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Determining the Position of Ahovan Caravansary in Silk Road Route

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ABSTRACT

In Iranian countries and current Iran area and along its main and minor zones, there are signs of midway buildings, especially the works of Islamic era in our country and Caravansaries due to various designs and creation of architecture spaces indicating knowledge, art and creativity of Iranian architects in pre-industrialization era, are of great importance. The distance of Caravansaries from each other was determined based on geographical and natural conditions of passing environment and calculation of one day trip for and some additional considerations. The highest distance in the plain in about 24 km and in mountainous roads, the distance was closer (Kiani, Mohammad Yousef, 1987). The remaining of the most important discussing roal is in the eastern half of the current Iran, in the distance between Ray-Serakhs. This road takes eastern-western length of Semnan province and there are many Caravansaries in the length over 500 km in this province. In this paper, we review two deserted examples of Iran cultural wealth called Ahovan Caravansaries and their location and their position in Silk Road.

KEY WORDS: Caravansary; Ahovan; Silk Road; Semnan.

INTRODUCTION

Iran due to its natural and strategic location in cultural, civilization, economic and military exchanges, was intersection location of the most important roads linking the major civilization centers of three recognized continents Asia, Africa and Europe. Through the history, governments attempted in repairing and maintaining previous roads and related constructions and construction of new ways and creating Caravansaries, Post houses (Chaparkhane), Ab-anbar and other required midway buildings and providing security and comfort of Karevan and Passersby (Pirnia, Mohammadkarim, 1991).

Here cultural and civilization important roads linked the east and west of ancient time's civilization world by Iran and in recent 100 years, it was called (Silk Road) from Europeans.

Purposes:

Purposes of this research are including as:

1. Increasing considerations of Iranian to recognizing the country (Cities, villages, cultural heritage, Iran nature, trips extension and scientific and specialized tours, etc.)
2. Repetitious considerations from national and international conventions to cultural, civilization, economic, political, military, historical way called Silk Road.
3. Identifying stone and brick Ahovan Caravansaries and the necessity of considering their protection

From the beginning, formation and foundation of Silk Road in one-thousand years ago, human being action to trade exchange, thoughts, traditions and language in sum, civilization and culture transfer all over Eurasia. Due to this fact, this road-linking the east and west of old world and covered a network of minor roads in their 1000 km routes- about all the routes formed by human being, we can say there had important role in human communications in terms of economics, cultural and even political as any important issue was related to this road. Generally, native culture of western Asia covers a wide area of east (Indus River**,** Chinese Turkestan or Sinkiang and Pamir plateau) to west (Eastern area of Mediterranean Sea), Greece and Egypt located outside Asia continent are affected culturally by it. Here the conditions of the countries located in Silk Road are chain rings linking history, civilization and different countries culture and it has the highest effect on it. Iran as one of this chain ring, is of great importance in terms of its geographical and cultural location and it was one of the major centers of ancient civilization. Indeed, only considering this point that at the beginning and end of this way old civilizations of china and India are located on one hand and Rom and Greece are located in the other hand and Iranian old civilization is located between these two civilizations, it can easily shows special role of Iran in cultural transfer by Silk Road. The role that was

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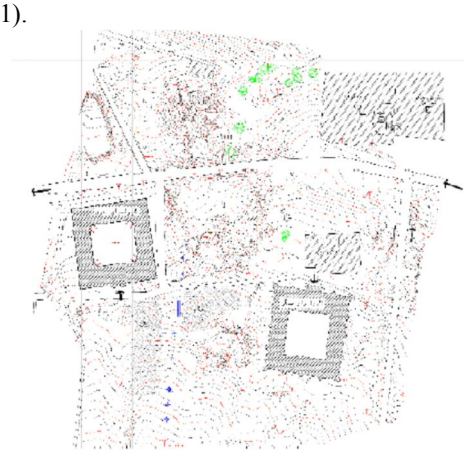
permanent until the prosperity of Silk Road and all ancient world were influenced in beyond continent scale without considering political borders of the countries or governments domain and ethnicities.

