

EMERGING TRENDS IN GEOSPATIAL TECHNOLOGIES FOR STUDY OF URBAN LANDSCAPE

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1 **ABSTRACT**

GIS has been an effective tool to study urban landscape. Recent developments in geospatial technologies offer new possibilities with new toolsets for spatial analysis and data visualization. This paper traces recent major trends in GIS and discusses their implications to the field of urban landscape study. These trends include the following: 1) increase in dimensions with 3D GIS; 2) integration with remote sensing; 3) cloud-based GIS; and 4) integration with virtual reality. This paper discusses a recent project and demonstrates the potential of these new emerging GIS tools applied to the study of urban landscapes. Many GIS applications were incorporated in this urban design project, including 2D mapping, remote sensing, scenario planning, 3D procedural modeling, virtual reality, and cloud-based tools. This paper details technical specifications and workflows used in the project. In spite of several advantages of these tools, their applications are not without drawbacks, such as high costs due to their proprietary nature, limited data availability, and inconsistent data schema and quality. This paper concludes with a brief discussion on their pros and cons for applying these tools in urban landscape study.

1.1 **Keywords**

Geographic Information System, Urban Form, 3D GIS, Remote Sensing, Virtual Reality