

Table of Contents

Preface	VII
Foreword	IX
Introduction	XI
Digital Approaches to Participation and Co-creation	1
<i>James F. Palmer</i>	
The Perception of Landscape Visual Quality by Environmental Professionals and Local Citizens	2
<i>Ibrahim Dhaini, Beata Dreksler</i>	
Co-creation in Immersive Virtual Reality: Insights from a Multi-Stakeholder Planning Workshop in Jabal Moussa Biosphere Reserve, Lebanon	10
<i>Wei Zhang, Wenjiao Li</i>	
Construction of Environment-Sensitive Digital Twin Plant Model for Ecological Indicators Analysis	18
<i>Jingyuan Yuan, Bing Wu, Ming Lu, Meicen Jin</i>	
A Coupled Structure-Function Evaluation Method for GI Construction Suitability of Shrinking Urban Vacant Land: A Case Study of Hegang, China	29
<i>Zhengen Liu, Jinpeng Yang, Jinao He, Wenjing Li, Waishan Qiu</i>	
GAN-based Transportation Noise Prediction via Satellite Maps: A Case Study in New York	38
<i>Henrik Schultz</i>	
Entangling Physical and Virtual Practices in Co-creative Processes?	50
<i>Yurii Karpinskyi, Anatoliy Lyashchenko, Nadiia Lazorenko, Danylo Kin, Nataliia Shudra, Oleksandr Yankin</i>	
The Role of Geospatial Habitus in the Research of Existing and Planned New Urban Landscapes.....	61
<i>Chuheng Tan, Ximing Zhong, Pia Fricker</i>	
AI as a Collaborative Partner in Landscape Form-finding	69
<i>Yuxin Yang, Adam Mekies PLA</i>	
EcoCircuit, a Text2Flow Application: Deciphering Environmental Metabolism Through Staging and Collaborating with Language Models	79

<i>Gabriel Wurzer, Nirmala Maja Salkic, Wolfgang E. Lorenz</i> Urban Transformation Using Cellular Automata Specified by the Public.....	97
<i>Daniel Munderlein</i> Putting Walkscapes on the Map: GIS-based Visualization for Mobile Methods in Landscape Research.....	105
<i>Evangelia A. Polyzou, Lazaros Sechidis</i> Use of Open-Source Software for Landscape Co-Design.....	128
<i>Mehmet Onur Senem, Hayriye Esbah Tuncay, Mustafa Koç İmdat As</i> Generating Landscape Layouts with GANs and Diffusion Models.....	137
Digital Responses to Nature-based and Nature-integrated Solutions	145
<i>Vincent Javet, Bryan Washko, Jack Bowen</i> Exploring Sustainable CNC Model Making Materials for Landscape Architecture Education.....	146
<i>Wendy Walls</i> A Discussion of Value-driven Challenges to Integrating Digitally Modelled Trees into Design Workflows.....	156
<i>Medria Shekar Rani, Deni Suwardhi, Endang Triningsih, M Z Dahlan, Firmansyah, Ira Prayuni</i> Canopy Interception Assessment of Urban Park Greenery: A Case Study of Ganesha Park, Bandung, Indonesia	164
<i>Francesca Mosca</i> A Conceptual Framework for the Optimization of Environmentally Sustainable Nature-based Solutions.....	173
<i>Peter Stempel, Ellie Nasr-Azadani, Chelsea Russ, Annette Grilli, Elin Schuh, Stephan Grilli, Isaac Ginis, Deborah Crowley, John Walsh, Jake Harrington, Christopher Damon, Roland Duhaime, Pam Rubinoff</i> Interpreting Dynamic Landscapes: Animated Landscape Visualizations to Improve Communication of Changing Coastal Conditions	182
<i>Yijun Zeng, Jijia Wang, Siqi Lai, Brian Deal</i> Understanding the Carbon Sequestration Potential of Urban Landscapes: A State- wide Assessment in Illinois	193
<i>Xun Liu, Nandi Yang, Runjia Tian</i> Reinventing Planting Design in Landscape Architecture: A Generative AI Approach ...	202

