



Trenchless Technology Center

Louisiana Tech University

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Fall 1992

TTC celebrates fourth year of operation

**By Chantele Smith
Editor**

As the Trenchless Technology Center embarks on its fourth year of operation, the trenchless excavation industry can look back on some landmark accomplishments that have been achieved since 1989.

When the center began in September 1989, trenchless technology was neither widely used nor understood in the United States. Although it had been used in other parts of the world for many years, America was behind the times in developing and using trenchless methods and equipment.

Much of that has now changed. The results are evident in the growing number of companies experimenting

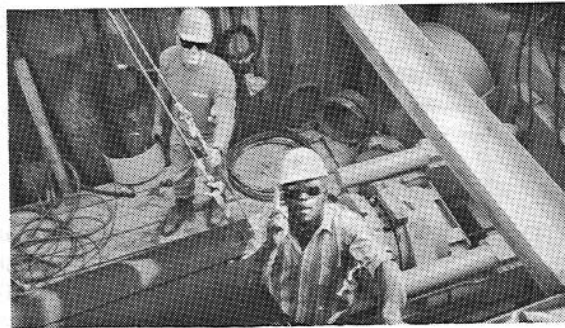
with trenchless technology for the first time. It is also evident in the wide publicity TTC has

the August 17 issue of Engineering News Record, the most widely read engineer-

Construction Company of Tokyo, Japan. This project was the first of its kind in that Japanese technology was brought to the United States to be tested and perfected.

Other projects such as the on-going U.S. Army Corps of Engineers' Construction Productivity Advancement Research Project have also helped expand knowledge about trenchless methods. As TTC begins its fourth year, the staff has a number of new projects planned, the newest being a grant for detection of underground obstacles.

TTC plans to continue its cultivation of companies using trenchless methods. At the rate the center and the industry are growing, trenchless and conventional methods should soon be able to compete.



Workers install a gripper system for the LLB evaluation project. See page 3 for story.

realized in the last year alone.

From a cover story on TTC director Tom Iseley in "Underground Magazine" proclaiming him "America's Trenchless Champion" to a cover story for

ing periodical in the world, TTC is gaining recognition.

TTC also propelled the American industry forward this year by gaining a research contract with Kidoh

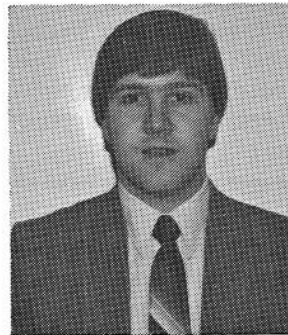
McCrary joins center's staff

TTC's staff has a new face these days.

Steven McCrary joined Louisiana Tech's faculty this summer as an assistant professor specializing in geographic information systems and environmental engineering.

McCrary's responsibilities with the center will be to assist with current research projects, assist in obtaining new contracts, and to promote interest in the center's activities.

A native of Neosho, Mo., McCrary earned both his bachelor's and his master's



McCrary

degrees from the University of Texas at Arlington. He was awarded a doctorate degree in engineering management from

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Upcoming Events

ADVANCED TECHNICAL SEMINAR sponsored by TTC, U.S. Army Corps of Engineers and NASTT will be held Jan 26-30, 1992 at Holiday Inn in Vicksburg, Miss.

Cost is \$225/day or \$595 for the entire program (includes lunches, banquet and

more). For registration or more information contact NASTT (312) 644-0828 or write to 435 North Michigan Avenue, Suite 1717, Chicago, IL 60611-4067.

Hotel reservations can be made by calling the Holiday Inn in Vicksburg at (601) 636-4552. Be sure to ask for the TTC seminar rate.



Tests to be conducted at WES

Construction of a 360 foot long test bed with five different types of soils and a 20 by 20 foot drive pit has been completed at the Waterways Experiment Station in Vicksburg, Miss.

The test bed has been instrumented heavily with settlement plates, inclinometers, strain gauges and other sensing instruments to investigate the soil-machine-pipe interaction during the pipe installation. The pipe for this evaluation will be a 24-inch Hobas. In addition, two microtunneling machines

will be used.

Initial testing will run from Sept. 9-25 and will be conducted on an auger microtunneling machine provided by Soltan-American Microtunneling of South Daytona, Fla. The second part of the evaluation is scheduled from September 28 to October 16, 1992. A slurry microtunneling machine will be provided by Iseki Inc. of San Diego for the tests. Each machine will install about 360 feet of the 24-inch Hobas pipe in a range of soil conditions.

Results of this evaluation will be used to improve design techniques, develop guidelines, provide a basis for development of new products and methods and develop guidelines for selection of methods, materials and equipment.

Anyone interested in witnessing this testing operation should contact David Bennett at the Waterways Experiment Station at (601) 634-3974.

More information on exact testing times can be obtained by calling the TTC office at (318) 257-4072.

... In Brief

ENR features TTC on cover

TTC made international headlines this summer as one of its projects was the cover story for Engineering News Record Magazine.

TTC's struggle to introduce trenchless technology techniques and equipment to the bourgeoisie of the construction industry was featured in the August 17 issue of ENR. The story highlighted Tom Iseley's and Louisiana Tech's impact on the microtunneling industry.

The article discussed how microtunneling has

gained more acceptance in the United States in the last few years, but how it still must overcome engineers and business owners who are not familiar with these techniques and equipment.

