



ON TRACK



A publication for and about our valued Michigan customers • www.CECOnTrack.com • April 2022

KOMATSU

R.L. Morris & Sons Construction Company

Firm celebrates 50th anniversary



Greg Morris,
former owner

Tyler Morris,
owner and president

A Message from Continental Equipment Corporation



Mark Kelso,
General Manager

**2022 looks
bright for
construction**



Dear Valued Customer:

We hope your 2022 is off to a wonderful start!

This year looks like another good one for construction. Industry economists and experts seem to agree that there will be growth overall, and the supply chain issues plaguing material acquisitions and driving up costs will ease in the latter half of 2022. They also believe that's when the impacts of the new infrastructure bill, which Congress passed in late 2021, will begin to take effect. We've highlighted some of the benefits of the bill, aka the Infrastructure Investment and Jobs Act, inside.

However, forecasters continue to see a shortage of workers, so if you are looking for new employees, consider the positive impacts a diverse staff can have on your business. In this issue, we take a look at diversity and the role it plays in growing companies. I believe you will find it enlightening.

Historically, construction and working remotely have not gone hand in hand. After all, dirt work doesn't get done and structures can't be built without workers on-site, right? In some cases, that's evolving. Learn about how remote operations are changing the landscape in today's — and especially tomorrow's — construction industry.

Komatsu is already at the forefront of this change with solutions such as Smart Construction Remote and Smart Construction Dashboard. Inside, you will find more information about these products and how they help save time and reduce costs. Our Smart Construction experts can show you the advantages and help you implement these solutions into your operations.

There are several other interesting and informative articles to help your business, including tips on preparing your staff and equipment for the upcoming busy season.

As always, if there is anything we can do for you, please call one of our branch locations.

Sincerely,
Continental Equipment Corporation

Mark Kelso,
General Manager

ON TRACK



A publication for and about our valued Michigan customers • www.CECONTrack.com

In this issue

R.L. Morris & Sons Construction Company pg. 4

Learn how a family business takes on pipeline projects throughout the lower part of Michigan.

Customer Success Story pg. 8

See how Hammer Construction Inc. finishes projects faster at lower costs with intelligent Machine Control (iMC) machines.

Federal Funding pg. 10

Understand what is in the Infrastructure Investment and Jobs Act.

Productivity Preparation pg. 12

Take these steps to ensure your company is ready for the busy season.

Perfect Pair pg. 15

Check out how Tripp Bros Inc. increased its efficiency with Komatsu's new iMC 2.0 technology and auto tilt IMU sensor.

Innovative Ideas pg. 17

Find out what technologies are trending in construction.

Field Notes pg. 20

Support your machines from anywhere and reduce expenses with Smart Construction Remote.

Working From Afar pg. 22

Examine the ways in which remote job site management and operation are changing the construction industry landscape.

Management Information pg. 25

Visualize what's happening on your job sites in near real time with Smart Construction Dashboard.

Insider Tips pg. 27

Read about Komatsu's new products and programs.

People Power pg. 28

Grow your business with a diverse staff.



Published for Continental Equipment Corporation.
© 2022 Construction Publications Inc. Printed in the USA.

THE PRODUCTS PLUS THE PEOPLE TO SERVE YOU!

LANSING

3600 N. Grand River Ave.
Lansing, MI 48906
(517) 321-8000
Fax: (517) 321-4191

PARTS/SERVICE LOCATIONS

GRAND RAPIDS

600 44th Street S.W.
Grand Rapids, MI 49548
(616) 538-2400
Fax: (616) 538-0449

NORTHEAST DETROIT

65809 Gratiot Ave.
Lenox, MI 48050
(586) 727-7502
Fax: (586) 727-7311

SAGINAW

4600 AIS Drive
Bridgeport, MI 48722
(989) 777-0090
Fax: (989) 777-1583

TRAVERSE CITY

8300 M-72 East
Williamsburg, MI 49690
(231) 267-5060
Fax: (231) 267-5257

WEST DETROIT

56555 Pontiac Trail
New Hudson, MI 48165
(248) 437-8121
Fax: (248) 437-5911

www.aismidwest.com

KOMATSU

Fifty years of experience cements RLM as a primary contractor for Michigan's energy sector



Greg Morris,
former owner



Tyler Morris,
owner and
president



Matt Besaw,
operation manager
and vice president

In 1972, Robert Leroy Morris established R.L. Morris & Sons Construction Company (RLM) out of Kalkaska, Mich. With only a backhoe and a lowboy, Robert worked 100-hour weeks to grow the business. During the Nigerian oil boom, RLM built refineries and underground pipeline distribution networks to move the captured oil and natural gas from wells to centralized production locations. Robert's son, Greg Morris, joined the company in the 1980s and helped establish the firm as a primary piping installation contractor for Michigan's growing energy sector.

"Growing up, I worked for my father during the summers," recalled Greg, who recently retired from his position as owner. "After finishing high school, I saw the opportunity to grow the company and make good money working with him. I started out as a laborer and learned every aspect of the business. When he retired, I took over running the business and, in the last year, have handed those responsibilities over to my son, Tyler."

The economic collapse in 2008 cut off most of the company's business and forced it to

look outside of Michigan for work. In 2009, Greg debated selling RLM before reversing the sale and bringing Tyler into the business. After several lean years, the company found its footing and reestablished itself in Michigan's energy sector.

"We teamed up with another company to lay 100,000 feet of power and communication wires in Bay City for the Big Turtle Wind Farm," said Tyler, who is now the owner and president of RLM. "That was in 2012. They bored the project, and we completed the digging. That project gave us the financial stability to add more equipment and grow the company with the recovering economy."

Today, RLM has over 60 employees and takes on pipeline projects throughout the lower part of Michigan. In 2020, Matt Besaw joined the firm as the operation manager and vice president; he oversees remediation operations.

"Matt and all of our employees are a big reason why we're successful," stated Tyler. "We also added four full-time safety managers and updated our operator qualification programs to keep our team safe."



