

visualization in landscape and environmental planning technology and applications

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Visualization in Landscape and Environmental Planning

This major reference presents the challenges, issues and directions of computer-based visualization of the natural and built environment and the role of such visualization in landscape and environmental planning. It offers a uniquely systematic approach to the potential of visualization and the writers are acknowledged experts in their field of specialization. Case studies are presented to illustrate many aspects of landscape management including forestry, agriculture, ecology, mining and urban development.

Landscape Planning

This volume focuses on methods and techniques, dealing with the topics and problems of modern environmental planning. This book incorporates the expansions taking place in the field of environmental planning.

Digital Landscape Architecture: Logic, Structure, Method and Application

Closely related to the frontier research field of "digital technology", this book reshapes the planning and design process of landscape architecture from theoretical and practical levels. It gives a full-scale discussion to the logic, structure, method, and application of digital landscape architecture, leading this field to a new era of perception-quantification research mode. Readers will get a comprehensive understanding of digital landscape architecture, know about multiple digital methods for landscape planning and design, and learn a lot of practical projects with digital technology. And it will inspire the readers to think about new patterns and approaches to landscape planning, rather than traditional ways. This book is organized under a clear logic, which helps the readers easily get the core of the work. A lot of logic diagrams showing between the theoretical paragraphs highly summarize the key points of the book, providing a better readability and acceptability. This book also contains many detailed drawings

and graphics for the project cases, which gives a good demonstration of how digital methods could be applied in practice.

Handbook of Research on E-Planning: ICTs for Urban Development and Monitoring

"This book provides relevant theoretical perspectives on the use of ICT in Urban Planning as well as an updated account of the most recent developments in the practice of e-planning in different regions of the world"--Provided by publisher.

Research in Landscape Architecture

Defining a research question, describing why it needs to be answered and explaining how methods are selected and applied are challenging tasks for anyone embarking on academic research within the field of landscape architecture. Whether you are an early career researcher or a senior academic, it is essential to draw meaningful conclusions and robust answers to research questions. Research in Landscape Architecture provides guidance on the rationales needed for selecting methods and offers direction to help to frame and design academic research within the discipline. Over the last couple of decades the traditional orientation in landscape architecture as a field of professional practice has gradually been complemented by a growing focus on research. This book will help you to develop the connections between research, teaching and practice, to help you to build a common framework of theory and research methods. Bringing together contributions from landscape architects across the world, this book covers a broad range of research methodologies and examples to help you conduct research successfully. Also included is a study in which the editors discuss the most important priorities for the research within the discipline over the coming years. This book will provide a definitive path to developing research within landscape architecture.

Structures and Architecture

Although the disciplines of architecture and structural engineering have both experienced their own historical development, their interaction has resulted in many fascinating and delightful structures. To take this interaction to a higher level, there is a need to stimulate the inventive and creative design of architectural structures and to persua

Natural Resources Management: Concepts, Methodologies, Tools, and Applications

The perseveration of our natural environment has become a critical objective of environmental scientists, business owners, and citizens alike. Because we depend on natural resources to survive, uncovering methods for preserving and maintaining these resources has become a focal point to ensure a high quality of life for future generations. Natural Resources Management: Concepts, Methodologies, Tools, and Applications emphasizes the importance of land, soil, water, foliage, and wildlife conservation efforts and management. Focusing on sustainability solutions and methods for preserving the natural environment, this critical multi-volume research work is a comprehensive resource for environmental conservationists, policymakers, researchers, and graduate-level students interested in identifying key research in the field of natural resource preservation and management.

