

Expanding Infrastructure Education & Information Dissemination Options







Presenter: Professor Tom Iseley, Ph. D., P.E., Dist. M. ASCE, PWAM

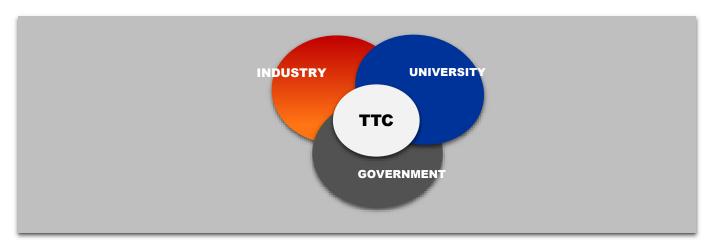
- Professor, Louisiana Tech University
- Director, Trenchless Technology Center (TTC)
- Chair, Buried Asset Management Institute-International (BAMI-I)
- Director, UNITRACC International
- Adjunct Professor, Xi'an Jiaotong University, China



Overview of TTC

TTC is expanding the research focus on integration of trenchless technology into asset management and continues to grow research programs to further increase understanding of the fundamental performance issues associated with various trenchless methods.

Louisiana Tech University Trenchless Technology Center From 1989-2016







• Research • Education • Technology Transfer



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Mission Statement



Mission

Advance and promote trenchless technology

Goal

Be an independent source of knowledge, research and education

Objectives

Educate about availability and capabilities of trenchless methods • Develop new, validate existing technologies • Promote buried asset management

Strategy

Research • Education • Technology transfer

Execution

Research projects • Municipal forums

• Undergrad & graduate courses • CTAM courses • Trenchless reference library



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High Bay Area with Soil Test Chamber



Inside NTTRF



Soil box (small 12'x6'x6', large 10'x20'x11')



Servo-controlled hydraulic ram, large



Extruder for cementitious samples



Liner Inversion Chamber

Material Characterization Laboratory



Servo controlled test machine, large, for tensile and flexure testing



Custom built ovens for CIP lined samples





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Field Testing Site

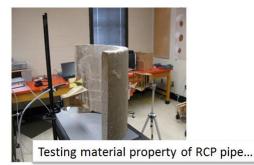


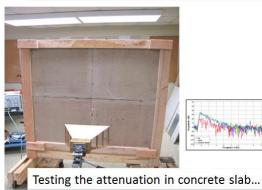




A collaboration between TTC, CUES Inc., a sewer and pipeline inspection company out of Orlando, Florida, and the City of Slidel, Louisiana.

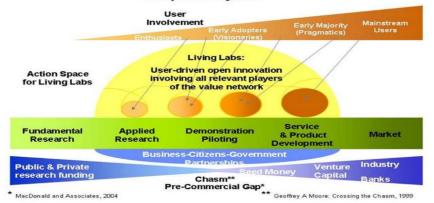
CUES has helped fund the project and a \$3.2 million grant for the project came in through the National Institute of Standards and Technology's Technology Innovation Program.





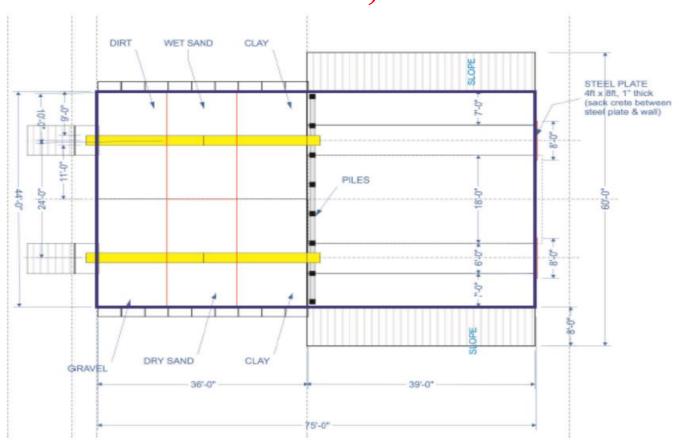
Validation Utilizing a LIVING LAB Concept

Action space for Living Labs along the technology adaption cycle





The 1st annual TTC Auger Boring School October 12-16, 2015





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TTC Subsurface Utility Engineering (SUE) School August 15-19, 2016 - Ruston, LA

http://ttcspecialtyschools.com/uis/





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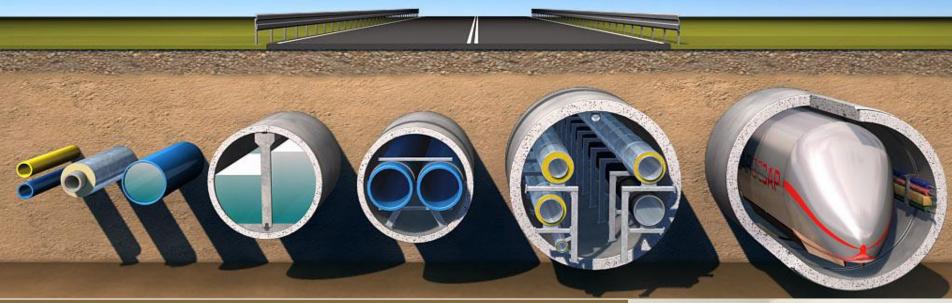








