

Programme

**The 20th Miklós Iványi International  
PhD and DLA Symposium**



**MIK50+**

28-29 Oct 2024

Faculty of Engineering and Information Technology  
University of Pécs, Hungary

## **How to find a paper**

The abstracts are published in the Book of Abstracts, electronically. In this programme the letters immediately preceding a paper title refer to the paper or lecture. For example P-2 refers to the second paper.

## **A note for authors presenting papers and chairmen**

All authors should meet at the front of the meeting room for their session at least 5-10 minutes before the session starts. Each paper has been allocated 15 minutes for presentation and questions. Chairmen should indicate when 10 minutes have passed and again after 12 minutes that the presenter should immediately finish. Three minutes are available for questions and comments.

Authors are kindly asked to keep to the time allocated to them by the Chairmen. Authors are discouraged from using their own laptops for presentation unless absolutely necessary, in which case they should ensure that they can quickly and efficiently start their presentation when requested by the Chairmen.

Chairmen are requested to keep to the timetable. Changes to the programme will be indicated on the copies of the programme displayed on the conference timetable board and at the entrance to each of the rooms.

As a courtesy and in politeness to all speakers and other participants, please turn off your mobile phone whenever you enter any of the meeting and lecture rooms.

## **Journal special issue submission**

For details of the format specification and procedures for submitting conference papers for possible publication in the journal of Pollack Periodica, please visit:

**<https://phdsymp.mik.pt.e.hu/publication>**

# Conference program

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**Day 1:** Monday 28 Oct 2024

**08:00-12:30** Registration desk open

**09:00-10:05** Conference opening and invited lecture

**10:05-10:15** Group photo

**10:15-12:30** Conference session

**12:30-13:30** Lunch (Room B224, second floor) - *admission by ticket*

**13:30-15:30** Conference session

**15:30-16:00** Coffee / Tea Break

**16:00-17:00** Conference session

**19:00-23:00** Conference dinner,  
Villány, wine tasting  
(Buses leave from the university, Boszorkány 2) - *admission by ticket*

**Day 2:** Tuesday 29 Oct 2024

**08:30-10:00** Conference session

**10:00-10:30** Coffee / Tea Break

**10:30-12:30** Conference session

**12:30-13:30** Lunch (Room B224, second floor) - *admission by ticket*

# Conference program

## Day 1, Monday

Time	Room A007
09:00-10:05	Conference opening, Plenary lectures page 3

## Day 1, Monday

Time	Room A007	Room A008	Room A015
10:15-12:30	Architecture 1 page 4	Architecture 2 page 5	Architecture 3 page 6
12:30-13:30	Lunch - <i>admission by ticket</i>		
13:30-15:30	Architecture 4 page 7	Architecture 5 page 8	Civil Engineering 1 page 9
15:30-16:00	Coffee Break		
16:00-17:00	Other Engineering page 10	-	-

## Day 2, Tuesday

Time	Room A007	Room A008	Room -
8:30-10:00	Architecture 6 page 11	Architecture 7 page 12	-
10:00-10:30	Coffee Break		
10:30-12:30	Information Technol- ogy page 13	Civil Engineering 2 page 14	-
12:30-13:00	Lunch - <i>admission by ticket</i>		

**Day 1: Monday, 28 Oct 2024: AM, Room A007**

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**09:00-10:05**

**Conference opening**

Professor Péter Iványi  
University of Pécs

Professor Gabriella Medvegy  
Dean of the Faculty of Engineering and Information Technology  
University of Pécs

**Plenary lecture**

Writing and Submitting Technical Papers for Journal Publication  
Professor Barry H.V. Topping

**10:05-10:15**

Group photo in front of the building

**Day 1: Monday, 28 Oct 2024: AM, Room A007**

**10:15-12:30**

**Architecture 1**

Chaired by Dr. Tamás Molnár

**P-2** Cultural Sensitivity in Office Design: Why "One Size Fits All" Fails in a Globalized Workplace

D. M. A. Abu-Lail, E. S. Zoltán

**P-3** Evaluation of Commercial Space Accessibility in Tourist Town: A Case Research of Maotai Town in China

L. Xu

**P-4** Quality of Spaces of Adaptable Apartments: Case Study of Osijek

D. Koški, I. Brkanić Mihić, E. S. Zoltán, N. R. Gonzalez

**P-5** U.P. - the Centenary Pavilion

Z. Kotnyek, G. Medvegy, G. Veres

**P-7** The Inter-University Thematic Student Forum beyond Reality - Metaverse Spaces As Elements of a New Reality

N. Popović, D. Djordjević, D. Mitrović, M. Devetaković

**P-8** The Application of Multimedia Space in Museum Narrative

Z. Renkun, T. Anna Mária

**P-9** Visual Integration of Functional Mechanical Objects on Building Facades

R. Árpás, A. M. Tamás, E. Vörös

**P-40** Challenges in Designing a Museum's Interior in a Historic Building: A Case Study of the Pécs Archaeological Museum

