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## RECREATION ARCHITECTURAL VALUES OF SARVESTAN GARDEN AND PAVILION

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### Abstract

Among all Iranian architectural masterpieces, *Sarvestan* building is a unique sample of art and technology which evaluation in its form and its elements is apparent. Appearance of this building is a magnificent outcome of architectural genius and represents the interaction between human and nature that rises from political, religious and cultural motivation. This complex is created in relation to its natural environment and as an interaction to its surrounding which shows the exchange of cultural-scientific values between people and rulers.

Unfortunately, big part of *Sasanian Empire* buildings are destroyed and ruins of these buildings are left and even plans of these buildings can be drawn in the trace of archeologic prints. About *Sarvestan*, there is nothing left from its garden and trees and previous streams and there are still traces of historical small hill and remains of some walls foundation and water canals that represents surrounding garden. Also most parts of main building's stone walls are destroyed and there is nothing left from canopy of some rooms but two vaults are still sound and intact and beside the remains of some columns and walls reveals place and spatial identity. Based on new researches, elements of this complex are included pavilion, Garden, Temple, water canal, artificial pond and quadrangle fence. These elements are linked to each other with walls and hedges that relates to each.

Considering the architectural value of *Sarvestan* historical monument and lack of written document about it, some fundamental questions arises about quality of ruined part, buildings functions and construction date. The following article is a field work and library research which is done based on quality research principles. The purpose of this research is buildings description and analysis of its architectural space to get the design process and architect's primitive notion.

**Keywords:** Sarvestan , Sasanid Architecture, Pavilion, Persian Architecture

### Introduction

The building known as "Sassanid Palace" is situated in Sarvestan region. What is made famous this region in national and global scale is the presence of this garden and pavilion near to Sarvestan city. The so-called "Palace of Sāsān" has been cited by many travelers and archaeologists as a landmark in Iranian architecture.(Godar,1962) Many early explorers, e.g., *Eugene Flandin*, *Pascal Coste*, *Marcel Dieulafoy*, *Jacques de Morgan*, *Aurel Stein*, and *Ernst Herzfeld* have attributed this building to *Sāsānian* period.(Flandin & Coste,1997) These scholars have either used their own observations or accounts by early Muslim writers to reach this conclusion. *Oscar Reuther* was the first person to carry out a thorough study of the building who also reached the conclusion that it belongs to *Sāsānian* period. But in recent decades a number of researchers with new approaches expressed reservations about the date of some structures previously dated to *Sāsānian* period and their function as fire-temple, or manor house, or palace.(Christiansen,2001) One example in case is Lionel Bier's study of *Sarvestān* structure. In his comprehensive study that formed the basis of his PhD dissertation, Bier argued that the *Sarvestān* structure is not a *Sāsānian* palace – as previously thought – but a Zoroastrian fire-temple of early Islamic period. He based his argument on similar constructions in Iran and Mesopotamia.( Bier,1986)

## Description of the Building

The imposing building (Fig. 1) consists of several domes, iwans, arches, and doorways built with cobbles, gypsum mortar, and sometimes with baked brick. The building is composed of several occupational spaces, carefully designed and built to form a well-integrated construction. Five iwans, two domed halls, two columned halls, three rooms, and a central open courtyard form the main components of the building. The building is 45 by 37 in dimensions.(Askari,2012)

The area around the building have been leveled over the years and turned into agricultural fields. But, about 300 meters to the NW of the building, one can see a low archaeological mound with traces of boulders and gypsum mortar on its surface. An aerial photograph taken by Erich Schmidt in the 1930s (Fig. 1 ), reveal traces of multiple structures to the north and west of the main building.(Fig 2) Most of these structures, however, been leveled and turned into agricultural fields ever since. Furthermore, previous reconstruction attempts at the site have modified the inner part of the main building, in some places removing the top one meter of the archaeological deposits and replacing them with gravel. (Askari , 2012)

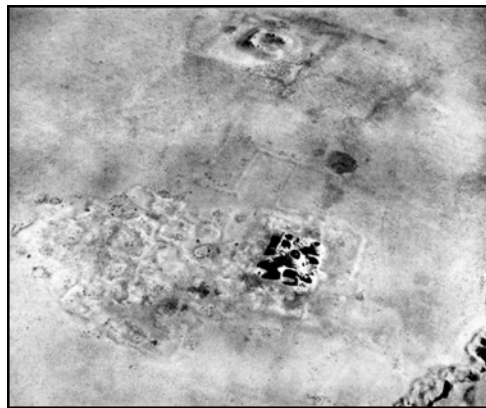


Fig 1: Aerial photo taken by Schmit, Exploring Iran: The Photography of Erich F. Schmidt, 2007

