

Day 2: 5/19/2026 (Tue)

Session 1 1-1 Indoor Air Quality

11:00 - 12:30 Location: SGM 123 / Session chair: Vincenzo Gentile

Paper Number	Author	Title
26	Bahadır Erman Yuce, Yunus Emre Cetin and Martin Kriegel	Comparison of Particle Deposition under Air Curtain and Mixing Ventilation in a Negative-Pressure Two-Bed Ward
41	Gerrid Brockmann and Martin Kriegel	A numerical investigation about the influence of combined exhaust positions on ventilation effectiveness
134	Chaimin Hong, Inseo Jeong, Taeyoung Kim, Hyukkyu Kwon and Sanghoon Park	Performance Evaluation of Window-Type Ventilation Systems: A Comprehensive Methodology and Experimental Validation
427	Saeid Chahardoli, Avijit Sarker, Mina Lesan, Yi Xiao, Andrew Z Johannsen and Arup Bhattacharya	SIMOC-Inspired Mesh Sensing and Combinatorial Bayesian Optimization of Classroom Air-Purifier Placement
558	Vincenzo Gentile and Marco Perino	Low-cost & fast response multi-tracer multi-point gas sensing network for ventilation and interzonal flows measurements

Session 1 1-2 Energy Efficiency, Conservation, Renewable Energy, and Embodied Carbon

11:00 - 12:30 Location: SGM 124 / Session chair: Huijeong Kim

Paper Number	Author	Title
71	Weiyu Shih, Kyosuke Hiyama, Yuya Baba and Ryosuke Kinoshita	Energy Conservation and Performance Verification of Air-Conditioning Systems in a University Building with a Large-Scale Learning Commons
72	Wei Jing, Akihito Ozaki, Yusuke Arima, Younhee Choi and Sungjun Yoo	Evaluation of a Peak Cooling Load Estimation Model for Radiant Systems in Large Indoor Spaces: Validation with BES and Energy Saving Analysis
174	Beom-Jun Kim, Sang-Hwan Park, Ye-Weon Kim, Ye-Eun Jang, Hansol Lim and Ki-Hyung Yu	Post-Retrofit Performance Evaluation of Heat Pump Systems Using Regression-Based Benchmarking
290	Minyoung Choi, Soo-Jin Lee, Min-Geon Park, Suyeon Hong and Jae-Weon Jeong	Performance of Hybrid Ground Source Heat Pump Systems with Open and Closed-Loop under Part-Load Operation
358	Mohammad Hamid, Mohammed Assad, Walid Chakroun and Nesreen Ghaddar	Pulsating Impinging Jet Ventilation with floor cooling to improve thermal comfort at enhanced system performance
537	Deok-Oh Woo, Rocky Alazazi, Karen Ternes, Rajul Patel and Sarah Beatty	High-Intensity UVC Irradiation of Air Handling Units for Enhanced Energy Efficiency Under Varying Biofouling Risks

Session 1 1-3 Building Technology and Performance

11:00 - 12:30 Location: SGM 101 / Session chair: Miroslav Čekon

Paper Number	Author	Title
45	Rossella Cottone, Stefano Fantucci, Giorgia Autretto and Miroslav Čekon	High - Performance Phase Change Material - Integrated Systems for Summer Climate Optimization
303	Yujin Kang, Ji Hun Park, Seong Taek Kang and Sumin Kim	Exploring cross-laminated timber (CLT) applications for sustainable façade design in Korea
311	Young Uk Kim, Dongchan Jin and Sumin Kim	Effect of carbon material dispersion in PCM on thermal properties of cementitious building materials
349	Minyoung Kwon, Jubyoung Lee, Yongsik Jeong, Youngjae Lee, Juseok Kim, Shinjae Lee and Sangeun Han	Plug-and-Play Cartridge Facades: Assessing Energy, Carbon, and Cost in Office Renovations
355	Yonca Yaman, Ayça Tokuç, Mehmet Akif Ezan, Gülden Köktürk, Zeliha Demirel and Irem Deniz	Bioreactive Skins: Evaluating Microalgae Façade Systems for Thermal and Daylighting Performance in Los Angeles
482	Soyeon Ahn, Minseong Kim, Taeyeon Kim, Hyokung Sung and Jae-Weon Jeong	Retrofit of Thermoelectric Moule-Based Thermally Activated Insulation Panel for Apartment Buildings

Session 1 1-4 Health, Wellbeing, and Human Behaviors in the Built Environment**11:00 - 12:30 Location: GFS 116 / Session chair: Evandro Eduardo Broday**

Paper Number	Author	Title
25	Mar Hernandez and Roberto Alonso González Lezcano	Methodology for determining Indoor Environmental Quality (IEQ) in residential buildings for the elderly by monitoring key environmental parameters.
98	Koga Nakamura and Tatsuya Hayashi	Impact of Office Environmental Performance on Corporate Value: An Objective Data Analysis in Human Capital Management
106	Mateus Pedrosa Braga, Iasmin Lourenço Niza and Evandro Eduardo Broday	The Influence of Seasonality on Indoor Environmental Quality Parameters in Brazilian University Classrooms
111	Clara Peretti, Alberto Lodovico Ghiberti and Enrico Fabrizio	Analysis and monitoring of environmental conditions and well-being in remote working environments in northern Italy
230	Shunsaku Uozumi, Koga Nakamura and Tatsuya Hayashi	Wellness Offices in Japan: An Empirical Analysis Based on CASBEE-Wellness Office
397	Shundong Li and Nan Ma	Large Language Models for Investigating Co-Occurrences in Multi-Domain Indoor Environmental Quality

Session 1 1-5 Thermal Comfort**11:00 - 12:30 Location: GFS 101 / Session chair: Ash Ragheb**

Paper Number	Author	Title
68	Vincenzo Costanzo, Gianpiero Evola and Michele Torrisi	Selecting and testing Personal Comfort Systems (PCS) in office spaces in a Mediterranean climate: first insights from in-situ surveys
109	Kyoungmin Lim, Jihyun Yoo, Junseok Park, Chungyoon Chun, Sanghun Kim, Seokwon Seo and Namshin Kim	Determining Optimal Local Thermal Environment for a Vehicle Passenger Using Thermal Comfort Model
128	Wen-Hsuan Hsu and Yun-Shang Chiou	Fishbone vs. Peripheral-Ring Air-Conditioning Layouts: Spatial Thermal Variation and Occupant Comfort in Office Environments
176	Tazia Rahman, Mohamed Ouf, Joyce Kim and Kehinde Bayode	Comparative cooling efficiency of wearable and non-wearable personal comfort systems in office settings
223	Shiyong Li, Yifan Wu and Borong Lin	Thermal comfort benefits using a convective–radiative Personalized Environmental Control System for intermittent heating
491	Rosa Seo, Chul Kim and Kyu-Nam Rhee	Impact of Thermally Activated Internal Louvers on Occupants' Thermal Comfort

Session 1 1-6 Smart Cities and Green Infrastructure**11:00 - 12:30 Location: GFS 118 / Session chair: Ryoza Ooka**

Paper Number	Author	Title
51	Chao Lin, Hideki Kikumoto, Yasutomo Takakuwa and Ryoza Ooka	Optimizing Parapets for Rooftop Wind Safety Using CFD Simulations and Sensitivity Analysis
91	Hongyuan Jia, Chao Lin, Karine Sartelet and Hideki Kikumoto	Bayesian inference for sources of reactive gases in urban canyons based on the adjoint method
119	Haruka Nishiyama and Yasuyuki Ishida	`
211	Youmin Xu, Xu Han, Shaoxiang Qin and Liangzhu Leon Wang	High Resolution Urban Microclimate Reconstruction with Generative Diffusion-Based AI
275	Yu-Cian Lin and Ying-Chieh Chan	Pareto Based Performance Framework for Urban Greening: Visualizing Trade offs between Cost, Carbon Sequestration, and Shading
553	Esra Tepeli	Towards Sustainable Building Delivery: Synergizing LEED and Lean Approaches for Energy-Efficient, Healthy Passive House Design

Session 1 1-7 Generative AI in Sustainable Built Environment**11:00 - 12:30 Location: GFS 207 / Session chair: Dongjun Suh**

Paper Number	Author	Title
17	Wooyoung Jung, Prosper Babon-Ayeng and Kahyun Jeon	Human-AI Interaction in Large Language Model-Integrated Building Energy Management Systems: User Prompt Strategy
252	Simona Semeraro, Francesca Vecchi, Roberto Stasi and Umberto Berardi	A Two-Phase Physics-informed Machine Learning Framework for Predicting Indoor Temperature and Cooling Energy in Present and Future Climates
279	Mahdi Bonyani, Maryam Soleymani and Chao Wang	Transformer-based Generative AI for HVAC Control with Fragmented Data Center Histories of IT Workload and Cooling Infrastructure
473	Giovanni Calzolari and Wei Liu	Accelerating Large Eddy Simulations of Urban Airflow with Two Generative Adversarial Networks-based Architectures
506	Xinyue Xu, Julian Wang and Xingjian Liu	ResStock-LLM: A Multi-Agent Framework for Climate-Adaptive Residential Retrofit Decisions
519	Muhammad Ihza Febriyan Pagri, Dongho Lee, Junhwa Hwang and Dongjun Suh	A Comparative Analysis of Fine-Tuning and Prompt Engineering for LLM-Based Automation of Building Energy Models for Rooftop Photovoltaics

Session 2 2-1 Sponsored session by KD Navien: Indoor Air Quality**1:30 - 3:00 Location: SGM 123 / Session chair: Arezoo Shirazi**

