

## **The restoration of rammed earth architecture from 1980 to nowadays through the archives of the Culture Ministry and the Development Ministry of the Spanish Government. Criteria, techniques and results.**

The main objective of this PhD is to analyse the diverse interventions that have been made with public funds on rammed earth monumental architecture for the last thirty years.

The growing interest on the study of earthen architecture that developed in Europe after the energetic crisis of the seventies arrived to Spain too, although later. As the interest on these historical earthen architecture structures grows and somehow as a direct consequence of it, the number of restoration projects on monumental buildings built originally using the rammed earth technique increases. Interventions on earthen architecture at the Iberian Peninsula started increasing in the decade of 1980, so these works have some time now and it is possible to analyse them with some perspective. These restorations, together with the studies centred on the constructive technique, have been previously analysed and studied in some cases in an isolated way, focused on one particular building or on a certain area of the peninsular territory. That is the reason why the starting hypothesis of this research is the importance of carrying out a study and global analysis of the diverse experiences on restoration of earthen architecture carried out on the Spanish territory, always aware of the own limitations of the study, limited both in the lapse of time considered (from 1980 to nowadays) and in the investigative sources considered, direct and indirect, linked to the national structure (Culture Ministry, Development Ministry and the particular case of Culture Regional Government of Andalucía).

More than thirty years ago, when the first experiences of intervention on rammed earth buildings were carried out, there was barely a solid corpus of knowledge of the technique and its peculiarities, and even less knowledge of the variety of possible interventions that could be carried out on rammed earth architectural monumental heritage and of their results on the medium and large term. As time passed, the technicians that have intervened these kinds of architectures have experimented with different criteria and have proposed diverse techniques according to their knowledge and previous experiences, always trying to achieve the best possible result.

This research intends to analyse the interventions carried out on rammed earth structures in the Spanish territory using national funds, both on city walls and on fabrics of castles, churches and other monumental buildings, in order to perform a global analysis of the most frequent pathologies found on these structures and of the constructive techniques used, the criteria adopted and the final results. And to do so, this PhD is structured in three parts. The first one is an introduction to the topic of the PhD and the rammed earth constructive technique, analysing its constructive variants and most frequent pathologies. The second part is focused on the analysis of the competences on the subject of heritage intervention in order to provide a legal and administrative frame to the work. The third part, which constitutes the main body of the work, presents the analysis of the interventions considered as case studies including a reflection on both the proposed constructive techniques, the criteria followed and the results achieved on each case.

After this research and thanks to the obtained conclusions it will be possible to develop future lines of investigation aiming to propose a series of guidelines to consider on future interventions on our rammed earth heritage.