Data-driven Design for Integrating Ecology and Architecture	211
<i>Alfonso Melero Bevià, Verna Vogler, Elham Ghabouli</i>	
Enhancing Urban Greenery: Integrating Environmental Data into 3D Urban Tree Models	212
<i>Wanyi Li, Bing Wu, Xiaoguang Liu, Yiqiao Wang</i>	
Analysis of Spatial-Temporal Pattern Evolution of Carbon Stocks Based on Land Use Change: A Case Study of Guangzhou	223
<i>Judit Zita Boros, Valerii Shevchenko, Damla Cay, Giulia Gualtieri</i>	
A Framework for More-than-human Placemaking with Data Storytelling.....	235
<i>Marc-Eduard Ihle, Volker Wichmann</i>	
Blurring Boundaries Between Scientific and Artistic Representation of Landscapes	253
<i>Lacy Shelby, Renato Villela Mafra Alves da Silva</i>	
Retrieval-augmented Generation: Empowering Landscape Architects with Data-driven Design.....	267
<i>Benjamin H. George, Brent Chamberlain, Phil Fernberg, Paul Gardner</i>	
Assessing the Value of Artificial Intelligence in Plant Selection	277
<i>Livia Calcagni, Sridhar Subramani, Koen Olthuis</i>	
A Comprehensive Computational Tool for Performance-driven Reasoning in Floating Building Design and Its Evaluation.....	285
Ecological Modeling and Simulation	301
<i>Travis Flohr, Lara Garcia, Caio Figueiredo, Mehdi Heris, Margaret Hoffman, Justine Lindeman, Hong Wu, Lilliard Richardson</i>	
Exploring a Just and Diverse Urban Forests' Capacity for Mitigating Future Mean Radiant Temperatures	302
<i>Maximilian Schob, Luis Callejas</i>	
From Radiance to Geometry: Identifying European Forest Clearings with Potential Heritage Value	314
<i>Ferdinand Ludwig, Michael Hensel, Thomas Rötzer, Albin Ahmeti, Xi Chen, Halil Ibrahim Erdal, Astrid Reischel, Qiguan Shu, Jakub Marcin Tyc, Hadi Yazdi</i>	
Digital Workflow for Novel Urban Green System Design Derived from a Historical Role Model	333

<i>Ceylan Sözer, Ikhwan Kim</i> The Computational Methodology for Proposing the Distribution of Marine Environment with Incomplete Data.....	346
<i>Serdar Aydin, Berat Çelebioğlu, Ayfer Aytug</i> Morphological Analysis of Historical Urban Landscape Through Heritage Transect: A Computational Model	354
Energy Landscapes	365
<i>Karl Bittner, Mathias Baumgartinger, Thomas Schauppenlehner</i> Real-Time VR Landscape Visualization for Wind Farm Repowering: A Case Study in Eastern Austrian World Heritage Sites	366
<i>Andrew Lovett, Gisela Sünnerberg, Paul Bourgeois</i> Developing Online Mapping and Analysis Tools for the Spatial Integration of Energy and Environmental Policies in England	375
<i>Thomas Schauppenlehner, Mathias Baumgartinger-Seiringer, Karl Bittner</i> Where Should We Place It? The Potential of a Serious Planning Game Approach for Participatory Planning Processes in the Context of Renewable Energy Development....	386
<i>Maximilian Schob, Jörg Rekitke</i> Geodesign Beyond the Shores of Landscape Architecture	394
<i>Jinjin Guan, Qi Huang</i> GIS-based Mapping of Impacts of Large-Scale Photovoltaic Power Stations on the Landscape	405
Decision Support for Social-Ecological Systems	419
<i>Chien-Yu Lin</i> Unraveling Collaborative Formation: A Framework of Investigating Key Factors Shaping Landscape Architecture Professions in the Era of Digital Visualization	420
<i>Vudipong Davivongs, Ornaim Tangkitngamwong, Prapasara Naka, Siam Lawawirojwong</i> Urban Forest for Green University Campus: Identifying Area Covered in Vegetation as Forest at Kasetsart University, Bangkok, Thailand	432
<i>Chiara Chioni, Nicola Callegaro, Rossano Albatici, Sara Favargiotti</i> Feel the Context! <i>Ex situ</i> Horizon Reconstruction in Mountain Landscapes for Bioclimatic Design	441