The historical route introduced as Silk Road in Iran is a route tha is used as Asphalted or a transit way nowadays. In historical periods, Silk Road route was approximately consistent with the current way but in most of the locations, the new way is diverted a little from the old route, due to observing road construction modern regulations. The above condition provided good conditions to organized historical ways and using them in tourism projects. Among Iran ways, from old times, two big highways were evident and until now they didn't lose their position by changing the route. One of the is Khorasan highway, the other is Fars highway. Although some of the cities by bridges collapse, their origin is moved, their main route is not changed. Our studied region (Ahovan) is located in Khorasan highway route in current Semnan province that linked Tisfun to Marv at a time and it passed in Iran from Ghasr Shirin and Current Ilam and big cities such as Hamedan, Rey and Ghomesh and reached Neishabur and in Khorasan , besides Marv, it went to Balkh, Harat and Sistan. Indeed, Semnan is among the provinces located in Silk Road route in Iran, in Desert area and it is consisting of different caravansaries from different times and each covering full information about Iran history and it has its own architecture. Unfortunately, the position of this kind of architecture is not considered a lot in introduction of Iran and its role in development of Silk Road. Silk Road in Semnan province passes from Miami, Shahrud, Damqan and Semnan cities and Bastam historical city is located in the proximity of Shahrud. This road after passing Semnan enters Tehran province. Semnan province placing old cities such as Semnan, Damqan, Bastam and Shahrud, it was constant from long times and throughout history and different times it was faced with different events. As it was said before, this province is consisting of different caravansaries and here two important instances of it in Ahovan of Semnan (In Silk road route) are introduced:

- Ahovan Anushirvani Ribat (stone Caravansary)
- Ahovan Shahsoleimani Caravansary (Brick Caravansary)

The studied region

In Ahovan region, in 35 km of Semnan road to Damqan and on the historical way of Ancient Rey to Khorasan, there are two important midway historical building. Two residency whose first Caravansary or Ribat is called Anushirvani and the main building period of it dates back to some of the researchers of Sasanid era and Ernest Hertsfeld professor believes that it was built in fifth century with the order of " Sharf Al-din Maali Anushirvan" of Al-Ziad governor. Entry of Anushirvan Ribat with high portal and great considerations are open to the north. Materials and the main structure of the construction are constructed of boulder and its peripheral walls and towers are bonded by stone. In Safavid era with the great movement of creating caravansaries with developed plans and more various than previous plans and also re-constructing old Caravansaries created active and dynamic trend in architecture of midway buildings. It was preferred to set up a new caravansary with the characteristics of new caravansaries instead of costly reconstruction of Anushirvani big Ribat. Ahovan new brick Caravansary is set up with the distance of about 100 m of Anushirvani Ribat and in its west side and by reversed entry direction in comparison with the previous work and to the north. This building was constructed in 1097 Hijri Ghamari at Shah Soleiman Safavi era and both Carvansaries are registered in national monuments lists. Each of these two monuments had inscription that does not exist anymore. The text of inscription of Ahovan brick Caravansary was read by Mohammad Hassan Khan Saniolole and the registered data consisting of the data of the construction of the monument (Haqiqat, Abdolrafi, 1991).



View of the location of stone and brick Ahovan Caravansaries in Silk Road route (Source: Author).

Ahovan Anoushirvani Ribat

Anoushirvani Ribat is located in Ahovan village in 42 km of east of Semnan and in its 100 step and opposite to it there is Ahovan Soleimani Caravansary. Anoushirvani Ribat in terms of plan is mostly similar to the beginning of Islam Caravansaries such as Ribat Karim in Saveh Road and Mohammadabad Ribat in Gom. This building was reconstructed in Safavid and Ilkhani era and a part of its reconstruction is seen in the entry gate and corridor. Regarding the construction of Ribat Shirvani, there are many items as: William Jackson knows them of Sassanid and Khosro Anushirvan era buildings but professor Hertsfiled knows Anushirvani Ribat belonging to Sharaf Al-din Maali Anushirvan, son of Falk Al-Maali Manuchehri governing in the years between 420-421 Hijri Ghamari. Hanri Rene Dalmani Fronsvay in his itinerary writes about this Ribat as: " This Caravansary is one of the important buildings. In four angles of it, there are four strong towers, its walls are tall and two towers are observed among them, their portal is made of brick and some traceries by white and red bricks with Arabic style are used for decoration around it. Ahovan stone Ribat is consisting of some periods of structural formation and in some cases they are reconstructed by the order of governors for political, defensive and service affairs to Caravans and in the previous years they are repaired by archeological monuments protection organization and cultural heritage organization, handicraft and tourism.

