

Simulation of the Hor Pha Keo Vientiane relic space using 3D graphics

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Abstract: This study explores the application of 3D computer graphics to digitally reconstruct the spatial environment of the Hor Pha Keo temple in Vientiane, Laos. Originally built in the 16th century as a royal temple and later repurposed as a museum, Hor Pha Keo holds significant historical and cultural value. However, its physical structure has undergone substantial alterations due to war and time, making the original spatial experience difficult to perceive. By utilizing photogrammetry, historical documentation, and 3D modeling software, this research reconstructs the temple's original architectural layout, interior spaces, and surrounding landscape. The digital model not only visualizes the lost details of the site but also simulates lighting, scale, and spatial relationships to recreate the authentic atmosphere of the historical period. The findings demonstrate that 3D simulation serves as an effective tool for cultural heritage preservation, offering scholars and the public an immersive means to study and experience endangered or altered heritage sites. This approach contributes to the broader field of digital heritage conservation in Southeast Asia.

Keywords: 3D graphics, heritage simulation, Hor Pha Keo, cultural space