

The Palace Architecture of the Achaemenids under scrutiny: an approach to the problem of its origin.

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It's beyond the scope of this article to present the Achaemenid architecture as a whole, i.e. its many characteristics, forms, traits and features. Many scholars have extensively commented on the matter and some of them have published very complete and fundamental studies (Barnett 1957, Schmidt 1953, Stronach 1978, Kleiss 1980, de Francovich 1966, Koch 2001, Shahbazi 1976.....). The main issue of our article is to propose to the readers another approach to the yet unsolved problem of the origins of the Achaemenid palace architecture. In other words, our hope is to add some more reflections to the questions in debate.

Analysing the architecture of the Achaemenid period and particularly the architectural remains in Persepolis and in Pasargadae, we have to admit that it is almost unavoidable to raise questions about its origins. How to explain its sudden rise in a area devoid of any previous elaborated architectural tradition ? Indeed, at its heart lies an enigma. It is difficult to imagine the construction of the buildings on the Great Terrace as the immediate result of a pure intellectual, architectural concept derived from a royally imposed programme or from the imagination of some pioneer of advanced intellectual capacity. An old view as such should surely be put aside.

Unfortunately, our knowledge of the history of the Achaemenid architecture is still desperately limited firstly to the buildings located in the two major well known sites (i.e. Persepolis and Pasargadae) and secondly to a third but minor one situated near Persepolis, but now in a very poor state of preservation: that of Dasht-i Gowhar². These three sites are not only not very far away from one to another (about 60 km between Pasargadae and Persepolis) but also very close from the point of view of chronology. Pasargadae seems to have known its first constructions during the life of Cyrus the Great (Cyrus II, 559 - 530). The works on the Great Terrace of Persepolis seem to have begun later, maybe around 520/518 (or even some years later), indeed at the beginning of the reign of Darius I (522-486).

Were the buildings of Persepolis and Pasargadae the ultimate examples of a continuous line of established Achaemenid building methods in which the architectural development was linked to the evolution of forms, layouts and techniques ? Till now it has been difficult to answer this because of the lack of sufficient material informations for that period. The hazardous circumstances of the archaeological discoveries give us a fragmentary documentation that we have to take into account. The Fars area gives us no complementary major informations about the architecture. On the other hand, in the Zagros region, archaeological excavations have unearthed some major buildings dating from the first half of the first millennium BC (Iron Age), at the sites of Nush-i Jan, Baba Jan, Hasanlu and Godin Tepeh. Not only the mud bricks architecture of these buildings show elaborate forms and layouts that may be considered as completely new in Iran, the buildings themselves are built as independant units, isolated from the others

¹) I have to thank very warmly Mrs. Anne Henrard to have given much time to read the English version of the article and to have given me many wise and pertinent observations.

²) The construction of the Royal Palace in Susa (Apadana) must be considered as contemporaneous with the second stage of Apadana in Persepolis. The layout displayed by these two imposing buildings are quite similar.

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and from ordinary structures. If their close geographical situation and dating could be considered as possible data to reinforce comparisons, their featured architectural characteristics could not be regarded without many precautions as forerunners of the monuments of the Achaemenid era. Nevertheless, in the literature some built structures have been put forward in order to draw comparisons, as is the case for the great columned halls. Such set-up of support for the roof can be observed in the buildings at Hasanlu IV (site destroyed before 800 BC) and in unearthed sites like Nush-i Jan and Godin II (abandoned around 700 BC)³.

The difficulty in trying to find true points of comparison is due to our own way of looking at things. We sometimes give inappropriate importance to the existence of particular features in the architecture of these poorly preserved sites. Looking for significances, this might just be a wrong approach. Indeed, we sometimes attach more value or more meaning to structures than they can really bring to us. The lack of precaution - when parallels are drawn too directly, that's to say with only pure formal comparisons - leads us to draw very insufficient or at least unimpressive conclusions through many poorly stated and inappropriate arguments.

