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*In the name of God*

**Dr. Mechtild Rössler,**  
Director  
World Heritage center

**Subject:** Submission of requested reports regarding the  
*State of Conservation report of "the Persian Qanat" and "Susa" World Heritage Sites*

**Dear Ms. Rössler,**

I would like to express my appreciation for the continued efforts of the World Heritage Center for promotion and preservation of WH.

Here I write to respond to the enquiries regarding State of Conservation reports of the two World Heritage Sites of "the Persian Qanat" and "Susa."

For any further information, I am at your disposal.

Please accept, your Excellency, the assurance of my highest consideration.

Yours sincerely,

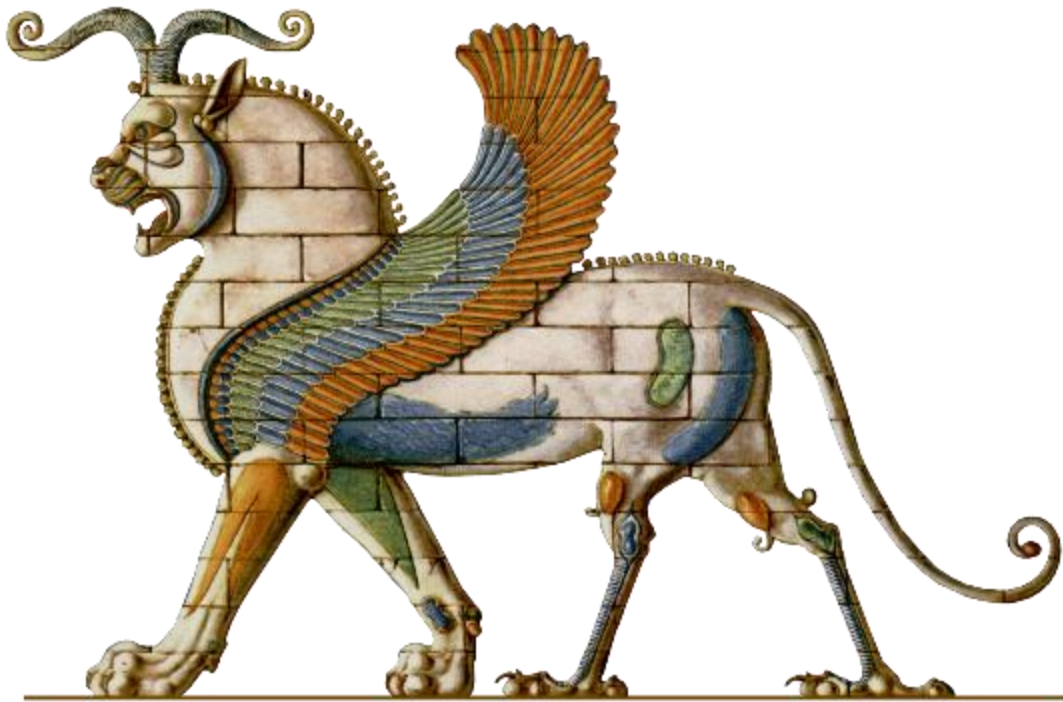
Mohammad Hassan Talebian

Deputy for Cultural Heritage & Secretary for the Iranian world heritage properties  
Iranian Cultural Heritage Handicrafts and Tourism Organization

**Islamic Republic of Iran**

Ministry of Cultural Heritage, Tourism & Handicrafts

**MCTH**



**Report on the state of conservation of Susa World Heritage Site**

*UNESCO*

*World Heritage Convention*

*Tehran 2019*

*In the name of God*

## **Introduction**

The Susa World Heritage Site, is inscribed on the World Heritage List on account of its significance based on the Criteria (i), (ii), (iii) and (iv) in the 39<sup>th</sup> session of the World Heritage committee in Bonn, Germany. The site bears exceptional testimony of several ancient civilizations from Elamite empire to Parthian and Sassanid period, as well as evolutions in Islamic era through architectural remains and material cultures. The most prominent Architectural remains are from the Achaemenid era, as the city was the wintertime seat of the Government for the Achaemenid Emperors.

**4-Continuous harmonization of existing territorial and urban planning instruments by integrating the Outstanding Universal Value (OUV) of the property into the regulations related to the property and the buffer and landscape zones;**

A standard urban planning of the city Shush was needed to take the conditions of Susa World Heritage Site, its boundaries and Outstanding Universal Values, as well as the public interests into account. Therefore, in 2014 a primary agreement was reached between Ministry of Cultural Heritage, Tourism and Handicrafts and other entities during the nomination of Susa to be inscribed on the list of World Heritage. Based on the agreement, relevant entities agreed on conducting necessary measures for matching urban planning tools with worldwide regulations for the World Heritage Sites. The extent and condition of above-mentioned measures noted in the agreement are of following table:

<b>Relevant entities and Tasks</b>	<b>Status of Implementation</b>
<b>Provincial Government, municipality and city council</b>	
Adjustment and organization of lighting in touristic routes throughout the property	Done
Adjustment and reorganization of urban furniture along touristic paths (in the core zone)	In progress
Moving asphalt factory from south of Hussein Abad lands to outside of the area and negotiation with urban management for future use of the east side of the site	In process of adopting the alternative Factory Location <sup>1</sup>
Adjustment of facades next to the site and its urban Landscape (in the core zone)	In progress
<b>Power Organization (Abfa Department)</b>	
Transferring the wastewater treatment channel in the vicinity of the site	Done
<b>Agricultural Jihad Office</b>	
Satisfaction of site regulations in regard to the so-called, “Hussein Abad” lands regarding “No change of function in farming lands”	On periodical monitoring
<b>Sports and Youth Office Department</b>	
Thorough satisfaction of regulations regarding protection of hills within the premises of Takhti Stadium	On periodical monitoring
<b>Road, Housing and Urban Development Department</b>	
Consideration of world heritage Site’s regulations in the detailed plan of Shush City	Done

*Table 1. Relevant Stakeholders and related Tasks*

On the other hand, in order to align the detailed plan of Shush City with relevant regulations for the boundaries of Susa world heritage Site, close cooperation of the Susa World Heritage Base and the municipality is considered. In this regard, a special attention is paid to the regulations of Susa World Heritage Site and its OUV in the revisions of the upstream urban plans.

<sup>1</sup> Location is going to be adopted in a way that the least environmental damage would be exposed to the local communities and the site’s boundaries and will exert the least pollution influence on historical monuments.



Figure 1. Correspondence regarding the alignment of the detailed plan of Shush City with regulations of the boundaries of Susa World Heritage Site

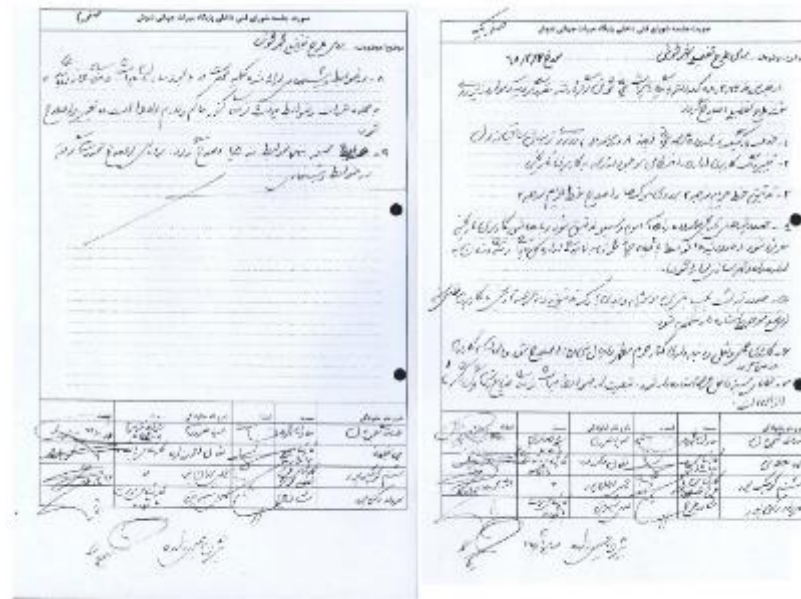


Figure 2. Meeting minute to align the detailed plan of Shush City with regulations of the boundaries of Susa World Heritage Site

In order to review consistent interaction and effective alignment between regional and urban planning tools used in the boundaries of Susa World Heritage Site, a meeting was held between Susa World Heritage Base and Susa Municipality. In this meeting, it was concluded that officials of municipality should deliver the list and details of all future projects of the entity for further analysis and feasibility study to the WH base so that their alignment with regulations of the boundaries of Susa world heritage site could be ascertained. After review and feasibility study, the WH base will provide its viewpoints on those projects which might disrupt the integrity and

