

Wroclaw University of Science and Technology (Poland)

Ton Duc Thang University (Vietnam)

VSB-Technical University of Ostrava (Czechia)

Savoie Mont Blanc University (France)

University of Trieste (Italy)

Urban Innovation Center: Architecture, Engineering, Technology, Mobility

Committee of Civil and Mechanical Engineering of Polish Academy of Sciences – Wrocław
Branch

We cordially invite you the 4th International Conference
on Sustainable Development in Civil, Urban and Transportation Engineering 2024

CUTE 2024

Wrocław, October, 14-17, 2024

Place of conference:

Wrocław University of Science and Technology,

Building H-14, Wybrzeże Stanisława Wyspiańskiego 40, 50-370 Wrocław

For any request please e-mail us: cute2024@pwr.edu.pl

www.cute2024.pwr.edu.pl

The Conference Programme

Organizers:



Wrocław
University
of Science
and Technology



ĐẠI HỌC TÔN ĐỨC THẮNG
TON DUC THANG UNIVERSITY

Co-organizers:



Centrum
Innowacji
Miejskich



**The 4th International Conference
on Sustainable Development in Civil, Urban and
Transportation Engineering 2024, Poland, Wrocław,
14-17 October 2024**

CUTE 2024

Monday 14.10.2024

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| 10:00-14:00 | Preconference event (for registered participants only) | |
| 14:00-18:00 | Registration | |
| 16:00-16:30 | Opening ceremony | |
| 16:30-17:00 | Damian Stefaniuk | <i>Building the future: Concrete's role in renewable energy storage</i> |
| 17:00-17:30 | Andrzej Moczko | <i>The present and future of non-destructive testing in the diagnostics of building structures – a significant challenge for the development of modern building engineering</i> |
| 17:30-18:00 | Ludovico Centis, Elena Marchigiani | <i>A View from the Sea. Research and Planning on Climate Transition in the Italian Upper Adriatic Regions</i> |
| 18:00-21:00 | Welcome reception | |

Tuesday 15.10.2024

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| 8:00-11:00 | Registration | |
| 9:00-11:00 | I session | Digitalisation for sustainability Chairs: Trần Minh Tùng, Bartłomiej Sawicki |
| 9:00-9:30 | Keynote lecture A. Ćwirzeń | <i>Concretes for sustainable transportation infrastructure – north European approach</i> |
| 9:30-9:45 | Robin Dorrie | <i>Digital fabrication strategies for sustainability</i> |
| 9:45-10:00 | Sophie Albrecht | <i>Possibilities for reducing the environmental impact in the construction industry using the example of a 3D printed staircase</i> |
| 10:00-10:15 | Martyna Nieświec | <i>Effect of materials on the properties of fresh cementitious composites for 3D printing – short review</i> |
| 10:15-10:30 | Magdalena Rajczakowska | <i>Trends in bio-based 3D concrete printing: An NLP-driven analysis</i> |
| 10:30-10:45 | Hannes Eichler | <i>Quantification of potential of Hybrid Wire and Arc Additively Manufactured I-beams for resource efficient and sustainable steel structures</i> |
| 10:45-11:00 | Tomasz Błaszczyński | <i>Smart Building Center as the first prototype zero-energetic and zero-emission office and production facility in Europe</i> |
| 11:00-11:30 | Coffee break | |
| 11:30-13:00 | II session | Data-Driven Science in Civil Engineering Materials Chairs: Sławomir Czarnecki, Damian Stefaniuk |
| 11:30-11:45 | Karol Skowera | <i>Dyckerhoff presentation</i> |
| 11:45-12:00 | Hai Chien Pham | <i>Recovery of the Construction Industry after Covid-19 Pandemic in the Developing Countries</i> |
| 12:00-12:15 | Trần Minh Tùng | <i>Feasibility of floating houses for Mekong delta region: analytical and experimental assessments</i> |
| 12:15-12:30 | Timea Mazurova | <i>The Problem of Controlled Intersection with Cranked Priority</i> |

