

## Metrology in Egyptian Architecture, Interrelation with Archaeology

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**Abstract :** In the framework of Archaeological Research, Heritage Conservation and Restoration, the object of study is metrology applied in composition of religious architecture in ancient Egypt, and usefulness in Archaeology. The objective is the determination of the geometric and metrological relations in architectural models and the module used in the initial project of the buildings. The study and data collection of religious buildings, tombs and temples of the ancient Egypt, is completed with plans. The measurements systematization and buildings modulation makes possible to establish common compositional parameters, with a module determined by the measurement unit used. The measurement system corresponding to the main period of Egyptian history, was the Egyptian royal cubit. The analysis of units measurements, used in architectural design, provides exact numbers on buildable spaces dimensions. It allows establishing proportional relationships between them, and finding a geometric composition module, on which the original project was based. This responds to a philosophical and functional concept of projected spaces. In the heritage rehabilitation and restoration field, knowledge of metrology helps in excavation, reconstruction and restoration of construction elements. The correct use of metrology contributes to the identification of possible work areas, helping to locate where the damaged or missing areas are. Also in restoration projects, metrology is useful for reordering and locating decontextualized parts of buildings. The conversion of measurements taken in the current International System to the ancient Egyptian measurements, allows understand its conceptual purpose and its functionality, which makes easier to carry out archaeological intervention. In the work carried out in archaeological excavations, metrology is an essential tool for locating sites and establishing work zones.

**Keywords :** egyptology, metrology, archaeology, measurements, Egyptian cubit

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