The article indicated the trenchless industry could be the standard method of operation in as little as five to 10 years.

Center thanks respondents

More than 100 companies from across the United States, Canada and Europe responded to the questionnaire published in the spring issue of TTC News.

The information gained from the questionnaire will be used in future TTC research and development activities. In addition, the names of the companies who have responded to this survey will be added to the TTC mailing list.

We want to thank each of you who took the time to respond to our questions.

If you would like to be included on our mailing list or if you have a research need in trenchless technology, please write to us. We would also be interested in receiving a brochure or catalogue on your company and products.

Thanks, again, to all of our supporters.

MCCRARY, from Page 1

the University of Missouri-Rolla in August 1991. He came to Tech from Purdue University where he served as a visiting professor for one year.

McCrary has published articles in the "Proceedings of the PMI '91 Seminar/Symposium," "GIS/LIS '90 Proceedings," and "Proceed-

ings of the 11th Annual Conference of the American Society for Engineering Management."

In addition to holding a registered professional engineer's license in Texas, he is a member of the American Society of Civil Engineers, National Society of Professional Engineers, Ur-

ban and Regional Information Systems Association, American Society for Engineering Education, American Society for Engineering Management, and Chi Epsilon civil engineering honor society.

McCrary is married to the former Melinda Nichols and they have three children.

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LLB project completed ahead of schedule

Evaluation yields successful results

Kidoh Construction Company, Carlon and the Trenchless Technology Center have completed their full-scale field evaluation of laying pipes of low-bearing force (LLB).

This evaluation was used to determine the effects of laying polyvinyl chloride (PVC) sewer pipe in a variety of soil conditions. It was the first time sewer pipe has ever been laid in the United States using a microtunnel boring machine.

LLB is a method in which a newly developed "gripper" system for microtunnel boring machines enables

PVC or other flexible pipes to be jacked long distances. The primary thrust force of the microtunneling machine is transmitted through a steel liner casing which runs inside the product pipe. The frictional resisting force is transmitted through the "gripper mechanism," which binds the internal surface of the plastic pipe to the liner casing. This method experiences less axial compressive microtunneling methods to utilize a variety of pipe materials which will enhance the cost effectiveness of trenchless technology alternatives to open-trench construction.

"The microtunneling industry in the U.S. continues to expand at an interesting rate. As more owners, engineers and contractors learn about this unique capability, the excitement grows," TTC Director Tom Iseley said.

The testing operation was success-

fully completed ahead of schedule in June. The pipejacking operation was performed at an average rate of 25 feet per day. The rate was considered good considering the difficult ground conditions. The head of the pipe was found to be within a few millimeters of the proposed line and grade of the pipe. Also, there was no slippage of the gripper system.

"We are very happy with the results of the test installation. This installation was an excellent test for our new joint system which is in the final phase of development," Mike Bank, Carlon Technical Services Manager, said. "The test illustrated our compressive strength properties as well as our sealing ability."

Bank added, "We are looking at microtunneling as a new and exciting market for our product. This new system of microtunneling will continue to help this new market develop."

CPAR project begins long-term testing

The long-term testing portion of the Construction Productivity Advancement Research project is scheduled to begin in early October.

CPAR is a \$1.2 million research project being conducted by the U.S. Army Corps of Engineers and the Trenchless Technology Center. The project's purpose is to evaluate methods, equipment

and materials for trenchless construction and rehabilitation.

CPAR was created to help the domestic construction industry improve productivity and regain its competitive edge nationally and internationally.

Thus far end seals for the testing procedure have been selected. Pipes to be used in the tests will be 6 feet long and

12 inches in diameter.

Five corporate sponsors will be participating in the testing procedures to evaluate their products. These sponsors are Insituform, Inliner USA, Spinello KM Inliner, Paltem and Superliner.

Anyone wishing to view testing procedures should contact the TTC office at (318) 257-4072 for more information.

TTC is pleased to offer

"Microtunneling: Installation and Renewal of Nonman-Size Supply and Sewage Lines by the Trenchless Construction Method"

by Stein, Mollers & Bielecki

Ernst & Sohn Publishers

Berlin, Germany 1989

Get your copy of this complete reference manual on microtunneling for \$115 each (Cost includes shipping), a discount of 18% off the retail price of \$140.00. Please mail check or money order to Trenchless Technology Center, Louisiana Tech University, P.O. Box 10348, Ruston, LA 71272.



Microtunneling & Horizontal Directional Drilling

Get your copy of the "Proceedings of the First TTC Symposium, Houston, Texas, Nov. 10-13, 1990." This bound publication consists of over 275 pages and costs only \$50.00 per copy (includes postage).

Evaluation of Underground Infrastructure Rehabilitation Techniques

TTC also has available copies of the "Proceedings of the Second Trenchless Technology Center Symposium, Dallas, Texas, Oct. 17-18, 1991." This bound copy of proceedings consists of over 150 pages and costs only \$20.00 (includes postage).

Remember there are only a limited number of these books available, so order early. Enclose check or money order, payable in U.S. dollars to the Trenchless Technology Center. Please specify the number of copies you would like. Mail orders to **Trenchless Technology Center, Louisiana Tech University, P.O. Box 10348, Ruston, LA 71272.**



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