
Rani-ki-Vav (India) No 922

Official name as proposed by the State Party

Rani-ki-Vav (The Queen's Stepwell) at Patan, Gujarat

Location

Patan, Patan District
State of Gujarat, India

Brief description

Rani-ki-Vav, located on the banks of the Saraswati River in Patan, represents a distinctive form of subterranean water architecture of the Indian subcontinent, the stepwell. Initially built as a memorial in the 11th century CE, the stepwell is a single component, water management system divided into seven levels of stairs with sculptural panels of high artistic and aesthetic quality. More than five hundred principle sculptures and over a thousand minor ones combine religious, mythological and secular imagery, often referencing literary works.

Category of property

In terms of categories of cultural property set out in Article I of the 1972 World Heritage Convention, this is a *site*.

1 Basic data

Included in the Tentative List

3 July 1998

International Assistance from the World Heritage Fund for preparing the Nomination

None

Date received by the World Heritage Centre

31 January 2013

Background

This is a new nomination.

Consultations

ICOMOS consulted several independent experts.

Technical Evaluation Mission

An ICOMOS technical evaluation mission visited the property from 21 to 25 October 2013.

Additional information requested and received from the State Party

ICOMOS sent an initial letter to the State Party on 27 September 2013 requesting additional information with regard to the general approach of nominating a single

stepwell rather than a group and the comparative analysis in a national context. The State Party provided additional information in response to the questions raised on 12 November 2013. The information provided is included under the relevant sections below.

ICOMOS sent a second letter on 13 December 2013 requesting further clarification on the boundaries, a possible extension of the buffer zone and the indicators of the monitoring system established. The State Party responded by letter on 28 February 2014 addressing all aspects for which additional information was sought. The information provided has been integrated in the relevant sections below.

Date of ICOMOS approval of this report

6 March 2014

2 The property

Description

The nominated property consists of the monument of Rani-ki-Vav, the Queen's Stepwell and its immediate vicinity, which cover an area of 4.68ha. The stepwell is oriented in an east-west direction and combines all of the principle components which characterize stepwells: (1) a stepped corridor beginning at ground level which leads to a first pavilion, (2) a series of four pavilions with an increasing amount of storeys towards the west, (3) the tank, which is directly accessed from the well and in which water was stored, and (4) the well in tunnel shaft form, which extends above the ground water level forming a parapet. Rani-ki-Vav has seven storeys of terraced walls with pavilions and buttresses which in architectural stylistics conform to the Maru-Gurjara style. The stepwell is mostly constructed of burned bricks with lime mortar and the local Dhrangadhra stone. A large number of masons' marks and signatures remain visible on architectural elements and sculptures. Only some of these can be securely dated however.

From east to west, the Rani-ki-Vav was entered through a ceremonial arched gateway framed by two entrance pillars, with figurines in niches on all four sides. The descending flight of wide steps leads to the ground level of the first pavilion. The stepped corridor was originally ornamented with 292 carved pillars, of which 226 remain. The steps are rather high but can be descended using the risers in the shape of truncated pyramids placed at regular intervals. The first pavilion originally had two storeys but only 12 plinths of former pillars remain on its lower storey. Moving towards the second pavilion, five principle high platforms with turret-shaped short flights of steps lead to the formerly four-storey second pavilion, of which only the lowest storey still exists.

The third stage of the corridor and following third pavilion is the largest, which also retains four out of six former high terraces. The even-higher steps can be navigated by multiple turret-shaped risers leading to the former six-storey pavilion, of which three storeys are preserved in

good condition. The roofs of each level are supported by three rows of six free-standing pillars and three additional pillars on each side adjoining the walls. The bottom of this third corridor reaches a depth of up to 22 meters below ground level. The fourth stage of the corridor is the deepest and leads into a rectangular tank, of 9.5 by 9.4 meters at a depth of 23 meters. The high walls of the tank integrate seven storeys of richly decorated architecture. The vertical surfaces on either side of the well cavity are reinforced by additional two-storey buttress structures aimed to prevent collapse of the vertical surfaces. The fourth pavilion had seven storeys of which five full storeys are preserved and the plinths of the sixth storey. The spaces between the pillars on the lower two storeys were braced with ornate walls to increase the structural stability of the lower stepwell sections. The well is located in the westernmost section of the property and consists of a shaft of 10m diameter which reaches an additional 7m below the ground level of the fourth section to 30m depth. The shaft is divided into seven levels which correspond to the seven storeys of the fourth pavilion.