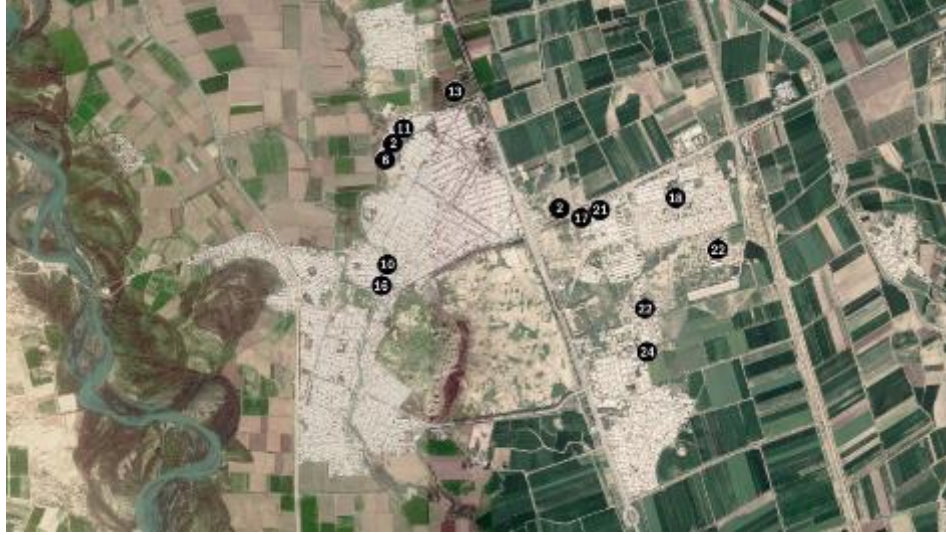
authenticity of Susa World Heritage Site and the further suggestions for adjustment of projects to the regulations of the World Heritage boundaries will be introduced.

### 5. a- Continue defining indicators to measure the effectiveness of the inter-institutional agreement

In order to monitor the effectiveness of inter-institutional agreements, paying attention to significance of promoting local quality of life, creating constructive interaction with local community and other governmental entities, developing tourism infrastructure of Shush City, certain indicators were developed to monitor the inter-institutional agreements and determine their effectiveness at urban level.

Row	Commitments noted in Agreements	Monitoring Tools	Duration
<b>Duties of Provincial Government, municipality and city council</b>			
1	Adjustment and organization of lighting in touristic routes throughout the property	-Field Visit -Statistical Data	6 months
2	Adjustment and reorganization of urban furniture along touristic paths (in the core zone)	-Statistical Data	3 months
3	Moving asphalt factory from south of Hussein Abad lands to outside of the area and negotiation with urban management for future use of the east side of the site	-Field visit -Archival images -Aerial and satellite images -GIS	6 months
4	Adjustment of facades next to the site and its urban Landscape (in the core zone)	-Related regulations and rules -Field visit -Archival images	3 months
<b>Commitments of Power Organization (Abfa Office)</b>			
5	Transferring the wastewater treatment channel in the vicinity of the site	-Field visit -Archival images -Aerial and satellite images -GIS	1 Year
<b>Commitments of Agricultural Jihad Office</b>			
6	Satisfaction of site regulations in regard to the so-called, "Hussein Abad" lands regarding "No change of function in farming lands"	-Field visit -Aerial and satellite images -GIS	6 months
<b>Commitments of Sports and Youth Office</b>			
7	Thorough satisfaction of regulations regarding protection of hills within the premises of Takhti Stadium	-Field study -Aerial and satellite images -GIS	1 Month
<b>Commitments of Road, Housing and Urban Development Office</b>			
8	Consideration of world heritage Site's regulations in the detailed plan of Shush City	-Participating in relevant expert meetings, monitoring the satisfaction of relevant ministry's regulations	Variable

Table 2. Stakeholders Commitments based on agreements



*Figure 3 .Location of current projects in the City monitoring periodically by Susa World Heritage Base*

On the other hand, during past two years certain projects were aborted due to their non-alignment with regulations of Susa World Heritage Site boundaries. In this regard, one could point to the following:

#### **Legal Measures to match projects with the regulation of the WHS boundaries**

The decrees issued after legal follow-ups for the past two years are:

- Negotiation on adjustment of the height of multi-storey parking lot;
- Measures to remove the asphalt covering the lands within the buffer zone of the site by and developing plans for taking the asphalt off;
- Identification of 20 historic hills in order to register them in database of Documents and Lands Registration Department within the boundaries of Susa world heritage Site.



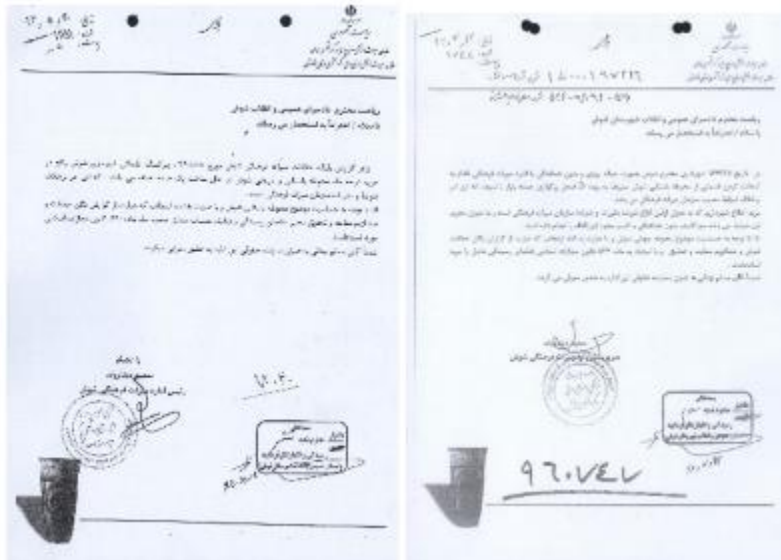


Figure 4. Written correspondence and follow-up to address the height issues of multi-Storey parking lot and removal of asphalt over the buffer zone lands by municipality

### Monitoring the comprehensive tourism plan of Shush City (historic-natural tourism)

The activities of Management and Planning Organization of Khuzestan Province, arrangements of municipality and cooperation of the Susa World Heritage Base led to official recognition of Shush as a touristic city. Then, a comprehensive study plan was developed so as to provide the condition for systematic development of the city through development of tourism. The study covers all of the boundaries of Susa WHS. Among the most significant subjects addressed in this plan, one could point to establishment of a balance between capabilities of the archeological site and tourism development goals of the city by taking Outstanding Universal Values of the site into account and satisfying regulations of the boundaries. In fact, the plan suggests that Shush City should use the attractions of historic monuments and natural landscapes to develop cultural tourism and eco-tourism. Therefore, it will contribute to protection of the archeological site, maintenance of natural attractions and development of tourism.

In this regard, the following plans will be implemented in 10 years (long term) after the plan was fully developed:

- Higher interaction between municipality and Susa World Heritage Base to solve the issues of tourism in Susa;
- Informing local community regarding benefits of tourism as an entrepreneurial industry;
- Promotion of touristic potentials of attraction of Shush;
- Developing proper infrastructures such as local accommodation, eco-tourism residences and hotels;
- Reorganization of Shavoor Riverside as one of the touristic attractions, and developing green spaces all around the city.

In the first step for the implementation of the upper mentioned plans, the Susa WHB has started with reorganization plan of the entrance area for the archeological site which will be implemented

after adaptation and approval of the Susa WH base's steering committee. The primary goal was to attain an appropriate spatial area which depicts the aesthetic indicators of the site based on the regulations of site as well as provide welfare services to the tourists and visitors under varied climatic conditions.



Figure 5. A sample of three-dimensional plans for modification of the entrance of Susa World Heritage Site



Figure 6. Design of Façade and the entrance of Susa World Heritage Site

### **5. b. Risk preparedness and integrating necessary measures in the Susa Development Plan and management framework**

Susa World Heritage Site embarked on reducing risk exposure and prevent damages to Outstanding Universal Values of the sites by using management tools, developing comprehensive

plan of risk management and adopting an interactive approach to other relevant entities. The followings are a brief report on developing the draft Risk Management Plan of the site:

### Meetings Provincial Council for Coordinated Risk Management in Shush City

In August of 2018, the meeting of Provincial Council for Coordinated Risk Management was held in which provincial and town officials of Shush participated.