The current condition

Ahovan mountain pass weather is cold in winter and cool in summer. Thus, considering the geographical and natural location, stone materials (local) are used in each structure and the main core of Ahovan Ribat is formed by 15 towers, one portal, 4 Iwans and stone big walls among towers. The main core of the mentioned Ribat is only defensive and it doesn't require other spaces. The main structure of the building is the combination of local stone and mortar of Nimkub gypsum and soil and retaining walls between the towers are made of stone with the width of 1.40 to 1.60 cm. Ahovan stone Ribat (Defensive Ribat) is without foundation and it is consisting of stone footing. Probably, this was done due to the fact that the building bed was rigid enough. footing with the height of 50 cm was constructed made of river stone and outer walls and main walls are formed at the same time with towers. Indeed, the mentioned towers were structural with semi-circle section around the building and is linked to the main walls as joint and foundation with the height of 8 to 9m and avoid foundations pressure to the outside.

In general, current structure is consisting of an entry in addition to the towers and main walls located in the northern front but not with the current cover, with simple structure and without entry corridor cover. In the first core of formation, stone materials are used and brick materials used in Hojreh are related to the second core of formation. Structural seperation of the main core with the next core is formed during relative security period, by the lack of lock and good fastening and racking, the main structure with secondary structure and adding brick materials to stone materials are defined. Secondary core doesn't interfere with the main core and outer walls but they are placed beside each other and they are inclined to outside of the main zone due to this reason. Secondary core is defined with some spaces such as hojre, stable and kitchen and it seems that in this period due to changing use of Ribat from defensive to service, the above spaces are formed. This building due to its location in the route of Caravan in Silk Road, gradually it is converted to a location for rest and loading caravans. At this time, caravans in Ghomes state went from Rey to the cities such as Semnan, Damqan and Bastam and used the Ribats on the way in these regions.

Anushirvan Ribat before reconstruction (Source: Iran Caravansaries- Mohammad Yusef Kiani)

At the same time with Safavid era, Hojre were located around the building and placed four separate spaces (Probably stable, kitchen and warehouse) in four angles of the construction. Their cover is of jack arch type and constructed on lancet arch back. The covers are made of a combination of stone and brick sticking with gypsum mortar. Summit lines diameter in some cases reach 1 m and heaviness of arches is logical due to the presence of thick backs and stable tides to adjust the structure. Space combination of rooms, porticos and Iwans are such that

four Iwans are in the summit of symmetry of porticos and Hojre and the loads of the pressures by backs are transferred to the surrounding tides of Hojre.

MATERIALS AND METHODS

Research method of this research is survey method with comparative approach by library resources.

In this research at first we review the trade road route and the importance of trading in old Iran civilization centers, then we determine the role of Ahovan Carvansaries and the structure and structural changes.

