



## **Building campaigns, restoration works and historic quarries exploited. The case of Portuguese National Pantheon**

M.J. Neto (1), C. Soares (1), V. Ventura (1), L. Aires-Barros (2), A. Dionísio (2), C. Figueiredo(2)

1. Instituto de Historia da Arte, Faculdade de Letras da Universidade de Lisboa, Portugal, mjneto@sapo.pt
2. Laboratório de Mineralogia e Petrologia, Departamento de Engenharia de Minas e Georrecursos, Instituto Superior Técnico, Av. Rovisco Pais, 1049-001 Lisboa, Portugal, amelia.dionisio@mail.ist.utl.pt

Nowadays it's certain that the preservation of the Architectural Heritage must be faced under an interdisciplinary perspective gathering the knowledge of subjects as different as Archaeology, Art's History, Geology, Engineering and Architecture. It has been not a long time since the study of historical quarries exploitation technologies has occupied working teams under this interdisciplinary dynamic.

It became essential to Know all the process that lay from the extraction of the stone in the quarry to the work made by the stonemason at the monument, which includes the identification of the methods used to hew the stone, the tools, the labouring organization, the system of transporting the stone blocks, etc. All those activities were on the bases of a certain mental and artistic plan that led to the production of an architectural project supported by a Maecenas for self-affirmation, devotion or simple aesthetic pleasure.

Thus, parallelly to an historico-artistic study of the monument, knowing all the technological proceedings is determinant on characterizing the provenience of the stone used on building and restoration works. It is also important to attempt possible relationships between those proceedings and the pathologies presented by the stones in the monument.

Church of Santa Engrácia is, by the vicissitudes that followed its construction, a peculiar case of Portuguese Architectural Heritage. The present building that raises up in Santa Clara's hill, in Lisbon, it is the third temple erected in devotion to Santa Engrácia. A long and tortuous way was run through from the construction of the innocent church of the XVIth century, to the temple started to build in 1632 that fell down before its terminus in 1681, and, at last, the noble building started in 1682 that remained unfinished until the 50-60ths of our century when was concluded under the auspices of the Direcção Geral dos Edifícios e Monumentos Nacionais.

It is pretended with project SOLIS to monograph the monument on all the aspects we have referred above, to localize the origins of the stone used, to constitute anew the building yard mounted, to understand the technical causes that may have been responsible for the consecutive unsuccessfulness of the building works, to appraise the effects of time over the unfinished monument, uncovered during almost three centuries and to relate those aspects with some of the pathologies presented by the stones, making account of the methods used to extract, transport and work those stones. It is also important to determinate the ideological and political circumstances that made the regimen (Estado Novo) decide to finish the temple and adapt it to be the National Pantheon as it was determinated by Decree in 29th April 1916. Besides, to appraise the works made in our century comparatively to the former ones, establishing cause-effect relations between them and the pathologies presented by the stones on the monument in a conservative dynamic.