In this meeting, the primary goal was announced to be prediction and prevention of damages during crisis. The officials of Shush City pointed the problems of the city, and offered their viewpoints on how to deal with them. A part of the meeting was allocated to challenges in cultural heritage and tourism sector and emphasis was put on development of infrastructure. On the other hand, cooperation of all executive bodies of Khuzestan Province to promote tourism and cultural heritage was demanded to attract investors' cooperation and support local stakeholders.



Figure 7. Agreement between mayor and the World Heritage Base on Risk management and maintaining integrity of Susa WH Site, its Boundaries and archeological ancient hills

### Development of the Draft Risk Management Plan

Considering the Shush plain in a special geographical, geostrategic and geo-politic location, it has gone through numerous crises such as 8-year war between Iran and Iraq, successive earthquakes and destructive floods. Due to these events, numerous archeological and historic sites of the region, including Susa WHS, have been damaged throughout centuries of existence. Taking into account the background of such crises in the region and probability of their reoccurrence, it was essential to develop and complete a plan for increasing the preparedness and capability of prediction in such cases and dealing with damages due to different crises. In this regard, during expert reviews, an initial scheme of short-term, mid-term and long-term plans were developed. In the following, these plans will be discussed in further details.



*Figure 8. Meeting regarding the Risk Management Plan in the Susa World Heritage Base*

## **Draft of Risk Management Plan**

### **Short-term Plans (1-year)**

- Updating the list of tangible cultural assets and prioritizing them for further safeguarding during risks and crises;
- Providing necessary equipment for preparing to deal with crisis in different areas and holding professional courses for training of special task force on using supplied equipment and ways of using them at times of crisis;
- Feasibility study of establishment of firefighting station at the access area of Susa Archeological Site;
- Enhancing security of storages of tangible historic and museum objects during crisis (in terms of structure, showcases, shelves, etc.);
- Identification of weaknesses and strengths of the WH base at times of crisis, planning to address vulnerable areas reduce and prevent possible damages and losses;
- Provide protective cover on heavy/immovable objects and/or physically vulnerable objects of museum;
- Interaction with the Executive, risk-preparedness organization in pre-crises, during crises and post crises measures to plan and take in times of need;
- Holding training courses in a national scale and use of domestic and foreign experiences for integrated management of various organizations, entities and stakeholders on account of a disaster or crises.

### **Mid-term Plans (5- years)**

- Feasibility study to attain an improved plan in order to reorganize the current storages into the standard condition for storing the cultural assets and vulnerable material cultures of the museum;
- Providing additional equipment for the risk preparedness;
- Persistence of training courses to transfer national and international experiences and knowledge on the newest risk preparedness approach.

### **Long-term Plans (10 Year)**

- Updating and reorganizing the storages as secure and safe locations of tangible historic objects during crisis;
- Refurbishment of museum according to standard and secure regulations for show-casing historic objects;
- Providing proper access for further rescue;
- Providing proper setting for moving tangible objects to outside of risk zone.

Previously, certain measures were adopted for effective protection and maintenance of monuments and objects at times of crisis. In the following, some of those measures will be discussed briefly.

## **6. State of Conservation (SOC)- implementation of the recommendations adopted in previous WHC sessions;**

### **Securing and Optimization of Storage**

The current storage areas for maintaining cultural assets are located in two buildings of garden-museum. Sufficient space for maintenance of objects, possibility of allocating guards next to them, possibility of establishing restoration and conservation workshops, insignificant distance from museum and easy access to it, and availability of safety equipment during times of crisis are among reasons behind the choice of these buildings.

During past few years, a part of building no.1 (non-historic building) was improved and equipped. In this working season, the remaining part of the building will be refurbished and secured.

- Evacuation of rooms and saloons and removing unused materials and tools;
- Blocking of openings towards the outer facades;
- Substitution of old doors with secure ones;
- Modification of electronic and electronic equipment;
- Improvement of inner wall-coating.





Figure 9. Plan of storage no. 1 and no. 2



Figure 10. Evacuation of Storage Spaces for Preparation and Maintenance of Historic Objects



*Figure 11. Preparation of Existing Storage areas of Garden-Museum for Maintaining Historic Objects*



*Figure 12. Reorganization of Storage areas Equipment*

## **Reorganization of Cultural Objects**

Reorganization of cultural objects is a consistent measure implementing periodically. Previous studies and excavations, surveys in order to verify the current condition of objects and their maintenance, and review of damages to objects, etc. are among major reasons of reorganization of storage areas. The reorganizations during past two years were done in two steps.

### **I- Transfer of Items from Storage areas and Rooms of Castle to Secure Storage areas**

In this step, a number of items were transferred to another place since the previous storage areas were in unsatisfactory conditions. During transportation, certain measures such as cleaning and removing dust, dealing with termites, primary counting, division of organic materials and mineral ones, and primary identification of damaged items were carried out. Based on above-mentioned considerations, some of the items were transferred to a more secure and optimal area.





## II- Registration of Cultural Assets

In this step, the following phases and goals are pursued to optimize the storage conditions and provide the possibility of visit for the researchers:

- Exact counting of items;
- Matching items with the registration specifications of each in the database, (number and date of excavation with numbers on lists);
- Registration in national database system called, “Jam”;
- Development of specification cards and complete dossiers for registration of outstanding cultural items in the National Heritage List;
- Designing and publishing catalogues and brochures;
- Determination of protection and restoration priorities.



Figure 13. Experts' Activities to Register Items in Jam Database

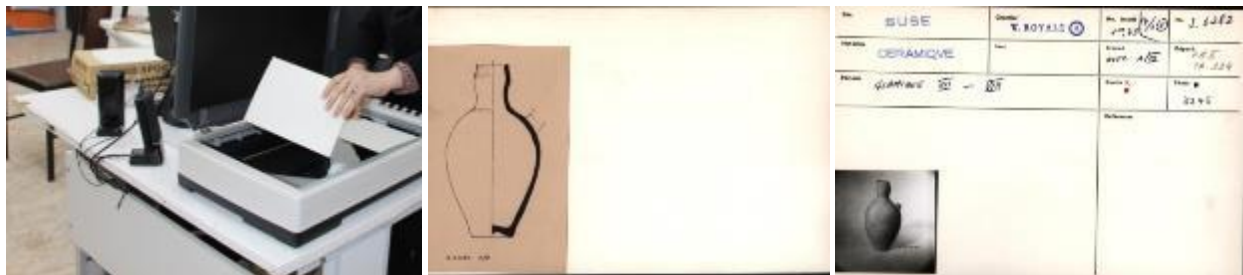


Figure 14. Scan of specification cards containing information of objects to be further included in reorganization of storage spaces and registration of objects in Jam database



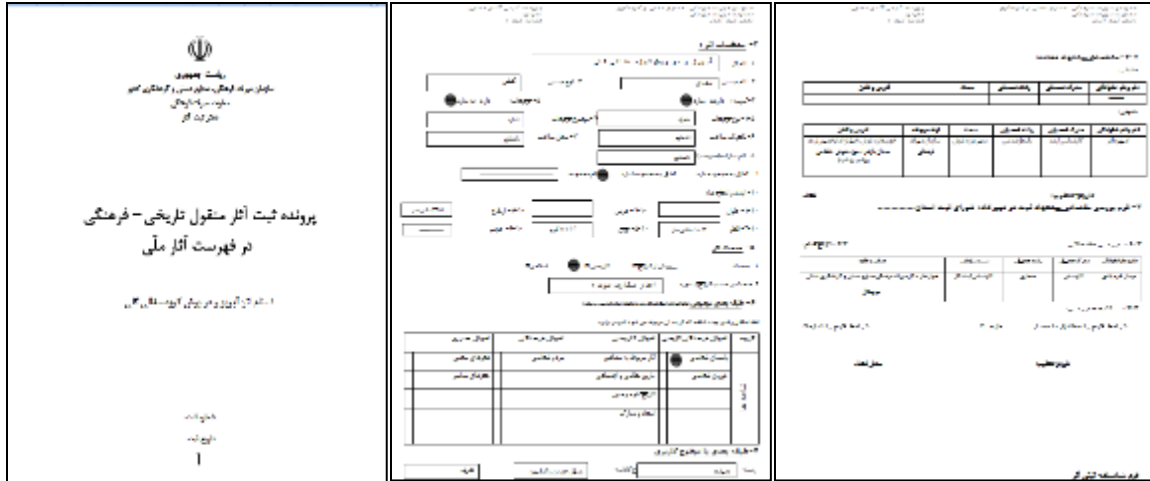


Figure 15. Development of specification cards and complete dossiers for registration of outstanding cultural items in the National Heritage List

### Completion of Identification of Archeological Hills based on Preventive Plan Approach

As a preventive measure to preserve the hills in and out of the site boundaries (the entire Shush City) and in order to realize organizational tasks, the map for exact location of archeological significant hills was updated. The map was developed by using literature review, aerial and satellite images, archive maps, and field surveys and is developed in GIS software.