T. Rácz, Á. Borsos, G. Medvegy, J. Gyergyák

**P-1** The Effect of International Brands on Hotel Design

Á. Bóna, T. Molnár, B. Mészáros

**12:30-13:30: Lunch**

**Day 1: Monday, 28 Oct 2024: AM, Room A008**

**10:15-12:30**

**Architecture 2**

Chaired by Dr. Erzsébet Szeréna Zoltán

**P-10** The Digital Transformation of Ancient Architecture Art: A Case Study of the Ninth Art  
H. Cao, J. Duan

**P-11** Adaptive Heritage: Exploring Mutation and Selection in Sustainable Restoration Practices of Hashim Chalbi House - Erbil Citadel/Iraq  
W. A. S. Goriel, E. Zoltán, T. Molnár

**P-12** Research on the Design and Renovation of Beihai Garden Expo Park - Exploration of the Exhibition Function and Innovative Application of Xiangyun Silk and Plant-Dyed Materials  
T. Chen, G. Medvegy

**P-13** Aesthetic Application of Window Design in Traditional Chinese Architecture and Garden Landscapes  
X. Jin, K. Jiao

**P-14** Earthquake Disasters and Building Reinforcement in Chinese Architecture in the Last 100 Years  
H. Li

**P-15** Research on the Strategy of Integrated Development of Vernacular Architectural Heritage and Cultural Tourism Industry  
H. Cao

**P-16** The Architectural Evolution of Mongolian Temples  
E. Gombo-Ochir, T. Molnár

**P-17** Compare of the Renovation of Historical Center of Beijing and Hungary  
H. Li

**P-18** Experiment from the Rehabilitation of the Post-Industrial Buildings of the Zsolnay Porcelain Factory through an Academic Semester  
A. Greg, G. Veres, Z. Kotnyek

**12:30-13:30: Lunch**



**Day 1: Monday, 28 Oct 2024: AM, Room A015**

**10:15-12:30**

**Architecture 3**

Chaired by Prof. Bálint Bachmann

**P-19** Selection of Fit-to-Purpose Weighting Approach for the Development of Sustainable Plus Energy Neighbourhood Index (SPENi)

Á. Magyari, A. Reith

**P-20** The Research on Livable Environment Space from the Perspective of Passive Design

Y. Wang, T. Wang

**P-21** Characterisation of Positive Energy Districts and Their Alignment with Existing Neighbourhood Typologies

M. Orova, B. Bachmann, A. Reith

**P-22** Adaptive Reuse - How Buildings are Changing

D. Varga, Á. Borsos, G. Medvegy

**P-23** Revitalisation of Captain Steinmetz Square Using Climate Adaptive Methods

D. Kalkán, J. Gyergyák, T. Rácz

**P-24** Identification of the Most Effective Holistic Approach Design for Achieving Performance Goals in School Buildings across Climate Zones Csa and Bsk in Iraq Using Fuzzy AHP

D. S. Khoshnaw, T. J. Katona, B. Baranyai

**P-25** Research of Tunable-Sound-Absorber (TSA) System and Its Controlling Strategy Towards the Application in Building Acoustics

Y. Tang, M. Halada, P. Paári

**P-76** Review on Characteristics of Some Thermal and Sound Insulating Materials for Multi-Layered Wall of Building

A. Zain, K. Hriczó, I. F. Barna

**P-26** Review on the Potential of Mycelium-Based Composites As Sustainable Alternatives in the Field of Architecture

D. Márfoldi

**12:30-13:30: Lunch**

**Day 1: Monday, 28 Oct 2024: PM, Room A007**

**13:30-15:45**

**Architecture 4**

Chaired by Prof. Ákos Hutter and Prof. Bojan Baletic

**P-27** Pre-Design Programming for Sustainable Public Space in Informal Settlement: A Case Study of Ulaanbaatar, Mongolia

B. Altankhuyag, T. Gantumur

**P-28** Value Reshaping of Traditional Villages Based on Built Environment Activation Strategies

S. S. Liu, B. Lu, K. Kovács-Andor

**P-29** The Evolution of Exhibition Spaces and the Concept of the "Urban Exhibition Hall"

L. Zhao, T. Wang, X. Jin

**P-30** Research on the Renewal Strategy of Old Community Public Space in Beijing under the Concept of inside Flow: Taking the Eastern Section of Yaojiayuan Road as an Example