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| 12:30-12:45 | Marie Hornáková | <i>Service Life of Reinforced Concrete Structure Determined by Electrical Resistivity and Natural Bulk Diffusion Measurements</i> |
| 12:45-13:00 | Marta Rusnak | <i>The potential of using mobile eye-tracking in construction safety research - review</i> |
| 13:00-14:15 | Lunch break | |
| 14:15-16:15 | III session | <i>Fatigue and fracture of eco-friendly, green and alternative structural materials</i> <i>Chairs: Grzegorz Lesiuk, Monika Podwórna</i> |
| 14:15-14:45 | Keynote lecture A. Królicka | <i>Enhancing the life cycle of railway tracks: the influence of microstructure on the fatigue, fracture and wear behavior of bainitic rails</i> |
| 14:45-15:00 | Camilia Ronchei | <i>Mechanical and Fracture Characterisation of an Earthen Material for Eco-Friendly Structural Applications</i> |
| 15:00-15:15 | Jacek Grosel | <i>Effect of structure-ground interaction on shrinkage stresses in foundation slabs</i> |
| 15:15-15:30 | Andrzej Helowicz | <i>An integral bridge resting on an elastic half-space</i> |
| 15:30-15:45 | Arkadiusz Szot | <i>Water hammer phenomenon simulation in a critical water pipeline installed in a submerged tunnel</i> |
| 15:45-16:00 | Monika Podwórna | <i>Optimisation of absorbers installed on a bridge – evolutionary algorithm</i> |
| 16:00-16:15 | Andrzej Moczko | <i>Engineering Experience in NDT Assessment of Existing Concrete Structures</i> |
| 16:15-17:00 | Coffee break | |
| 16:15-17:00 | Poster session | |
| | Magdalena Grzegorzewska | <i>The impact of interior space on occupant health and well-being in relation to daylight availability in office buildings</i> |
| | Angelika Czajczyńska-Mieszkała | <i>Problems and challenges of green revitalisation of post-industrial areas</i> |
| | Benedykt Mrosek | <i>Cement mortar reinforced with dispersed payment card fibres</i> |
| | Jennifer Udebunu | <i>Characterization and application of auxetic cementitious cellular metamaterials: literature review, perspectives, and research gaps</i> |
| | Shriram Marathe | <i>Properties of Sustainable Alkali-Activated Permeable Concretes Developed using Agro-Industrial By-products</i> |
| | Shriram Marathe | <i>Effect of Alkali Activated Slag and Sugarcane Bagasse Ash on the Properties of Indian Lateritic Soil Subgrades for Pavement Infrastructure</i> |
| | Bartłomiej Bodak | <i>Dielectric spectroscopy as an efficient non-invasive method for soil properties characterization</i> |
| | Kamila Koszela | <i>Sustainable additive manufacturing – how composition of concrete mix influences fresh properties of concrete</i> |
| | Marlena Moj | <i>Evaluation of the effect of multi-walled carbon nanotubes on the pull-off strength value of epoxy resin floor</i> |
| | Mateusz Moj | <i>Comparison of models predicting the tensile strength of epoxy resin floors modified with granite powder and flax fibres</i> |
| | Andrzej Szewczak | <i>Epoxy glue modified with micosilica and carbon nanotubes</i> |
| | Andrzej Szewczak | <i>Durability of hydrophobized concrete with agents modified with higher fatty acids</i> |
| | Patryk Rumiński | <i>Cement paste with basalt powder: hydration process and porosity evolution due to thermal interaction</i> |
| | Mikołaj Masłowski | <i>Effective thermal conductivity of partially saturated soils: analytical micromechanics approach</i> |
| | Emmanuel Oluwasegun | <i>Demolition, dismantling and destruction of buildings – A perspective of demolition contractors</i> |
| | Agnieszka Chowaniec | <i>Towards sustainable development of epoxy floors with waste mineral additives</i> |