At R.L. Morris & Sons Construction Company's (RLM) pipe yard, an operator lifts a pipe using a Komatsu PC350LC excavator while a crew places the pipe.



An operator moves material around RLM's pipe yard with a Komatsu WA380-8 wheel loader. "I've worked on many different brands of equipment and rate the Komatsu machines very highly," said Dave Bell, shop foreman. "I like that the electrical and hydraulic hosing and piping is isolated. You can tell the machines were engineered properly and not vendor-sourced parts smashed together."

We're defined by our employees' work ethic and wouldn't be where we are today without them. They're loyal and hardworking."

Komatsu fast, efficient, reliable

The addition of two bending machines, which are capable of bending pipes up to 36 inches in diameter, further cemented RLM in Michigan's energy sector. RLM works closely with DTE Energy to install launchers and receivers that facilitate pigging throughout the energy providers' network of pipelines. To access buried pipes and install new connections, RLM utilizes its fleet of Komatsu equipment.

"The best decision we made coming out of the recession was to go with Komatsu machines," stated Tyler. "We have machines that range from brand new to 10,000 hours. They're fast, efficient and reliable."

The firm's fleet of Komatsu excavators ranges in size from the PC138USLC to the PC350LC. Multiple PC290LC and PC210LC excavators are the workhorses for its projects. Recently, RLM added a WA380-8 wheel loader to help move materials at its pipe yard.

"The uptime on our Komatsu machines has been excellent," stated Dave Bell, RLM shop foreman. "With the type of work we do, logistically, down machines on a job site cost us valuable time and money. All our excavators perform well and hold up over time.

"I've worked on many different brands of equipment and rate the Komatsu machines very highly," Dave added. "I like that the electrical and hydraulic hosing and piping is isolated. You can tell the machines were engineered properly and not vendor-sourced parts smashed together."

Relationship with CEC

When RLM needs new equipment, it turns to Continental Equipment Corp. (CEC) and sales representative Denny Gill to find the right machine. The firm's relationship with CEC dates back to the 1970s.

"I remember as a kid, Dick Doyle (a former CEC sales representative) would fly a helicopter into our yard to meet with my father," recalled Greg. "We've had a relationship with CEC for a long time, and they've always taken care of us. Now



**Dave Bell,
shop foreman**

Continued...

'We're able to work in a wide range of environments'

... continued



Operators use RLM's fleet of Komatsu excavators to access piping at a job site in Michigan. "The uptime on our Komatsu machines has been excellent," stated Dave Bell, shop foreman. "With the type of work we do, logistically, down machines on a job site cost us valuable time and money. All our excavators perform well and hold up over time."

whenever we need something, we call Denny, and he makes it happen."

Dave appreciates the support he receives from Gill and CEC. "With any project you're going to run into adversity. Whether I need product support or a question answered, Denny goes out of his way to provide a solution. He's always willing to give us ideas that put us on the right path. While the general scope of our projects is usually the same, each job site is different. Often, we need different equipment to achieve the same goal. Denny provides us the support and resources to match the right machines with each project and maximize our efficiency."

Niche success

RLM is in a strong position as Greg transitions into an oversight role, and Tyler assumes the day-to-day responsibilities that come with the title of owner. The demand for RLM's services already extends into the next two years.

"We've established ourselves in a niche market," stated Tyler. "We're able to work in a wide range of environments that most other contractors shy away from. We have a network of customers that we partner with and plan to continue that into the future." ■

(L-R) RLM's Tyler and Greg Morris work closely with CEC sales representative Denny Gill to find the right machines and solutions for their company. "We've had a relationship with CEC for a long time, and they've always taken care of us," said Greg. "Now whenever we need something, we call Denny, and he makes it happen."

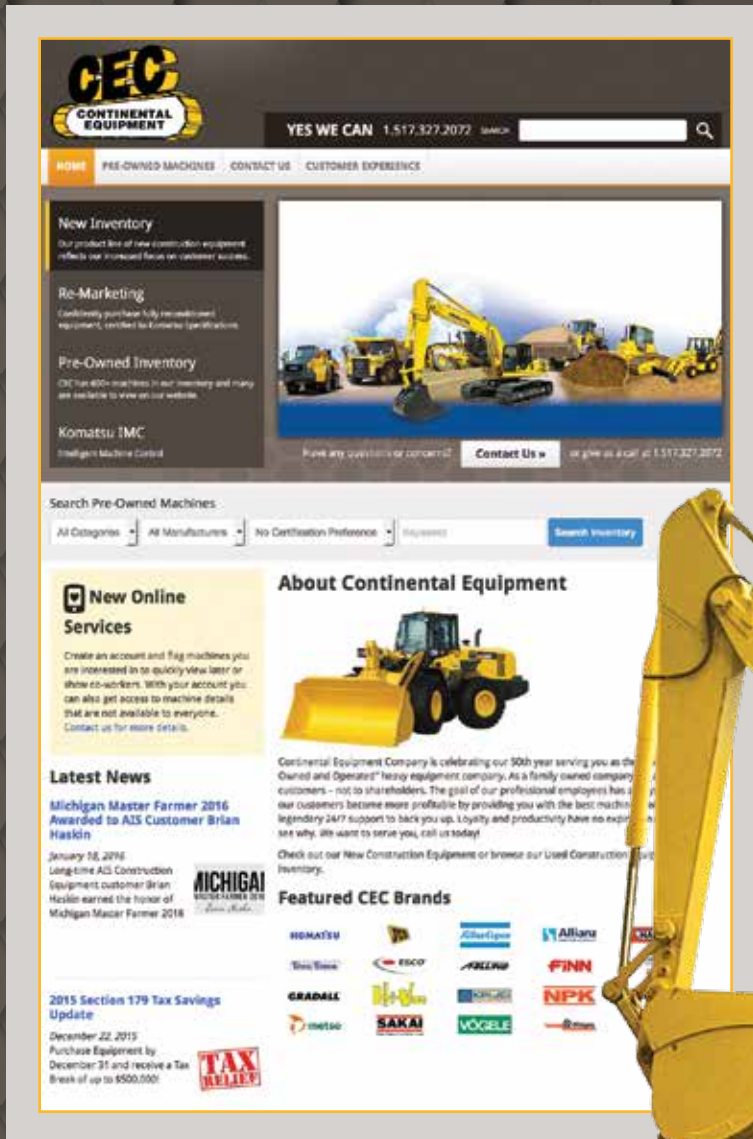


Open the door to more CEC services!

