

Persian translation of this paper entitled:

بررسی ساختار معماری باروی قلعه ابرج با استناد به کاوش‌های
باستان‌شناسی (پاییز ۱۳۹۶)
is also published in this issue of journal.

Qaleh Iraj: An Investigation into its Defensive Wall Based on Archaeological Excavations (Autumn of 2017)

Mohammadreza Nemati*¹, Seyed Mehdi Mousavinia²

1. Assistant Professor, Research Institute of Cultural Heritage and Tourism, Tehran, Iran.

2. Assistant Professor, Department of Archaeology, University of Neyshabur, KhorasanRazavi, Iran.

Received: 29/12/2018 ; revised: 04/05/2019 ; accepted: 15/05/2019 ; available online: 23/10/2019

Abstract

Problem Statement: Qaleh Iraj is one of the Sasanian archaeological sites in Tehran plain. The site is enclosed by arectangular defensive wall (rampart), 1470×1300m in dimension; thus, the surface area of the site would be aound 190ha. So far, field investigations have yielded no extensive architectural remains in this vast area enclosed by the wall. For this reason, the main objective of the present paper would be to locate the architectural structures related to the living spaces of the inhabitants. In addition, the second query to answer would be the spatial organization of the architectural structures recovered within the Qaleh Iraj rampart. To answer the principal question, it seems, due to the lack of architectural remains in the vast are enclosed by the wall and regarding the fact that such remains are abundant within the defensive wall itself, the inhabitants were probably living within the structures (numerous rooms) built inside the huge defensive wall itself and not in the whole site. To answer the second question about the spatial organization, it seems, according to the field studies, the architectural spaces were systematically built within the entire defensive wall of Qaleh Iraj, including stunning 828 similar rooms, one all-embracing corridor, 148 watch-towers, and some exterior arches.

Aims: This research was conducted in order to search for the living spaces of the inhabitants of Qaleh Iraj. Due to the fact that they were absent in the whole 190ha area enclosed by the wall, the huge defensive wall was chosen for archaeological excavations. After the discovery of abundant architectural remains within the defensive wall itself, these remains were examined thoroughly. Finally, some hypotheses were offered for explaining the spatial organization of the architectural structures.

Methodology: In this research, descriptive-analytical method was used to answer the questions of the study. In the first step, the architectural remains that discovered from the field investigations were described and then, by putting the jigsaw puzzle pieces together as a whole, archaeological examinations were done in order to develop hypotheses on the spatial organization of the defensive wall elements.

Results: The presence of architectural remains within the defensive wall or rampart of Qaleh Iraj was unknown previously. Field excavations indicated that the defensive wall itself contained numerous rooms and a corridor and these were built for the sake of living of the inhabitants. As a result of the mentioned archaeological discoveries in Qaleh Iraj, it is now clear that the architectural structures such as rooms were built all over the defensive wall, executed in a similar fashion. The remains within the defensive wall include rooms, a corridor, watch-towers, and exterior arches. In addition to what mentioned, it seems the architectural system was changed in the later phases possibly due to security reasons.

Keywords: *Qaleh Iraj, Sasanian Period, Ray, Architecture, Defensive Wall.*

* Corresponding author: 09126104793, mohammadreza1973@gmail.com

Introduction

Living spaces are the centerpiece of social life and the quality of these spaces could indeed reflect the quality of social life. Speaking of different life qualities could have bearings on the diversity of spatial elements in architecture. This diversity is the product of citizens' viewpoint toward the ultimate goal of collective life. In the Iranian context, these spatial elements are influenced by two rather different worldviews; one, before and the other, after Islam (Mansouri, 2007, 52-53). The Pre-Islamic spatial organization highlighted the presence of a special order in the social classes. Such spatial organization is the expression of the dominant mentality (belief system) ruling over the community, which ultimately originates from religion. The emphasis of this spatial organization was on the distinction of classes and making these separation of people more explicit (Ibid; Pourahmad & Pourahmad, 2014, 24-25). Studies about Iranian living spaces have indeed indicated this spatial order during the Pre-Islamic periods (Huff, 1986; Perrot, 1986; Mansouri, 2007; Sarfaraz & Teymouri, 2007; Pourahmad & Pourahmad, 2014; Hosseini & Fallah Mehrjerdi, 2016). It is also supposed that such separation of people based on class was to the degree that the citizens themselves could realize this distinction and find their proper place in the living spaces easily.

Qaleh Iraj is an archaeological site in Iran belonging to Sasanian Period; therefore, it depicts the quality of the spatial organization in Pre-Islamic Central Plateau of Iran. It is located in some 2km northeast of Varamin, near the village of Asgharabad in Pishva County. The site, with an area of about 190ha, is among one of the largest Sasanian sites in the Central Plateau of Iran. Despite the archaeological importance of Qaleh Iraj, limited studies have been carried out there so far. The majority of these studies are based on the finds resulted from surface surveys. As a result, a variety of opinions on the remains have been expressed so far. These opinions are ranging from being a hunting ground (Matheson, 2001, 25), a city (Eastwic, 1864, 273-285; Minorsky & Bosworth, 1995, 471; Etemad-al-Saltaneh, 1932, 34; Pirnia, 1996, 2217; Farzin,

2002, 1-67; Eskandari, 2006, 83-90), and a garrison and/or military fortress (Pézar d & Bondoux, 1911, 61-63; Kleiss, 1987, 294; Dieulafoy, 1887, 45-142; Eskandari, 2006, 80-81). This diversity of assumptions is also seen when searching for the history of Qaleh Iraj construction. Some find it a Parthian building (Farzin, 2002, 1-67; Eskandari, 2006, 83-90; Kleiss, 1987, 292-307), while others consider it a Sasanian relic (Dieulafoy, 1887, 152; Matheson, 2001, 25), which its usage lasted until the Islamic middle ages (Kleiss, 1987, 292-307). However, some researchers have stated it was originally built during the Islamic period (Khalatbari, 2001, 397-399). This latest look is slightly different from the assumptions that other researchers have developed. It should be noted here that among the people, only Kleiss has referred to the existence of limited architectural structures within the defensive wall itself and attempted to prepare a plan for them (Kleiss, 1987).