A. Greg, D. Zhao, Y. Qian, Y. Wu

**P-31** Urban Space Renewal in Response to Emerging Urban Elements

T. Hu, A. Greg

**P-32** What Can We Know about the Population of Historical Settlements? - Demographic Questions of the Civil Town of Aquincum

A. Timár

**P-33** Adaptable Housing: A New Paradigm in the Mass Housing Approach

D. A. Ojo, Á. Borsos, G. Medvegy

**P-34** Community Outdoor Spaces in Collective Housing Neighborhoods: A Rapidly Urbanizing Area Mati, Pristina, Kosovo

B. Lleshi, B. Berbati, Z. Fácányi

**P-46** Strengthening Local Identity: Masterplanning for Community and Sustainability

I. Manhertz

**15:30-16:00: Coffee break**

**Day 1: Monday, 28 Oct 2024: PM, Room A008**

**13:30-15:45**

**Architecture 5**

Chaired by Prof. Ágnes Borsos and Prof. Hrvoje Krstic

**P-35** Research on the Application of Intelligent Technology in Elderly-Friendly Housing  
Q. Cui, P. Zilahi, X. Jin

**P-36** Spaces of Rehabilitation - Building Places for Rebuilding Ourselves  
V. Karácsonyi, P. Zilahi

**P-37** Practical Challenges and Countermeasures in the Renovation of Chinese Community  
Healthcare Centers  
Z. Fu, D. Rétfalvi, X. Jin

**P-38** Research on Cultural Space Design from the Perspective of "Great Health"  
S. Xiao, A. M. Tamás, J. Sarolta

**P-39** Human-Centered Design Technologies Assisted by Parametric Design  
K. Varga, Á. Borsos

**P-6** PTE Science and Innovation Park  
S. Jurdik, D. Lovig, Á. Borsos, G. Medvegy

**P-41** Intermediate Spaces  
N. Ramos González

**P-42** Application of Virtual Reality in Interior Design for Supporting Well-Being  
Z. Bittner, Á. Borsos, B. Gács

**P-43** Architectural Tools As Properties for Education  
A. B. Grósz, A. M. Tamás

**15:30-16:00: Coffee break**

**Day 1: Monday, 28 Oct 2024: PM, Room A015**

**13:30-15:15**

**Civil Engineering 1**

Chaired by Prof. Andrej Soltész

**P-65** Improvement of Revitalization Measures for Enhancing Fish Migration: A Case Study of the Myjava River

A. Vidová, L. Čubanová, J. Rumann, P. Dušička

**P-66** Photogrammetric Scanning As a Tool for Flow Modeling in Open Channels

A. Rutzká, J. Rumann, L. Čubanová, P. Dušička

**P-67** Efficiency Assessment of Water Retention Equipments to Load the Sewer Network

A. Raczkova, M. Portnov, I. Skultetyova, R. Wittmanova

**P-68** Analysis of the Impact of Rainfall Changes and Stormwater Management Efficiency Using Rational Method and R Programming

R. Awad, S. Stanko, R. Wittmanova, J. Hrudka

**P-69** Modeling Urban Water Retention for Sustainable Water Management

A. Kollár, M. Meliška, Š. Stanko, J. Hrudka

**P-81** Correlation of Trommel Screen Aperture Size with Refuse-Derived Fuel Quality and Quantity

A. Győrfi, A. Dolgosné Kovács

**P-82** Examination of Industrial Preparation for Returnable Beverage Packaging and Investigation into Efficiency Improvements

A. Győrfi, C. Leitol

**15:30-16:00: Coffee break**

**Day 1: Monday, 28 Oct 2024: PM, Room A007**

**16:00-17:00**

**Other engineering**

Chaired by Prof. Drazan Kozak

**P-78** An Overview of Noise, Vibration, and Harshness (NVH) Analysis in Vehicle Manufacturing and Its Future in the Automotive Sector

J. Nagy, C. Szalai, J. Perger, I. Lakatos

**P-79** Transforming Burnishing Techniques: A Novel Method to Enhance Efficiency and Surface Quality through Tool Feed Variation

F. T. Kebede, C. Felhő

**P-80** Machine Learning-Aided Lifetime Estimation of Solder Joints with Different Geometries

A. Bakonyi, Z. Sáfár, A. Zelei

**P-83** Investigation of NG-Diesel Dual Fuel Engine Performance, Combustion, and Emissions

H. S. Muhssen, Á. Bereczky

**Day 2: Tuesday, 29 Oct 2024: AM, Room A007**

**08:30-10:15**

**Architecture 6**

Chaired by Dr. János Gyergyák and Prof. Kristina Careva

**P-44** Examining the Interrelationships Between Urban Planning Units and Systems  
L. L. Gallyas

**P-45** Examining the Development of Syrian Urban Housing-Case Study: Damascus  
H. Tomajian, J. Gyergyák

**P-47** Sustainable Stormwater Management Solutions for the Renovation of Prefabricated Concrete Buildings  
L. Ben Khadra, J. Pál-Schreiner, J. Gyergyák

