



CRC Press  
Taylor & Francis Group

# INTERNATIONAL CALL FOR AUTHORS

Book Title

## ***SMART BUILDINGS & CITIES WITH REMOTE SENSING & GIS***

***Unlocking the Potential:  
Harnessing the Power of Geomatics  
in Architecture & Planning***

**Publisher – CRC Press: Taylor & Francis Group, USA**  
**Final Book Publication – 2024**



*We are delighted to extend our invitation to you to contribute a chapter to this upcoming book to be published by the world's leading CRC Press, Taylor, and Francis Group. Your unique perspective and insights would be invaluable to our readers, and we believe that your contribution would greatly enhance the quality and value of the book.*

## SCOPE OF THE BOOK

The book has global scope by incorporating research studies from diverse regions worldwide. Despite the significant benefits of remote sensing (RS) and Geographic Information Systems (GIS) in architectural and planning research and applications, the integration of RS and GIS in this domain is still relatively less explored. This presents an opportunity for further research and exploration of the diverse ways in which RS and GIS can be integrated into the approaches and paradigms of architecture and planning. Some potential reasons for the limited exploration of RS and GIS integration in architecture and planning may include a lack of awareness about the capabilities of RS and GIS among architects and planners, limited access to relevant data and tools, and challenges in incorporating RS and GIS into existing workflows and practices. However, with the increasing availability of data, advancements in technology, and growing recognition of the importance of data-driven decision-making, there is a growing need to explore and leverage the potential of RS and GIS in architecture and planning. Further research and exploration of RS and GIS integration in architecture and planning can help uncover new opportunities and applications, improve decision-making processes, enhance design and planning outcomes, and contribute to more sustainable and resilient built environments. It can also facilitate cross-disciplinary collaborations between architects, planners, RS/GIS professionals, and other stakeholders, leading to innovative solutions and approaches in the field of architecture and planning.

The book aims to bridge the gap between remote sensing, GIS & architecture, and planning, and provide readers with a comprehensive understanding of how these technologies can be integrated to benefit urban development. The real-world case studies presented in the book will help readers understand the practical applications of these technologies. The **scope, features, and benefits** of the proposed book can be summarized as follows:

### STATE-OF-THE-ART WORK

The book will showcase the latest research, case studies, and examples of remote sensing and GIS integration in architecture and planning from around the world. It will highlight the work done by academicians, researchers, organizations, and corporates in the field.

### GLOBAL PERSPECTIVE

The book will strive to provide a global perspective on the integration of remote sensing and GIS in architecture and planning, covering examples and case studies from different regions of the world. It will also specifically highlight perspectives from developing countries, where the adoption of remote sensing and GIS technologies in architecture and planning may have unique challenges and opportunities, which are currently underrepresented in the existing pieces of literature.

### PRACTICAL APPLICATIONS

The book will provide practical guidance on the integration. It will include practical examples, best practices, and workflows for utilizing remote sensing and GIS in various stages of the architectural and planning process, from site selection and analysis to design, monitoring, and maintenance of buildings.

### TARGET AUDIENCE

The book will be targeted toward students, researchers, and practitioners in the fields of architecture and planning, civil engineers, professors, government authorities, remote sensing and GIS professionals, as well as others interested in exploring new technologies and bringing innovation to architectural and planning practices.

## IMPORTANT DATES



**30TH JUNE, 2023**

Abstract Submission Deadline



**16TH JULY, 2023**

Abstract Acceptance/Rejection Info



**17TH SEPTEMBER, 2023**

Complete Chapter Submission Deadline



**1ST OCTOBER, 2023**

Chapter Acceptance/Rejection Info



**3RD DECEMBER, 2023**

Chapter Review Results/Corrections



**24TH DECEMBER, 2023**

Final Chapter Submission



Abstract submission formats are attached in this link. Chapter formats will be mailed along with abstract acceptance mail.

## EDITORS

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## RECOMMENDED BOOK CHAPTERS

Chapters including **examples of practical work and case studies** will be given preference. The scope of the handbook includes but is not limited to the following topics:

### Part 1

#### Introduction (Covered by Editors)

- **Introduction to Architecture and Planning**
- **Introduction to Remote Sensing and GIS**
- **Major & Ongoing Satellite Missions Useful for Architecture and Planning**
- **Brief of Various Applications of Remote Sensing and GIS in Architecture and Planning**

### Part 2

#### Architectural Applications

- **BIM-GIS Integration**

- This theme chapter can discuss how by combining the geometric and semantic information of a building model with the spatial data from GIS, the integration of BIM and GIS can be used to manage utility networks more effectively in buildings and cities including issues related to location, maintenance, and optimization.