Paper Number	Author	Title
180 *	[Sponsor Team: KD Navien] Insoo Hwang, Junwoo Kim and Hyunbae Park	A Study on Indoor Air Quality Using a Hybrid Dehumidification Ventilation Unit
85	Danbi Kwon, Donghyun Kim and Taeyeon Kim	CFD-based Surrogate Model for Predicting CO2 Concentration Distribution in Classrooms
86	Yubin Cho, Donghyun Kim, Taeyeon Kim and Sihyeon Kim	CFD-ML Approach for Predicting Breathing-Zone PM2.5 in Indoor Cooking Environments.
401	Avijit Sarker, Saeid Chahardoli, Mina Lesan and Arup Bhattacharya	Real-Time Indoor CO2 Distribution Prediction Using CFD and Physics-Regularized Kolmogorov-Arnold Network
442	Yi Xiao, Saeid Chahardoli, Mina Lesan, Avijit Sarker, Andrew Z Johanssen and Arup Bhattacharya	Optimizing Ventilation Inlet and Outlet Configurations using a UQ-Informed Robotic Sensing Platform
456	Tang Lee and Anthony Santini	Preventing the spread of airborne infectious pathogens in the next pandemic

Session 2 2-2 Energy Efficiency, Conservation, Renewable Energy, and Embodied Carbon**1:30 - 3:00 Location: SGM 124 / Session chair: Sharon Verghese**

Paper Number	Author	Title
36	Yi Zhu, Junyu Chen, Junjie Fu, Kan Chen and Peng Xu	An Efficient PSO-Based Approach for Optimizing Internal Gain Schedules in Building Energy Simulation
90	Yusuke Nagaoka, Keiichiro Taniguchi and Yasunori Akashi	Preemptive HVAC setpoint scheduling enabled by large language model-based occupancy prediction: a lecture hall case study
241	Sharon Verghese and Mike Jaeger	Enhanced Deterministic Occupant Behavior Modeling Framework for Energy Efficient Conceptual Design
249	Jeongyun Hwang and Hyunwoo Lim	Improving urban building energy modeling (UBEM) accuracy through shape and energy use pattern calibration factors based on representative buildings
576	Sooyoun Cho and Gi Seok Kim	Development of Hierarchical Classification System for University Building Energy Influential Factors and Construction of Prediction Matrix

Session 2 2-3 Building Technology and Performance**1:30 - 3:00 Location: GFS 116 / Session chair: Ying-Chieh Chan**

Paper Number	Author	Title
75	Miyu Matsunobu, Kyosuke Hiyama and Yutaka Oura	Quantifying the Trade-off between Upfront and Operational Carbon in High-Performance Building Envelopes
322	Hyeonseong Yuk, Seong Taek Kang and Sumin Kim	Balancing energy efficiency and conservation in historic building retrofits
357	Max Ruffo	Why Energy per Person Is the Metric the Future Demands
496	Oi-Man Hip, Simeon N. Ingabo and Ying-Chieh Chan	Evaluating the Impact of Reflective Painting on Building HVAC Performance
532	Kisa Fujiwara	Thermal and Daylighting Performance of Representative Spatial Configurations in Contemporary Japanese Municipal Office Buildings
645	In-Hwan Lee, Beom Yeol Yun, Hyung Woo Lee, Chul-Ki Kim and Sang Joon Lee	Strategies for zero energy building certification of timber house

Session 2 2-4 Health, Wellbeing, and Human Behaviors in the Built Environment**1:30 - 3:00 Location: GFS 118 / Session chair: Hui Zhu**

Paper Number	Author	Title
50	Seonghyuk Son and Dongwoo Jason Yeom	Lighting and Spatial Proportions in Virtual Reality: Patterns of Comfort and Task Performance
204	Yanwei Jin, Yunyi Zeng, Juan Yu and Borong Lin	Health impact assessment of light and thermal environments: field research in offices with wearable monitoring
226	Quanna Liao, Duo Yang, Le Ma, Hui Zhu, Hua Su, Masanari Ukai and Songtao Hu	Cognitive performance evaluation based on physiological indicators in different sleep restrictions
270	Wan-Tai Au-Yeung, Josephine Lau, Joel Steele, Nora Mattek, Zachary Beattie, Lyndsey Anderson, Allison Lindauer, Miranda Lim and Jeffrey Kaye	Associations between night-time bedroom environmental factors and objective sleep metrics of older adults
380	Zhining Zhu, Jieun Choi, Xinbo Xu, Jiwon Park, Tobias Kramer, Hui Zhang and Stefano Schiavon	Environmental and Physiological Influences on Sleep Quality: A Randomized Controlled Trial using Heating Pads in the Bay Area
571	Eun Ji Choi and Joon-Ho Choi	Robust Occupant Activity Recognition in Buildings using AI-Based Data Generation

Session 2 2-5 Thermal Comfort**1:30 - 3:00 Location: GFS 101 / Session chair: Yongxin Xie**

Paper Number	Author	Title
42	Maha Basha and Jim Uttley	Adaptive thermal comfort and healthy home metrics among minority households in the United Kingdom.
202	Raimo Simson, Martin Kiil, Karl-Villem Võsa, Endrik Arumägi, Alo Mikola and Jarek Kurnitski	Balancing Cooling and Comfort: Lessons from Fan Coil Units in Estonia
346	Ryuichiro Yoshie	Field Measurements in a Renovated Apartment with Underfloor Air Distribution Using a Single Mini-Split Heat Pump
448	Ashraf Ragheb	Indoor Thermal Comfort Evaluation of an Office Space in the Southeastern United States.
567	Ying Jiang, Yongxin Xie and Jianlei Niu	Developing a physiological-parameter-based thermal sensation model for warm-biased outdoor settings: the dynamic part
579	Andrea Martinez Arias, Marco Morales, Valentina Gonzalez Bernal, Maria José Peña, Daniel Canto and Isaias Navarrete	Prototypes and on-field testing of eco-insulated modules for retrofitting building facades in public schools in Chile.

Session 2 2-6 Visual (Lighting and Daylighting) Quality and Accoustic Quality**1:30 - 3:00 Location: GFS 207 / Session chair: Yun-Shang Chiou**

Paper Number	Author	Title
35	Kuniaki Mihara, Daniel Jun Chung Hii, Hiroyuki Takasuna and Katsuhiko Sakata	From Simulation to Space: Impacts of Green Coverage Ratio and Spaciousness on Occupant Well-being in a Semi-outdoor Atrium
153	Haerin Yang, Minwoo Kim and Jeehwan Lee	Comparative EEG Neural Pattern Analysis of Occupant Responses to Window Configurations in Educational Environments
198	Yun-Shang Chiou and Wan-Hsin Cheng	Between ClimateStudio simulations and reality – a study of glare in complex lighting workplace environments
217	Chung-Luen Cheng and Ying-Chieh Chan	Interactive Lighting Design and Simulation Interface Based on BIM and Game Engines for Smart Indoor Environments
396	Zahra Najafi and Mehdi Ashayeri	A Framework for Designing Kinetic Fabric Shading Systems Optimizing Integrated Energy, Daylight, and View Clarity Metrics

Session 2 2-7 Panel Discussion**1:30 - 3:00 Location: SGM 101 / Session chair: Mannider Thind**

Paper Number	Author	Title
601	Maninder Thind, Rebecca Martinez, Anushka Raut, Yu Hou	Advancing Healthym Equitable Buildings: Integrating Research, Standards, and Decarbonization Practice

Session 3 3-1 Indoor Air Quality**3:30 - 5:00 Location: SGM 123 / Session chair: Lu Li**

Paper Number	Author	Title
15	Hanin Othman and Rahman Azari	Enhancing the Granularity of Spatial Sensing using a Low-Cost IoT-based Sensing Network
261	Lu Li and Katie E Angarano	Long-Term Indoor Air Quality Exposure Assessment in Academic Buildings
317	Jehyun Kim and Minki Sung	Estimation of the Number of Occupants Using Carbon Dioxide Concentration and Differential Pressure Data Based Machine Learning Model
324	Arezoo Shirazi, Artur Grigorev, Payam Keshavarz Mirzamohammadi, Dikaia Xenaki, Brian Oliver and Adriana-Simona Mihaita	Indoor and Outdoor Air Quality Monitoring in a Sydney Medical Research Center Using IoT and Toxicological Assessment
549	Aaron Collins, Joseph Stam and Rob Caldwell	Evaluating and Mitigating Residential Fine and Ultrafine Particle Exposure via an Open-Source Condensation Particle Counter and Low-Cost Sensor Suite

Session 3 3-2 Energy Efficiency, Conservation, Renewable Energy, and Embodied Carbon**3:30 - 5:00 Location: SGM 124 / Session chair: Qiuhua Duan**

Paper Number	Author	Title
197	Mohamed Oualid Mghazli, Zineb Zoubir, Mohamed Elmankibi and Nouzha Lamdouar	Modeling Peer-to-Peer Energy Markets: Economic Viability and Social Benefits in Contrasting Grid Contexts
334	Heon-Min Lee, Youngsub An, Jongkyu Kim, Jae-Won Jeong and Min-Hwi Kim	Experimental and Theoretical Performance Analysis of a Building-Integrated Photovoltaic and Thermal (BIPVT) System
338	Ye-Bin Shin, Jae-Won Jeong and Min-Hwi Kim	Experimental Analysis of a Building-Integrated Photovoltaic and thermal (BIPVT) Module with Detachable Phase Change Material (PCM) for Curtain Wall Applications
475	Shun Okihara, Shun Okihara, Hideki Sato and Katsunori Nagano	A study on optimal energy management with forecasting PV power generation and energy consumption for ZEB provided by GWHP and energy storage.
563	Yong You and Qiuhua Duan	Multi-objective performance assessment of rear-ventilated BIPV double facade using CFD

560	Mohammed Nazarpour and Huijeong Kim	Challenges and Drivers of Battery Second-Use Community Energy Storage Development: Integrating Social, Techno-Economic, and Behavioral Perspectives
-----	-------------------------------------	---

