

# International Experts' meeting for the elaboration of a conservation plan for Tiwanaku, (Bolivia)

27-29 Agosto de 2012



*The sculpture of Ponce Stela*



## I. Background

### I. Background

**Tiwanaku: Spiritual and Political Centre of the Tiwanaku Culture** (Bolivia), *property inscribed on the World Heritage List in the year 2000 under criteria (iii) and (iv)*, is one of the most important pre-Inca archaeological sites of the Andean region. Most of the ancient city, which was largely built of adobe, has been overtaken by the modern town. However, the monumental stone buildings of the ceremonial center survive in the current protected archaeological zones. Tiwanaku is a planned city that initiated in the Andes between 400 A.D. and 900 A.D. The maximum expression of this culture is reflected in its traditional - ceremonial organized spatially identical center to the cardinal points, constructed with impressive ashlar stones carved accurately and equipped with a complex system of underground drainage that controlled the flow of rain water.

The public - religious space of this city is shaped by a series of architectural structures that correspond to different periods of cultural accessions: Temple Semi-underground, the *Kalasasaya* Temple, *Akapana* Pyramid, and the *Puma pumku* Pyramid. In addition, the administrative and political area is represented by structures such as the Palace of *Putuni* and *Kantatallita*. This architectural ensemble reflects the complex political structure of the period and its strong religious nature. Two millennia ago, Tiwanaku constituted a major ritual and ceremonial center, and today it continues to be used in a similar way, with many indigenous cultural traditions continuing to be held at the site.

The **2010 Reactive Monitoring Mission** carried out by ICOMOS and UNESCO assessed the current status of the property, and considered that the restoration of Tiwanaku needed to be updated, as scientific knowledge available today would allow the implementation of more appropriate interventions. The mission reported that information on interventions carried out was very limited, and there was no central repository of data that would facilitate decision-making for the property. As for the archaeological structures, the mission carried out a detailed inspection and identified decay factors and processes arising both from natural and man-made phenomena. The main issues identified were related to the uncontrolled flow of rainwater and a lack of proper drainage, soil erosion, biological and stone decay. The mission also noted that the interventions at the various buildings had not been based on archaeological and topographic information, and there was no integrated approach to interventions, which had greatly impacted the structures, in particular the *Akapana* pyramid. Additionally, it was highlighted that there was no visitor management strategies in place, which had also affected the fabric of the property. The mission also concluded that the management plan will need to include a comprehensive conservation plan, with precise interventions for each of the monuments, including guidelines and principles that take into account practices and standards at the international level, as well as a public use plan.

Furthermore, the authenticity and integrity criteria had not been taken into account in former projects. The mission also noted that a participatory approach would be required in order to ensure its implementation by the stakeholders involved.

The property's state of conservation report was evaluated during the 34th Session of the World Heritage Committee. The Committee urged the State Party to take the appropriate measures to guarantee the implementation of the "Project for the Conservation and Preservation of Tiwanaku and the Akapana Pyramid", project financed by UNESCO/Japan Funds in Trust for the Preservation of the World Heritage.



Figure 1-Faces on the Sunken Courtyard wall

The state of conservation of Tiwanaku was again evaluated by the 35th session of the World Heritage Committee in June 2011. The World Heritage Committee by its Decision **35COM 7B.119**, requested the State Party to work in collaboration with the World Heritage Center and the Advisory Bodies to organize an international meeting to define regulations and guidelines that would help develop a conservation plan for the property

In the meantime, the Government of Bolivia adopted the **Presidential Decree 1004** in September 2011 creating the Centre of Archaeological and Anthropological Research and Management of Tiwanaku (CIAAAT) which provides a clear distribution of responsibilities at national/local level for the management of the property.

*Enter into force of the Presidential Decree and creation of the Center of Archeological and Anthropological Research, and Management of Tiwanaku (CIAAAT)*

Following the adoption of the Presidential Decree 1004 which was signed on 11 October 2011 by Mr. Evo Morales, President of the Plurinational State of Bolivia, the Center of Archeological and Anthropological Research, and Management of Tiwanaku (CIAAAT)<sup>1</sup> is in full operation. The creation of the CIAAAT is instrumental to provide a clear updated course of action of the project and sustainable conservation of the inscribed property.

