



TOWN +GOWN: NYC

It's 10 P.M., January 1, 2075

**Do We Know Where Our Subsurface Infrastructure
Is, Actually?**

Can We Get to It Easily to Minimize Disruptions?

Do We Still Have Subsurface Spaghetti?

Under the Ground.3

Presenters' Biographies



Travis Anderson, Senior Infrastructure and Energy Planner, City of Boston Planning Department

is the Senior Infrastructure and Energy Planner at the City of Boston's Planning Department. He oversees the Smart Utilities Program and Policy, which drives the development of resilient, equitable, and innovative infrastructure throughout the city. His work includes leading initiatives such as Geothermal Districts, electric vehicle adoption, targeted Distributed Energy Resources, and electrification strategies. Travis also plays a key role in the City of Boston's broader decarbonization efforts, contributing to initiatives such as the newly adopted Net Zero Carbon Zoning, the Mayor's Office of Housing Zero Emission Building Guidelines, and helping the city achieve its energy transformation goals. Travis began his career in the trades, where he helped construct one of the first passive houses in Massachusetts. Trained as an architect and a Certified Passive House Consultant, he brings a comprehensive, sustainable approach to the city's energy and infrastructure planning.



Adam Barin, since joining the NYC Mayor's Office of Operations in 2016, has led and supported many important initiatives through policy, data, and spatial analysis. He played a key role in the City's COVID response efforts including serving as the Chief of the Data Analytics & Reporting Branch of the NYC Vaccine Command Center. Adam has helped drive New York City's underground built and natural environment mapping efforts since 2017.



Anthony Bauer, Vice President, US Transportation and Infrastructure, Exodigo, has 15+ years of structural and geotechnical engineering expertise. He is particularly well-versed in leading teams through successful alternate delivery project models, including progressive design-build and design-build. Anthony leads Exodigo's planning, design, construction, and program management of complex rail and mobility sector projects, from procurement to completion.



Jacob Bortz, Eastern US Transportation and Infrastructure Lead, Exodigo, has a background in developing productive public-private partnerships in various industries, and with a particular focus on the transportation sector. Jacob has experience working municipalities across the US, state/city DOTs, transit agencies, and the private sector in delivering accessible transportation to communities. He leads all project engagements across the Eastern US.



Matt Friesen, ASLA, AICP, Jacobs Global Principal, Placemaking, is a landscape architect, certified planner, and urban designer whose interests and experience include creative sustainable approaches for all project types, including territorial planning, mixed-use districts, institutional, commercial, and urban infrastructure. Matt has extensive experience in all aspects of planning, urban design and landscape architecture for diverse public and private projects in the United States, Middle East, Asia Pacific, North Africa, and Caribbean. With a proven record of thoughtful design and thorough implementation, his diverse project experience includes neighborhood planning and design, mixed-use developments, urban regeneration strategies, corporate/university campuses, and hospitality/resorts. As Jacob's Global Principal for Placemaking and a Director within the Advance Planning Group, Matt is committed to an enabling, participatory design process, bridging the various disciplines required to address today's complex, built environment issues. Matt is passionate about delivering challenging projects and achieving his client's goals through the creation of ecologically balanced, artistic environments.

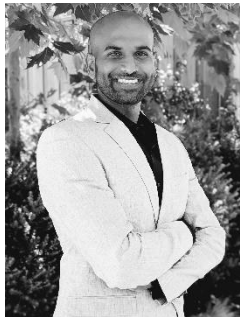


David Green, AIA, LEED AP BD+C, Americas Urban Design Lead, Arup, focuses on large-scale planning and urban design projects. He has been involved in hundreds of projects over the past thirty years, encompassing all scales of development from individual buildings to national scale projects across the globe. His work focuses on issues of broadly sustainable planning and

development in urban areas and the design and metrics that facilitate their success. He further addresses the regulatory framework within which this development occurs and provides innovative strategies for appropriate design and policy implementation. David received the AIA (American Institute of Architects) Atlanta Silver Medal in 2003 and the AIA Georgia Bronze Medal in 2008. David was a member of Georgia Tech College of Architecture Faculty from 1992-2013; appointed Professor of the Practice of Architecture, where he taught studios focused on research both at the building and urban scales.



Rich Jones is the Chief Engineer at NYC Department of Design and Construction. He is responsible for the agency's specifications, construction contracts, utility coordination, and grant reimbursement. Rich is a graduate of Worcester Polytechnic Institute, is a NYS Professional Engineer, AWS Certified Welding Inspector, and a CSI Certified Documents Technologist.