Are the great halls of the buildings of Persepolis the direct followers of the constructions of the Iron Age sites in the Zagros ? Has the layout and the monumental architecture of the great halls in Persepolis been inspired by the latter ? Which plays the most important role among the cases of a possible influence, a presumed inspiration or even a possible local self-expression architectural creation ? An accurate and detailed answer to each of these three questions is yet impossible to be given with any degree of certainty. Furthermore, the great difference in construction methods linked to the type of building, built with stones or in mud bricks, should not be forgotten. Technical applications - for instance in the stability of roofs, walls and supports - are absolutely different in these two groups of buildings.

Likewise, architectures displaying inner spaces of different forms and extends should not be analysed only using simple arguments about the general form of the layout. Nonetheless, these arguments are currently used when comparing architectural plans together. We have to admit that reflections on the inner spaces and volumes are generally taken into account in sufficiently for a more appropriate and useful comprehension of the building⁴. We also should also consider that that architecture has to be considered as the testimony to the technical prowess of the builders. Similarly, we must not forget that the partially preserved structures on the ground are the sole available marks to reconstruct the disappeared upperstructures of the architectural volumes..⁵

As we have already seen, the comparative approach has its own limits and in this case these comparisons between the huge buildings of the Great Terrace and the much older mud brick constructions are highly hypothetical. The great halls with the supports sustaining the roof may not be compared with each other directly without a cautious analysis of the technical methods used to build them, and even these architectural arrangements could be observed in both constructions.

Lacking true and appropriate comparisons with buildings of the previous periods, we have to bear in mind that an Achaemenid architectural style could have existed before the construction programmes displayed at Pasargades and Persepolis. However, evidence of oldest architectural forms dating from the time of the ancestors of the Achaemenid dynasty are surprisingly inexistant. We wonder whether they existed at all. Are these precious remains until now hidden somewhere in Iran and waiting future excavations? Once again the question is desperately wide open.

³) Hasanlu, on the south shore of the lake of Urumiyeh - West Azerbaijan province of Iran - Nush-i Djan and Godin, sites in the Central Zagros near the city of Hamedan.

⁴) Margueron 1986 : *Principes méthodologiques*, pp.261-285.

⁵) Margueron has pointed out the problems related to the architectural volume through some very outstanding examples of an inappropriate lecture of the plan (Margueron 1986 : *op.cit.* p.264).

Excavating an Empire

Cuyler Young has proposed an interesting theory about the adoption by the Persian builders⁶ of foreign architectural models that could have been transformed afterwards to display local Achaemenid concepts and salient features⁷. Nevertheless, we have to pay a very careful attention to make the distinction between concepts adopted by the Achaemenids during the imperial period and those that could have been developed by the Persians themselves during the formation period of the Medio-Achaemenid state. Under the Empire, some architectural features were obviously brought to Persia from the conquered peoples, e.g. : the palm-shaped Egyptian lintel on top of windows and doors in the Tachara, the multiiform parts adorning the lower half of the capitals, or the fluted shafts of the columns⁸. Before the conquests of Cyrus the Great and Darius, the Persians had largely no idea about the existence of these features. The difference must always be kept in mind. The sudden and apparent outbreak of a developed architecture (as we have in Pasargadae) should be linked at least to the existence of a long term period of contacts with more developed material and (architectural) culture of the people of the neighbouring areas like the north-western Zagros and the Urartu. The situation seems to be very difficult to understand without keeping in mind this hypothetical assumption. Of course, the lack of archaeological data about the period of the incipient Achaemenid state's structure makes all debates highly conjectural⁹.