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| 17:00-18:00 | IV session | <i>Universities for Territorial Sustainable Development: working in-between knowledge transfer and civil engagement</i> <i>Chairs: Bożena Hoła, Ludovico Centis</i> |
| 17:00-17:15 | Hoang Thi Phuong Thao | <i>A study on Art-led Regeneration and Historic Village Preservation - Artworks Vitalizing Space</i> |
| 17:15-17:30 | Elisa Bertolini | <i>Towards a Technical Characterization of Green Neighborhoods in North-Eastern Italy</i> |
| 17:30-17:45 | Zuzanna Woźniak | <i>Research Areas of Near Misses in the Construction Industry: Literature Review</i> |
| 17:45-18:00 | Tomasz Błaszczczyński | <i>Planet Friendly certificate as a comprehensive and multi-criteria ecological certification system for buildings</i> |
| Wednesday 16.10.2024 | | |
| 8:00-11:00 | Registration | |
| 9:00-11:00 | V session | <i>Nature Based Solutions for Sustainable Geotechnical Design</i> <i>Chairs: Francesco Cafaro, Adrian Róžański</i> |
| 9:00-9:30 | Keynote lecture J. Shiau | <i>Development of Sustainable Sinkhole Research in Australia</i> |
| 9:30-9:45 | Tatiana Olinic | <i>The effect of living plant roots on the shear strength parameters: a sustainable approach to shallow slope stability and erosion control applications</i> |
| 9:45-10:00 | Adelaide Amato | <i>Impact of drainage geocomposite affected by roots on the infiltration through a compacted soil</i> |
| 10:00-10:15 | Arkadiusz Szot | <i>Aspects of risk analysis in the micro-tunnelling process</i> |
| 10:15-10:30 | Jim Shiau | <i>Effect of Microbial Induction on the Shear Strength of Coarse Sand and Black Soil</i> |
| 10:30-10:45 | Tomasz Abel | <i>Assessment of CIPP liners internal structure in terms of pore morphology</i> |
| 10:45-11:00 | Vu To-Anh Vu | <i>Cement incorporated with fly ash to improve the geotechnical properties for soil stabilization in pavements</i> |
| 11:00-11:30 | Coffee break | |
| 11:30-13:45 | VI session | <i>Rethinking cities through urban innovation</i> <i>Chairs: Bram Entrop, Daria Podstawczyk</i> |
| 11:30-12:00 | Keynote lecture Eva Spackova | <i>The search for a sustainable city as part of urban planning</i> |
| 12:00-12:15 | Annalisa Taballione | <i>The Tratturo Magno L'Aquila - Foggia: history, identification</i> |
| 12:15-12:30 | Maciej Szeląg | <i>The influence of thermal load and MCM-41 content on the hydration process and the air pores structure in cement paste</i> |
| 12:30-12:45 | Bram Entrop | <i>CO2 Emissions during Road Renovation Projects; the Case of a Residential Road in the Netherlands</i> |
| 12:45-13:00 | Paola Limoncin | <i>Facade additive strategies to foster a wider concept of comfort</i> |
| 13:00-13:15 | Isaac Agbamu | <i>Concrete self-healing: paving the way for sustainable infrastructure</i> |
| 13:15-13:30 | Jarosław Michałek | <i>Spun concrete with added steel fibers – overview of application possibilities</i> |
| 13:30-13:45 | Paulina Romańska | <i>Evaluation of mechanical properties of recycled polyethylene terephthalate (rPET) reinforced with glass fibres</i> |
| 13:45-14:45 | Lunch break | |
| 14:45-16:15 | VII session | <i>Biobased materials for sustainable building construction</i> <i>Chairs: Danuta Barnat-Hunek, Monika Wołoszyn</i> |
| 14:45-15:15 | Keynote lecture M. Wołoszyn | <i>Biobased material contribution to building construction: from material scale to energy and environmental performance</i> |
| 15:15-15:30 | Piotr Łapka | <i>Characterization of physical and thermal properties of bio-based building materials</i> |
| 15:30-15:45 | Shriram Marathe | <i>Improvements in Geotechnical Properties of Indian Lith-omargic Subgrade Soil through Geopolymerised Agro-Industrial by-products for Sustainable Pavement Design</i> |
| 15:45-16:00 | Pauls Argalis | <i>Application of a recovered low-strength binder from wood-cement particleboard production</i> |

