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Curriculum Vitae

Joseph A. Sopko, Ph.D., P.E.

Director of Ground freezing

Dr. Sopko directs Moretrench's ground freezing programs, including review of all design and laboratory testing programs related to remediation and underground construction projects He develops business opportunities with respect to geotechnical construction, specifically ground freezing and groundwater control, and routinely provides on-site project management and quality control programs. Dr. Sopko specializes in ground freezing for civil and mining projects world-wide.

EDUCATION:

Doctor of Philosophy, Civil Engineering, Michigan State University, 1990

Doctoral Dissertation: New Design Method for Frozen Earth Structures with Reinforcement

Major Professor: O.B. Andersland

Master of Science, Civil Engineering, Michigan State University, 1983

Bachelor of Science, Civil Engineering, Michigan State University, 1980

LICENSES:

Registered Professional Engineer, Wisconsin

YEARS OF EXPERIENCE:

Since 1985

PROFESSIONAL HISTORY:

2010 to Present:	Director of Ground Freezing, Moretrench American Corp.
1992 to 2010:	Director of Engineering, Layne Christensen, Port Washington, WI
1990 to 1992:	Senior Engineer, Dames & Moore, Chicago, IL
1988 to 1990:	Geotechnical Engineer, Hayward Baker, Odenton, MD
1985 to 1988	Vice President, Geocentric-Geofreeze, Lorton, VA

PROFESSIONAL AFFILIATIONS:

Member, American Society of Civil Engineers

Committee Member, ASCE Committee on Frost Action Soils

Member, The Moles

MILITARY EXPERIENCE:

Lt. Colonel, Missouri Air National Guard

- Civil Engineering Officer
- Called to active duty, Operation Enduring Freedom, Afghanistan
- Called to active duty, Operation Desert Shield

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PUBLICATIONS & PRESENTATIONS:

"Air Force Engineering Mission in Antarctica**,"** Transportation News, Vol. 23, 2002

"Investigative and Remedial Methods for Breach in a Frozen Shaft," Proceedings of the International Symposium on Ground Freezing and Frost Action in Soils, Brussels, 2000

"The Development of Shaft Construction Methods," Conference on 120 Years of Tunneling in New York City, 1994

"Freezing to Provide Support for Tunneling Using Vertical Refrigeration Pipes," Proceedings of the Rapid Excavation and Tunneling Conference (RETC), Seattle, WA, 1991

"Frozen Earth Cofferdam Design," Proceedings of the Sixth International Symposium on Ground Freezing, Beijing, 1991

"New Design Method for Frozen Earth Structures with Reinforcement" (unpublished), Ph. D. Thesis, Michigan State University, East Lancing, MI, 1990

"Ground Freezing to Control Groundwater and Support Deep Storm Sewer Structural Excavations," Proceedings of the Rapid Excavation and Tunneling Conference (RETC), Los Angeles, CA, 1989

PATENTS HELD:

U.S. Patent # 7,438.501: Ground Freezing Installation Accommodating Thermal Contraction of Metal Feed Pipes

U.S. Patent # 6,796,139: Method and Apparatus for Artificial Ground Freezing

SELECTED GROUND FREEZING EXPERIENCE:

- Boeing Dinol Paint Booth Exhaust Plenums, Renton, Washington, 2017
- Frozen Cross Passages, Northgate Link Tunnel, Seattle, Washington, 2017
- Dugway Storage Tunnel – Shaft DST-01, Cleveland, OH, 2016
- First Street Tunnel Shafts and Adits, Washington, D.C. 2015
- Port Mann TBM Rescue, Vancouver, British Columbia Canada, 2015
- Access Shaft No. 3, Buenos Aires, Argentina, 2014
- Port of Miami Cross Passages 2 and 3, Miami, FL, 2013
- Fort Hills Basal Aquifer Test, Fort Hills, Alberta, Canada, 2013
- Frozen Shafts and Tunnel Approaches, York Interceptor, Toronto, Canada, 2012
- Northern Boulevard Tunnel Crossing, New York, New York, 2011
- Hampton Avenue and Mill Road Shafts, Milwaukie, WI
- Jones Island, Scott & Barclay and Erie Street Shafts, Milwaukie, WI
- Mahogany Isolation Test, Meeker, CO
- Verglas Crown Pillar, Noranda Mining, Rouyn-Noranda, Quebec, 2001
- Gibson County Coal Shaft, Gibson County, IL, 1999
- South Bay Ocean Outfall Shaft, San Diego, CA, 1995
- Utilidor Tunnel Shafts, Seattle, WA, 1994
- Bushwick Shaft 20B, New York, NY, 1992
- Ventilation Shaft, Path Mining, Val D'Or, Quebec, 1991
- Shafts CT-8, CT-7, CT-5/6, NS-9, LMS-10 and NS-10, Milwaukie Metropolitan Sewerage District Deep Tunnels Project, 1986-1992