Archaeological studies in Qaleh Iraj have entered a new phase with the excavations of one of the authors (M.R.N). During the fifth and/or the final season of the field mission, the diggings were conducted in the southern corner of the defensive wall. Archaeological data and architectural remains of this season of excavation are the basis of the present research. Describing and analyzing the architectural remains in order to understand the structure of the defensive wall and its constituents is the approach used here. In this regard, it is attempted first to prove the existence of architectural remains within the defensive wall of Qaleh Iraj and then, to explore the techniques of constructions and the spatial organization of the spaces discovered. The present study indicated that the architectural remains are found all over the defensive wall and they are executed in a similar and symmetric fashion. At least three distinct phases of architectural constructions are found within Qaleh Iraj rampart. In the first phase, the structure includes the rooms, the wide corridor, the watch-towers, and the exterior arches, all were made in an excellent arrangement in relation to each other. This pattern was changed during the second and last architectural phases in Qaleh Iraj by limiting

and eventually, blocking all spaces except the rooms. Based on what mentioned above, the most important objectives of this study are as the following, 1. To prove the existence of architectural remains within the defensive wall; 2. To propose a reconstruction of the architectural structures; and 3. Speculation about the architectural changes and the associated causes.

Problem Statement

Until the beginning of archeological excavations in Qaleh Iraj, it was believed that the inhabitants of this site were living in the large apparently vacant area enclosed by the defensive wall and there could be found extensive living structures in that part (Eastwick, 1864, 273-285; Minorsky & Bosworth, 1995, 471; Etemad-al-Saltaneh, 1932, 34-35; Eskandari, 2006, 83-95; Farzin, 2002, 1-67; Pirnia, 1996, 2217). But, with the beginning of archeological excavations in Qaleh Iraj and the digging of test pits in the huge area of the site, it was become clear that this area was never chosen for extensive constructions. Therefore, one of the most important aims was to find the place where the local inhabitants lived at Qaleh Iraj. Earlier, the authors identified some traces of architectural remains within the defensive wall of Qaleh Iraj during the field surface surveys. Based on this, the fifth season of excavation was started to identify the architectural remains and the structure of the constructions within the rampart. In order to do so, the southern side of the wall was chosen. Founded on the mentioned field investigations, and after the discovery of extensive evidence of architectural works, Qaleh Iraj can now be described as an enclosed site with a huge rectangular defensive wall, within which extensive architectural structures could be seen, unlike the vast empty area enclosed by the rampart. In this archaeological definition, the importance of the defensive wall is highlighted. The data recovered from excavations have indicated that not only the architectural structures could be seen within the defensive wall, but also they extend to all over the wall. There is evidence that these works follow three successive phases. It is expected that the proposed sequences of events regarding the architectural phases

of the southern part of the rampart could be extended to explain the whole architectural structures seen on all parts of Qaleh Iraj's defensive wall.

History of Studies

Apart from the general descriptions of Qaleh Iraj made by people such as Edward Eastwick (1864, 273-285), Mohammad Hassan Khan Etemad-Al-Saltaneh (1988, 179-181), Hassan Pirnia (1996, 2217), and Jane Dieulafoy (1887, 142-145), George Curzon (1892, 352-353), Georges Pézard and Georges Bondoux (1911, 61-63) and Sylvia Anne Matheson (2001, 25), a short two-days visit by Wolfram Kleiss led to the publication of a research paper about the site. This paper opened new horizons to study Qaleh Iraj. The precision of Kleiss's observations is visible in his plans drawn for reconstruction of Qaleh Iraj (Fig. 1). For the first time, he noted the existence of some buildings within the rampart itself. Additionally, based on the surface material, he regarded Qaleh Iraj as a Partho-Sasanian site that was alive until the Islamic Middle Ages (Kleiss, 1987, 289-307). Mohammadreza Khalatbari also visited Qaleh Iraj during his surface surveys of Varamin County in 2001, introducing it as an Islamic castle (Khalatbari, 2001, 397-9). In 2002, an archaeological project entitled "the documentation project of Qaleh Iraj" was conducted by the technical office of "the deputy of conservation and restoration of the Cultural Heritage Organization" in order to register the site in the list of the national monuments. In the reports resulted from the project, the surface finds were described and it was suggested that Qaleh Iraj was indeed a Partho-Sasanian town (Eskandari, 2006, 83-90; Farzin, 2002, 1-67).

The year 2008 was the beginning of systematic archaeological excavations in Qaleh Iraj under the direction of one of the authors (MRN). He was staff of the Cultural Heritage Organization of Tehran Province at the time. To this day, five seasons of excavations have been conducted there. In the autumn of 2008, the delimitation work of the site was done using test trenches. At the same time, the research team excavated some parts of the southeastern gate