Ahovan stone caravansary located in42 km of Semnan, Damqan, its stone structure creates many reasons based on defensive nature but being placed in Silk Road path change its use as comfort and midway caravansary. In its 100 m distance, brick caravansary is located and it seems that based on historical evidences- it was constructed after it and it was the residency of soldiers and now it is without use. Between these two caravansaries and with some meters distance between them, remaining of a bathroom is seen that is not old and it dates back to military soldiers in the recent decades. The past *Qanats* show access way of Caravansary to water and now there are some new constructions beside Caravansary and opposite to it as Restaurant, Toilet and etc causing considerable damages to Ribat border. Ahovan stone Caravansary is a construction with 4 Iwans in the shape of square whose angle is 74m. Entry of construction is in the southern front, 10 m height and 5 m width. Ahovan stone Ribat is with a big portal with four bays in two sides with the area of 16646 square meters. Portal bays are placed on each other by not pointed arch. As upper bays are shorter than lower ones. The wall in front of Caravansary entry is decorated by Shiri-Shekari stucco and ochre and it is decorated with facing brick in two sides and beautiful practice in the middle and it seems that under finishing coat, gypsum layers are applied. Covering of portal is the combination of Khotayi brick and river rock with gypsum and soil mortar with the thickness of 60cm that is constructed as equilateral pointed arch in two different sizes. In addition, a rib with the width of 1 m as Golandaz in front of Iwan has added to its beauty. Entry coating is made of arc master and a kind of lancet arch Abanbar is constructed as façade and decorative and between two arches is empty. The entry gate is made of Doulte wood and its joint is between inside and outside of the building. After entering the building, a big Iwan is seen. The building is as 4Iwan and its central yard is in the shape of rectangle with the dimension of 30*40m. In two sides of Iwan, there are some platforms for resting and a place for quay. In the western front of Iwan, a staircase directs passengers to the roof. In two western and eastern angles two holes link to two adjacent rooms and two entries with beautiful bays to porticos all over the yard. Iwan of hallway is very long. The mentioned Caravansary is consisting of 15 towers and its continuous walls and its thick. This building has central yard and two rooms around it as they are separated by Iwans and to enter them, we should pass Iwans. Porticos have covering and are covered as jack arch by lancet arch made of brick, gypsum and soil mortar. The bays located in front of porticos are having short stone Safe"70cm" in counter. And it is considered one of the ways to enter the portico and hojre. Hojreha are linked to the central yard by porticos and are constructed by jack arch system on lancet arch back (Normal arch master) all Hojres are consisting of holes that are installed to providing good lighting and ventilation and air circulation. In four angles of the building, there are some spaces divided into some sections and it seems that it is a place for placing kitchen animals and warehouse, etc. Southern Iwan is located in the front opposite to the northern Iwan made by arch system and rib. Gypsum leaves with the thickness of 7 cm is located between brick leaves with the thickness of 40 cm.In the next stage, into the ribs are full of stone materials. In the middle of Ribat central yard, four-angle Abanbar with brick arch is located and some part of it is destroyed exposing to climate factors and other parts are destroyed during debris removing. The existing arches in porticos except a little number of them are destroyed. The wall of eastern front of Caravansary is with strong axle exit that is occurred due to the lack of good fastening with internal walls. In addition to the lack of any lock and good fixing outer joints with internal walls, high wear out of stone materials, brick materials exposed to climate factors and unallowable excavation due to human factors are reasons to destroy the building. Between arches to the height of 50 cm is made of stone and the remainings is made of manual soil. After raking the roof, it is covered by Khotayi brick to level the roof bottom. In the final stage, mud straw coating with the diameter of 20 cm had covered Khotayi and it seems that one of the roof destruction factors is using above materials with high density.

- Footing: The building walls are located on footing and the imposed loads are transferred from stone backs to footing and from there, it is transferred to the ground. The materials in footing are stone and mortar of gypsum and mud. The width of footing is 2.30 m and its height is 50 cm.
- Wall: building walls are of retaining type and they are made of river rock. The thickness of these bases are high as the external walls of the building are varied 1.70 m and the internal walls are ranging between 1.40 to 160. The mortar between the stones is mud and gypsum and in some cases, ash mixture. The internal walls with defined height and a little denting to the inside, form impost. The walls facades are with coarse river rocks and sometimes, edgy materials in the edge and the middle part of the wall is covered by fine and coarse grained stones.

- Covering: The covering in Caravansary is as curve. All the arches are constructed on lancet arches back. The construction is of straight barrel type and the materials used in it are brick, stone and mortar of mud and gypsum. Pitches of arches are different depending on the type of span in rooms, Iwans and porticos. After the construction of arch, gypsum grouting with the mixture of ash is poured on it and lancet staggering of setts reaches about 30 to 50 cm. then gypsum grouting is poured and the entire arch becomes uniform. The empty space between two arches is full of stone to the height of 50 cm and after that it is leveled by manual soil and raking is done. After finishing, the bottom of roof is covered by Khotayi brick. In any case the thickness of arch is varied of 60 to 100cm.
- Classifying the existing decorations in the building:

1- Shir and shekar decorations with Islamic geometry traceries and trefoiled arch (above the main portal)
2- Simple brick-stretcher (In covering Iwans)
3- Different kinds of arch in ribs and porticos (Equilateral pointed arch- arch master, Panj o Noh and etc.)

