KING SOLOMON'S TEMPLE: A CORNERSTONE FOR MODERN CONSTRUCTION

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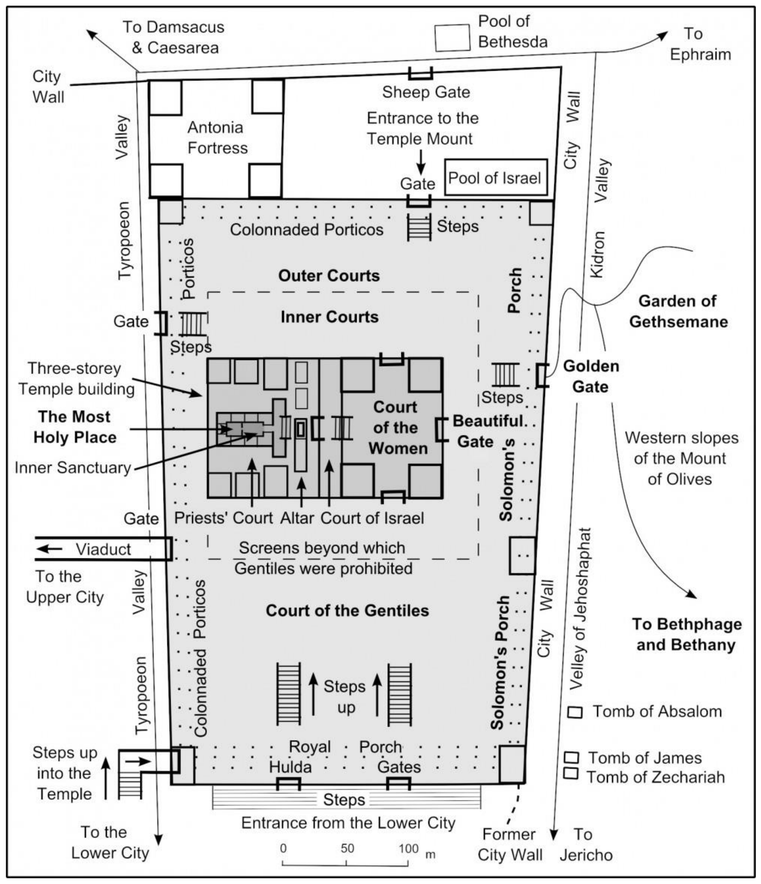
Introduction

Historians believe the traditional construction began to take shape in Ancient Egypt, Mesopotamia, and Achaemenid empire. However, there is no specific building or area that can be marked as the beginning of modern construction. As the world constantly advances, we need to understand that modern technology and practices have evolved from prior principles and guidelines. Engineers today need to understand the principles that have laid the foundation for contemporary construction, and how they have developed over the years. King Solomon's temple is a perfect example of a structure that embodies these principles to which we still practice. As engineers, we begin to analyze this building to understand how it came to be by asking questions like, how the structure was built, what planning went into making it possible, why material selection was so important and how they were able to transport these materials with limited technology at that time. These questions are important because they help set a fundamental reasoning and similarity with modern day construction. This study discusses the key construction methodologies of how antiquity serve as foundations of modern construction such as prefabrication.

King Solomon's Temple is widely known to be the first recorded instance of prefabrication. In 968 B.C., Solomon began constructing Solomon's Temple in Jerusalem to serve as final resting place for the Ark of the Covenant and worship place for the god Yahweh.

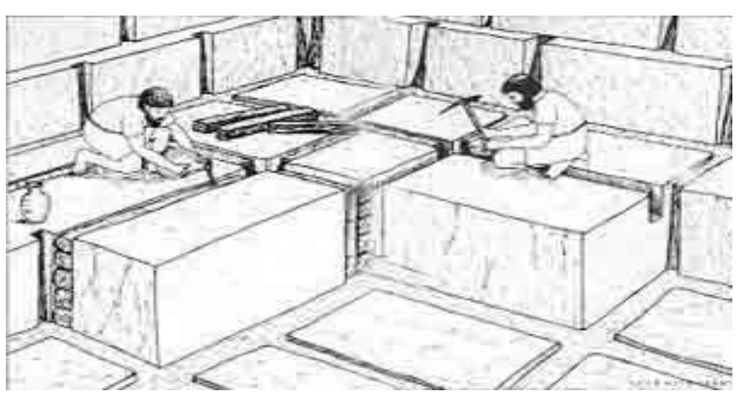
Prefabrication

- Solomon wanted construction to produce zero noise pollution to preserve the sacred area.
- Therefore, Solomon turned to prefabrication to build many parts of the temple in different locations to avoid noise.
- The process would consist of offsite building, and once finished was brought on-site to put together with the rest of the temples' pieces.
- Prefabrication facilitated a safer construction environment and reduce hazards with field installation
- Also significantly helped to reduce construction time & optimized the supply chain



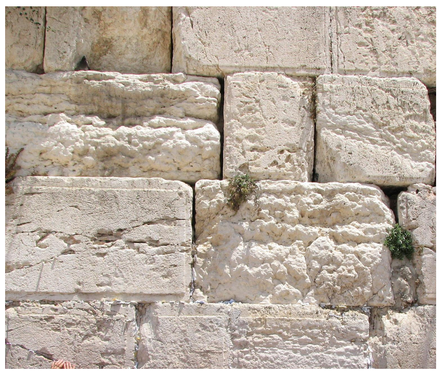
Human Resource Management

- King Solomon needed numerous laborers to construct the 35-meter-long, 10-meter-wide, and 15-meter-high construction
- The temple took roughly seven years to complete due to a shortage of machinery
- To progress in uniformity, dimensions had to be agreed upon every moment, and to do so, workers moved forward in unity and humility.
- There were 3,300 foremen supervisors, 70,000 laborers, and 80,000 hewers.
- Laborers would bear the burdens while the hewers cut different materials like wood, stone, and metals.



Materials Selection and Logistics

- King Solomon traded for most his materials.
- Wooden Materials: Cedars of Lebanon were regarded as the most prestigious timber.
- Stone: Jerusalem stone is a category of limestone and dolomite commonly found in quarries underneath the city of Jerusalem
- Other Materials: King David, Solomon's father, personal treasures used, such as onyx, turquoises, stones of various colors, silvers, marbles, and a large amount of gold
- Pictured below: Lebanese cedars, Jerusalem stone, Frame of Temple



Discussion

- Sections of the temple were prefabricated and installed on-site
- Efficiency through standardization and modularization
- Using project delivery models that reduce waste, add value, and optimize project results
- Multinational human resource development
- Workforce rotation system in which 30,000 workers were divided into three groups

Works Cited

[1] Elsner, R. J. F. (2020), "Bible Study for Freemasons: The Building of King Solomon's Temple", Scottish Rite Journal of Freemasonry Southern Jurisdiction, USA, Vol. 128, No. 3, pp. 8-9.

[2] Smith, A.M. (2020). Stone working in antiquity on general techniques and a framework of critical factors derived from the construction of Solomon's Temple in Jerusalem (Doctoral dissertation).