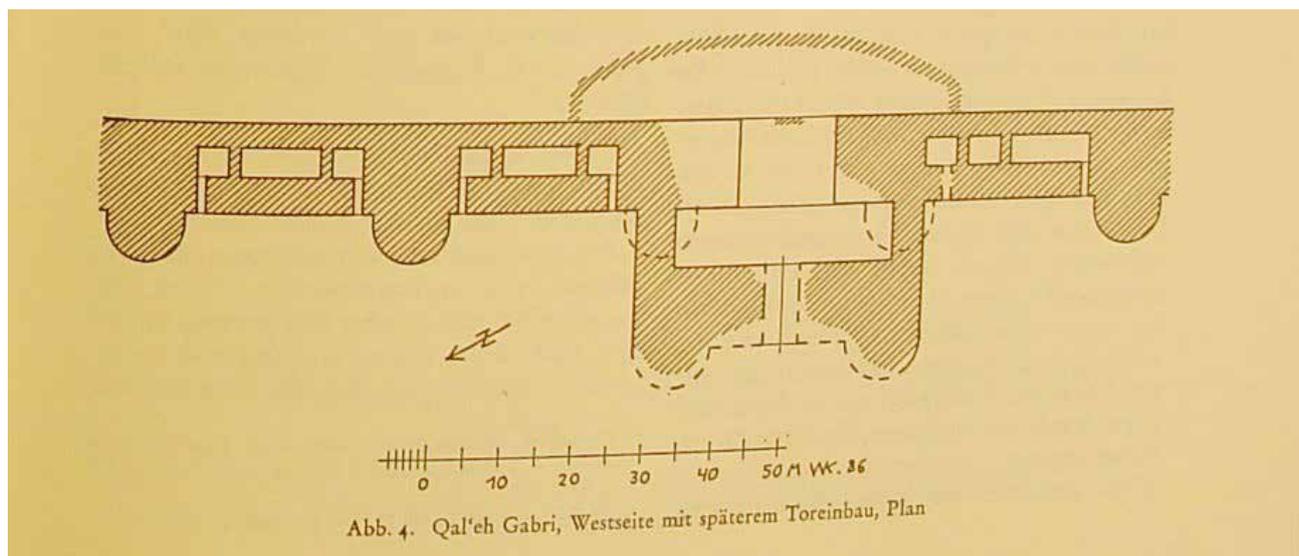


Fig. 1. The suggested plan of the southeastern gate and the architectural structures within the defensive wall. Source: Kleiss, 1987, 291.

(Nemati, 2008). The second season was in the summer of 2012 during which the south eastern gate of Qaleh Iraj was excavated again (Nemati, 2012). The third season of excavation in the site was in the fall of 2015, during which the defensive wall was also excavated in addition to the continuation of the digging work in the southeastern gate (Nemati, 2015). The fourth season was carried out in the summer and fall of 2016. In this season, the western corner of the site was subjected to geophysical prospection and two stratigraphic trenches were opened in the southeastern gate. At the same time, some other parts near this gate were also excavated (Nemati, 2016). During the fifth and final season of excavation in Qaleh Iraj in the fall of 2017, the director (MRN) excavated the southern part of the defensive wall (Nemati, 2017). As a result of these excavations, the remnants related to a gate, one Sasanian burial, clay seals, ostraca pieces, and potsherds related to Sasanian period were found (Mousavinia & Nemati, 2016, 189-208).

Methodology

The basis of this paper is on the data recovered from the latest field research at Qaleh Iraj. During the fifth and final season of excavation in the site, the team searched for architectural structures within the defensive wall. Thanks to these field studies, we now

know that there are architectural constructions within the rampart, including rooms, a wide corridor, watch-towers, and exterior arches. In the present research, the above-mentioned components are described first, with regards to their constructional phases. Then, by investigating the architectural remains within the rampart, the authors try to analyze them and their construction phases in the context of Sasanian period. Finally, due to the similarity of architectural constructions in shape and spatial organization all over the excavated spaces, such organization is proposed for the whole rampart of Qaleh Iraj.

The Description of the Site

Being enclosed by a defensive wall or rampart, 1470×1300m in dimension, Qaleh Iraj is a very large site with some 190ha surface area (Fig. 2). The wall itself is inclined, having a lower and upper width (thickness) of 22 m and 15m, respectively. The maximum height of the existing wall is 15m. The wall is built with no foundation directly on the surface ground and has 148 circular watch-towers on the outer side. As mentioned above, the remains of constructions within the rampart include a large number of living rooms, a corridor, and the arches. The defensive wall does have four gates in about the center of each side, within which the southern gate

is preserved better in relation to the other three. It is interesting that all architectural structures within rampart, including the watch-towers, the corridor, and arches were filled with bricks during the last phase of Qaleh Iraj. Contrary to what mentioned about the rampart, the vast interior area lacks any major architectural works; but having chalcolithic, Sasanian, and Islamic potsherds, plus mudbrick pieces and one stucco decoration piece dispersed on the surface (Mousavinia & Nemati, 2016). Totally, twelve test trenches were digged in the area enclosed by the wall, in which only the remains of a living floor paved with pebbles has been discovered. To date, no evidence of extensive architecture in this area has been reported. Based on what mentioned here, Qaleh Iraj is defined as a Sasanian site which has extensive architectural structures within its rampart, in contrast to the vast interior area which is featureless. This definition makes Qaleh Iraj unique among the other historical sites in Iran.

The Excavations in the Rampart

During the fifth season of field mission at Qaleh Iraj, the southern corner of the rampart was selected for excavation (Fig. 3). This part was selected for some reasons; among them were the fact that the southern part and its associated structures were preserved better than any other sides of the wall. This fact could help to better understand the exact structure of the rampart. In addition, due to the better state of preservation, the information about the architectural phases within the rampart could be more complete. Eventually, due to the location of this part in one corner of the rampart, it could potentially provide information on how the rooms were related to the surrounding rooms and the corridor. In this regard, three 10×10m trenches were digged to explore the nature of the rooms, the corridor, and the joint spaces between the two. These trenches were mapped based on the mapping landmarks named F128, F129 and G129. By exploring this part of the site, the structure of the rampart and its dependent architectures were evaluated.