Copies of the map were sent to executive and monitoring entities such as Municipality, Natural Resources Department, Environment Protection Agency, Department for Roads and Urban Development and the protection guard division of the Ministry of Cultural Heritage, Tourism and Handicrafts for further monitoring of the hills.

For instance, these maps were beneficent on account of the flood of March 2019 as preventive measures during times of crisis and used as the initial setting for conducting measures to prevent the flow of flood toward risk-exposed archeological hills. Also, used in monitoring processes to prevent any disturbing action of machineries, which were developing obstacles for flood flow, within the hills.



Figure 16. Correspondences to forward maps of archeological sites to municipality and Risk management council of Shush City

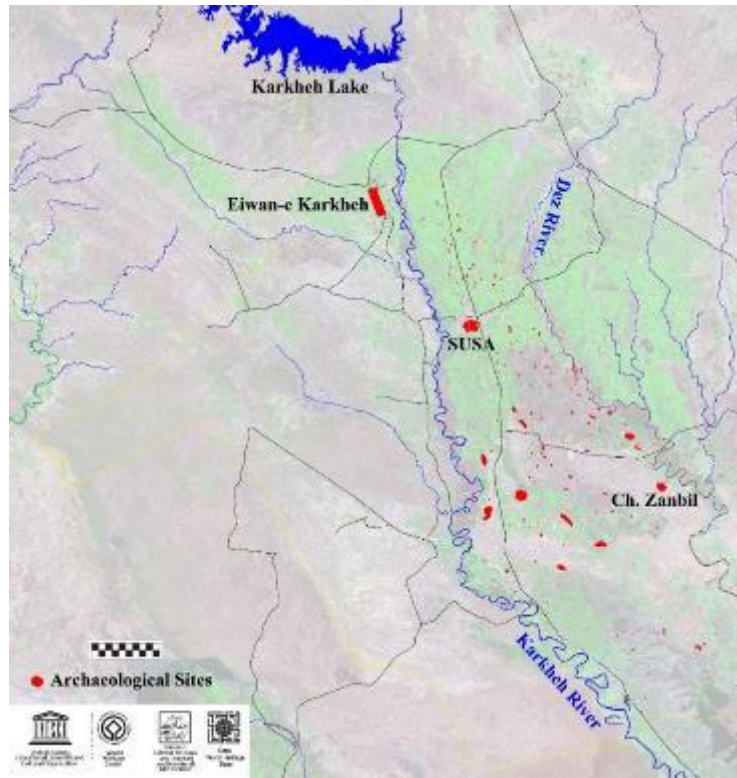


Figure 17. Location of Ancient hills and excavated sites in the Shush city vicinity

## **Other measures of Susa World Heritage Base related to the priorities of the Executive Calendar**

### **Archeo-geophysics Analysis of Susa World Heritage Site**

Archeological studies of Susa World Heritage Site through magnometric methods was done in 2018. The analysis and studies covered a part of acropolis hill, parts of Shahi City (A), southern side of the urban hill called Dan Juan, and the premises of Sanatgaran town (northern side of mosques built during first centuries of the emergence of Islam). The current reviews and studies only cover 360 ha of Susa WHS due to the vast area of the site. Doing thorough analysis of the whole site will proceed in the following years.

The results of the upper-mentioned project is published and is available in the documentation center of Susa World Heritage Site.



Figure 18. Geophysical project on parts of acropolis hill (right) and Sanatgaran City (left)



Figure 19. Location of geophysical surveyed spots within Susa Archeological Site

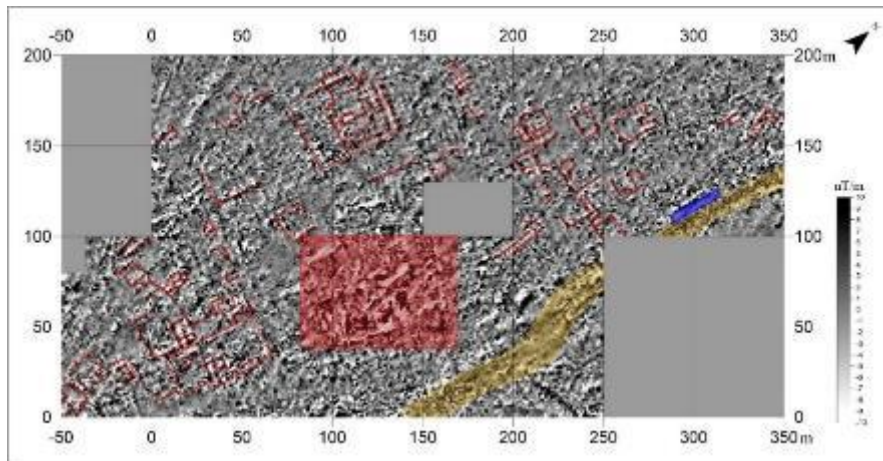


Figure 20. Geophysical map of Sanatgaran City (the zone highlighted in red signifies excavated regions and the red lines refer to anomalies caused by buried brick structures)

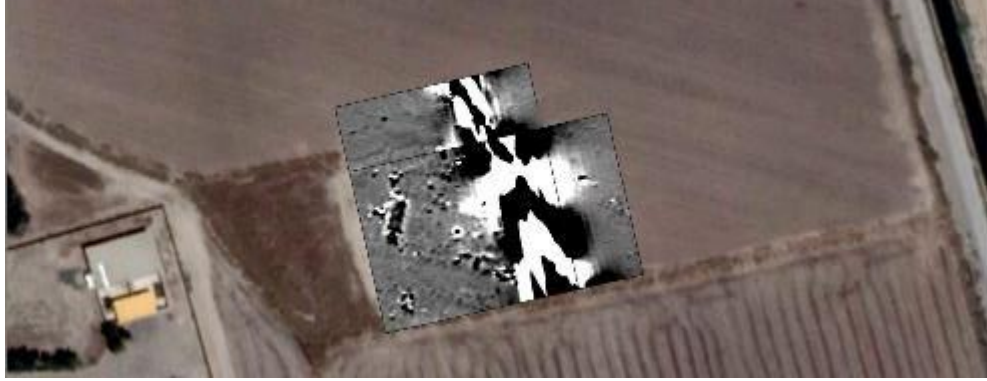


Figure 21. Magnetic Map of Ayadana Hill

### Study Plan for Conservation and Restoration of Castle

Susa Castle is located in northern corner of acropolis hill. It was built during 1897-1912 by Jacques de Morgan. The castle was built without a foundation on archeological remains and it was damaged during 8-year war between Iran and Iraq. These factors caused the structure which was made of mud bricks to be more susceptible to different factors such as natural disasters. The earthquakes of 2014 and 2017 caused significant damages to different parts of the castle, especially its western section. Considering its structural and physical instability, a survey plan for protection and restoration of the castle was drafted. As a result, thorough studies on the site was conducted and for restoration, scientific principles and restoration guidelines were followed. Along with these studies, exact drawing of façade and horizontal and vertical sections of different parts were developed, the plans of different sections were prepared and all of the damages were spotted on them. In the plan, necessary details and calculations for further protection of the site were considered.

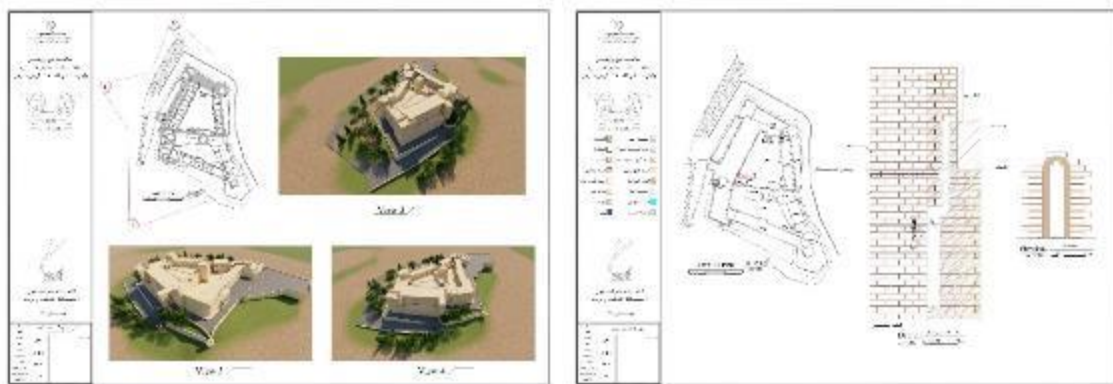


Figure 22. Samples of study plans for the restoration of castle

### Study Plan for reorganization of the site edges of the Property

In order to maintain integrity and authenticity of Susa World Heritage Site, a better association between the site and urban fabric, and create satisfactory reorganization of the Urban Landscape, a plan for reorganization of edges of the core zone was developed. Based on previously conducted

studies, reorganization of borders of the property by taking following measures could contribute to realization of above-mentioned goals:

- Reorganization and improvement of trees state at border of property;
- Alteration of the Urban Vicinity in between the archeological site of Susa and the palace of Ardashir II Palace (with a 350m distance) into a low-traffic slow-moving path;
- Reorganization of urban facades, especially within the neighboring streets that are adjacent to borders of the property;
- Demarking borders of the property by benchmarks with the emblem of world heritage and the logo of the ministry of Cultural Heritage, Tourism and Handicrafts;
- Developing tourism infrastructures such as lighting, furniture, etc. according to the qualities of its surroundings and urban landscape.