UNITRACC The Future is in the Underground



Tom Iseley, Ph.D., P.E., Dist. M. ASCE, PWAM UNITRACC International Director CETF Professor of Civil Engineering Director of the Trenchless Technology Center Louisiana Tech University



TTC Expands Global E-Learning Options For Water Professionals

Due Trenckless Technology Center (TTC) at Louisians Tech University, Russian, LA, and Tokin in Partner Grabit (Soft) based in Sections, Germany, recently entered into an agreement to especial the assummans of the Underground Informational Training and Computerness Centre (INMITSACC) training and learning requires This joint initiation will be lied by Dr. Toen Inchy, director of TTC and Dr. Robert Stein, CED for S&F.

The UNITRACC e-Isaming program is a unique knowledge portal which utilizes a bugs library of media such as photos, animations, videos, graphics, signalations, etc. to provide support for professionals throughout their careers. This network hus bom developed over a 20 year timehas and to decigned for professionals in all segments of the sofer sector. It is a demand-oriented knowledge transfer platform to provide immediate support for decision-enalting responsibilities in all job-related sitsations including design, construction, operation and maintenance, and management.

Indies will serve as the insernational director for UNITRACC.com. He is well-immers for his global leadership related to underground infrastructure. TTC has strengthened in infrastructure, TTC has strengthened in interacture of the past few years, for example, eatablishing agreements in China with the China University of Geoscieton. XI as Austring University, Institute of Geoscietons and Europeanums.

Indep believes the joint initiaties is a major refeators in filling the considerable lack of knowledge about solutions for construction, rehabilization and management. The rove qualified and informed the decision maker, the higher the chances for the selection of the most appropriate techniques and concepts, beley with.

treity soil.

It will also have significant impact on advanting the underground infrastructure industry by making saw the right amount of money is being appear on doing the right things at the night time.

Other initiatives

Currently, the TTC has established the following educational and training programs:

- Provides to Chrical and administrative services to the Buried Asset Management Institute Letternational (BAME-D and manages the BAME-I CTAM (Certification for Asset Manages areas) programs. (humi-score)
- A partnering agreement with the Calamain School of Minns for the development of the note generation of four perfectional development courses. The first will be offered in November 2006 on Georgetheirs for Trenchless Construction. (compace conservation trenchless)
- Specialty School programs which consist of these to five days of edimnine training on topics such as Auger Boring and Utility Innestigations. (Ht. lateth edia)
- Global Papeline Internship Program that in 2010 were two graduate students from Louisiana
 Tech to HK Polytechnic University and hosted two students from HK Polytechnic University who helped in the Aug. 15–19 Utility Interestications School (USS).

TTC Nini-seminar series

The Trenchless Technology Center at Louisiana Tech University has launched a series of special educational programs sized at preveding detailed information about modern trenchless construction, rehabilitation and asset management.

The TTC Trenchloss Mini-seminar program was Learning of faring the appropriate part of a semion-level undergraduate capatone project drives course of Lousdara Tech. The unifiest selected was a large existor traveling project in Carada. Industry leaders from eight organization provided instruction. This program was expanded in the full semanter of 2016 for a graduate/undergraduate introduction to trenchloss technology, where 15 organizations, expressiving 18 industries, conducted







Caclevia from top left. Dr. Torn bries and Oliver, POXYUNK Intent: Dr. belley and Dr. Sales Sgring the agreement, From left to right. Carry Young, James H. Anspack, Brian Tooley, Dr. Cream Davinga, John Campbell, and Philip. J. Meis, Jeff Boschert, Eri Bloodman, and Robh Creamfer

The objective of the seminars is to prepare attendees to demonstrate sound engineering judgment for managing the construction, required notationaries of underground infrastructures. These seminaries and maintenance of underground infrastructures. These seminaries underty, The sensions began on Sept. 15 and rest through Oct. 27. Begistration is consolinearies.

Looley said that "it is very exciting to see how the trenchless industry is partnering with TTC to provide our industry's fature decision makeers with maniferance exposure to the trenchless industry."

The TTC Mani-Seminum are aparamently the National Clay Pipe Institute, Addersion, Priority Associates, Northard Bollitis Construction Co., Avanti International, Pase Tochoologis, Underground Imaging Technologis, America Davide Iron Pipe, Thompson Pamp, NASSCO, Nacated Turneling, Derrick Biptiment Company, CDM Smith, Mustice Pipe Institute and Hobse USA.

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October-November Mini-seminar schedule:

Oct. 11 - Caret-in-Place Pipe-ICPPI Upra E. Osboan, Development Manager, MESSCO

Oct. 13 - MTBM Equipment & Shart Construction Process - Starry Separation

Fig. Post, Vice President, Hisrard Tunneling LLC, Mart Waggers, Technical Service Representative/Solids Control School Instructor, Denich Equipment, Company

Oct. 18 - Shrewport's Commit. Becree and the Trenchless Technology Program Water Carpenter, Project Manager.