Urban Parks Between Safety and Aesthetics

The question of how to live in the city and increase the quality of urban life creates new challenges for both urban policies and academic research. Urban parks are important keys for achieving a broader understanding of the urban landscape. Open green spaces in every form are essential for life in our ever more urbanised society and are becoming a vital issue for the liveability of the urban environment. The purpose of the present research is to acquire a more thorough knowledge of the evaluation of urban parks. The study uses statistical analysis methods combined with landscape planning and visualisation methods. The research provides an innovative and sophisticated point of view along with the means to improve the comprehension of people's preferences for alternative urban park scenarios. The results are expected to create an advanced discussion platform and make a contribution towards improving knowledge of the public's perception of urban parks. The investigation was conducted with empirical experiments on two parks in Zurich. The functional component of the research is the visualisation of spatial data using powerful visualisation tools. The theoretical prospect is the achievement of broader knowledge about individuals' perception of open green spaces, focusing on previously unexplored experimental research combining conjoint analysis and visualisation methods. The experiments created

for the research are effective for modelling and explaining the significance that people assign to specific dimensions characterising different park scenarios. Two motivations are at the base of the research: exploring the use of conjoint analysis methods to study virtual urban parks and evaluating the use of visual stimuli with conjoint analysis.

Landscape Planning

Landscape architecture is the design of outdoor and public spaces to achieve environmental, socio-behavioral, and/or aesthetic outcomes. It involves the systematic investigation of existing social, ecological, and geological conditions and processes in the landscape, and the design of interventions that will produce the desired outcome. The scope of the profession includes: urban design; site planning; town or urban planning; environmental restoration; parks and recreation planning; visual resource management; green infrastructure planning and provision; and private estate and residence landscape master planning and design - all at varying scales of design, planning and management. This book contains chapters on recent developments in studies of landscape architecture. For this reason I believe the book would be useful to the relevant professional disciplines.

The Routledge Companion to Landscape Studies

Landscape is a vital, synergistic concept which opens up ways of thinking about many of the problems which beset our contemporary world, such as climate change, social alienation, environmental degradation, loss of biodiversity and destruction of heritage. As a concept, landscape does not respect disciplinary boundaries. Indeed, many academic disciplines have found the concept so important, it has been used as a qualifier that delineates whole sub-disciplines: landscape ecology, landscape planning, landscape archaeology, and so forth. In other cases, landscape studies progress under a broader banner, such as heritage studies or cultural geography. Yet it does not always mean the same thing in all of these contexts. The Routledge Companion to Landscape Studies offers the first comprehensive attempt to explore research directions into the many uses and meanings of 'landscape'. The Companion contains thirty-nine original contributions from leading scholars within the field, which have been divided into four parts: Experiencing Landscape; Landscape Culture and Heritage; Landscape, Society and Justice; and Design and Planning for Landscape. Topics covered range from phenomenological approaches to landscape, to the consideration of landscape as a repository of human culture; from ideas of identity and belonging, to issues of power and hegemony; and from discussions of participatory planning and design to the call for new imaginaries in a time of global and environmental crisis. Each contribution explores the future development of different conceptual and theoretical approaches, as well as recent empirical contributions to knowledge and understanding. Collectively, they encourage dialogue across disciplinary barriers and reflection upon the implications of research findings for local, national and international policy in relation to landscape. This Companion provides up-to-date critical reviews of state of the art perspectives across this multifaceted field, embracing disciplines such as anthropology, archaeology, cultural studies, geography, landscape planning, landscape architecture, countryside management, forestry, heritage studies, ecology, and fine art. It serves as an invaluable point of reference for scholars, researchers and graduate students alike, engaging in the field of landscape studies.

Future Cities

Future Cities For the first time in human history, more than 50% of the world's population lives in urban regions. Cities are the largest, most complex, and most dynamic man-made systems. They are vibrant centers of cultural life and engines that drive the global economy. Contemporary cities are environmentally, socially, and economically unsustainable. The quality of urban life is threatened by such factors as pollution, rising temperatures, limited resources, congestion, social inequalities, aging of large sectors of the world population, poverty, informality, crime, and economic imbalances. The overall planning of future cities is a challenge that can only be faced by interdisciplinary teams combining multitudes of backgrounds and expertise. eCAADe "Education and Research in Computer Aided Architectural Design in Europe" eCAADe covers Europe, Middle East, North Africa and Western Asia and works in collaboration with the four other major international associations in the field: ACADIA, ASCAAD, CAADRIA, CAADFutures and SIGRADI. eCAADe has collaborated with these associations to devise an exciting international Journal for the field called the International Journal of Architectural Computing or short IJAC.

