innovator

Winter 2010

Seasons Greetings!

Duke University (shown), North Carolina State and the University of North Carolina at Chapel Hill anchor the points of Research Triangle Park, one of the largest science-centric developments in the world. KCI is helping to alleviate traffic congestion in the populated region through construction of Triangle Parkway.

Photo courtesy of Duke University

KCI TECHNOLOGIES

INSIDE

President's Message

Seasons Greetings. To all of our employees, clients and partners, I am pleased to report that we are financially strong and well-positioned to take advantage of the economic recovery that we see in the near future. 2010 has certainly proved to be challenging, but we have successfully implemented our reorganization and are continuing to overcome the hurdles of a struggling economy. Our present strength and optimism are based on a few simple ideals: employ the best staff in the industry, diversify our services throughout our geographic footprint, and most importantly, provide first-rate customer service.

Throughout these difficult times, we continue to invest in our staff, helping them grow as professionals and individuals. We are committed to hosting our internal project management academy and are organizing a new emerging leaders class—two internal programs designed to train and mentor the men and women who will help run this company in the future.

We have acquired a Florida-based engineering and testing company and made key individual hires in the Transportation, Site, Power, Construction Management, Environmental and Resource Management Practices. We welcome our new staff and look forward to their contributions to the continued success of our firm.

Our Construction and Environmental Engineering Disciplines each have projects highlighted in this publication. Both projects are a testament to our commitment to customer service, representing repeat business for the city of Baltimore and innovative project delivery for the North Carolina Turnpike Authority.

Finally, we want to thank our employees for their loyalty and sacrifice throughout this year. They are the reason that we have weathered this recession and will continue to be the backbone of our success. We look forward to the recovery and the prosperity it will bring us and our firm.

Sincerely,

Nathan J. Beil, PE, D.WRE

Every Last Drop

Water is life. Over the last century, worldwide usage has grown twice as fast as population, emphasizing the need for more effective and efficient public works to manage this strategic resource.

Like many cities faced with aging infrastructure, Baltimore's Bureau of Water and Wastewater experiences a significant amount of unaccounted water—lost between treatment plants and consumers—due to meter inaccuracies, reading errors or leaky pipes. By conducting a comprehensive water audit, the city is working with KCI and subconsultant M.E. Simpson Co. Inc. to minimize water loss by identifying leaks and inaccurate meters, and prioritizing repairs using a customized geographic information system (GIS).

The city operates and maintains two filtration plants and more than 3,800 miles of water main to serve 1.8 million people in the region. The system includes more than 19,000 fire hydrants and 400,000 meters. Previous reports estimate the city's water loss at approximately 20 percent, but the current audit will take the program a step further by not only identifying unaccounted water, but also areas of concern that have a higher probability of main breaks or leaks.

"Before we know the water balance, we need to record how much water is entering the system, then we can determine how much of that water is revenue generating and what amount is lost to leaks and metering errors," said KCI project manager Carlos A. Espinosa, PE. "All master meters that measure flow from treatment plants are being tested for accuracy."

The team is also blanketing the system to listen for leaks using transducer microphones and in-pipe devices. The high-pitched noise associated with each leak can help determine the type and volume of water loss. Using rugged field laptops, technicians enter the noise correlation from multiple locations into a custom GIS application.

Photo courtesy of Pure Technologies.

