group, a Facility Group, Directional Drilling, Environmental Reclamation, and its latest undertaking: Renewable Energy, which focuses on sitework and other services for wind and solar projects.

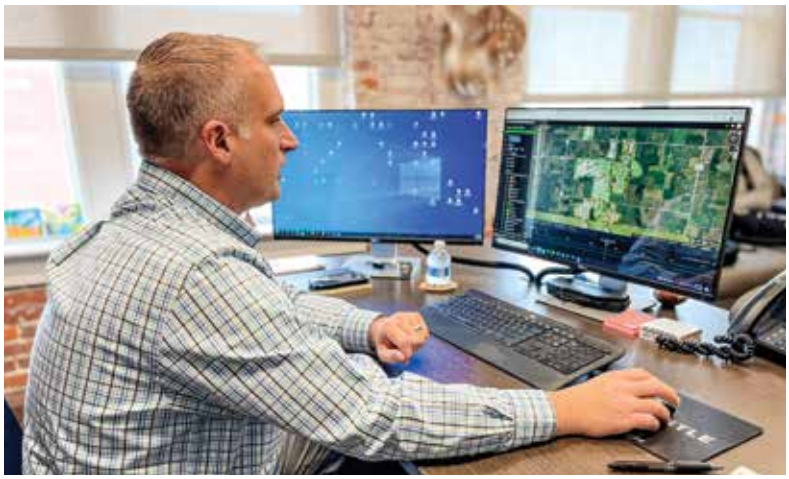
"Castle saw the transition to renewables and wanted to be a part of that," said Vice President Chris Scheve, who joined the company about a year ago and has helped spearhead the formation and expansion of the Renewable Energy Division. "With our skilled workforce and our equipment, it's a nice fit to move over and do the renewables effort."

Joel Brewton, Vice President of Asset Management & Centralized Services, added, "Outstanding service is our hallmark, and that's really built around doing things safely and efficiently. We believe that goes hand in hand with delivering solid production. We are always seeking ways to improve our practices. Technology — such as the Komatsu Smart Construction machinery and solutions we now use — is playing an increasingly bigger role for us because we see the benefits it is delivering in terms of cost and time savings."

Brewton and Scheve emphasized that the two large solar projects that Castle's Renewable Energy Division recently took on in Wisconsin are prime examples. About a year ago, Castle began site preparation, including putting the sites to grade, building basins, and handling erosion control. Between the two, Castle team members moved about 700,000 yards of dirt.

"Our Onion River project, which is the bigger of the two, involved about 18 different sites, so it was pretty spread out," explained Superintendent Rocky Hartwick. "We started in July and had the mass grading done by the end of the year. Our Crawfish River project began earlier, and the grading was basically done within a relatively short timeframe."

Hartwick continued, "These projects were our first ones using Komatsu's intelligent machines, and we were very impressed with the ability to use the integrated GPS from grass to grade. Using traditional methods, we cut approximately two acres to grade each day. Komatsu's intelligent machines allowed us to



Komatsu's Jason Anetsberger (left) uploads data from the Smart Construction Drone flights to Smart Construction Dashboard. Castle's Joel Brewton (right) uses Komatsu's Smart Construction Dashboard in his office in Meridian, Miss., to check the progress of Castle's job sites in Wisconsin.

▶ VIDEO

An operator cuts grade with a Komatsu D71PXi-24 Intelligent Machine Control (IMC) dozer on Castle's Onion River project near Adell, Wis. "We were very impressed with the ability to use the integrated GPS from grass to grade," said Superintendent Rocky Hartwick. "The accuracy and efficiency are spot on."

do 10 to 12 acres without the need for a grade checker because the machines always know where they are in relation to final grade. The accuracy and efficiency are spot on."

Using Smart Construction solutions

Throughout the projects, Castle has used Komatsu Intelligent Machine Control (IMC) dozers and excavators, as well as Smart Construction Drone, Smart Construction Dashboard and Smart Construction Remote. Castle also purchased its own drone, and staff members received training from Komatsu, so they could conduct flights independently.

"Komatsu corporate has been a big part of helping us learn the intelligent system as well as incorporating drone flights to verify that what the machines are seeing is exactly what we're seeing," Scheve explained. "We've made drone flights a standard, so before we ever move a speck of dirt, we do an initial flight of the sites to make sure we have accurate models to work from. CAD (computer-aided design) files are developed from those, and those models are uploaded to the intelligent machines. We do subsequent flights about a month apart to check progress and verify how much dirt was moved, and that gets uploaded to Dashboard. That information helps us put together as-built models we can show to the customer and keep accurate records."