Two very well known monuments recall a heritage coming possibly from Urartu. The first monument is situated in Pasargadae (the so called Zendan) and the second one can be observed in Naqsh-e Rostam (the so called Ka'aba-i Zardusht)¹⁰. The particular architectural tower-shape of these two monuments recalls those illustrated on the Assyrian reliefs depicting Urartean fortresses. The building depicted on some bronze plaques (for example, the plaque of Toprak Kale, seems to display these tower-like constructions. Also the plan of the basement for the Persian monuments could be linked to the very similar ones displayed by the Urartean tower-temples. Meanwhile, taking account of the geographical distance and most importantly the chronological space that separate Urartians and Persians, this assumed heritage might have been shared and then brought into the Persian homeland by the mediation of foreign people amongst whom we must find the Medes, closely related to the Achaemenids¹¹. Once again, we have no serious evidence to strengthen this assumption.¹² If the incipient architecture in Persia has matched serious and continuous influences from other more developed people, the problem is to determine how

⁶) We prefer to use the term builder instead of architect because at that time it is highly improbable that the function of the architect really have existed in the modern sense we use now.

⁷) Cuyler Young 1994.

⁸) Genito has recently called attention to the interpretative difficulties related to the external influences and their allegedly assimilation in art and architecture by the Persians (Genito 2000, pp.538....).

⁹) Briant in his article on the *La Perse avant l'empire*, develops some similar theories about the political development of the Achaemenian state before the empire. For him it's doubtful that the state under Cyrus II could have suddenly arisen in the history without a long period of formation. (Briant 1984).

¹⁰) Stronach 1967.

¹¹) The influence that the Medes would have exerted in the development of the architecture (and art) of the Achaemenids, has to be considered with caution, due mainly to an insufficient documentation displaying an obvious continuity between the two cultures (see Genito 2000, pp.539-545).

¹²) With the exception of the two mentioned monuments, the influence of the Urartean architecture seems to have been important during the first half of the 1st Millennium BC. Sites belonging to the northwestern Zagros area have shown many buildings in which forms, features and layouts can really be compared to Urartean monuments (Johnson 1975). On the other hand, Urartean influences on the great Achaemenid architecture and more precisely on the palace architecture, seem to have been very limited. Arguments about the similarity between Achaemenid columned halls and those unearthed in the first millennium sites have been sometimes put forward. This has led to debates about an allegedly Urartean origin of the former. If halls with supports have been observed in some Urartean sites, they obviously display a very different layout. A similar conclusion can be drawn on many other similar examples. As a result, the conclusions make the gap between the two architectures very difficult to bridge (see also de Francovich 1966 for more detailed examples, pp.220...).

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they influenced the creation of new architectural forms and the buildings inner organizations that first occurs in Pasargadae.

The forerunners of the buildings of Persepolis

We have pointed out the links that existed between some of the constructions in Persepolis, mainly the Apadana Hall and those of Pasargadae and Dasht-e Gowhar. If we could not speak of analogy unless with great care, it's possible to point out many similarities and resemblances mainly in the layout and the organization of inner spaces and accesses between different connected parts in the buildings.

Dating from around the middle of sixth century BC (i.e. some years before the start of the construction of the Great Terrace of Persepolis, around 518), the buildings unearthed in Pasargadae (Palace P and Palace S) and in the site of Dasht-e Gowhar show an architectural concept particular for this period. It seems to originate from an established Achaemenid building method.

A great central hall of rectangular shape is flanked by two porticoes of unequal lengths or surrounded by four, each one built along a side of the central room. Rows of supports or columns have been set up in the central hall and the porticos are themselves provided with two rows of supports. On account of its sudden occurrence, the architectural organization could be viewed as a prototype. In that, it could lead someone to point to anomalies and weaknesses in the setting up of the different structures and to consider them as marks of an inexperienced workmanship.

Dasht-e Gowhar (fig.1)

Now if we have a look at the plan of the building at Dasht-e Gowhar, we can see a 55 meters long portico open on the South Eastern with two parallel rows of high columns each. A unique access leads to the main central hall through its back wall. Five rows of high columns once supported the roof of this hall¹³. Kleiss has proposed a reconstituted plan displaying three more porticos with two rows of columns each¹⁴.

