

***Building materials and built structures in Cypriot architecture:
from the Neolithic period to the Late Bronze Age***

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This PhD thesis covers the study of the architecture (form and typology) of the earliest periods of Antiquity in Cyprus and includes an in-depth research on the methods of construction and mainly on the building materials used (stone, mudbricks, mortars, timber). The main aims of the research were the determination of the composition of the different materials used and the evolution in their use, as well as the investigation of the probable provenance of the raw materials and the procedures followed for their preparation. Thus the thesis aimed to investigate the building techniques in prehistoric Cyprus, the technology and pyrotechnology known during the earliest periods of antiquity, and the determination of the first use of each particular material and structural method. The greater part of the research of the thesis was mainly based on personal in situ observations and surveys of architectural constructions and structural details and the selection of specimens from various settlements of each period as well as various quarries, and their in-depth study using analytical methods. The thorough study and identification of the composition was achieved by a series of laboratory analyses: Chemical (Atomic Absorption Spectroscopy, Chromatometric methods, Flame Photometry), Mineral (Petrographic analysis, X-Ray Diffraction) and Thermal analyses (Differential Thermal Analysis, Thermogravimetry) as well as Scanning Electron Microscopy investigation. In the framework of the research the periods of the initial use of gypsum and lime mortars as well as hydraulic plasters were identified and comparisons were carried out with the technology of neighbouring civilizations. In addition many old quarries were investigated and their connection with the neighbouring prehistoric settlements was achieved through the analysis of samples of rocks and stones. The thesis led to conclusions with regard to the chronological succession of the building materials, the first use of each particular method of preparation, the role of environmental and climatic conditions for their selection and use and the position of the island in relation to the neighbouring countries in the technology of mortars. The thesis also led to conclusions with regard to the relationship between the different materials used and the structural methods followed with socio-economic factors during the periods under study. Through the study of architecture and especially that of materials and building techniques information was gathered with regard to the level of technological development, the methods of exploiting the raw materials, the economy, the organization of production and the society, as architecture is strongly connected with the way of life. With the study of the materials – their provenance, the methods of treatment and the preparation of the final products which was carried out using contemporary methods of analysis new knowledge regarding the technology knowledge (building technology) of the early periods of Architecture in Cyprus was revealed.