- **Smart Architectural Site Analysis using Remote Sensing and GIS**

- This theme chapter could explore how remote sensing and GIS can be used to automate architectural site analysis more efficiently and accurately, reduce site visits, and how this analysis can inform the design of buildings and other structures.

- **Architectural Site Suitability Use Cases**

- This chapter could provide case studies of how remote sensing and GIS have been used to identify suitable sites for different types of buildings, including commercial, residential, and institutional structures.

- **Site/Region-Specific Disaster Analysis with Remote Sensing and Corresponding Building Design Measures**

- This chapter could examine how remote sensing and GIS can be used to assess the risk of natural disasters and inform building design measures to mitigate these risks.

- **GIS-Enabled Smart Campus Design Strategies and Steps**

- This chapter can discuss the use of GIS for smart campus design strategies and steps, such as creating a digital twin of the campus, including issues related to location, transportation, and sustainability.

- **Laser Scanning and 3-D model Generation for Building Inside Characteristics**

- This chapter could discuss how laser scanning and 3-D modeling can be used to capture and analyze the inside characteristics of buildings, including issues related to energy efficiency, indoor air quality, and occupant comfort.

- **Spatial Regression/ Geospatial Machine Learning Based Predictive Modelling**

- This chapter could explore how machine learning and spatial regression techniques can be used to predict various building and site characteristics, including energy consumption, air quality, and traffic patterns.

- **UAV Data Based Pre, During, and Post Construction Building Monitoring and Maintenance.**

- This chapter could examine how unmanned aerial vehicles (UAVs) can be used to monitor and maintain buildings during construction and after completion, including issues related to safety, quality control, and energy efficiency.

- **WebGIS-Based National Architectural Site Information Portal**

- This chapter could discuss how a WebGIS-based national architectural site information portal can be developed to provide information on building and site characteristics, including issues related to accessibility, energy efficiency, and sustainability.

- **Building Habitat Design for Moon/Mars**

- This theme chapter could explore how remote sensing and GIS can be used to do site analysis on extraterrestrial bodies, analyze potential sites for building habitats on the moon or Mars, and how this analysis can inform the design of these habitats.

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## • **Landscape Architecture/ Green Architecture**

- This chapter can explore the use of remote sensing and GIS in landscape and green architecture design. It can discuss the various remote sensing data used to collect information on vegetation and environmental quality.

## Part 3 Planning Applications

### • **Urban Sprawl Prediction Using Land Use Evolution Models**

- This research theme can focus on predicting urban sprawl using geospatial predictive models, land use change detection, and urban growth modeling using data from remote sensing and GIS technologies, and how it can benefit city planning.

### • **Identification of Road Traffic Crashes Hotspots and Planning Solutions**

- This study can focus on methods for identifying hotspots of road traffic crashes. The study should use GIS and spatial analysis to compare the effectiveness of different hotspot identification methods and recommends the most suitable method for the city. It can cover topics such as traffic management, route optimization, and real-time monitoring of traffic conditions using data from remote sensing technologies.

### • **Urban Planning Multi-Scalar Nested Structure of Urban Retail Clusters**

- This research can focus on the structure of urban retail clusters in cities, using a multi-scalar nested approach. The study should use GIS and spatial analysis to analyze the relationships between different scales of urban retail clusters and their impact on the city's economy and development.

### • **Digital Master Plan Generation using Remote Sensing and GIS**

- This chapter can propose innovative methods for generating a digital master plan for a city using remote sensing and GIS data. It will discuss how these technologies can be used to collect and analyze data on various urban elements, such as land use, building heights, and transportation networks, to create accurate and detailed digital representations of the city.

### • **Urban Green Space Analysis and Monitoring Using Remote Sensing Data**

- This research can focus on analyzing and monitoring urban green spaces using remote sensing data. The study shall use satellite imagery and GIS data to analyze the distribution and characteristics of urban green spaces and their impact on the city's environment and quality of life.

### • **Use of Remote Sensing and GIS for Watershed Analysis and Integrated Water Management.**

- This research can focus on using remote sensing and GIS for watershed analysis, case studies, and examples of successful water management in smart cities.