The structure of the Rampart

At Qaleh Iraj, before constructing any architectural structure and as the first step, one man-made sandy layer of 20-110cm thickness was made as the lowest part of the defensive wall. Then, the elements of other phases were built on this. The lower part of the rampart is made from adobe (pisé) with the height of 6m, the dimensions of adobe pieces ranging from 40×30×19 to 184×175×110cm. The adobe wall is itself stepped, narrowing gradually toward the upper parts; in a way that it is 22m thick in the lower part, while only 15m when reaching the 6m-high line. It is in this height that the stepped adobe part of the rampart gives its place to the brick part. There is a variety of architectural designs in the brick part. Yet, despite the diversity, they follow a specific architectural order. Contrary to the brick part, the structure of the adobe part is homogeneous and unchanged. It should be noted that the order in which the architectural structures in the brick part were made was unclear before the beginning of the excavations. Earlier, based on the finds of the surface surveys, the spatial organization in the upper brick part was proposed like this: five rooms in the space between the two towers, the fifth of which was connected to the corridor via a joint space parallel to the towers. The width of the corridor was also proposed to be 1-2m, previously. In addition, it was believed that Qaleh Iraj was abandoned after filling the architectural spaces on the rampart (Mousavinia & Nemati, 2016). The recent excavations have corrected some of the mentioned assumptions. Now, with reference to the archaeological data, one can confidently comment on the structure of the rampart in the southern corner. Such confidence comes out of the fact that the space between the two watch-towers in the southern corner was excavated systematically and this space was a location in which the architectural features were well-preserved.

Three phases of architectural constructions within the rampart have been identified during the excavations. The first phase corresponds to the first stage of constructions within the rampart and the oldest



Fig. 2. Aerial view of Qaleh Iraj, western view. Source: authors' archive.



Fig. 3. The southern view of the rampart before excavations. Source: authors' archive.

phase of habitation. What comes in the following is the description of the first phase. The rooms were connected to each other in this phase. The dimension of some of them is detectable almost well; one well-preserved room had a dimension of 490×300cm (Fig. 4). Based on the presence of two joint spaces in well-preserved spots, such joints are proposed for the other parts of the rampart. The remains of these joints are also identified to the northwest and eastern parts of the site with width of about 120cm. The relationship of the rooms to the public corridor is in a way that after each six rooms, one joint space connects the rooms to the corridor. According to available evidence, each joint was 125cm wide and 237cm long with a height of about 2m. The corridor was the main characteristic of the first phase and an important factor in the distinction of architectural phases at Qaleh Iraj. The width of the corridor was 6m during the first phase (Fig. 5). It was also the main factor in the division of space within the rampart. Apart from the corridor, the outer watch-towers were another constituents of the rampart, which were connected via a joint space to the corridor; the width of the joint spaces were 150cm. The inner diameter of these towers was 7m and the outer, 9.5m. Apart from what mentioned, in the outer part of the rampart in this phase, at the space between each two towers, there were four elliptical arches. The arches were themselves 210cm wide and 275cm high and the depth of each was 180cm (Fig. 6). Given the fact that the most likely and parsimonious function of Qaleh Iraj could be for military purposes (such as a garrison), the spatial relationship of these structures can be assumed to be as the following: military forces were living in the relatively similar rooms within the rampart which were connected to each other by entrance-like joint spaces. The inhabitants (the forces) could have access to other spaces such as the corridor and the towers via these joints. As the surface survey of the rampart testified, the mentioned structure and the organization of space at the southern side of the wall is extendable to the other parts of this defensive wall as well (Fig. 7 & 8). During the second phase, the plan of the architectural structures within the Qaleh Iraj defensive wall was

changed a bit. One of the distinctive features in this phase was making the corridor narrower. The width of the corridor in this phase has been reduced from 6m to 2m (Fig. 5). This reduction was done by bricks which were filling the connective parts (joint parts) to the rooms. To avoid interrupting the spatial connectedness between the rooms and the other structures, the joints of the rooms and the corridor were lengthened and extended to the new corridor of the second phase (Fig. 9). There is no evidence of change in the rooms and watch-towers during the second phase. Therefore, changing the width of the corridor and adding the length of the rooms-corridor joints in order to maintain the spatial connectedness was the most important change during the second architectural phase (Fig. 10). The spatial organization in this phase was almost the same as in the previous one, with the exception that the corridor width was narrowed. Evaluating the impacts of this narrowing on the spatial organization of structures during the second phase would be difficult such as the field studies are incomplete. Therefore, one cannot talk about the impacts of the narrowing on the other architectural structures made within the defensive wall.

The third phase was the last phase of constructions within the Qaleh Iraj rampart. It was in this phase that all the architectural spaces, except the rooms were filled with bricks (Fig. 5). Also, the joints of rooms to the corridor were filled in the same fashion. Therefore, in this phase, the watch-towers had no function and the corridor was no longer used for the space division. At the same time, the rooms were still used with no sign of filling (Fig. 11). This claim is due to the presence of living floors in the rooms, plus the layers of thatch coating on the body of the rooms after filling the joints to the corridor. Two living floors and four layers of thatch coating have been found in G129 square during excavations. This fact indicates that the rooms have been used for a long time after the brick fillings. Considering the fact that the rooms were a part of a larger whole during the first phase and were an integral part of the other wall structures, judgment of their function during the last phase of Qaleh Iraj occupation



Fig. 4. The rooms within the rampart which had been used continuously during the whole three phases. Source: authors' archive.



Fig.5. The first and second phases of corridors within the defensive wall of Qaleh Iraj. The second phase of the corridor was filled with bricks during the third phase. Source: authors' archive.

