

Digital Reconstruction of the Cultural Landscape: Chengde Summer Resort as a Case Study

Authors : Jingsen Lian, Steffen Nijhuis, Gregory Bracken, Kai Lan

Abstract : This study explores the digital reconstruction of the Chengde Mountain Resort (CMR), a UNESCO World Heritage Site recognized for its cultural landscape significance. Using mixed methods, the research combines spatial, textual, and graphical data to reconstruct the historical evolution of CMR's landscape across four phases from 1704 to the present. Data acquisition includes 3D point clouds, historical maps, traditional paintings, poetry, land-use records, academic papers, engineering drawings, and old photographs. Interdisciplinary techniques such as georectification, 3D modeling, and textual analysis were employed to integrate these diverse datasets into a cohesive Web-GIS platform. The reconstructed data illustrates dynamic landscape changes, reflecting shifting cultural and ecological priorities. The Web-GIS platform facilitates data visualization, querying, and customization, serving multiple stakeholders, including researchers, government planners, and local communities. This study underscores the value of digital tools in cultural heritage preservation, offering a model for adaptive and participatory management of historical sites while promoting open access and stakeholder engagement.

Keywords : landscape mapping, cultural landscape, heritage, case study, mixed methods

Conference Title : ICBAU 2025 : International Conference on Building, Architecture and Urbanism

Conference Location : New York, United States

Conference Dates : May 29-30, 2025