Malte Schünemann, Stefan Taeger

The Audience in Mind: An Attempt of a Target-Group-Specific Application to Communicate Climatic Hazards to Decision-Makers..... 449

Sensorics and Responsive Landscapes 459

Linda Hänchen, Robert Hecht, Denis Reiter, Theodor Rieche, Elias Pajares, Sebastian Seisenberger, Johannes Gnädinger, Andreas Plail, Lisa Bareiss

Indicators for Assessing the Supply, Demand and Accessibility of Urban Green Spaces in the Context of a Planning Instrument 460

Gideon Spanjar, Frank Suurenbroek, Rachel Reynolds

The Non-Experts' Experience of 3D City Visualisations: Lessons for Urban Design Practice 471

Laura Schalbetter, Nicolas Keller, David Evans, Brent Chamberlain, Ulrike Wissen Hayek, Adrienne Grêt-Regamey

Eye Tracking in VR to Analyse Physiological Responses to Peri-urban Landscape Elements 482

Zhongzhe Shen, Mintai Kim

Examining a Smart Devices-assisted Landscape Performance Assessment Framework..... 490

Peter Zeile, Thomas Obst, Céline Schmidt-Hamburger, Nina Haug

A Multisensory Toolbox for Active Citizen Participation in Cycling Planning on Shared Real and Virtual Roads: A Case Study in Herrenberg, Germany 499

Zana Fattah Ali, Yaseen N. Hassan, Gábor Pirisi, Kinga Kiss, Parisa Maleknia, Nelson Ugwonoh

Seismic Activity Hazard Assessment Using GIS Techniques in a Vulnerable Urban Area of the Iraq Kurdistan Region..... 511

Craig Douglas

Sensing the Landscape: Mapping the Dynamic Atmospheric Environment of the Urban Fabric 521

Resilient Landscapes, Global Change and Hazard Response..... 533

Matthias Pietsch, Matthias Henning, Sascha Fritsch

Monitoring as a Basis for the Development of Resilient Landscapes – Where, How and Why? 534

<i>Xiaohan Zhang, Xi Chen, Ferdinand Ludwig</i> A Human-centered Approach for Calculating the Shade Benefits of Street Trees Considering Pedestrian Mobility	542
<i>Alessandra Battisti, Herbert Natta, Maria Valesse, Eva Vergara, Angelo Figliola</i> Wine Cultural Landscape's Adaptation: A Methodological Framework for the Dynamic Conservation of Cultural Heritage	552
<i>Omid Zamani Gharehchamani, Ayçim Türer Başkaya</i> Sustaining Urban Resilience Through Adaptive Green Infrastructure Strategies: A Case Study of Istanbul-Kadikoy District	570
UAV Imagery and Remote Sensing	583
<i>Přemysl Krejčířík, Jozef Sedláček, Radim Klepárník</i> From Flap Technique to Structure from Motion: A Case Study of a Historical Park Restoration.....	584
<i>Jozef Sedláček, Lukáš Štefl, Radim Klepárník, Kryštof Chytrý, Nastassia Zhurauskaya, Lenka Hrušková, Petr Kučera</i> Advancing Urban Ecology Research with UAV: A Study on NDVI and Individual Tree Vitality Assessment in Species-rich Parks	592
<i>Brendan Harmon, Hye Yeon Nam</i> 3D Printing of Heritage Trees.....	605
<i>Michael G. White, M. Hank Haeusler, Joshua Zeunert</i> Using Point Clouds to Capture Growth and Change in Experimental Urban Planting Trials.....	614
<i>Salvador Lindquist, Keenan Gibbons</i> Infrared Chorographies: Visualizing Thermal Disparities	621
<i>Elif Serdar Yakut, Meltem Erdem Kaya</i> Land Decoding: A Comparative Study on Image Recognition Using U-Net for Urban Parks	632
<i>Haoting Gao, Mark Lindquist, Ramiro Serrano Vergel</i> AI-driven Avatars in Immersive 3D Environments for Education Workflow and Case Study of the Temple of Demeter, Greece.....	640
<i>Peter Connolly</i> Re-thinking How Representation Can Be Employed to Engage with Landscape Experience – and How Point Clouds Can Contribute to This.....	652