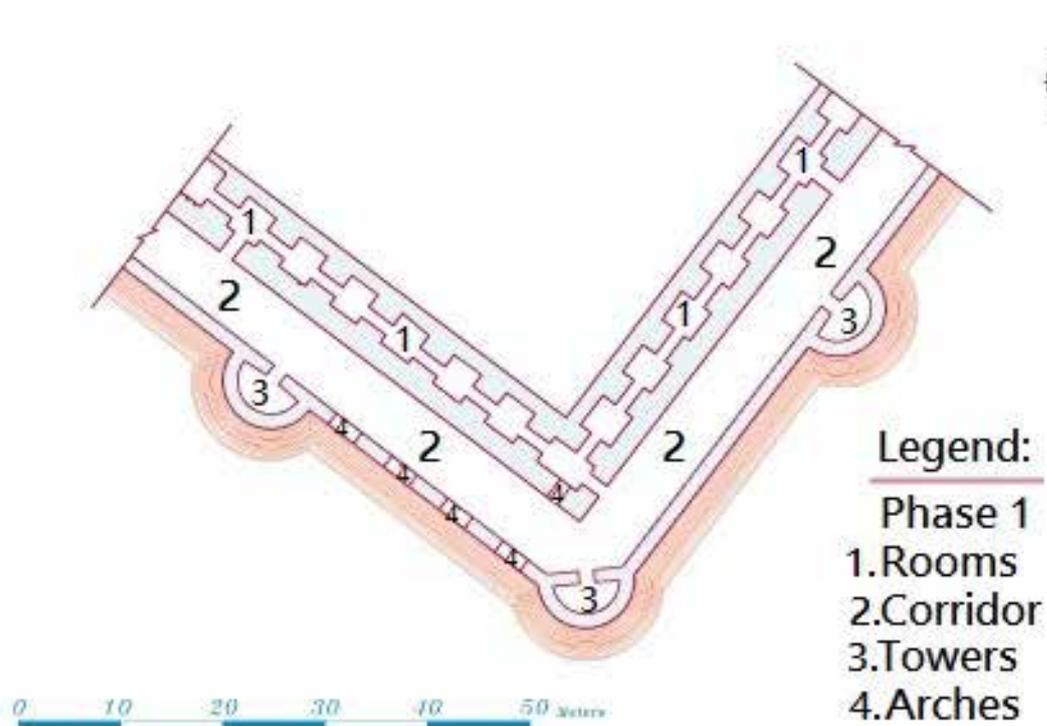


Fig. 6. Plan of the first construction phase within the rampart of Qaleh. Source: authors.



Fig. 7. Reconstruction of the outer structure of the rampart during the first phase. Source: authors.

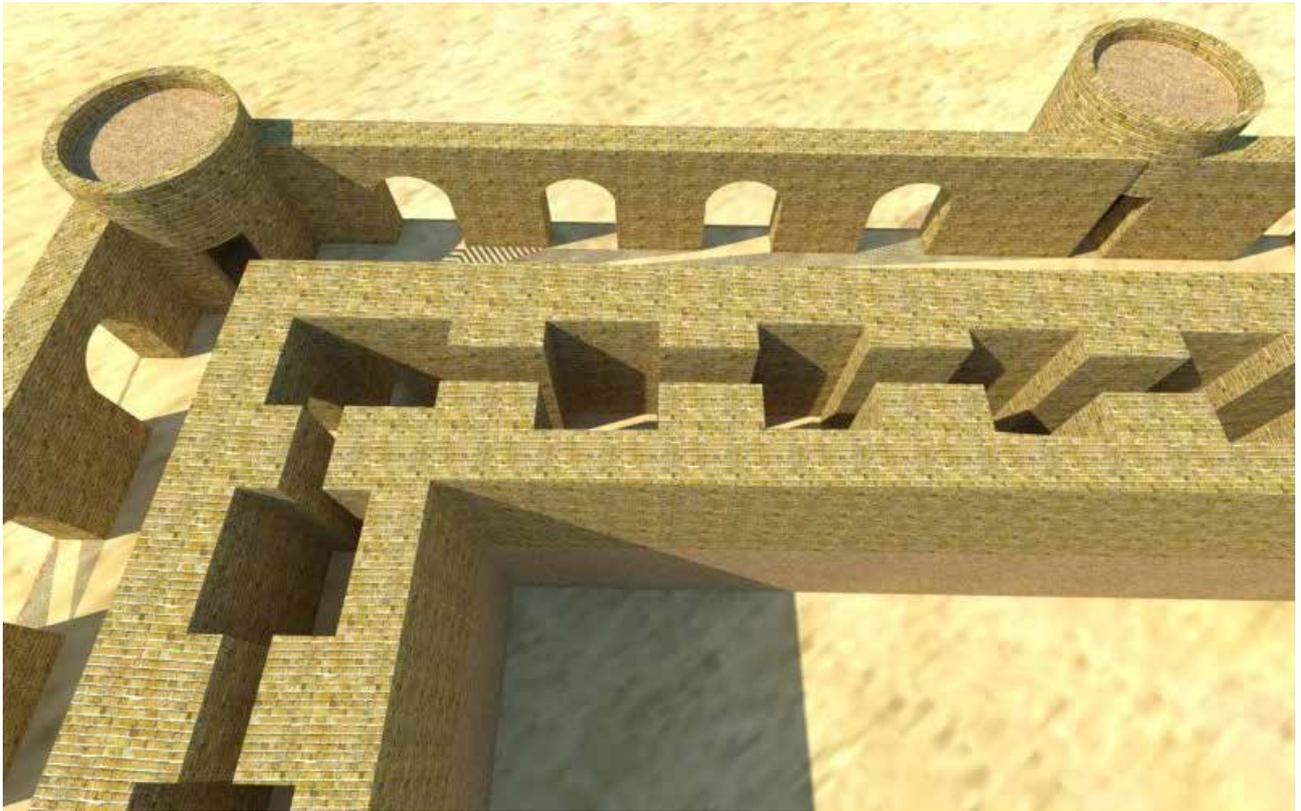


Fig. 8. Reconstruction of the rooms, the joint spaces and the corridor within the rampart during the first phase. Source: authors.



Fig. 9. The lengthening of the joint spaces between the rooms and the second phase corridor. Source: authors' archive.

