

## RESCUHe Project: Cultural Heritage vulnerability in a changing and directional climate

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### Abstract

RESCUHe Project (Improving structural RESilience of Cultural HERitage to directional extreme hydro-meteorological events in the context of the Climate Change) is a coordinated IGME-UAM research project funded by Spanish Government (MCIN/AEI/10.13039/501100011033).

The framework of this research is the predicted increase in climate change vulnerability of heritage sites and the current disconnection between both environmental research on material decay and the practical aspects of designing preventive conservation measurements.

The main aim of the coordinated project is to establish the scientific-technical basis for optimum design of innovative preventive measures that mitigate its current and future vulnerability of cultural heritage. Special attention is paid to the directionality of extreme events. This global objective is treated from two different perspectives (each one framed in a different subproject). The first one offers a holistic view, analysing the climatic hazard and the properties vulnerability by means of theoretical models and experimental procedures (subproject 1, led by IGME). The second subproject (led by UAM) applies the methodologies and results obtained from the subproject 1 to five case studies, establishing the methodological criteria for the design and resizing of preventive barriers.

This main aim is built around four specific objectives:

- Development of novel 'Climatic Risk Indexes' focuses on quantifying more precisely the vulnerability of cultural heritage.
- Analysis of the relationship between 'exposure' (climate conditions and relative orientation) and 'durability' (closely linked to *vulnerability*) of different materials.

- Application of theoretical and experimental results to real case studies
- Development of a methodology, based on scientific-technological criteria, for increasing the effectiveness of physical shielding barriers (natural and/or artificial) designed for preventive conservation of cultural heritage.