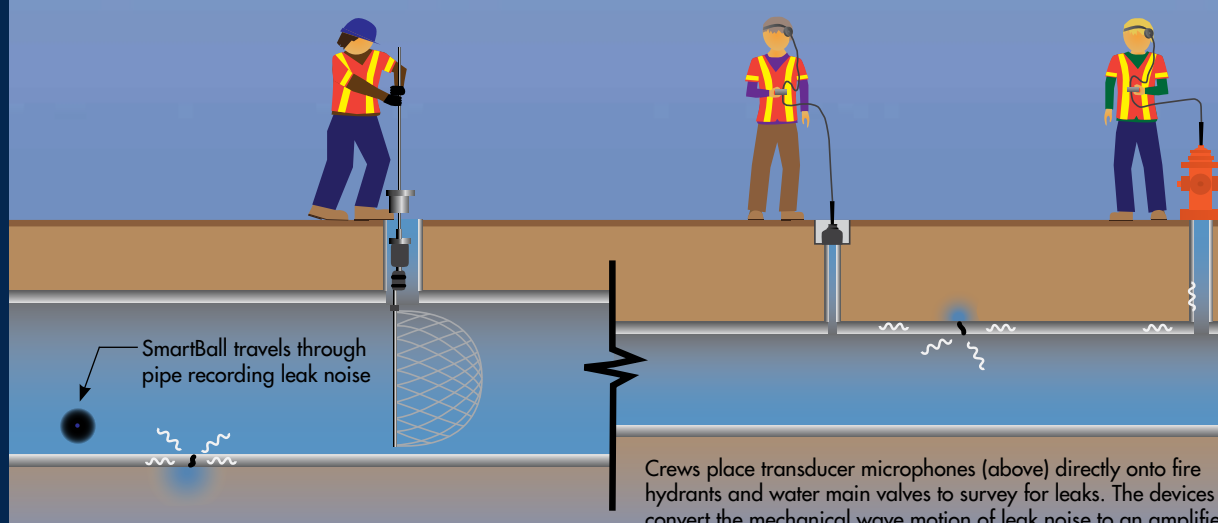
Pure Technologies' free-floating SmartBall (right) will be inserted in large diameter water mains to listen for leaks as it travels with the water flow (below left). Leak noise is recorded via a microphone and recorder contained in the device, and the location of leaks is calculated using the velocity of the SmartBall versus time of recording.

"Many cities have their own leak detection crews and are still using the manual method," said M.E. Simpson Vice President, John Van Arsdel. "Normally, a leak crew would carry a paper map of the area to mark potential leak noise spots, then pinpoint the leak using specialized noise correlators and record its location on the hard copy records." KCI developed software to record and track the leak location, while linking it to the associated feature in the city's existing GIS.

"Through the field application, we can record and report leaks, digitize any new features on the fly and synchronize with the city's main database at any time," said Craig Van Soest, a field crew leader for M.E. Simpson. "It saves us time in the field and helps us identify mains with repeated problems."

The project also calls for a condition assessment of the water infrastructure. KCI developed a protocol that evaluates every pipe in terms of likeli-

[See Water, page 4]



Crews place transducer microphones (above) directly onto fire hydrants and water main valves to survey for leaks. The devices convert the mechanical wave motion of leak noise to an amplified audible sound that can be heard through headphones.

Office Updates

DELAWARE • FLORIDA • GEORGIA • INDIANA • MARYLAND • NEW YORK • NORTH CAROLINA • OHIO • PENNSYLVANIA • TENNESSEE • VIRGINIA • WEST VIRGINIA • WASHINGTON, DC • DELAWARE • FLORIDA •

DELAWARE

KCI was selected by the Delaware Department of Natural Resources & Environmental Control to provide a comprehensive study and prepare conceptual designs for drainage improvements for the town of Bowers Beach.

FLORIDA

The city of Tampa Water Department awarded KCI a $2 million contract to provide utility locating services.

Sarasota County selected KCI to provide construction engineering and inspection services under a $500,000 contract.

Polk State College selected KCI to perform forensic investigation services in connection with distress cracking in the floor slab at their Lakeland Technology Building.

GEORGIA

Under an indefinite quantity contract supporting the Department of Defense Education Activity, KCI is providing educational programming, mechanical/electrical engineering, plumbing design, telecommunications and building security system design as a subconsultant to EwingCole for a new 450-student elementary school at Fort Stewart.

MARYLAND

The Harford County Department of Public Works awarded KCI a $1 million open-end contract to provide engineering services for water and wastewater projects.

The city of Baltimore selected KCI for a $1.5 million contract to provide wastewater engineering services for improvement of the low level sewershed collection system and a $3 million contract to conduct conduit manhole occupancy surveys.

As a subconsultant to EBA Engineering Inc., KCI will provide engineering services for open road and trail construction maintenance and repair at various National Park Service properties.

The Maryland State Highway Administration selected KCI for a $14 million contract to provide construction engineering and inspection for projects located in Anne Arundel, Calvert, Charles and St. Mary's Counties.

KCI was selected by Mount St. Joseph High School to provide site/civil and geotechnical engineering and surveying services for the construction of an addition to their field house.

NEW YORK

As a subconsultant to BR Construction, KCI was recently selected to provide mechanical, electrical and plumbing upgrades for the Department of Veterans Affairs in Batavia.

Triangle Points to Innovation and Efficiency

Changing Face of Construction Inspection helps North Carolina Build the State's First Modern Toll Road

Triangle Parkway (shown at the future Davis Drive crossing) is being built for the most part on land that was set aside when Research Triangle Park was originally planned in the 1950s.