Whether you're on the go, working at your office or relaxing at home, CEC can help you find what you need to keep you up and running!

Our mobile-friendly website is your doorway to:

- A large selection of new equipment
- Hundreds of pre-owned and Komatsu-certified machines, with detailed descriptions and photos
- Rentals
- Parts
- Maintenance
- Painting services
- And more!



Visit www.CECeq.com today, and unlock what CEC has to offer!



Hammer Construction Inc. finishes projects faster at lower costs with iMC machines



Robby Moore,
president and owner



Josh Swafford,
foreman



Matt Swafford,
foreman

Over the past decade, Hammer Construction Inc. expanded its services into more commercial projects, providing complete site packages or individual services for customers, including clearing, mass earthwork and fine grading, utility installation, and concrete paving.

"We — and most of our clients — prefer to do a turnkey project where the civil construction schedule is in our hands," said Robby Moore, president and owner. "In those cases, we self-perform nearly everything and work with trusted partners to get certain items taken care of. We are not opposed to breaking out and doing a dirt- or utility-only job. Whatever the customer wants, we will take care of it. That's helped us build a solid list of customers that we continue to work for on a repeat basis."

Typically, Hammer Construction has 15 to 20 projects in the works at a time. In a recent commercial venture, the company provided earthwork for the first phase of a new multipurpose sports complex that will include three baseball fields, concession stands and parking. A crew performed cut/fill operations for general site construction, which involved moving thousands of yards of dirt.

"The project is an excellent example of what Komatsu intelligent Machine Control equipment

is capable of," stated Josh Swafford, foreman. "In some places, there were 12-foot cuts and fills. Traditional methods would have meant having a survey company come out four or five times to stake it as we progressed. Because the intelligent machines always know where they are in relation to final elevation, much of that is eliminated, so we save time and money by using them from start to finish."

Increased production time

Hammer Construction used its D61EXi-24 dozer and PC360LCi-11 excavator for everything from rough cut to final grading. Similar to all projects done with intelligent Machine Control (iMC) equipment, it built a site model from a CAD file Hammer Construction received from the general contractor.

"We upload the model to the machines, do a final precheck and go," said Matt Swafford, foreman. "The integrated GPS control of the iMC machines is extremely accurate. We have never had an issue in the three-plus years that we have used them. Our first unit was a D65EXi-18 that we rented for an oil field job. We bought it because we knew right away it was a game-changer for us. With no masts or cable to put up and take down, our production time increased, so we are able to finish projects faster with reduced costs." ■



Discover more

► VIDEO

A Hammer Construction Inc. operator grades dirt with a Komatsu D61EXi-24 intelligent Machine Control (iMC) dozer. "We upload the model to the machines, do a final precheck and go," said Matt Swafford, foreman. "The integrated GPS control of the iMC machines is extremely accurate. We have never had an issue in the three-plus years that we have used them."





Discover the value of My Komatsu

My Komatsu is your centralized portal for comprehensive fleet management. Check machine telematics, access support materials, order parts and more from your phone, tablet or computer — anytime, anywhere.

Create an account at mykomatsu.komatsu. Download the app from Google Play or the App Store, or scan the associated QR code.



KOMATSU
My Komatsu

Infrastructure Investment and Jobs Act brings historic investments

The recently passed \$1.2 trillion Infrastructure Investment and Jobs Act (IIJA), aka the Bipartisan Infrastructure Deal, will reauthorize surface transportation programs for five years and invest \$110 billion in additional funding to repair America's aging roads and bridges. With nearly \$40 billion dedicated to the latter, that is the single, biggest investment in bridges since the construction of the interstate highway system in the 1950s, according to the Biden administration.

Transportation safety programs will see \$11 billion in funding, including \$5 billion for the new Safe Streets and Roads for All program, established to help states and localities reduce crashes and fatalities in their communities. Another new program provides grants to community-owned utilities to replace leaky and obsolete cast iron and bare steel natural gas pipelines. In total, the infrastructure bill is projected to more than double funding directed to programs that improve the safety of people and vehicles.

Largest outlay for water systems

The spending package also includes the largest investments in other infrastructure

systems. To expand access to clean drinking water for households, businesses, schools and child care centers all across the country, \$55 billion will be dedicated to address water contamination and the replacement of lead pipes.

IIJA sets aside \$50 billion to protect against droughts, floods and wildfires, as well as weatherization, in an effort to increase the resilience of physical and natural systems from extreme weather events.

Modernizing for the 21st century

With major investments to connect rural areas, low-income families and tribal areas, \$65 billion will be dedicated to expanding broadband internet access. The bill includes provisions to make internet service more affordable and easier to compare prices.

An additional \$65 billion will modernize the nation's power grid and build thousands of miles of new, resilient transmission lines to facilitate the expansion of renewable energy.

Updates to the nation's power grid should allow more electric vehicles to be charged, and IIJA provides \$7.5 billion to build the

Airports are to receive \$25 billion to address repairs and maintenance backlogs, reduce congestion, and drive electrification and other low-carbon technologies. Ports, rail and buses are among the other public transportation sectors seeing significant funding for modernization.





Roads and bridges receive the largest amount of funding in the Infrastructure Investment and Jobs Act at \$110 billion; nearly \$40 billion of which is dedicated to bridges. Transportation safety is to receive \$11 billion.

first-ever national network of electric vehicle (EV) chargers in the United States. This funding includes the deployment of EV chargers along highway corridors to facilitate long-distance travel, and within communities to provide convenient charging where people live, work and shop.

Updating public transit

In total, the new investments and reauthorization in IIJA guarantee \$89.9 billion in funding for public transit over the next five years — the largest Federal investment in public transit in history. The legislation will improve accessibility to all users, bring transit services to new communities, and replace thousands of deficient transit vehicles with clean, zero-emission vehicles.