Advances in GIScience

The Association of Geographic Information Laboratories for Europe (AGILE) was established in early 1998 to promote academic teaching and research on GIS at the European level. Since then, the annual AGILE conference has gradually become the leading GIScience conference in Europe and provides a multidisciplinary forum for scientific knowledge production and dissemination. GIScience addresses the understanding and automatic processing of geospatial information in its full breadth. While geo-objects can be represented either as vector data or in raster formats these representations have also guided the research in different disciplines, with GIS researchers concentrating on vector data while research in photogrammetry and computer vision focused on (geospatial) raster data. Although there have always been small but fine sessions addressing photogrammetry and image analysis at past AGILE conferences, these topics typically played only a minor role. Thus to broaden the domain of topics the AGILE 2009 conference it is jointly organized with a Workshop of the International Society of Photogrammetry and Remote Sensing (ISPRS), dedicated to High Resolution Satellite Imagery, organized by Prof. Christian Heipke of the Leibniz Universität Hannover. This collocation provides opportunities to explore commonalities between research communities and to ease exchange between participants to develop or deepen mutual understanding. We hope that this approach enables researchers from the different communities to identify common interests and research methods and thus provides a basis for possible future cooperations.

Broad Scale Coastal Simulation

Coastal zones exemplify the environmental pressures we face: their beauty attracts settlement, they offer potential for diverse economic activities, and they are sensitive natural habitats for important species, as well as providing a range of ecosystem services. They are also extremely vulnerable to the vicissitudes of climate change, which include rising sea levels and changes in extreme events such as storms. With large populations living in coastal and estuarine cities facing the ongoing threat of inundation, coordinated management is essential, especially as coastal zones form a linked system in which piecemeal, uncoordinated management could be counterproductive.

Innovative Technologies in Urban Mapping

The book presents a comprehensive vision of the impact of ICT on the contemporary city, heritage, public spaces and meta-cities on both urban and metropolitan scales, not only in producing innovative perspectives but also related to newly discovered scientific methods, which can be used to stimulate the emerging reciprocal relations between cities and information technologies. Using the principles established by multi-disciplinary interventions as examples and then expanding on them, this book demonstrates how by using ICT and new devices, metropolises can be organized for a future that preserves the historic nucleus of the city and the environment while preparing the necessary expansion of transportation, housing and industrial facilities.

Landscape and Sustainability

This unique book addresses the issue of sustainability from the point of view of landscape architecture, dealing with professional practices of planners, designers and landscape managers. This second edition contains updated and new material reflecting developments during the last five years and comprehensively addresses the relationship between landscape architecture and sustainability. Much in the text is underpinned by landscape ecology, in contrast to the idea of landscape as only appealing to the eye or aspiring cerebrally to be fine art. Landscape and Sustainability establishes that the sustainability agenda needs a new mindset among professionals: the driving question must always be 'is it sustainable?' Developing theory into practice, from the global to the local scale and from issues of policy and planning through to detailed design and implementation and on to long-term maintenance and management, the contributors raise and re-examine a complex array of research, policy and professional issues and agendas to contribute to the necessary ongoing debate about the future of both landscape and sustainability.

Emerging Issues, Challenges, and Opportunities in Urban E-Planning

Recent advances in information and communication technologies have enhanced the standards of metropolitan planning and development. These innovations have led to new opportunities in this evolving profession. Emerging Issues, Challenges, and Opportunities in Urban E-Planning brings

together the efficiency of web-based tools and digital technologies with the practice of spatial planning. Focusing on the utilization of geographic information systems, computer-assisted design, visualization concepts, and database management systems, this book is a pivotal reference source for planners, policymakers, researchers, and graduate students interested in how recent technological advancements are enhancing the traditional practices in urban planning.

