

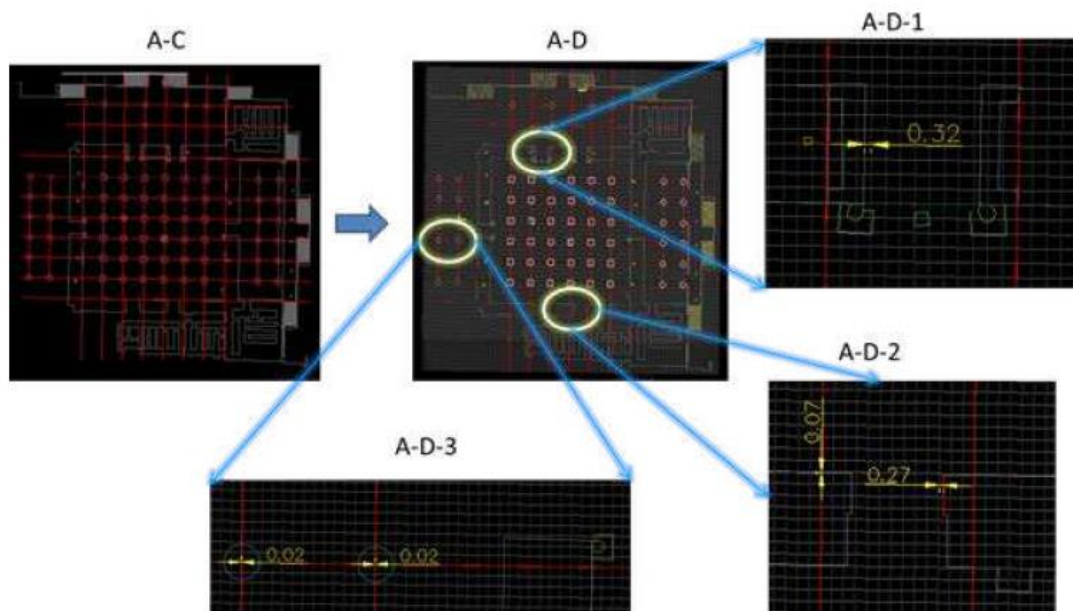
The study of length measuring modules in architecture of Iran before the Achaemenid era

At the very beginning of human history, architecture was meant to satisfy the very basic need of shelter and protection: however, the innovations and advancements made during time changed architecture into a more complex system which is universally influenced by factors like geometry, modules, proportions etc. Although module plays a significant role in designing and constructing any structure, it has been studied less frequently by scholars.

Unfortunately, neither the roots nor the evolution of module in Iran's architecture is apparent to us. Also, it is not clear if Achaemenid module was invented or inspired by the neighboring cultures. Similarly, there is no information about whether one module was being repeatedly used throughout the history or there were different systems simultaneously being practiced in different cultural zones in Iran. Therefore, the stone architecture of Persepolis, compared to the building structures of the previous era, provides us with a better foundation to start the studies of module in Iran. In this regard, the results of the study of length measuring modules previously conducted in Persepolis (Apadana and the hall of a hundred column) by the author is going to create a base on which the Median and Elamite architecture is going to be examined. This study attempts to resolve the ambiguities surrounding the history of length measuring modules before it was well established in Achaemenids era.

Also, the influence of the neighboring cultures of Iran on the formation of length-measuring systems is going to be investigated.

According to the studies conducted in Persepolis, Achaemenid length measuring system is based on modular bricks which are in standard dimensions of 33×33×13 cm. It's noteworthy to mention that Achaemenid brick modular system was inspired by the Babylonian brick modules yet the length measuring units adopted by Achaemenids are like the Greek ones which were being frequently used in Greek monuments. The most common Achaemenid module is Royal cubit and cubit which were adopted mostly due to the application of these buildings. This modular system was deployed with the help of architectural grids inspired by Egyptian gridding systems.



The gridding system used to study length measuring modules in Apadana