Geodesign Approaches, Technologies, and Case Studies	663
<i>Yiqiao Wang, Bing Wu, Xiaoguang Liu, Wanyi Li</i>	
Boundary Green Infrastructure Patches: Bridging Spaces that Connect Natural and Built-up Spaces.....	664
<i>Hanwen Xu, Mark Randall, Yusong Zhu, Tiansu Wang</i>	
An Interactive Terrain Design Method Combining Augmented Reality Sandbox and Multi-objective Optimization Assistance	673
<i>Songtao Wu, Mingyi He, Xiao Peng, Jingyuan Yuan</i>	
Digital Frontier: Construction and Application of Landscape Database for Border Towns in Hei-longjiang Province from the Perspective of Spatial Humanity	683
<i>Austin Dunn, Daniel Scheir</i>	
On Spatial Data, Computation, and Public Participation for Regional Multi-Use Trail Design	695
<i>Ata Tara</i>	
From Geodesign to Geoart: Maximising Research Impact in a Georesilience Framework.....	705
<i>Timo Wätjen, Hans-Georg Schwarz-v.Raumer</i>	
Are Urban Biotope Networks Well Connected to Open Space? A Case Study.....	713
<i>Yaseen N. Hassan, Zana Fattah Ali, Laura Üszöke, Sándor Jombach</i>	
A Comparative Assessment of UGS Changes and Accessibility Using Per Capita Metrics: A Case Study of Budapest and Vienna.....	723
<i>Xiaohao Yang, Mark Lindquist, Derek Van Berkel, David Grace</i>	
A Viewscape-based Approach for Assessing Perceived Walkability in Cities.....	735
Algorithmic Design and Analysis of Landscapes	747
<i>Phillip Fernberg, Zihao Zhang</i>	
Problematizing AI Omnipresence in Landscape Architecture.....	748
<i>Ruiqi Yang, Jessica Fernandez, Gengchen Mai, Angela Yao</i>	
Measuring the Visual Quality of Street Space Using Machine Learning	756
<i>Emily Schlickman, Xinyi Li, Danxiang Wang</i>	
Spot the Bots: Analyzing Text-to-Image Outputs for the Field of Landscape Architecture	764

<i>Emily Schlickman, Alma Magana-Leon</i> Employing Generative Technology in Urban Design: An Aid or a Threat?.....	772
<i>Shirin Rezaeimalek, Jessica Fernandez, Yang Song</i> Analyzing User Sentiments Towards Urban Landscapes: A Case Study of Atlanta's Places Using TripAdvisor Reviews and VADER.....	780
<i>Tino Ahlmann</i> Artificial Intelligence, Program Structure and Programming in Design Processes: In an Urban Context in Malta	788
Landscape and Building Information Modeling (LIM + BIM).....	805
<i>Iлона Brueckner, Matthias Remy, Marieke Schönfeld</i> BIM-based Applications for Construction Permits Considering Open Space	806
<i>Hadi Yazdi, Qiguan Shu, Xi Chen, Thomas Rötzer, Ferdinand Ludwig</i> GroTree – A Novel Toolbox for Simulating and Managing Urban Tree Canopy Growth.....	815
<i>Xilun Cao, Panyan Wang, Zhe Li</i> Practical Application of Landscape Information Modelling in Grading Design of Exhibition Garden.....	826
<i>Ziqian Cheng, Yuning Cheng</i> Research on the Spatial Structure of Landscape Architecture from Design Intention to Function Use.....	835
<i>Jela Ivankovic-Waters, Michael G. White, M. Hank Haeusler, Joshua Zeuner</i> Advancing Planting Design Through Digital Technologies in Teaching Landscape Architecture	848
<i>Mariusz Hermansdorfer, Christian Oettinger, Hans Skov-Petersen, Pia Fricker, Kristoffer Negendahl</i> Advancing Low-Emission Urban Design Through Parametric Modelling and Life Cycle Assessment.....	858
<i>Guoping Huang</i> Towards a Digital Landscape Twin: Insights from the Healthcare Industry	873