Elements of ornament and decoration illustrate high artistic quality and systematic development. All pillars in Rani-ki-Vav are uniform in design with square shaped plinths and carved niches housing deities on opposite sides. The octagonal drums are divided into four vertical, decorative segments and the capitals are designed in the form of quadruple brackets, the undersides of which carry four human or animal heads. Rani-ki-Vav initially included more than 800 sculpted panels of which approximately 400 survive, distributed in the walls. All surfaces of Rani-ki-Vav are ornate with sculptures illustrating contemporary belief systems but also social patterns and the extraordinary skills of craftsmen. Around 400 niches housed divine images, amongst which Vishnu by far outnumbers the other gods and Parvati the goddesses. The nomination dossier provides elaborate documentation on the location and stylistics of sculptured elements. Additional sculptures flank either side of the niches on the long stretches of the terraced walls.

History and development

Stepwells are a specific architectural typology of the Indian Subcontinent and have been constructed since as early as the 3rd millennium BC. The typology evolved over time from what was basically an accessible pit in sandy soil, towards very elaborate multi-storey works of art and architecture. Rani-ki-Vav was built at the height of craftsmen ability in both stepwell construction and the Maru-Gurjara architectural style. The Rani-ki-Vav was constructed as a religious as well as functional structure, designed as an inverted temple highlighting the sanctity of water. Built as a memorial to a King, the stepwell celebrated water as the mother goddess and was associated with both medical and ritual benefits.

Following the construction on Rani-ki-Vav in the 11th century CE, major environmental events influenced its present state of conservation. The first of these events was the initial flooding and later silting of Rani-ki-Vav following major floods and later the disappearance of the

Saraswati River in the 13th century. According to traveller reports authored in the 19th century, the entire property, except for the well shaft, was still then indiscernible due to the layers of silt which covered the multi-storey structure.

During the following important phase from the 1930s to the 1960s, initial conservation works were undertaken which later allowed for excavation of the silted parts of the property. In 1937 initial repair and stabilization work was conducted on the extant parts of the property and in the following years the colonnades were exposed. Large amounts of debris were removed and the stepwell was cleared during several subsequent phases in conjunction with conservation initiatives. In the 1970s conservation activities were continued and structural stabilizations were undertaken, especially on the northern wall which was in a dilapidated condition and was therefore reassembled and its sculptures put back into place. During the 1980s most of the silt was removed and surface conservation and cleaning could be commenced. Dust, dirt and biological deposits continued to be removed in the 1990s, when some of the richly-decorated, missing ashlar were also replaced to stabilize the underground water structures. Conservation works were completed in 2008 but have since been continued as part of an annual maintenance and monitoring scheme.

3 Justification for inscription, integrity and authenticity

Comparative analysis

The comparative analysis discusses stepwells and comparable accessible well structures, both on an international and regional level. In the international comparison, well structures are identified in different regional contexts such as the stepwells of the Cahuillan Indians in Coachella Valley, the holy wells of Ireland, Sardinia and France, several accessible well structures in North America, the Tula wells of the Borana community in Ethiopia and several others. Several of these wells considered in the comparison have rich ornamentation and religious associations. ICOMOS considers however that the stepwells on the Indian Subcontinent constitute a specific type of architectural structure that cannot easily be compared with stepwell structures in other cultural contexts.

At a regional level, the comparative analysis considered a number of other stepwells including Narayan Rao's stepwell at Idar, Gujarat, the Rataba stepwell in Rampura, Gujarat, the Dada Harir stepwell in Ahmedabar, Gujarat, the Rudabai stepwell in Adalaj, Gujarat, the Stepwell in Neemrana Fort and the Rani Stepwell in Nadol, Bundi, Rajasthan. The comparative analysis concluded that the Rani-ki-Vav has the most ideal proportions in relation to the division of space, and exhibited the highest level of technological achievement in engineering skills.

At the request of ICOMOS the State Party expanded on the comparative analysis and provided additional

information on 47 stepwells. Key examples were then compared both on the basis of architectural design, ornamental decoration, state of conservation and quality of craftsmanship for which ground plans and ample photographic documentation was provided.

ICOMOS considers that Rani-ki-Vav is a distinct and remarkable example of a stepwell representing the height of the technological and architectural development of this particular type of structure. It is also a unique masterpiece in terms of its ornamental and figurative decoration of exceptionally high quality and artistic skill.

ICOMOS considers that the comparative analysis justifies consideration of this property for the World Heritage List.

Justification of Outstanding Universal Value

The nominated property is considered by the State Party to be of Outstanding Universal Value as a cultural property for the following reasons:

- Rani-ki-Vav is the most developed, elaborate and ornate example of a unique type of Indian subterranean architectural structure, and it marks the zenith in the evolution of stepwells.
- The queen's stepwell is an exceptional example of technological development in utilizing ground water resources in a single component, water management system and it illustrates the exceptional capacity to break large spaces into smaller volumes following ideal aesthetic proportions.
- Rani-ki-Vav is a particularly large and complex example of a stepwell, with seven storeys of ornamented panels of sculptures and relief representing the height of the Maru-Gurjara style.
- Following the flooding and disappearance of the Saraswati River due to geotectonic changes, the property was buried under layers of silt for almost seven centuries and has been preserved underneath in an exceptional state of conservation.

