



A publication for and about Kirby-Smith Machinery, Inc. customers

Connection

Special Paving Edition

Kirby-Smith paving customers share their stories



Cornell Construction Company
President Johnny Cornell (left) and Project Manager/Estimator John Lee Cornell
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City of Arlington Public Works
Field Operations Manager
Bill Bateman
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J. Lee Milligan, Inc.
VP Bill Cheek Jr. (left) and President Doug Walterscheid
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MESSAGE FROM THE PRESIDENT



Ed Kirby

**Dedicated to
Texas highway
and bridge
construction**



Dear Seminar Attendee,

Welcome to Kirby-Smith Machinery's 2013 Paving Seminar. We truly believe in giving back to those industries that have helped us grow and prosper for the last 30 years, and we are committed to continuing our efforts to ensure you succeed too.

Kirby-Smith has very high standards for the manufacturers we represent. Our product lines from Komatsu, Wirtgen, Hamm, Kleemann, Vögele, Gradall, Gehl, Manitou, and Rosco are world leaders in their industry and they meet our high expectations for service, quality, advanced technology and reliability.

The state of Texas is leading the country in innovative funding and construction design for its future infrastructure and highway transportation needs.

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At Kirby-Smith we are committed to being the "Paving Authority" and your single source for all your highway equipment needs.

We hope you find this seminar informative and a good investment of your time.

Sincerely,

Ed Kirby, President/Owner
Kirby-Smith Machinery, Inc.



Connection

THE PRODUCTS PLUS THE PEOPLE TO SERVE YOU!

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Learn why this city's Public Works Field Operations keeps growing and moving forward.

TEXOP CONSTRUCTION

Find out how experience has helped this Northlake, Texas, milling contractor lay the groundwork for quick success.

CORNELL CONSTRUCTION COMPANY

Check out this Clinton, Okla., contractor's grading and asphalt paving services, provided with quality in mind.

CIMARRON COUNTY

Study the impact a Kleemann crusher has made for two county road maintenance districts, helping them make road products faster and more cost effectively.

AUSTIN INDUSTRIES

See how high-performance mixes and machines provided the fast track to a smooth Formula 1 racetrack for this company.

DURWOOD GREENE CONSTRUCTION

This Texas contractor uses tandem milling to prepare a busy Interstate for a hot-mix asphalt overlay. Read more inside.

MANHATTAN ROAD & BRIDGE

Discover the approach this Tulsa company used to build a new I-244 bridge after demolishing the old one.

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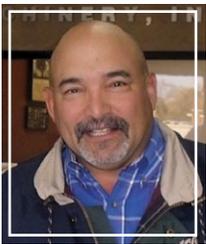
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J. LEE MILLIGAN, INC.

Amarillo paving contractor takes on a larger presence with acquisition of another longtime company



Doug Walterscheid,
President

If you look at the monthly bid lettings and contract award notifications for the state of Texas, J. Lee Milligan would likely be listed several times. Such has been the case for nearly 80 years for the Amarillo paving specialist.

A wholly employee-owned company, J. Lee Milligan has become one of the Texas panhandle's largest regional highway contractors with a speciality in asphalt work. Led by President Doug Walterscheid, the business mainly does public works projects for the Texas Department of Transportation (TXDOT), as well as counties and municipalities.

"Most of the work we do is as a prime contractor that performs nearly everything on a project," said Walterscheid, who joined J. Lee Milligan about 22 years ago. "We have the capabilities to take a project from the natural ground through the finished product. That includes doing concrete work, building structures such as bridges, installing drainage systems, pouring curb and gutter, and, of course, doing the asphalt paving. We sub out some work, but we prefer to do as much as we can."

Large projects often involve building the road's subbase, including placing gravel materials before paving. Most of those materials

are supplied by J. Lee Milligan itself from its portable crushing operations. It also supplies its own asphalt materials from permanent and portable asphalt plants.

In addition to new construction, J. Lee Milligan also does reconstruction and rehabilitation work that includes milling and overlays, and it supplies aggregate and sand for TXDOT projects and private individuals. Walterscheid noted that J. Lee Milligan's projects run anywhere from \$1 million to \$20 million in size.

"We have very good rapport with several developers that we work with continually," said Walterscheid. "That's part of being a diverse company, and it allows us to react and follow market trends. We also work as a subcontractor, which adds to our versatility."

Purchase of Jagoe-Public expands footprint

J. Lee Milligan expanded its footprint about four years ago with the acquisition of Denton, Texas-based Jagoe-Public, a well-respected paving company, which, like J. Lee Milligan, has a storied history. Founded in 1921 by Walker Jagoe as W.M. Jagoe Manufacturing, it claims to be the first company in Texas with an asphalt plant. He also founded Public Construction Company and combined the two businesses into Jagoe-Public in 1950.

"It's said that Jagoe-Public has paved in every county in Texas," said Vice President Bill Cheek, who's been with the company nearly 28 years, joining full time in the early 1980s. His father also worked for the company, and was a general manager at the time Bill came on board. "For a long time the company moved plants to where the work was, but in the late 1960s, a permanent plant was put up in Denton."

Continued . . .



Bill Cheek Jr.,
Vice President,
Jagoe-Public

J. Lee Milligan uses a Wirtgen milling machine on a road rehabilitation project. "Wirtgen products are well-engineered and reliable," said President Doug Walterscheid.





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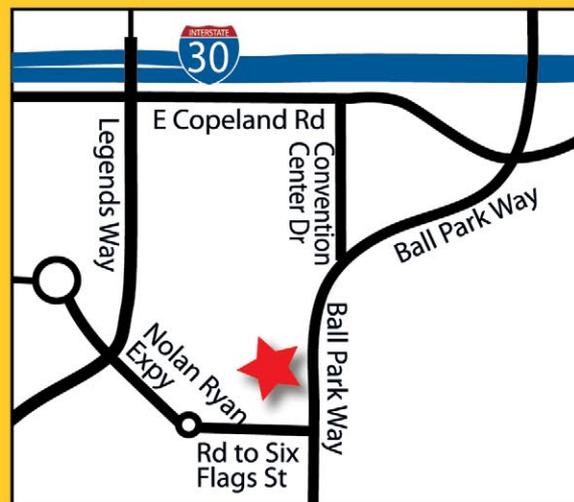
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Alex Hochstein,
Shop Superintendent



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Superintendent

The plant is one of two Jagoe-Public has, with the second in Chico. Mainly a heavy highway contractor, nearly all of Jagoe-Public's work falls into the public sector. It works as both a prime and subcontractor, mainly within a 50-mile radius of Denton, including the Dallas-Fort Worth metroplex. Some of its asphalt materials come from its recycling operations, located at the Denton plant.

"Very much like J. Lee Milligan, we try to handle as much of a project as possible, especially if we're the prime contractor," noted Cheek. "That involves not only the paving, but drainage and wet utilities, as well as some minor concrete. Most of what we do involves reconstruction — either repairing or widening existing roadways, including quite a number of overlay projects. Our jobs typically take anywhere from 15,000 to 100,000 tons of asphalt paving."

Jagoe-Public runs nine crews that consist of five to eight people, depending on the size and scope of a project. Recent projects include three road-widening jobs in Denton County that each took about 60,000 tons of asphalt.

One of the company's largest projects was in Southlake, where in a 10-mile stretch, crews poured about 100,000 feet of curb and gutter. It was part of a six-lane reconstruction of Southlake Boulevard from Highway 114 to the west and included several turning lanes. Jagoe-Public subbed out sidewalk and landscaping work.

"That was a bigger project than we usually do, but it indicates our capabilities," said Cheek. "We were able to do a large portion of it and turn to subs for their specialties, just as other prime contractors turn to us for their paving needs. In either case, we have strong relationships with several other contractors and we believe that's a real positive. We know we can rely on them, and they know they can trust us to deliver a quality project on time and budget."

Employee-owned

Walterscheid credits the people who work for J. Lee Milligan and Jagoe-Public for the success of the two companies. Combined, more than 300 people work under the J. Lee Milligan umbrella.

In addition to Walterscheid and Cheek, key individuals in the J. Lee Milligan family of companies include Board Members Ruth Wall Hudson and Judith Glenn, Vice President Swanson Hagerman and Secretary/Treasurer Tammy Brannon.

"J. Lee Milligan is an ESOP (employee stock ownership plan), which means employees have a direct stake in the success and profitability of the company," explained Walterscheid. "That's a motivating force, but in addition to that, they are

J. Lee Milligan and Jagoe-Public use Hamm smooth-drum and padfoot rollers for compaction on new development sites that require dirt compaction and road projects where aggregate subbase is necessary.

J. Lee Milligan has two WA500-6 wheel loaders, including this one used in screening materials at the Boys Ranch pit near Amarillo. With the acquisition of Jagoe-Public, a well-respected asphalt-paving contractor, the company has become one of the largest highway contractors in the Texas Panhandle.



Go online or scan this QR code using an app on your smart phone to watch video of J. Lee Milligan machines at work.

good people with a solid work ethic. They're cost-conscious and hardworking."

Adding Komatsu and Wirtgen

J. Lee Milligan also expects the equipment it uses to work hard, in addition to being cost-effective and efficient. About two years ago, the company purchased its first Komatsu wheel loaders, two WA500-6s, which are now used in its aggregate operations.

"Our cycle times are faster with the Komatsus, but that's not the only aspect that keeps our costs down," said Shop Superintendent Alex Hochstein who oversees maintenance on the company's fleet. "They're proving reliable, with excellent uptime. The articulation areas, which are wear points we track closely, remain tight. We're very pleased with the WA500s."

Hochstein and staff perform services and maintenance. The company uses parts and occasionally requests help from Kirby-Smith Machinery's Amarillo service department. "We've dealt with Kirby-Smith for a very long time," noted Walterscheid. "We were very happy when Kirby-Smith moved into this area, and in fact, that was one direct reason we chose to buy Komatsu loaders. We knew Kirby-Smith would take excellent care of us."

In addition to Komatsu, J. Lee Milligan and Jagoe-Public have worked with Kirby-Smith — including Amarillo Branch Manager Chuck Thompson, Territory Manager Brady McAlister and Fort Worth Territory Manager Kris Phillips — to purchase machinery from the Wirtgen Group of products. The company uses a W 2100 milling machine as well as W 2500 recyclers and Hamm 3412 and 3410 rollers.