The drawing proposed by the German archaeologist shows two corner halls, each one standing at an end of the 33 meters long northwestern portico. These recall the tower-like corners of the well known palaces of Pasargadae (Palace P and S) and those of the Apadana of Persepolis (see below). Here, the external walls of these two rooms are lined with the limit of the outer side of the bordering three porticos. The plan shows a perfect rectangular frame with perfectly straight sides. If the general plan of the building draws a regular shaped form, the difference of length between the northwestern and southeastern porticos gives to the building an asymmetrical layout. As we will see later, the feature could represent a chronological mark for the building.

More surprisingly, the columns are set 3.65 m apart. This very short distance might just reveal that the builders had not really mastered the building techniques. This congested space must have been very uncomfortable and not easily practicable during official purposes when people had to gather in. Maybe this situation could display the limits of the technical knowledge of the builders.¹⁵ At that time, they were not

¹³) According to Kleiss, there were five rows and this assessment seems to have been afterwards shared by Tilia in her later publication (Kleiss' publication was issued in 1980 - and the one of Tilia in 1978) .

¹⁴) Kleiss 1980, abb. 1 & 2. Kleiss has proposed the new plan on pure metrical bases.

¹⁵) We have to keep in mind that winters in the area of the Murghab Plain could be sometimes extremely severe due to the altitude (about 1900 m !).

trained in the construction of large roofed spaces. This can also give us another chronological mark for this building.

In the now admitted reconstitution (Kleiss' plan), two lateral porticos are placed on each side of the great hall. The depth of these two columned spaces fill the entire difference in length between the great southeastern portico and the long side of the central hall.

The existence of these corner-halls seems to be linked to the function of the northwestern portico. Now if we compare this with the layouts of Palaces P and S in Pasargadae, the very long portico of the southeastern side at Dasht-i Gowhar could also face a garden or something similar. We have to take into account that there, at the back of its wall, only one door led to the great hall. This particularity seems to be related to the private character of this side of the palace. This hypothesis leads us to consider the northwestern one as the main and official access to the building. The entrance portico would have been set up between two halls functioning as guard rooms. We can match the same organization in Palaces P and S at Pasargadae (northwestern side of the Palace P and western side of Palace S) and in the north side of the Apadana. As we will see later in these three buildings, the portico built on the mentioned side could be considered as the official entrance to the palace. If the layout of the building in Dasht-e Gowhar reveals in some features the still low experienced workmanship, many signs lead us to consider this building and the Palace S at Pasargadae as contemporaneous.

On the stone column bases and plinths discovered at the site of Dasht-e Gowhar, only marks left by edged tools can be observed. These marks could also be viewed on blocks belonging to the different buildings in Pasargadae¹⁶ contrary to the stone works in Persepolis where all the marks are exclusively left by toothed tools. The form of the curve and the torus of the bases of the columns in Dasht-e Gowhar could be compared to the style of those in the Palace S at Pasargadae. This form was altogether put aside in the buildings of Persepolis.

In fact, these mason's clues are generally considered as chronological marks of the anteriority of these monuments with regard to the Apadana¹⁷. According to a general agreement, these buildings date from the reign of Cyrus the Great or during the early period of the reign of Darius.¹⁸ In fact, this argument is sometimes difficult to engage on its own, but it seems to be of good chronological support in addition to being a complement for an architectural analysis.

Thus the analysis of the architecture displayed by the building of Dasht-i Gowhar has to be compared to the one of the two great palace buildings at Pasargadae.

The so called Residence or Palace P in Pasargadae (fig.2)

Looking at the layout of this construction, we are surprised to find out the same asymmetrical organization we have already seen between the northwestern and the southeastern sides at Dasht-e Gowhar. In the Palace P, the 73 meters long southeastern portico extends largely beyond the side limits of the central columned hall, and ends on each side by short bordering walls.

