STATE OF CONSERVATION OF WORLD HERITAGE PROPERTIES

Name of World Heritage property:	**Hill Forts of Rajasthan**
State Party:	**India**
Identification number:	**247rev**
Date of Inscription:	**2013**
Criteria:	**(ii) (iii)**

Introduction

Within the State of Rajasthan, six extensive and majestic forts together reflect the elaborate, fortified seats of power of Rajput princely states that flourished between the 8th and 18th centuries. The extensive fortifications, up to 20 kilometres in circumference, optimized various kinds of terrain, hilly at Chittuargarh, Kumbhalgarh and Amer, riverside at Gagron, the dense forests at Ranthambore, and the desert at Jaisalmer, exhibit an important phase in the development of an architectural typology based on established "traditional Indian principles of fortifications". The vocabulary of architectural forms shares much common ground with other greater styles, such as Sultanate and Mughal forts. Rajput style was not 'unique', but the particular manner in which Rajput architecture was eclectic (drawing inspiration from antecedents and neighbours) together with its degree of influence over later regional styles (such as Maratha architecture) do make it distinctive.

As a former capital of the Sisodia clan and the target of three famous historical sieges, **Chittorgarh** is strongly associated with Rajput history and folklore. Furthermore the sheer number and variety of architectural remains dating from the 8th to the 16th centuries, mark it as an exceptional fort in its scale and monumentality comparable to very few other Indian forts. **Kumbhalgarh** was constructed in a single process and (apart from the palace of Fateh Singh, added later) retains its architectural coherence. Its design is attributed to an architect known by name –Mandan – who was also an author

and theorist at the court of Rana Kumbha in Chittorgarh. This combination of factors is highly exceptional. Situated in the middle of forest, **Ranthambore** is an established example of forest hill fort and in addition, the remains of the palace of Hammir are among the oldest surviving structures of an Indian palace. **Gagron** is an exemplar of a river-protected fort. In addition its strategic location in a pass in the hills reflects it control of trade routes. **Amber** Palace is representative of a key phase (17th century) in the development of a common Rajput-Mughal court style, embodied in the buildings and gardens added to Amber by Mirza Raja Jai Singh I. **Jaisalmer** is an example a hill fort in desert terrain. The extensive township contained within it from the outset, still inhabited today, and the group of Jain temples, make it an important (and in some respects even unique) example of a sacred and secular (urban) fort. These properties are inscribed in the World Heritage List under

> ***Criterion (ii):*** *The Hill Forts of Rajasthan exhibit an important interchange of Princely Rajput ideologies in fort planning, art and architecture from the early medieval to late medieval period, within the varied physiographic and cultural zones of Rajasthan. Although Rajput architecture shared much common ground with other regional styles, such as Sultanate and Mughal architecture, it was eclectic, drawing inspiration from antecedents and neighbours, and had a degree of influence over later regional styles such as Maratha architecture.*
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> ***Criterion (iii):*** *The series of six massive hill forts are architectural manifestations of Rajput valour, bravery, feudalism and cultural traditions, documented in several historic texts and paintings of the medieval and late medieval period in India. Their elaborate fortifications, built to protect not only garrisons for defence but also palatial buildings, temples, and urban centres, and their distinctive Rajput architecture, are an exceptional testimony to the cultural traditions of the ruling Rajput clans and to their patronage of religion, arts and literature in the region of Rajasthan over several centuries.*

1. Response from the State Party to the World Heritage Committee's Decision, paragraph by paragraph

At the time of inscription of the property, several factors likely to affect the integrity and authenticity of the property were raised in the Outstanding Universal Value statement. These issues and the response are as follows:

Chittorgarh Fort

It was mentioned in the OUV statement that *"the wider setting of Chittorgarh is vulnerable to urban development as well as industrial and mining activities that cause notable air pollution*" and further that *"there are structures in a state of progressive decay or collapse, which are vulnerable to losing their authenticity in material, substance, workmanship and design"*

Response: The possible effects of industrial and mining activities have drawn the attention of the Hon'ble Supreme Court of India in the Special Leave Petition No 21211/2012 Birla Corporation Vs Bhanwar Singh and others. In its order, the Hon'ble Supreme Court has directed the setting up of a technical study to monitor the impact of mining on the monuments and the effect of high visitor turnouts and the vehicular movement within the property. The study was conducted by a committee of scientists from CBRI, Rourkee and IIM, Dhanbad, two premier research institutions of India. Their report is under the consideration of the Hon'ble Supreme Court and therefore is *sub-judice*. The orders of the Hon'ble Supreme Court will be implemented.