## II. The International Expert's meeting of experts on the elaboration of a Conservation Plan for Tiwanaku. International Meeting of Experts (27-29 August 2012)

The meeting was organized following Decision **35 COM 7B.119** adopted by the World Heritage Committee at its 35th session in June 2011. By this Decision, the Committee, after evaluating the state of conservation of the property, requested the authorities of Bolivia to work in collaboration with the World Heritage Centre in order to organize an international meeting that would define the regulations and guidelines for the development of a conservation plan for the property.

<sup>1</sup> (CIAAAT) in Spanish *Centro de Investigaciones Arqueológicas y Administración de Tiwanaku*

In order to ensure the **implementation of Decision 35 COM 7B.119**, the World Heritage Centre, in close coordination with the Ministry of Cultures of Bolivia and UNESCO Quito, organized the International meeting of experts from **27 to 29 August 2012** in Tiwanaku with the aim of elaborating a set of recommendations which will serve in the future as the basis for the development of a conservation plan for Tiwanaku. The meeting was successful organized by the Ministry of Cultures, UNESCO Quito and the World Heritage Centre and benefit from the involvement of international and national experts in several fields such as: archaeology, architecture, engineering, geology/geomorphology, biology, and intervention.



**Figure 2-The megalithic entrance to the Kalasasaya**

Furthermore, the guidelines provided by the experts and the conservation measures identified will serve as a basis for the revision of the extra-budgetary project entitled **“Preservation and Conservation of Tiwanaku and the Akapana Pyramid”**. This project, after being suspended for several years due to the instability of the administrative and institutional structure of the Bolivian Government, was finally extended to May 2014. A new revised project document, including a new work-plan of activities and a budget, in line with the priorities and activities was identified as most urgent and should be submitted for approval by the Japanese authorities around the first quarter of 2013.

The expert meeting was entirely financed by the UNESCO/Japan Funds-in-Trust for the preservation of World Heritage.

## Objectives

- Identify appropriate measures to respond to conservation issues that have been affecting the property in the past 5 years, such as:
  - o the condition of the various monuments at the archaeological site
  - o the state of conservation and the structural stability of some of the components- especially the *Akapana Pyramid*

## Meeting Preparation

Four international experts from Mexico and Peru and four other national experts proposed by the national institutions were selected to participate in the meeting. The experts mostly had previous work experience in the site and some were specialized in the analysis of the structural stability of the *Akapana Pyramid* and other components of the site.

The provisional agenda comprised of visits to the property as well as the museums and the town of Tiwanaku. The field visits were conducted in order to hear the opinions of the professional staff working on preserving the site and learn about the undergoing



management and conservation activities that will help base a broader knowledge on the site and its state of conservation.

### Brief description of the Meeting and field visits



The international meeting of experts took place during three full days in the town of Tiwanaku which is five minutes away from the archaeological site. The Vice minister of Interculturality and the Mayor of Tiwanaku participated in the meeting's inauguration and closing ceremony, as well as representatives of the local communities the *Mallkus*. It is also noteworthy to underline the presence of the

Director of UNESCO-Quito, who actively participated during the three-day meeting.

### Wednesday 27 August 2012 –

**The Opening ceremony** with the presence of the Mayor of Tiwanaku and the Mallkus representatives.

**Presentation by the World Heritage Centre** with the meeting's proposed methodology, objectives to be attained and implications of decisions adopted by the Committee. A proposal was discussed as a tool for the development of the future conservation plan for the site.



**Presentation on the progress made in the conservation measures** applied after the Reactive Monitoring Mission UNESCO/ICOMOS in 2010 by The Tiwanaku's Site Manager.



**Presentation on the progress made in the implementation of the Presidential Decree** creating the CIAAAT by the Director of Cultural Heritage and Museums.