On the north-western side, the portico is limited on each side by a corner hall.¹⁹ The noteworthy difference with the construction of Dasht-e Gowhar is that these two corner rooms are not closely attached to the outer western angles of the main central hall. We can observe that a short section of the back wall of

¹⁶) Many references on worked stones at Pasargadae in Stronach 1978 and also for Persepolis in Tilia 1978.

¹⁷) Cool-Root 1979: pp. 52-58 ; see also Stronach 1967, p.283 ; Nylander 1965, pp.52

¹⁸) Tilia 1978 : p.80.

¹⁹) Corner rooms are known in the Persian architecture since the excavations of the Manor at Baba Djan (Zagros area), a building dating from the IX/VIII century BC (Goff 1969).

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the portico runs freely on both sides. This situation could be explained in case of a planned transformation of the main hall which was never carried out.

Since the existence of these two corner halls was proved by excavations, many scholars have conjectured about the existence of two lateral porticos which have occupied the entire area between the lateral part of the main hall and the projecting sections of the two porticos.²⁰ In fact, these open areas have yielded no clear structured architectural remains²¹. If these spaces were really occupied by porticos, they would have shown a very unexplainable depth mainly in contrast with the others.²² It is noteworthy that the two existing porticos display the same depth.

Like in the Dasht-e Gowhar building the second and shorter portico on the opposite side of the central hall, could represent the main accès to the building. The entrance was also bordered by two corner halls which could have been used as guard rooms or something else. As we have seen, the Apadana represent the major example of such an entrance layout.

The long open southeastern portico of the Palace P faced a large area devoid of any other construction and obviously reserved for the royal gardens as the excavations have proved.²³ A sort of throne stood in the middle of the back wall instead of the usual centered location for an access, leading to the main hall.²⁴ According to this arrangement, the access through the opposite portico (northwestern side) is also not centered on the back walls. The reason of the eccentric positions of the two doors may be due to an enlargement of the layout from the first architectural stage of the building. It's not impossible that, at the beginning of the construction programme, the accesses were set as usual in the middle of the walls (like in the other buildings). Without this transformation, we should admit that the original central hall would have been obviously very limited to be used as a living quarter or for official purposes (its mensuration is 31.10 m in length and 22.10 m in width, and no less than 5 rows of 6 columns have been set up). Also like for the former building we have seen, the central hall shows a very congested space, highly uncomfortable and hardly practical for meetings. The general arrangement could be an old traditional architectural norm perhaps reflecting the structured space of the nomadic tent. The great number of columns seems to be technically justified by the change of the material used for the roof, from a light weaved shapeless cover to an heavy wooden and mud covered flat roof.

The so called Audience Palace or Palace S in Pasargadae (fig. 3)

Before going any further in our investigation, we can say that the analysis of the layout displayed by the Palace S in Pasargadae seems to reveal an extremely new development of the architectural concept of the Achaemenid palace.

The Palace S is located not very far away from the Palace P and looks onto the same largely open garden area. Obviously, the general plan reveals the strong ties which bond this building to the former two. Nevertheless, it displays here the most complete and developed architectural programme before the construction of the Apadana.

Like the Palace P, this building was built on top of a low platform of two levels stone blocks. The central columned hall of rectangular shape is bordered by four porticos of unequal length as established for the

²⁰) According to this, Kleiss, as we have seen, has bore all these architectural structures on his reconstruction layout of the palace of Dasht-e Gowhar.

²¹) Stronach 1978 p.78 and notes 8-11.

²²) Concerning a possible palace quarter here and the comparison with living quarters in the palaces of the Safavid and Qajar period in Iran, see Huff 2005 : « From Median to Achaemenian Palace » , p.382.

²³) Stronach 1978, pp.107-112. See also his report about the Royal Gardens in Stronach 1989, pp.475-487.