As far the second issue is concerned, Archaeological Survey of India has initiated several conservational measures to restore the decaying structures. Some of these measures are outlined in item 3.

Kumbhalgarh Fort

It was mentioned in the OUV statement that the *Kumbhalgarh Fort, there are structures in a state of progressive decay or collapse, which are vulnerable to losing their authenticity in material, substance, workmanship and design*.

Response: It is stated here that the some of the temples were restored in the past retaining their authenticity in material, substance, workmanship and design under a project few years back. Few more buildings are being to be taken up during this and in the coming years for restoration and stabilising their fabric for further decay.

Jaisalmer Fort

The stability of the overall hill on which Jaisalmer rests is vulnerable to water seepage as a result of the lack of adequate infrastructure. ...At Jaisalmer within the urban area, individual buildings are in need of improved conservation approaches..... For Jaisalmer, the Management Plan for the property along with sub-plans including visitor management, risk preparedness, and livelihood generation for the local population, will be completed by end of 2013... For Jaisalmer, there is a need to ensure the major conservation project for infrastructure and conservation of individual buildings is delivered according to the agreed timescale.

Response: A comprehensive Site Management Plan is being prepared for the site incorporating all the above concerns. Further, scientific studies are being conducted to understand the bearing capacity of the hill over which the fort is built.
An infrastructure development project was approved by the ASI to improve the sanitation, provision of water supply and distribution of electricity through underground cables. The DPR prepared by RUIDP was approved and the same is being implemented.

2. Other current conservation issues identified by the State Party
[Note: Conservation issues which are not mentioned in the Decision of the World Heritage Committee or any information request from the World Heritage Centre]
In addition to addressing the above concerns identified by the WHC, the following conservation issues have been identified by the State Party.

Chittorgarh Fort
No conservation issues, which are likely to affect the OUV of the property, were identified by the State Party. However, the following issues require immediate attention, which are also highlighted by the Committee formed by the Hon'ble Supreme Court of India.

1. Excessive number of visitors visiting the Vijay Stambh, the icon monument of this fort.
   This factor is serious considering the structural design of the structures with very narrow passage. Such heavy movement of visitors climbing the eight stories structure with very narrow staircase set within the masonry are causing heavy vibration on the structure. The steps of the staircase were also eroded to large extant due heavy footfall. Chances of stampeded happening are very high.

2. The movement of vehicles within the fort is a serious concern. Effective movement plan will be devised and put into effect taking into consideration the existence of a habitation within the fort.

Kumbhalgarh Fort

No conservation issues, which are likely to affect the OUV of the property, were identified by the State Party.

Jaisalmer Fort

Jaisalmer fort presents a serious scenario and there are number of factors that are likely to affect the OUV of the property. One such factor is the rampant unauthorised constrictions and then location of large residential/lodging facilities on some of the bastions are likely to cause immense structural damages due to continuous seepage of sullage from them into the core of the bastions. Secondly, is the rampant and unchecked growth of construction seriously

changing the original architectural vocabulary of this 'living fort'. These issues are addressed to in the Site Management Plan that is being drafted.

3. In conformity with paragraph 172 of the Operational Guidelines, please describe any potential major restorations, alterations and/or new construction(s) within the protected area (core zone and buffer zone and/or corridors) that might be envisaged.
The following conservation works are being initiated and are in progress.

Chittorgarh Fort

A. Sukhadia tank

This is a large tank located at the centre of the fort. A long bund, 100m long in the east-west orientation, with flight of steps was constructed to trap the surface water. The flight of steps was preserved for about 20m on the eastern side. The flight of steps was restored for the past three years in phases. A small segment on the JJ side was restored as per the original during the year 2013-14.

B. Ghee Boadi:

This is large reservoir for water and one among the sixty odd water bodies identified in the fort. This reservoir is located to the west of the Vijay Stambh. It was in a dilapidated condition as the ashlar masonry on the eastern side is missing at many places. There was huge growth of vegetation through the masonry further leading to disintegration of the original structure. The floor of the reservoir was covered with 1 to 3 m debris consisting of silt and few architectural members. The ashlar masonry on the western arm was completely missing for about 3m on the top.