**General Debate** on the methodology and current issues following the presentations made by UNESCO and the Bolivian institutions.



## Main Field visits

The event comprised of one day dedicated to visiting the following components of the site in order to assess their current. The visits were conducted by the site manager and other officials having direct responsibilities over the different components and activities:

### I. Puerta del Sol



Figure 3-The entrance side of the Portal of the Sun atop the Kalasasaya mound

The experts considered that the state of conservation of the gate was acceptable, but requested a conduct and implementation of a structural evaluation of the gate's foundations and to identify an appropriate system to isolate the capillary base of the structure. It was brought to mind the need to collect all available information and introduce a periodic record that enables detailed monitoring of the structure. The experts insisted on the fact that given the acceptable state of the structure's conservation, the **current location shall be maintained** to avoid risks that might

arise with the structure's mobilization.

### II. Putuni

Next was a site visit to Putuni, a neighboring building separated from the property Kalasasaya by a street and a wall. The influence of different periods' interventions on the structure was very clear.

The experts confirmed the view expressed by 2010 RMM that evidence from all the periods is of equal importance and that this construction's additions from all periods and timeline should be conserved, even if the architectural manifestations of all the periods are not as outstanding as the original monuments.



Figure 4- Remains of Putuni



Figure 5- Remains of Putuni

The front walls are made of andesite, while the funeral chambers have blocks of sandstone. It was also determined that some of the latter show relevant biological colonization.



**Figure 6- Reintegration of the Walls**



**Figure 7- Draining systems**

### **III. Akapana's Pyramid**

At present, the pyramidal building is a great mound of earth, composed of clay, gravel, and sandy materials from the alluvial deposits and river-and-lake deposits of the valley, with a large hole at the summit, some platforms, a main stairway, and monoliths. The experts considered that the interventions that have been carried out on the Pyramid helped progress its deterioration as they were not based on any archaeological and topographic information.

A large part of the Pyramid was dismantled in the past. The new topographic plan commissioned by UNESCO in 2010, which covers a large area around the structure, shows this aspect clearly, in particular in the south and north-south quadrants.



**Figure 8-Akapana's Pyramid**



The experts agreed that given the current situation, it was necessary **to restrict public access to the pyramid** in order to prevent soil degradation and that studies should be made on the soil mechanics, in anticipation of conducting future archaeological research.

The **tour circuits should also be redesigned** and complemented with illustrative storyboards, thus the degradation factors would be reduced. The visitors then would not affect the preservation and conservation of the site, the architecture, or the monoliths.

As a preventive measure, the **implementation of a drainage system** to channel rainwater from the top of the Pyramid and help in storm control was recommended. The experts also mentioned the necessity to introduce a plant cover for exposed areas in order to mitigate the effects of water and wind erosion.

A **permanent surveillance team** should also be formed and trained in the conservation of stone monuments so that they are able to deal with the conservation of the stone from microorganisms, lichens and salts.

#### IV. The Puma Gate (Pumapunku)

The experts considered that work has been conducted on this architectural complex on many occasions, sometimes without the necessary background information being taken into consideration. Many stones from this site were extracted during the colonial period. Problems of erosion, drainage and filtrations in old excavations were detected. The experts considered that the problems detected must urgently be solved.



Figure 9- The Puma Gate

Certain up to date methods for preservation were recommended such as:

- **Recording each stone in a database with the support of a 3D scanner**
- **Reducing the height of the existing excavation slope**
- **Preventing the acceleration of the wind-** a major factor in the erosion of the historical stones.

It was also recommended that the **final conservation project in the south sector should be implemented** considering that the archaeological excavations have been completed. It was also recommended to use geo-blocks and/ or crushed stones on the floors of the platforms in order to prevent erosion.