The Renewable Energy Landscape

Winner of the 2017 EDRA Great Places Award (Research Category) Winner of the 2017 VT ASLA Chapter Award of Excellence (Communications Category) The Renewable Energy Landscape is a definitive guide to understanding, assessing, avoiding, and minimizing scenic impacts as we transition to a more renewable energy future. It focuses attention, for the first time, on the unique challenges solar, wind, and geothermal energy will create for landscape protection, planning, design, and management. Topics addressed include: Policies aimed at managing scenic impacts from renewable energy development and their social acceptance within North America, Europe and Australia Visual characteristics of energy facilities, including the design and planning techniques for avoiding or mitigating impacts or improving visual fit Methods of assessing visual impacts of energy projects and the best practices for creating and using visual simulations Policy recommendations for political and regulatory bodies. A comprehensive and practical book, The Renewable Energy Landscape is an essential resource for those engaged in planning, designing, or regulating the impacts of these new, critical energy sources, as well as a resource for communities that may be facing the prospect of development in their local landscape.

Innate Terrain

Innate Terrain addresses the varied perceptions of Canada's natural terrain, framing the discussion in the context of landscapes designed by Canadian landscape architects. This edited collection draws on contemporary works to theorize a distinct approach practiced by Canadian landscape architects from across the country. The essays – authored by Canadian scholars and practitioners, some of whom are Indigenous or have worked closely with Indigenous communities – are united by the argument that Canadian landscape architecture is intrinsically linked to the innate qualities of the surrounding terrain. Beautifully illustrated, Innate Terrain aims to capture distinct regional qualities that are rooted in the broader context of the Canadian landscape.

Visualizing Climate Change

Carbon dioxide and global climate change are largely invisible, and the prevailing imagery of climate change is often remote (such as ice floes melting) or abstract and scientific (charts and global temperature maps). Using dramatic visual imagery such as 3D and 4D visualizations of future landscapes, community mapping, and iconic photographs, this book demonstrates new ways to make carbon and climate change visible where we care the most, in our own backyards and local communities. Extensive color imagery explains how climate change works where we live, and reveals how we often conceal, misinterpret, or overlook the evidence of climate change impacts and our carbon usage that causes them. This guide to using visual media in communicating climate change vividly brings to life both the science and the practical solutions for climate change, such as local renewable energy and flood protection. It introduces powerful new visual tools (from outdoor signs to video-games) for communities, action groups, planners, and other experts to use in engaging the public, building awareness and accelerating action on the world's greatest crisis.

Nachhaltige Lösungen für die Informationsgesellschaft

Climb a mountain and experience the landscape. Try to grasp its holistic nature. Do not climb alone, but with others and share your experience. Be sure the ways of seeing the landscape will be very different. We experience the landscape with all senses as a complex, dynamic and hierarchically structured whole. The landscape is tangible out there and simultaneously a mental reality. Several perspectives are obvious because of language, culture and background. Many disciplines developed to study the landscape focussing on specific interest groups and applications. Gradually the holistic way of seeing became lost. This book explores the different perspectives on the landscape in relation to its holistic nature. We start from its multiple linguistic meanings and a comprehensive overview of the development of landscape research from its geographical origins to the wide variety of today's specialised disciplines

and interest groups. Understanding the different perspectives on the landscapes and bringing them together is essential in transdisciplinary approaches where the landscape is the integrating concept.