"The Wirtgen products are well-engineered and reliable," said Walterscheid. "That's important in our business because any downtime can obviously set a project schedule back. We're very conscientious about the equipment we buy and rent. We believe Kirby-Smith carries the best lineup in the market, and they've always delivered when it comes to sales or rentals."

Hopeful for the future

Despite challenging economic conditions, J. Lee Milligan and Jagoe-Public have remained

fairly busy. Walterscheid and Cheek both are cautiously optimistic that will remain the case.

"Investing in infrastructure is something we believe can really boost the economy," observed Cheek. "Continuing to do that will make the country more competitive and put many people back to work. It provides real value."

"There's a real need for new roads in Texas and the rest of the country," Walterscheid pointed out. "It's especially important to provide connectivity from rural areas to metropolitan areas. That's where we do much of our work, so we're hopeful that we will be part of that growth." ■



Kirby-Smith Amarillo Branch Manager Chuck Thompson (left) meets with J. Lee Milligan President Doug Walterscheid.



Crusher Foreman Johnny Romero (left) visits with Kirby-Smith Territory Manager Brady McAlister at one of J. Lee Milligan's crushing operations.

Kirby-Smith Territory Manager Kris Phillips (left) meets with Jagoe-Public Superintendent Greg Huff at the company's Denton office. "Our relationship with Kirby-Smith has grown, especially since we became part of J. Lee Milligan," said Huff. "They've been very good to work with and the machinery they carry is top-of-the-line."





CITY OF ARLINGTON

Public Works Field Operations keeps growing and moving forward



Bill Bateman,
Field Operations
Manager

Every time the Dallas Cowboys play a home game at Texas Stadium, the City of Arlington Public Works and Transportation Department plays a role ensuring traffic flows smoothly in and out of the stadium. The task is handled by the city's Public Works Traffic Engineering and Field Operations staff, which began performing that duty when the Cowboys opened their new \$1.3 billion stadium in Arlington in 2009.

"There's a lot of planning that takes place before every event that's held there, not just the football games," explained Field Operations Manager Bill Bateman, who's been with the City of Arlington nearly 20 years. "From the time we knew the Cowboys were going to build their new stadium here until now, we've constantly been working with our traffic engineering staff on signal adjustments, traffic-control plans and signage."

The City of Arlington began work on the stadium in 2005, not long after the Cowboys

signed a deal with the city to move there from their previous home in Irving. The 20-story main structure, which sits on about 140 acres, took four years to complete. The City of Arlington committed \$325 million to the construction, \$70 million of which went into land acquisitions.

As the land was acquired, the city began the task of clearing the way for construction by filling in swimming pools at abandoned apartment complexes on the site, as well as debris removal and land clearing. That set the stage for the city to hire out the demolition of streets and buildings.

Planning for the "Big Game"

Before and during the process of demolition and building, the City of Arlington mapped out plans to ensure as little disruption to traffic patterns as possible. The city takes the same approach when events are held at the stadium, as well as during Texas Rangers games at Ranger Ballpark in Arlington, which is just down the road from the Cowboys' home. The planning paid off as the city prepared for handling the huge crowd at the 2011 Super Bowl at Texas Stadium.

"Safety and security are of utmost importance," stated Bateman. "We started gearing up for the Super Bowl more than a year in advance, figuring in several contingencies. For instance, one of our biggest concerns was possibly having snow and ice during that time. So, we stockpiled additional sanding material to cover the event, and had plows and other equipment ready. Our entire staff was on call 24 hours a day during Super Bowl week."

The City of Arlington's Field Operations staff totals about 100 people, which Bateman said was split into 12-hour shifts during Super

City of Arlington Operator Amado Perez and Screenshot Man Fausto Gamez use a Vögele Super 700 paver to lay asphalt on a residential street in Arlington.

The City of Arlington's main production machines are two Gradall XL 4100 excavators. "Two major advantages of the Gradalls are the telescoping boom, which will go out nearly 30 feet, and the ability to rotate the bucket or attachment up to 210 degrees," said Field Operations Manager Bill Bateman.

Bowl week. The staff is usually split into multiple crews that handle the daily street maintenance as well as responding to the 4,000 to 5,000 citizen requests that come in each year for items such as potholes that need filling.

Efficient use of taxpayer dollars

The city continues to grow, with a population now of about 380,000, and because of that, the Public Works Field Operations is split into north and south divisions. Bateman oversees the south and Allen Jones the north. The city maintains two locations to better serve the public.

"We're very proactive, with good preventive maintenance programs that we believe are designed to make efficient use of taxpayer dollars," Bateman said. "We use a comprehensive pavement management system to assign a rating to each street. That tells us which streets require minor maintenance or become candidates for a complete rebuild. We're part of a road, water and drainage committee that puts together a rolling three-year street maintenance and water utility plan. The committee meets once a month to discuss long-range planning and coordination of construction activities.

"In addition to that, we maintain 345 traffic signals, 43,000 signs and more than 2 million linear feet of pavement markings," he added.

"We're also responsible for severe weather operations such as snow and ice, flooding and anything else that might be a disruption. Splitting field operations into two divisions helped make us more efficient by cutting travel times, for example."

Bateman pointed out that street work isn't the only function of the City of Arlington's Public Works Field Operations. It also cleans out culverts and under bridges, as well as cleaning up graffiti and handling other projects that are part of the city's upkeep. All employees are cross-trained to handle anything that falls under field operations duties.

Versatile machinery from Kirby-Smith

In addition to manpower, the City of Arlington Public Works Field Operations keeps a well-maintained fleet of versatile equipment. Its main production machines are two late-model Gradall XL 4100 excavators. The city worked with Sol Gieser, Kirby-Smith Machinery's Texas Governmental Sales Manager to purchase the new Gradalls, which replaced two Gradall 4100s purchased in 2000.

"There are two major advantages of the Gradalls; one being the telescoping boom

Continued . . .



Go online or scan this QR code using an app on your smart phone to watch video of the City of Arlington's machines at work.

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Equipment versatility keeps costs down, productivity up

... continued

which will go out nearly 30 feet," said Bateman, of the 47,000-pound-plus excavators. "That gives us the flexibility of working in close on things such as pavement removal, or getting out farther for items such as culvert and ditch cleaning. Another advantage is that the bucket or attachment can be rotated up to 210 degrees, so on projects such as ditch cleaning, we can follow the contour more efficiently.

"That versatility allows us to do more with one machine as opposed to having multiple pieces of equipment, which would obviously cost us more," he added. "Our costs are further reduced because we can drive the units from

jobsite to jobsite, so our transportation expenses remain low. Once we get to the jobsite, they're ready to go without much setup."

Bateman said the City of Arlington added to its efficiency when it purchased a Vögele Super 700 asphalt paver from Kirby-Smith. The city uses the 60-horsepower paver with an electrically heated screed on small paving and patching jobs, compacting the asphalt with a Hamm HD 12 tandem roller.

"We mainly use the Super 700 paver on streets in areas where we have to take out a small section of pavement and replace it with an overlay, usually of about two inches," Bateman explained. "We were trying to do that by hand, and it often came out a little rough. The Vögele paver allows us to put down a smoother course, and we can adjust the width it paves to meet our needs."

Kirby-Smith Machinery provided training on all products, and the City of Arlington contracted a maintenance agreement with Kirby-Smith for the Gradalls. "Kirby-Smith has the expert knowledge on those machines; they're the specialists, so we believe the maintenance agreement was a good move to ensure maximum productivity and uptime. We've worked with Sol Gieser for a very long time, and bought parts from Kirby-Smith, so we know they'll take care of us and stand behind the machines."

A never-ending process

That will continue to be important going forward, according to Bateman. Keeping costs down is a critical component of maintaining public works operations.

"What we do is a never-ending process, and part of that process is constantly working to improve our efficiencies and productivity," said Bateman. "That may mean adding more machines, or finding new ways to utilize what we have, such as looking at new attachments. No matter what, we have to be ready with long-term plans, but flexible enough to handle emergencies that come our way. The public expects us to respond to those and keep our roads in good working order. It's our job to ensure that happens." ■



City of Arlington Roller Operator Richard Clayton uses a Hamm HD 12 tandem roller to compact asphalt.

Kirby-Smith Machinery's Texas Governmental Sales Manager Sol Gieser (third from left) provided training to City of Arlington when it purchased new Gradall XL 4100 excavators. With Gieser are (L-R) Stephan Fischbach, Mike Norton, Filadelfo Martinez and Fausto Gamez.



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TEXOP CONSTRUCTION

Experience helps Northlake, Texas, milling contractor lay the groundwork for quick success



Danny Simpson,
Owner



Go online or scan this QR code using an app on your smart phone to watch video of TexOp Construction's machines at work.

TexOp Construction begins its ninth season in the milling and highway construction industry in March, crediting its strong start to nearly 70 years of combined staff experience in the industry. Owner Danny Simpson and his wife, Anne, launched the construction company in 2005 with their son Daniel and mechanical expert Richard Webb. Thanks to the support of general contractors who knew that they could count on TexOp to deliver, the company grew rapidly. Currently, TexOp has a team of more than 40 employees, including Chief Estimator James Davis, and Office Manager Tonia McCloud. Today the company averages 10 projects at any one time.

"Because my background was in milling, that has always been the focal point of TexOp," explained Simpson. With the experienced personnel who came on

board, TexOp immediately began quoting milling jobs across the state. Within the first year, Simpson was able to keep three milling machines busy. For Simpson, being confident that the work would be done on time and within budget was important. "Our employees deserve much of the credit because they are willing to do whatever it takes, and go wherever is necessary to please our customers," Simpson emphasized.

Concentrating on the customer

Sometimes that means traveling a good distance to get a job done. TexOp travels across a four-state area. "From the beginning, Wirtgen was the product of choice," Simpson confirmed. "The machines are well-designed and thoroughly tested. I've always been impressed with Wirtgen's technology and production, but even more impressed with its durability. This is so important when it comes to milling, which is hot, dusty, and an all-together tough application. Customers count on our ability to respond promptly and complete projects with quality. To do this, we knew that we needed equipment that we could count on."