**P-48** Research on Rural Architectural Renewal and Architectural Design Practice of Art Museum, Hebei, China  
T. Wang, X. Jin

**P-49** Bridging the Gap: Addressing Monitoring and Evaluation Challenges in Nature-Based Solutions Implementation  
F. Tapia, A. Reith

**P-50** Adaptive Comfort Technologies As Architectural Possibilities for Climate-Migration  
T. Kondor, H. Juhász

**P-51** Millions of Years Ago Human National Archaeological Site Park Design - Xuetang Liangzi Site for Example  
K. Kovács-Andor

**10:00-10:30: Coffee Break**

**Day 2: Tuesday, 29 Oct 2024: AM, Room A008**

**08:30-10:00**

**Architecture 7**

Chaired by Dr. Márk Zagorác

**P-52** BIM and AI in AEC Industry: a Literature Review  
C. M. Barbosa Teodoro, L. Issa Yousef Esau, O. Rák

**P-53** Literature Review for Heritage BIM  
T. Jászberényi, M. Zagorác

**P-54** Investigation of Life Cycle Assessment (LCA) Methods That Can be Implemented into Building Information Model (BIM) in the Early Stages of Architectural Design for Single-Family Houses and Small Public Buildings: A Systematic Literature Review  
D. E. Simon

**P-55** Decision-Support LCA Calculator for Ventilated Façade Cladding Structures  
B. L. Novák, B. Füredi

**P-56** Automated Verification of Wall and Opening Structures Using BIM and Point Cloud  
A. Madiiev, J. Erdelyi, R. Honti

**P-57** Possibilities of Digitization of Indoor Environments Using a Low-Cost Mobile Mapping System  
J. Brindza, J. Erdélyi, P. Kyrinovič

**10:00-10:30: Coffee Break**

**10:30-12:00**

**Information Technology**

Chaired by Prof. Péter Iványi

**P-70** Enhancing Adversarial Robustness: A Comprehensive Analysis of Objective Functions in Adversarial Training

A. Al-Najjar

**P-71** Household-Size Power Plant Generated Energy Consumption Optimization

Z. Ercsey, Z. Kovács, T. Storcz

**P-72** Solution of a Sport Shooting Competition Scheduling Problem

T. Storcz, Z. Kovács, Z. Ercsey

**P-73** Weather-Informed Vision Enhancement for Autonomous Vehicles in Adverse Conditions

E. Bayramov, Z. Istenes

**P-74** Evaluating Performance and Confidence in EMG-Based Prosthetics Using Eye-Tracking and the Blocks and Box Test

P. Müller, Á. Schiffer

**P-75** Application of Formal Verification Methods for Embedded Software Development

B. Nagy

**12:30-13:30: Lunch**



**Day 2: Tuesday, 29 Oct 2024: AM, Room A008**

**10:30-12:30**

**Civil Engineering 2**

Chaired by Prof. Majid Movahedi Rad and Prof. Jaroslav Kruis

**P-58 Robust Design of Shell Grids**

B. Tóth, M. Bruggi, J. Lógó

**P-59 A Comparative Analysis of Retrofitting Methods for Earthquake Resistance: Evaluating Cost and Structural Performance**

M. U. Farooq, S. Ali, E. Sara, Z. Orban

**P-60 Parametric Study on the Design of Cross-Laminated-Timber-Concrete Slabs**

M. Tantawi, D. B. Merczel, J. Lógó

**P-61 Evaluation of Various Treatment Methods on the Properties of Recycled Brick Aggregates**

H. Ayaz, S. Elhadad, A. Salem, A. Fülöp, R. Ashraf, R. Hameed, Z. Orban

**P-62 Mechanical Behavior of 3D Printed Concrete with Steel Fiber: Influence of Steel Fiber Volume on Mechanical Performance**

H. J. Bosco, S. Elhadad, A. Salem, A. Fülöp, Z. Orban, J. Marcus

**P-63 Energy Performance of 3D-Printed Concrete Walls Using Different Forms of Ceramic: A Numerical Study**

J. Khalaf, S. Elhadad, A. S. Salem, A. Fülöp, Z. Orban

**P-64 Optimization of Masonry Strength Assessment Procedure Using Fuzzy Method**

A. Kaszás, V. O. Pomezanski, L. T. Kóczy, A. Dormány, Z. Orbán

**P-77 Measuring the Thermal Conductivity of a 3D Printed Sample**

A. Ózdi, L. Lenkovics, L. Budulski, G. Loch, M. M. Eördöghné, B. Cakó

**12:30-13:30: Lunch**