Charan Kukunoor, Ph.D. Candidate, Urban Informatics, NYU; Co-founder, Acuitas 3D, is a Ph.D. candidate at New York University focused on using AI, GIS, and urban analytics to transform how cities manage and plan the urban underground. As a co-founder of Acuitas 3D, he leads the product development, enabling proactive planning and reducing disruptive street works. His work blends infrastructure policy, geospatial modeling, and underground utility mapping to improve data quality and support resilient urban development. Before NYU, Charan held leadership roles in planning

major infrastructure projects in India and worked with UN-Habitat on sustainable city frameworks.



Debra Laefer, Professor, New York University, Tandon School of Engineering, with degrees from the University of Illinois Urbana-Champaign (MS, Ph.D.), NYU (MEng), and Columbia University (BS, BA), Prof. Debra Laefer has a wide-ranging background spanning from geotechnical and structural engineering to art history and historic preservation. Not surprisingly, Prof. Laefer's work often stands at the cross-roads of technology creation and community values such as devising technical solutions for protecting architecturally significant buildings from sub-

surface construction. Prof. Laefer and her Urban Modeling Group also pioneer computationally efficient storage, querying, and visualization strategies that both harness distributed computing-based solutions and bridge the gap between remote sensing data availability and its usability for the engineering community.



Frankie Lau, ENV SP, Deputy Director, Infrastructure, Manhattan Construction, NYC DDC, has worked for both the NYC DDC and NYC DOT for the past 15 years and has a professional career in design and construction spanning over 20 years. He holds a B.S. degree in Architecture from CUNY New York City College of Technology. Prior to his City service, he worked for an architectural firm and then a private developer designing high end residential homes in Manhattan and Long Island and then designing and construction

management of new construction hospitality projects, involved in the design and construction of numerous brand hotels in Mid-Town Manhattan. During his time at NYC DOT, he managed the complex interaction between the many construction projects that were taking place to reconstruct Lower Manhattan after September 11. At NYC DDC, first as a Resident Engineer, then as Engineer in Charge and now as deputy Director, he managed a variety of highway and utility projects throughout Manhattan and has been charged with overseeing the first design-build project being piloted in Midtown Manhattan on Lexington Avenue. He is also one of the most prominent specialists in Joint Bid procedures, currently assisting NYC DDC to continually update and improve its efficacy.



Joseph Lione, PE, Associate Commissioner, Coastal Resiliency, NYC DDC Construction, boasts an exceptional professional career spanning an impressive 37 years, with extensive expertise in NYC Infrastructure Construction. He holds a B.S. degree in Engineering Science from CUNY's College of Staten Island and is a licensed Professional Engineer in the State of New York. During the initial phase of his career, Mr. Lione served in various roles, including Deputy Director, working directly

with NYCDEP and NYCDDC. Demonstrating his adeptness in project administration and management, he successfully oversaw numerous infrastructure construction projects for the City. In the following stage of his career, Mr. Lione assumed the role of Chief Engineer for a successful general contractor. Throughout a 12-year period, Mr. Lione actively engaged in both private and municipal infrastructure construction contracts. His experience was influential in refining the company's proficiency in estimating, scheduling, and comprehensive project management. In addition to his strong negotiation abilities and coordination skills with various utility agencies, subcontractors, and vendors, he ensured the successful execution of all project phases. As a highly driven professional, Mr. Lione's next 11 years were devoted to Construction Management firms, where he commanded the role of Resident Engineer, effectively leading high-profile NYCDDC projects. Then, Mr. Lione's extraordinary expertise and visionary leadership culminated in his appointment as the Associate Commissioner of the DDC's Coastal Resiliency Construction Program. This remarkable program encompasses a series of ongoing projects with a combined value exceeding \$2 billion and extending across 3.4 miles of Manhattan's East Side.



Itzik Malka, Co-founder and CEO, 4M Analytics, which is a Utility AI Mapping and Analytics Solution built for Civil Engineers, DOTs, Municipalities, and Service Providers during the early stages of infrastructure development to help projects remain on schedule and within budget. Under his leadership, 4M Analytics is committed to unlocking access to the world below us, ensuring the continuity and development of all

critical infrastructure and services people rely on daily. Prior to 4M Analytics, Itzik co-founded 4M Defense in 2016, a company that utilized multi-remote sensing technologies to detect landmines and hazards in conflict zones.