ICOMOS considers that Rani-ki-Vav is indeed an outstanding example of the mastery and elaborate technology of stepwell construction, and that the aesthetic proportions and artistic skill that it illustrates are impressive. ICOMOS considers that stepwells are an important architectural typology on the Indian subcontinent and that hundreds of examples, many of them well-preserved, still exist. ICOMOS agrees however with the arguments presented, that it is the mastery of artistic implementation, the excellent quality of workmanship and the beauty of detail and proportions, which makes Rani-ki-Vav the most outstanding example amongst these single component water management structures.

Integrity and authenticity

Integrity

Rani-ki-Vav is preserved in its key architectural components and, despite missing pavilion storeys, its original form and design can still be easily recognized. A majority of the sculptures and decorative panels remain in-situ and some of these in an exceptional state of conservation. The level of integrity may have been reduced slightly as several figurative elements were found in the silt and could not be attributed to a specific location on site. It was decided not to integrate these in the monument and they were transported to an off-site museum and are in consequence no longer part of the nominated property. ICOMOS considers however that it is legitimate to preserve selected structures in an ideal environment, in particular when their original location remains subject to speculation.

It could be argued that the integrity of Rani-ki-Vav has also been reduced following geotectonic changes due to seismic activity and natural processes in the 13th century, which resulted in a change of the Saraswati River bed and consequently reduced the ground water level on site, negatively impacting on the functionality of the stepwell. ICOMOS considers that this change is part of the history of Rani-ki-Vav as it caused the flooding and silting of the architectural structure which allowed for its exceptional preservation over seven centuries. Although it is regrettable that the previous function of Rani-ki-Vav can no longer be experienced today, the seismic activity allowed for its unique state of preservation, and cannot be said to significantly affect the integrity of the site.

ICOMOS considers that all components including the immediate surrounding soils which adjoin the vertical architecture of the stepwell are included in the property. It can therefore be assumed that the property is complete. In terms of intactness, the property does not seem to have experienced major losses since its flooding and silting in the 13th century. However, ICOMOS considers that Patan like many Indian urban centres is experiencing rapid urban growth and that the western expansion of the city towards Rani-ki-Vav has to be carefully controlled to protect the integrity of the property in the future.

Authenticity

Rani-ki-Vav has largely maintained its authentic material and substance, but in several sections component parts had to be reconstructed for structural stability. At the entrance flight of stairs, new steps had to be integrated in the same type of sandstone used in the construction of the monument, and previously-lost stone works on the southern side of the upper two levels were added, suggesting the architectural language of neighboring components but without ornamental details. In all instances the reconstructed elements seem to be only added where structurally required or to protect remaining sculptures. The smooth surfaces and lack of decoration of these elements can be easily distinguished from the historic elements.

Likewise, at the lowest two levels of the tank, new sand stone pillars were added to reinforce the cracked beams of the bracing structure. Around the outer terrace at ground level, slopes of smooth descent, a so-called sacrificial terrace, were created to prevent soil erosion following stronger rain falls. ICOMOS considers that apart from these clearly identifiable additions, Rani-ki-Vav has a high level of authenticity in material, substance, design, workmanship and, to a certain extent, atmosphere, location and setting. The authenticity of setting is somewhat reduced however by the fencing structure installed for security purposes. Unfortunately, the Rani-ki-Vav cannot retain authenticity in its use and function as a result of the altered ground water levels following the relocation of the Saraswati River. ICOMOS considers that the overall condition of authenticity is acceptable.

In conclusion, ICOMOS considers that the conditions of integrity and authenticity have been met but that urban development in the property's vicinity has to be carefully controlled to protect its integrity.

Criteria under which inscription is proposed

The property is nominated on the basis of cultural criteria (i) and (iii).

Criterion (i): represent a masterpiece of human creative genius;

This criterion is justified by the State Party on the grounds that Rani-ki-Vav is the most authentic example of a subterranean water structure, also seen as an underground water temple, which has been perfectly executed with complex engineering and masonry skills. It creates a unique combination of functional requirements and high-quality water architecture with religious imagery.

ICOMOS considers that Rani-ki-Vav illustrates the technological and artistic height of stepwell tradition, and that it has been decorated with religious, mythological and at times secular sculptures and reliefs, of true artistic mastery. The stepwell represents an expression of human creative genius in its variety of motifs and mastery of craftsmanship, and in its elegance of proportions which frame an intriguing space, both functional and aesthetic.

ICOMOS considers that this criterion has been justified.

Criterion (iii): bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;

This criterion is justified by the State Party on the grounds that Rani-ki-Vav reflects an exceptional testimony to the tradition of building subterranean stepwells as an act of charity and piety. It constitutes the most evolved example of such single component, water management structures at the zenith of stepwell construction, which flourished during early and medieval times but then disappeared completely from the 19th

century when alternative methods of sourcing and storing water were developed.

