

33rd International No-Dig Conference and Exhibition (NO-DIG ISTANBUL 2015)

Istanbul, Turkey
28-30 September 2015

ISBN: 978-1-5108-1442-4

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2015) by International Society for Trenchless Technology
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact International Society for Trenchless Technology
at the address below.

International Society for Trenchless Technology
c/o John Hephill
1655 N Fort Drive
Suite 700
Arlington, Virginia 22209
USA

Phone: 703 299 8484

info@istt.com

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

REALIZING VALUE BY TRENCHLESS REHABILITATION OF SEWER SYSTEMS	1
<i>Bert Bosseler</i>	
AARHUS WATER DOCUMENTS CORPORATE SOCIAL RESPONSIBILITY	6
<i>Samuel T. Ariaratnam</i>	
ADVANCED FURTHER EDUCATION FOR ENGINEERS, TECHNICIANS AND STUDENTS VIA E-LEARNING.....	16
<i>Robert Stein, K. Tolga Erpinar</i>	
WATER PIPELINE MANAGEMENT RESEARCH NEEDS	21
<i>Samuel T. Ariaratnam, John C. Matthews</i>	
AN INTEGRATED ANP AND ER CONDITION ASSESSMENT MODEL FOR SEWER PIPELINES	30
<i>Alaa Hawari, Firas Alkadour, Tarek Zayed</i>	
STEEL CASED DTH DRILLING FOR ROCKY NO-DIG APPLICATIONS.....	39
<i>Tuomas Lassheikki</i>	
HDD EXPERIENCE IN LOW AND HIGH MOUNTAINS REGIONS	49
<i>Hans-Joachim Bayer</i>	
INSTALLATION OF SHORE APPROACHES AND SEALINES WITH TRENCHLESS METHODS: TECHNOLOGIES AND CASE STUDIES	60
<i>Lutz Zur Linde</i>	
RECORD HDD APPLICATION IN TURKEY	70
<i>Aybars Mutluer, Faruk Saglam, Faysal Aydogdu, Bahadırhan Çinar</i>	
APPLIED DUCTILE PIPE TECHNOLOGIES FOR TRENCHLESS APPLICATIONS WITHIN CITIES – HORIZONTAL DIRECTIONAL DRILLING DN 400 AS AN EXAMPLE FOR SPACE-SAVING CONSTRUCTION	77
<i>Stephan Hobohm</i>	
APPLICATION OF PIPE ROOF BY USING PIPE JACKING UNDER DIFFERENT DESIGN ON BEHAVIOR OF GROUND SURFACE AFTER TUNNEL CONSTRUCTION.....	84
<i>Hideki Shimada, Takashi Sasaoka, Sugeng Wahyudi, Naung Naung, Toru Sato</i>	
ANALYSIS OF THE OVERCUT AND STUCK EFFECTS ON SOIL-PIPE INTERACTION OF THE PIPEJACKING IN GRAVEL FORMATIONS.....	94
<i>Keh-Jian Shou, Chih-Ying Hsieh</i>	
MICROTUNNELING CHALLENGES IN URBAN ENVIRONMENT.....	104
<i>Keivan Pakiman, Taha Ashoori, Mohammad Najafi, Amir Tabesh, Bahram Abediniangerabi</i>	
PIPE-JACKING METHOD IN CONNECTING NEW PIPELINE TO THE EXISTING UNDERGROUND STRUCTURE INCLUDING RIGHT ANGLE CURVE ROUTE.....	112
<i>Fumihiko Matsumoto, Tomo Morita, Eiji Sakai, Takashi Sasaoka, Hideki Shimada</i>	
TUBULAR ROOF UNDER HISTORICAL BUILDING: COMBINING PIPE-JACKING-DEWATERING-TIMBERED TRENCHES COMPENSATION GROUTING	120
<i>Wim Smet</i>	
CONSIDERATIONS FOR DEEP SEWER INSTALLATIONS WITH MICROTUNNELING	125
<i>Gerald Krapesch, Dariusz Kosiorowski, Micha- Szewczyk, Cezary Madryas</i>	
INVESTIGATION INTO NET CUTTING RATE OF A SLURRY MICROTUNNELING MACHINE	134
<i>Ahmet Baris Akkaya, Hanifi Copur</i>	
MICROTUNNELING ACROSS RIVER ELBE (GERMANY).....	140
<i>Peter Dennig, Sipko Dotinga</i>	
POSITION ESTIMATES FOR EXISTING TRENCHLESS INSTALLATIONS.....	144
<i>Wout Broere, Ernest-Jan Achterhuis</i>	
COMPARISON OF CO2 EMISSIONS FROM TRENCHLESS AND OPEN-CUT INSTALLATION METHODS, INSTALLATION OF OD 3000 MM DIAMETER PIPES FOR PROJECT CZAJKA, WARSAW, POLAND.....	150
<i>Victor Vladimirov</i>	
PIPE JACKING PERFORMANCE OF A MODIFIED EPB TBM USED IN ISTANBUL KURBAGALIDERE WASTEWATER COLLECTOR PIPELINE INCLUDING CURVED ALIGNMENT	160
<i>Meriç Yetis, Aykut Eren, Hanifi Copur</i>	

