

Rammed earth construction technique. Contribution to its framing in the current constructive and conservation standards.

Summary

The subject of this thesis is rammed earth conservation. Traditionally present in both vernacular and monumental architecture, it is one of the earthen building techniques that, despite being practiced for centuries, has always used empirical methods, and did not constitute itself as a body of scientific knowledge. In Portugal there are no specific regulations for the construction, conservation or maintenance of rammed earth buildings.

Currently, and under recommendations of the European Union, such activities require the existence of technical regulations that support interventions, whether in the context of heritage conservation or in the context of the sustainability of new constructions. Thus, the main objective was defined as framing rammed earth in the current technical and constructive standards, through a set of technical recommendations that could lead to its future regulation. It is expected that the main contribution of this work will be a more generalized and properly optimized use of the rammed earth construction technique, and its efficient conservation, supported on scientific knowledge and specific technical data.

Keywords

Earthen construction, rammed earth, conservation, quality control, sustainability, regulations.



Heritage rammed earth repair and conservation.



Rammed earth on site sampling.



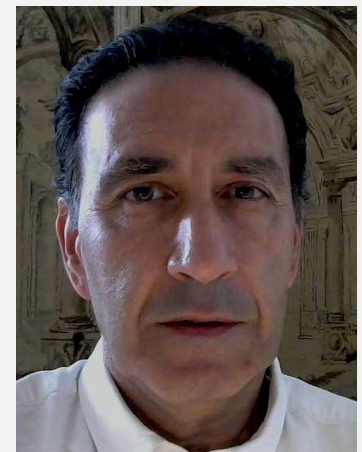
Rammed earth samples for laboratory analysis.



New rammed earth in heritage conservation site.



New rammed earth in a new construction site.



PhD student

Carlos Miguel de Araújo Rocha

PhD program

Civil Engineering (FCT, Nova University of Lisbon)

Supervisor

Paulina Faria (FCT, Nova University of Lisbon; CERIS, IST, University of Lisbon)

Co-supervisor

António Sousa Gago (CERIS, IST, University of Lisbon)

Period

2022-2025

Funding

FCT scholarship (PRT/BD/152878/2021)

DGPC (Direcção Geral do Património Cultural) within the scope of the "Science in Cultural Heritage Program"