Session 3 3-3 Building Technology and Performance

3:30 - 5:00 Location: SGM 101 / Session chair: Shayan Mirzabeigi

Paper Number	Author	Title
129	Sameeraa Soltanian-Zadeh, Shayan Mirzabeigi, Bess Krietemeyer and Jianshun Zhang	Integrated Evaluation of Energy Performance, Indoor Environmental Quality and Building Envelope Performance in Retrofitted Multifamily Residential Buildings
178	Yuchong Qian and Jiawei Leng	How Digital Twin Platforms Empower the Decarbonization of Built Environments: A Case Study of a Vernacular Dwelling
305	Yun-Jin Hong, Jabin Goo, Dong Hee Choi and Dong Hwa Kang	Prediction of Dehumidification Performance of a Window-Type Liquid Desiccant Ventilation System
390	Jiwon Park, Sangjoon Lee, Jiayu Li, Stefano Schiavon, Kian Wee Chen and Ipei Izuhara	A simulation study on condensation risk in radiant cooling panels with elevated air movement
462	Daisuke Ogura, Sora Nakaike, Makiko Nakajima and Masaru Abuku	Investigation of Hygrothermal Control and Architectural Measures to Reduce Mold Risk in RC Detached Houses in Hot and Humid Regions
540	Enkh-Uchral Erdenebaatar, Taro Mori, Amarbayar Adiyabat and Hisato Osawa	Field Evaluation of Winter Indoor Environmental Performance of a Passive House–Level Detached House in Mongolia

Session 3 3-4 Health, Wellbeing, and Human Behaviors in the Built Environment

3:30 - 5:00 Location: GFS 116 / Session chair: Cristina Piselli

Paper Number	Author	Title
49	Seonghyuk Son, Jae Yong Suk, Kristina Knowles and Dongwoo Jason Yeom	Light-Music Interaction: Modulating the Perception of Emotional Music Through Ambient Lighting
193	Shuja Rehman, Prabhjot Singh Chani, Rajasekar Elangovan and Omar Afroz	Thermal-Only Physiological Sensing of Stress and Boredom Detection for Occupant-Centric Control
466	Yijin Zhao, Tsz Him Ian Chiu, Nan Wang, Jeffrey Mundinger and Julian Wang	A pilot study of the interaction between heat stress and metameric white light on occupants' cognitive performance
489	Shintaro Ando, Misaki Miyazaki, Wataru Umishio and Toshiharu Ikaga	Long-Term Risk of Chronic Disease from Cold Indoor Environments: A 10-Year Cohort Study
534	Neda Ghaeili Ardabili and Julian Wang	Spectral Drivers of Circadian Daylight Performance in Architectural Glazing as a Function of Gaze Direction

Session 3 3-5 Thermal Comfort

3:30 - 5:00 Location: GFS 101 / Session chair: Yichen Yu

Paper Number	Author	Title
48	Senta Mill, Matija Cabadaj, Nicolas März, Nicholas Müller and Normen Langner	How Accurate Is Low-Cost Comfort Monitoring? Validating the ComfortCube
112	Maciej Danielak and Patrick Warzecha	Natural Convection Cooling for Indoor Thermal Regulation in Buildings
272	Yukimasa Hirano, Masahiro Katoh, Saori Yumino and Tsubasa Okaze	Validation of Turbulence Models used in CFD Analysis of Indoor Natural Convection with a Cold Window and a Thermal Manikin
276	Cheng Zhao, Yichen Yu and Jianlei Niu	Development of a dynamic heat and moisture transfer model for sweat-soaked clothing in thermal comfort assessment
320	Jihee Nam, Yujin Kang and Sumin Kim	Influence of the thermal behavior of building envelopes on urban microclimate
510	Meftah Uddin and Sanjeev Khanna	3D Visualization and Spatiotemporal Analysis of Indoor Comfort Parameters

Session 3 3-6 Climate Change Adaptation, Resilience, and Environmental Policy**3:30 - 5:00 Location: GFS 207 / Session chair: Mohamed Dardir**

Paper Number	Author	Title
136	Yasir Ahmed	Toward a Just Energy Transition in the GCC: Integrating Policy, Sustainability, and Climate Leadership
175	Zahra Khashei and Sandeep Langar	Integrating Circular Strategies into Post-Disaster Rebuilding: Pathways to Resilient and Resource-Efficient Recovery
237	Min Zong	From the source ensuring IAQVEC meet people's new expectations for a better life
344	Ryuta Tsurumi and Takahiro Yoshida	Spatiotemporal analysis of major CO2 emission sources in the Japanese building sector
546	Caribay Godoy-Rangel, Emanuele Giorgi and Viviana Barquero	Evaluating the Thermal Resilience of PCM-Retrofitted Housing under Heat Waves and Climate Change in Mexico

Session 3 3-7 Generative AI in Sustainable Built Environment**3:30 - 5:00 Location: GFS 118 / Session chair: Soo Jeong Jo**

Paper Number	Author	Title
82	Jung Min Han	Quantum Computing for Wind Pressure Data Prediction
181	Po-Yen Lai, Xinyu Yang, Jian Cheng Wong, Derrick Low and Huizhe Liu	Agentic AI-Enabled Framework for Thermal Comfort and Building Energy Assessment in Tropical Urban Neighborhoods
565	Saba Imani and Yun Kyu Yi	GenAI for Human-Building Interaction: Consistency, Reproducibility, and Automation in Post-Occupancy Evaluation
572	Le Sun, Xinyue Xu and Julian Wang	Bridging Construction and AI: Computer Vision-Based Floor Plan Analysis for Real-Time Cost Estimation
573	Ana Graça and Xiang Zhang	Early-stage shading design evaluation for buildings: A workflow accessing energy performance on AI-generated 3D geometry
574	Soo Jeong Jo	Application of AI and Building Performance Simulations to the Early Stages of Building Design

Session 3 3-8 Online Session**3:30 - 5:00 Location: GFS 107 / Session chair: Minyoung Kwon**

Paper Number	Author	Title
67	Mahdieh Adib, Fariborz Haghighat and Fuzhan Nasiri	Continuous-Time Neural Surrogate Models for Simulation and Scheduling of Compressed Air Energy Storage Systems
471	Zeinab Deldoost Fattahi, Fariborz Haghighat and Fuzhan Nasiri	A Superposition-Based Method for Rapid Estimation of Indoor Airflow Fields Under Occupant Movement
500	Maria Isabel Rivera, Tamara Ugarte-Aviles, Patricia A. Huerta and Marcela Palma-Troncoso	The Effect of Air Purifier Use in Classrooms on the Pulmonary Function of School-Aged Children: A Pragmatic Controlled Trial in Primary Schools in Central-Southern Chile
535	Kátia Fugazza, Marcos Marques and Sylvia Meimaridou Rola	Architectural Retrofit and Multidisciplinary HVAC Modernization with BIM Methodology in Existing Hospitals: A Case Study of the Carlos Tortelly Municipal Hospital
60	Mo Zhou and Xiangfeng Li	Classroom Environments and Problem Behaviors in Children with Autism: Exploring Spatial Impacts and Underlying Mechanisms

Day 3: 5/20/2026 (Wed)

Session 4 4-1 Sponsored Session by ERC (Engineering Research Center) at Chung-Ang University, Korea 11:00 - 12:30 Location: SGM 101 / Session chair: Michael Youngsu Kim

Paper Number	Author	Title
47*	Seungwon Seo, Choongwan Koo, Dajeong Choi, Yujin Choi and Seongkyun Ahn	Toward Carbon-Neutral Construction: Clustering-Based Analysis of Site Electricity and Abnormal Use
101*	Hae Won Lee, Ji Young Yun and Jin Woo Moon	Development and Applicability Evaluation of an Image-Based BMI Estimation Model for Occupant-Centric Thermal Environment Control
161*	Sarath Raj, Jung Da-Eun, Jeong Ji Hwan, Kanghee Lee and Geun Young Yun	Machine-Learning Based Downscaling of GK-2A Land Surface Temperature: A study of Seoul, South Korea
194*	Jun Kyu Kim, Jin Chul Park and Se Hyeon Lim	Analysis of the Lifecycle Carbon Reduction Effects of Public Daycare Centers through Green Remodeling
244*	Sim-Cheon Yuk, Han-Seung Lee, Seo-Yeon Jo and In-Beom Jo	Evaluation of Resistance to Chloride Attack of Concrete Repair Method Using a Combined Application of Silicone-Based Water Repellent
570*	Chan Hyeok Kang, Bo Kyung Jung, Tae Kyu Lee, Young Cheol Kwon, and Chang Ho Choi	Automated IFC Generation and Machine Learning-Based λ -Correction for Embodied Carbon Estimation of Buildings

Session 4 4-2 Indoor Air Quality 11:00 - 12:30 Location: SGM 123 / Session chair: Gerrid Brockmann

Paper Number	Author	Title
132*	[Sponsor team: ERC] Hye In Kim, Kang Woo Bae, Ji Yeon Hyun and Jin Woo Moon	Evaluating the Scalability of a PM2.5 Indoor Concentration Prediction Model using Transfer Learning
260	Renate Jaanus, Kristin Taru, Alo Mikola and Jarek Kurnitski	Experimental Evaluation of CO ₂ Tracer Gas Dosing Methods for Reliable Ventilation Effectiveness Measurements with a Point Source
323	Haedeun Park, Hyeonwoo Jeong, Jiyeong Byeon, Nayun Kim and Seong Jin Chang	Development of wood welding technology for jointing and pollutant emission evaluation
415	Neelima Geetha Archana Madasu, Sanand Maddipati and Elham Fini	The Role of Bio-Based Wall Insulation in Enhancing Indoor Air Quality and Human Performance
521	Yunus Emre Cetin, Zihao Wang, Gerrid Brockmann and Martin Kriegel	Ventilation Effectiveness in a Test Room: Experiments and CFD Validation
528	Zhongqing Yang and Hikaru Kobayashi	Occupant-Distribution-Based CO ₂ Measurement to Optimize Demand-Controlled Ventilation in Office Spaces

Session 4 4-3 Energy Efficiency, Conservation, Renewable Energy, and Embodied Carbon 11:00 - 12:30 Location: SGM 124 / Session chair: Qihua Duan