Brewton said that level of accuracy has been impressive to Castle and its customers.

"We are a very schedule-driven contractor," Brewton stated. "When we make a schedule, we want to stay on it. Drone flights let you verify a site within a matter of hours rather than days with the old methods of walking the site and staking it. Instead of taking maybe 20 shots with a rover and a stick within a 10-foot section, the drone is shooting thousands of points in that same area, so it's delivering a more accurate picture. Billing is another advantage we see. We don't want to overcharge our customer or be underpaid. With the drone, you can verify exact quantities, and you get paid for exactly the work you've done, and that's what we want."

Additional adoption

Increased productivity and efficiency with Komatsu IMC machines and Smart Construction solutions on the Renewable Energy Division's Wisconsin projects have encouraged the Castle team to expand their usage of technology.

"Recent legislation is only going to put additional significant dollars into renewables, and we have customers asking us for commitments for several years out; making the investment makes sense," said Scheve. "We see the applications for the machines and solutions in our other divisions too, such as Pipeline, so we are looking into how to adopt it for those going forward." ■

**The opinions expressed here are from the end users who are quoted.*

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WIRTGEN's AutoTrac system for stabilizers and recyclers increases efficiency, reduces environmental impact

Using environmentally friendly processes and handling valuable resources responsibly are becoming more important in the areas of soil stabilization and cold recycling. Cost-effective realization of these processes is only possible when they are efficiently executed. With the launch of the AutoTrac system for its WR Series, WIRTGEN now offers a technology that focuses precisely on this.

Soil stabilizers are used for resource-efficient preparation of pavement bases on infrastructure projects. A subbase with insufficient load-bearing capacity is transformed into resilient materials that can withstand heavier loads. This process takes the existing soil and adds and mixes in binding agents such as cement and/or lime. In the case of cold recycling with the WR Series machines, damaged asphalt layers are milled and resized in a single operation, rebound by the addition of binding agents and water, and then repaved. New base layers produced by this process have extremely high load-bearing capacities.

Automatic steering for optimal overlaps

By enabling precise, automatic steering, the AutoTrac system helps WIRTGEN machines achieve greater process efficiency and, as a result, a high degree of environmental sustainability. It steers the machine accurately within tolerances of a few centimeters on the basis of a previously established reference strip and a specified overlap of adjacent strips, which enables consistent utilization of the machine's ideal working width. AutoTrac relies on various global navigation satellite systems for precise control of the machine's position and direction of travel. The system is operated from an additional control panel that also enables the operator to view information about the position of the machine and previously completed strips.

Shorten completion time

Adhering to the pre-set overlaps reduces the consumption of binding agents, consumables and fuel, making the carbon footprint smaller and shortening the project's completion time. The result is increased project efficiency, as well as cost-effectiveness and reduced environmental impact.

Reduce operator workload

Manual steering of the machine always requires considerable effort when it comes to avoiding unprocessed gaps in the ground being worked. AutoTrac's automatic steering assists the operator and reduces the workload. Maintaining the desired overlap avoids unwanted gaps in the final results. The operator can concentrate entirely on the mixing process and keep an eye on what's going on around the machine. ■

WIRTGEN's AutoTrac system for WR Series recyclers and stabilizers provides automatic steering for increased efficiency, resource conservation and reduced operator workload.

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Retrofit

New replacement monitors, GNSS receivers provide upgrades to your existing Intelligent Machine Control devices

Komatsu's Intelligent Machine Control (IMC) equipment has always been on the cutting edge of technology that automates grading and excavating. To ensure that's the case on all models of IMC equipment, Komatsu has now introduced remanufactured, upgraded machine control monitors and GNSS (global navigation satellite system) receivers.

"Komatsu always looks to upgrade its equipment and components in order to increase our customers' efficiency and production, and we updated these devices to the latest technology as well," said Goran Zeravica, Senior Product Manager, Reman. "There have been slight changes to the hardware, but the biggest upgrades came in software that makes them even more effective than the previous models."

The new devices are replacements for the original monitors in IMC dozers and excavators and their GPS/GNSS receivers. All are now Komatsu Genuine Reman with proprietary technology, including the PH700 IMC excavator monitor (replacing the older X31) that shows operators where cuts and fills are, as well as other job site features. Users can upgrade their GX-60 to a new GX-55 in IMC dozers. As with the PH700, the GX-55 shows cuts and fills and other job site features.