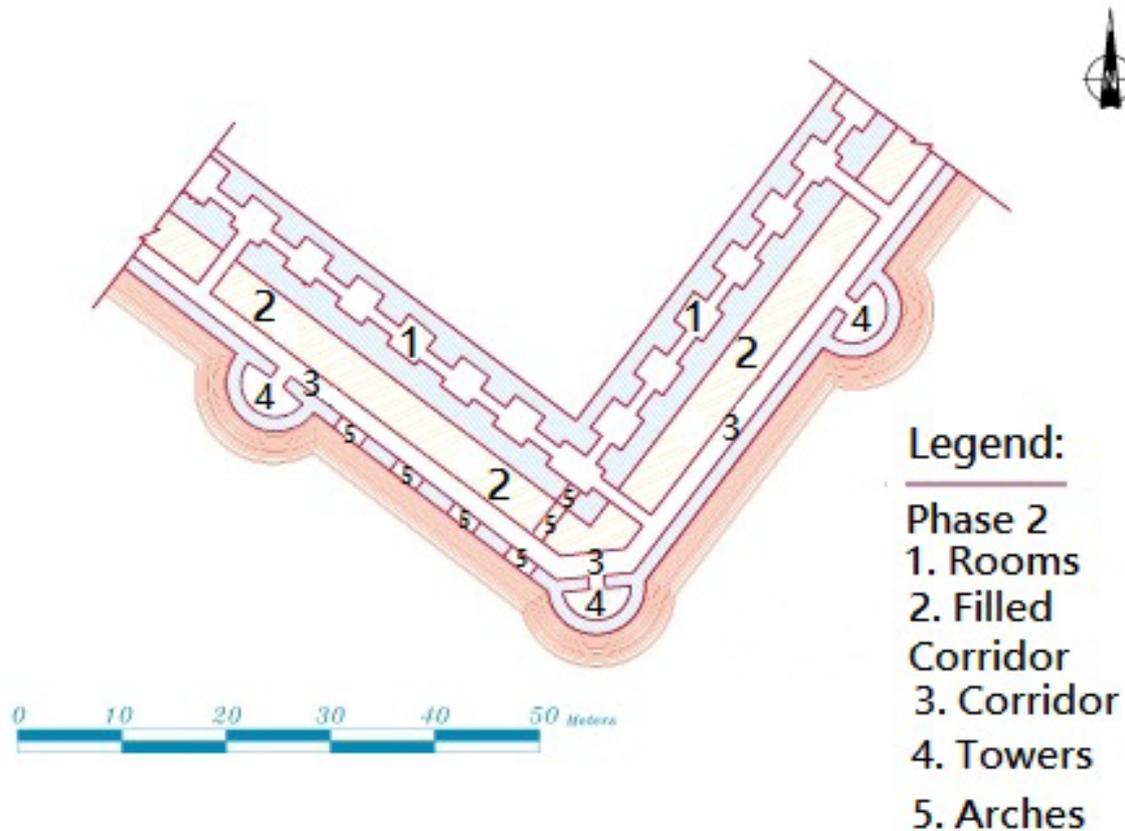


Fig. 10. Plan of the second phase constructions within the rampart. Note the fillings in some parts and the lengthening of some rooms' joints to the corridor. Compare with the first phase in figure 6. Source: authors.

is difficult. In addition, archeological excavations inside the preserved spaces of the rooms yielded no evidence indicating some new functions.

Discussion

The architects of Qaleh Iraj at the time of founding this great Sasanian rampart, had the dream of laying the foundations of a unique architectural monument; a monument that was destined to have no widespread constructions in the vast area enclosed by the wall, and on the other hand, similar and repetitive arrays of buildings were constructed within its enormous rampart. The architects of Qaleh Iraj laid the layout of buildings first by covering the surface of the site using sands and gravels, and then, since predicted the extensive architectural elements within the rampart, built its walls rather wide. With the predictions about

the directions of forces and amount of loading on the wall, these architects reduced the width of the wall in order to transfer the loads from the upper levels to the floor; such that the width changed from 22m in the floor to 15m at the height of 6m. From the viewpoint of Qaleh Iraj's architects, this width and height of the lower part seemed to be sufficient for bearing the components of the rampart. The architects, with having knowledge of the role of the arches in the transfer of loads to the floor, designed four arches in between the two towers so that during the transfer of heavy loads of structures to the lower levels, enough light would reach the interiors and illuminate the spaces. With such engineering discipline, brick structures were built on the raised lower part. As mentioned, 828 identical rooms were constructed on the brick part, connected to each other and the corridor via joint spaces. In the outer

part of the wall, 148 watch-towers were built to take care of the security of the gigantic rampart. A little bit further outside, a wide ditch was built to complement the security duty of the towers.

Based on the latest field studies, we now know that there were three distinct architectural phases in Qaleh Iraj. In the first phase, the structures within the defensive wall are seen in their original context. The rooms were linked to each other and the corridor via joints in a regular fashion. The corridor was the central element and connector of the architectural spaces in this phase. The quality of the linkage between these structures and the 190ha vast area enclosed by the wall is yet unknown, but the archaeological excavations of the southeastern gateway could provide insights into the quality of the relationship between the structures within the rampart and the area surrounded by the defensive wall. In the second season of excavation, the remains of two staircases belonging to the southeastern gate were discovered, which were linked to the corridor. These two stairs were among one of the ways to reach the vast interior area via the rampart; in a similar way, it could also be assumed that there were other stairs linking the rampart to the interior area. Thus, the elements of the first phase architecture represent the similar rooms that were linked to the interior area via the main corridor and the staircases. The complex was guarded by 148 watch-towers and a massive outer ditch. During the second phase, the width of the corridor was decreased and the joints of the corridor to the rooms were lengthened in order to preserve the spatial relationship. The inhabitants in this phase, like the first phase, were linked to the corridor as the main factor of the division of spaces via joints, but this time the joints were longer and the corridor, narrower. During the third and final phase of the defensive wall constructions, all the architectural spaces except the rooms were filled. The rooms no longer hold spatial relationships to other structures within the rampart. Archaeological evidence suggests that despite the spatial disconnection, life in rooms continued long after the fillings; the discovery of living floors and that hincg of the walls imply this result.

