A Review on the Prognostic Evaluation of Historic Masonry Structures

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Abstract:

A large portion of the world's architectural and cultural heritage is preserved in historic masonry monuments. These masonry structures endure accumulated degradation due to gradual aging which often goes unaddressed for extensive periods of time. Prognostic techniques monitor gradual degradation using on-site measurements in order to forecast a structure's remaining useful life. This knowledge can help caretakers ensure the structural safety of these monuments by more effectively using available resources. While in recent years there has been a significant increase in research involving prognostic methodologies, little investigation has been in regards to historic masonry. This paper examines masonry degradation schemes and inspection techniques amenable for incorporation into a prognostic framework, and highlights several particularly successful prognostic approaches with potential for application on historic masonry structures. Finally, the paper overviews the challenges in the applying prognostics to historic masonry and discusses the need for and direction of future research

that can alleviate these concerns.

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