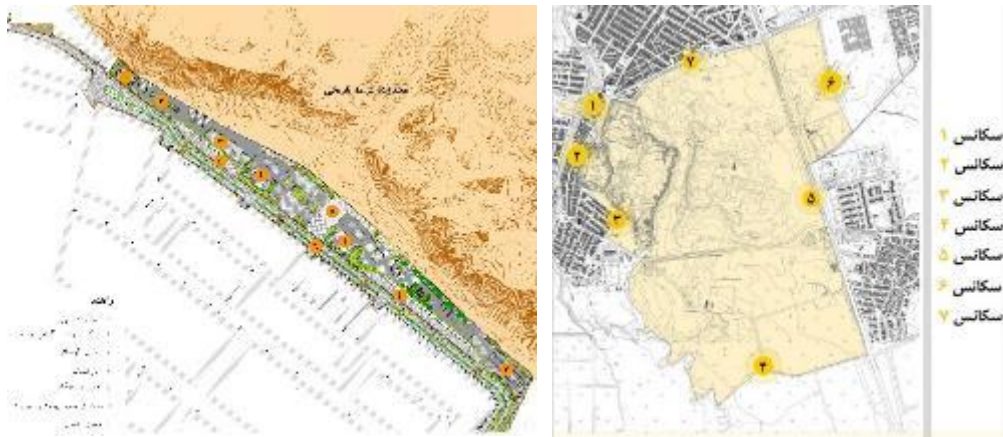
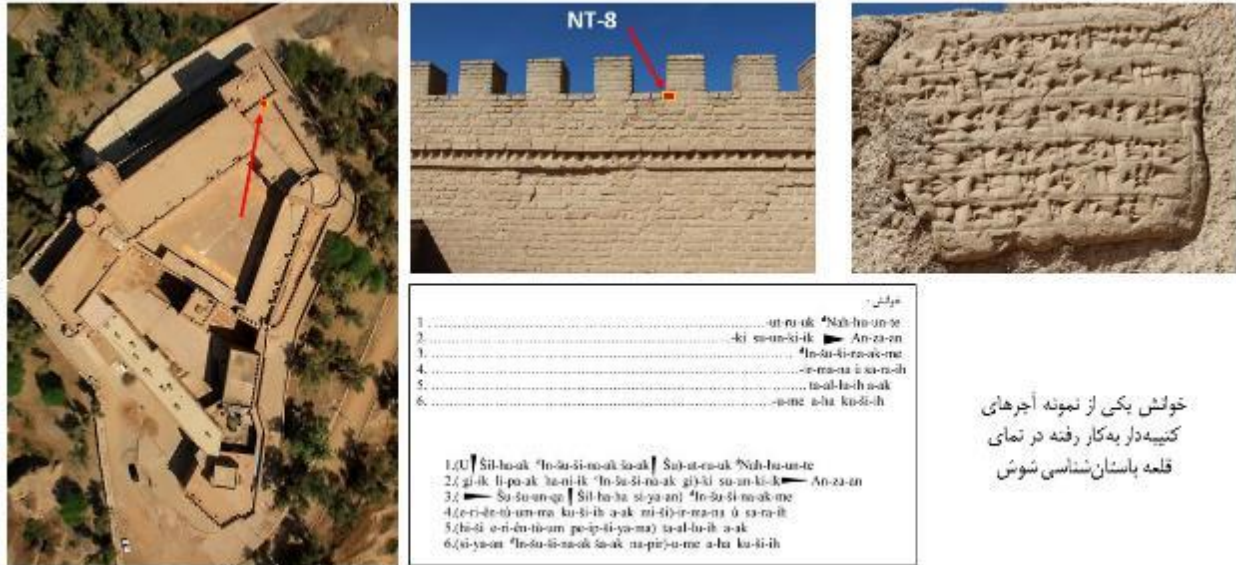


Figure 23. An instance of details of the study plan for reorganization of borders of property

### **Second Phase of Identification and Interpretation of Inscriptions on Façade of Susa Castle**

Susa World Heritage Base has implemented the second phase of documentation and study of brick inscriptions of the property during 2017-2018. In this plan, about 300 bricks and broken bricks with Cuneiform, Elamite and Akkadian inscriptions were identified, documented and interpreted.



## Second Phase of Identification of Hills inside of Site and developing their dossiers for further Registration of them on the National Heritage List

In winter of 2018, a new phase of registration of archeological hills started in Shush City. In terms of registering archeological hills of Shush which is made up of four steps of field visit, literature review, provision of drawings and legal affairs, the first step consisted of developing registration dossiers for 25 archeological hills by experts of Susa World Heritage Base are in progress. In the next phase, dossiers of 40 other hills will be developed for registration.

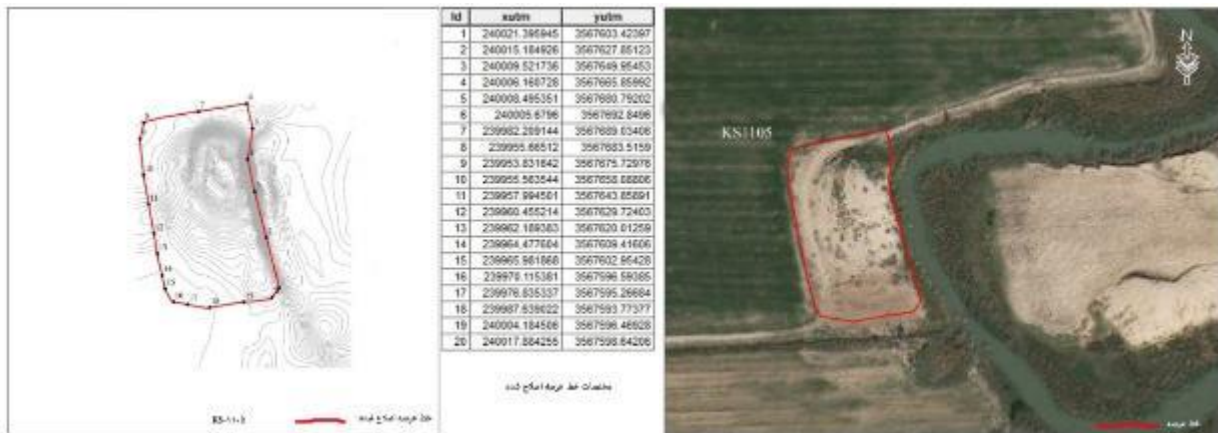


Figure 24. Topographic map and satellite image of one of the archeological hills being registered

## Cooperation with Scientific Institutions and Universities

Susa World Heritage Base pursue the following goals to conduct its research commitments and establish communication with major universities and scientific centers of Iran and worldwide:

- Developing inter-organizational cooperation in regards to the scientific and research activities and plans;

- Providing necessary means for developing scientific and research facilities with major scientific centers;
- Identification and introduction of potentials and capacities of the WH base in terms of development of research-based cooperation;
- Signing memorandum of understanding and agreements on educational, research and technological affairs with scientific centers.

One of the most significant reasons behind increasing engagement of researchers is creating the proper condition for accessing archeological materials and data in archeology museum and storage areas of Susa WHS which had been optimized in past few years. Researchers can use the materials and data in their research and restoration activities. On the other hand, the center facilitates administrative affairs by providing certain services such as supply of laboratory tools. This way, the center creates a relatively ideal setting for promoting engagement of the professionals.

