

Study of environmental degradation of stone structure & development of gypsum-based repair material under “Creation of centre of excellence on heritage structure(GAP-311).

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Abstract:

Preservation of heritage buildings is crucial for the economic development through tourism and the preservation of age-old traditions, cultural roots, belief systems, and individual identities. The structural performance and aesthetics of heritage buildings decrease over time due to environmental degradation, climate change, dust deposition, and other factors. The conservation of historic structures requires an understanding of the building materials and their kinetics and mechanism of deterioration. That's why it is very much essential to study the effect of different environmental condition on the physical, mechanical and durability properties of stones. The use of interior gypsum-based plaster coatings was very common in the Portuguese architecture since the 18th century. Ranging from elaborated decorative programs in noble buildings to more simplified elements in common constructions they constitute a valuable heritage that is important to preserve. The design of new products should be addressed through a conservative perspective, considered essential to the preservation of the architectural heritage integrity and to the promotion of really sustainable interventions.

Objective of the Project

- Study of effect of different environmental condition on the physical, mechanical and durability properties of stones
- Development of compatible gypsum based repair material for heritage structure
- Durability study of the developed repair material