²⁴) The existence of a throne seat there at that place may be related to some public performances taking place in this open area instead of the very limited and congested central hall.

others buildings. Looking at its size, a comparison with the dimensions of the others main halls leads us to accept that a standard dimension could have been the rule in the construction of the great hall. For the Palace S we note the dimensions (32.25 m x 22.15 m). They are nearly the same as the great central hall of the Palace P (31.10 m x 22.10 m) and of Dasht-e Gowhar one (about 32 m x 22 m)²⁵. The rectangular form with its measurement seems to come from a former architectural model which could have served afterwards for all the Achaemenid buildings. It's reveals a possible established building method. We will discuss about the chronology of the constructions later on.

Here, the lateral inner porticos are fitted out with two rows of eight columns each and the long northeastern one with two rows of 24 columns each. The opposite portico, which faces the southwestern direction, displays two rows of 14 columns each. As usual two corner halls are built at each end of this entrance portico. Their almost square plan is due to the unusual lenght of the entrance portico.

Here once again the general layout displays the usual architectural concept of the Achaemenid palace constructions. The four porticos are of the same depth and of the same type, i.e., with two rows of supports. The main central hall maintains its rectangular-shaped form and approximately the same dimensions as those observed in the two other palaces. Thus the outstanding difference may be observed in the reduced number of the columns in the central hall. To support the roof, only two parallel rows of four columns are necessary. They are set 7.90 m apart and the columns are set 6,45 m apart. We can observe here a real technical improvement maybe due to the development of architectural knowledge of the time. The general arrangement shows a more apropiate space for public and official purposes. Its layout deviates now from the old traditional architectural norm reflecting the structured space of the nomadic tent (as in Palace P).

Looking at the layout, we can easily observe that the building is a project realized as a unit. Contrary to the Palace P, the doors are set in the middle of the walls of the hall. Porticos are regularly placed around the central hall. This gives the impression of a structural compactness and balance between the different architectural spaces. In fact, this building represents the last development of the Persian palace architecture before entering the era of the great imperial Achaemenid architecture.

The relative chronology of the constructions.

In order to transcend this basic analysis, we now have to deal with the chronological order of each one of the buildings. As we know, the Apadana shows the ultimate stage of a well developed and organized layout for the Achaemenid era (fig.4). For this reason it seems to us quite interesting to go back over the plan as a reference before suggesting appropriate arguments for the debates.

As we have seen, the Dasht-i Gowhar construction and the two Palaces (S and P) at Pasargadae have two types of porticos, a long one widely open and limited by short walls and on the opposite side, a shorter one placed between two corner halls. It seems this asymmetrical organization is a rather common and usual architectural concept of that time.

In palace P the construction of the two long oposite porticos leaves between them and the main hall two open areas. These seem to have been occupied only by some mudbrick walls and rooms by now completely decayed. The building of Dasht-e Gowhar may have displayed the same layout showing no lateral porticos. It's quite remarkable to note that no one base of support was ever found during the excavations. Thus we have to admit that the actual plan depicts only a hypothetical reconstruction. Further more, we have tried to explain the unusual eccentric organization of the two doors connecting the main

²⁵) These measurements are based on the plan proposed by Kleiss (Kleiss 1980 : Abb.2) and therefore, they are hypothetical.

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hall and the porticos due to a possible enlarging programme of a first stage building. The proved existence of two stages in the construction of the Apadana makes this assumption possible.

As we have already said, these features result from either the marks of the weakness of the workmanship of the builders or more importantly, the lack of confidence in the building techniques. Another question arises about the hypothetical architectural display in the layout in the Dasht-e Gowhar building.²⁶ Was it similar to the one of Palace P or Palace S ? If the first assumption is correct, we have to note that the curved bases of the columns in Dasht-e Gowhar appear at later periods, contrary to the more ancient grooved (horizontally fluted) bases and torus observed in palace P.²⁷ For that reason, the Palace P in Pasargadae may have been the first monumental construction built during the reign of Cyrus the Great.