Due to the filling of the main corridor which was originally the factor linking various structures, understanding the mechanism of relationship between rooms after the fillings is a challenge. Until further excavations, one can only suspect that the inhabitants during the third phase were likely to be linked to the interior vast area by a series of stairs. Still, we do not know whether Qaleh Iraj retained its military function after the third phase fillings. We also do not know whether the residents were still the military forces similar to the former phases. These questions and other archeological inquiries discussed earlier would be answered only by future excavations in Qaleh Iraj, this important site of the Iranian historical period.

Conclusion

Despite the importance of Qaleh Iraj in the Sasanian archaeological studies, some of the historical and archaeological aspects of this site had been remained unanswered, due to the mere reliance on the surface survey data; for instance, the dating and function of the site was unknown. Excavations at Qaleh Iraj have indicated that this site was probably a military garrison during the Sasanian period. Two of the most important remaining archaeological questions on Qaleh Iraj were the location of living spaces of the inhabitants and the spatial organization of the architectural structures. The first season of field studies in Qaleh Iraj indicated that there was never large-scale architectural constructions in the vast area of Qaleh Iraj site. Therefore, the assumption surrounding the presence of extensive constructions within the rampart of Qaleh Iraj seemed probable. The last season of excavation in the southern side of the rampart of Qaleh Iraj was conducted with this assumption in mind. Thanks to this archaeological excavation, we now know that not only there were extensive architectural structures inside the rampart of Qaleh Iraj, but also these architectural structures had been implemented in an eye-catching spatial discipline. As far as the architectural changes are related, three distinct phases could be proposed for Qaleh Iraj rampart. In the first phase, the architecture consisted of rooms, a corridor, watch-towers and outer arches

representing the climax of architecture in Qaleh Iraj. During this phase, probably a military garrison was designed to train and manage the Sasanian military forces. The order of Architectural elements during this phase indicates that the work has been accomplished in its most exalted form. In this phase, the spatial organization consisted of a set of similar rooms which were linked to the other spaces through the joint spaces leading to the main corridor. The calmness and security were two other aspects of this phase's structures. The outer arches, which made it possible to access the architectural spaces from outside, indicate that there was enough political calm during the first phase of using the defensive wall. At the same time, the watch-towers and the ditch affirm the attention to security aspects despite the claimed political calm. It seems that this security and political calm were not present during the second and third phases of architecture, since in the first place, the width of the corridor was decreased, and in the next

step, all spaces except the rooms were filled with brick and mortar. It is believed that there may be significant correlations between the changes of the second phase and the general fillings during the third phase. However, there is no evidence to bring us closer to the reasons behind the architectural changes in the third phase. The continuation of life in the rooms despite the fillings in the other architectural spaces is one important aspect of the third and/or final architectural phase of Qaleh Iraj. In sum, and in response to the research questions, we now know that the inhabitants of Qaleh Iraj were not living in the huge area enclosed by the wall, but probably in the 828 rooms made within the rampart. Apart from the rooms, other architectural spaces, namely the corridor, watch-towers, and exterior arches were made also an architectural excellence. Changing the initial plan of the defensive wall by decreasing some spaces likely highlights the security aspects during the late Sasanian period.

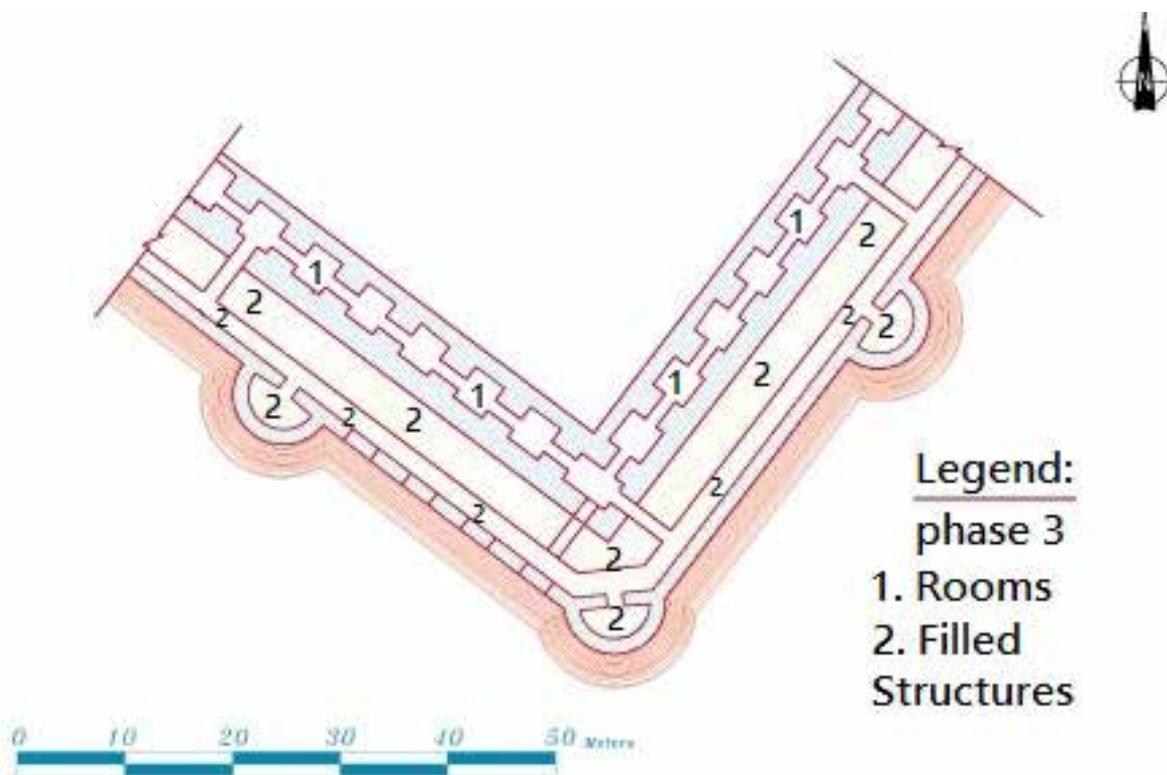


Fig. 11. Plan of the third phase of architectural constructions within the rampart. Compare it to the first and second phases. Source: authors.