Simpson's first purchase, a W 2000 milling machine, was shipped directly to TexOp's job site. "In the beginning, it was the only machine we had, so it ran 24/7. It gave us good production and never missed a beat. We have had similar experiences with every Wirtgen milling machine we've owned," Simpson noted.

Throughout its eight-year history, the jobs TexOp Construction has taken on have grown increasingly larger. Despite the

TexOp's headquarters is located in Northlake, Texas. The building contains office and shop facilities.



TexOp purchased this Wirtgen W 2200 milling machine from Kirby-Smith Machinery. "It cuts twelve and one-half feet, and with extensions we can go more than 14 feet," said Owner Danny Simpson. "The W 2200 allows us to mill a full lane and zero-out the shoulder as we go."

name, TexOp, short for Texas Operations, the company works beyond the Lone Star state. Simpson estimates that 80 percent of the company's work is in Texas, with about 30 percent of that total in the Dallas-Fort Worth area. The remaining 20 percent is spread throughout Oklahoma, Arkansas and New Mexico. Simpson noted that TexOp is in the initial process of providing service in Louisiana.

"For the most part, we've found our niche as a subcontractor," Simpson pointed out. "The general contractors like that we offer them more than just bringing in a mill and taking up the asphalt. TexOp's employees are certified for traffic control, so we can come in and set up, mill, sweep, clean, and stockpile the material. We do a complete job, and customers like that."

Wirtgen from the start

A couple years ago, TexOp worked for one of its repeat customers on Interstate 30, east of Dallas. The company ground up about 800,000 square yards of materials as it milled 16 miles of asphalt at a three-inch depth. The asphalt was hauled to a Department of Transportation stockpile. To handle the Interstate 30 project, TexOp used a Wirtgen W 2200 milling machine purchased from

TexOp Construction uses one of its Wirtgen W 2000 milling machines on a project in Fort Worth. "I've always been impressed with Wirtgen's technology and production, but even more impressed with its durability," said Owner Danny Simpson. "The latter is essential when it comes to milling, which is hot, dusty and an all-together tough application."

Kirby-Smith Machinery with the help of Greg Otts, Vice President of Major Accounts.

TexOp now has nine Wirtgen milling machines, most of which are W 2000 models. "The 900-horsepower Wirtgen W 2200 falls right in line with the others in its durability,

Continued . . .



Daniel Simpson,
Texas Area Manager

Hard work, good service builds business

... continued



James Davis,
Chief Estimator

but offers more in terms of cutting width," Simpson observed. "It cuts 12 and one-half feet, and with extensions we can go more than 14 feet, which is quite a bit more than a W 2000. The W 2200 allows us to mill a full lane and zero-out the shoulder as we go, compared to the W 2000s, which are basically half-lane machines. Both sizes have their place, so the W 2200 isn't always an

advantage over the W 2000s. It just gives us flexibility in determining the best fit on a particular job."

With a full-time mechanic, TexOp handles service on its Wirtgen products with parts supplied by Kirby-Smith. TexOp also runs Broce Brooms sold by Kirby-Smith. "Greg Otts and everyone we've worked with at Kirby-Smith have been terrific," Simpson stated. "They keep common wear parts, such as filters, immediately available. They're fairly new to the Wirtgen line, but Kirby-Smith has done an outstanding job of identifying our needs and ensuring we have what we need quickly. They're competitively priced, which we appreciate."

Otts says that product support training plays a large role in Kirby-Smith's ability to respond quickly and efficiently to customers' service needs. "Kirby-Smith Machinery has invested more than \$1 million in training our service personnel companywide, and the Wirtgen product line was a large part of that investment. We have product-specific service technicians dedicated to staying up-to-date with all the Wirtgen products, especially the mills."

Dedicated to the long haul

TexOp Construction's size is right in line with what Simpson had planned for the company, however he's looking at opportunities to expand, if they're the right fit.

"I believed this is where we'd be at this point when I started," Simpson said. "We've been able to get here with hard work, good service and reinvesting in the business.

"We are dedicated to being around for the long haul. Certainly, if there are ways to grow, we'll take a look at those as long as they don't detract from our ability to complete projects on time and budget," he concluded. "That's what our customers expect, and if we don't do that, they'll go elsewhere. We're intent on not letting that happen." ■



TexOp Construction's Owner Danny Simpson (left) worked with Greg Otts, Kirby-Smith Vice President of Major Accounts, to purchase a Wirtgen W 2200. "Greg and everyone we've worked with at Kirby-Smith have been terrific," Simpson stated.

Following milling, TexOp uses Broce Brooms to sweep.

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Go online or scan this QR code using an app on your smart phone to watch video of Cornell Construction Company's machines at work.

Cornell Construction Company began in 1961, but the history of the Clinton, Okla., company can be traced back to World War II. During the war, founder John Loflin Cornell was part of a second wave of Marines to hit the beach at Guadalcanal, one of the first major offensives against Japan.

Operating a bulldozer, John Loflin's job was to help clear the way for supplies to the troops. It was his first experience working equipment, and sparked his interest in starting his own construction company. After returning to his hometown of Paducah, Texas, John Loflin leased a filling station where he worked during the day and hauled gas at night. Eventually, he took the money he made and purchased a bulldozer and a ship anchor chain.

"He hooked the chain onto the dozer and cleared mesquite for some of the largest ranches in Texas," explained his son, Johnny, now Owner and President of Cornell Construction. "By the mid-1950s, he'd saved enough to come to Oklahoma and try his hand at soil conservation, building ponds and dams."

With a firm foothold in Oklahoma, John Loflin decided to branch out into highway work. Within a few years he had a fleet of more than 20 scrapers to handle a growing grading business. In 1970, he added an asphalt plant and began paving the highways too. Since then, Cornell Construction Company's focus has remained on grading and asphalt paving for Oklahoma Department of Transportation projects, mainly in the western half of the state.

"During the '60s and '70s, I got my first experience in grading and paving," said Johnny. "In seventh grade, I was on a survey crew, and I was running a scraper about the same time. It's all I've ever done, and it's something I continue to enjoy."

Like his father, Johnny began putting his three sons into the field. His oldest, John Lee, has a master's degree in civil engineering and is the company's Project Manager and Estimator. He's part of a 40-member staff that performs asphalt paving and grading.

Big jobs, experienced staff

Cornell Construction recently completed a \$2 million project near Roosevelt that involved milling and overlaying a six-mile stretch of U.S. Highway 183. It required about 30,000 tons of asphalt.

Second-generation Owner/President Johnny Cornell (left) oversees operations of Cornell Construction Company. His son John Lee is Project Manager and Estimator. The Clinton, Okla., company offers paving and grading services.



Cornell Construction Company added a Vögele Vision 5200-2 paver in November 2011. "It fit everything we were looking for, and when we demo'd it, we knew it was the right machine," said Equipment Manager Gene Priddy. "Paving is all about production, and the Vögele delivers because its engineering and technology are top-of-the-line."

The paving crew then moved to an Interstate 40 job near Erick, before heading back to Clinton for an \$8 million widening project to expand Highway 183 from two to four lanes for six miles between Clinton and Arapaho.

Through the years, Cornell Construction has completed projects like these on some of the state's most recognizable routes, including the Indian Nation, H.E. Bailey and Chickasaw Turnpikes, Interstates 40 and 35 and "nearly every state highway in western Oklahoma," according to Johnny. "In fact, we've maintained, rehab'ed and widened some of the same roads my dad worked on and originally built."

He credits an experienced staff for helping Cornell Construction complete projects on schedule and on budget. In addition to his son John Lee, key individuals include Asphalt Paving Superintendent David Wolf, Asphalt Foreman Ricky Sifuentes, Grading Foreman Chris Thompson, Asphalt Plant

Continued . . .



For earth compaction, Cornell Construction recently added a Hamm 100-horsepower 3410P padfoot roller that features an 84-inch drum and hydrostatic steering. "It provides very good compaction," said Equipment Manager Gene Priddy. "Our guys really like its maneuverability and production."

Productive equipment helps meet jobsite challenges

... continued



Gene Priddy,
Equipment Manager

Manager Tony Burch, Quality Control Manager John Florer and Equipment Manager Gene Priddy.

“Having experienced people I can trust is invaluable,” acknowledged Johnny. “I have employees who have been here a decade or more and worked their way up. For example, Ricky Sifuentes started as a flagger and is now a foreman. I can’t say enough about how hard all my employees work and how willing they are to make sure everything is done right. There are times we’re working seven days a week, but they don’t complain. They know our name is on each and every job they do, and they take that personally. They’re my best assets and the reason why we’ve won numerous awards for our work throughout the years.”

Adding Wirtgen Group machinery

Coming in a close second would be the equipment Cornell Construction uses, including new machines from the Wirtgen

(L-R) Cornell Construction Company Owner/President Johnny Cornell and his son, John Lee, who’s Project Manager and Estimator, meet with Kirby-Smith Machinery Territory Manager Brad Howard on a jobsite in Roosevelt, Okla.



Group of products purchased through Kirby-Smith Machinery with the help of Territory Manager Brad Howard. In November 2011, the company added a Vögele Vision 5200-2 paver with a paving width up to 28 feet and a laydown rate of 1,300 tons per hour.

“We were looking for a mainline paver replacement,” said Equipment Manager Gene Priddy. “We did some basic comparisons of pavers at the most recent CONEXPO, and the Vögele stood out. I contacted Brad, and he arranged a trip to the factory. I was impressed with the manufacturing processes, so we set up a demo. We really liked how well it operated and laid down the mat and were impressed with the 5200’s engineering and technology. I came from a background that included working for the company that made the previous brand we owned, so for me to switch, the Vögele had to have significant advantages. It fit everything we were looking for, and when we demo’d it, we knew it was the right machine. Paving is all about production, and the Vögele delivers, because its engineering and technology are top-of-the-line.”

For earth compaction, in spring of 2012, Cornell Construction bought a 100-horsepower Hamm 3410P padfoot roller that features an 84-inch drum and hydrostatic steering. “It provides very good compaction,” reported Priddy. “Originally, we leased the Hamm, but after using it awhile, we decided to buy. Our guys really like its maneuverability and production.”

