

DOCTORAL THESIS

The Vault in the Mayan Architecture

AUTHOR

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ABSTRACT

The vault, used by the ancient Maya for more than ten centuries, is one of the most characteristic elements of Mayan architecture. This stone roof system, based on the principle of corbelling, shows, on the one hand, the continuity of construction techniques employed by this ancient civilization and, on the other hand, how technological progress differs between the regions of the Maya Lowlands.

The present doctoral thesis examines the Mayan vault by recording and analysing a wide sample of vaults from different geographical zones and chronological periods. The data collected during fieldwork was complemented by results from previous studies and put into a database that was created to archive, analyse and compare all the features of the vaults. This corpus was then analysed from an architectural perspective, taking into account aspects such as form, geometry, function, symbolism and constructive features of the vaulted spaces, and paying special attention to the technological developments that were observed. Based on this analysis, a general classification of the Mayan vault according to various criteria was proposed.

The comparative analysis of the sample allowed to identify the particularities and the most characteristic features of the vaults of various geographical areas, as well as to study their development over time. In the light of the results, hypotheses may be formulated on the historical relationships between the different regions and the possible transfers of building knowledge.

Moreover, the evaluation of the buildings' current state of conservation allowed the author to determinate the deterioration processes that affect them. Therefore, some general criteria were also proposed for the excavation, conservation and restoration practices in the Mayan vaulted buildings, an architecture with a great heritage value but which often presents serious conservation problems.