To begin with the accumulated debris on the floor of the reservoir is being cleared. Any architectural fragments and ashlar stones recovered from the debris will be reused appropriately. Further, conservation and restoration of the eastern arm to stabilise the existing masonry will be taken up soon.

The removal of debris in a part of the floor of the tank revealed a high quality lime concreting of the entire floor of the tank to ensure that there is no seepage of water through the joints of the bedrock.

C. Manpura-Bhanpura Haveli

This is a Haveli located further east of Kalikamatha temple. It is datable to 17th century. The rubble structures within the enclosure wall are in complete ruins and are hardly recognisable. In order to provide an idea of the layout of the enclosure, the walls of the structures are traced and reconstructed to the available height in matching dry rubble masonry by using the available rubble from the enclosure. The top of the reconstructed portion of the walls will be water-tightened with liquid lime mortar. This restoration work is in progress.

D. Kumbha Palace

This large palace complex is the most prominent structure within the fort. The area designated as 'Meera Palace' consists of a large quadrangle surrounded by remains of rooms. Some of the

rooms are paved with flagstones and rest are finished with lime concrete. However, the flooring is missing in the large area leading to easy growth of vegetation after rains. In order to mitigate this problem and to have a main tainable floor, the cells will be provided with lime concrete/flagstone paving as the case may be. Further, missing *kangoora* motifs will be restored wherever it s missing. This work will begin soon.

E. Fortification near More Magri area

The fallen fortification near the More Magri (behind the Mrigvan, the forested area) will be restored during this year.

Other works like providing low height MS grills to the landscaped area around Vijay Stambh, construction of rubble masonry pedestals to display the loose and unusable architectural fragments in front of Tope Khana and Vijay Stambh are also being taken up.

Kumbhalgarh Fort

A. Ruins of a Temple near Bund No 2

There is a ruin of a small temple having the *garbha-griha* and *mandapa* in front located above the Bund No 2 is taken up for exposing and restoration to extant available clue. As on date, the plinth of the temple is exposed full by removing the debris. Further work is in progress.

B. Other planned restoration

A dilapidated rubble masonry building datable 17-18th century is located at the summit just below the Badal Mahal. This building is without any roof but there are evidence for wooden trusses and a tiled roof. The roof will be restored in similar fashion and the space will be utilised to put up pictorial display of the concept of world Heritage and restoration efforts carried out in the past. Similarly, another structure, still preserving the original features of bamboo rafters and wooden trusses, which had completely decayed and cannot hold a roof, will also be restored in a similar manner.

Jaisalmer Fort

A. Fortification and Pitching Wall

A portion of the pitching was wall conserved as per the methods devised earlier. One of the bastions (no 38) will be taken up for restoration during this year.

Ranthambore Fort

A. Battis khambha Chhatri


The broken base, shaft and capital of the stone pillars of Battish Khambha Chhatri have been taken up for conservation. The broken part is replaced with a new one, matching with the original. The broken/missing *pan dasa* stones have also been conserved. The damaged/missing *chhajja* stones of small chhatries were replaced as per original.

B. Jain Temple

The broken/missing Jali of the mandapa of the Jain temple is replaced with the newly constructed Jali, matching with the original. The damaged stones of inner ceiling of the mandapa are also conserved. The old worn out/broken stones have been replaced with the new stones. Crushed stones on the outer wall of the main temple up to Jangha part have also been conserved matching with the original.


C. Bazar Area

Located on both side of the pathway, dilapidated buried structures in the Bazar area complex have been taken up for conservation. The buried structures were exposed and conserved in – situ, and a new stone pathway have been provided after easy moment of tourist.

Chemical Conservation and treatment

In addition to above work periodical chemical cleaning of some of the structures have been taken up at Chittaurgarh and Kumbhalgarh. The following process was adopted in the process.

- **Cleaning the Surface:** The entire Surface is cleaned by using 3% solution of ammonical water & non ionic detergent. Followed by the treatment of the surface by calcium hypo-chlorite solution. The whole process is repeated again to eradicate the remnant of micro vegetation growth.
- **Biocidal Treatment:** A 3% aqueous solution of sodium pentachlorophenate is sprayed all over the surface.
- **Hydrophobic Treatment:** Finally, after complete drying of the surface two coats [wet on wet] of silicone based water repellant resin [Wacker BS 290] mixed with mineral turpentine oil in the ratio of 1:14 is applied over the entire surface by brushing.