### • **Managing Underground City Utility Network with GIS**

- This research can focus on using remote sensing and GIS for managing underground utility networks using case studies and examples of successful GIS-based management of underground utility networks in smart cities.

### • **Planning and Monitoring Urban and Rural Road Networks with GIS**

- This research can focus on the importance of planning and monitoring road networks and provide case studies and examples of successful GIS-based road network planning and monitoring. It can cover topics such as road network analysis, traffic flow modeling, and real-time monitoring of road conditions using data from remote sensing technologies.

### • **GIS-Based City Livability Evaluation System**

- This research can focus on the importance of evaluating city livability in smart cities, applications of GIS in developing a city livability evaluation system using case studies and examples of successful GIS-based city livability evaluation systems in smart cities

### • **City Weather/Climate/Air Quality Analysis, Change Detection, and Impact using Remote Sensing and GIS**

- Case studies and examples of successful remote sensing and GIS-based weather, climate, and air quality analysis in smart cities.

### • **Crowd Simulation**

- This chapter will explore the use of remote sensing and GIS in simulating crowds in urban areas. It will discuss the various techniques used to collect and analyze data on pedestrian and vehicular traffic, as well as the software used to simulate and visualize this data.
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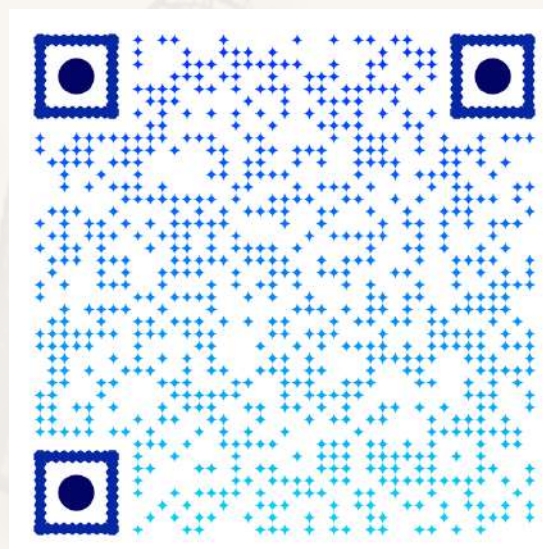
## BENEFITS FOR CONTRIBUTORS

- Each Contributor shall receive credit as the author of the contribution and 1 complimentary eBook copy of the work in which the contribution appears.
- The book will be circulated worldwide through Taylor and Francis network and websites.

## ABSTRACT SUBMISSION PROCEDURES

- Researchers, academicians, and practitioners are invited to submit their abstracts in the given format (1-2 pages in PDF format) on or before **June 30th, 2023**.
- Abstract submissions should conform to the given guidelines in the format.
- Abstracts should be submitted via Google Forms.
- Anyone of the main author or co-author can submit the abstract via the Google form link provided.
- Chapter submission details will be shared with the abstract acceptance mail.
- Authors of accepted proposals will be notified by **July 16th, 2023** about the status of their proposals.

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ABSTRACT  
SUBMISSION



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## IMPORTANT POINTS FOR SUBMITTING RESEARCH WORK

- **Co-authorship** is welcome, and each chapter should be self-contained and complete.
- With a commitment to fostering inclusivity and diversity, the book aims to assemble a well-rounded authorship consisting of **a main author and only two co-authors, with an effort to include at least one author from a different country** to ensure a broad representation of perspectives, allowing for flexibility in assembling a talented and knowledgeable team of authors. **Abstracts with such authorship will be given priority.**
- Authors are encouraged to submit **original, high-quality, unpublished results** of research work.
- This book volume seeks to showcase practical applications of remote sensing and GIS in architecture and planning in the realm of smart cities. Therefore, **chapters that include authors' original work on real-world case studies and practical applications will be given preference.** We encourage authors to share their experiences and expertise in the field and contribute to the advancement of knowledge on this topic.
- All submitted chapters will be reviewed on a double-blind review basis.
- Contributors may also be requested to serve as reviewers for this project.
- There is **no publication fee** for the submission to this book publication.
- For any queries related to the book, please email us at [books.editors.rsgis@gmail.com](mailto:books.editors.rsgis@gmail.com) with the subject 'Query'.

## PUBLICATION AND INDEXING

The book published by Taylor and Francis Group, CRC Press will be indexed in Scopus by the publisher. For further clarification refer to the link: <https://www.routledge.com/faqs/author-faqs/citation-indexes>

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