The legislation also invests \$66 billion in rail funding to eliminate the Amtrak

maintenance backlog, modernize the Northeast Corridor, and bring service to areas outside of the northeast and mid-Atlantic. Airports will get \$25 billion to address repairs, reduce congestion, and drive electrification and other low-carbon technologies.

Job openings

Additionally, the infrastructure bill will drive the creation of good-paying union jobs and grow the economy sustainably and equitably. Combined with the President's Build Back Framework, it is estimated that on average, 1.5 million jobs per year will be added for the next 10 years.

Opportunities for construction workers, truck drivers, architects, mechanical engineers and cybersecurity analysts, among others, are likely to increase. ■

Your busiest time of the year is near. Make sure equipment and personnel are ready for maximum production

During the winter months, your machinery may have sat for a long period of time, or you may have kept working and just had routine services done during that time. Either way, it is vital to take steps to ensure your equipment is ready for the busy summer days that lie ahead.

Don't wait

If you have any outstanding work orders or operator repair tickets, finish them as soon as possible. Thoroughly inspect machines a few weeks before the schedule really heats up, and if you find any issues, address them right away. Remember, larger items such as undercarriages take more time to repair, so inspecting them well ahead of time is vital.

Buckets, blades, cutting edges and ground engaging tools such as teeth require attention, too. Make sure there are no cracks, chips or excessive wear that could affect safety and performance; replace if needed. Check that your attachment hoses and connectors are in good working order and ready for hydraulic fluids. Hook them up briefly, and run them to see if they are working properly.

Prepare staff members

Make sure employees are aware of schedules, procedures, emergency protocols, and

the dangers and signs of heat-related illnesses. Employees should also know how to report maintenance items, the functions of new machines, and how to use them to maximize production and efficiency. Plus, make sure they have all the necessary personal protective equipment and that it is in good condition.

Stock up on parts

You should have an easily accessible store of basic maintenance items on hand such as grease, fluids, filters and belts. Having these on hand will save you from making frequent trips to the store, and decrease your overall downtime.

Clean the machine

Have you heard the adage that a clean machine runs better? True or not, you should wash your equipment to remove any dust and/or dirt buildup from storage or from use during the winter months. Cleaning can help you spot potential issues. Remove any debris, including from the engine compartment. Look out for rodent and/or bird nests.

Don't overlook the inside of the cabs — clean the glass, and dust the consoles and dashes. Replace missing or damaged safety decals.

Charge batteries

If you stored batteries, be sure to check them. Before using them, ensure proper water acid levels and fill, if necessary. Batteries that were not charged during storage should be. Coating battery connections with an anti-corrosion spray can prolong system life. Replace batteries if you believe there is any doubt about their safety or reliability.

Check fluid levels

It is essential to keep fluids at proper levels. Make sure there is an operating and maintenance manual available in your machine year-round, and refer to it for guidance. Be sure to grease any points that require it.

As temperatures rise, you should switch to fluids that properly match the ambient temperatures. If the machine requires diesel exhaust fluid, draining it and refilling it with new fluids to maintain purity and concentration is highly recommended, regardless of if you used the machine during

Thoroughly inspect your machinery before the busy construction season starts to ensure it is ready for maximum performance. Make sure everything is in working order and fluids are at their proper levels. Don't forget to check technology.





During the busy season, your machinery and personnel work hard, so make sure both are ready ahead of time. Check your equipment's undercarriage, ground engaging tools, fluids, components and other critical items. Make sure staff members have all necessary personal protective equipment and that it is in good condition.

the cold winter months or not. Switch fuel to a summer blend such as No. 2 diesel, and drain the lines of any condensation.

Pay attention to hoses and filters

If fluids are the lifeblood, hoses are the arteries that carry it. Check them for abrasions and leaks; replace immediately if any are found.

Cold can affect filters, so consider replacing them with new ones, including air filtration and air conditioner filters, so operators have a cleaner, more comfortable environment. Dust and contaminants affect filter performance, so keep a close eye on them, and change them as often as necessary.



Don't overlook technology

Check the connections on your aftermarket GPS systems, as well as those that go with removable monitors. Turn the machine on, and test telematics systems to make sure you can monitor machines through your computer or smart devices. ■



Have you seen what's **new** in My Komatsu?

We've made some exciting changes! An **all-new mobile app**, simplified ordering through the **Online Parts Store**, **Komatsu Care Program (KCP) integration** and more have been added to enhance the My Komatsu user experience.

Log in to your My Komatsu account to see the full range of new features. Don't have a My Komatsu account? Go to mykomatsu.komatsu to sign up.

KOMATSU
My Komatsu

Contractor reaches target elevation faster with new auto tilt bucket control that can follow unique design surfaces

Bobby and Allen Tripp spent countless hours running drag lines and operating dozers for their uncle while growing up on their family's farm. In 1997, the brothers transitioned from farm work when they established their own company, Tripp Bros Inc., which has steadily grown into a turnkey site development operation.

The firm's projects range from installing new construction infrastructure to resurfacing city and town streets. For maximum efficiency, the firm completes all aspects of a project in-house. To meet tightened grade tolerances and compensate for the declining number of experienced operators, the company has turned to GPS-equipped machines.

"The knowledge and skill lost from older operators leaving the industry — and with younger operators replacing them — GPS technology has become essential to our business," stated Bobby. "We rely on the technology to help our operators reach grade. Without our GPS-equipped machines, it would take us three times as long to complete the work."

At its residential jobs, which comprise 75% of the firm's current workload, creating as-built storm retention ponds is a challenge.

"The ponds are an environmentally conscious way to treat water before it's released from the site," noted Bobby. "Because each pond is unique, you can hardly dig them without diverting extra labor and equipment to keep it within tolerances."

Bobby continued, "We've found that with our Komatsu PC210LCi excavator with the new auto tilt bucket control, our operators can build the pond to grade more accurately than they could with a person shooting grade or checking them with a rover."

