Modelling Medieval Vaults: Digital Simulation of the North Transept Vault of St Mary, Nantwich, England

Authors : N. Webb, A. Buchanan

Abstract : Digital and virtual heritage is often associated with the recreation of lost artefacts and architecture; however, we can also investigate works that were not completed, using digital tools and techniques. Here we explore physical evidence of a fourteenth-century Gothic vault located in the north transept of St Mary’s church in Nantwich, Cheshire, using existing springer stones that are built into the walls as a starting point. Digital surveying tools are used to document the architecture, followed by an analysis process to hypothesise and simulate possible design solutions, had the vault been completed. A number of options, both two-dimensionally and three-dimensionally, are discussed based on comparison with examples of other contemporary vaults, thus adding another specimen to the corpus of vault designs. Dissemination methods such as digital models and 3D prints are also explored as possible resources for demonstrating what the finished vault might have looked like for heritage interpretation and other purposes.

Keywords : digital simulation, heritage interpretation, medieval vaults, virtual heritage, 3d scanning
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