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Development of Building Information Modeling for Cultural Heritage: The Case of West Theater in Gadara (Umm Qais), Jordan

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Abstract : The architectural legacy is considered a significant factor, which left its features on the shape of buildings and historical and archaeological sites all over the world. In this framework, this paper focuses on Umm Qais town, located in Northern Jordan, which includes archaeological remains of the ancient Decapolis city of Gadara, still the witness of the originality and architectural identity of the city. 3D modeling is a public asset and a valuable resource for cultural heritage. This technique allows the possibility to make accurate representations of objects, structures, and surfaces. Hence, these representations increase valuable assets when thinking about cultural heritage. The Heritage Building Information Modeling (HBIM) is considered an effective tool to represent information on Cultural Heritage (CH) which can be used for documentation, restoration, conservation, presentation, and research purposes. Therefore, this paper focus on the interdisciplinary project of the virtualization of the West Theater in Gadara (Umm Qais) for 3D documentation and structural studies. The derived 3D model of the cultural heritage is the basis for further archaeological studies; the challenges of the work stay in the acquisition, processing, and integration of the multi-resolution data as well as their interactive visualization.

Keywords : archaeology, 3D modeling, Umm Qais, culture heritage, Jordan
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