NORMALIZED CUTTING INDICES TO UNDERGROUND MECHANICAL EXCAVATION	170
<i>Yao-Chung Chen, Li-Hsien Chen, Lin Guo-Long, Zhe-Xun Yang, Yuh-Hung Cheng, Hesbon Mortasi, Adrian J. S. Jethmal, Hsin Ying Yang</i>	
THE PUNCH PENETRATION TEST FOR ESTIMATING MACHINE PERFORMANCE.....	180
<i>Saffet Yagiz</i>	
THE HYDRAULIC JOINT – KEY TO CURVED MICROTUNNELING	190
<i>Stefan Trümpi-Althaus, Thomas Eichenberger, Cyrill Althuser</i>	
CONDITION PREDICTION FOR CHEMICAL GROUTING REHABILITATION OF SEWERS.....	200
<i>Ibrahim Bakry, Hani Alzraiee, Khalid Kaddoura, Mohamed El Masry, Tarek Zayed</i>	
TECHNICAL DESCRIPTION OF THE MOST IMPORTANT UNDERGROUND INFRASTRUCTURE PROJECTS UNDER CONSTRUCTION IN COLOMBIA, SOUTH AMERICA	208
<i>Juan Carlos Gutierrez</i>	
LARGE PROFILE PIPE CLEANING PROJECT IN ISTANBUL ASSOCIATED TECHNOLOGIES, TECHNIQUES AND EQUIPMENT USED IN THE PROJECT	217
<i>Kadir Tolga Erpinar</i>	
LARGE-SCALE UTILITY MAPPING USING MULTICHANNEL 3D GPR ARRAY SYSTEMS: RECENT DEVELOPMENTS	224
<i>Alexandre Novo, Enrico Boi</i>	
SEWER REHABILITATION DESIGN - SPECIAL ASPECTS OF AN EFFICIENT, FLEXIBLE AND OPEN INFRASTRUCTURE DATABASE AND GEO INFORMATION SYSTEM	229
<i>Jörg Martin</i>	
TEN YEARS OF CIPP LINER TESTING RESULTS.....	239
<i>Roland W. Waniek</i>	
REHABILITATION OF A RETURN LINE FOR COOLING WATER BY USING A UV-LIGHT CURED CIPP.....	251
<i>Michael Röling</i>	
COMPARING DIFFERENT FREQUENCY GPR ANTENNAS TO LOCATE ANOMALIES IN CONCRETE STRUCTURES.....	255
<i>Gokhan Kilic, Yasin Torun</i>	
VITRIFIED CLAY PIPE FOR INSTALLATION BY TRENCHLESS METHODS USE OF CLAY JACKING PIPES ON LONDON'S CROSSRAIL PROJECT	262
<i>Edward Naylor, Ade Dickinson</i>	
NEW GENERATION OF PE100 PIPE MATERIALS ALLOWING FOR DEMANDING INSTALLATION CONDITIONS	269
<i>Christophe Salles, Norbert Jansen, Ümit Çorbacioglu</i>	
AN ONLINE TECHNICAL GUIDE TO THE USE OF PE100 IN TRENCHLESS APPLICATIONS.....	278
<i>Tom Sangster, Pierre Belloir</i>	
PROTECTION JACKET PIPES FOR TRENCHLESS TECHNOLOGIES MADE OF POLYETHYLENE.....	285
<i>Toni Pietsch</i>	
RESULTS FROM A MULTI-YEAR RETROSPECTIVE EVALUATION OF REHABILITATION TECHNOLOGIES IN NORTH AMERICA	294
<i>R. Sterling, S. Alam, E. Allouche, W. Condit, J. Matthews, D. Downey</i>	
FLOOD GROUTING A HOLISTIC GEO-TECHNICAL METHOD TO SEAL GRAVITY FED SEWER CONVEYANCE SYSTEMS AGAINST INFILTRATION AND EXFILTRATION A HISTORY OF 20+ YEARS OF EXPERIENCE	304
<i>Csilla Pall</i>	
CABLE-LESS TV-INSPECTION OF PIPELINES WITH INTEGRATED LEAK DETECTION.....	314
<i>Michael Huainig</i>	
SELECTION OF APPROPRIATE TRENCHLESS SEWER RENEWAL TECHNIQUE IN INDIAN CONTEXT:.....	322
<i>Dec Downey, Ayanangshu Dey, Raman Kumar, V. S. Thind</i>	
MOKOLO PIPELINE CASE STUDY: A STIMULATING CONDITION ASSESSMENT TOGETHER WITH A NOVEL APPROACH TO LINING REFURBISHMENT SELECTION.....	332
<i>Ross Mahaffey</i>	
MANY TRENCHLESS POINT REPAIR METHODS – WHICH IS THE WINNER FOR PIPES OF VARYING INNER DIAMETER AND OFFSET JOINTS?	342
<i>Jey K. Jeyapalan, Rudy Ellgass, Mark Biesalski</i>	
COMPLEX CONSTRUCTION PROJECTS WITH PIPE LINERS – LARGE PROFILES, OVAL PROFILES, SPECIAL PROFILES	351
<i>Gunter Kaltenhäuser</i>	

NEW INSTALLATION AND REHABILITATION OF PROPERTY SERVICE CONNECTIONS	357
<i>Sebastian Schwarzer</i>	
HYDRAULIC CAPACITY IMPROVEMENT VIA REHABILITATION	366
<i>Reda Bakeer, Perry Mickley, Jeremy Schmitt, V. Firat Sever</i>	
MIAMI DADE COUNTY PRE-STRESSED CONCRETE CYLINDER PIPE REHABILITATION	
USING FRP COMPOSITE SYSTEMS	375
<i>Jonathan Wise, Paulina Wasco, Scott Arnold</i>	
TRENCHLESS GEOPHYSICAL SURVEYS IN TUNNELING WORKS	384
<i>M. Ali Kaya, E. Tahsin Boz</i>	
IKT COMPARATIVE PRODUCT-TEST OF REPAIR METHODS FOR LATERAL	
CONNECTIONS	394
<i>Serdar Ulutas, Bert Bosseler, Roland W. Waniek</i>	
Author Index	