ICOMOS considers that while the arguments made are in principle valid, the building of subterranean stepwells cannot be considered a cultural tradition or civilization as required by criterion (iii) and accordingly Rani-ki-Vav cannot be seen as an exceptional testimony to a cultural tradition. However, the arguments presented seem to indicate that the Queen's stepwell is the most outstanding example of a specific type of architecture and technological development which would be better recognized under criterion (iv).

ICOMOS considers that this criterion has not been justified.

Criterion (iv): be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;

This criterion has not been proposed by the State Party. However, ICOMOS considers that the arguments presented under criterion (iii) that Rani-ki-Vav is the most exceptional example of stepwells in both technological and functional terms, are better recognized under this criterion.

ICOMOS considers that Rani-ki-Vav is an outstanding example of subterranean stepwell construction and it represents a prime example of an architectural type of water resource and storage system which is widely distributed across the Indian subcontinent. It illustrates the technological, architectural and artistic mastery achieved at a stage of human development when water was predominantly resourced from ground water streams and reservoirs through access of communal wells. The functional aspects of this architectural typology were often combined with worship of water as a venerated natural element and the depiction of highest quality Brahmanic deities. The presence of Sheshayin Vishnu in the well illustrates the "temple function" of this water management structure.

ICOMOS considers that this criterion has been justified.

In conclusion, ICOMOS considers that the nominated property meets the conditions of authenticity and integrity and meets criteria (i) and (iv).

Description of the attributes

The Outstanding Universal Value of Rani-ki-Vav is expressed in its architectural structure, technological achievements in water sourcing and structural stability and in particular its sculptural decoration and artistic mastery. Attributes encompass the consecutive stepped terraces and pavilions, the figurative motifs and sculptures, as well as the proportion of filled and empty spaces, which provide the stepwell's interior with its unique aesthetic character. The setting enhances these

attributes in the way in which the well descends almost suddenly from a plain plateau into the earth and it is the contrast of the empty plain out of which the descent starts, which strengthens the perception of this space.

4 Factors affecting the property

Patan is a zone of seismic activity, as the historic event which displaced the Saraswati River from the site previously demonstrated. In 2001, a massive earthquake occurred (between 7.6 and 8.1 magnitude according to the Richter scale) which had its epicentre close to Bhuj, only 260 kilometres west of Patan. Following close site inspections shortly after, it seems that only minor cracks occurred in the entrance wall of the upper level. Other monuments in the vicinity of the site however were seriously damaged and a risk of future earthquake damage exists also for Rani-ki-Vav. The fact that the top storeys of the pavilions have been lost – likely in an earlier massive earthquake - leaves the side walls more vulnerable during earthquakes. While a Risk Preparedness Plan exists and was described in the nomination dossier, it does not offer concrete technical solutions for any preventive mechanism to avoid future damage during earthquakes. ICOMOS considers that methods should be developed which provide preventive stabilization of the most elaborate sculptures in particular and thereby prevent damage which may be caused through earth movements or partial wall collapses during major earthquakes.

A number of natural factors including air pollution, heavy rain falls and wind are at the origin of the erosion and deterioration of sandstone sculptures and decorations. Likewise, mechanical damage occurs on the stone surfaces in particular because adequate measures are missing to prevent visitors from walking on the many narrow veneers on both sides, linking pavilions on each level. Sculptures which are easily accessible to visitors are frequently touched, and consequently suffer abrasion damage.

Urban expansion of Patan city towards the west could impact on the visual perspectives at the property in reducing the impression of an empty plain from which the visitor descends into the property. ICOMOS considers it essential that the perspectives towards the western end of the stepwell remain free of any development that would be visible from the entrance level of the stepwell and that any development towards the north, east and south of the stepwell should be controlled to ensure that the impression of the flat surrounding of the well entrance is not reduced. This applies in particular to potential developments for visitor infrastructure which may be considered in the future.

ICOMOS considers that the main threats to the property are earthquakes, urban or infrastructure developments, and direct physical damage to the sculptures due to visitor contact.

5 Protection, conservation and management

Boundaries of the nominated property and buffer zone

The boundaries of the property comprise an area of 4.68ha of almost triangular shape, of which the stepwell occupies an area of 1,400 (70 by 20) square meters. The property is surrounded by a buffer zone of 130.12ha. The boundaries comprise the stepwell architecture, surrounding soil and much of the undeveloped plain in which it is located. ICOMOS considers that the boundaries are adequate to encompass the key elements and provide adequate protection for Rani-ki-Vav.