## V. Museo Cerámico [Ceramic Museum]

The museum is managed by the Municipality of Tiwanaku. The experts pointed out that, although the museum is open to the public, maintenance on the artifacts inside the showcases cannot be performed because they cannot be accessed. Water leaks were observed affecting the collection and major problems caused by this factor were identified. The completion of a detailed inventory of existing pieces in the museum is considered an urgent matter in order to determine the amount of artifacts, their degree of importance and degree of conservation. In addition a record shall be prepared for the identified pieces based on the work being implemented by the Ministry of Culture, taking into account the established international guidelines.



Figure 10- Ceramic Artifacts- in the Ceramic Museum

The experts considered that it was necessary to initiate a maintenance project on the building cover and to evaluate the possibility of establishing cooperation with specialized organizations in the area of movable heritage conservation in order to provide optimal conditions for the preservation of cultural material with higher levels of vulnerability.

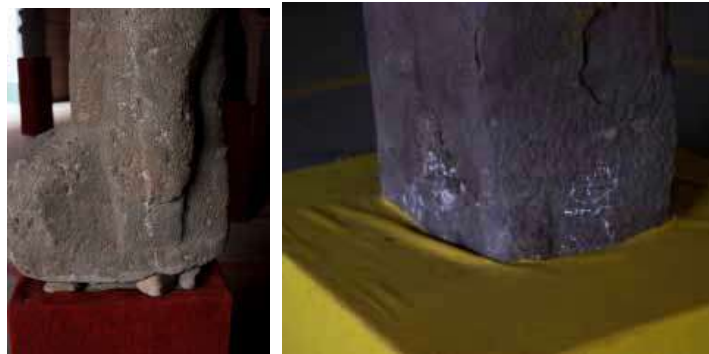
## VI. Museo Lítico [Stone Museum]

During the field visit it was observed that the museum was in a very poor maintenance state. Water leaks were observed. There was evidence that the water leakage present was a major factor in the stone artefacts deterioration. The structure system of the museum was also proven to be unreliable.



Figure 11- Poor maintenance- Museo Litico

It was considered important to provide a **detailed diagnosis of each stone piece in order to develop a restoration program.**



**Figure 12- Stone Artefacts- Museo Litico**

As an urgent priority, the experts highlighted the necessity to **reduce the water and moisture levels at the base of the monolith Bennett.**



**Figure 13- Stone Artefact 1**



**Figure 14- Stone Artefact 2**



**Figure 15- Benrett Monolith**

After the field visits, the meeting continued with the World Heritage Centre's presentation on the **criteria for inscription of the site and its proposed OUV**. In this presentation the general guidelines for the elaboration of the conservation plan were proposed were the following:

- ✓ **Diagnosis on the state of conservation of the site**, structure by structure, including the museums, and identification of the components of the site
- ✓ **Explanation on the criteria** for inscription, proposed by Bolivia in the **Retrospective Statement of Outstanding Universal Value** and currently under evaluation by ICOMOS.
- ✓ **Explanation on the criteria** for inscription, proposed by Bolivia in the **Retrospective Statement of Outstanding Universal Value (RSOUV)**:

*Criterion (iii): The ruins of Tiwanaku bear striking witness to the power of the empire that played a leading role in the development of the Andean prehispanic civilization.*

*Criterion (iv): The buildings of Tiwanaku are exceptional examples of the ceremonial and public architecture and art of one of the most important manifestations of the civilizations of the Andean region.*

Furthermore, it was stressed that the future conservation plan should take into account the attributes, values and the authenticity of the site:

**Statement of Integrity**

All the attributes to convey the Outstanding Universal Value of the property are located within its boundaries. The archaeological remains have maintained to a certain extent their physical integrity although systematic conservation and maintenance measures will be required to ensure their physical stability and the protection from the adverse effect of climatic conditions in the long term. Similarly, effective enforcement of regulatory measures for the protection of the large areas of the ancient urban complex, that exist beneath the modern village of Tiwanaku and farmhouses, is crucial for maintaining the integrity of these remains.