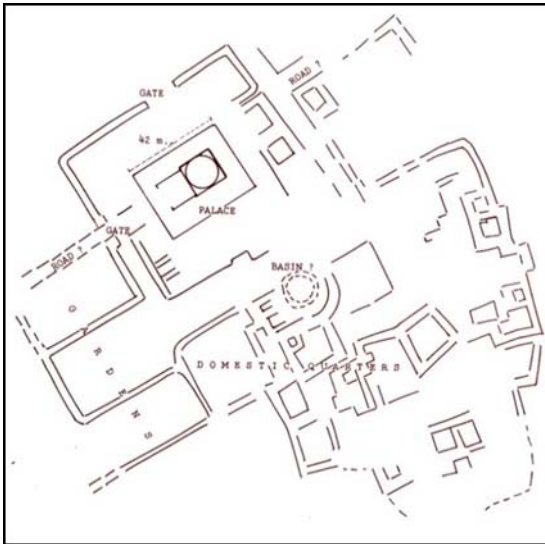
## The Environmental Setting

The fertile Sarvestān plain consists of multiple alluvial layers, deeper than 35 meters in some places. This alluvial soil makes the plain a very fertile land for cultivation. The plain enjoys a mild, but semi-arid weather, with an annual precipitation level of 227 mm. The so-called “Palace of Sāsān” is located in the southeast part of the plain where two mountain ridges come together. A spring, locally known as Tazang is located in the eastern foothills of the plain, some 7 km from the site. Water from this spring irrigates most of the land in this part of the plain. Another important feature of this part of the plain is multiple series of qanāts. Due to the depth of the alluvial surface soil, wells reach underground water tables at depths of 50 to 80 meters. One can see traces of multiple irrigation canals leading from the Tazang spring to the lands surrounding the Sarvestān building, suggesting that water from the latter spring was used to provide water for the building and the area around it. The large number of abandoned canals indicates that the water has changed its course several times over the centuries, but every time the destination has been the Sarvestān building. This spring and the adjoining canals should therefore be considered as part of the greater landscape of the site.

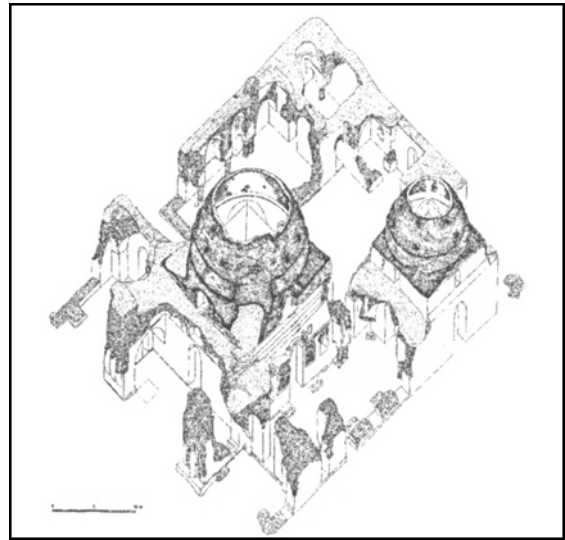
## Recreating architectural Design

Destruction part of the building cause our recent researchers to recreate and reconstruct it in their own idea.

Professor Schmidt is one of the first people who could describe the environmental setting of the building with help of the Aerial photos.( Schmidt,2007) could reconstruct garden and environmental residences based on these aerial photos. Streets, houses, service spaces, water canals and some puddles are from his imaginary design of garden complex. (Fig 2)