Paper Number	Author	Title
97	Ruixiaoxiao Zhang and Minhyun Lee	Energy Management Strategies in Smart City Microgrids Considering Power Output Uncertainties and Seasonal Variation
130	Akihiro Imaizumi, Hideki Tanaka, Hideharu Komoda and Takeshi Watanabe	Cooperative control method for Distributed Energy Resources using air conditioning heat source systems in multiple buildings
148	Mao Serikawa, Seiichi Kashihara, Junta Nakano, Takashi Akimoto, Toshiharu Ikaga and Shuzo Murakami	Economic and environmental benefits of using batteries and heat pump water heaters to effectively utilize daytime electricity

222	Junlang Zhu, Hao Tang, Xiangzhe Xi, Yang Geng and Borong Lin	Planning High-PV Penetration Park: Enhancing Local PV Utilization and Economic Efficiency through Multi-Energy Storage
251	Youssef Benmoussa, Joud Al Dakheel, Nassim Sebaibi and Mohamed El Mankibi	Enhancing Building Energy Flexibility Through Demand Response-Enabled Heating and Ventilation for Flexible IEQ Management
564	Qihua Duan and Christy Ponnann	Closed-Loop Digital Twins for Building-Integrated Photovoltaics: A Focused Review

Session 4 **4-4 Building Technology and Performance**
11:00 - 12:30 **Location: GFS 116 / Session chair: Meng-Chieh Jeffrey Lee**

Paper Number	Author	Title
242*	[Sponsor Team: ERC] Jiwoo Jang and Hanseung Lee	An Experimental Study on a Paper-Based Sensor for Chloride Ion Measurement in Fresh Concrete
37	Indra Permana, Alya Penta Agharid, Fu Jen Wang, Zulvi Alfiqri Hidayatulloh and Chu-Cheng Wei	Enhancing Biotechnology Cleanroom Performance through Field Recovery Testing and CFD-based Airflow Optimization
113	Kättriin Onemar, Raimo Simson and Jarek Kurnitski	Dynamic Modeling and Experimental Validation of Floor Cooling Systems for Overheating Assessment and Condensation Risk Considerations in Residential Buildings
155	Minzhi Ye, Masashi Momota, Aoto Kumagai, Hajime Ogata and Hyo Ogawa	Post-construction evaluation of building envelope thermal performance using neural networks
457	Nasim Ildiri and Mark Hernandez	Effects of HVAC Duct Cleaning on Indoor Air Quality Parameters: A Multi Season Demonstration of Exposure Assessment in Occupied Public School Classrooms
646	Beom Yeol Yun, In-Hwan Lee, Sang-Joon Lee, Chul-Ki Kim, Hyung Woo Lee and Tae-Ik Hwang	Field Application of EMC-Based Temperature–Humidity Monitoring for Durability Risk Assessment in Timber Buildings

Session 4 **4-5 Health, Wellbeing, and Human Behaviors in the Built Environment**
11:00 - 12:30 **Location: GFS 101 / Session chair: Enrico Fabrizio**

Paper Number	Author	Title
78	Kensuke Watanabe, U Yanagi, Yoshiki Shiraishi and Koichiro Asano	Mycobiome of air purifier filters in allergic bronchopulmonary mycosis patients' homes
105	Iasmin Lourenço Niza, Mateus Pedrosa Braga and Evandro Eduardo Broday	Assessment of Indoor Environmental Quality (IEQ) in university classrooms by periods of the day through discriminant analysis
139	Toby Cheung and Eikichi Ono	Occupant Environmental Satisfaction in a Semi-Outdoor Workspace versus Air-Conditioned Offices in Singapore
146	He Wu, Hisato Osawa and Taro Mori	Investigation of Legionella Transmission Using CFD Simulation Coupled with GIS
187	Amanda Quarshie and Cristina Poleacovschi	Residential Cooking and Kitchen Ventilation Behaviors in Alaska Native Households: Foundations for Indoor Air Quality Assessment
239	Houda Er-Retby, Myriam Bahrar, Mohamed Oualid Mghazli, Mostafa Benzaazoua and Mohamed El Mankibi	Experimental Assessment of Indoor Air Quality and Thermal Comfort Performance Using Fuzzy Logic Control for Natural and Mechanical Ventilation Systems

Session 4 **4-6 Smart Cities and Green Infrastructure**
11:00 - 12:30 **Location: GFS 207 / Session chair: Xu Han**

Paper Number	Author	Title
150	Ryoma Okuda, Hideki Tanaka, Hiroaki Tanaka and Fuminori Nishiyama	Optimal control method for HVAC heat source system based on operational data utilizing machine learning
163	Doyun Lee, Young Jik Youn and Wonseok Oh	Microclimate heterogeneity and operational strategies in indoor vertical farm
177	Jeonghoon Choi, Muhammad Ihza Febriyan Pagri and Dongjun Suh	Sensor-Only Occupant-Centric Ventilation Control with LLM-Augmented Decision Support for Human–Building Interactions
364	Chanuk Lee and June Young Park	Deep reinforcement learning for citizen-centric building retrofit decision making under behavioral uncertainty of a series game scenario

431	Hongzhi Liu, Takumi Tanabe, Bozhou Dang and Katsunori Nagano	Implementation of an Optimized Control Strategy for Energy Storage Systems in HEMS (Home Energy Management System) in Cold Climate
551	Nan Wang and Giorgia Chinazzo	An Immersive VR-Based Workflow for Evaluating Automated Shading Control and Visual Aging Effects within Smart Cities

Session 4 **4-7 Sustainable Building Materials and Circular Economy**
11:00 - 12:30 **Location: GFS 118 / Yumna Kurdi**

Paper Number	Author	Title
210	Todd Walsh, Yumna Kurdi, Tharique De Silva and Bruce Haglund	Overcoming Construction Barriers to Mass Timber Adoption in the Inland Northwest: A Case Study of the ICCU Arena
299	Dongchan Jin, Young Uk Kim and Sumin Kim	Development and performance evaluation of recycled insulation materials from waste firefighting suits for fire-resistant building pipes
302	Won Duk Suh, Jihee Nam and Sumin Kim	Aging of indoor finishing materials under long-term temperature exposure: Focus on surface degradation and chemical oxidation
326	Jae Hyuck Jung, Young Uk Kim and Sumin Kim	Thermal performance of lightweight concrete with a novel aggregate from cement-coated recycled polyurethane foam impregnated with phase change material
421	Najah Majouri, Mohamed El Mankibi and Jalila Sghaier	Sustainable Fired Clay Composites with Root Palm and Diss Fibers for Energy-Efficient and Healthy Indoor Environments
536	Tannaz Afshar Bakeshloo, Azadeh Sawyer and Joshua Lee	Life Cycle Assessment of Building Deconstruction: Insights from Ten Projects

Session 5 **5-1 Poster Session**
1:30 - 3:00 **Location: VHE Courtyard**

Paper Number	Author	Title
19	Jong-Il Bang and Minki Sung	Disinfection Effectiveness of UR-UVGI for Airborne Bacteria Based on Equivalent Air Change Rate in a Multi-bed Patient Room
27	Jaekyoung Kim, Donghyun Koo, Taeyoon Kim, Dasom Hur and Seungkwon Jung	Development and Application of a Spatiotemporal Validation Method for CFD-based Analysis of Urban Heat Island and Thermal Comfort
46	Chun Han Li	Evaluation of Membrane-Based Dehumidification Systems: Pressure Permeance of Dry Air in Commercial and Composite Membranes
52	Jaekyoung Kim, Donghyun Koo, Taeyoon Kim, Samuel Park and Soonchul Kwon	Development of a predictive Model for Urban Cooling Blue Infrastructure using Integrated CFD and U-Net CNN
53	Suji Choi and Jaehun Jo	Operational Performance Indicators Based on Temporal Energy Use Patterns for Enhancing EUI
56	Katalin Fülep, Claudia Kopic and Martin Kriegel	Balancing Infection Risk and Energy Consumption in Hospitals: A Data-Driven Ventilation Strategy
57	Ali Moazzeni Khorasgani , Ghazal Asadi Eskandar	Sustainable Mycéliums Composites for Building Construction
58	Milad Jafari and Ehsan Mousavi	Data-driven approach for studying MRI units' energy consumption
77	Chih-Hao Chen	New Ionic Liquid for Liquid Desiccant Air Conditioning system
142	Jinkyun Cho, Jongwoon Song, Wonseok Oh, Sangwoo Byun, Jihyuk Ahn and Haram Kim	Engineering resilient ventilation systems for rapid-deployment medical isolation units
151	Jyun-De Liang and Cheng-Kai Hung	Design and Study of a Vapor Compression Cycle Household Dehumidifier Using Ionic Liquid Solution
200	Yi Chun Chu, Jia Kun Chen, Yan Cheng Chiang and Tzu I Tseng	Impact of Inlet Flaps on Ammonia Distribution in a Water-Pad Layer House: A Case Study in Yunlin, Taiwan
234	Shunsuke Fujitsubo, Yasuyuki Shiraishi, Yoshiaki Ushifusa and Masayuki Watanabe	Optimization of Annual Operation of a PV-HPWH-BT Cooperative System in an All-Electric House to Achieve Maximum Electricity Self-Sufficiency