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| 16:00-16:15 | Maya Obeid | <i>Advancing Sustainable Building Technologies: A Focus on Bio-Based Multi-Layer Panels and Real-Scale Hygro-thermal Analysis</i> |
| 16:15-16:30 | Monika Wotoszyn | <i>Solar Performance Indicators and Retrofitting of a Rural School in France</i> |
| 16:30-16:45 | Coffee break | |
| 16:45-18:00 | VIII session | <i>Interdisciplinary problems in Sustainable Development in Civil, Urban and Transportation Engineering</i> <i>Chairs: Marie Hornakova, To Anh Vu Phan</i> |
| 16:45-17:00 | Marcin Piechaczek | <i>Waste aggregate with pet sludge for use in construction</i> |
| 17:00-17:15 | Katarzyna Misiurek | <i>Static analysis of two-layer beam with flexible interlayer connection: numerical investigations and research perspectives</i> |
| 17:15-17:30 | Vu To-Anh Vu | <i>Effects of sea sand and fly ash on the compressive strength of concrete</i> |
| 17:30-17:45 | Emmanuel Oluwasegun | <i>Overview of Cement Partial Substitution with Marble Dust, Eggshell Powder in Pine-Needle Fibre Concrete</i> |
| 17:45-18:00 | Francesco Cafaro | <i>The impact of a wildfire on a vegetated topsoil: field monitoring and numerical modelling</i> |
| 20:00 | Gala dinner | |