Most important repairs considering the existing documents are:

1985:

Roof raking, northern and southern wall kerbstone, underpinning western wall for kerbstone operation, repairing entry façade arch, underpinning and reconstruction of two hojre in the northern and southern front

1988:

Reconstruction and wall layering of southern front, repairing internal walls, underpinning in western walls towers and repairing them, repairing the entry gate, jointing of the northern wall.

1989:

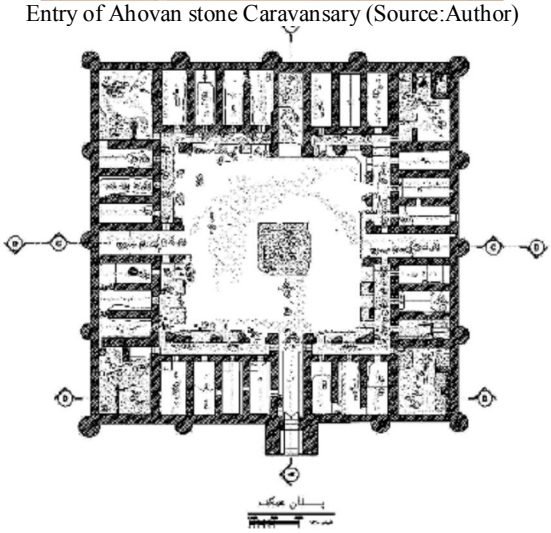
Building western stone wall, repairing internal walls of Hojre, construction of outer stone walls and its jointing, reconstruction of multi-hojre arch.

1991:

Reconstruction of the eastern wall, wall making and façade making of eastern angle under the supervision of Seid Abas Hesami.

After the above repair, Anushirvani Ribat was stable even with the 50% destruction.

Entry of Ahovan stone Caravansary (Source:Author)



Plan of stone Caravansary

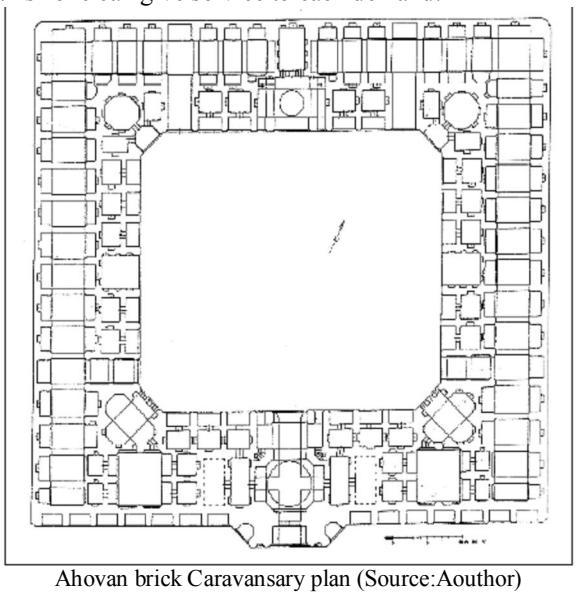
Introduction of Ahovan brick Caravansary

- Ahovan "Shah Soleilmani" Caravansary

This caravansary is located in Ahovan village in the distance of 42 km of east of Semnan. " Sanioldole" writes about Ahovan Shah Abasi caravansary:

"Ahovan new Caravansary is square. 4 Iwans are located in four sides and one of them is a corridor consisting of a tall dome and this Iwan is one Zare higher than 3 other Iwans. Caravansary Hojarat are 32 and in each angle there are 3 Hojre, behind of Hojarat there are overall stable. The length of Caravansary is 55steps and width of 50 steps. The advantage of this Ribat is that outside and inside, there is brick cutter. Above the portal of Ribat there is excellent marble and above the stone is a smaller marble and on the upper stone with embossing, in the third with a special handwriting some poems are written about the construction of Caravansary. The line and craving of this stone is excellent. Ahovan has a series of Ghanat and there is not village and its height from Mashhad is 750 Zare. Ahovan Shah Soleimani Caravansary is consisting of a big rectangle yard with the length of 40 m and width of 32 m with 4 plans. These four plans built to the north, south, east and west are a rectangle with the length of 5.50 m and width of 4.75m. in the entry gate is from the south and it has 5 m width. In this Caravansary there are totally 24 rooms around the yard with the dimensions of 3.35 and 2.90 respectively. The outer plan of Caravansary is square and each angle of it is 74 m. In the building of this Roba, construction materials such as brick, stone and gypsum are used (Haqiqat, Abdolrafi, 2000).