COMSmith

Born Nd Softmans

Oct. 20 - Design and Installation of PGETIO Mater Plains per ANSAWWA C906-E5 and AMMA MSS-86 - PPI

Camille Rubeiz , Director of Engineering, Plastic Ripe institute

Oct. 27 - FRP Ripe Rick Turkopp, Vice President, Engineering, Hobas Ripe

The seminanum held from 10 - 1150 a.m. on the Louisians Tech campus



Underground Construction October 2005

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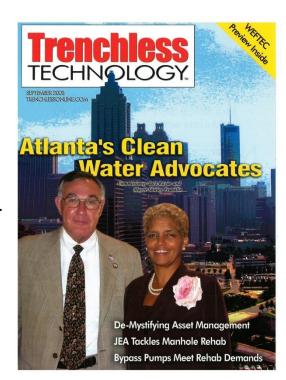
UNITRACC Reference Books







- In 2003, formed in Atlanta's Department of Watershed
 Management as a result of inspiration & leadership by Mayor
 Shirley Franklin & Commissioner Jack Ravan.
- In June 2004, formed as non-profit organization.
- Serves to provide a center of excellence for owners of underground water infrastructure to join with industry and researchers:





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What is CTAM?

- Certification of Training in Asset Management
- Exclusive four-part series training

Levels of Certification

- Associate Water Asset Manager (AWAM)
- Professional Water Asset Manager (PWAM)





TTC AND BAMI-I LAUNCH A COMPREHENSIVE ASSET MANAGEMENT CERTIFICATION PROGRAM

Raleigh, NC August 17-20.







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TTC Municipal Forums

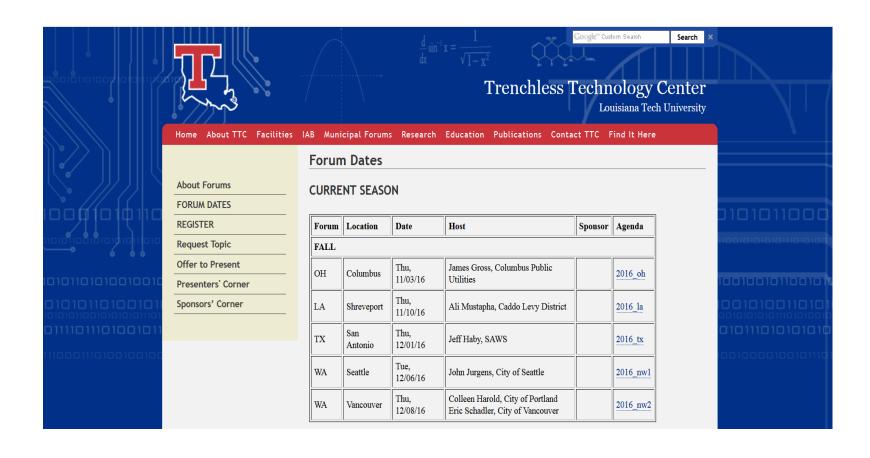








TTC Web Pages: Municipal Forums





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http://csmspace.com/events/trenchless/

The next 3 proposed courses:

- Trenchless Design,
- Trenchless Equipment and
- Contracting and Risk Management.





Geotechnics for Trenchless Construction

November 1-3, 2016 Golden, Colorado, USA







This three-day knowledge- and skill-building course provides an in-depth, comprehensive review of geotechnical engineering and design required for successful trenchless construction projects.

Trenchless technologies are sustainable methods used to install and renew underground infrastructure, and these innovative technologies have been increasingly utilized in North America. Appropriate selection among trenchless techniques and optimized project design requires a thorough understanding of the geologic subsurface conditions and variability. In this course, trenchless technology's top experts will provide instruction on the state-of-practice in site-characterization and design of trenchless projects.

Hands-on labs and demonstrations of the geotechnical engineering principles required for best trenchless design provide relevant experience for the industry professional, new and seasoned alike. This course is the first of a suite of short courses to be offered and developed as a collaboration between the Colorado School of Mines and Louisiana Tech University. Stay tuned in 2017 for courses on: Trenchless Design, Equipment and Contracting and Risk Management.

WHO SHOULD

Owners, designers, contractors, equipment manufacturers and suppliers involved in the planning, design, construction and management of trenchless projects seeking to expand his/her professional knowledge, as well as those interested in an update on new guidelines.

This short course incorporates the NEW Standard Design and Construction Guidelines for Microtunnelling, published by American Society of Civil Engineers in 2015.

CONTINUING EDUCATION: Colorado School of Mines will award 2.3 CEUs upon successful completion

Organized by:

Colorado School of Mines Center for Underground Construction & Tunneling (UC&T)

Dr. Priscilla Neison

Department Head and Professor Department of Mining Engineering Colorado School of Mines

Dr. Reza Hedayat Assistant Professor, Department of Civil and Environmental Engineering

Colorado School of Mines

of Civil

Dr. Tom Isology CETF Professor, Civil Engineering Director, Trenchless Technology Center Louisiana Tech University

csmspace.com/events/trenchless