PRE-CONFERENCE EVENT*

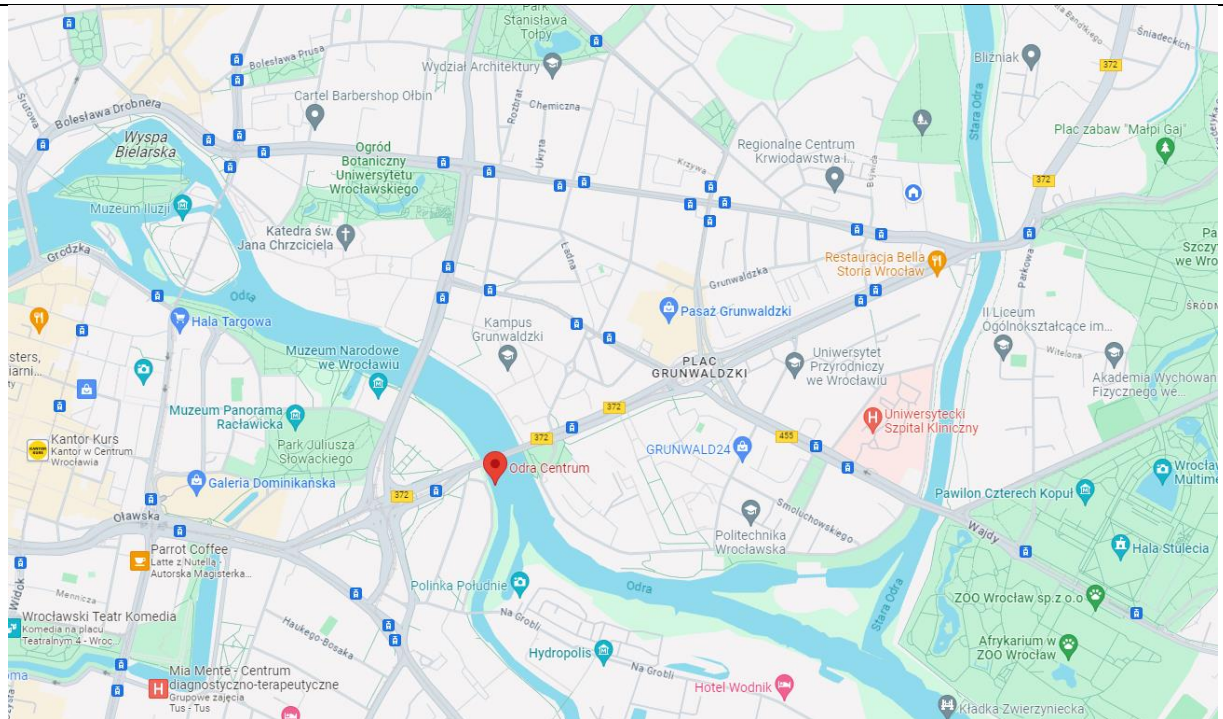
*only for registered participants

WHERE AND WHEN?