The 7,000 acres that make up Research Triangle Park (RTP) are home to more than 170 companies and a work force of nearly 50,000, while boasting the region's highest concentration of technology, pharmaceutical and research facilities. With its abundant work force and a population of three million within a 60-mile radius, not surprisingly the area experiences significant traffic congestion.

Thanks to a coordinated effort among state agencies, contractors and engineers, a new six-lane toll road will soon improve mobility through RTP. As a member of general contractor S.T. Wooten Corporation's design-build team, KCI is responsible for construction quality control, mainly consisting of inspection and testing, to ensure that the new highway is built in accordance with the project's plans and specifications.

Triangle Parkway is a three-mile long segment of the future Triangle Expressway, which will be among the first roads built in the U.S. with all-electronic tolls as well as the state's first modern toll road. Challenges associated with financing, schedule and initialization of tolling operations led the North Carolina Turnpike Authority to initiate a design-build contract that included construction quality control or CQC.

Construction inspection and testing is usually contracted separately or performed directly by the owner. Reporting requirements associated with financing the toll road required a third-party consultant to provide checks and balances. "It's important to have an outside view," said Authority Chief Engineer Steve DeWitt. "We believe requiring the contractor to have an independent quality control team helps them maintain a focus on quality, helps them catch and correct any issues, and gives them a different view on constructability."

The contractor also sees definite benefits to the unique contract arrangement. "KCI was on the team from the beginning of the bid process and has been in tune with our plan to build the project," said Wooten project manager Scott Clement. "They are always geared up and know in which direction we are running instead of following behind and asking, 'What am I going to look at today?'"

Wooten made it clear early on that KCI's allegiance was to the contract and its specifications. "We are the eyes representing the Authority, making sure the project is built to their plan," said KCI project manager David J. Eberspeaker, PE. "The fact that we are paid by the contractor doesn't change our responsibility." KCI maintains an on-site staff of 17 inspectors who perform quality control inspections and take samples for materials testing.

Clement expects CQC to become more prevalent based on Triangle Parkway's success. The $137 million project is progressing smoothly. After months of testing the new tolling infrastructure, the Authority plans to open the roadway to traffic on schedule in December 2011.

Technician Michael Stokes uses a Trimble SCS900 GPS unit and software to run Real Time Kinematic surveys to verify stake out and create as-built drawings for the Kit Creek Road Bridge.

Rally, Recover, Rebound

KCI Targets Future Growth through Strategic Hires and Acquisition

Whether bear or bull, recession or prosperity, business opportunities can be found through decisiveness, diligence and conviction. KCI sees the current economic recession as a chance to position the firm for future expansion, and plans to act on those opportunities.

The first and strongest instinct when financial indicators fall is toward conservative belt tightening. KCI has carefully implemented several measures to trim costs; however, recovery cannot be achieved by cost reduction alone. By carefully aligning skills and capabilities with existing and potential markets, the firm has balanced cost reduction with strategic positioning, choosing its direction for recovery and growth.

"We've certainly had to contract some of our service offerings and geography based on the economic climate," said Chief Executive Officer and Chairman of the Board Terry F. Neimeyer, PE. "But during the last two decades, we've managed the firm to the point where our balance sheet and cash reserves are healthy, giving us the ability to be more selective in our response to the downturn."

Even though some markets are down for the near future, the firm continues to support and invest in those service lines to avoid a cold start-up after a rebound. "The transportation market is at a career low right now," said President Nathan J. Beil, PE, D.WRE. "But investment in our nation's highways and bridges will return because the need for maintenance and ex-

[See Rebound, page 4]

Charles L. Flowe, PE, (left) and Kenneth T. Briggs, PE, are new transportation practice leaders for the North Carolina and Baltimore-Washington, D.C. areas, respectively.

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NORTH CAROLINA

The University of North Carolina at Chapel Hill awarded KCI a $100,000 open-end contract for structural engineering services.

KCI was selected to provide easement procurement and design-build services for approximately 15 acres of wetland mitigation in Cabarrus County as part of the North Carolina Ecosystem Enhancement Program.

As a subconsultant to O'Brien & Keane, KCI was selected to provide site plan and construction drawing approval for the development of a new 1,500–seat church at St. Catherine of Siena Catholic Church in Wake Forest. Future plans call for a new K-8 school, an early childhood and administrative office building and a rectory as well as ball fields.