Landscape Perspectives

Advances in Geo-Spatial Information Science presents recent advances regarding fundamental issues of geo-spatial information science (space and time, spatial analysis, uncertainty modeling and geo-visualization), and new scientific and technological research initiatives for geo-spatial information science (such as spatial data mining, mobile data modeling, and location-based services). The book contains selected and revised papers presented at the joint International Conference on Theory, Data Handling and Modelling in GeoSpatial Information Science (Hong Kong, 26–28 May 2010), and brings together three related international academic communities: spatial information science, spatial data handling, and modeling geographic systems. Advances in Geo-Spatial Information Science will be of interest for academics and professionals interested in spatial information science, spatial data handling, and modeling of geographic systems.

Agroforestry Notes

Modelling is an important tool for understanding the complexity of forest ecosystems and the variety of interactions of ecosystem components, processes and values. This book describes the hybrid approach to modelling forest ecosystems and their possible response to natural and management-induced disturbance. The book describes the FORECAST family of ecosystem management models at three different spatial scales (tree, stand and landscape), and compares them with alternative models at these three spatial scales. The book will help forest managers to understand what to expect from ecosystem-based forest models; serve as a tool for use in teaching about sustainability, scenario analysis and value trade-offs in natural resources management; and assist policy makers, managers and researchers working in assessment of sustainable forest management and ecosystem management. Several real-life examples of using the FORECAST family of models in forest management and other applications are presented from countries including Canada, China, Spain and the USA, to illustrate the concepts described in the text. The book also demonstrates how these models can be extended for scenario and value trade-off analysis through visualization and educational or management games.

Advances in Geo-Spatial Information Science

conference topics are: Urban Transport Planning and Management; Transport Demand Analysis; Traffic Integration and Control; Intelligent Transport Systems; Transport Modelling and Simulation; Land Use and Transport Integration; Public Transport Systems; Environmental and Ecological Aspects; Air and Noise Pollution; Safety and Security." --Book Jacket.

Forecasting Forest Futures

With landscapes there is no room for experimentation. Real changes to the landscape become an indelible part of it, mostly for decades or even centuries. That is why level-headed and foresighted planning is required before final decisions are made. Computer-based models allow the testing and visualization of development options and decision alternatives. For this reason virtual representation of landscape processes is gaining increasing importance in planning. The Thematic Synthesis Report V of the National Research Programme 48 "Landscapes and Habitats of the Alps" shows the potential of computer-based models and visualizations for spatial and landscape planning and examines the current state of research. The models developed within NRP 48 deal with the most important issues in spatial and landscape planning in the Alps: mechanisms and landscape changes through changing agricultural use patterns, tourism and intensive settlement development, and changes in the natural hazards potential due to global warming. Synthesis Report V throws light on chances and obstacles of models and visualizations in planning practice and demonstrates how the formulation of use cases facilitates the development and improvement of computer-based models and the corresponding software for the world of practice.

Urban Transport XV

"We don't sell gardens; we sell images of gardens." This observation on the part of a landscape architect makes it clear just how important it is that a design be effectively communicated to the community, clients, and the public. Drawings, models, simulations, and films communicate the designers' proposed

ideas and solutions, but they also convey their attitude toward the use of nature and the environment. With myriad possibilities – including computer programs as well as hand drawings and models, which continue to be widely used – and strong competition in the field, there is now a huge variety of visual representations, with agreed-upon rules but also a great deal of freedom. In three large sections, this book sifts through the currently commonplace and available techniques and evaluates them in terms of their informative value and persuasive power, always illustrating its points with analysis of examples from international firms. An introductory look at the development thus far is followed by a systematic presentation of modes of representation in two, three, and four dimensions – in the plane, in space, and in the temporal process. The second section deals with the sequence within the workflow: from the initial sketch through concept and implementation planning all the way to the finished product. The third section deals with the strategic use of visualizations in the context of competitions, future schemes, and large-scale landscape planning. The focus in this section is not on the familiar use of the relevant techniques, but rather on the methods and forms of visual representation in contemporary landscape architecture.

Virtual Worlds - Real Decisions?