253	Seun Lee, Kyu-Nam Rhee, Chul Kim and Eun Song Shin	Evaluation of empirical HVAC system sizing methods to identify energy performance impacts on code-compliant simulations
307	Dong Yoon Park	Individual thermal comfort prediction using ensemble transfer learning and physiological signals under different physical characteristics
312	Sung Won Cho, Ji Hyun Yoo, Seung Rim Lee, Yi Zhou Wang and Jun Seok Park	Determining the Minimum Monitoring Period for Predicting Occupant behaviors related to manual control of Windows in Residential Buildings
339	Ye-Bin Shin, Deuk-Won Kim, Wangje Lee, Jae-Won Jeong and Min-Hwi Kim	Comparative Analysis of PCM- and Water-Based Thermal Energy Storage Units in a Photovoltaic and Thermal System for Residential Applications
384	Krzysztof Grygierek and Joanna Ferdyn-Grygierek	Impact of ventilation stacks on airflow in naturally ventilated buildings: simulation vs. measurements
385	Krzysztof Grygierek, Joanna Ferdyn-Grygierek, Stanisław Kocik and Aleksandra Lipczynska	Assessment of solar radiation distribution in indoor spaces for local thermal comfort evaluation
399	Kotoha Shin, Yasuyuki Shiraishi, Yoshiaki Ushifusa and Masayuki Watanabe	Optimization of Distributed Energy System Operation in All-Electric Districts with Electricity Sharing
429	Jeongil Kim, Takashi Kurabuchi, Sihwan Lee and Hayato Kiyosuke	Experimental Evaluation of Particle-Based Tracers for Indoor Ventilation Performance Assessment
494	Yi-Pin Lin, Tzu-Ling Huang, Chi-Ming Lai and Rong-Hong Chen	Ventilation and thermal performance of monitor roofs equipped with internally mounted PV-powered fans
509	Soroush Samareh Abolhassani, Alimohammad Sedaghat, Mojtaba Parsaee, David J.Sailor and Sami G. Al-Ghamdi	Building and Census-Tract-Scale Validation of a Coupled Urban Energy–Microclimate Digital Twin (CityDigitalTwin): Mobile Traverse Observations and Utility-Billing Benchmarking
511	Namchul Seong, Daeung Kim and Kyungmo Kang	Energy Saving of HVAC System Using Integrated Machine Learning Algorithm (IMLA)
550	Zhuoying Lin, Yi Fang, Marcus Young, Qin Xia, Caleb Kwon, Catherine Banach, Haoran Zhao, Tim Tyner, Stephanie Holm, Anabelle Garza, Arlette Garcia-Ramirez, Briseida Vasquez, Debra Manzo Garcia, Jesus Rivera, Amy Dryden, John Balmes, Brett Singer and Suzanne Paulson	Measured indoor particulate matter, black carbon, and oxidative potential before and after replacing gas with induction electric cooking in homes with a child with asthma
561	Anders Bjork, Ella Tucker and Charlie Thornton	Bridging New Air Cleaner Measurement Standards and Indoor Air Quality Simulation: An In-Progress Method in CONTAM
569	Hye-Gi Kim, Hye-Ry Shin, Han-Gyeong Chu, Doo-Sung Kim and Deuk-Woo Kim	Stepwise Address Matching Methodology for National-Scale Building Energy Database Integration
628	Saemi Shin and Joung Ryeul Sohn	Measurement of Fine Particulate Matter Concentrations and Time-Series Outlier Analysis at a Korean Screen golf course
629	Joung Ryeul Sohn and Saemi Shin	Comparative Analysis of Health Risks Associated with the Operation of Ventilation Systems in a School Kitchen
640	Jieun Han, Jeong Hoon Lee, Yoonhee Lee, Minjung Kim, Dongryul Park and Hyungho Park	Real-time Personalized Comfort Control Algorithm utilizing User Location and Machine Learning-based PMV Prediction
647	Kuo-Hsiung Lin, Tzu-Jui Huang, Jun-Hao Jhu and Hung-Lung Chiang	Assessment of Volatile Organic Compound Emissions from Liquid Cleaners and Personal Care Products

Session 6

3:30 - 5:00

6-1 Indoor Air Quality

Location: SGM 123 / Session chair: Ayça Tokuç

Paper Number	Author	Title
127	Kiriti Sahoo, E V S Kiran Kumar Donthu and Siva Rama Krishna Evani	Role of portable-mechanical air ionisers on indoor air quality in Indian office buildings
159	Elham Hasani Alavy and Clifford B. Fedler	Safety Evaluation of Air Cleaner Technologies in the Building Sector
354	Yonca Yaman, Ayça Tokuç, Seda Nur Apdik, İrem Deniz, Azize Ayol, Gizem Tuna Tuygun, Tunahan Akış and Mehmet Akif Ezan	Beyond Filters: Evaluating Biotechnological Indoor Air Purification with Microalgae Systems

408	Semi Park, Rafi Uddin and Insung Kang	A state-of-the-air review and laboratory experiments of do-it-yourself (DIY) air cleaners
424	Wenfeng Huang, Tong Lin and Jianshun Zhang	Modeling and Simulation of Indoor Aerosol Particle Behavior under Bipolar Ionization-Based Air Cleaning
649	Kuan-Lun Pan, Pei-Yun Shih, Zhen-Shuen Choo and Jo-Chen Hsu	Removal of isopropyl alcohol (IPA) in a semiconductor facility using ozone catalytic oxidation

Session 6 6-2 Energy Efficiency, Conservation, Renewable Energy, and Embodied Carbon

3:30 - 5:00 Location: SGM 124 / Session chair: Zineb Zoubir

Paper Number	Author	Title
38	Alya Penta Agharid, Indra Permana, Fujen Wang and Chu-Cheng Wei	Energy Audit and Modeling for a Bank Management Office under Hot-Humid Climate
196	Mohamed Oualid Mghazli, Zoubir Zineb, Walid Maioute and Najat Oualine	A Comparative Building Energy Management System: Two Different Climatic Conditions, France and Morocco
218	Hyun-A Ko and Jong-Won Lee	Building Energy Performance Evaluation of Public Institutions Using the Korean Green Button System
288	Kentaro Suga and Ryoza Ooka	A Study on the Comfort and Energy Effectiveness of Passive Design Method - Case Studies using Detached House Model
562	Yizhou Yang and Qihua Duan	Predictive Control of Kinetic BIPV Fins for Comfort-Efficient Building Operation
578	Wooyoung Jung	Chain-of-Thought Prompting for Human-Centered Home Energy Management

Session 6 6-3 Building Technology and Performance

3:30 - 5:00 Location: SGM 101 / Session chair: Zheng Tan

Paper Number	Author	Title
145	Shu Han Liu, Meng-Chieh Jeffrey Lee, Yi-Chun Kuo and Tien-Chun Cheng	Impact of CO2 concentration on Elderly residential by EEG& ECG
182	Shisheng Chen and Ruohan Xu	Enhancing Pedestrian Thermal Comfort through Scalable and Energy-Efficient Ventilation Systems under Extreme Heat
258	Jialiang Guo, Ngoc Dung Ngo Hoang and Hilde Breesch	Outdoor Microclimate Variations and Indoor Thermal Stress: Summer Field Measurements in an Elderly Care Facility
499	Mohammad Saleh Nikoopayan Tak and Yanxiao Feng	The Naturalness Effect: Open-Database Analysis of Ventilated and Mechanically Cooled Spaces
502	Tsz Him Ian Chiu, Yijin Zhao and Julian Wang	Thermal Sensitivity and Biomarkers as Predictors of Individual Heat-Stress Vulnerability in Indoor Environments
525	Guancong Ren and Zheng Tan	Evaluating Walking Thermal Comfort in Urban Spaces Using Machine Learning: The Role of Physiological and Microclimate Factors

Session 6 6-4 Health, Wellbeing, and Human Behaviors in the Built Environment

3:30 - 5:00 Location: GFS 116 / Session chair: June Young Park

Paper Number	Author	Title
164	Shaymaa Al Marzouqi, Dongwoo Jason Yeom, Kamil Kaloush and Elham Fini	Daylight Timing, Natural Scent, and Outdoor View on Cognitive Performance in Office Settings
173	Mehmet Furkan Özbey, Dolaana Khovalyg, Neşe Alkan and Cihan Turhan	Effect of Mood States on Thermal Sensation: Cultural and Gender Differences in Türkiye and Switzerland
248	Taketo Suzuki and Tatsuya Hayashi	The relationship between worker's work style and wellness in activity-based working (ABW) offices
360	Negar Salahi and June Young Park	Investigating personal thermal comfort for wheelchair users using a non-intrusive wheelchair-based sensing
439	Xin Guo, Emanuel Boutros, Bing Guo, Sameeraa Soltanian-Zadeh and Jianshun Zhang	Personal Environmental Control Systems: How Occupants Interact under Different Temperature in Office Environments
538	Shevva Beiglary and Julian Wang	Machine Learning-Based Prediction of Circadian Lighting Exposure: A Practical Framework for Nursing Homes

Session 6
3:30 - 5:00**6-5 Thermal Comfort****Location: GFS 101 / Session chair: Ali Ghahramani**

Paper Number	Author	Title
33	Anwar Ibrahim, Ahmad Freewan and Majd Momani	Exploring Factors Influencing Occupant Behavior and Thermal Perception in Apartment Buildings: Irbid/Jordan as a case study
44	Wataru Umishio, Naoki Kagi, Isao Yamada, Lisa Yumae and Tomohiro Konda	Thermal Comfort and Productivity under Air Conditioning Control Based on Metabolic Rate Estimation from Thermal Images
348	Taeyeon Kim, Seheon Kim, Yingdao Nan and Jae-Weon Jeong	Data-Driven Estimation of Occupant Thermal Preferences from Air Conditioner Control Behavior in Residential Units
447	Kai Chen and Ali Ghahramani	Demonstrating Challenges in Predicting Occupant Temperature Setpoints: A Comparative Evaluation of Traditional and Transformer-Based Machine Learning Models
464	Ryota Iihara and Kazuyo Tsuzuki	Effects of Palms Cooling on the Human Body During Sleep in Hot Environments
469	Yijin Zhao and Julian Wang	How heat stress impairs cognition: A review of cognitive performance in indoor passive hyperthermal environments

Session 6
3:30 - 5:00**6-6 Energy Efficiency, Conservation, Renewable Energy, and Embodied Carbon****Location: GFS 118 / Session chair: Jinkyun Cho**