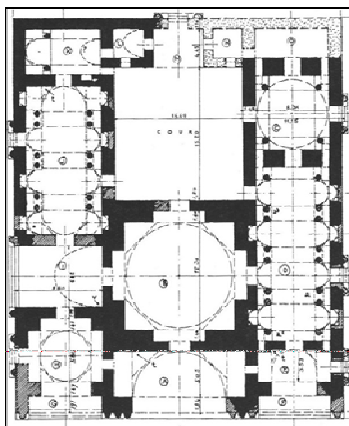


**Fig 2:** reconstruction the surrounding area by Schmidt, FLIGHTS OVER ANCIENT CITIES OF IRAN, 1940

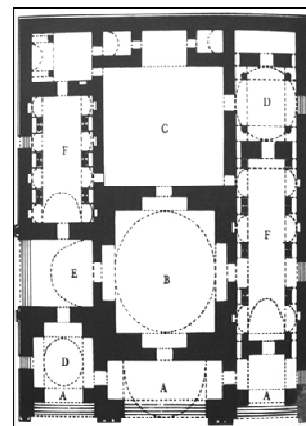


**Fig 3:** Situation of current existing building (Axonometric Plan), Cultural Heritage Archive, 2004

About framework of the building and interior spaces different plans and maps have been designed. Fladen and Cost had mentioned this edifice as a Sassanid Palace. They proposed some elevations and profiles for the destroyed parts of the plan. ( Fladen & Cost ,1997) in addition, Pope and Siro had proposed some plans individually.(Fig.4&Fig.5) These hypothetical designs narrate the features of the building , for the environmental setting Siro imagined the outer environment of the building with central basin which has a great architectural view but there is not any witness to his claim. In Pope's design heights of the main facade porchs are equal to each other however in Siro and Fladen- Cost design the main and central Iwan has been designed much more higher which is much more similar to reality based on the remains(Fig6)(Pope, 1995). Pope and Siro Imagined the unique Iwan at North-west of the building as the same height of the rest of the building but in Fladen- Cost design this iwan has the same height of the main iwan.(Fig7)



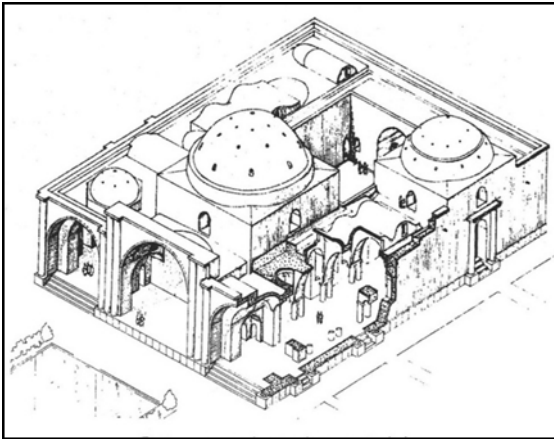
**Fig 4:** Complete plan designed by Siro, Iranian Cultural Heritage Archive, 2012



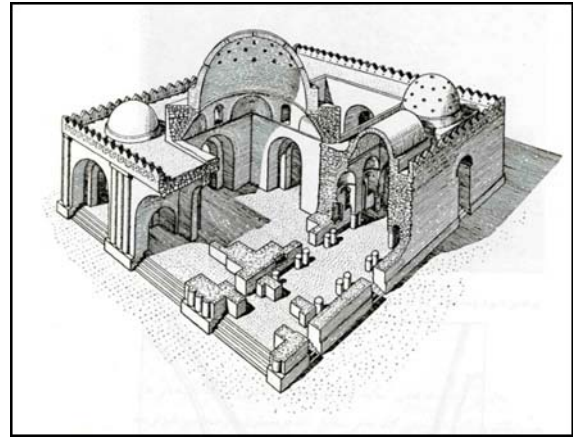
**Fig 5:** Complete plan designed by Pope, Persian Architecture, 1995

Only Flanden- Cost did not imagine the third dome on the central space of the southern porches. In all interpretations stairs situated in the threshold of doors and iwans. (Fig 6, Fig 7) Edge of roofs has been designed laborious in Pope's work and in the other designs has been imagined simple which cannot be judged

by whatever left because there is not much left. In reconstruction of main façade, Pope has just showed main semi columns. (Fig7) (Pope,1995)



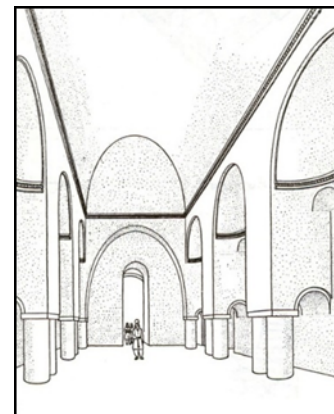
**Fig 6:** Sectional Perspective designed by Siro, Iranian Cultural Heritage Archive, 2012



**Fig 7:** Sectional Perspective designed by Pope, Persian Architecture. 1995



**Fig 8:** Interior Perspective by Siro, Iranian Cultural Heritage Archive, 2012



**Fig 9:** Interior Perspective by Pope, Persian Architecture, 1995

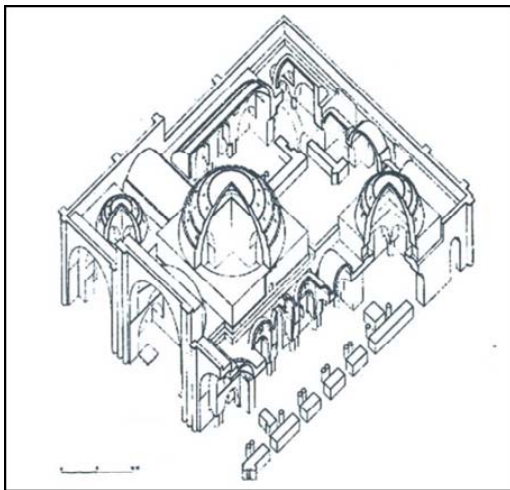
The dimension of building in Flanden-Cost, Schmidt and Pope is less than the real dimension of plan which is 37\*45 square meters while in this plans it is about 37\*42 square meters. Just Siro has drawn plan based on the real dimensions. The most important difference is between two interpretations of columned hall space.