OHIO

The city of Elyria selected KCI to provide bridge load rating and inspection services for 2010-2011.

KCI is part of a team providing construction management and inspection for replacement of the Jeremiah Morrow Bridge crossing that carries Interstate 71 over the Little Miami River.

PENNSYLVANIA

KCI was selected by the Pennsylvania Department of Transportation for a $1 million open-end contract to provide construction inspection services for projects located in Greene, Fayette, Washington and Westmoreland Counties.

TENNESSEE

The Tennessee Stream Mitigation Program contracted KCI to perform emergency repair, assessment and remediation services in the wake of historic flooding in the middle and western portions of the state.

As a subconsultant to Thompson Engineering, KCI will be providing construction engineering and inspection services under a two-year contract with Tennessee Department of Transportation, Region 1.

VIRGINIA

KCI, as a subconsultant to BCRA, was recently selected to provide mechanical, electrical and fire protection engineering for building additions to child development centers in Fort Belvoir and Richmond.

WASHINGTON, DC

KCI is providing information technology and telecommunications consulting services to the Architect of the Capitol for the renovation of Federal Office Building 8.

People

Senior Vice President Harvey M. Floyd, PE, has been named Transportation Discipline Manager, and will oversee KCI's Highway and Traffic, Rail, Transportation Structures and Planning Practices.

Cindy S. Sweetland, PE, has been promoted to Chief Client Services Officer. She will administer the firm's ISO 9001:2008 certified quality management system.

KCI welcomes Roger A. Eaton, PE, as Mid-Atlantic regional practice leader for transportation structures. James E. Deriu and Douglas V. Goldsmith were promoted to Mid-Atlantic regional practice leader for natural resources and geospatial solutions, respectively.

KCI welcomes the following new practice leaders in various regions: Kenneth T. Briggs, PE, Transportation; Charles L. Flowe, PE, Transportation; David E. Locke, FASLA, Landscape Architecture; Michael J. E. Sanchez, PE, LEED AP, Land Development; and William G. Stewart Jr., Construction Engineering and Inspection.

In Memoriam

Thomas L. Fink, 1948-2010

Tom Fink, Project Manager, suffered fatal injuries in an automobile accident on November 15. His colleagues will remember him for his kind heart and his giving nature.

Michael E. Milburn, 1947-2010

Michael Milburn, senior construction inspector, passed away in April. A 17-year veteran of KCI, Michael provided inspection services on roadway, utility and bridge projects.

Jack O. Timberlake, 1935-2010

Jack Timberlake, Construction Management, passed away August 27. Jack joined KCI in 2006 as a senior project inspector overseeing construction at the Eastern State Hospital.

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KCI TECHNOLOGIES

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hood and consequence of failure, or condition and criticality. The protocol assigns each water main a rating based on its condition and criticality scores, allowing repairs and scheduled maintenance to be prioritized based on need and impact.

The overall objective of the program is to assist the city in developing a proactive capital improvement program for the renewal of water infrastructure. Through prompt repairs of leaks and accurate metering, the city could recover millions of dollars in revenue each year.

Technicians enter the location of leaks into a custom GIS application using field computers with wireless and GPS capabilities. Crews have access to the city's GIS that contains all its water main data, including the size, material and date last inspected of each of the municipality's mains, hydrants and valves.

[Rebound, from page 3]

pansion is there. We have hired some key players in the industry and are committed to maintaining a strong presence in transportation by positioning ourselves for the return of federal and state funding."

KCI recently welcomed Charles L. Flowe, PE, and Kenneth T. Briggs, PE, as transportation practice leaders for the North Carolina and Baltimore-Washington, D.C. areas, respectively. Together, they bring more than 60 years of project management and technical design experience to their regions. Other key hires and promotions are highlighted in the People section of this newsletter.

In June, KCI acquired ASC geosciences inc., a Florida-based company specializing in geotechnical and geoenvironmental engineering, materials testing, forensic engineering, and construction inspection. "This acquisition is a great opportunity for us to grow in the Southeast," said Beil. "The addition of ASC allows us to offer forensic, geotechnical and materials testing services and supplement our existing construction inspection work force while extending our geographic reach."

Based on the company's solid financial footing and plans to expand both in geography and client base, the time was right to make these investments. The future is bright for KCI as the firm chooses to leverage its strong financial position into key staff hires and market penetration, and stands ready to rebound from the current economic conditions.

