

# ARCHITECTURAL HERITAGE AND RETROFIT MEASURES: THE IMPROVEMENT OF BUILDINGS PERFORMANCE THROUGH PASSIVE COMPATIBLE STRATEGIES

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## **Abstract.**

Architectural Heritage has a crucial role in the exploitation of the cultural, social and economic potential of historical cities. Due to the numerous threats, such as natural disasters, it is necessary to guarantee an adequate level of protection and valorization to Cultural Heritage. The optimization of environmental performance and an update of its fruition mode are essential to keep in use the historical structures. The balancing of protection needs and performance improvement requires the development of multidisciplinary intervention methods able to provide an adequate technological advancement, compatibility and a low material impact on the building to preserve. For this reason, it is fundamental to evaluate the effects on the energetic behaviour and conservation issues caused by retrofit measures in valuable buildings. The research aims at the performance improvement of Architectural Heritage promoting passive control strategies. Passive systems are always presents in historical structures but often their use is not adequately exploited in terms of energy saving. As devices integrated into the building system, they can ensure compatibility and contribute significantly improving the structure's energy performance through the enhancement of their operation mode. The goal of this work is to evaluate the improvement of the comfort level and energy efficiency of the historical environments through the optimal usage of compatible strategies. This paper intends to show which retrofit measures better contribute to enhance and valorize the Architectural Heritage.

**Keywords:** *Cultural Heritage; Passive Systems; Energy Efficiency, Valorization*