Maximum efficiency with iMC 2.0 with auto tilt bucket control

Bobby said that the new intelligent Machine Control (iMC) 2.0 technology on the PC210LCi-11, with the optional auto tilt IMU sensor, makes grading the ponds more efficient. By using Komatsu intelligent excavator auxiliary hydraulics, the auto tilt IMU sensor enables automatic control of the bucket/attachment angle to match the cutting edge of the surface.

Like all iMC excavators, the full bucket profile protects against over-excavation — even when the machine is not facing directly toward the target surface. With iMC 2.0 and the IMU sensor, the full bucket edge stays on the surface and automatically returns the bucket to a horizontal position for unloading.

"The machine is set up to tilt the bucket on its own and match a swale based on the design," explained Bobby. "We call it a 'one and done motion' because you don't have to go back and regrade the surface. The tilt bucket slopes, shapes and takes the pond to grade as you go."

"The auto tilt bucket control increases the machine's versatility and removes the need for an iMC dozer to check grade," added Alan Yoder, superintendent. "You're able to tilt the bucket instead of moving the machine to get the correct angle. Even our inexperienced operators find it easier to understand and control."

Bobby notes that the iMC 2.0 PC210LCi excavator improves Tripp Bros' efficiency contouring and crowning roads as well. "When we're undercutting a section of road, we can undercut the surface at a 2% fall and shape a crown in the road. The precision means we don't have to touch material twice. I haven't seen anything on another machine that compares to what this excavator can do." ■



Bobby Tripp,
president



Alan Yoder,
superintendent



Watch the video

Superintendent Alan Yoder excavates a storm retention pond using a Komatsu intelligent Machine Control (iMC) 2.0 PC210LCi-11 excavator with auto tilt bucket control.

"The auto tilt bucket control increases the machine's versatility and removes the need for an iMC dozer to check grade," said Yoder. "You're able to tilt the bucket instead of moving the machine to get the correct angle."

► VIDEO





My Komatsu is everywhere you are

The all-new My Komatsu mobile app puts fleet telematics, equipment support manuals, parts ordering and more at your fingertips—anytime, anywhere.

Create an account at mykomatsu.komatsu. Download the app from Google Play or the App Store, or scan the associated QR code.



KOMATSU
My Komatsu

Technology is changing the construction landscape

Have you ever been pulled over for speeding because a law enforcement officer “clocked” you over the limit? Did you know that the same technology used in the officer’s scanner helps build today’s construction sites?

“We use lidar (light detection and ranging) scanners on tripods or drones to shoot out about 1 million points of light per second. Whenever a laser touches something, its light bounces off the surface and back into the scanner,” explained Ken Smerz, CEO of Zelus, a firm that specializes in building information modeling (BIM) and virtual design and construction (VDC). In the article “Here’s how advances in technology are transforming construction industry,” Smerz continues, “It’s the same technology that police officers use to see if you’re driving too fast, but it’s just recently been used in the construction field.”

Drones equipped with lidar can fly over a site and collect data that can be used to build 3D models. This fast and accurate way of surveying a site provides several benefits, according to Dustin Price, a licensed land surveyor and operations

manager at Landpoint LLC. In his blog post “Lidar Inspections Improve Construction Safety,” Price points out lidar is beneficial because it:

- Delivers accurate surveys quickly at the beginning of a project
- Provides information for simulation and analysis when developing a project
- Identifies maintenance and repair requirements on the project as needed

Tech strategy adoption

Lidar is just one of many technologies trending today in construction. To gain efficiency and increase productivity, companies across the world are adopting technology as they look to lower owning and operating costs.

An analysis and outlook by construction software company InEight Inc. found that 96% of respondents believe technology

Editor’s Note: This article is excerpted from a longer piece. To read it in its entirety for additional information about technology trends and how they are playing a role in today’s and tomorrow’s construction industry, visit <https://www.komatsu.com/blog/2022/technologies-changing-the-construction-landscape/>



Continued...

To gain efficiencies and increase productivity, while lowering owning and operating costs, construction companies across the world are adopting technology. Drones equipped with lidar (light detection and ranging) can fly over a site and collect data that can be used to build 3D models. Lidar is just one of many technologies trending in today’s construction industry.



Technology improves productivity

... continued

can improve productivity, and 71% believe it's already improving the industry. Nearly 100% of contractors said they had a strategy that considered the adoption of technologies for data analytics, project management software, artificial intelligence and machine learning, among others.

According to a recent article, "Construction technology funding skyrockets to record levels" in ConstructionDive, U.S. construction technology investor funding reached a record \$2.1 billion in early October 2021 — more than a 100% increase from 2020.

While those are common to most in today's construction industry, there are other technologies gaining prominence that you might not currently be aware of, but will probably know in the future.

BIM for collaboration

Owners, architects and contractors use BIM to collaborate on design and construction at each phase of the project. According to Whole Building Design Guide (WBDG), which is managed by the National Institute of Building Sciences, BIM is a digital representation of physical and functional characteristics of a facility. It serves as a shared knowledge resource for information and provides a reliable basis for decisions during a project's life cycle.

Commonly listed advantages from experts who use BIM include improved communication and coordination, cost and resource savings, higher quality results, early identification of potential problems, and increased safety.

Don't be intimidated

Adopting technology may seem intimidating, but it doesn't have to be with the right approach, according to Damon Haber, co-founder and chief revenue officer at Record360, which helps businesses add the latest products to their operations.

"I was an operator before I became a tech guy, so I understand how it is affecting companies and individuals," Haber said. "Like equipment, devices and apps don't create outcomes; however, they can be valuable tools that help achieve them. Failures often happen when companies try to do too much or have no clear objectives as to why they want to implement certain solutions."

Haber said there are some best practices for introducing technology: start small, set measurable goals and outcomes, and secure commitments from end-users.

"You can always get bigger," Haber emphasized. "Before full implementation, it's wise to do a pilot study, and do it well. You should also look at today's modern solutions, and see how they can flex to match desired goals." ■

Virtual reality (VR) and augmented reality (AR) headsets are being used throughout the construction industry for operator training. Until they gain some proficiency, these high-tech devices allow a wearer to mimic the movement of construction equipment without having to be on an actual job site.