Previous MC-i3 GNSS receivers have been replaced with new MC-i4 models, which provide GPS/GNSS positioning for the machine, so it knows where it is on the job site and in relation to final plan elevations.

Available through distributors, My Komatsu

"As with cell phones, which you upgrade periodically to have the latest technology, we encourage you to do the same with your IMC devices," said Arash Moghaddamzadeh, Product Manager, Reman Products and Forestry Aftermarket. "These new devices are available through your Komatsu distributor by contacting your product support representative, technology solutions expert, or through the parts department. Additionally, they are available as Reman by using your My Komatsu account." ■

Goran Zeravica, Senior Product Manager, Reman, Komatsu

Komatsu Genuine Reman devices for Intelligent Machine Control (IMC) dozers and excavators feature proprietary technology that helps increase earthmoving efficiency.

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Komatsu Care Plus Cost Per Hour gives you a fixed hourly rate on unlimited services for 60 months

As your machines age, increase certainty in your owning and operating costs with Komatsu's new Komatsu Care Plus Cost Per Hour program that delivers unlimited scheduled maintenance services at a fixed rate for 60 months.

"Komatsu Care Plus Cost Per Hour is a subscription-style billing plan that gives customers a very cash-flow-friendly alternative and lets them extend coverage beyond the complimentary maintenance period," said Komatsu National Accounts Manager Felipe Cueva. "There is a nominal, up-front, opt-in charge. Customers then lock in their cost per hour for that 60-month period and are billed based on the machine's monthly usage. Price protection is built in. The rate doesn't change, which offers a hedge against inflation and rising costs."

The benefits of Komatsu Care Plus Cost Per Hour include:

- Unlimited hours
- Up to 60 months of coverage guaranteed
- Price protection
- Total periodic maintenance (oils, filters, labor, travel and oil sampling)
- Monthly payments based only on machine utilization reported in Komtrax
- National coverage

How it works

"For example, if the rate on their particular machine is $5 per hour and the customer used the machine for 10 hours, they would be billed $50," Cueva explained. "If they put 100 hours on the machine, the cost would be $500 for that month."

The usage is tracked with Komatsu's Komtrax telematics system to ensure accurate billing.

"Added peace of mind comes in knowing that, as with other Komatsu Care programs, the services performed with Komatsu Care Plus Cost Per Hour are done by certified technicians," said Cueva.

He also noted that Komatsu Care Plus Cost Per Hour is restricted to current production models such as Dash-11 excavators. Hourly rates vary depending on machine. Once the initial 60-month period ends, customers may opt in again at the current rate.

"Customers can cancel their subscriptions at any time after 1,000 hours and two completed services without penalties or fees," said Cueva. "We encourage anyone who wants more certainty in their costs to check this out, as well as other options through My Komatsu. Your local Komatsu distributor can help get you covered." ■

Felipe Cueva, National Accounts Manager, Komatsu

Komatsu Care Plus Cost Per Hour locks in a fixed hourly rate for 60 months, and customers are billed on their monthly usage, which is tracked with Komatsu's Komtrax telematics system to ensure accuracy. Services are performed by certified technicians.

Emery Sapp & Sons Inc. reduces costs by utilizing Smart Construction Remote to transfer files from the office to the field

Tyler Grotewiel, Surveying and Construction Technology Manager

Watch the video

Valuing hard work, investing in its employees, adapting to the markets, and taking chances on new opportunities has made Emery Sapp & Sons Inc. (ESS) successful. For the past 50 years, that formula has propelled the Columbia-based firm into one of Missouri's largest full-service civil contractors with about 1,800 employees.

"Our capabilities include everything from full site development to bridge installation to every aspect of paving," said Tyler Grotewiel, Surveying and Construction Technology Manager. "We have over 200 projects in the works at any one time. In addition to core values, ESS has always been very forward-looking when it comes to adopting technology that increases efficiency on every site."

One of the company's earliest technology adoptions was adding aftermarket GPS grade control systems into its earthmoving operations, which improved its productivity.

Tyler Grotewiel, Surveying and Construction Technology Manager at ESS, updates plans on machines in the field from his office with Komatsu's Smart Construction Remote. "The process is simple," said Grotewiel. "All you have to do is log into the website, find the machine or machines that you want to send the file to, and drag and drop the file to them. It's nearly instantaneous, and the operator doesn't have to do anything."

More recently, ESS began utilizing Komatsu's Intelligent Machine Control (IMC) dozers.