### Training Workshops

Susa WH Base has arranged for numerous expert meetings and workshops some of which will be pointed out in the following:

- Integrated Pesticide Management Workshop;
- Scientific Conference of archeology day;
- Training workshops for restoration and protection of archeological sites in cooperation with Jondishapur Polytechnic University of Dezful;
- Workshop on training and familiarization of children with the specific potteries of Susa;
- Scientific workshop for academic studies in cooperation with Archeology Department of Shush University;
- Holding meetings and exhibitions of objects from the Islamic era in Susa Museum;
- Holding Smile Photography exhibition in the presentation hall of Susa WHS;
- Holding scientific meetings and introduction of Chogasofla grave in Susa Museum.





Figure ۲۵. Promotion of some workshops and meetings



Figure ۲۶. Arranging training workshops for the tour guides- cultural heritage friends' forums



Figure ۲۷. Arranging scientific and training programs for students





Figure 28. Arranging handicraft and traditional Iranian lifestyle exhibition



Figure 29. Gathering of cultural heritage friends in 18th April (the International Day of Monuments and Sites)

### **Design and Development of Susa WH Base's Website**

Considering the Outstanding Universal values of the Susa WHS, the following website was developed to enable maximum cooperation with the local community and other stakeholders:

[www.susawhb.com](http://www.susawhb.com)

The website consists of administrative, executive, exhibition and events, presentation, scientific, educational, news, tour guide and achieve sections.



Figure 30. Design and development of website for Susa WHS

## Developing and publishing brochures for presentation of Susa World Heritage Site in Persian and English Languages

In order to inform local communities and tourists on the Outstanding Universal values of Susa WHS, developing and publishing paper brochures, virtual brochure and descriptive posts in Persian and English has been pursued in the past two years and early into this year by the WH base of Susa. In this regard, the Susa WH Base in cooperation with private sector, in order to engage various stakeholders to promote their national and Worldwide values and participate in the capacity building activities of the base, produced a number of publication and distributed them with historical data and graphical specifications, Some of which are uploaded on the website for easy access of the audiences globally.



Figure ۳۱. Distribution of brochures among the visitors of the site

In addition, numerous executive activities have been carried out for the past two years to resume the activities of previous years. These activities are categorized into “emergency measures” and “infrastructural activities”.

### A-Emergency Measures

Protective-restorative Measures in this period of time consist of:

**1-General Cleaning:** The measures, according which the disturbing factors in the Landscape of the property are omitted. Among such factors, one could point to excessive growth plants which

damage the structure of historic architectural remains and exert negative effect on the landscape of the property.

Dealing with vegetation to prevent from damages to architectural structures and archeological layers has been carried out in the past two years, like the years before, within the Ardashir Palace, Apadana Palace, the eastern gate of Apadana Palace, Hadish, the fifteenth city and Achaemenid village. However, the most noticeable case is removing *Prosopis Fracta* trees from large eastern trench of Apadana Palace. In this section, the climatic condition provided the setting for outgrowth of the specie so that some trees grew as high as 7m.



Figure 32. Outgrowth of plants in Susa World Heritage Site

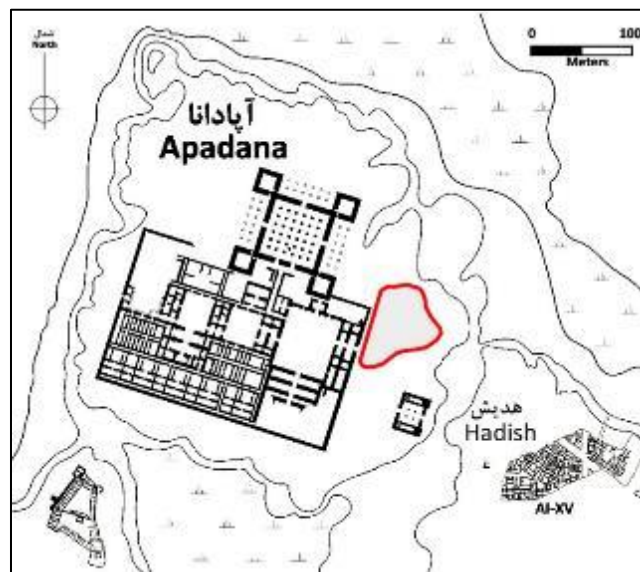


Figure 33. Location of large eastern trench of Apadana Palace



*Figure 34. Removing vegetation from large eastern trench of Apadana Palace*



*Figure 35. Removing vegetation of Apadana Palace*



*Figure 36. Removing Vegetation of the columned-hall of Apadana palace*



*Figure 37. Condition of columned-hall of Apadana palace before and after the vegetation removal*





*Figure 38. Removing dried vegetation around the mud-laid platform known as high platform of Acropolis hill*



*Figure 39. Removing vegetation within the large trench of Shahi town (fifteenth town)*

### **Re-coating Protective layers by Kahgel (mud and straw mixture)**

Considering the climatic condition, the general landscape of the archeological site of Susa and architectural remains which are mostly made of clayey materials or mud bricks, a protective layer of mud and straw mixture are applying as a final coating. Almost all architectural remains of the site have been coated by the mixture so as that they can be protected better and a publicly satisfactory view of the property can be presented. In this regard, one could point to coating of architectural structures of Ardashir Palace, eastern gate and large trench of Shahi city (fifteenth city).

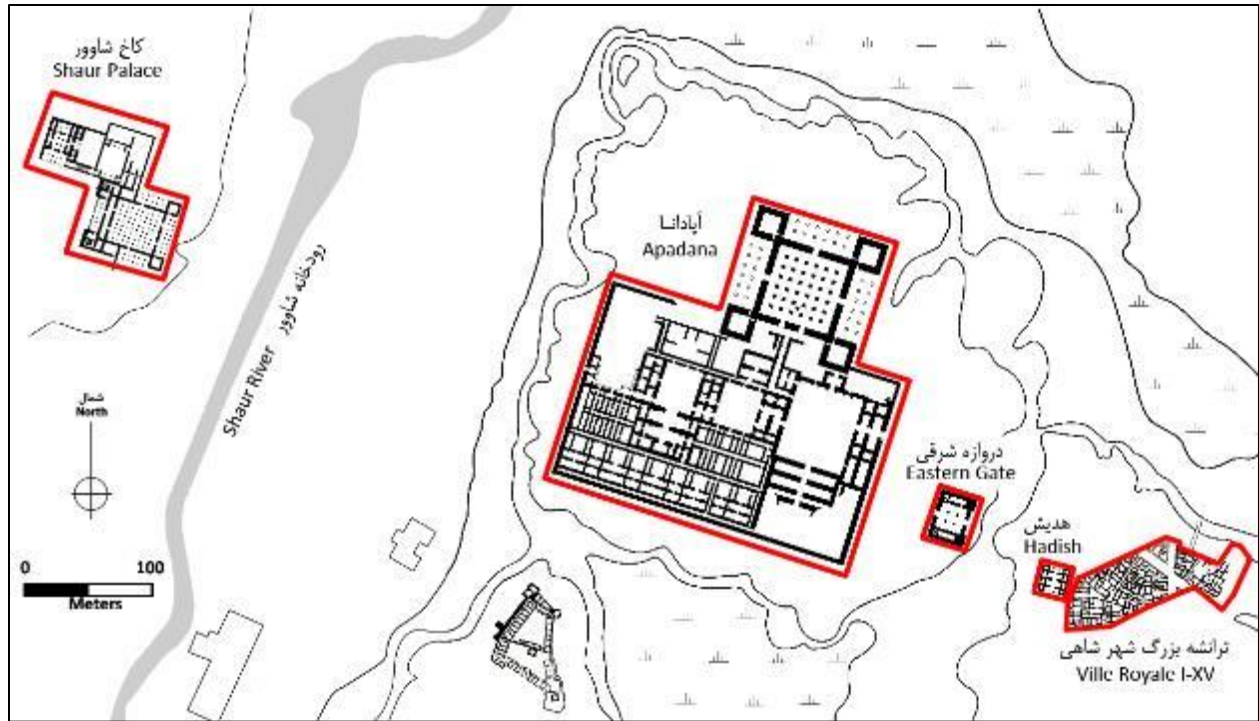


Figure 40. Operating workshops for restoration with mud-straw mixture and mud-brick within the property



Figure 41. Mud-straw coating of remains in adobe-made pathway between Apadana Palace and Hadish



Figure 42. Mud-straw coating of remains of the eastern gate of Apadana



*Figure 43. Mud-straw coating of architectural remains of Apadana*



*Figure 44. Mud-straw coating of architectural remains of Shavoor Palace*







Figure 45. Mud-straw coating of architectural remains of Hadish

### Addressing Local Damages and Destructions

Among climatic factors, rainfall is the primary factor causing local damages and destructions of architectural structures and even restored elements in Susa Archeological Site. Fifteenth city, Acropolis and Hadish suffered the most damages due to their topographic condition and special architectural plan.