The wider surrounding of the property contains further elements of cultural significance, which are included in the revised buffer zone submitted in February 2014 at the request of ICOMOS. It remains uncertain at this stage whether some of these may have had direct functional relation to the Rani-ki-Vav. Structures in the buffer zone include a second water tank built shortly after the Rani-ki-Vav, which may have had functional relations to the stepwell, as well as an ancient mound and the ancient city walls. ICOMOS considers that little information has been provided to understand the historic geographic conditions which provided the historic context to the property. The context of other water tanks and the ancient city walls, which were constructed earlier than the stepwell but created its protective surrounding until the floods in the 13th century, should be better researched and understood, especially in terms of functional and spatial relations between the Rani-ki-Vav and its environment.

ICOMOS considers that the boundaries of the nominated property and the buffer zone are adequate.

Ownership

The nominated property is under State ownership administrated by the Archaeological Survey of India, Ministry of Culture, as the sole authority for all aspects of management and protection. The buffer zone is partly state-owned and administrated by the Archaeological Survey of India and the Municipal Cooperation of Patan, Gujarat. Other properties in the buffer zone belong to charitable organisations such as temple trusts or dargah trusts as well as private land owners. The cafeteria constructed for visitors belongs to the Tourism Cooperation of Gujarat.

Protection

The property is protected as a national monument by the provisions of the Ancient Monuments and Archaeological Sites Act of 1958 amended by its revision of 2010 and accordingly administrated by the Archaeological Survey of India. It is formally designated as an ancient monument of national importance and surrounded by a protective non-development zone of 100m to all sides of the architectural structure.

The buffer zone covers the protected area of Rani-ki-Vav and the protected areas of another monument, the Sahastralinga Talao located in the vicinity thus combining a larger protective zone. The wider surroundings of the buffer zone, in particular towards the east, are further protected in the municipal plan, which restricts urban and infrastructure development in this area.

ICOMOS considers that the protection of the property is established at the highest national level and that the protection of the buffer zone is adequate. ICOMOS further considers that it is important to upkeep the restrictions for urban and infrastructure development in the wider surroundings of the legally-formalized protection zone to preserve the integrity of the site's setting.

ICOMOS considers that the protective mechanisms for the property and the buffer zone are adequate.

Conservation

The state of conservation is good on a general level but the stone surfaces are constantly exposed to weathering conditions and, in some areas, visitor impacts. The deterioration of these stone surfaces, especially of the detailed ornamentation and sculptures, is one of the key challenges of the property, as the impact of water and wind erosion but also of physical abrasion and biological and chemical degradation can be observed. On lower, formerly silt-covered stone surfaces white crusts have developed over time as a result of mineral crystallizations and long-term humidity. Some of these crusts then begin to flake off and expose softer surfaces which then become subject to accelerated erosion.

According to the conservation activities foreseen in the management plan, the stone surfaces will be treated with a sacrificial layer to prevent further erosion and degradation. ICOMOS considers that the provision of a sacrificial layer is an appropriate solution for stone surfaces of such volume and vulnerability but recommends that prior tests be conducted to ensure that the impact on the surface appearance of the historic structures will be negligible.

In 2008, a systematic condition mapping was undertaken to document the structural features and decorative elements with regard to their structure and state of conservation. Additional detailed documentation was obtained in 2011 through a 3D scanning of the property. Several inventories of sculptures and figurative elements exist but are organized according to different methodologies. ICOMOS considers that it would be very beneficial to combine the data of different lists and inventories in one database and link these to images and location sketches.

Ongoing conservation and maintenance activities are effective, professionally-guided and match the highest international standards. Recently, conservators fixed glass markers across cracks for daily monitoring and carefully removed biological surface growth, likely induced by dampness in the well shaft and the tank. ICOMOS

considers that both the expertise dedicated and selection of activities is adequate.

ICOMOS considers that while stone surfaces in particular of sculptures are very vulnerable, the conservation activities and plans adequately address the challenges.

Management

Management structures and processes, including traditional management processes

The management of the property is under the sole responsibility of the Archaeological Survey of India. The management is steered by a Superintending Archaeologist and involves an in-house team of ASI archaeologists working and monitoring on site. Any proposed interventions require scientific clearance by the superintending archaeologist who may be advised by experts in a specific field. A management plan has been prepared by the ASI for the property and its implementation commenced in 2013.

The primary source of finance for the site is public funding through the contributions to the ASI which are complemented by resources from the National Culture Fund or other direct Government of India contributions. The team designated to be involved with different management aspects on site includes professionals trained in archaeology, engineering, conservation and architecture. Key training needs that have been identified for the team are risk preparedness and visitor management. ICOMOS confirms that the approaches taken to risk preparedness and disaster management planning are not yet adequate and should be further developed in such an earthquake prone area. ICOMOS recommends developing an adequate risk preparedness plan, including consideration for specific stabilization methods on site, which may prevent major damage in case of seismic activity.