"When I started here 17 years ago, we had a few machines with GPS, and now we have more than 100," said Grotewiel, noting that ESS has also adopted GPS in its paving operations. "Knowing where you are in relation to final elevation and only having to move dirt once really increased our efficiency. It also cut costs because there is no rework, less wasted material, and no need for a grade checker. Every site we do now has a GPS model, whether it's a small parking lot or a large highway job."

"Solution we needed"

Grotewiel manages a group of about 30 people at ESS who focus on construction layout and prepare data files for machine control. About one-third of them are building 3D GPS models from the data as well as from CAD (computer-aided design) drawings from engineers and transportation departments.

"Our staff is outstanding at building accurate models that can be uploaded directly into the machines, but as anyone in the construction industry knows, plan changes are inevitable," said Grotewiel. "In the past, that meant we had to physically drive to a project with a thumb drive to update files. Our projects are spread out across a large territory that covers multiple states, so it's time-consuming and a major expense in fuel to do that. We were looking for a way to reduce or eliminate the hassle, and our research determined that Komatsu's Smart Construction Remote was the solution we needed. The fact that it's compatible with both Topcon and Trimble systems is a huge benefit. We have used it with both our Komatsu and competitive machines."

Grotewiel added, "We compared it to other solutions in the market and found Smart Construction Remote to be more user-friendly, too. The process is simple. All you have to do is log into the website, find the machine or machines that you want to send the file to, and drag and drop the file to them. It's nearly instantaneous, and the operator doesn't have to do anything. We have four offices, and I estimate that we use Smart Construction Remote about 15 times per week at each one. I don't have to

With Komatsu's Smart Construction Remote, ESS can send plans and updates to its machines without driving to the job site. "Our projects are spread out across a large territory that covers multiple states, so it's time-consuming and a major expense in fuel to do that," said Tyler Grotewiel, Surveying and Construction Technology Manager. "Komatsu's Smart Construction Remote was the solution we needed."

pay someone to drive the file to the job site, and the operators get the information faster."

See what the operator does

If an operator has a question or an issue, Grotewiel and his team can assist them from the office because Smart Construction Remote allows direct remote access to a machine.

"Instead of having to drive to the site, we can see what the operator sees on the screen in the machine," said Grotewiel. "If necessary, I can actually take control remotely to directly address the issue."

Operator Gage Snider says Smart Construction Remote has also notably increased the company's production.

"If there is an update, it's just done," stated Snider. "You don't have to wait on somebody to show up. It comes to the machine and is done automatically, so I keep moving dirt without having to worry about the plan being outdated. Because it's done remotely, most of the time I don't even know it's been done."

Initial setup, ongoing support

ESS worked with its local Komatsu distributor to access Smart Construction Remote. Distributor representatives helped ESS with the setup, including the installation of cellular modems that are used for communication to load and update plans.

"They remain an invaluable resource because they guided us through the initial setup, helped us through the learning curve, and provide ongoing support," said Grotewiel. "As we were adding Smart Construction Remote, our modems had to be upgraded to 4G, which was a big undertaking, and they were there every step of the way. They have ensured our successful use of Smart Construction Remote. Because of that — and the savings we are seeing — our plans include working with them to add it to more machines. We highly recommend Smart Construction Remote." ■

**The opinions expressed here are from the end users who are quoted.*

Gage Snider, Operator

Komatsu restarts production of popular HM400-5 articulated haul truck at its Chattanooga Manufacturing Operation

Rod Schrader, Chairman/CEO, Komatsu North America

Bruce Boebel, Director of Products and Services for Wheel Products, Komatsu

Due to the growing demand for off-road trucks in construction, quarry and mining operations throughout North America, Komatsu is once again producing its HM400-5 articulated haul truck at its Chattanooga Manufacturing Operation (CMO) in Tennessee. The trucks were produced at CMO in the mid-2000s, but production shifted to Japan, where it has remained until now.

"The HM400 is a very popular truck because it's built for reliability and durability," said Bruce Boebel, Director of Products and Services for Wheel Products at Komatsu. "We're excited about reshoring production here in North America. As trucks are completed, they're on a lowboy going to a customer's site immediately."

Komatsu designed the 473-horsepower HM400-5 to move material across challenging terrain while delivering productive, consistent performance for operators of all skill levels. It has a 44.1-ton payload and a low loading height of 10 feet, 5 inches.

"The HM400-5's versatility makes it a great fit for a variety of applications," Boebel noted. "A dump bed for hauling materials is most common with the HM400, but they can be customized for water and lube trucks too."

First off the line

Rogers Group Inc., an aggregate producer and highway construction company based in Nashville, Tenn., purchased the first HM400-5 off the CMO line and is using it in one of its 70-plus quarries, along with many other Komatsu products.