A JOHN DEERE COMPANY



Your one-stop supplier.

➤ www.wirtgen-group.com/technologies

CLOSE TO OUR CUSTOMERS

ROAD AND MINERAL TECHNOLOGIES. With leading technologies from the WIRTGEN GROUP, you can handle all jobs in the road construction cycle optimally and economically. Put your trust in the WIRTGEN GROUP team with the strong product brands WIRTGEN, VÖGELE, HAMM, KLEEMANN.

➤ www.wirtgen-group.com

WIRTGEN

/

VÖGELE

/

HAMM

/

KLEEMANN

Smart Construction Remote helps you support your machines from anywhere, saving you time and expense



Mike Salyers,
senior product
manager, Komatsu
Smart Construction
solutions

Do you need to get data to your machines? Want to help your operators troubleshoot? If you have connectivity and Komatsu's Smart Construction Remote solution, you can do both from anywhere, optimizing your time and making workflows more efficient.

With Smart Construction Remote, construction site managers can help operators troubleshoot issues in real time by viewing the same data they do. Managers can add new files without the time commitment of traditional methods, and transfer design files to multiple machines on-site with one click.

"In today's world, we live by emails, text messages and live chats to get things done quickly, and visualize what needs to be accomplished," said Mike Salyers, senior product manager, Komatsu Smart Construction solutions. "Smart Construction Remote gives you similar capabilities. It's like a live support system for the machine and its operator, allowing you and the operator to make necessary adjustments while making sure the machine has the current information needed to complete a job — without allocating valuable resources and hours to get the machine up and running."

Salyers added that Smart Construction Remote has the capabilities to connect to all types of machines, including Komatsu intelligent Machine Control (iMC) equipment, machines equipped with select Topcon aftermarket systems, and select Topcon data collectors utilizing Pocket 3D field software.

Easy to get started

To get started using Smart Construction Remote:

- Visit Komatsu's My Komatsu webpage and login, or set up an account

- Navigate to the Smart Construction Marketplace (<https://smartconstruction.mykomatsu.komatsu/products>)
- Click on 'Smart Construction Remote' and add it to your shopping cart
- Input payment information when you're ready to check out

Once activated, click 'My Subscription.' When you open the application, the Smart Construction Remote screen will appear after logging in. Begin the activation process to add the machines you want connected to Smart Construction Remote. A red bell will appear on screen, and you can simply follow the prompts from there.

Once a machine has been activated, it can receive files and information remotely. Multiple files can be sent at one time and downloaded from the machine. If necessary, files can be deleted from the machine's control box.

If the operator needs assistance understanding if they are in the correct file or on the correct surface, or if there are issues that prevent them from working properly, Smart Construction Remote can be deployed, and managers can access the monitor and remotely correct machine settings or resolve issues.

"Smart Construction Remote's remote-control function is just like sitting in the cab of the machine, but in the comfort of your office, home or location," said Salyers. "A remote user can navigate the on-screen menus and make the necessary adjustment to the blade control's point

of emphasis, surface offsets, dozing modes and many more. Smart

Construction Remote can also be used as a training tool to show operators how they can perform desired operation by executing functions in front of them, so they can actually see what they need to do." ■

With Smart Construction Remote, construction site managers can help operators troubleshoot issues in real time by viewing the same data they do. New files can be added and design files can be transferred to multiple machines on-site with one click — without allocating valuable resources and hours to get the machine up and running, according to Mike Salyers, senior product manager for Smart Construction solutions.



MASTER OF MULTI-TASKING



The new JCB I CXT delivers the material-handling and excavating capabilities of a backhoe loader with the maneuverability and transportability of a compact track loader.

Skid steer attachment compatibility. Extending dipper. Under 10,000 lb. Optional hand-tool auxiliary circuit. The feature list is impressive. The versatility is game-changing.



f/JCBNA @JCBNA JCBNA www.jcb.com

To learn more or arrange a demo, visit jcb.com or contact your local JCB dealer.

Remote job site management and operation are changing the construction industry landscape

Could one person control all the earthmoving on a job site from a remote location? While the idea may seem far-fetched, it's closer to reality than you think.

"The market sees this possibility evolving and coming to fruition at some point down the road," said Komatsu's Jason Anetsberger, director of customer solutions. "Mining has had autonomous trucks hauling billions of tons of materials for quite some time, which gives us an indication of what's possible."

Anetsberger added that remote operation, or teleoperation as it's often called, and autonomy on construction sites are "assets that customers continue to express interest in, especially considering the shortage of workers in the construction industry. Having one or a few people controlling large numbers of machines from an off-site location has the potential to lower costs and increase safety."

To a degree, the construction industry has already been using remote operation. Several manufacturers offer remote-controlled equipment that allows operators to run machines from outside

the cab. These have generally been used in highly sensitive and/or dangerous areas — such as cleaning up land mines or moving contaminated soils — but require operators to be on the site, albeit at a safe distance.

Simulators as a prep tool

There are already tools that can help prepare operators for remote operation. Sophisticated training simulators use virtual reality to bring the look and feel of a job site task to operators and potential operators — all without stepping a foot on-site.

During an educational session (Virtual Reality, Augmented Reality, and the Future of Work: Are You Ready for the New Realities?) at CONEXPO-CON/AGG in 2020, Jim Colvin, president and CEO of Serious Labs Inc. — which offers virtual reality training solutions — said simulators continue to gain popularity in construction. He said they are more effective than on-the-job training and a good way to build skills faster, and more safely.

"There are ways of training nowadays using VR (virtual reality) and AR (augmented reality) that are more engaging, immersive, interesting and effective than traditional training methods," Colvin said.

Remote control machines have been available for several years. Typically deployed in highly sensitive or dangerous environments, they are gaining prominence as production machines in construction applications.





Simulators can help trainees understand how to operate machinery before they get in the actual cab and may also be a way to prepare for remote machine operation.