### Large Trench of Shahi City (Fifteenth City)

The surrounding walls of Shahi City's trench which are, in fact, cut layers of historic walls remained and revealed during excavations. The walls are highly vulnerable to rainfall and climatic factors. They have been washed by superficial streams and mud and deposits flow into the trench. Accumulation of superficial streams in the trench cause damages to mud-brick structures which are remains of an Elamite city. After the last rainfall and reduction of humidity levels behind the walls, the restoration and removal of debris carried out as of the following procedure:

- Collecting deposits and mud from the bottom of walls;
- Laying mud-bricks based on historic plan;
- Use of mud-straw coating to create protective layers which generally appeal the general view of archeological site.

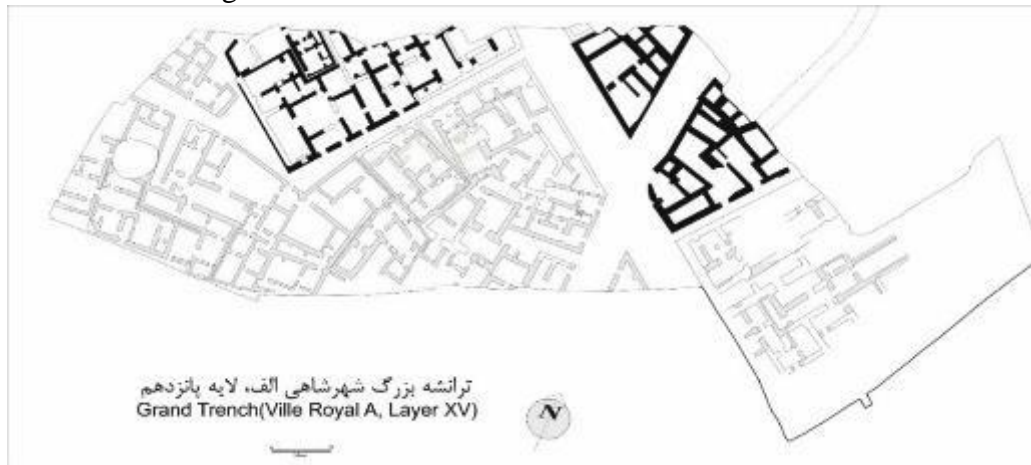




Figure 46. Restoration Measures in Large Trench of Shahi City (Fifteenth City)



Figure 47. Restoration of water-washed edges of large trench of Shahi City (Fifteenth City)

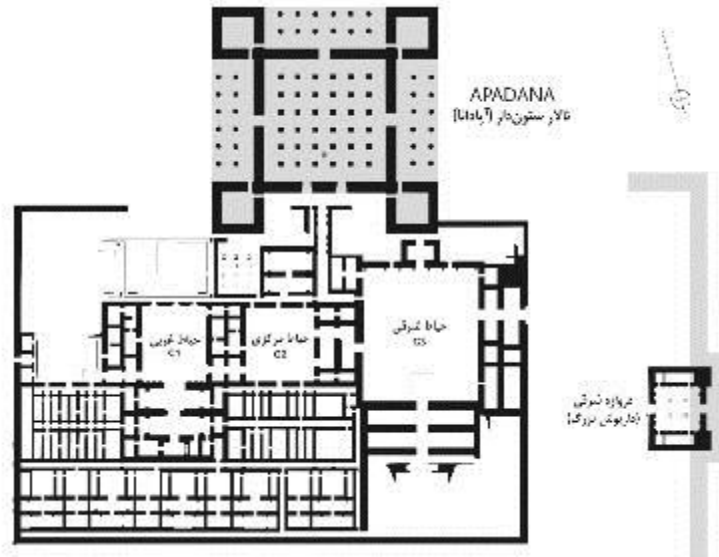




Figure ۴۸. Local restoration of eastern gate of Apadana Palace

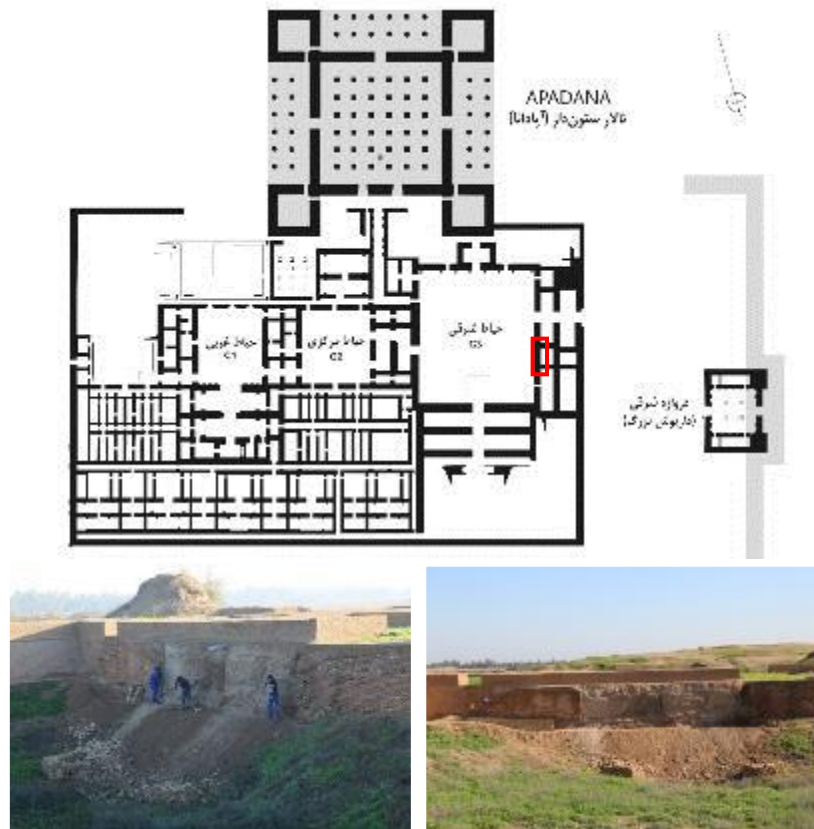


Figure ۴۹. Before restoration (right) and during restoration (left)



Figure 40 . Local restoration and reinforcing walls of trenches made in yards of Apadana Palace- After restoration



Figure 41 . Protective-restoration Measures on the northwestern tower of Apadana Royal Palace

### Restorations of Castle

According to the conservation study plan of castle which carried out during current working season, section with minor local damages which were not structurally vulnerable identified and restored. In this regard, one could point to adjustment of coating finish and the reorganization of the room under pergola, dining room in the second yard, as well as improvement of some gutters as well as reorganization and restoration of the external room of the castle called “Girshman Garage”.

Over the years, certain parts of external wall in western corner of the structure had been damaged which are restored and the vulnerable bricks substituted at heights.



Considering the historic qualities of the castle, the structure evidently required periodic restorations. As a result, restoration team of the Susa World Heritage Base follow daily and weekly measures based on a pre-adopted plan.