Paper Number	Author	Title
88	Keisuke Kurobe and Hideki Tanaka	Simulation Analysis of District Heat Source Water Supply System Configuration for Urban Areas in Warm Climates
108	Soowon Chae, Yeonju Kang, Hyunmoon Cho, Kwonye Kim and Yujin Nam	Study on Reinforcement Learning-Based Control for PVT-Heat Pump Integrated Thermal Storage
143	Jinkyun Cho, Joo Hyun Moon, Sangwoo Byun and Jikyum Kim	Sustainable cooling solutions for high-density data centers: A numerical analysis of liquid cooling optimization
166	Chi Ling Liu and Yaw-Shyan Tsay	Development of an Integrated Decision-Support Platform for WBLCA in Early-Design Stage
267	Mohamed Dardir and Ali Khorasgani	Integrated Phase Change Materials and Solar Energy Generation for High-Performance Buildings in Extreme Weather
547	Wanyu Rengie Chan, Bijay Sharma, Brandon Bilzman, William Delp and Brett Singer	Methane Emission Measurements and Occupant Survey of Gas Appliances in California Homes

Session 6
3:30 - 5:00**6-7 Climate Change Adaptation, Resilience, and Environmental Policy****Location: GFS 207 / Session chair: Max Ruffo**

Paper Number	Author	Title
63	Yasuyuki Ishida, Shuhei Fujita, Wang Zheng, Miguel Yamamoto, Yusuke Hiraga and Ryotaro Tahara	Development of LCZ Mapping Method Combining GIS with Machine Learning
104	Subin Lin, Jason Leong, Boo Cheong Khoo and Hee Joo Poh	Aerodynamic Response and Ventilation Enhancement in Urban Street Canyons through Building Porosity: A Comparative Numerical and Experimental Study
263	Mana Nemati Aghdam and Manish Dixit	Empirical Fragility-Based Adjustment of Embodied Carbon Using Machine-Learning-Derived Post-Hurricane Fragility Data
291	Kanxuan He and Hongshan Guo	Data-driven cross-national climate zone classification for building codes: a future-compatible framework
325	Douaa Al-Assaad, Ilaria Pigliautile, Yanghao Cui, Ongun Kazanci, Jun Shinoda, Bjarne Olesen, Joyce Kim, Joo-Ho Choi, Wooyung Jung and Mariya Bivolarova	A classification scheme for exploring the role of wearable personalized environmental control systems (PECS) in a changing climate

Session 6
3:30 - 5:00**6-8 Online Session**
Location: GFS 107 / Session chair: Yihui Li

Paper Number	Author	Title
61	Enlian Zhang, Jin-Bin Im, Lijing Xu, Seo-Young Park and Ju-Hyung Kim	The Influence of Window Characteristics on Occupant Well-Being and Perception in Indoor Environments: A Review
227	Naja Aqilah, Sheikh Ahmad Zaki, Noor Alam and Fitri Yakub	Environmental, Physiological, and Subjective Assessments of Thermal Comfort in a School Classroom
480	Sadia Israt Anam and Fan Zhang	Heart Rate Variability as a Marker of Cognitive Workload: Influence of Temperature and Task Complexity in Office Settings
527	Kátia Fugazza, Pedro Braga and Sylvia Meimaridou Rola	Architectural Retrofit and HVAC Modernization in Existing Hospitals: A Case Study of the Municipal Hospital Carlos Tortelly
651	Shuyi Chen, Yihu Zhang, Jun Xiao, Ziliang Wei, Hao Zhou, Yang Geng and Borong Lin	Seasonal and spatial differences of building occupancy profiles: Evidence from mobile data

Day 4: 5/21/2026 (Thu)**Session 7**
11:00 - 12:30**7-1 Sponsored session by LG: Thermal Comfort**
Location: SGM 101 / Session chair: Moon Keun Kim

Paper Number	Author	Title
329 *	[Sponsor Team: LG] Jae-Hee Lee, Peter Schild, Moon Keun Kim, Saikee Oh, Sanghun Lee, Donghan Kim, Beomsoo Seo, Eunjun Cho and Trygve Eikevik	Field Evaluation of Multiple R290 Air-to-Water Heat Pumps in Cascade Operation Adapted to Nordic Climates
29	Kertu Kund, Raimo Simson, Alo Mikola, Kátriin Onemar and Jarek Kurnitski	Analysis of Circuit Connections and Control Strategies for Residential Air-to-Water Heat Pump Systems
64	Lorenzo Croci, Francesco D'Oria and Maria Francesca Talamo	Hybrid Heat Pump: Enabling Efficient Decarbonization of Existing Buildings
297	Sangmin Lee and Hyunwoo Lim	Optimal Load Shift Control Strategy for CHPWH system Based on Load Separation Method
335	Yujin Lee and Dae Uk Shin	System configuration and control process of a combined convective cooling and radiant floor heating system
504	Won-Jong Choi, Jae-Won Jeong and Min-Hwi Kim	Operational optimization of fifth-generation district heating and cooling systems with thermal energy storage for energy autonomy

Session 7
11:00 - 12:30**7-2 Indoor Air Quality**
Location: SGM 123 / Session chair: Lexuan Zhong

Paper Number	Author	Title
107	Chai Yoon Um, William Delp, Rowan Blacklock, Stefano Schiavon and Brett Singer	Measured influence of supply airflow rate and supply air temperature on air mixing time in a room with overhead mixed system
201	Karl-Villem Võsa, Martin Kiil, Raimo Simson, Alo Mikola and Jarek Kurnitski	Evaluating perceived stuffy air complaints through tracer gas experiments in a modern educational building in Estonia
215	Wenhao Chen, David Moore, Rosemary Castorina, McKenna Thompson, Kyle Peerless and Kazukiyo Kumagai	Comparison of Field Approaches for Characterizing Classroom Ventilation Rates (VRs) and Equivalent VRs for PM2.5 – A Case Analysis
347	Jurgis Zemitis, Marta Zemite, Arturs Palcikovskis, Heidi Salonen and Linda Mezule	Assessment of Microbial Growth in Ventilation Ducts of a Recently Renovated University Building

402	Aysha Siddika and Aysegul Demir Dilsiz	Linking Global IAQ and Thermal Comfort Trends in Educational Spaces to LEED and AASHE STARS Ratings
513	Yi Fang, Haoran Zhao, Tim Tyner, Stephanie M. Holm, Brett C. Singer, Marion L. Russell, Anabelle Garza, Arlette Garcia-Ramirez, Briseida Vasquez, Debra Manzo Garcia, Jesus Rivera, John R. Balmes and Amy Dryden	Measured Indoor Nitrogen Oxides in Homes with a Child with Asthma and Gas or Induction Electric Cooking

Session 7 7-3 Energy Efficiency, Conservation, Renewable Energy, and Embodied Carbon

11:00 - 12:30 Location: SGM 124 / Session chair: Weibing Gong

Paper Number	Author	Title
195	Alex Nwosu and James Hunter	“Standard Retrofit First: Scalable Energy Efficiency Strategies for Legacy Row Homes”
203	Yi-Ting Lai and Yaw-Shyan Tsay	Embodied Carbon Benchmarks for Residential Buildings in Taiwan
293	Muhammad Asim, Muhammad Furqan Siddiqui and Farooq Riaz Siddiqui	Retrofit Pathways for HVAC Decarbonization: A sustainable solution for harnessing ultra-low-grade waste heat for energy efficiency and net-zero buildings
389	Fatemeh Yazdandoust, Siddhartha Sen and Kamalesh Panthi	Energy Efficiency Solutions for Baltimore Housing
394	Mohammad Hamdan, Hamed Moradi, Paria Saadatjoo and Parham Mirzaei	Microclimate Building Energy Retrofitting: Assessing Urban Morphology Impacts on Cooling Demand and Carbon Emissions
446	Min-Gyu Shin, Hye-Jin Kim, Soo-Hwan Park and Dong-Hyun Seo	Development of Detailed EUI Benchmarks for South Korea’s Residential Building Stock

Session 7 7-4 Building Technology and Performance

11:00 - 12:30 Location: GFS 116 / Session Chair: Brett Singer

Paper Number	Author	Title
83	Tatsuya Miyata, Tatsu Kishida, Hiroki Ikeda, Yasuaki Kaneko, Shohei Miyata and Yasunori Akashi	Development of a High-Resolution Dynamic Emulator for a Chiller Plant and Its Application to Control Improvement
84	Myeongwon Chae, You-Jeong Kim and Yun Kyu Yi	Data-Driven Assessment of Air-Conditioning System Sizing Using Runtime and Indoor Humidity Performance
95	Flavia Barone, Loubna Ait Lahsen, Myriam Bahrar and Mohamed El Mankibi	Hybrid control strategies for energy efficiency, thermal comfort and indoor air quality in residential compact HVAC–DHW systems
254	Joud Al Dakheel, Mohamed El Mankibi, Myriam Bahrar and Nassim Sebaibi	Mind the Gap: Experimental Analysis of Mechanical Ventilation Under Variable and Fault Scenarios
461	Darwish Darwazeh, Narges Zaeri and Farzeen Rizvi	Operational Control and Air Mixing Fault Detection and Diagnostics in Rooftop Units
490	Haruka Kitagawa, Takuji Nakamura, Ko Shigemori, Sei Ito and Daisuke Sumiyoshi	Optimum Operation of a Heat Source System considering Bidirectional Heat Interchange among Multiple Buildings

Session 7 7-5 Health, Wellbeing, and Human Behaviors in the Built Environment

11:00 - 12:30 Location: GFS 101 / Session chair: Yumna Kurdi

Paper Number	Author	Title
20	Wooyoung Jung, Prosper Babon-Ayeng, Kevin Keene, Sophia Witt and Jessica Baweja	Do Common Performance Metrics in Indoor Environmental Quality Research Represent Actual Office Work? A Survey-Based Assessment
102	Fariza Sabit, Christian Rodriguez, Eric Ravussin and Dolaana Khovalyg	Modeling the circadian dynamics of resting energy expenditure for the built environment
162	Shaymaa Al Marzouqi, Dongwoo Jason Yeom, Kamil Kaloush and Elham Fini	Daylight Timing and Natural Scent on Cognitive Performance in Office Settings without Outdoor View