As we have seen, the curiously stretched form of one of the porticos in Palace P, seems to have been built for some special purpose. We could compare this architectural structure to the later open porticos which faced some open places and areas in Persepolis, for example, the south portico of the Tachara and the north-entrance of the Hundred Columns Hall. It seems that we could find a similar concept of entrance here in these two buildings. Interesting to note is that at that time they didn't extend out of the limits formed by the side walls of the building.

A sometimes neglected feature appears in the central columned hall of the Palace P. Along each of the short sides of this room, large mudbrick piers or pilars were found at some little distance from the walls. They seem to screen a corridor giving access through two doors to disappeared rooms. If their function is still not clear, it's not impossible that these thick mudbrick structures served once as supports for a gallery or a balcony²⁸. This architectural fit-out recalls the layout of thick mudbrick walls we can observe beyond the south wall of the central hall of the Apadana. At the place of a fourth portico, two long corridors running parallel to the outer face of the wall were built instead. Each one, connected via a single door to the main hall, gives in turn access to an enigmatic group of narrow rooms and short passageways. These spaces are separated by thick mud bricks walls. A row of columns marks the southern border of the building, i.e. the so called « Royal Porch ». Here the diameter and the span between these columns are curiously very short. It seems to be all what remains of a long disappeared original portico of unknown extent. Bearing in mind that the porticos were of a lesser height than the one of the central hall, in order to allow light and air to enter in, we would have some difficulties imagining the bindings of the roof around the central hall without restoring a second level of rooms in the south part of the Apadana. The thick mud brick walls of the Apadana could be linked to the curious piers in the Place P central hall that also could have been built to support an upper level.

The Palace S of Pasargadae displays the most developed layout of previous architectural examples. With its four regularly set up porticos surrounding a large and spacious central hall, this building combines all the architectural structures we have previously seen. It also unites all the technical possibilities used by the more experienced builders. Its architectural organization already heralds the magnificent architecture of the Apadana.

Yet it has been proven since the excavations of Tilia that the Apadana displayed a very different layout at the beginning of its existence. According to her research, the Apadana was once to be entered through its eastern portico²⁹. Some time later, the building was extended to the west as the long protruding bastion in the north-south border of the Great Terrace seems to prove. The new extended area certainly allowed the builders to construct a partially new building. It's not unreasonable to say that they turned out the old main

²⁶) See note 9 about the proposition from Kleiss.

²⁷) Stronach 1978 for the architecture of Palace P. Tilia 1974, 1978 ,p.80... for Dasht-e Gowhar.

²⁸) For a theory about balconies in the Achaemenian buildings, see the recently issued study of Huff (Huff 2005).

²⁹) Tilia 1972, pp.127-138. The discovery of the foundation tables set in stone caskets under the two eastern inner corners in the great central hall seems to prove this side was built first. According to the situation, it's not unreasonable to think that work had begun with the construction of the entrance. .

traditional rectangular shaped hall to a square shaped and imposing hall with columns as we can see it now.

After the blocking-up of the former southern entrance to the Great Terrace of Persepolis, a new entrance was built on the northern side of the Apadana according to the construction of the new (actual) stairway-providing access near the north-western corner of the terrace site. The former guard halls of the original entrance seem to have been left in place, although a new corner hall was built on the northwestern corner of the Apadana as a counterpart of the one of the northeastern corner. We can be sure that the southeastern corner hall was added for symmetry. At the same time, the lateral (south) wall of the hall became the back wall of the new central hall and the original southern or former lateral portico was blocked up to give way to the rooms and other passageways we have discussed about. On the western side, a new portico was built not only to offer a very nice view to the king, but to allow a more secure access to the south toward the private royal palace (Tatchara) and to the later palace of Xerxes (Hadish).