Policy framework: management plans and arrangements, including visitor management and presentation

The management plan for Rani-ki-Vav is drafted for implementation between 2013 and 2017 and contains five key strategies for management approaches: (1) a conservation plan, (2) visitor management, (3) information management, (4) security management and (5) disaster management. Various stakeholders were involved or consulted during the development of the vision and clear goals, which have subsequently been transferred into specific fields of action. The management of the buffer zone is also given special consideration and is steered through the site management committee and a consultative committee of all stakeholders concerned. ICOMOS considers that the management plan is adequate to guide the administrative interrelations of all management partners as well as goal-oriented management processes on site.

At present, interpretation facilities hardly exist on-site and the only source of visitor information are two stone panels erected by the ASI. These contain a very brief summary of the age and function of the site in Hindi and English. At the booking office, just outside the property, booklets and leaflets are also available. However, the content of these leaflets is no more detailed than what is indicated on the stone panels. Other booklets available are almost entirely focused on the religious interpretation of the sculptures. ICOMOS considers that the visitor management component of the management plan offers space for improvement and that a more holistic concept to visitor management including local community concerns and revenue models would be desirable.

During the technical evaluation mission, ICOMOS was informed that an information centre with food court and office building to be used as a monitoring centre is planned on a piece of empty land to the west of the property. No plans exist at the moment but the ASI indicated that it could under no circumstances be higher than a single storey structure. ICOMOS notes that the western side of the property is the most vulnerable with regard to developments which may change the view perspectives and settings of the property. ICOMOS recommends that a Heritage Impact Assessment in accordance with the ICOMOS guidance for heritage impact assessment on World Cultural Heritage properties be carried out before any concrete plans are approved and implemented.

Involvement of the local communities

Local communities have been involved in the process of the compilation of the nomination dossier and the drafting of the management plan through consultation of community leaders and information exchange via local media. Senior citizens especially have shown great consciousness and pride for this heritage site and are eager to participate in the preservation of Rani-ki-Vav. Local stakeholders consulted during the technical evaluation mission also expressed their strong support for the property's nomination and the municipal representatives indicated their full support including that they were willing to change the municipal development plan if needed.

ICOMOS considers that the current management is effective but that any future development in particular regarding visitor infrastructure needs to be very sensitive and should not create visual interference with the architectural features or setting of the Rani-ki-Vav.

ICOMOS considers that the management system for the property is adequate but that attention should be given to adequate heritage impact assessment procedures for any new infrastructure of interpretation development on site.

6 Monitoring

The monitoring system proposed contains indicators for the state of conservation of various architectural sections of the monument and its surroundings on the garden surface level. All monitoring indicators are identified with their specific method of observation, actions required during the monitoring procedures and periodicity of inspection. ICOMOS considers that the indicators submitted in the additional information at the request of ICOMOS are well described, cover all relevant areas and refer to the responsible authorities entrusted to undertake the monitoring exercises. ICOMOS recommends to improve these by establishing measurable benchmarks for the interpretation of the indicators.

ICOMOS considers that the monitoring system provided is adequate but would benefit from measurable indicators for interpretation of data.

7 Conclusions

Rani-ki-Vav is an outstanding example of a stepwell illustrating the technological and artistic height of this typology of underground water structures. It is decorated with religious and mythological sculptures and reliefs of true artistic mastery. The stepwell represents an expression of human creative genius in its variety of motifs, of the highest quality of craftsmanship, and its elegance of proportion creates a unique, functional and aesthetic space. ICOMOS considers that Rani-ki-Vav represents a prime example of an architectural type of water resource and storage system which is widely distributed across the Indian subcontinent. ICOMOS accordingly considers that the Rani-ki-Vav demonstrates Outstanding Universal Value and meets criteria (i) and (iv).

ICOMOS considers that the property meets the qualifying conditions of integrity and authenticity. However, to preserve integrity in the future, ICOMOS considers it essential that the perspectives towards the western end of the stepwell remain free of any development that would be visible from the entrance level of the stepwell. Likewise developments towards the north, east and south of the stepwell should be controlled and additions carefully evaluated for their potential heritage impact to ensure that the impression of the flat surrounding of the well entrance is not reduced. ICOMOS recommends in this context that any plans for the intended visitor centre should be evaluated by means of a comprehensive Heritage Impact Assessment before they are approved and implemented.

ICOMOS considers that the main threats to the property are earthquakes, urban or infrastructure development and direct physical damage to the sculptures due to visitor contact. Ongoing conservation and maintenance activities are in principle effective, professionally-guided and correspond to international standards. ICOMOS considers

that both the expertise dedicated to the conservation activities and the selection of activities is adequate.

ICOMOS considers that the management system in place and the administration's human and financial resources are adequate. However, ICOMOS considers that the approaches taken to risk preparedness and disaster management planning are not yet adequate and should be further developed in such an earthquake prone area.

8 Recommendations

Recommendations with respect to inscription

ICOMOS recommends that the Rani-ki-Vav (The Queen's Stepwell) at Patan, Gujarat, India, be inscribed on the World Heritage List on the basis of **criteria (i) and (iv)**.