412	Hernan Rosas, Ming Hu and Edward Bernat	Advancing Pathways To Occupant Mental Wellbeing: Mapping Attention Restoration and Stress Reduction in Biophilic Design to a Validated Mental Health Framework
413	Andrew Cook and Yumna Kurdi	Applying Technology to Learning: Visualizing Environmental Data Through Augmented Reality
526	Jinmog Han and Yunjeong Mo	A design-oriented framework for smart home energy management system interfaces to support energy-saving occupant behavior

Session 7 **7-6 Smart Cities and Green Infrastructure**
11:00 - 12:30 **Location: GFS 207 / Session chair: Julian Wang**

Paper Number	Author	Title
209	Dahyun Oh and Soowon Chang	Transportation Infrastructure Innovation through Optimal Solar PV Deployment Planning in DOT Facilities and Right-of-Way using a Geographic Information System-based Multi-Criteria Decision Making
388	Vimal Preet, Dr. P.S. Chani and Dr. Sandeep Agarwal	The Role of Urban Form and Green Cover in Residential Energy Consumption: A Pilot Study of Sector 22, Chandigarh
460	Cosimo Damiano Carpentiere, Riccardo Carnevale and Umberto Berardi	Enhancing Transparency and Sustainability in Urban Ventilation Systems through Blockchain, IoT, and AI: Case Studies from Seoul, Tokyo, Beijing, Dubai, São Paulo, and Sydney
470	Hayoung Kim and Soowon Chang	Integrated Building-Grid Modeling: A Co-Simulation Framework for Dynamic Reliability Assessment
505	Chenshun Chen, Mohammad Elmi and Julian Wang	Glazing Façade Design for Energy-Efficient Buildings, Improved Thermal Comfort and UHI Mitigation in Dense Urban Center
653	Xindan Kang, Karen M. Kensek, John Wilson, Joon-Ho Choi	Tree Shading, Solar Radiation, and GIS-Examining the effect of tree shading on sidewalk heat reduction

Session 7 **7-7 Indoor Air Quality**
11:00 - 12:30 **Location: GFS 118 / Session chair: Insung Kang**

Paper Number	Author	Title
190	Loubna Ait Lahsen, Flavia Barone, Myriam Bahrar and Mohamed El Mankibi	In-situ assessment of a multifunctional compact system (MCS) in a low energy residential test facility: A comparative study
220	Fahad Iqbal and Shayan Mirzabeigi	Comprehensive IoT-based Monitoring of Air Quality and Thermal Comfort: An Indoor-Outdoor University Campus Case Study
309	Jeong-Min Oh, Ju-Hyun Lee, Seheon Kim and Jae-Weon Jeong	Application of Hollow Fiber Membrane Humidifier in Residential EHP Systems for Indoor Air Quality in Winter
398	Sudharshan Anandan, Andres Barrio-Zhang, Akshay Deolia, Tyler Hughes, Sohum Sodhi, Jae Hong Park, Ryan Wagner, Arezoo Ardekani and David Warsinger	Acoustically assisted fibrous filtration for enhanced particle capture
404	Semi Park and Insung Kang	Low- and no-cost ventilation strategies to reduce indoor cooking emissions: a case study of natural ventilation, window fans and kitchen hoods
555	Wanyu Rengie Chan, Marion Russell, Jiayu Li and Pradeep Prathibha	Measurements of Volatile Organic Compounds and Polycyclic Aromatic Hydrocarbons in 10 Commercial Kitchens

Session 8 8-1 Indoor Air Quality**1:30 - 3:00 Location: SGM 123 / Session chair: Rahman Azari**

Paper Number	Author	Title
117	Kazuyo Tsuzuki and Yuki Nabeshima	Effects of humidity on skin temperature and sleep variables of young men during sleeping period
206	Rosemary Castorina, Karla Vargas, Flavia Wong, Zhong-Min Wang, Aditya Simha, Elizabeth Noth, Asa Bradman and Kazukiyo Kumagai	Residential Volatile Organic Compounds (VOC) Measurements in the San Joaquin Valley: Findings from the SPHERE Study
207	Hemakshat Sharma, Rosemary Castorina, Charles Perrino, Tanmayi Amanchi, Kazukiyo Kumagai, Asa Bradman and Elizabeth Noth	Stockton school-aged children's exposures to polycyclic aromatic hydrocarbons (PAHs)
367	Dong Kyu Lee, Ji Hyeok Son, Sukumar Nartarjan and Woong June Chung	Analysis of the correlation between particulate matter and microplastics according to particle size
495	Shuo-Hsuan Chang, Yuto Morishita, Ji Yoon Bae, Dorit Aviv, William Braham and Jihun Kim	CALM (Clay-based Air-treating Living wall Module): Passive Cooling and VOC Removal

Session 8 8-2 Energy Efficiency, Conservation, Renewable Energy, and Embodied Carbon**1:30 - 3:00 Location: SGM 124 / Session chair: Takao Katsura**

Paper Number	Author	Title
39	Kiho Tanaka, Makiko Ukai and Sihwan Lee	Performance evaluation of an office-integrated cultivation room utilizing human-emitted CO2 for sustainable building-integrated agriculture
92	Arianna Peduzzi, Roberta Jacoby Cureau, Claudia Fabiani, Adriana Ciardiello, Maria Francesca Talamo, Veronica Lucia Castaldo and Anna Laura Pisello	Passive energy retrofit strategies for historic buildings: A systematic review of innovative and non-invasive solutions
189	Zahra Salehi	Agrioltaics as a Renewable Energy and Green Infrastructure Strategy for Enhancing Thermal Comfort, Energy Efficiency, and Climate Resilience
508	Xu Liu and Julian Wang	Spectral-Selective Glazing Strategies for Energy-Efficient and Adaptive Building Envelopes
517	Takao Katsura, Erkki Hirvonen, Kanato Kimura, Takaharu Matsui, Kentaro Sekine, Kazuyoshi Harimoto, Miyuki Watanabe and Katsunori Nagano	Improvement of thermal insulation performance of transparent vacuum insulation panels and in-situ performance test
544	Mohammad Elmi, Siddharth Jayakrishnan Jayakrishnan, Adam Muhammad and Julian Wang	An Experimental Analysis of Photothermal Nanocoatings for Greenhouse Energy Efficiency

Session 8 8-3 Building Technology and Performance**1:30 - 3:00 Location: SGM 101 / Session chair: Xiang (Jason) Zhang**

Paper Number	Author	Title
122	Xue Cui, Minhyun Lee, Xuange Zhang, Mohammad Nyme Uddin and Junjiang Luo	Time-series forecasting of indoor temperature: Toward sensor-free occupant-centric HVAC control
179	Jincheng Dai, Ryoza Ooka, Chao Lin, Ken Takahashi and Shintaro Ikeda	Developing a surrogate RC Model for Optimal HVAC Control Applications in Modelica-Based Building Digital Twin
205	Eunwan Kim, Jeonghoon Choi and Dongjun Suh	Camera-Only Unsupervised Visual Anomaly Detection for IEQ-Oriented Building Operations
278	Mahdi Bonyani, Maryam Soleymani and Chao Wang	A Physics-Informed Modeling of Data Center Cooling and Self-Supervised Learning-Based Autoencoder for Fault Detection and Diagnosis
518	Yihui Li, Zhexuan Yu, Jun Xiao, Hao Zhou and Borong Lin	Physics-Embedded Transfer Learning Graph Neural Network for Building Energy Prediction

Session 8 8-4 Health, Wellbeing, and Human Behaviors in the Built Environment**1:30 - 3:00 Location: GFS 207 / Session chair: Josephine Lau**

Paper Number	Author	Title
287	Zhao Dong, Jian Ge, Jiaqi Wang, Kang Zhao and Isabelle Y.S. Chan	The impact of tangible and intangible factors on occupants' satisfaction with the indoor environment: A machine learning-driven analysis
316	Jongwon Lee	Does Building Retrofit Program for Low-Income Households Really Create Healthy Homes?
450	Xianzhun Zhong, Yongxin Xie and Jianlei Niu	Calibration of the sweating function in a multi-node thermoregulation model based on chamber experiment
474	Shaofang Xu, Giovanni Calzolari, Jilong Wang, Jianlin Ren, Fei Liu, Bin Lu, Qiang Li, Wei Liu, Junjie Liu and Tengfei Zhang	Efficient reconstruction of the atmospheric boundary layer in spatially constrained wind tunnels
524	Sreelakshmi Kavuthimadathil and Satish Bk	Towards Adaptive, human-centric lighting: Limitations of Subjective Measures and a multimodal framework
652	Xindan Kang, Karen M. Kensek, John Wilson, Joon-Ho Choi	Tree Shading, Solar Radiation, and GIS-Examining the effect of tree shading on sidewalk heat reduction

Session 8 8-5 Generative AI in Sustainable Built Environment**1:30 - 3:00 Location: GFS 101 / Session chair: Mojtaba Parsaee**

Paper Number	Author	Title
114	Mojtaba Parsaee, Tarlan Abazari and Soroush Samareh Abolhassani	Towards AI-driven Digital Twins and Cyber-Physical-Social Systems for Circular Disaster Management: Developing A Multi-Agent Debris Life Cycle Simulation Framework
184	Carlos Faubel, Derian Mowen, Marjan Miri, Ursula Demarquet Alban, Antonio Martinez-Molina and Miltiadis Alamaniotis	Fusing visual and sensor data with multimodal transformers for indoor environmental quality assessment in educational settings
368	Yasaman Norouzi and Manish Kumar Dixit	Forecasting the U.S. Residential Renewable Electricity Mix: A Time-Series Approach for 50-Year Building GWP Projections (1949–2080)
485	Xinyue Zhang and Weirong Zhang	Augmentation Framework for HVAC Fault Diagnosis Based on Denoising Diffusion Models
503	Wooyoung Jung and Namgyun Kim	Multi-Agent AI Learning Assistant for Human Building Interaction: System Architecture and Preliminary Performance