This reprint, originally published in 1983, draws attention to the important lines of thought that have emerged during the past several decades to offer a portrait of contemporary physical geography which have been drawn together in this text. It introduces conventional terms and topics of the subject and weaves them into a conceptual fabric that rests on three major themes, including the energy-balance concept; a model for understanding the forces and processes in the landscape; the stress-threshold concept; the relationship between the stress produced by forces such as wind and water and the resistance of the earth's materials; and the magnitude and frequency of change in the landscape. Chapter summaries are featured along with numerous illustrations.

Visualizing Landscape Architecture

This two-volume set (CCIS 201 and CCIS 202) constitutes the refereed proceedings of the International Conference on Computer Science and Education, CSE 2011, held in Qingdao, China, in July 2011. The 164 revised full papers presented in both volumes were carefully reviewed and selected from a large number of submissions. The papers address a large number of research topics and applications: from artificial intelligence to computers and information technology; from education systems to methods research and other related issues; such as: database technology, computer architecture, software engineering, computer graphics, control technology, systems engineering, network, communication, and other advanced technology, computer education, and life-long education.

Trends in Real-time Landscape Visualization and Participation

This inspiring and thought-provoking book explores how recent innovations in landscape architecture have uniquely positioned the practice to address complex issues and technologies that affect our built environment. The changing and expanding nature of "landscape" make it more important than ever for landscape architects to seek innovation as a critical component in the forward development of a contemporary profession that merges expansive ideas and applications. The editors bring together leading contributors who are experts in new and pioneering approaches and technologies within the fields of academic and professional landscape architecture. The chapters explore digital technology, design processes and theoretical queries that shape the contemporary practice of landscape architecture. Topics covered include: Digital design Fabrication and prototyping Emerging technology Visualization of data System theory Concluding the book are case studies looking at the work of two landscape firms (PEG and MYKD) and two academic departments (Illinois Institute of Technology and the Rhode Island School of Design), which together show the novel and exciting directions that landscape is already going in.

Landscape Planning

Environmental planning forms the basis of all site development decisions and deals with the factors that must be considered before a site plan can be drawn up. Environmental Planning for Site Development emphasizes the man/nature interface and explains how nature limits and controls what can happen on every piece of land. The text is clearly set out and will help the reader understand exactly what information is needed for a site planning proposal. The book includes a live case study to demonstrate

how GIS systems are now assisting in the design and decision process as communities increasingly participate in local decisions. (Local Agenda 21)

Advances in Computer Science and Education Applications

Natural and human activities change the environment we are living in and consequently impact the quality of life. Analysing these dynamics leads to a better understanding of urban change and facilitates urban development. Research related to the management of urban data has a long tradition. Through the years a variety of challenging research questions has been investigated related to the collection, storage, use and visualisation of the data representing the urban phenomena in a computer-based environment. The Urban Data Management Symposium (UDMS) focuses on these issues since 1971. UDMS aims at providing a forum to discuss urban planning processes, exchange ideas, share information on available technology and demonstrate and promote successful information systems in local government. The focus is on urban, regional and rural issues. The UDMS 2009 annual addresses the following themes: 3D modelling, Spatial Data Infrastructures and databases, Risk and Disaster management, Environmental planning, analysis and e-government and Traffic and road monitoring. The book will be a useful source of information for urban data-related professionals, such as scholars, GIS engineers, geomatic professionals, photogrammetrists, land surveyors, mapping specialists, urban planners and researchers, as well as for postgraduate students and lecturers.

Innovations in Landscape Architecture

This volume introduces an innovative tool for the development of sustainable cities and the promotion of the quality of life of city inhabitants. It presents a decision-support system to orient public administrations in identifying development scenarios for sustainable urban and territorial transformations. The authors have split the volume into five parts, which respectively describe the theoretical basis of the book, the policies in question and indicators that influence them, the decision-support system that connects indicators to policies, the case study of Ancona, Italy, and potential future directions for this work. This volume is based on transdisciplinary research completed in May 2016 that involved about 40 researchers at The University of Camerino, Italy and other European universities. With purchase of this book, readers will also have access to Electronic Supplementary Material that contains a database with groups of indicators of assessment of urban quality of life and a toolkit containing the data processing system and management information system used in the book's case study.