Endnote

1. The words defensive wall and rampart are used here interchangeably, both equal to the Farsi word *bārī*.

Reference List

- Curzon, G. N. (1892). *Persia and the Persian Question* (Vol. 1), London and New York: Longmans Green & Co.
- Dieulafoy, J. (1887). *La Perse, la Chaldée et la Susiane 1881–1882*, Paris: Hachette.
- Eaštwick, E. B. (1864). *Journal of a Diplomat's Three Years Residence in Persia* (Vol. 1). London: Smith, Elder & Co.
- Eskandari, S. (2006). *Physical Re-Identification of Qaleh Iraj, Varamin*. Proceedings of The Third Congress on the History of Architecture and Urban Design in Iran, Research Institute of Cultural Heritage and Tourism, Arg-e Bam.
- Etemad-al-Saltaneh, M. H. (1932). *Tatbigh-e Loghat-e Joghrafiyai-ye Ghadim va Jadid-e Iran (supplementary of the book Dorar Al-Tijan Fi Tarikh-e Bani-Ashkan)*. [The Matching of Old and New Geographical Vocabulary of Iran], Lithographic Volume, Tehran.
- Etemad-al-Saltaneh, M. H. (1988). *Mer'at Al-Boldan* (vol. 1). A. Navaei (Ed.), Tehran: University of Tehran.
- Farzin, A. (2002). The Documentation Project of Qaleh Iraj, Varamin. The Archives of the Iranian Cultural Heritage Organization, (unpublished).
- Hosseini, A. & Fallah Mehrjerdi, M. (2016). The Investigation on the Processes Involved in the Formation of Hatra Spatial-Physical Structure. *Pazhouhesh-ha-ye Bastanshenasi-e Iran*, 6(10), 141-160.
- Huff, D. (1986). *Sasanian Cities*. In *A General Study on Urbanization in Iran* (M. R. Sarraf Trns.), M. Y. Kiani (Ed.), Tehran: Jahad-e Daneshgahi.
- Khalatbari, M. R. (2001). Preliminary Report on Varamin County Surface Survey. Archives of Iranian Cultural Heritage Organization, (unpublished).
- Kleiss, W. (1987). Qal'eh Gabri bei Veramin. *Archaeologische Mitteilungen aus Iran*, 20, 289-307.
- Mansouri, S. A. (2007). Two Periods of Spatial Organization in the Iranian Urbanism: before and after Islam; Investigation with the Help of Kerman Developments. *Bagh-e Nazar*, 1(7), 49-60.
- Matheson, S. (2001). *Persia, an Archaeological Guide*. Tehran:
- Yassavoli. Minorsky, V. & Bosworth, C. E. (1995). *Al-Rayy*. In *Encyclopaedia of Islam* (2nd ed., pp. 471-473). Leiden: Brill.
- Mousavinia, S. M. & Nemati, M. R. (2016). Archaeological Survey in Qaleh Iraj: Dating and Functional Studies. *Motaleat-e Bastanshenasi*, 8(2), 189-208.
- Nemati, M. R. (2008). Preliminary Report on Qaleh Iraj Excavation, the first season. The Archive of the Cultural Heritage Organization of Tehran Province, (unpublished).
- Nemati, M. R. (2012). Preliminary Report on Qaleh Iraj Excavation, the second season. The Archive of the Cultural Heritage Organization of Tehran Province, (unpublished).
- Nemati, M. R. (2015). Preliminary Report on Qaleh Iraj Excavation, the third season. The Archive of the Cultural Heritage Organization of Tehran Province, (unpublished).
- Nemati, M. R. (2016). Preliminary Report on Qaleh Iraj Excavation, the fourth season. The Archive of the Cultural Heritage Organization of Tehran Province, (unpublished).
- Nemati, M. R. (2017). Preliminary Report on Qaleh Iraj Excavation, the fifth season. The Archive of the Cultural Heritage Organization of Tehran Province, (unpublished).
- Perrot, J. (1986). Achaemenid Urbanism in Susa. In *A General Study on Urbanization in Iran* (A. Khalatbari Trns.), M. Y. Kiani (Ed.), Tehran: Jahad-e Daneshgahi, P. Pezard, G. & Bondoux, G. (1911). *Mission de Teheran, Mémoires Delegation Archéologique Française en Iran*. Paris: publié sous la dir. de J. de Morgan.
- Pirnia, H. (1996). *The History of Ancient Iran* (Vol. 3), Tehran: Donya-ye Ketab, .
- Pourahmad, A. & Pourahmad, A. (2014). Spatial Structure of Cities before and after Islam. *Shahr-e Paydar*, 1(1), 21-36.
- Sarfaraz, A. A. & Teymouri, M. (2007). The Spatial Organization of the Sasanian City of Bishapur. *Bagh-e Nazar*, 4(8), 91-102.

COPYRIGHTS

Copyright for this article is retained by the author(s), with publication rights granted to the Bagh-e Nazar Journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>).



HOW TO CITE THIS ARTICLE

Nemati, M. & Mousavinia, S. M. (2019). *Qaleh Iraj: An Investigation into its Defensive Wall Based on Archaeological Excavations (Autumn of 2017)*. *Bagh-e Nazar*, 16(77-), 15-28.

DOI: 10.22034/bagh.2019.160033.3889

URL: http://www.bagh-sj.com/article_95617_en.html