As good as the equipment is, Johnny said he probably wouldn’t have considered buying it if it wasn’t for Brad Howard and Kirby-Smith. “That was the ultimate deciding factor in going with the Vögele and Hamm products. Brad, Bud Sears, our Product Support Rep, and Kirby-Smith in general understand how critical it is to minimize downtime and support our machinery. I’ve known Ed Kirby for a long time. He promised me that Kirby-Smith would take care of us, and I took him at his word because I know he’ll stand behind it.” ■

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CIMARRON COUNTY

Kleemann crusher helps two districts make road products faster, more cost effectively

Cimarron County, Okla., is undeniably big. With a landmass of nearly 1,900 square miles, it's the state's second-largest county. Connecting the townships that fall within the county is a mix of about 1,600 miles of asphalt, concrete, gravel, caliche and dirt roads.

To cover all the road maintenance that's needed, the county is split into three districts of a little more than 600 square miles each. Each district has its own County Commissioner to oversee such items as rerocking gravel roads, blading dirt byways and chip sealing overlaying asphalt pavements. Each district has about 10 full- and part-time employees who are cross-trained to run equipment, drive trucks or work as laborers.

"The majority of our roads are considered rural, and in most cases that means

unpaved," said John Freeman, District 2 County Commissioner. "And the majority of those tend to be caliche-based. It's a hard product, almost like concrete. It makes for a fairly solid surface."

Making caliche even more attractive as a road surface is its abundance in Cimarron County. Districts 2 and 3 get the material from a leased pit about 15 miles east of Boise City, the county seat. Through the years, they've harvested it in several ways, including pushing it up in a pile with dozers and crushing it. About 11 years ago, they switched to a soil reclaimer that picks up the material and grinds it.

"The reclaimer is really meant for grinding pavement, but it worked OK in the pit," said District 3 Commissioner Tommy Grazier. "The problem is that it's very inefficient and not cost-effective in that environment. The material is very hard in places, so the reclaimer wouldn't pick it up. We could never keep up with our needs and, on top of that, we were replacing almost 100 teeth a day. That got very expensive."

"Never misses a beat"

About two years ago, Freeman and Grazier began looking for a new reclaimer. They contacted Kirby-Smith Machinery, and Territory Manager Britt Stubblefield paid them a visit to discuss options. The commissioners decided a new 390-horsepower Kleemann MR 110 Z impact crusher with a 350 tons-per-hour feed capacity was their best choice

"Britt showed us that a new crusher would serve our needs much better," said Freeman. "Another problem with the reclaimer was that it didn't make a consistent product. So, when

District 3 Commissioner Tommy Grazier (left) and District 2 Commissioner John Freeman lead teams that oversee road maintenance in Cimarron County, Okla. The county has more than 1,600 miles of paved, gravel, caliche and dirt roads.





we sent material out to a road, there would be everything from small pebbles to some fairly sizeable rocks, which are hard to blade. The Kleemann crusher always makes the inch-and-three-quarter size we need. That cuts down our blade time because all the material stays on the road. When the blade operator is done, there's no cleanup to remove large rocks."

"An additional advantage is that it allows us to make more product faster and stockpile it," added Grazier. "With the reclaimer, it would take two to three months to grind up enough material to do one mile of road. We can easily get it in days with the Kleemann crusher. In the first five months we had it, we stockpiled more caliche than we had in 15 years."

Freeman and Grazier point out that when caliche and gravel are spread on a road, it's advantageous to have fines in it to help bind the material together. They had trouble getting enough fines with the reclaimer.

"At first we had the same issue with the Kleemann crusher, but we figured out that the prescreen was taking that material out," said Freeman. "We put a blank in it, and solved the problem. The biggest issue we've had since then is keeping up with the crusher's production. We're running two loaders, and at times dumping rocks as large as four to five feet in diameter. The crusher never misses a beat."

Already saving time and money

To ensure the MR 110 Z would operate to its full capacity, Stubblefield and other Kirby-Smith personnel, as well as Kleemann representatives, trained the district's employees on how best to use the crusher. Kleemann personnel stayed on site for a week.

"The measures Kirby-Smith and Kleemann took to ensure our satisfaction are impressive," said Freeman, who's been a commissioner for seven years. "They spent a lot of time listening to us, and gave us a chance to try the crusher before we made a full commitment. I've worked with Britt and Kirby-Smith on other equipment purchases, and they've always been honest and dependable, so I knew they'd stand behind the crusher purchase."



Cimarron County Districts 2 and 3 teamed up to purchase this 390-horsepower Kleemann MR 110 Z impact crusher with a feed capacity of 350 tons per hour. "It allows us to make more product faster and stockpile it," said District 3 Commissioner Tommy Grazier. "In the first five months we had it, we stockpiled more caliche than we had in 15 years."



Cimarron County District 2 Commissioner John Freeman (left) met with Kirby-Smith Territory Manager Britt Stubblefield at the county's material pit. "The measures Kirby-Smith and Kleemann took to ensure our satisfaction are impressive," said Freeman. "They've always been honest and dependable, so I knew they'd stand behind the crusher purchase."

"Below the caliche is gravel, and with the crusher, we get to it quicker," continued Freeman. "That saved us quite a bit considering we were hauling in gravel from about 120 miles away." Freeman and Grazier already have plans for the 100,000-pound Kleemann MR 110 Z crusher beyond using it for caliche and gravel.

"As we become more proficient in using the crusher, I see us being able to make our own rock for chip sealing and other products as well," explained Grazier. "It was a big investment for the county but it's already saving us time and money and will easily pay for itself in a short amount of time."

When the districts purchased it, they made sure it had a magnet. "I have several tons of concrete piled up, some of which has metal in it," noted Freeman. "Now we can crush that for use on the roads too. I can honestly say it's the best piece of equipment we've ever purchased." ■



AUSTIN INDUSTRIES

High-performance mixes and machines provide the fast track to smooth Formula 1 racetrack

Reprinted with permission from Wirtgen America.

Although spectators might not be aware of it when watching Formula 1 race cars speed around a track, the track itself is crucial to the performance of the cars. Last summer, Austin Industries of Dallas, Texas, took on the challenge of laying three courses of high-performance pavement at the new Circuit of The Americas (COTA) Formula 1 track just southeast of Austin, Texas.

The 3.4-mile track features 20 turns — some extremely sharp — plus inclines and a straightaway. Track width varies from 32 to 52.5 feet, accommodating speeds approaching 200 mph. The maximum change in elevation is nearly 133 feet. The track itself sits on 350 acres of the 1,000-acre Circuit of The Americas site. Overall, the project represents a private investment of approximately \$400 million.

Executed in the midst of other crews working to erect administration buildings, grandstands, an amphitheater, an observation tower, fences and landscaping, the paving at COTA took a

little more than four months. Each of the three lifts of asphalt was specifically designed to meet the standards of the FIA (the sanctioning body Fédération Internationale de l'Automobile) and the rigors of the central-Texas climate. The base course supports the vertical forces of the cars, the binder or intermediate course supports the horizontal forces of the cars during acceleration and breaking, and the wearing course provides grip at high speeds.

The combination of strict smoothness specs, a tight schedule, rigorous mix designs and having to work in the public eye meant a challenging project that would tax the best contractors. In addition, Austin Industries crews had to work in blazing-hot weather conditions that sometimes exceeded 100 degrees week after week.

Massive project

During construction of the entire project, some 3.25 million cubic yards of earth were moved — enough to fill a one-third-mile-deep hole the size of a football field. The track alone required approximately 700,000 cubic yards of material.

For its part of the project, Austin Industries crews excavated approximately 10 feet of Texas clay the entire length of the track. They then placed a black, 30-millimeter, polyethylene liner along the length of the grade as a separation layer. Workers followed up with seven feet of sandy, clayey-loam select fill, 1.5 feet of pit-run clayey-sand and six inches of crushed, recycled concrete aggregate (RCA). As a final step before paving, crews placed six inches of crushed limestone flex-base.

For the three pavement courses, crews placed 3.1 inches of hot-mix asphalt (HMA) base course, a two-inch binder course and a 1.6-inch wearing course, for a total asphalt pavement depth of 6.7 inches.

Austin Industries of Dallas, Texas, proudly flew a checkered flag on its paving equipment as it worked on the Circuit of The Americas Formula 1 racetrack.





Austin Industries relied on a fleet of Wirtgen Group machines, including these Hamm rollers, to achieve the exacting pavement smoothness standards at the new 3.4-mile Circuit of The Americas Formula 1 racetrack. "In my opinion, the Hamm rollers are bulletproof," said Tom Byrum, Austin Industries management team member. "We've had great success with them."

The track required a total of approximately 80,000 tons of HMA, with about 10,500 tons of surface mix on the wearing course alone. Austin Industries placed a total of 21,000 tons of critical wearing course, including the paved runoffs and verges.

"This is the only purpose-built Formula 1 race track in the United States, and it's the first one we've ever been part of," said Tom Byrum, management team member for Austin Industries. "We had to be on top of our game, because when the track opened in November 2012, the whole world of racing was watching."

Getting 60 people, 40 trucks, a hot-mix plant, four paving machines and six to 10 rollers to all move in concert, knowing exactly where to be every minute, was a daunting task, he noted.

"There are many differences between building a Formula 1 track and a high-level Interstate-type highway," Byrum observed. "No. 1, the surface mixture is a high-performance friction course with a high level of skid resistance, and asphalt cement represents 6.5 percent of the mix. At PG 82-22, the liquid asphalt was highly modified with SBS polymer. It could be considered a Superpave mix, very similar to a stone-matrix asphalt, with high binder content and gap-graded aggregate, providing rock-on-rock contact with minimal fines. It had to be durable and skid-resistant."



Using four Vögele Super 2100-2 pavers in echelon, the paving crew from Austin Industries places a two-inch binder course on the Circuit of The Americas racetrack.

Flat and elongated particles were suppressed in these mixes, Byrum said. "During crushing, it's always optimum to obtain cube-shaped or rounded aggregates. That being said, we had to use aggregate that would crush into that shape. We chose hard limestone-dolomite aggregate with a sandstone from Marble Falls. All aggregates were sourced in central Texas."