**Statement of Authenticity**

As with most archaeological sites, Tiwanaku preserves a very high degree of authenticity. However, a conservation plan with precise guidelines for interventions, which take into consideration the original form and design, as well as the materials used for construction, will need to be implemented to ensure that the conditions of authenticity continue to be met

*(Extract from the agreed RSOUV to be submitted to the 37<sup>th</sup> session of the Committee).*

**Wednesday 29 August**

## **Presentation of a set of recommendations for discussion and methodology**

As initial basis for a discussion, a first set of recommendations were proposed to the experts for debate. The meeting was based on the framework and the methodology previously adopted. The experts and the representatives of the local and national institutions agreed on a tentative calendar for the implementation of recommended conservation activities interventions.

The general recommendations were divided into technical, management and conservation measures.

It was also considered important to designate responsible national/international entities for each of the activities proposed and to determine the resources (human and financial) required in conducting the conservation activities. This will constitute a basis of discussion for the elaboration of a final conservation plan to be proposed for the consideration of UNESCO. The experts decided to formulate specific actions for each of the structures bearing in mind the findings of the site visits (see in the Recommendations annex 3).

## **Adoption of recommendations**

A final set of recommendations, together with a tentative work-plan and the table with the identification of responsibilities and resources required was finally adopted by consensus by all participants to the meeting.

## Closure

A closing ceremony was held with the participation of the Minister of Cultures, Mr. Pablo Cesar Groux Canedo, the Mayor of Tiwanaku and the Mallku Cantonal as representative of the communities. The Minister reaffirmed the commitment made by the Ministry of Cultures to develop a suitable project according to the guidelines and recommendations provided by the experts.

The Ministry also stressed that the CIAAAT will play an important role and that the Director will be soon designated. He added that governmental resources will be mobilized in favor of implementing a suitable conservation plan for Tiwanaku and expressed their wish to continue a close collaboration with UNESCO, the local communities and the Ministry of Culture in the implementation of actions that will help conserve the site. Mr. Gorky Salas, in representation of the experts, thanked local and national institutions for the hospitality and expressed his satisfaction for the exceptional work that has been accomplished.



Figure 16- A face on the Sunken Courtyard



**This meeting was funded by the UNESCO/Japan Funds-in-Trust for the preservation of World Heritage**



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del Japón para la UNESCO

## Annexes

### Annex 1.

#### English Version

#### Recommendations

The international experts gathered in Tiwanaku from 27 to 29 August 2012, after the planned visits to the World Heritage site of Tiwanaku took place. They recommend considering the following steps in the development of a future conservation plan of the site to be implemented taking into account the guidelines and decisions of the World Heritage Committee of UNESCO and to be submitted for approval by the World Heritage Centre.

#### I. Technical aspects

1. Formulate an **integral and interdisciplinary plan for archaeological investigation** of the site of Tiwanaku with a particular emphasis to the following aspects of conservation:

- Determine the intangible zones, public use, research, protection and corresponding regulatory measures.
- Identify, register and rehabilitate the pre-Hispanic drainage system in the different areas of the site.

2. **Conclude with the studies for the implementation of the main drain axis** around the archaeological site. This study should take into account the original drainage rehabilitation evidenced in the western sector of Putuni and Pumapunku sector.

3. Considerate the possibility of the **installation of a weather station on the site** that allows monitoring in relationship to the needs of research and conservation.

4. Continue **monitoring and research of mortars** in the field and in the laboratory to evaluate their physical and chemical behavior.

5. Formulate **diagnostics to determine the different actors and processes of deterioration caused by biotic and abiotic factors** (chemical and physical) in the different structures of the site.

6. Adapt **ecologic barriers in the site to mitigate the physical, chemical, biological and anthropic impacts** considering the periodically recorded meteorological data.