Seeing projects from a distance right now

While the construction industry takes initial steps toward fully automating and teleoperating machines, projects can be managed remotely. In the past, project managers often had to drive from one location to the next, but now they can check on multiple sites from their office, vehicle or job site trailer.

Cell phones and computers ushered in the ability to communicate faster between the office and field personnel, and smartphones are making it even easier with applications designed for timecard management, productivity tracking, job site management and planning, and more.

"There are a multitude of apps available that let project managers view the job site in real or near real time right now," said Bryce Satterly,

Komatsu Smart Construction solutions manager. "With digital plans and satellites, they can view an intelligent machine's monitor and see exactly where it is on a site and its relation to the final elevations. It lets project managers see productivity remotely and make adjustments faster. That can save time and money, and increase productivity."

According to Anetsberger and Satterly, virtually managing operations is a gateway to machine teleoperation and ultimately the autonomy of construction equipment.

"Virtual, or remote, machine management is a step in the right direction toward one day having fully-remote or autonomous job sites," said Satterly. "Understanding how to use that information and apply it to equipment operation and overall job site management is invaluable. It could be a key factor in full autonomy and remote operation." ■

MUNICIPAL WORKHORSE



With industry leading lift capacity on both the front and back end, we aren't horsing around when we say the JCB 4CX SUPER is the most productive municipal backhoe loader on the market. This equal-sized tire machine provides excellent flotation and traction, delivers over 10,000 lb loader lift capacity and easily loads a tri-axle truck. The 3-steering modes (crab, 2-wheel steer and 4-wheel steer) result in the most versatile backhoe loader on the market. Available with seat mounted pilot controls and a suite of automated features, the 4CX SUPER provides the ultimate in operator comfort. Better yet, it's just one of the many models available in the family of the world's best selling backhoe loaders.



Saddle up to your dream backhoe today. Visit JCB.com to learn more.

YOUR FAMILY OF LOCAL JCB DEALERS



f/JCBNA @JCBNA JCBNA

aisequip.com

GRAND RAPIDS 616.538.2400

LANSING 517.321.8000

DETROIT - WEST 248.437.8121

TRAVERSE CITY 231.267.5060

SAGINAW 989.777.0090

DETROIT - N.E. 586.727.7502

Visualize what's happening on your job sites in near real time

Gaining insight into your job site's progress at any time and from anywhere reduces guesswork and enables faster decision making. Designed for daily use, Komatsu's Smart Construction Dashboard combines data from multiple sources to give you one comprehensive picture.

With Smart Construction Dashboard, contractors have a 3D graphic visualization of all design, drone and machine data to measure cut/fill, quantities and productivity. Site progress can be viewed with the timeline function (including playback) in terms of whole-site visual, cross-sections and individual measurements. You can confirm if a pre-bid topographical map is correct, track job site progress in near real time, document site conditions as evidence for change orders, and quickly and easily measure stockpile quantities.

"The 'data layers' option allows you to upload any design and drone files," said Yoetzin

Diaz, Komatsu Smart Construction solutions manager. "The measurement tab lets you create different measurements such as cut/fill, stockpile measurement and line measurements, including 2D cross sections to investigate specific areas of the site.

"There is so much more you can do with Smart Construction Dashboard to manage job sites," she added. "We highly suggest setting up an account and contacting your distributor's sales or Smart Construction representative to help guide you so that you get the most from this solution."

To get started, you'll need a My Komatsu account; set it up online (<https://smartconstruction.mykomatsu.komatsu/products>) or through your distributor. Once you have a verified account, sign in, find Smart Construction Dashboard, purchase it and click 'My Subscriptions' to begin. ■



Yoetzin Diaz,
Komatsu Smart
Construction
solutions manager

Smart Construction Dashboard lets you visualize a job site's progress at any time, from anywhere. With Smart Construction Dashboard, contractors get a 3D graphic visualization of all design, drone and machine data to measure cut/fill, quantities and productivity.



EXPERIENCE YOU CAN TRUST, QUALITY THAT IS PROVEN.

You know what you need to haul, Felling has the trailer to get it there. With over 100 years combined industry sales experience, we have the answers to your specialized trailer needs.



Air Tilt with Air Ramps



Low Profile Deck-Over Tag
with Air Bi-Fold Ramps



Hydraulic Tail Perimeter Frame
with Front Deck Ramp



OTR (Over-the-Road) Step-Deck



FELLING The Trailer **EXPERTS**

Visit www.felling.com

Call 1-800-245-2809 | Email trailers@felling.com

WOMEN
OWNED

LIFETIME
WARRANTY

1974

PAINT
WARRANTY

MAX
WARRANTY

DEXTER

Soundwell
WARRANTY

Get real-time insights straight from the field

Success of a job site comes down to a simple question: Did we hit our targets for the day? Tracking the costs of labor, machines and materials are the keys to answering, "Yes." With Smart Construction Field, you can say goodbye to pen and paper, and leverage a connected system to analyze your costs against your bid.

You can:

- Get more accurate job site data
- Easily track and analyze daily spending
- Track job site daily activity
- Make better business decisions

Insider Tip: "With Smart Construction Field you can quickly see if you are ahead, on schedule or behind to give you the ability to make faster decisions that affect production," said Bryce Satterly, Komatsu Smart Construction solutions manager. ■

Learn more about this and other Smart Construction solutions at <https://www.komatsu.com/en/site-optimization/smart-construction/#tab3>



A smooth approach for better productivity

A new modulation clutch in the WA900-8 surface mining wheel loader enables the operator to perform smooth approaches when loading trucks. This feature can also help reduce shock when shuttling between forward and reverse, which is particularly beneficial in v-cycle applications.

Automatic dig, semi-automatic approach and dump systems can reduce fatigue and allow operators to focus more on the path of machine travel.

Throttle lock allows operators to set engine speed. When enabled, auto-deceleration automatically decreases the engine speed to low idle when no operator inputs are applied to the controls and the transmission is in neutral.

All of those features can help improve your production and lower fuel consumption.