Recommended Statement of Outstanding Universal Value

Brief synthesis

Rani-ki-Vav is an exceptional example of a distinctive form of subterranean water architecture of the Indian subcontinent, the stepwell, which is located on the banks of the Saraswati River in Patan. Initially built as a memorial in the 11th century CE, the stepwell was constructed as a religious as well as functional structure and designed as an inverted temple highlighting the sanctity of water. Rani-ki-Vav is a single-component, water management system divided into seven levels of stairs and sculptural panels of high artistic and aesthetic quality. It is oriented in an east-west direction and combines all of the principle components of a stepwell, including a stepped corridor beginning at ground level, a series of four pavilions with an increasing amount of storeys towards the west, the tank, and the well in tunnel shaft form. More than five hundred principle sculptures and over a thousand minor ones combine religious, mythological and secular imagery, often referencing literary works.

Rani-ki-Vav impresses not only with its architectural structure and technological achievements in water sourcing and structural stability, but also in particular with its sculptural decoration, of true artistic mastery. The figurative motifs and sculptures, and the proportion of filled and empty spaces, provide the stepwell's interior with its unique aesthetic character. The setting enhances these attributes in the way in which the well descends suddenly from a plain plateau, which strengthens the perception of this space.

Criterion (i): Rani-ki-Vav (The Queen's Stepwell) at Patan, Gujarat illustrates an example of the artistic and technological height of stepwell tradition. It has been decorated with religious, mythological and at times secular sculptures and reliefs, illustrating a true mastery of craftsmanship and figurative expression. The stepwell represents an architectural monument of human creative

genius in its variety of motifs and its elegance of proportions, which frame an intriguing space, both functional and aesthetic.

Criterion (iv): Rani-ki-Vav is an outstanding example of a subterranean stepwell construction and represents a prime example of an architectural type of water resource and storage system which is widely distributed across the Indian subcontinent. It illustrates the technological, architectural and artistic mastery achieved at a stage of human development when water was predominantly resourced from ground water streams and reservoirs through access of communal wells. In the case of Rani-ki-Vav, the functional aspects of this architectural typology were combined with a temple-like structure celebrating the sanctity of water as a venerated natural element and the depiction of highest-quality Brahmanic deities.

Integrity

Rani-ki-Vav is preserved with all its key architectural components and, despite missing pavilion storeys, its original form and design can still be easily recognized. A majority of sculptures and decorative panels remain in-situ and some of these in an exceptional state of conservation. Rani-ki-Vav is a very complete example of the stepwell tradition, even though after geotectonic changes in the 13th century it does no longer function as a water well as a result of the change to the Saraswati River bed. It was however the silting of the flood caused during this historic event, which allowed for the exceptional preservation of Rani-ki-Vav for over seven centuries.

All components including the immediate surrounding soils which adjoin the vertical architecture of the stepwell are included in the property. In terms of intactness, the property does not seem to have experienced major losses since its flooding and silting in the 13th century. However, Patan like many Indian urban centres is experiencing rapid urban growth and the western expansion of the city towards Rani-ki-Vav has to be carefully controlled to protect the integrity of the property in the future.

Authenticity

Rani-ki-Vav has a high level of authenticity in material, substance, design, workmanship and, to a certain extent, atmosphere, location and setting. While it maintained its authentic material and substance, it also required some punctual reconstructions for structural stability. In all instances reconstructed elements were only added where structurally required to protect remaining sculpture, and they are indicated by smooth surfaces and a lack of decoration which can be easily distinguished from the historic elements. Around the outer terrace at ground level, slopes of smooth descent, a so-called sacrificial terrace, were created to prevent soil erosion following stronger rain falls. Unfortunately the Rani-ki-Vav cannot retain authenticity in use and function as a result of the altered ground water levels following the relocation of Saraswati River.

Management and protection requirements

The property is protected as a national monument by the provisions of the Ancient Monuments and Archaeological Sites Act of 1958 amended by its revision of 2010 and accordingly administrated by the Archaeological Survey of India (ASI). It is formally designated as an ancient monument of national importance and surrounded by a protective non-development zone of 100m to all sides of the architectural structure. The buffer zone has been included in the adopted Second Revised Development Plan, which ensures its protection from any inappropriate development.