Before drawing some conclusions about these assessments on the Achaemenid architecture, we have to point out the chronological aspects of this overall view. We have to consider the similarities observed in different layouts and in the setting-up of the inner spaces of the buildings. The layout in the Dasht-i Gowhar building seems to be closer to the Palace S than the Palace P one. The restored plan of the former building perhaps depicts a skewed view of its architectural arrangement. We have to recognize that without such hypothesis, it would have been quite difficult to draw any parallels between the two buildings.

Concerning the defects observed in the inner architectural arrangement in the Palace P, they seem to reveal a lack of search for regularity in the architectural setting-up than a lack of symmetry itself.

It seems too that the builders of Palace P were neither experienced nor sufficiently trained for working on such type of construction. This possibility leads us to the conclusion that we should not be surprised by the existence of some curiously unconnected architectural structures. One of the most obvious is the isolated position of the two rooms at the ends of the long northwestern portico. Between the two opposite porticos, the spaces left devoid of any structure may be due to a failure in the making of an architectural project as a unit. At least it reveals an old building method perhaps linked to a nomadic concept of the tent in front of which a cover supported by posts is erected (materialized by the portico). These features have to be considered as marks of an early stage in the development of the Achaemenid architecture.

Furthermore, it has been noted that some marks could be linked to some features belonging to the Greek-Ionian architecture displayed in western Anatolia.³⁰ For example, we can point out the horizontal fluted torus upon a double plinth, the fluted columns, the long columned porticos, the use of dovetail clamps on stone blocks and the marks of edged tools on stone works. All these are considered as the main clues of an Ionian origin of the builders or at least of the building method used commonly in Ionia.³¹ It's noteworthy that all these architectural features, with the exception of the double columned portico, are no more observed in the new building programme at Persepolis. At that time, i.e. the reign of Darius and his successors, a completely different style has been chosen to illustrate the imperial character of the official architecture. Taking into account this chronological difference and according to the architectural observations viewed previously, we have some reasons to think that the Palace P could be considered as the first - known - example of an incipient monumental architecture.

³⁰) Schefold 1968 , pp.51-52 ; de Francovich 1966, p.246 ; Nylander 1965, p.52 ; in Stronach 1978, there are many references about these in his description of the monuments at Pasargadae.

³¹) Contrary to the edged toll marks and toothed chisel marks are regularly observed on the monuments in Persepolis instead, all dated back to the reign of Darius. At Pasargadae, these marks are exceptionnaly found on one or two monuments (see de Francovich 1966, pp.244-247). Schefold has convincingly proposed to link the double columned porticos to the greek stoa architecture observed in some Aegean sites like Samos (Schefold 1968, pp.54-56).

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The Palace S displays obviously a more developed layout with four porticos bordering the sides of a central hall. This architectural arrangement reveals now a greater skill in the setting-up of the structures. They are built in connection in order to form an architectural unit. If the restored plan of the building of Dasht-i Gowhar is correct, we can point out the two buildings as twins. However, the more congested hall with five rows of columns seems to reflect a less technically and older architectural stage compared with the highly improved arrangement of the Palace S.

Though the tradition of a longer portico bordering one long side of the rectangular shaped central space goes on unchanged, this general arrangement seems to prepare the way for the future and toward a more elaborated layout like the one observed at the Apadana. For all these reasons, it's not unreasonable to consider the Palace S as the last architectural building form before the construction of the Apadana. The soundings made under the eastern portico of the Apadana have confirmed that after a first stage, the building underwent some changes. If the entrance portico seems to be left unchanged, the central hall has undergone important transformations (new entrance at the north side) with its limit moved to the west. This second layout can still be seen now on the site. According to this, it seems difficult to imagine that the Apadana building displayed a very different layout than the one of the Palace S at the origin. The construction of the square shaped central columned hall seems to reflect a completely new architectural concept, most probably linked to the need to give to the building a more impressive character.

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