Marquee of two halls had been collapsed and there is a little evidence about the previous form of it. In reconstruction of the main hall, Pope imagined it like a barrel arch but Siro had proposed it like arch and roof.

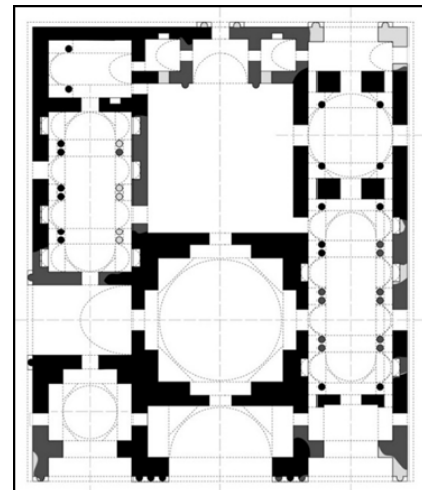
(Fig 8,9) There are some evidence to prove or decline these two alternatives. It seems that if an architect want to design integrated high space, smooth marquee is the better solution so it can be imagined that the marquee was in a form of barrel arch; but in the other hand, this caused the space to look like a long corridor which the main emphasize will be on the smaller dome.(Memarian, 1988) Absence of skylights and minor space emphasize on larger dome can be a reason to recline the form of barrel arch.(Brant,2001) In

addition, If we imagine that marquee is arch and roof, the space would be no longer in the form of the long corridor but the space will not be integrated anymore. In conclusion, it can be said that the marquee was the combination of these two kinds of structures. The north eastern part of the building has been collapsed and most of the researchers imagine it as a closed space like a warehouse. Today's analysis has been demonstrated an iwan on the other hand, because foundations has been founded in both sides. Also the great garden on the other hand has an entrance iwan to dome house. Based on the previous studies, the Iranian cultural Heritage proposed a perspective recently which is closer to the reality.(Fig 10) also there has been redrafted new plan based on the previous ones and with inspiration of the building to use as a reference for further studies.(Fig 11)

**Analysis the architectural values of Sarvestan Garden and Pavilion**

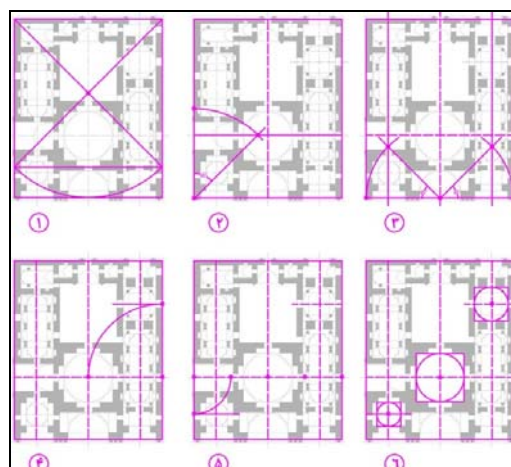


**Fig 10:** completed sectional perspective, Iranian Cultural Heritage Archive, 2012



**Fig 11:** plan designed by Author, 2013

Every designer or architect has an idea, concept or notion before drawing a line. This primitive idea is the raw design of the final form of building which has to be completed during further steps. For knowing the starting point of the design we have to reverse the design process to reach the primitive point and architect's concept. The plan has been designed in the rectangular form. In this building there are three dome houses which none of them are not in the same size and they do not situated in the same line. The design process can be proposed like below from 1<sup>st</sup> to 6<sup>th</sup> steps(Fig 12):



**Fig 12:** Design Process–Author - 2013

## Conclusion

The handmade pattern of Sarvestan Palace is designed based on a particular concept. This Simple Euclidean geometry shows the relationship between architecture, human and nature. Sarvestan Palace contains the main elements and patterns of Iranian Architecture which is emphasized in a Hierarchy of Space.(Girishman,1995) So it can be claimed that Sarvestan palace is one of the primitive developed Iranian Architecture so architectural analysis of this palace can be a good portal to define the Iranian Architecture and it's different elements like structure, architectural space, technology and prospective and evaluation of form in history of architecture. On the other hand, this building can be inspired for space designs of contemporary architecture.

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