"We have found as we study owning and operating costs of all our fleets that the HM400 gives us the best overall value [on articulated trucks]," said Darin Matson, President and CEO of Rogers Group. "Komatsu is a big supporter of our industry, and that's something we look at in our equipment-buying decisions. Of course, we think it's great that they are building the HM400 right here in our home state."

To support growing demand in North America, Komatsu is once again producing HM400-5 articulated haul trucks at its Chattanooga Manufacturing Operation in Tennessee. The factory also produces excavators and forestry products.

Quick Specs			
Model	**Gross Horsepower**	**Gross Vehicle Weight**	**Payload**
HM400-5	473 hp	165,644 lbs.	44.1 tons

▶ VIDEO

Komatsu's 473-horsepower HM400-5 articulated haul truck delivers performance for operators of all skill levels.

Optimum traction in soft ground

The HM400-5 features the Komatsu Traction Control System (KTCS) that is designed to provide excellent traction in soft and slippery ground conditions without sacrificing steering performance. If conditions worsen and the truck detects tire slippage, the inter-axle-lock kicks in. If tire slippage continues, it will automatically apply an independent brake to the wheel on which the slip was detected to help regain traction.

Boebel added, "The hydro-pneumatic seat suspensions help cushion the ride for operator comfort and reduced fatigue."

An integrated payload meter is standard and displays loaded-material weight on the in-cab monitor. External lamps illuminate green, yellow or red as the payload increases to help prevent under- and over-loaded haul cycles.

Komatsu made service convenient with a lightweight resin hood and a cab that tilts rearward for easy access to the engine and transmission. Production data and other information is stored on board the HM400-5 and is accessible by plugging a laptop into a port or remotely via Komtrax. Users can monitor daily, weekly or monthly detailed data to allow for full production studies.

"We have seen the demand for our HM400-5 trucks grow significantly in both the U.S. and Canada, which is why we began producing the trucks here in the U.S.," said Rod Schrader, Chairman and CEO, Komatsu North America. "The domestic production of this popular truck supports Komatsu's commitment to jobs and manufacturing in the U.S." ■

Darin Matson, President/CEO, Rogers Group Inc.

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OSHA reports large rise in trench-related fatalities, announces enhanced enforcement and oversight

The Occupational Safety and Health Administration (OSHA) reported that nearly 40 deaths occurred in trenching and excavation work during 2022, making it one of the deadliest years on record. The total more than doubled the 15 fatalities reported in 2021.

OSHA reported 22 deaths in the first half of 2022, prompting it to launch enforcement initiatives to protect workers from known industry hazards. Compliance officers from OSHA were sent to perform more than 1,000 trench inspections nationwide.

"The Occupational Safety and Health Administration is calling on all employers engaged in trenching and excavation activities to act immediately to ensure that required protections are fully in place every single time their employees step down into or work near a trench," said OSHA Assistant Secretary Doug Parker. "In a matter of seconds, workers can be crushed and buried under thousands of pounds of soil and rocks in an unsafe trench. The alarming increase in the number of workers needlessly dying and suffering serious injuries in trenching accidents must be stopped."

OSHA reminded companies and workers that trenching and excavation operations require protective systems and inspections before workers can enter. Those requirements apply to trenches 5 feet or deeper unless they are made entirely in stable rock. Safe access and egress, including ladders, steps, ramps or other safe means, are required for employees working in trench excavations 4 feet or deeper, and they must be located within 25 feet of all workers.

When designing a protective system, you must consider factors such as soil classification, depth of cut, water content of the soil, changes caused by weather or climate, surcharge loads, and other operations in the vicinity.

Protective systems include:

- Benching: Protecting workers from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels; this method cannot be done in Type C soil
- Sloping: Cutting back the trench wall at an angle inclined away from the excavation
- Shoring: Installing aluminum hydraulic or other types of supports to prevent soil movement and cave-ins
- Shielding: Protecting workers by using trench boxes or other types of supports to prevent soil cave-ins

"OSHA stands ready to assist any employer who needs help to comply with our trenching and excavation requirements," Parker said. "We will conduct outreach programs — including safety summits — in all of our 10 regions to help ensure any employer who wants assistance gets it. The stakes are too important." ■

OSHA requires protective systems for trenches 5 feet or deeper unless they are made entirely in stable rock. Safe access and egress, including ladders, steps, ramps or other safe means, are required for employees working in trench excavations 4 feet or deeper, and they must be located within 25 feet of all workers.

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