Professional Notes

At the Los Angeles, Calif., High Speed Rail 2010 conference in June, Chairman Emeritus **Jack Kinstlinger, PE, AICP,** presented the new American Road & Transportation Builders Association policies on high speed rail.

CEO & Chairman **Terry F. Neimeyer, PE**, was named Chairman-Elect of the American Council of Engineering Companies.

The International Society of Soil Mechanics and Geotechnical Engineering selected Vice President **Dhirendra S. "Sax" Saxena, PE,** Forensic Engineering, for a four-year term as the U.S. representative for their Forensic Geotechnical Engineering Committee.

In August, three employees from KCI's Water/Wastewater/Solid Waste Practice led technical sessions at the Tri-Association Conference in Ocean City, Md. **Timothy W. Wolfe, PE, BCEE,** and **Carlos A. Espinosa, PE,** presented "Cleaning of Large Diameter Pipe – The Lower Jones Falls Interceptor." **G. Raymond Schulte, PE, BCEE,** presented "FOG and Scum on the Run: Receiving, Heating, Mixing and Digester Feeding."

Vice President **Anupam Saxena, PE,** Geotechnical Engineering, is serving on the Polk State College Foundation Board.

In June at the American Society of Highway Engineer's national conference in Cincinnati, Ohio, **Scott A. Cook, PE,** Highways and Traffic, and **Charles E. Kessler, AICP**, Policy/Planning, hosted a technical session on shoreline stabilization along Lake Erie associated with U.S. Route 531 in Ashtabula, Ohio.

Kenyon College asked **Kelly C. Lyles,** Policy/Planning, to join the board of the Philander Chase Corporation.

Ransford Addei, Geotechnical; **Amit Bhusal** and **Jonathan B. Meyers,** Water/Wastewater/Solid Waste; **Ryan W. Burdette** and **Jothsna B. Rao,** Water Resources; **Briana C. Campbell**, Land Development; **Dion K. Ho,** Highways and Traffic; and **Patrick H. Mans** and **Zong-Jhy (Kevin) Su,** Transportation Structures, passed their professional engineering examination.

Charles J. Tuck, LEED AP, Mechanical/Electrical, received his Registered Communications Distribution Designer (RCDD) certification.

McSendy Pierre, Highways and Traffic, was certified as a Traffic Operations Practitioner Specialist.

Awards

KCI's **High Bridge Glens** project was chosen for an Engineering Excellence Honor Award by the **American Council of Engineering Companies of Ohio**.

Joanne Brooks, Hazardous Waste, was honored by Maryland State Highway Administration's Office of Environmental Design for **Outstanding Consulting Support.**

In their April 26 issue, *Engineering News-Record* magazine ranked KCI 83 among the **top 500 engineering design firms** in the U.S.

For the fourth consecutive year, *Public Works* magazine listed KCI among their **top 50 public works engineering firms** in the nation.

Community Service

CEO and Chairman **Terry F. Neimeyer, PE,** joined **Michelle L. Arnold,** Environmental Administration; **Nicole D. Baer, PE,** Building Structures; **Susanna K. Brown, Michael J. Pieper** and **Michael D. Trumbauer,** Natural Resources; **Madeleine R. Driscoll, PE,** and **Christopher L. Overcash, PE, BCEE, LEED PA,** Water/Wastewater/Solid Waste; **Robert A. Heyman, PE,** Transportation Structures; **Jennifer Nein,** Geospatial Solutions; **James H. Shumaker,** Safety and Procurement; and family members in cleaning up Loch Raven Reservoir as part of the Alliance for the Chesapeake Bay's Project Clean Stream event.

Kathy L. Hoverman, PE, Michael J. Pieper, and **Michael D. Trumbauer,** Natural Resources, joined **Christopher J. Griffith, PE, CCM,** Construction Management; **Dion K. Ho, PE,** and **Nadia E. Pimentel,** Highways and Traffic; **Terry F. Neimeyer, PE,** CEO and Chairman; and **Christopher L. Overcash, PE, BCEE, LEED AP,** Water/Wastewater/Solid Waste, to raise more than $3,000 by riding in the American Diabetes Association's Tour de Cure on May 8 in Howard County, Md.

Employees selected **Convoy of Hope**, a nonprofit which specializes in disaster relief through delivery of food and supplies, as this year's corporate charity and have raised more than $5,500 to date.