PLACE: ODRA CENTER

Wybrzeże Juliusza Słowackiego 5B,
50-406 Wrocław

<https://maps.app.goo.gl/h1Jm7UJdb9fMNmFQ8>



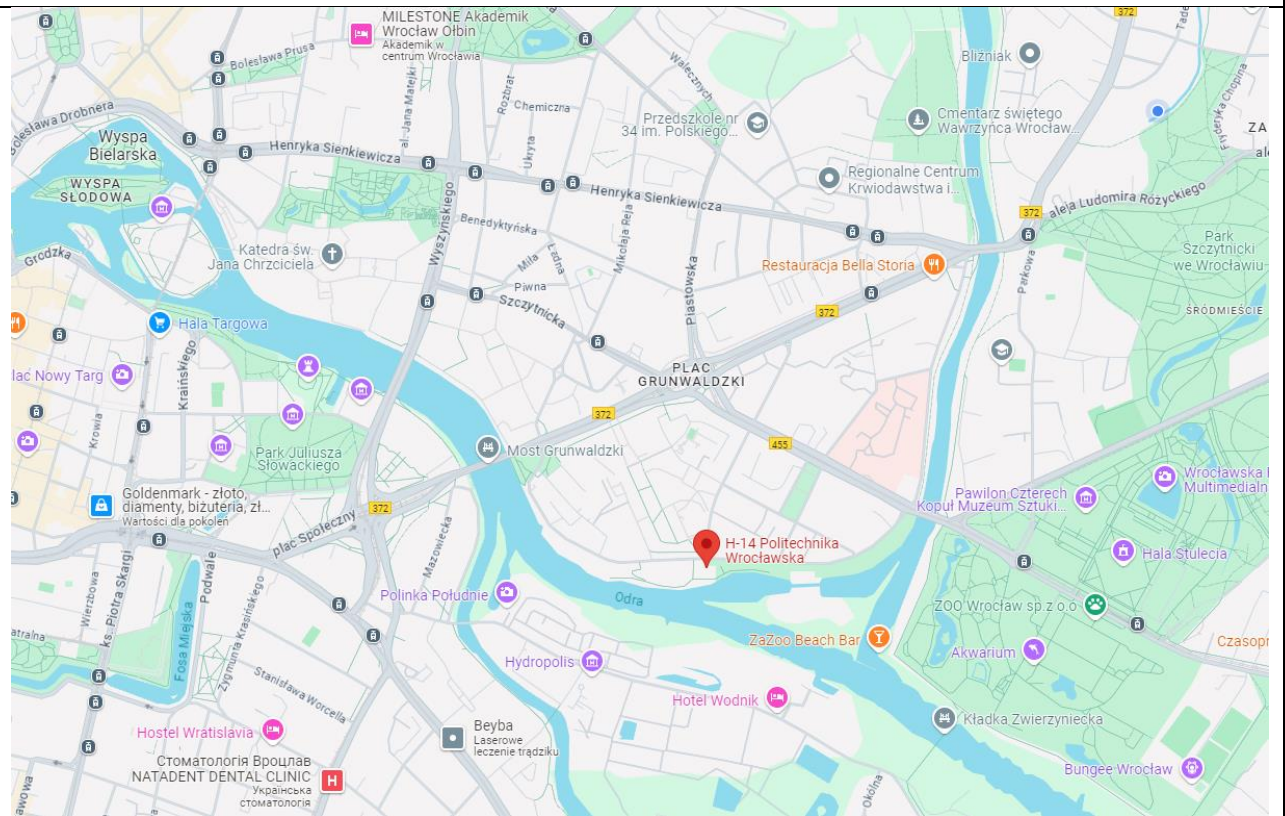
TIME 14th October, 2024, 10.00 – 14.00

CONFERENCE

WHERE AND WHEN?

PLACE: Wrocław University of Science and Technology, Building h-14,
Wybrzeże Stanisława Wyspiańskiego 40,
50-370 Wrocław

<https://maps.app.goo.gl/cvXQdZafG9YZbeE98>



TIME 14th – 16th October, 2024

GALA DINNER*

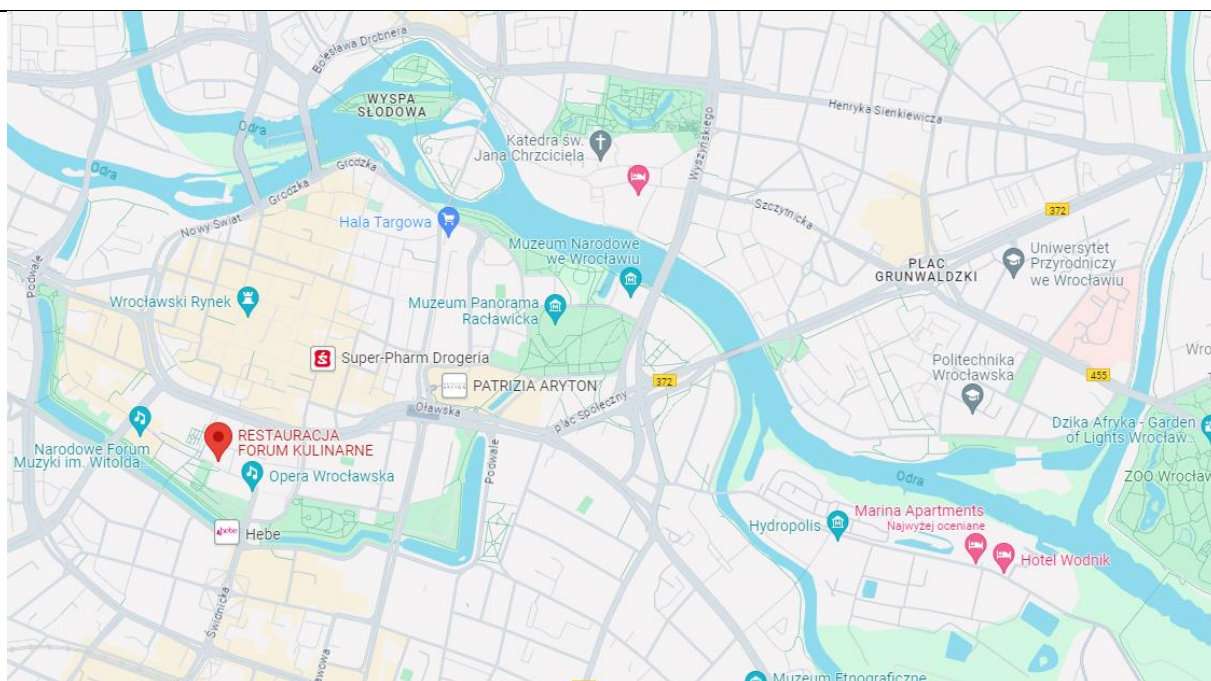
* only for registered participants

WHERE AND WHEN?

PLACE: FORUM KULINARNE

Plac Wolności 4,
50-071 Wrocław

<https://maps.app.goo.gl/qpFui6yZyn7c4N17>



TIME 16th October, 2024, 20.00 – 23.00