Environmental Planning for Site Development

"Geosimulation has recently emerged at the intersection of Geographic Information Science, Complex Systems Theory and Computer Science. Geosimulation aims at understanding the dynamics of complex human-driven spatial systems through the use of spatially ex"

Urban and Regional Data Management

Traditionally, the DDSS conferences aim to be a platform for both starting and experienced researchers who focus on the development and application of computer support in urban planning and architectural design. This volume contains 31 peer reviewed papers from this year's conference. This book will bring researchers together and is a valuable resource for their continuous joint effort to improve the design and planning of our environment.

Quality of Life in Urban Landscapes

Human well-being depends in many ways on maintaining the stock of natural resources which deliver the services from which human's benefit. However, these resources and flows of services are increasingly threatened by unsustainable and competing land uses. Particular threats exist to those public goods whose values are not well-represented in markets or whose deterioration will only affect future generations. As market forces alone are not sufficient, effective means for local and regional planning are needed in order to safeguard scarce natural resources, coordinate land uses and create sustainable landscape structures. This book argues that a solution to such challenges in Europe can be found by merging the landscape planning tradition with ecosystem services concepts. Landscape planning has strengths in recognition of public benefits and implementation mechanisms, while the ecosystem services approach makes the connection between the status of natural assets and human well-being more explicit. It can also provide an economic perspective, focused on individual

preferences and benefits, which helps validate the acceptability of environmental planning goals. Thus linking landscape planning and ecosystem services provides a two-way benefit, creating a usable science to meet the needs of local and regional decision making. The book is structured around the Driving forces-Pressures-States-Impacts-Responses framework, providing an introduction to relevant concepts, methodologies and techniques. It presents a new, ecosystem services-informed, approach to landscape planning that constitutes both a framework and toolbox for students and practitioners to address the environmental and landscape challenges of 21st century Europe.

Advanced Geo-Simulation Models

A single-source guide to harnessing the power of 3D visualization tools for analysis and representation of landscapes. Current technology allows designers to model environmental phenomena and space in new and exciting ways that go beyond the two-dimensional plane. The models, illustrations, and animations that can be created usher in a new paradigm of landscape representation that can become analytical tools as well as beautiful imagery. The text focuses on digital modeling methods that can be used to express rich environments using digital tools to develop, composite, and animate scenes. This full-color book provides coverage of 3D visualization tools for land planning and landscape architecture. The methods and theories in *Modeling the Environment* present landscape representation around a core set of ideas—scene, object, terrain, environment/atmosphere, time/dynamics, and the composite—that centers representation on human experience. Supported by www.lab.visual-logic.com, a website offering tutorials and forums, the text shows you how to use Autodesk 3ds Max to create dynamic landscape environments while also referring to a range of other tools including Google SketchUp, Autodesk Maya, and AutoCAD Civil 3D. It also demonstrates how to integrate 3D visualization tools into existing workflows, and offers critical coverage of intelligent drawings and representations, giving you a glimpse at the future of the profession. This book: Includes sections intended to build upon one another in order to understand the environment as a composite representation of multiple systems interacting. Shows how to integrate 3D visualization tools into existing workflows, as opposed to offering an entirely new workflow. Emphasizes modeling, animation, and simulation as both design/analysis tools and presentation tools. *Modeling the Environment* is essential reading for professionals in landscape architecture, urban planning and design, architecture, and related disciplines who are looking to be at the forefront of technology.

Teaching + Learning Landscape

Innovations in Design & Decision Support Systems in Architecture and Urban Planning