Strict smoothness specs

According to Byrum, the smoothness specs were the toughest aspect of the job. "More than anything,

Continued . . .

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Smoothness specs present special challenge

... continued

the flatness spec is what made this a huge challenge. The surface course had a very tight specification for smoothness, two millimeters over four meters (0.08 inches over 13 feet)."

Meeting those specs on the top layer meant each lift below also had to be super-smooth. The 3.1-inch-deep base course had a PG 64-22 binder with a smoothness spec of four millimeters over four meters (0.16 inches over 13 feet), while the two-inch-deep intermediate "binder" lift in the middle had PG 76-22 liquid asphalt, with a little SBS modifier in it, and a smoothness spec of three millimeters over four meters (0.11 inches over 13 feet).

How the asphalt courses were laid was as important to the smoothness as their makeup. While Austin Industries crews placed the base course using a single paver, the binder and wearing courses were placed by pavers in echelon, or at the same time, to eliminate cold joints. "We had a V-shaped paving operation, with two pavers on the outside, trailed by a third paver in the middle," Byrum described. "This had to be a continuous process and we could not stop throughout the pass. We placed transverse joints at intervals where cars will be driving slowest, and the longitudinal joints are virtually nonexistent due to the echelon formation. We used a fourth paver in echelon with the other three where ramps widened the paving width for verges and runoffs."

Equipment helps meet specs

The specifications required using pavers with compaction, and the team selected Vögele Super 2100-2 pavers with AB 600-2 TP2 high-compaction screeds. The paving crews also employed a Vögele Super 800 paver with AB 200 TV screed to pave some narrow runoff areas bordering the main line.

The high-compaction screeds on the Super 2100-2 pavers have a leading-edge tamper bar and two trailing-edge pressure bars. The pressure bars were used in conjunction with the tamper bar to place the limestone flex base and base course.

"For the binder and wearing courses we used the tamper bar in front, but not the pressure bars in back," Byrum recalled. "Without the pressure bars, we got about 88-percent to 89-percent density. When we turned them on, we got 91 to

92. But our consultant preferred that we not use the pressure bars as the aggregate might fracture. In response, we rolled it a little bit more."

Also on the project were a number of Hamm rollers, including five HD+ 120 VV HF rollers, used on the wearing course, four HD+ 90 VV-S compactors with split drums for easier compaction without tearing on curved sections, three GRW 280 pneumatic rollers and one HD 14 VV compact roller.

The small HD 14 VV roller was useful for rolling up against positive and negative curbs, and with its edge-rolling attachment, it formed a beveled edge on the lifts. The HD+ 120 VV HF rollers were put to work on the wearing course, where the roller configuration changed.

Continued . . .



Hamm GRW pneumatic rollers served as intermediate rollers to knead and fix the surface of the racetrack mat.

Austin Industries used its Wirtgen W 210 cold mill to correct pavement smoothness, remove obstructions and handle trimming at the Circuit of The Americas racetrack near Austin, Texas.



“First-class” track makes its debut

... continued

The specified split-drum rollers have drum sections that turn at slightly different speeds on tight radii. “The split-drum was ideal for making tight turns on the sharp corners we had to pave and compact,” Byrum commented. “If we didn’t use the split-drum, the mat would have shoved and pushed and cut on those sharp turns.”

Outside of the sharp turns on the binder course, the HD+ 90 VV-S split-drum compactors also served as breakdown rollers in back of the pavers for all three courses. “The split-drum worked fine on the rest of the track too,” he reported.



Because pavement specs for the Circuit of The Americas racetrack required pavers with compaction, Austin Industries used Vögele Super 2100-2 pavers with AB 600-2 TP2 screens, which have a leading-edge tamper bar and two trailing-edge pressure bars.

Austin Industries paving supervisors use a beam to check the critical smoothness of the binder course on the Circuit of The Americas racetrack.



Byrum said the pneumatic rollers served as intermediate rollers to knead and fix the surface of the mat. “This mix was somewhat tender so we kneaded it using those rollers. But on the wearing course, the pneumatic rollers were not allowed, except at the very end of the rolling train, and that was a whole other challenge.”

Specification for the binder course breakdown rolling was 94-percent to 97-percent density, and the rollers obtained 96 percent. In general, density specs for each lift were in that range, with the wearing course a little higher.

To correct pavement smoothness, remove obstructions and do trimming, workers used a Wirtgen W 210 cold mill. “It made ‘smart’ repairs — very minute repairs to the surface that allowed us to meet specification,” Byrum said. “The W 210 shaved off infinitesimally thin layers to make the lift as smooth as possible.

“We’ve had many, very positive experiences with Wirtgen mills, Vögele pavers and Hamm rollers,” Byrum attested. “In my opinion, the Hamm rollers are bulletproof. We’ve had great success with them, and I’m a huge fan of the Wirtgen milling machines. The Vögele pavers are well-designed and work well for us. When we looked at the specifications and the choice of machines, the decision to go with Wirtgen Group products was pretty much a slam-dunk for us.

“Everyone involved with this project, including Wirtgen America, gave 110 percent, partnering together to make this project a success,” Byrum acknowledged. “They were here whenever we needed them to help us be successful, and we could not have done it without them.”

Thumbs up from FIA

All Formula 1 circuits must be inspected and approved by Charlie Whiting, who directs racing, safety and technical matters for FIA, before they can conduct Grand Prix racing. “Everything I’ve seen has been absolutely first-class,” Whiting said of the Circuit of The Americas track. “It’s built to the highest quality, exactly as we expected.” Whiting approved the new track for Grade 1 status, which is the highest distinction awarded to a motorsports venue. The passing grade cleared the way for the circuit to conduct Formula 1 racing at its debut race last November. ■

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DURWOOD GREENE CONSTRUCTION

Texas contractor uses tandem milling to prepare Interstate for hot-mix asphalt overlay

Durwood Greene Construction Co. of Stafford, Texas, faced several challenges when it undertook an asphalt-overlay project on busy Interstate 10 west of Houston.

The project for the Yoakum District of the Texas Department of Transportation, which encompassed both eastbound and westbound main lanes, including shoulders, called for a mill-and-fill surface overlay on 16 miles of Interstate in the vicinity of Sealy, Texas, some 50 miles due west from downtown Houston. Durwood Greene began working on the job in September 2011.

The existing pavement structure was an approximately 17-year-old asphalt overlay over jointed concrete pavement. The asphalt overlay

had developed rutting in the wheel paths and the underlying concrete pavement's transverse joints had also reflected through the existing asphalt surface.

"Originally, we were tasked with milling the end points of the pavement at transverse joints, to provide smooth tie-ins at the bridges and end points," said Matt Downing, Durwood Greene Project Manager and Safety Officer. "We also were to mill underneath overpasses so we would not raise the elevation of the driving surface below bridges. But the state noted that preconstruction, high-speed, profile-ride data showed that the left westbound main lane had a high number of bumps and dips — in excess of 700 — and they wanted to see how profile milling could improve the ride."

So, Durwood Greene began by profile milling to eliminate wheel rutting and to provide a level surface for the overlay. Initially, the company didn't plan on extensive use of cold mills, but later implemented the cold-milling process to improve ride quality on the westbound main lanes, using two big cold mills in tandem to prep for a hot-mix asphalt overlay.

Cold mills worked in tandem

To expedite milling, Durwood Greene used two of the largest cold planers available, W 210 and W 2200-12 mills from Wirtgen America, Inc. The contractor milled pavement from 0.75 to 1.5 inches in depth.

"The W 210 has a seven-foot, two-inch drum and the W 2200-12 has a 12.5-foot, full-lane drum," Downing noted. "Both machines have the Level Pro system that allows the crew to establish grade and slope. The W 2200 planed full width, starting on the inside lane with the first pass, and working to the outside."

Reprinted with permission from Wirtgen America.

Durwood Greene Construction recently completed a 16-mile, asphalt-overly project on Interstate 10 west of Houston, Texas. Here, crews use a Wirtgen 2200-12 mill followed by a W 210 mill.



As required by the Texas DOT, Durwood Greene completed all the milling and paving on I-10 at night, operating the two cold mills in tandem, one in front of the other. Between 40 and 50 trucks were in rotation each night for the milling operations. “We got the highway from 7 p.m. to 5 a.m.,” Downing said, noting that the Texas DOT assesses lane-closure fees for failure to vacate a lane. The contractor ensured lanes were back open for morning traffic because, unlike some other states, Texas does allow driving on the milled surface.

Durwood Greene uses Wirtgen cold mills exclusively. In addition to the two mills it used on this project, Durwood Greene also has a Wirtgen W 2100. “The company likes them,” Downing emphasized. “We’ve had other cold mills in the past but have found the Wirtgen mills to be excellent. They are powerful, durable machines. We move a large amount of material with the W 2200 and have used it on many recent projects. It covers a lot of ground in a short period of time.”

As part of the milling process, Durwood Greene stockpiled reclaimed asphalt pavement (RAP) for use along the edge of the shoulders on the project. “We call it ‘shouldering-up,’” Downing explained. “After we paved the shoulder, we laid the RAP along the edge to stabilize it. Typically, we place it using a road widener, then make a single pass with a roller. That enhances safety for drivers by addressing the issue of shoulder drop-off.

“After we put the RAP down on the edge of the shoulder, we sprayed oil on it to help bind it together and hold it in place,” he added.

Asphalt overlay

After milling, Durwood Greene placed an underseal and two separate 1.5-inch courses of hot-mix asphalt on the I-10 project, laying approximately 120,000 tons of asphalt on the job.

“The first lift was an inch-and-a-half compacted of what we call a ‘level-up’ course, and the second lift was a final surface mix, also an inch-and-a-half compacted,” Downing described. “We placed a standard Type D Texas DOT hot mix, which is a performance-graded mix.” The same mix, provided by American

Continued . . .



Operating in echelon (at the same time) Durwood Greene crews milled pavement using Wirtgen W 210 (left) and W 2200 milling machines on Interstate 10 west of Houston, Texas.



After milling the surface, Durwood Greene used a Vögele Vision 5203-2 paver to place a 1.5-inch leveling course of hot-mix asphalt on 16 miles of Interstate 10 in Texas.