Session 8 8-6 Indoor Air Quality**1:30 - 3:00 Location: GFS 118 / Session chair: Trond Thorgeir Harsem**

Paper Number	Author	Title
116	Emmanuel Aghimien, Ajla Aksamija and Timothy Adekunle	Indoor Environmental Quality in a Mid-Century Research Laboratory Building
147	Youngbo Won, Wenhao Chen, Zhong-Min Wang, Jeff Wagner and Kazukiyo Kumagai	How Ventilation and Air Cleaning Strategies Affect Classroom PM _{2.5} and CO ₂ under Normal and Wildfire Conditions? – A CONTAM Simulation Study
158	Shikang Wen and Qingyan Chen	Field investigation of the impact of different terminal devices on thermal comfort and ventilation uniformity
353	Trond Thorgeir Harsem, Bente Hellum, Haakon Flaarønning, Marie Heistad and Mina Andrea Torvanger	Influence of Surgical Staff Movement on Airborne Particle Concentrations in Operating Rooms with Laminar and Mixing Ventilation
417	Hassan Kotb Ali, Yunus Emre Cetin and Martin Kriegel	Air Curtain Intervention to Reduce Air Exchange Between Operating Rooms and Anterooms

Session 8
1:30 - 3:00**8-7 Panel Discussion****Location: GFS 116 / Session chair: Dolaana Khovalyg**

Paper Number	Author	Title
596	Dolaana Khovalyg, Minyoung Kwon, Matteo Bilardo, Cristina Piselli	Personalized Environmental Control Systems (PECS): Multi-Dimensional Trade-Offs in New and Existing Buildings

Session 9
3:30 - 5:00**9-1 Indoor Air Quality****Location: SGM 123 / Session chair: Ali Alexander Nour Eddine**

Paper Number	Author	Title
12	Abdollah Baghaei Daemei, Zhenan Feng and Daniel Paes	Assessing the Effectiveness of Game-Based Learning Versus Video-Based Learning for Mold Prevention Education
32	Zohreh Kiani, Kátia Cordeiro Mendonça, Ali Alexander Nour Eddine and Marc Abadie	Does numerical simulation reproduce reality? A comparative assessment of indoor environmental quality in multifamily buildings
240	Soo-min Jeong, Bon Seo and Su-Gwang Jeong	Controlled sustained release of natural volatile organic compounds from phytoncide emulsion-zeolite composites via surfactant hydrophilic-lipophilic balance adjustment
370	Divine Agbobli, Yunjeong Mo and Cristina Poleacovschi	A Review of the Factors Influencing Adoption and Abandonment of Indoor Air Quality Improvement Strategies
425	Mina Lesan, Avijit Sarker, Saeid Chahardoli, Yi Xiao and Arup Bhattacharya	Adaptive Placement of Portable Air Cleaners under Changing Contaminant Sources
453	Kumar Naddunuri and Shankha Pratim Bhattacharya	Assessing the energy saving potential of personalized ventilation system

Session 9
3:30 - 5:00**9-2 Energy Efficiency, Conservation, Renewable Energy, and Embodied Carbon****Location: SGM 124 / Session chair: Max Ruffo**

Paper Number	Author	Title
231	Francesca Vecchi, Simona Semeraro, Roberto Stasi and Umberto Berardi	Modelling the Adoption of Renewable Energy Communities in Urban Districts: An Agent-Based Approach
238	Bon Seo, Soo-min Jeong and Su-Gwang Jeong	Analysis of determinants of building energy use in Seoul through clustering and regression, and proposal of tailored energy policies
289	Hisato Osawa and Taro Mori	Development of a WebGIS for Visualizing Building Energy Consumption and Renewable Energy Potential: Automated Generation of 3D Building Models Using GIS Data
486	Zhiyan Jin and Weirong Zhang	System Performances Comparative Analysis of PV-Battery Systems for Rural Buildings Between Electrochemical and Mathematical Aging Battery Models
512	Nida Batool Sheikh, Muhammad Mashhood Arif, Jelle Laverge and Marc Delghust	Residential Energy and Transport Coupling for Neighbourhood Decarbonization in Transit-Oriented Development
582	Dongwoo Kim, Tae Kon Kim, Seung Hoon Choi, Dageong Jeong, Kwangho Lee, Min Hwi Kim and Deuk Won Kim	Development and Performance Evaluation of a Thermal Energy Prosumer System Using EnergyPlus-Based Simulation During the Cooling

Session 9
3:30 - 5:00**9-3 Building Technology and Performance****Location: SGM 101 / Session chair: Vimal Preet**

Paper Number	Author	Title
80	Xianzhe Yang, Akihito Ozaki, Seonghwan Yoon, Sung-Jun Yoo, Younhee Choi and Yusuke Arima	Thermal environment prediction in a large open office space with complex air-conditioning system using dynamic coupled BES-CFD
167	Ayane Fujiwara, Hideki Tanaka, Shusaku Mizuta, Terutake Furuta and Fumiharu Oba	Operational Performance of a Small-Scale NZEB Office and Effective Utilization of Photovoltaic Surplus Power on Non-Business Days using Base Air-Conditioning
386	Chengbo Du, Bess Krietemeyer, Bing Dong, Nina Wilson, Peng Gao, Tong Lin and Jianshun Zhang	Green Design Studio: A Modular Interface for Multi-Scale Building Performance Simulation in Architectural Practice

410	Jun-Sub Kim, Seong Woo Park, Jeong Won Kim and Hyeun Jun Moon	Building Genome Analysis for Integrated Indoor Environmental Quality and Energy Performance in a Commercial Building
420	Lindsay Li Chen Hu, Sicheng Zhan and Leslie Keith Norford	Towards cost-effective energy savings: Learnings from non-invasive occupant-centric control implementation in an office building
654	Xuewen Quan, Karen M. Kensek, Sathyanaraya Raghavachary, Haonan Wang	Toward AI in AECO: Integrating BIM Facility Data with an LLM-RAG Framework

Session 9 **9-4 Climate Change Adaptation, Resilience, and Environmental Policy**
3:30 - 5:00 **Location: GFS 207 / Session chair: Wanyu Rengie Chan**

Paper Number	Author	Title
208	Quang Van Tran, Farzad Hashemi, Parisa Najafian and Esteban Ochoa Lopez	Roof Retrofit Scenarios for Thermally Vulnerable Homes: A CFD-Based Evaluation of Indoor Comfort and Air Quality in San Antonio, Texas
264	Mana Nemati Aghdam and Manish Dixit	Integrated LCA and Energy Simulation for Envelope Decisions: Climate-Dependent Results
266	Mohamed Dardir, Jeffrey Wilson and Umberto Berardi	Natural Infrastructure for Health and Environmental Risk Mitigation
372	Maryam Meshkinkiya and Farzad Hashemi	Beyond Numerical Features: Mixed-Type Clustering of Urban Building Archetypes Using Hierarchical and K-prototypes Methods
414	Maryam Abbasi Kamazani and Manish K. Dixit	AI-driven and simulation-based multi-objective building envelope optimization: strengths, limitations, and gaps

Session 9 **9-5 Visual (Lighting and Daylighting) Quality and Accoustic Quality**
3:30 - 5:00 **Location: GFS 107 / Session chair: Azadeh Sawyer**

Paper Number	Author	Title
152	Haerin Yang, Minwoo Kim and Jeehwan Lee	A Multi-Layered Daylighting Assessment of LEED Certified Buildings
172	Bahereh Vojdani, Deok-Oh Woo and Andressa Martinez	Assessing Architect-Friendly Daylighting Feedback from LLaMA: A Zero- and Few-Shot Evaluation of an LLM Approach
255	Dongwoo Lee, Manal Anis, Donghyeok Choi, Hyungsub Kim and Yun Kyu Yi	Developing an Outdoor View Evaluation Method for Complex Shading Systems
409	Won Hee Ko, Luis Santos, Michael Kent, Hanwook Kim and Nehal Nagarjun	How View Content Determine Minimum Window Size and Energy Implications: Evidence from Virtual Reality Experiments
531	Niloofer Nikookar and Azadeh O. Sawyer	An AI-Driven Affective Lighting System for Stress Reduction and Satisfaction in Office Environments.

Session 9 **9-6 Indoor Air Quality**
3:30 - 5:00 **Location: GFS 101 / Session chair: Michael Sohn**

Paper Number	Author	Title
34	Jing Wu, Dahai Qi and Lexuan Zhong	Wildfire Smoke Alters Particle Size Distributions Indoors and Outdoors in an Urban Office Building
319	Michael Sohn, Ruoyu Lan, Marion Russell and David Lorenzetti	Ventilation and Filtration Tradeoffs for Increasing Building Protection from Outdoor Aerosols
514	Yi Fang, Haoran Zhao, Tim Tyner, Stephanie M. Holm, Brett C. Singer, Anabelle Garza, Arlette Garcia-Ramirez, Briseida Vasquez, Debra Manzo Garcia, Jesus Rivera, John R. Balmes and Amy Dryden	Range Hood Use and Effectiveness in Reducing Indoor Air Pollution During Gas and Induction Cooking
516	Mingyao Yao and Chenchen Shi	Health Implications of Air Pollution in Metro Stations in China
580	Elham Hasani Alavy, Mahsa Khanpoor Siahdarka, Zahra Qavidelfardi and Faeghe Rahnama	Lessons from the Post Occupancy Evaluation of the Indoor Learning Environments: A Review

Session 9
3:30 - 5:00

9-7 Panel Discussion: IES
Location: GFS 118 / Session chair: TBD

Paper Number	Author	Title
TBD		

Session 9
3:30 - 5:00

9-8 Special session: Elsevier
Location: GFS 116 / Session chair: TBD

Paper Number	Speaker	Title
N/A	Natalie Lee, Elsevier	