

### Workshop

## Underground Space Development: Utilization, Innovation, and Urban Sustainability

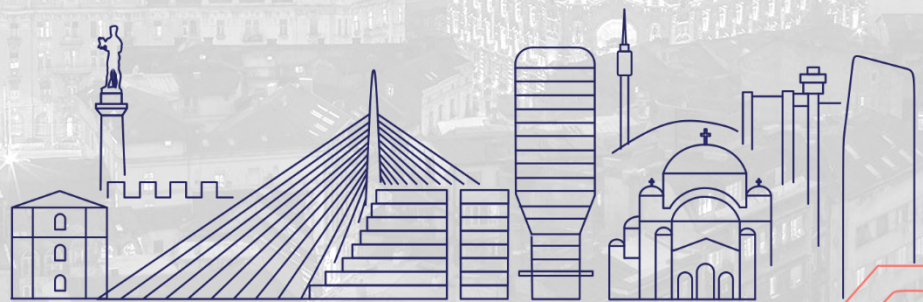
The Palace of Science, Kralja Milana 11, 11000 Belgrade, November 4<sup>th</sup>, 2025

Urbanization and population growth are driving cities to look *downward* to develop sustainable solutions. The **"Underground Space Development: Utilization, Innovation, and Urban Sustainability"** workshop addresses the critical challenges and opportunities in utilizing innovative and robust underground spaces to build resilient, efficient, and liveable cities. This full-day event brings together global experts from academia and industry to showcase cutting-edge technologies, innovative design strategies, and policy frameworks shaping the future of underground development. From AI applications used in underground construction to the development of multi-functional subterranean facilities including tunnels, hosting various uses, participants will gain insights towards the transformation of urban challenges into underground opportunities.

### Who Should Attend?

This workshop is designed for professionals and stakeholders engaged in urban development, including:

- Engineers & Architects: Specializing in tunnelling, geotechnics, or underground space design
- Urban Planners & Policymakers: Involved in city infrastructure, zoning, or sustainability initiatives
- Construction & Tech Professionals: Working in underground projects with AI, IoT, or BIM tools
- Academics & Researchers: Focused on underground urban studies, geoscience, or smart city
- Students & Newcomers: Seeking foundational knowledge and career opportunities in this field



# AGENDA

Time	Session	Key issues / topics
9:00 – 9:30	<b>Registration</b>	
9:30 – 9:45	<b>Opening Remarks</b> <b>prof. Dimitris Kaliampakos, PhD</b> University of Athens, Greece President of ACUUS	<ul style="list-style-type: none"> <li>- Welcoming address</li> <li>- Workshop objectives</li> </ul>
9:45 – 10:30	<b>SESSION 1:</b> <b>FROM VISION TO VALUE: EMBEDDING SUSTAINABILITY IN URBAN UNDERGROUND PROJECTS DESIGN</b> <b>Giuseppe Gaspari</b> , AECOM, Toronto, Canada	<ul style="list-style-type: none"> <li>- Climate Change and Carbon Emissions</li> <li>- Financial and Economic Incentives for sustainable underground space use</li> <li>- Innovative Construction Methods and Materials and their financial impact</li> <li>- Risk and Resilience framework for climate change assessments</li> <li>- Sustainability Frameworks and Standards</li> <li>- Social and Media Context, including public trust issues like "greenwashing"</li> </ul>
10:30 – 10:45	<b>Coffee Break</b>	
10:45 – 11:30	<b>SESSION 2:</b> <b>NORTH AMERICAN TRENDS IN UNDERGROUND SPACE DEVELOPMENT FOR TRANSPORTATION</b> <b>Sanja Zlatanic, P.E.</b> Chief Tunnel Engineer, Senior Vice President HNTB, New York, U.S.A. Secretary General of ACUUS	<ul style="list-style-type: none"> <li>- Urban transportation planning, design and construction using non-disruptive technologies and innovative applications</li> <li>- Unique considerations of North American underground projects procurement and delivery including lessons learned</li> <li>- Costs of underground projects in North America including factors driving them and potential solutions for making the projects more affordable</li> </ul>
11:30 – 12:15	<b>Lunch Break</b>	
12:15 – 13:00	<b>SESSION 3:</b> <b>AI APPLICATIONS IN UNDERGROUND PLANNING, DESIGN AND CONSTRUCTION</b> <b>Prof. Mike A. Mooney PhD</b> , Colorado School of Mines, Boulder, Colorado, U.S.A. Director for the Americas of ACUUS	<ul style="list-style-type: none"> <li>- Summary practical explanations of traditional and emerging AI technologies including machine learning, natural language processing, computer vision, robotic process automation, generative AI, and available tools for users</li> <li>- Example applications of these AI technologies to underground planning, site investigation, design and construction</li> <li>- Advantages and disadvantages; suggested roadmap for moving forward with AI</li> </ul>
13:00 – 14:00	<b>SESSION 4:</b> <b>IMPROVING TUNNEL SAFETY CONSIDERATIONS</b> <b>Prof. Andreas Benardos, PhD</b> , University of Athens, Greece Assistant General Manager of ACUUS <b>Bernd Hagenah, PhD</b> Principal Tunnel Ventilation Engineer, HNTB, New York, U.S.A.	<ul style="list-style-type: none"> <li>- Tunnel Safety Considerations – Operational and Emergency Conditions</li> <li>- Tunnel Ventilation and Emergency Evacuation Lessons Learned through Case Studies</li> </ul>
14:00 – 14:15	<b>Coffee Break</b>	
14:15 – 15:00	<b>SESSION 5:</b> <b>ECONOMICS OF UNDERGROUND SPACE</b> <b>Prof. Dimitris Kaliampakos PhD</b> , University of Athens, Greece President of ACUUS	<ul style="list-style-type: none"> <li>- Cost-benefit analysis and funding models for complex underground works</li> <li>- Defining benefits and social licensing of improved funding modelling and approach</li> </ul>
15:00 – 15:45	<b>SESSION 6:</b> <b>CONSIDERATIONS AND RECENT TRENDS TOWARD URBAN UNDERGROUND SPACE PLANNING</b> <b>Nemanja Sipetic MS</b> Urban planner, Belgrade Serbia Vice Chair of the Conference	<ul style="list-style-type: none"> <li>- Defining main considerations, aspects and criteria toward Underground Urban Space (UUS) planning and development</li> <li>- Selection of methods for UUS development</li> </ul>
15:45 – 16:00	<b>Closing / Certificates*</b>	
16:00 – 17:00	<b>Organized guided tour</b>	

\*CPD Certificate (1-Day) will be issued by the organizers to all participants.