Durwood Greene's Vögele Vision 5203-2 wheeled paver easily handled asphalt placement in this difficult space on an exit ramp of Interstate 10 west of Houston, Texas.

Vögele pavers, Hamm rollers provide smooth surface

... continued

Materials Inc. of Jersey Village, Texas, was used in each lift.

Durwood Greene placed both lifts with its Vögele Vision 5203-2 10-foot, wheeled asphalt paver, using the machine's dual "big skis" for grade control. "We really like the noncontact skis on the Vision paver," Downing confirmed. "They eliminate contact with the freshly laid surface and eliminate imperfections that can impact other systems."



The Wirtgen W 2200-12 can cold-mill a full lane of roadway. "We've had other cold mills in the past but have found the Wirtgen mills to be excellent," said Matt Downing, Durwood Greene Project Manager and Safety Officer.

The Vögele Niveltronic control system gave the contractor the smoothness it needed to satisfy Texas DOT specs and even earned Durwood Greene smoothness bonuses on the project.

Oscillation used in breakdown

In addition to the Wirtgen mills and Vögele asphalt paver used on this project, Durwood Greene employed a Hamm HD O130V tandem roller. With oscillation in one drum and conventional vibration in the other, the contractor operated the roller in breakdown mode.

Oscillation compaction is nonaggressive because it compacts with a gentle rocking motion, not a vertical pounding. Horizontal forces are transmitted from the drum into the pavement, and the result is better compaction in fewer passes, with less vibration-related wear and tear on operators and surroundings. While conventional compaction works by "bouncing" the drum on the ground, Hamm's oscillation technology ensures that the roller drums maintain constant contact with the surface for faster, more effective compaction.

On I-10, Durwood Greene also used a Hamm HD+ 140 VV HF roller with high-frequency vibration for intermediate rolling and a pneumatic roller to achieve final compaction. ■



Using a Hamm HD O130V roller, the Durwood Greene crew compacts the leveling course at an exit ramp on Interstate 10 in Texas.

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MANHATTAN ROAD & BRIDGE

After demolishing old I-244 bridge, Tulsa company's focus turns to building a new one



Reed Wood,
General
Superintendent

With road repairs to one bridge done and demolition of another behind it, Manhattan Road & Bridge is earnestly working on construction of a new, multipurpose, westbound bridge on Interstate 244 in Tulsa. The locally based company began the nearly \$64 million project in spring 2011 and expects to complete it this year.

The new bridge's top deck was designed to carry four lanes of traffic across the Arkansas River, with a bottom deck designed for future rail use, although the rail lines weren't put in as part of this project. Pedestrian and bicycle traffic areas will also be part of the bottom deck. The new, completed bridge, slated to be finished in late 2013, will be about 300 feet longer than its predecessor.

Komatsu excavators equipped with hammers played a large role in the demolition of a bridge on I-244, including the removal of old bridge piers.

Manhattan Road & Bridge began the construction phase as it was wrapping up demolition of the existing bridge, drilling new piers while taking down the supports for the previous structure that was built in 1967. The bridge was considered functionally obsolete, meaning it could no longer meet traffic demands of a city with a population of more than 390,000.

Throughout its short history — Manhattan was formed out of two businesses merging together — the company has completed some of Oklahoma's most recognizable public projects, including the six miles of reconstruction it did on Interstate 244 in Tulsa. It also relocated about six miles of Interstate 40 through downtown Oklahoma City. Those projects, as well as several other multimillion-dollar ventures, helped Manhattan Road & Bridge approach this Interstate 244 job with confidence it could meet the scheduled time frame for completion, even with some unique challenges.

Protecting Route 66

Manhattan Road & Bridge began by repairing the surface of the existing eastbound Interstate 244 bridge. The repairs were necessary to ensure the bridge stayed in good working order while the westbound bridge was demolished and the new one constructed. That existing bridge currently carries traffic both ways.

"We mainly worked nights and weekends on the repairs to minimize traffic disruption," said Manhattan Senior Vice President Mike Webb. "That went very well, as did the demolition, despite facing some challenges that required us to do some of the work differently than we normally would."

Using a Komatsu PC400LC-8 excavator equipped with an NPK processing jaw, a Manhattan Road & Bridge operator works on removal of an old bridge pier. "Demolition puts a heavy toll on machinery, but our Komatsu equipment has always stood up to the challenge and gives us good productivity," said General Superintendent Reed Wood.

Among the challenges of the demolition phases was protecting the nearby 11th Street Bridge, which is part of the historic Route 66 and sits as close as 40 feet to where the old bridge was in some spots. To lessen the impact, Manhattan Road & Bridge placed a heavy layer of sand underneath the Interstate 244 bridge — in the areas that weren't over water — to cushion the impact of debris hitting the ground as it demolished the bridge.

"We also minimized the impact by taking the bridge down in smaller chunks," said General Superintendent Reed Wood, who's overseeing the project and noted an additional challenge included working next to a refinery with trains moving in and out and crossing a railroad bridge in close proximity. "Seismographs were set up to monitor vibration and movement. Our processes worked, and we were able to demolish the bridge without any issues."

Versatile Komatsu equipment

The demolition began with Manhattan Road & Bridge removing the deck of the old bridge. Much of the concrete material was used on site to build a causeway that allowed crews to move machinery, personnel and materials across the Arkansas River.

Manhattan Road & Bridge used a combination of Komatsu excavators, ranging

Manhattan Road & Bridge used demolition material to build a causeway to move machinery and personnel across the Arkansas River, grading the materials out with Komatsu D61EX and D37EX dozers.

in size from a compact PC88 to a PC400LC-8, equipped with NPK hammers and processing jaws to break up concrete materials and sort out and cut rebar. Additional excavators included a PC228, a PC270 and a PC138.

"Demolition puts a heavy toll on machinery, but our Komatsu equipment has always stood up to the challenge and gives us good productivity," reported Wood. "The hydraulic excavators have excellent power to run any of

Continued . . .



Go online or scan this QR code using an app on your smart phone to watch video of Manhattan Road & Bridge machines at work.

Experienced staff, right equipment get the job done

... continued

the attachments we put on them, which makes us appreciate the versatility they offer. We can hammer, process and dig with one machine, and that makes a big difference to the bottom line.”

As Manhattan Road & Bridge took down the bridge deck, it hauled and placed concrete in the river to build the causeway, grading it out with Komatsu D37 and D61 dozers. Komatsu wheel loaders were used for a variety of tasks, including moving materials around the site and loading trucks.

Manhattan Road & Bridge also used JLG lifting machines for various tasks, including

lifting personnel up to the top of existing bridge piers to cut structural steel.

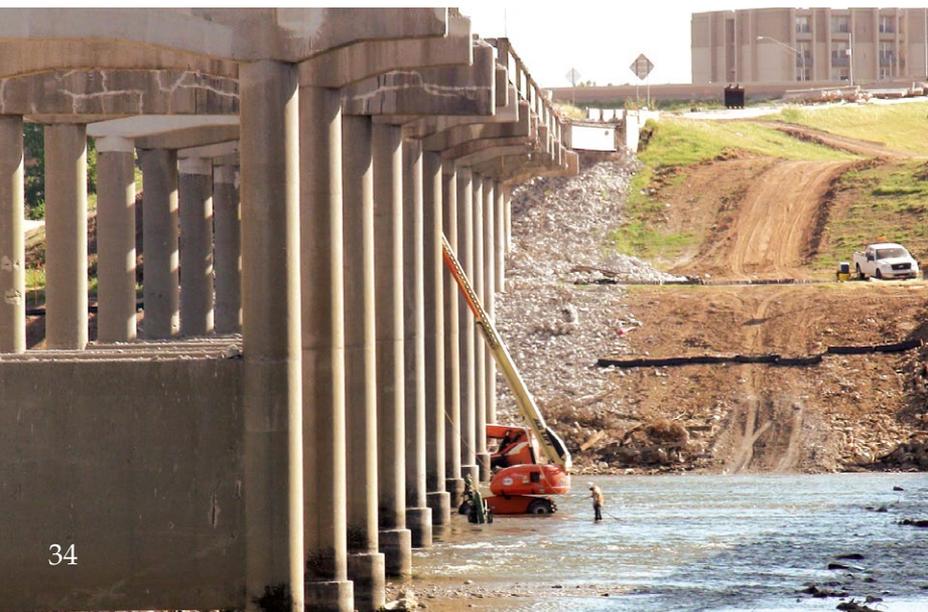
“I’d estimate that at times, our workers were up to 50 feet in the air,” noted Wood. “We used the JLGs rather than have our workers walk beams with lifelines tied to them. It made for a much safer operation. Of course, we also used the lifts for getting materials into place, so, like our Komatsu equipment, the JLGs give us versatility too.”

In addition to using its own equipment, Manhattan Road & Bridge turned to Kirby-Smith Machinery for most of its rental machines, working with Territory Manager Dan Rutz to acquire the additional pieces. “It’s common for us to rent pieces that we wouldn’t necessarily need on every project,” said Webb. “That keeps our costs down. We’re very pleased with the service we get from Dan and Kirby-Smith.”

Manhattan Road & Bridge General Superintendent Reed Wood (left) meets with Kirby-Smith Machinery Territory Manager Dan Rutz at the I-244 bridge site in Tulsa.



To cut structural steel from old bridge piers, Manhattan Road & Bridge used JLG lifts to place personnel. “We used the JLGs rather than have workers walk beams with lifelines tied to them. It made for a much safer operation,” said General Superintendent Reed Wood.



Experienced staff gets the job done

When the new Interstate 244 westbound bridge is finished, it will be nearly 3,000 feet long and Manhattan Road & Bridge will have used approximately 9 million pounds of structural steel, 6 million pounds of reinforcing steel and 39,000 cubic yards of concrete. It will have excavated more than 30,000 yards of material and built four retaining walls.

Manhattan Road & Bridge is handling nearly all the work. Webb and Wood estimate as many as 250 workers are involved in the project. Among them are key individuals, such as Senior Project Manager Richard Davis and Project Manager John Poole.

