



Trenchless Technology Center Newsletter

September 1997

TTC ASSET Pre-proposal Selected

The importance of university-industry cooperation is evidenced by the success of a recent pre-proposal to the National Science Foundation (NSF) to create an engineering research center on the subject of underground infrastructure technology.

A consortium of four universities, Louisiana State University, Louisiana Tech University, University of Houston and Southern University, proposed to create a center with the acronym ASSET—Advanced Subsurface Systems Engineering and Technology.

Success in the full proposal, due in September 1997, would mean a very substantial boost to the research monies available for study of underground infrastructure technologies—a total from all funding sources of approximately \$20 million over five years with a possible extension for an additional five years.

The intent of the proposal is to address a common problem in the civil infrastructure area in the United States—low levels of government and private research funding, caused in part by legal liability concerns and the public procurement process. Cooperative industry-university-government research is seen as one of the few avenues open to combat these circumstances in the United States.

The proposed center will approach the improvement of subsurface construction and utilization technologies through a series of integrated interdisciplinary research thrusts, and an aggressive education and technology transfer program. The research thrusts will aim for major advances in:

- the design and construction of subsurface facilities;
- the ability to "see and feel" through the ground to determine what is there;
- optimized data structures to build, maintain and utilize records

of both natural and constructed elements underground;

- new materials and techniques to preserve and renovate underground structures;
- and incorporate a broad systems perspective on how underground resources can be used most effectively both now and in the future.

The education program will emphasize making the interdisciplinary knowledge necessary for successful underground solutions available to researchers, engineers, planners and policy makers

through tailored educational programs and distance-learning capabilities.

The existing close involvement of industry with the proposal partners together with the research vision presented and the plan to accomplish that vision have been strong contributors to the selection of the pre-proposal as one of the 23 invited by NSF to make a full proposal. It is expected that three to four centers will be selected.

Please contact the TTC for more information on joining this research effort.

Spotlight on TTC Faculty and Staff

Jadranka Simecevic joined the TTC in July as a Research Associate. Jadranka is originally from Croatia and has a B.S. degree in civil engineering from the University of Split and an M.S. degree in sanitary engineering (environmental) from the University of Zagreb.

She is joining the TTC on a half-time basis, and will be working with technical information provision and assisting with research projects.



Martha Stevens has been the secretary/administrative assistant at the TTC for over six months and is enjoying her role.

Days are very hectic with a variety of tasks split between public/industry inquiries, proposal preparation, project and center accounting, and report/paper preparation. Several student workers on a part-time basis assist Martha.



Office assistants consist of graduate and undergraduate students majoring in various programs at the university. **Brandyn Marquardt**, Boulder, Colo., is a graduate student majoring in finance and plans to graduate in spring 1998.

The student positions provide flexible staff support for the TTC. In return, the TTC provides interesting experience and much needed funds for the student.



Technical Note:

Avoiding Damage to HDPE Pipes in Trenchless Pipe Replacement

One of the questions involved in the use of trenchless pipe replacement is the extent to which the replacement pipe is scratched by fragments of the existing pipe during replacement or is point loaded by the irregular fragments later in its service life. This question of scratches is principally an issue for pressure pipe applications and, when using plastic pipes such as HDPE, is generally dealt with by using a sacrificial sleeve pipe.

Even when non-pressure applications are involved as in most sewer pipe replacements, unnecessary pipe damage should be avoided. The accompanying photographs show pipe being installed in a sewer pipe replacement. The close-up view of an HDPE pipe shows one of several deep scratches caused by careless pipe handling in the fusing or set up for the pipe replacement operation. In many cases, pipe is dragged along the ground or road surface into position with no protection against gouging.

In the second photograph, a rudi-



Gouge in HDPE pipe prior to insertion

mentary protection in the form of a cardboard box has been provided against gouges being formed at the point where the pipe presses against the back edge of the entry pit.



Rudimentary protection against pipe damage during installation

Before worrying about damage caused in the ground, it is important to avoid unnecessary damage prior to installation by using care in assembling the replacement pipe and roller stands or other adequate protection during the pull in of the pipe.

The issue of the orientation of pipe fragments following pipe bursting is one of the topics studied during the pipe replacement tests at the TTC site earlier this year. Results from the studies are being prepared in a report to be released later this year.

Research Colloquium

Plans are continuing to develop for a research colloquium to be held at the TTC in January 1998. The principal intent of the colloquium is to bring together academic researchers from around the world to discuss research issues

and potential research collaboration.

With a limited participation of 25 to 40 researchers and an agenda of discussions rather than paper presentations, it is hoped that the colloquium will strengthen informal interactions

among the trenchless technology academic research community. The colloquium has been arranged to follow the UCT meeting in Houston and will consist of some site visits in Houston followed by three to four days of research discussions at the TTC in Ruston and finishing with some visits and social activities in New Orleans.

For further information on the colloquium, please contact Dr. Fred Akl at the TTC (phone: (318) 257-4410, e-mail: akl@engr.latech.edu).

New Industry Support for the TTC

The TTC is pleased to announce that TRS/Trenchless Replacement Systems, Ltd., Calgary, Alberta, joined the TTC Industry Advisory Board in June.

TRS joins CSR Pipeline Systems as advisory board members involved in the trenchless pipe replacement sector.

Industry Advisory Board

Akerman Manufacturing, Inc.
Brownsdale, Minn.

Bellcore
Chester, N.J.

BRH-Garver, Inc.
Houston, Texas

CSR Pipeline Systems
Houston, Texas

Gulf Coast Trenchless Association
Houston, Texas

Hobas Pipe USA, Inc.
Houston, Texas

Insituform Technologies, Inc.
Memphis, Tenn.

Lamson Vylon Pipe
Cleveland, Ohio

Soltan Microtunneling
Charleston, S.C.

Trenchless Technology, Inc.
Peninsula, Ohio

TRS/Trenchless Replacement Services, Ltd.
Calgary, Alberta

Ultraliner, Inc.
Oxford, Ala.

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Trenchless Technology Center
Louisiana Tech University

Director: Dr. Ray Sterling
Admin. Assistant:
Martha Stevens

Mailing address:
P.O. Box 10348
Ruston, LA 71272-0046 USA

Phone: (318) 257-4072
Toll-Free: (800) 626-8659
Fax: (318) 257-2562
e-mail: ttc@engr.latech.edu
Web site for TTC:
<http://www.latech.edu/tech/engr/ttc/>

The TTC Newsletter is published as a department within Trenchless Technology magazine. All newsletter materials are prepared by TTC. Communications should be directed to the center.