Visualization, Animation and Mixed Reality (VR, AR).....	881
<i>Adolfo Martinez, Jessica Fernandez, Benjamin George, David Spooner, Shirin Rezaeimalek</i>	
Determining the Effect of Alleyway Design on Perceived Safety Through Virtual Reality.....	882
<i>Jaeyoung Ha, Todd Ogle, M. M. Lekhon Alam</i>	
Implementation of Augmented Reality in Landscape Architectural Education: Enhancing Understanding of Three-Dimensional Space	890
<i>Rümeysa Merve Öksüz, Ikhwan Kim</i>	
Effects of Visual Cues on Depth Perception in Virtual Landscapes.....	900
<i>Mengting Ge, Jun Yang, Jiahua Zhao, Yang Zhang, Mintai Kim</i>	
Enhancing Design Concept Initiation of Landscape Practice Using VR and AR Representation	908
<i>Afshin Ashari</i>	
WE[AR] – Dynamic Interaction in Puplic Spaces Using AR/MR.....	919
<i>Mark Heller</i>	
A Semi-automated Workflow for Computationally Generating Perspectival Renderings of Geographic Scale Landscapes	929
<i>Xun Liu</i>	
Integrating Generative AI into Landscape Architecture Education: Methodologies, Applications, and Ethical Considerations	937
Teaching Digital Landscape Architecture.....	947
<i>Pia Fricker, Ulrike Wissen Hayek, Rosalea Monacella, Susann Ahn, Stephen Ervin, Michael Hensel, Jörg Rekitke, Olaf Schroth, Philipp R. W.Urech, Matthias Vollmer</i>	
Inclusions – Landscape Narratives for Enhancing Landscape Architecture Pedagogy ...	948
<i>Ramzi Hassan, Annegreth Dietze-Schirdewahn</i>	
Virtual Reality as Mediator in Teaching Landscape Architecture History	958
<i>Ervine Shengwei Lin</i>	
Extreme Scaffolding – An Application of Blended Learning in Teaching Digital Landscape Architecture	966

<i>Howard Hahn</i> Integrating Teaching, Research, and Community Engagement Using a GIS-oriented Web Hub.....	979
<i>Florian Zwangslleitner, Gašper Habjanič, Arabella Knegendorf</i> AI as a Tool in the Landscape Architecture Design Process	987
<i>Gabrielle Bartelse, Hannelie du Preez, Raita Steyn</i> Exploring Landscape Architecture Education: Scoping Review of Innovations, Challenges, and Future Directions	995
<i>Alexander Peters, Andreas Thon</i> Digital Transformation in University Landscape Architecture Education: Integrating Future Skills in Implementation Planning	1003
<i>Chaelin Lee, Yumi Lee</i> Harnessing Artificial Intelligence for Designers: Conversion of Design Sketches into Digital Images Using AI Image Generators.....	1012
<i>Sungmin Kim, Yumi Lee</i> Comparative Analysis of Landscape Element Images Created by Text-to-Image Artificial Intelligence Tools in the Design Process	1021
<i>Jaeheon Kim, Yumi Lee</i> Accuracy Evaluation of Tree Images Created Using Generative Artificial Intelligence	1029
Acknowledgements	1039
Early Conference Announcement & Call for Papers for the International Conference “Digital Landscape Architecture DLA 2025”	1047