Insider Tip: "A high-lift configuration to pair with 150-ton trucks is available, as well as optional add-ons that include KomVision with radar object detection for a bird's-eye view of the machine and its surroundings," said Sebastian Witkowski, Komatsu product marketing manager. ■

See more productivity features of the WA900-8 at <https://www.komatsu.com/en/products/wheel-loaders/surface-mining-wheel-loaders/wa900-8/>



New feature reduces operator fatigue

Want to reduce operator steering input by 80%? Tilt steering control on Komatsu intelligent Machine Control (iMC) 2.0 dozers maintains power to the tracks and automatically tilts the blade for straight travel during rough dozing.

Additional benefits include:

- Reduced operator fatigue
- Greater reduction in track slip
- No surface undercuts

Insider Tip: "Use tilt steering control during heavy cutting applications and when simple grading is off," said Ron Schwieters, Komatsu senior product manager, iMC and hardware. ■



Learn more about tilt steering control and other technological advances in iMC 2.0 dozers and Smart Construction solutions at <https://www.komatsu.com/en/site-optimization/smart-construction/#tab5>



Diversity could be key to growing your business

Statistics show that a diverse staff could be key to growing your business. According to analysis by The Wall Street Journal, the 20 most diverse S&P 500 companies generally performed better financially over five- and 10-year periods. The analysts created a diversity ranking based on ethnicity and age of employees, whether a company has a diversity and inclusion program, the percentage of women leaders, and the board's composition.

A May 2020 report from global management consulting firm McKinsey & Company titled "Diversity wins: How inclusion matters" concurs: "the business case for inclusion and diversity is stronger than ever...The most diverse companies are now more likely than ever to outperform peers on profitability."

For instance, McKinsey & Company found that companies whose executive ranks

were more than 30% female were more likely to outperform companies where the number of women executives ranged from 10%-30%. In the case of ethnic and cultural diversity, the top companies demonstrated similar success.

The McKinsey & Company report also noted two common threads for successful diversity leaders in top performing companies: a systematic approach and bold steps to strengthen inclusion. Fairness and transparency are important to ensure the representation of diverse talent and enable equal opportunities.

That success extends to companies that are inclusive of LGBTQ and nonbinary persons. A Gallup survey released in early 2021 reported that those who identified as LGBTQ in the United States rose to 5.6%, up a percent since 2017.

Research by The Wall Street Journal analysts found that the 20 most diverse S&P 500 companies generally performed better financially over five- and 10-year periods. A McKinsey & Company report showed that the greater the representation, the higher the likelihood of outperformance.





Iris Farley, senior human resources director for Komatsu, said that the construction industry has close ties to the science, technology, engineering and math (STEM) fields that have been highly promoted as careers during the past several years. "Highlighting that construction and mining careers involve operating and working on technologically advanced equipment to gain interest is something we should be doing, as well as showing that you don't have to be male to be in these fields," said Farley.

The Human Rights Campaign (HRC) Foundation's Corporate Equality Index 2021, a survey of leading companies and law firms, showed that the highest number of companies in the annual report's 19-year history — 767 — received top scores for advancing LGBTQ policies. Organizations receiving a 100% score collectively employed over 13 million people.

"Our participating companies know that building an LGBTQ-inclusive workplace is not just the right thing to do — it is also the best business decision — allowing companies to attract, retain and engage top talent," said HRC Foundation President Alphonso David.

Multiple, diverse perspectives

An overall snapshot of the U.S. population shows it is evolving. According to the Centers for Disease Control and Prevention (CDC), one in four American adults has some type of disability, while the 2020 Census, which

counted more than 330 million people, highlighted the changes in the U.S.

For the first time in history, the white population in the U.S. declined. The multiracial population, however, increased nearly four-fold — from 9 million in 2010 to nearly 34 million in 2020. People who checked "white" in combination with another race grew by more than 300%, and Hispanic and Latino, Black, Asian and other minority populations increased as well.

A 2015 Census Bureau report projects that by 2044, the U.S. will no longer have a white majority. By that time, people of color will comprise more than 50% of the population. And while "the non-Hispanic white alone population is projected to remain the largest single group, no group will have a majority share of the total, and the United States will become a 'plurality' of racial and ethnic groups." ■

Editor's Note: This article is excerpted from a longer piece with additional information about diversity and how it could help alleviate the labor shortage in construction. To read the entire piece, visit <https://www.komatsu.com/blog/2022/diversity-could-be-key-to-growing-your-business/>





The My Komatsu
Parts Store makes it
easy to get what you
need to keep your
equipment running
at its best.

Don't have a My Komatsu
account? No problem!

Check out as our guest at
mykomatsu.komatsu

KOMATSU
My Komatsu

To see our full inventory, visit us at aismidwest.com



A Division of AIS Construction Equipment
LANSING, MICHIGAN

MARK: 517-327-2072
WILL: 616-304-1863



HIGHEST QUALITY - LOWEST RATES



KOMATSU PC228USLC-3 STK#: H58699
\$64,900



KOMATSU PC360LC-10 STK#: H58471
\$84,900



KOMATSU PC78MR STK#: U224464D
\$64,900



KOMATSU PC220LC-8 LR STK#: C72073
\$135,500



KOMATSU PW160 STK#: H53961
\$64,900



KOMATSU WA470-6 STK#: U211034
\$119,900



KOMATSU WA320-5 STK#: H59160
\$89,500



KOMATSU WA500-7 STK#: W43769
\$229,500



KOMATSU HM300-2 STK#: U211017
\$199,900



KOMATSU D41P-6 STK#: U224468A
\$99,900



CASE 580M STK#: U218407
\$49,500



KOMATSU WA200-5 STK#: U224464B
\$84,900



JCB JS220 STK#: U224482
\$124,900



KOMATSU PC138USLC-10 STK#: W43788
\$114,500



Caterpillar 906M STK#: U207305
\$89,900



DEERE 750C STK#: H59119
\$49,900

WE'VE GOT YOU COVERED!

All Makes, All Models, All the Time.

The best source for all of your **Equipment, Rental,**
and **Maintenance Needs**



KOMATSU



Visit WWW.AISMIDWEST.COM to view our inventory