*Figure 52. Periodic Restoration of the Castle*

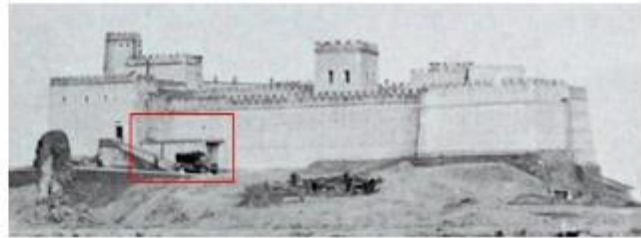
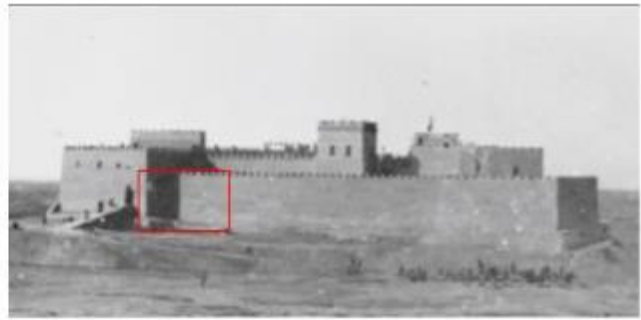
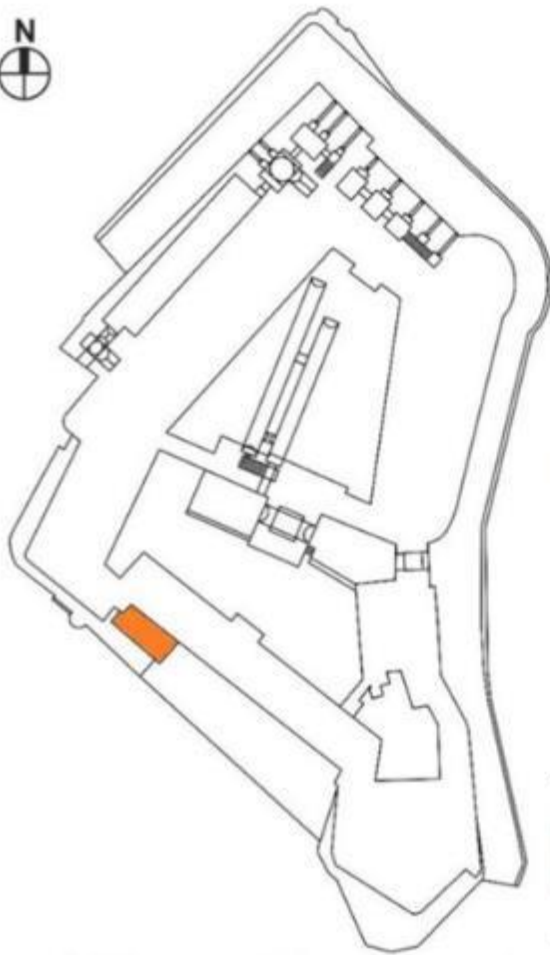
### **External Room of Castle (Girshman Garage)**

At the southern side of the castle and next to southern gate of it, there is a room, a wall of which contains about 300 bricks with Elamite inscriptions, known as Girshman Garage.

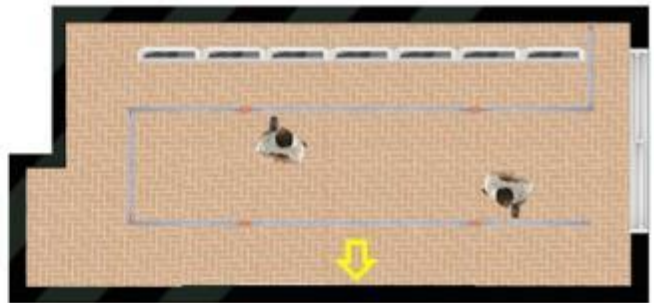
The room has for long been used as a storage area for maintaining additional and excess equipment. The brick inscriptions in the room made the steering committee to embark on measures to protect the inscriptions, conduct restoration measures and use the room as an exhibition area.

The executive steps for restoration of the room are:

- 1- Evacuation of unnecessary tools and building materials;
- 2- Restoration of the roof;
- 3- Reorganization of the pavement;
- 4- Substitution of the deteriorated door;
- 5- Cleaning and stabilization of inscriptions;
- 6- Substitution and completion of lighting and air conditioning systems;
- 7- Designing and producing presentation signs and their installation.



دو نما از قلعه شوش پیش و پس از ایجاد گاراژ توسط گیرشمن



پلان گاراژ گیرشمن و طراحی مسیر بازدید

قلعه شوش، موقعیت گاراژ موسوم به گاراژ گیرشمن



Figure ۵۳. Initial status of Girshman Garage used as a storage area



Figure ٥٢. Current condition of Girshman Garage after restoration

## B-Infrastructural Activities

### Electronic improvement and equipping

In order to monitor the boundaries especially the museum and storage areas, the area of garden-museum, inside and outside of museum building, storage areas for maintaining cultural objects and inside and outside of the castle were equipped with CCTV cameras.



### **Improvement and Optimization of installations and utilities**

Adjusting the lighting around the castle and garden-museum, reorganization of water pool of the garden-museum and water pipes, reorganization of the network of power cables and removal of extra elements from museum façade, storage areas for maintaining cultural objects and castle, installation of water coolers in the site (garden-museum, castle and Apadana palace) are among the measures which were noted in this phase.



*Figure 44. Adjusting the lighting of museum and the property*



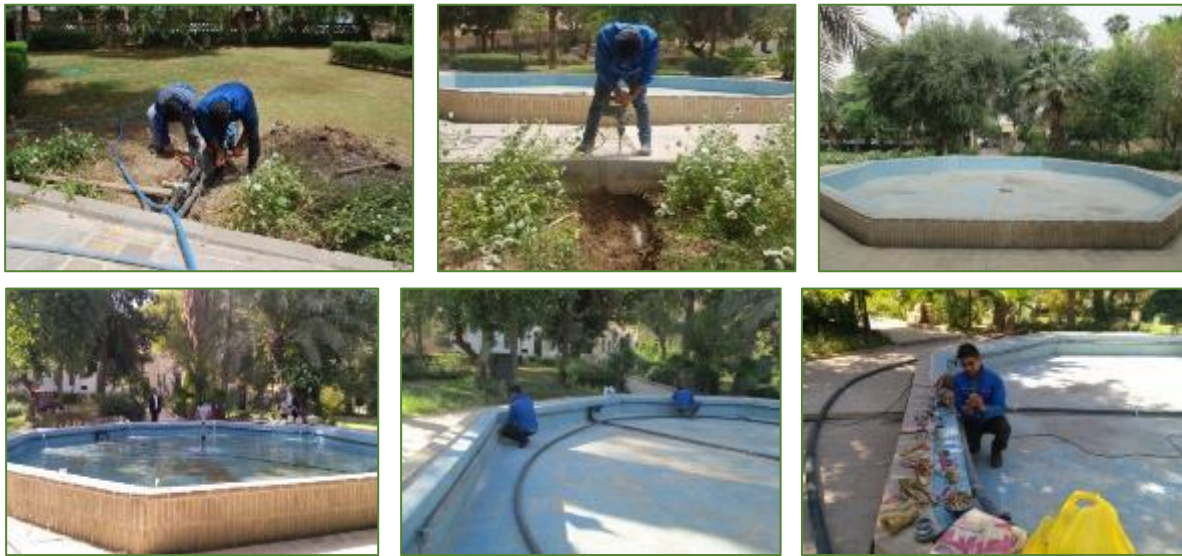


Figure 56. Reorganization of Water Pool in garden-museum

### Modification of Museum Content Plan

The Museum plan of the Site revised and designed in few steps based on the current condition of halls and in order to provide a clear vision on the evolution of Susa throughout the centuries, its expansion and survival in a 600-year period, namely from prehistoric era of 5<sup>th</sup> century B.C. to 13<sup>th</sup> century A.D.



Figure 57. Plan of current condition of Susa Archeological Museum



Figure 58. 1<sup>st</sup> alternative of the suggested plans for Susa Archeological Museum



Figure 59. 2<sup>nd</sup> alternative of the suggested plans for Susa Archeological Museum





*Figure 60. Representation of a grave dating back to 5th century B.C. in museum*



*Figure 61. Transferring pedestal of Achaemenid era from yard of castle to Achaemenid hall of Susa Museum*



Figure 62. Transferring pedestals and stone-made items of Achaemenid and Parthian era from garden-museum to the Museum



Figure 63. Installation of informative signs in the Museum



Figure ٤٤. Recreation of a Sassanid-era painting found in the large trench of Shahi City and its installation in Susa Museum

Figure ٤٥. Developing informative signs for the objects shown in the Museum

## Equipping Conservation and Restoration Workshop

The workshop is located near the storage areas where cultural objects are kept. The workshop aims to realize the following goals and plans and it fulfills its commitments to the Susa World Heritage Site:

- Identification of items which require restoration and protective measure and prioritizing them;
- Identification and separation of items based on their constituting materials and their separate maintenance in storage areas;
- Cooperation with the director of the archeological museum in terms of regulation for exhibition the objects.

In this regard, the protection and restoration workshop of the WH Base has restored 36 pottery objects, 300 brick inscriptions, 12 pieces of stone objects and inscriptions, 49 coins and 200 pieces of animal and human bones. Some of these valuable objects were put to exhibition in museum halls due to their high historical, artistic, and representative values and their alignment with content design of the museum.



*Figure ٩٤. Restoration of a historic objects*



*Figure ٩٧. Identification and separation of items based on their constituting materials*



Figure 68. Steps of cleaning and stabilization of brick inscriptions in the Girshman Garage

### Physical Protection of the boundaries

The Susa World Heritage Base has carried out a reorganizing measure in order to offer better physical protection of the Site through physically marking the boundaries by means of fences.



Figure 69 . Marking the Boundaries of the Property