“We subbed out a few items, such as a large soil nail wall on the north end of the project, utility relocation, electrical work and asphalt paving, but our personnel are doing the vast majority of the project,” said Webb, who noted that Manhattan Road & Bridge remains on schedule. “Making a project like this work involves not only having the proper equipment to do the job, but having the right people in place who know how to get a job done. Our people certainly have the experience to do that. We’re confident that we’ll be done on time and on budget.” ■



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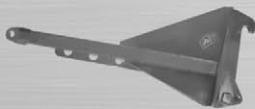
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RECLAMATION LLC

Cold-in-place recycling is answer to resurfacing roadway in environmentally sensitive area

These days, more communities are concerned about the environmental impact of construction projects. But a recent project to rebuild a two-lane state highway in a mountainous area of New York State's Adirondack State Park was especially environmentally sensitive.

To tackle the project, which was adjacent to the ski resort town of Lake Placid, home to the U.S. Olympic Training Center and site of the 1980 Winter Olympics, Reclamation LLC of West Hurley, N.Y., chose to use cold-in-place recycling.

The contractor's "green" solution was to use a Wirtgen 3800 CR (with a 12.5-foot cutter) and a 2200 CR (with an eight-foot cutter). Both machines are unique in the industry as they can undertake cold-in-place recycling using emulsions, foamed asphalt or cement slurry, but in a few hours — including addition of conveyors — they can be converted into full-depth, 950-horsepower, cold-milling machines.

"This was our first-ever project with our 3800 CR," recalled Reclamation LLC Sales Manager Mike Haggerty. "We love the machine, and its production is superior to any other reclamation machine on the market today."

With an average production rate of 520 tons per hour for the 3800 CR on this project, using in-place recycling eliminated having to remove more 50 truckloads of material per hour in the remote, mountainous location. That saved the state and the contractor time and money while reducing overall environmental impact, including wear and traffic on the highways and reduced fuel use and exhaust fumes.

"The larger 3800 CR foam-stabilized about 10,000 feet per day, and the 2200 CR we teamed it with did about 6,000 feet per day," Haggerty noted. "The 3800's cut is wider and the machine

is very powerful. We hooked up to a 9,000-gallon asphalt trailer and a 6,000-gallon water tanker and pushed both as one unit."

Foamed asphalt advantages

The specification of foamed asphalt not only permitted 100-percent recycling of the existing road into a stabilized road base, but extended the construction season into cooler temperatures, like those found in the mountainous Adirondacks.

"The foamed asphalt allows us to work late into the fall," Haggerty said. "Plus, in Lake Placid, tourism is the No. 1 industry. Our traffic pattern is shorter, and on this very busy road we had very few complaints. The happier the public is, the happier the resident engineer and the community are."

"On this project, Reclamation LLC was cold-in-place recycling a depth of four inches with foamed asphalt," said Mike Marshall,

Reprinted with permission from Wirtgen America.

Continued . . .

Reclamation LLC used its Wirtgen 3800 CR to foam-stabilize this roadway in New York's Adirondack State Park. The cold-in-place recycling method reduced environmental impact while saving the state time and money on the project.



Machines provide high production, low environmental impact

... continued

Director Recycling Products at Wirtgen America Inc. “Two-percent asphalt cement was added by mass bulk of material. In addition, a nominal three-quarter-inch-size stone was added, prespread on the pavement, mixed in with the existing pavement and stabilized with foam. The finished structure was four inches thick.”

New York State requires the “add-stone” in its specs, Marshall pointed out. “The combination is 85-percent existing materials and 15-percent new. The add-stone acts as a leveling agent to fill dips and irregularities in the pavement, and the virgin aggregate supplements the RAP (reclaimed asphalt pavement) in the pavement, making it stronger and better. It’s a winning formula that works very well.”

To smooth the newly laid asphalt, Reclamation LLC chose two Hamm HD 130 VV tandem vibratory rollers for initial and intermediate compaction, and a brand-new, 30-ton GRW 280 pneumatic roller for finish rolling. “The GRW 280 is a great follow-up roller,” Haggerty acknowledged. “It kneads the material together and polishes it off, providing a surface very similar to hot-mix asphalt, depending on the material.” Traffic can run on the recycled surface until a hot-mix asphalt overlay is placed on it later.

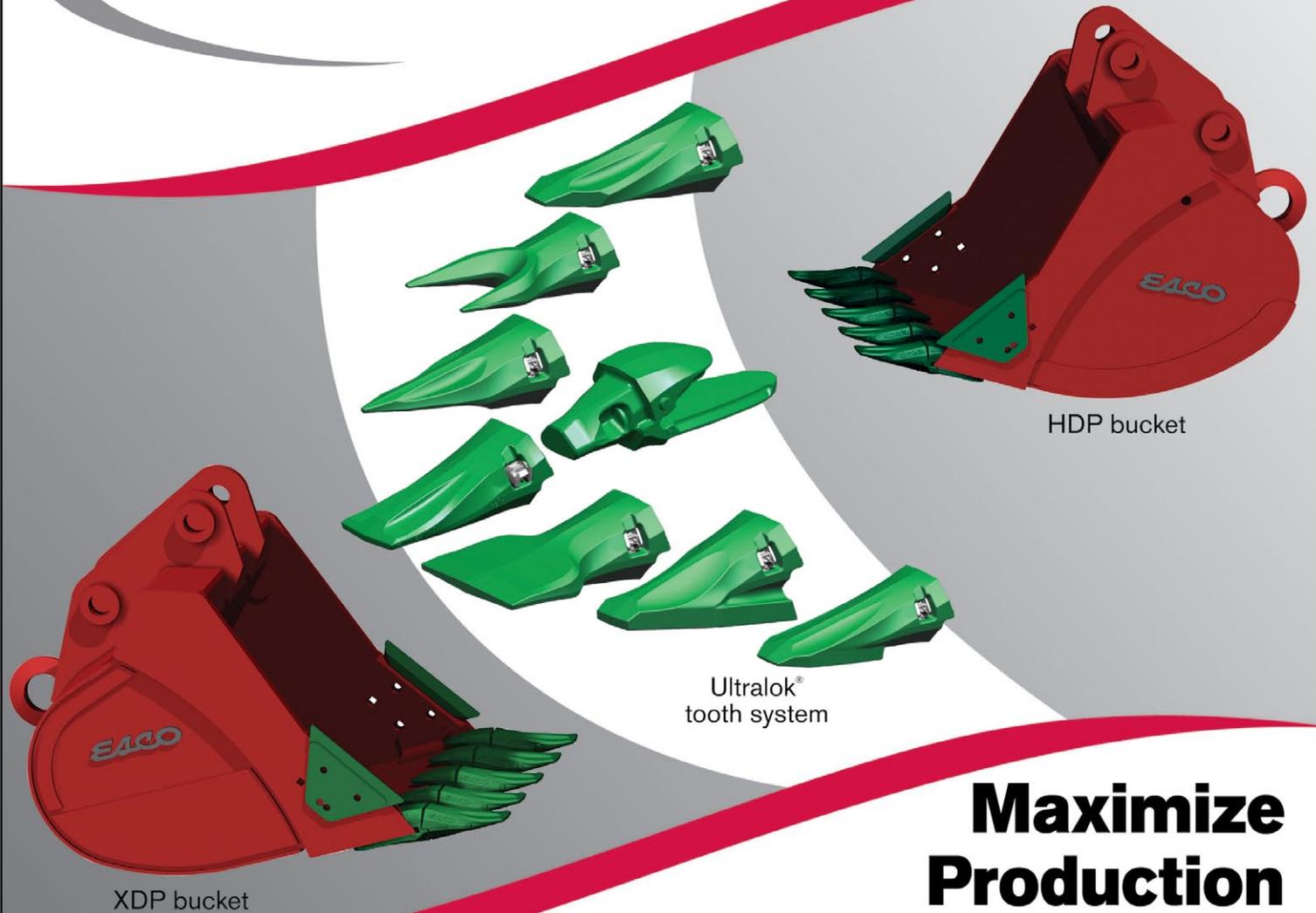
The 100-percent recycled roadway project was an environmental win-win situation for Reclamation LLC, the New York State DOT and the Lake Placid community. “In the Adirondacks, that’s very important,” Haggerty concluded. “The folks up here are very environmentally conscious, and they smiled at our operation.” ■

A Reclamation LLC operator guides the company’s Wirtgen 3800 CR on a cold-in-place road-surface recycling project.



Two Hamm HD 130 VV rollers provided initial and intermediate compaction on the Adirondack State Park roadway project, followed by a Hamm GRW 280 pneumatic roller for finish rolling. The pavement surface incorporated nominal three-quarter-inch stone, which was pre-spread on the pavement and mixed in with the existing pavement during the recycling process.





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New Transportation and Infrastructure Committee chairman looks at transportation funding options

New House Transportation and Infrastructure Committee Chairman Ron Shuster said all options should be on the table when it comes to highway funding, including raising the gas tax, taxing miles driven and more tolling. The gas tax is 18.4 cents per gallon and hasn't been raised since 1993.

That's partially led to a shortfall in funding for transportation projects in the past three years, with Congress using general revenue to

make up the difference between what the gas tax brings in and outlays for project costs. The gap is expected to remain, and likely widen, with more efficient vehicles.

Shuster said a tax on miles driven could help alleviate that, however it's drawing resistance. In the past, the President has said he doesn't support it, and the House adopted a transportation appropriations amendment last summer that forbids even studying it. ■

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COCCHIOLA PAVING

Mobility makes Vögele Vision 5103-2 paver top choice for winding roads

Reprinted with permission from Wirtgen America.

Narrow, winding, two-lane blacktop roads with an abundance of small intersections in semi-rural New England present a real challenge to paving contractors. Cocchiola Paving, Inc. of Oakville, Conn., often takes on such projects. The company specializes in road and commercial work in western Connecticut. It's a family-owned and -operated paving and construction company with more than six decades of experience in state, municipal and private projects.

Many of the roads Cocchiola paves don't have shoulders by necessity, with pavements flanked by dirt or sand drop-offs. Vice President Domingos Almeida says rubber-tire pavers, rather than track pavers, are the solution. "In my opinion the rubber tires are much better for maintaining traction. They give the paver the higher 'flotation' it needs to keep from getting bogged down in unconsolidated shoulders or raveled road edges."