Francesc Mirada, Senior Engineer, Arup, is a Senior Geotechnical Engineer in Arup's New York office. He has over 10 years of experience working on several large multi-disciplinary teams, working as a geotechnical designer and owner's engineer, integrating the interfaces between public owners and operators, technical disciplines, and contractors for large infrastructure projects. His experience covers a wide variety of geotechnical solutions, including the delivery of integrated geotechnical and

structural designs for deep excavations, deep and shallow foundations, damage assessments to underground structures, and slope stability. Francesc brings international experience and best practices to his teams and clients, drawing from his extensive past experience in Europe, the UK, and Latin America, where he was based before joining Arup in New York. He has previously worked with private clients and public agencies, providing advice on geotechnical asset management and managing the inherent geotechnical risks of projects.



Paul Nicholas, VP GBL Water BL, Tunneling & Trenchless Technology, AECOM, is a technical manager with over 35 years' experience in the heavy infrastructure, tunnelling and Trenchless industries with a geotechnical background and extensive engineering experience. He specializes in trenchless technologies, geotechnical analysis, equipment specification, methodology and constructability / risk analysis both on the

contractor and owner side giving him an understanding of all the elements it takes to effectively design and construct trenchless projects. Paul is also recognized expert (Hall of Fame member) in trenchless technology, he has been entrenched in the design, manufacturing, and/or commissioning of trenchless equipment. He has extensive experience in various types of ground for trenchless works from microtunneling, HDD and jack and bore to larger diameter TBM's supplied to transportation and water projects worldwide. Paul provides oversight of construction and with a geological background he works with tunneling equipment manufacturers in analyzing the ground conditions and recommending means and methods and completing constructability and risk assessments for tunnel and trenchless construction. Recent projects include the Pacific Corp new 300KVA cable installation with twin 3400ft long 24in HDD drills under the Willamette river Portland OR up to 180ft deep; also, a 2400ft long 90in outfall tunnel with FloCrete pipe installed by microtunneling with a horizontal and three vertical curves, in Oregon City OR. Other projects include the Newport beach Microtunneling project, Anderson Dam tunnel, and the Padre Dam HDD project.



Matthew Peterson, Assistant Commissioner, Chicago Department of Transportation, Division of Infrastructure Management, 811 Chicago, moved to Portland, Oregon, after completing high school in East Tennessee, to attend college (Portland State University). After earning a BS in Psychology, Matthew served in the U.S. Peace Corps (Azerbaijan), before moving to Chicago to complete his MA in International Comparative Politics (Loyola University Chicago) graduating magna cum laude and Pi Sigma Alpha. Matthew's 10+

year career with the City of Chicago includes positions with the City Treasurer's Office (Economic Development) where he managed *Bank On Chicago*; the Office of Inspector General (Performance Auditor) where he qualified as a Certified Inspector General Auditor (CIGA); and, currently, the Chicago Department of Transportation (Assistant Commissioner), where he manages One Call operations and right of way inspections which includes supervising a staff of 40+ individuals. Matthew is a graduate of the University of Chicago's Civic Leadership Academy (2024) and the Secretary for the Greater Chicago Damage Prevention Council (GCDPC).



Cesar Quiroga started and currently leads the Utility Engineering Program at the Texas A&M Transportation Institute (TTI). He has led multiple research and technology/knowledge transfer projects both at the state and national levels in areas such as utility-related processes; right-of-way acquisition and management; optimization of the project delivery process; and use of uncrewed aircraft systems (UASs), low-cost data acquisition technologies, and advanced geophysical techniques. He is a Civil Engineer with master's and PhD degrees from LSU in Baton Rouge. He is a registered P.E. in Texas and Louisiana. He

is a member of several organizations, including ASCE, APWA, and IRWA. At the Transportation Research Board, he served as member and Chair of the Utilities Committee. At ASCE, he is a founding member of UESI and TxUESI. At UESI, he has been a member of several committees, including the committees that developed the 38-22 and 75-22 standards.



Mark Reiner, PhD, PE, ENV SP, The Engineer, Co-founder Acutias 3D, is the lead civil engineer and infrastructure expert at Acutias 3D. Mark's focus for the past two decades has been on the transitions of infrastructure from supply to distribution, chronic and acute threats, and the symbiotic connections between urban/installation planning and the infrastructure that serves the city/installation. Before co-founding Acutias 3D, Mark was a founding Principal and CEO of WISRD that provided capital expenditure recommendations based on chronic hazards to buried infrastructure and the importance of the communities and facilities that would be impacted. WISRD was acquired by Jacobs in April 2021. Prior to WISRD, Mark was the Principal and CEO of Symbiotic Engineering in Boulder, Colorado. Symbiotic Engineering specialized in utility data tracking and life-cycle assessments and was acquired by ICF International in September 2012. Mark earned his Ph.D. in Civil Engineering from the Urban Sustainable Infrastructure Engineering Program (USIEP) at the University of Colorado Denver in 2007.