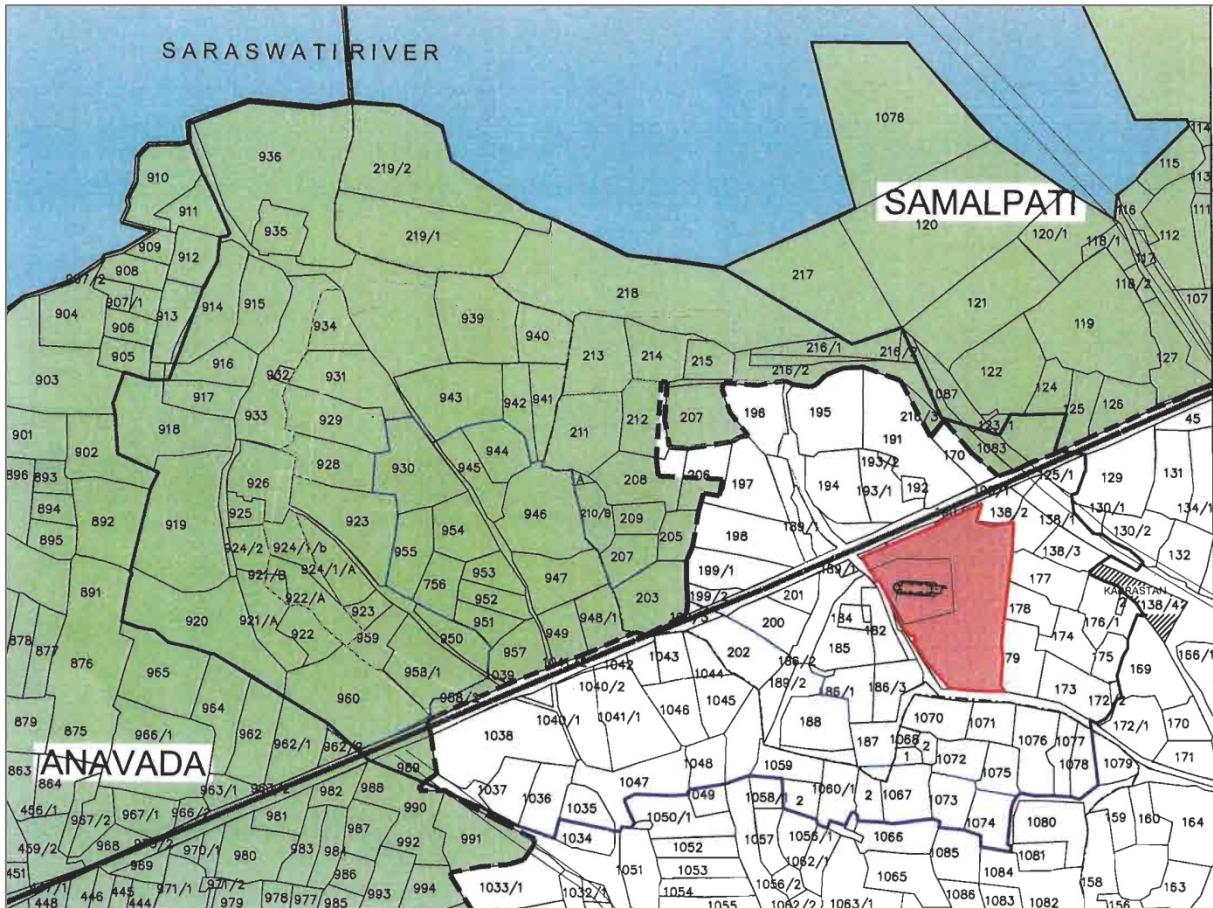
The management of the property is under the sole responsibility of the Archaeological Survey of India and steered by a Superintending Archaeologist with an in-house team of ASI archaeologists working and monitoring on site. Any proposed interventions require scientific review by the superintending archaeologist who may be advised by experts in a specific field. A management plan has been prepared by the ASI for the property and its implementation commenced in 2013.

The approaches taken to risk preparedness and disaster management planning should be further developed given that Rani-ki-Vav is situated in an earthquake prone area. Few interpretation facilities exist on site and the only information sources are two stone panels erected by the ASI. The Rani-ki-Vav would benefit from a more holistic concept to visitor management including local community concerns and revenue models. An information centre with food court and office building is planned on site but its location needs to be selected with care as some directions, in particular the western direction are more vulnerable with regard to developments which may change the view perspectives and settings of the property. For any future intervention in the property or buffer zone, Heritage Impact Assessments in accordance with the ICOMOS guidance for heritage impact assessment on World Cultural Heritage properties should be carried out before any plans are approved and implemented.

Additional recommendations

ICOMOS further recommends that the State Party give consideration to the following:

- Developing an adequate risk preparedness plan, including consideration for specific stabilization methods on site which may prevent major damage in case of seismic activity;
- Augmenting the monitoring indicators to provide measurable benchmarks for the interpretation of data collected;
- Combining the data sets of different surveys and studies now compiled in different lists and inventories into one single database, which links the inventory records to the photographic and cartographic documentation of sculptures;
- Conducting a Heritage Impact Assessment (HIA) in accordance with the ICOMOS Guidance on Heritage Impact Assessment for World Cultural Heritage properties once concrete plans for the visitor centre have been prepared;
- Strengthening approaches to visitor management including through community involvement and revenue generation models wherever possible.



Map showing the revised boundaries of the nominated property



Aerial view of Rani-ki-Vav



Bracing structure in the tank



The well shaft



Sculptured panel