In historical and political –economical geography, the areas of this land, ways and accesses of between cities and important economical zones are explained in historical periods, the places and structures meeting the demands of Caravans are also mentioned. The direct relation between the performance of these places and importance of each way the type of economical interaction and Carvanian is evident. Rey-Khorasan road in the regions about Garmsar to the region about Shahrud, is the only trade-economical zone from west to east and variety of Caravansary in terms of the type of goods and exchanges and variety of social positions of passersby are inferred. It seems that Caravansaries of this zone can give service to each demand.



Ahovan brick Caravansary plan (Source:Aouthor)

The application of materials in the construction of Ahovan brick Caravansary

The investigation of brick application in construction of Ahovan brick Caravansary.

The most important materials in this building is brick. All the joints and arches of this building are made of brick and all the repairs are also of brick. The important point in this building is the application of good bricks by firing bricks. We know that different kinds of bricks are made in traditional brick kilns and only yellow, pink and yellow-green are used and other bricks of the kilns are wasted.

Internal space of Iwan and Brick Caravansary hojre (Source: Author)

But due to costly production of brick in older buildings, most of the kilns products were used and the problem of wasted bricks was removed by thick mortars. In Ahovan building different kidns of bricks are used but considering apparent investigations, the major construction bricks are good and yellow bricks. It seems that other kinds of bricks including red brick, green or brown bricks are also used but they have good bricks and the quality of the selection of brick materials are different. In Ahovan Caravansary considering the apparent studies, 5 kinds of bricks in terms of color are used.

1. Yellow brick
2. Green brick
3. Pink brick
4. Red brick
5. Brown brick

Variety of different colors in Ahovan Caravansary bricks (source: Author)

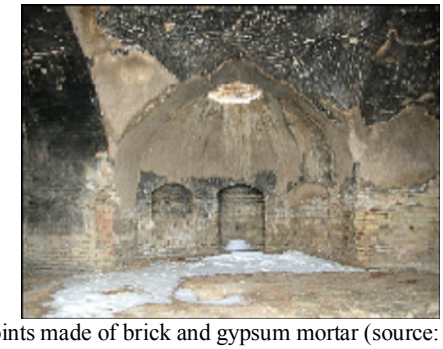
In terms of grading and texture, there is no different in bricks. The soil of different bricks in this building are sieved and coarse grains of talus materials are seen less among bricks. Normally there is great difference between green brick and red brick. Green brick has dense texture with limited, big and small pores. But texture of red brick and brown is totally uniform without stability and uniform porosity. The important point is that increasing moisture of the foundations, destroy red and brown bricks.

Destroyed bricks in plinth of a wall due to humidity penetration (Source: Author)

Using brick for building joints

Full construction of Ahovan is made of brick

Building joints are used. In construction of the joints of this building, except brick and mortar, other materials are not used.



The joints made of brick and gypsum mortar (source: Author)

Using brick for the construction of arches

In this building good bricks are used for the construction of different kinds of arches. Normally in valuable buildings, red brick is not used for building arches.

Construction of different kinds of arch (Source: Author)

Using brick for the construction of brick covering.

Example of brick covering of roof (Source: Author)

The brick is used for covering roof. Traditionally, clinker brick or green brick are used for paver because they were more stable.