Continued . . .



An operator for Cocchiola Paving maneuvers the company's Vögele Vision 5103-2 paver along a rural roadway in Connecticut.



Monroe Township's Jim Robinson checks out the Vögele paver used on the roadway resurfacing project on Barn Hill Road.

Cocchiola Paving specializes in road and commercial work in western Connecticut. Here, crews are at work on a rural roadway resurfacing project.

Paver's ease of operation is added advantage

... continued

Winding roads also make it difficult for a tracked paver to place asphalt at a swift pace. "With rubber tires, it is easy to move the paver on the roads," Almeida explained. "We can travel back and forth on the jobsite without making a mess."

For those reasons, Cocchiola Paving selected the eight-foot Vögele Vision 5103-2 rubber-tire paver from the Wirtgen Group as its top choice for best-practice paving projects on local roads.



In addition to its Vögele paver, Cocchiola Paving relies on its Hamm HD O70V roller to produce a smooth roadway surface.

Cocchiola Paving Vice President Domingos Almeida says the rubber-tire Vögele 5103-2 paver is perfect for roadways without shoulders. "It doesn't get bogged down in unconsolidated shoulders or raveled road edges," he noted.



In addition to its maneuverability, the paver is ideal for the back-and-forth paving of asphalt intersections. "A tracked paver will lift the asphalt up," Almeida pointed out. "I've tried them before and I don't like them for this type of paving."

Almeida cited an example of the Vision 5103-2's ease of operation. "After paving one 11-foot pass under shady trees to the bottom of a hill, our operator simply put the paver in reverse and swiftly backed up the length of the project for the next pass, driving it as if it were an automobile."

Last summer, Cocchiola Paving used the Vision 5103-2 to reestablish crown on the milled surface of Barn Hill Road in Monroe Township, placing two-inch hot-mix asphalt (HMA) and compacting it to 1.5 to 1.75 inches, depending on the surface. The Cocchiola crew handled intermediate compaction using its Hamm HD O70V roller in the vibratory mode. The company also owns a Wirtgen WR 2500 milling machine, which it uses for full-depth reclamation and recycling.

"We're really happy with the Vögele paver," Almeida concluded. "In fact, I want to talk about getting another one next year!" ■

A swing-out seat on the Vögele Vision 5103-2 paver provides greater visibility for the operator.





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TRI-COUNTY ASPHALT MATERIALS, INC.

Efficient processing optimizes value of reclaimed asphalt pavement in custom mixes

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As the popularity of using reclaimed asphalt pavement (RAP) in roadway construction increases, so does the demand for custom asphalt mixes using the product. Consistency of mixes and efficient production are a must for asphalt producers.

Tri-County Asphalt Materials, Inc., a northeast-Ohio asphalt producer, is optimizing its use of RAP by processing it into consistent sizes, which it stockpiles and uses as needed in commercial and DOT mixes.

“Consistency of RAP feed is very important for mix production, especially with state work,” confirmed Plant Manager Chuck Royer. “We have to make sure they’re getting exactly what’s called for in the mix design. In order for us to do Ohio DOT work, we have to make blended piles.”

Tri-County Asphalt Materials serves the tri-county area of metropolitan Youngstown, Ohio, from a single, 160,000-ton-per-year batch

plant adjacent to downtown Youngstown. The asphalt producer serves predominantly commercial customers with a variety of on-demand, a-la-carte mixes. About 80 percent of production is destined for private-sector use.

“Many of our customers pave driveways, residential developments and parking lots,” Royer explained. “The plant makes different mixes for our customers throughout the day. We run recycled asphalt 20 percent in base materials, and 15 percent for surface courses, and otherwise, we use limestone from a quarry 20 miles south of the plant.”

Because the RAP material that Tri-County processes comes from so many sources, it relies on a Mobirex MR 110 ZS EVO mobile impact crusher from Kleemann. “This machine helps us process large amounts of RAP, using test samples to confirm the gradation and AC content,” Royer said. “The Kleemann equipment gives us much more consistency than we had before.”

More efficient production

The single, compact Kleemann machine replaced a rented crusher / screen and a small in-line crusher that Tri-County had mounted in its recycle system. “We rented the crusher / screen to process RAP, but we still had to run RAP through the in-line crusher,” Royer recalled. “That was an added cost. We also had problems with that small crusher. It was wearing out and would plug up on us. It required a great deal of maintenance.”

The new impactor offers more flexibility in feed sizes, Royer observed. “Our new Kleemann lets us accept blacktop driveway tear-outs of all sizes. In the past, we were limited to six-inch-diameter and down. The previous in-line crusher we used was good

Tri-County Asphalt Materials relies on this Kleemann Mobirex MR 110 ZS EVO mobile impact crusher to process reclaimed asphalt pavement it uses in its custom asphalt mixes.



only up to 20 tons per hour, and when material was damp, it would tend to plug up. Rubber or crack sealants in the feed also would bind it up," Royer added. "We'd have to shut the recycle system down and could not run RAP in mixes, which meant we'd have to use virgin material that cost us money. In the meantime, our crew would spend two or three hours cleaning the crusher out and getting it back on line. Now we can crush much larger size feed. It's been working really well for us."

"The Kleemann saves us substantially in labor," confirmed Tri-County President Rick Vernal. "Now, we have the same person feeding one piece of equipment and pulling out a finished product. We're only handling the product once. Before, we'd have two to three employees who would run RAP through the rented crusher, through the screen, then through the crusher and back through a final screen. It was much more work."

"The consistency wasn't what we were looking for, so we decided to get control of the crushing and screening for ourselves," Vernal said. "We saw the Kleemann equipment at CONEXPO in Las Vegas and were impressed with its workmanship, the quality and the ease of use. We made our choice."

Prescreen keeps out fines

Often, depending on how deep or fast a milling machine is operating, RAP feed will wind up primarily as fines, along with chunks. "All of it goes into the crusher," Royer pointed out. "Our Mobirex MR 110 ZS EVO crusher screens out most of the fines into a pile, and whatever is left, goes to the crusher to be processed."

"The prescreen is a big advantage," Vernal reported. "When we take grindings off the street, about half of it is already the size we need. To run that through the crusher when it's already the right size is redundant and costs money. It makes sense to get it out of the way first, and then crush what's left. We get a much more consistent quality of product with this crusher/prescreen."

"The final product out of the crusher is a minus 9/16-inch maximum size," described Royer. "The prescreen removes a minus three-quarter-inch down to dust, which we run through the plant



According to Tri-County Asphalt President Rick Vernal, the prescreen on the company's Kleemann crusher is a big advantage. "We get a much more consistent quality of product with this crusher/prescreen," he noted.



and crush to 9/16-minus size. We use that 9/16-inch material in every mix we make."

Easy operation

Tri-County's asphalt plant is located in a relatively small urban footprint adjacent to an Interstate highway interchange, immediately southeast of downtown Youngstown. The compact mobile crusher fits well in the limited-space site. "It's always better to have more room, and we get that with the Kleemann crusher," Royer said.

"Integrating the crusher into our operation was relatively easy," he continued. "It's not a complicated machine. Kleemann personnel were with us for several days while we were starting up."

The operator of the wheel loader, which charges the crusher, also controls the Mobirex

The Kleemann Mobirex MR 110 ZS EVO mobile impact crusher prescreens and stockpiles minus three-quarter-inch to dust material and produces a final product of 9/16-inch material.

Continued . . .

Efficient production, consistent RAP product

... continued

A conveyor on Tri-County Asphalt's Kleemann crusher reintroduces oversize material into the crusher circuit.



A wheel loader feeds a Kleemann crusher with raw reclaimed asphalt pavement (RAP) at Tri-County Asphalt's plant in Youngstown, Ohio.

Tri-County Asphalt's Kleemann Mobirex MR 110 ZS EVO mobile impact crusher takes up a small footprint in the company's limited-space site in Youngstown, Ohio.



MR 110 ZS. "The driver operates the crusher, but everybody at the plant has worked with it and is familiar with its operation and can run it," Royer said. The driver feeds the plant with raw material and removes crushed RAP from one stockpile and screenings from the Kleemann's prescreen from another stockpile.

Each day, once the asphalt plant is up and running, the day's operator will do all prechecks to make sure the crusher is good to go. That includes oil checks, air filter inspection and greasing.

The Kleemann unit works so quickly that one day's crushing can serve the batch plant for two days, Royer reported. "We crush it as we need it. We can crush one day and then we'll be good for a few days."

Tri-County has a Wirtgen W 1900 cold mill, but most of its RAP comes from other contractors. "Our RAP stays fairly consistent because most contractors place limestone pavements to Ohio DOT specs," Royer explained. "We have a lab that tests the material as it comes in from the field, determining liquid asphalt cement content. For Ohio DOT work, we also send RAP to them for testing."

"Our W 1900 cold mill works great for us," Vernal concluded. "If you look at the Wirtgen line, they make the best grinder, the best paver, the best roller — we have a Hamm HD 70 roller — and we think they make the best crusher/screen." ■



Raw reclaimed asphalt in a variety of sizes goes into Tri-County Asphalt's Mobirex MR 110 ZS EVO mobile impact crusher. "The Kleemann equipment gives us much more consistency than we had before," said Plant Manager Chuck Royer.



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2006	Komatsu PC300HD-7		EQ0013795	6,435	\$115,000
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2005	Komatsu D65EX-15	OROPS, SEMI-U DB	EQ0013510	4,007	\$100,000
2008	Komatsu D65EX-15	EROPS, SEMI-U, ripper	EQ0017724	4,302	\$150,602
2006	Komatsu D155AX-5B	EROPS, SEMI-U, SSR	EQ0012311	4,291	\$265,000

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2006	Witzgo RG-35	as is	EQ0012522	NA	\$25,000
1997	Rosco RA300		EQ0015055	3,494	\$27,500
2004	Lonestar 4.5-cu.-yd. mixer	Sterling chassis	EQ0013979	1808m	\$59,500

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2007	Komatsu WA320-5L		EQ0012530	6,417	\$89,500
2008	Komatsu WA380-6	new rubber	EQ0012088	3,724	\$141,500

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