Chris D.F. Rogers, Professor of Geotechnical Engineering, University of Birmingham, researches sustainability, resilience and liveability of cities, infrastructure and urban systems, and how systemic changes can be designed and implemented to realise greatest value. He focusses on the 'urban metabolism' (all the flows into, around and out of cities), buried infrastructure and utility services, trenchless technologies, use of underground space and infrastructure systems' interdependencies. He founded *Trenchless Technology Research* (now incorporated into *Tunnelling and Underground Space Technology*). A Lead Expert of the UK Government *Foresight Future of Cities* project and founder member and Deputy Convenor of the *UK Collaboratorium for Research on Infrastructure and Cities (UKCRIC)*, he has been appointed to the UK's *Department for Transport College of Experts*. His notable current research grants include the Road to Net Zero project (www.roadtonetzero.org.uk) and Pipebots (www.pipebots.ac.uk), and he led the bid for, and development of, the £28m UKCRIC National Buried Infrastructure Facility at the University of Birmingham (<https://www.birmingham.ac.uk/research/activity/ukcric/nbif>).



Peter Roloff, P.E., Tectonic Engineering, Resident Engineer, has more than 27 years of experience on a wide variety of civil engineering projects. He has a bachelor's degree in civil engineering from Union College and a master's degree in environmental engineering from Northeastern University. By 2005, after obtaining his NYS PE license, he began his career as a consultant Resident Engineer for NYC DDC. He has continued to be a Resident Engineer on Staten Island and on several Manhattan roadway reconstruction and trunk water main projects since that time. He recently completed a \$ 50 million trunk

water main project in the Hudson Yards area of Manhattan (MED 598B - TWM in W 30th St Phase II). This project is required to activate a NYC DEP shaft 26B that will allow New Yorkers to maintain a safe plentiful supply of fresh water for the next century. In addition, he has extensive knowledge of micro tunneling, pile auguring and driving, retaining walls and private utility interference. He is currently the Resident Engineer for the NYC DDC Reconstruction of Greenwich Street joint bid project in lower Manhattan with Tectonic Engineering.



Wylie Tsang, Associate Engineering Geologist in Arup's New York Office, is Arup Americas East Geotechnical, Tunneling, and Geology discipline team lead. She has over 15 years of experience as Project Manager in managing multidisciplinary infrastructure projects, as well as leading geological, geotechnical and tunneling design and construction projects in US and Asia. She is currently the package manager of the tunnel construction contract for the NYC DEP Kensico-Eastview Connection Project, which includes a 2-mile deep

rock TBM water tunnel and 2 deep shafts in Westchester County, NY. She obtained both her bachelor in Earth Sciences and master in Geotechnical Engineering from the University of Hong Kong. She is a certified Envision Professionals (ENV SP) and Chartered Geologist.



David J. Varoli, Esq., DBIA, is DDC's Deputy Commissioner and General Counsel. David is an Associate Member of DBIA, where is a Certified Instructor. David is a graduate of Fordham University, where he is an Adjunct Professor. David received his JD from the Elisabeth Haub School of Law at Pace University and his LL.M. from the Quinnipiac University School of Law.



Rae Zimmerman, Research Professor and Professor Emerita of Planning and Public Administration at NYU Wagner’s Graduate School of Public Service and Director of its Institute for Civil Infrastructure Systems, previously was full-time professor of planning and public administration. She is a Fellow of the American Association for the Advancement of Science (AAAS) and Society for Risk Analysis (SRA) past president, Fellow, and distinguished achievement and outstanding service awards recipient. Infrastructure-related appointments have included National Academies Transportation Research Board standing committees and the NYC Panel on Climate Change. Her research encompasses infrastructure resilience for natural and technological hazards. She was co-Principal Investigator of “Unification for Underground resilience Measures” and currently co-PI of a cyber security and infrastructure resilience grant, both funded by the NSF. She co-edited *Urban Infrastructure* (U. Pittsburgh Press), authored *Transport, the Environment and Security* (Edward Elgar), authored *Governmental Management of Chemical Risk* (Lewis Publishers), published other co-edited books and about 200 papers. Education: U. California (Berkeley) chemistry BA, U. Pennsylvania Master of City Planning, and Columbia U. PhD in planning.