The investigation of mortar application

By brief look at this construction and by apparent observations in different parts of Ahovan Carvansaries we find that there are various mortars in terms of color

The investigation of using gypsum as mortar

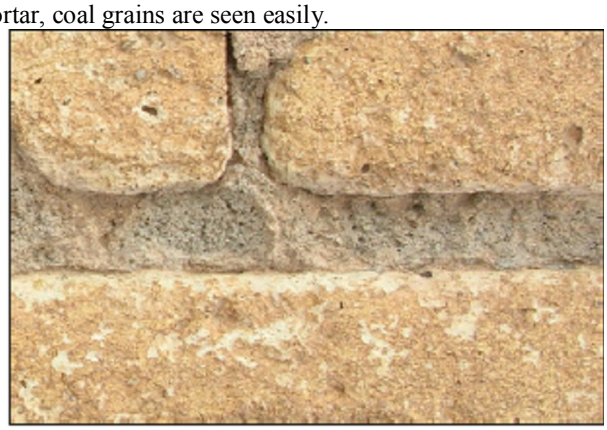
a. White mortar and with different grading: This mortar has the highest volume of Caravansary mortar. Normally, on the outer level of this mortar there is a fine layer of dust and it can be said that mortar color is changed into grey. But we should consider that to see the real color of the mortar we should scratch it to make the surface layer clear and to expose the color of mortar. This mortar is stable and keeps its adhesion. But in some cases exposed to moisture, it is changed.

Example of white mortar (Source: Author)

b. Grey mortar: in collapsed mullions of this building, there is a kind of grey mortar and the reason to change color is the existence of more soil in mortar structure.

An example of grey mortar (Source: Author)

c. Grey mortar: Other kind of mortar that has less volume in comparison with other mortars is grey mortar. Among the texture of this mortar, coal grains are seen easily.



Example of grey mortar (Source: Author)

d. White mortar with fine and homogenous grading: In Ahovan Caravansary building, mortar texture variety in addition to color diversity, the mortar of this construction is consisting of different grading. This mortar is used in grouting and calking. Namely, at the roof of this building this mortar is used for filling the joints of roof bricks.

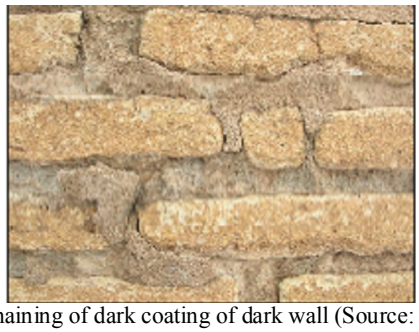
Example of white mortar with fine grading (Source: Author)

e. Red mortar with different grading: This mortar is used in a small part of this building and red mortar is observed in the holes.

The remaining of dark coating of dark wall (Source: Author)

The investigation of gypsum as coating

Dark mortar with fine and uniform grading: This mortar is used for surface coating and in the western yard some examples are seen.



The remaining of dark coating of dark wall (Source: Author)

Damages

The factors exposing erosion or destruction are including: human factors, ecological or biological, weather and climate. Also the destruction and erosion roots in Ahovan Caravansary building.

1- Using the building more than its expected life, any building is designed more or less for a limited life span that can vary from 10 years to centuries. These buildings remained beyond their expected life. This Caravansary dates back to 400 years and erosion and destruction is a common thing.

2- Human direct destruction factors: The presence of destructive human factor, unsuitable changes without considering the type of structure and previous performance caused many damages in the building.

3- Materials oldness and the effect of weather, oldness of the materials makes the stability weak and results into erosion.

4- Humidity amount, continuous changes of temperature is the factors weakening the stability of these materials.

5- The lack of enough protection of the building exposed to erosive factors hazard and it is regarded as other factors of destruction in the building.

Conclusion

To be honest and having a deep attitude, the requirement to repair or reconstruction of special buildings are due to the values of the history of the building- reflecting the building beauties- considered as cultural and social representation- a national monument, global work and they are turning point of emotional links of citizens (Falamaki, Mohammad Mansur, 2008).

Protection of valuable historical buildings and giving new use considering the temporal and place location can be a considerable help to the cultural development (keeping historical-cultural origins), economy and tourism. Some buildings such as Ahovan stone Ribat and brick Caravansary of Ahovan and most of the other historical buildings in case of not being protected will be collapsed. According to the current studies cultural facilities of Silk Road is having high capabilities for cultural tourism industry development and by considering some works as two mentioned buildings of Ahovan (In Semnan) in some regions of Iran located in the route of this road, these buildings can be repaired and a valuable image of culture and civilization of this land and Iranian native architecture and increasing general knowledge are presented.

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