7. Finalize **the draft conservation plan for Tiwanaku** taking into account the international standards established in the field of World Heritage conservation

## II. Management aspects

1. Guarantee **optimal working conditions** to protect the health and safety of personnel involved in the work of research, conservation and maintenance on the site, under the “*Ley General del Trabajo*”.
2. Review **the circuit visits**, taking into account the degree of deterioration in each structure composing the site. This circuit should be complemented by a system of signing and safety for visitors designed according to international standards used in other World Heritage Sites.
3. Promote **training and awareness of the guides and tour operators** in the protection, conservation and preservation of the site, so that they may guide and inform tourists and visitors.
4. Develop a **sensitization program directed towards the local population through participatory workshops** in order to emphasize the significance of the site and its Outstanding Universal Value (OUV) and the results of research and conservation actions undertaken.
5. Perform **periodic monitoring with the support of a multidisciplinary team** for the conservation of the site of Tiwanaku, in collaboration with specialized institutions linked to the different areas of expertise.
6. Under the prerogatives of CIAAAT, **appoint a Director of Archaeology in the research area foreseen in the Presidential Decree** and define specific responsibilities for each of the components of the research and site conservation plan.

## III. Normative aspects

1. Promote and **support the development of an urban plan for Tiwanaku’s town** (identification of areas for urban growth, height of buildings, building materials and architectural typology) with particular emphasis to the adjacent area to the protected area.
2. Develop a map of **key players for the management and conservation** of the site.
3. Compile and centralize all **existing documentation related to previous research**, and study the possibility of **creating a documentation Centre** on Tiwanaku’s site with the required technical and equipment facilities.
4. Promote **new agreements to strengthen capacities in the field of conservation and site management with national and international academic institutions**.
5. Conclude as soon as possible the **appointment of the new Director of CIAAAT**.

6. Strengthen and improve **the current system of inter-institutional cooperation** in order to facilitate the adoption and implementation of measures for research and conservation of the site.
7. Strengthen **institutional cooperation of the entities involved for proper management of the site and museums.**
8. Promote **programs of cooperation and exchange of experience in the field of conservation and museology.**

#### IV. Puerta del sol

1. Implement a structural evaluation of the foundation.
2. Propose a system to isolate the capillary base of the structure.
3. Collect all available information and institute a periodic record that enables a detailed monitoring of the structure and its iconography.
4. Considering the current state of the structure's conservation, maintenance *in situ* is recommended given the risks involved in the mobilization.

#### V. Putuni

1. Assess the relevance of stone restitution of walls and the use of the drywall and ashlar technique after examining the art of differentiation in future maintenance and conservation in relation to the alignment of the original parts.
2. In the case that restitution of walls continues using adobe covered with mud, they must maintain alignment with the original stone elements considering that there is a clear difference in finishing materials.

#### VI. Akapana

1. Make studies of soil mechanics a priority and use these studies in concert with the archaeological information.
2. Restrict public access to the pyramid in order to prevent soil degradation, in anticipation of conducting future archaeological research.
3. As a preventive measure, implement a drainage system for channeling rainwater from the top of the Pyramid and continue the storm water control.
4. As a preventive measure, introduce plant cover for exposed areas in order to mitigate the effects of water and wind erosion.



## VII. Puma Punku

1. Record and collect each stone with the support of a 3D scanner.
2. Reduce the height of the slope of the excavation already conducted to prevent the acceleration of the winds that increase the effect of erosion on the original stones.
3. Develop and implement a final conservation project in the south sector considering that the archaeological excavations are completed. It is also recommended to use geo-blocks and/ or crushed stones on the floors of the platforms in order to prevent erosion.

## VIII. Ceramic Museum

1. Urgent completion of a detailed inventory of existing pieces in the museum in order to determine the amount of cultural material, their degree of importance and degree of conservation. Subsequently a record shall be prepared for the identified pieces based on the work being implemented by the Ministry of Culture, taking into account the established international guidelines.
2. Plan and implement a maintenance project on the building cover.
3. Evaluate the possibility of establishing cooperation with specialized organizations in the area of movable heritage conservation in order to provide optimal conditions for the preservation of cultural material with higher levels of vulnerability.

## IX. Lytic Museum

1. Urgently develop a project that includes detailed engineering plans to ensure the repair of the museum's roof and submit it to study at the World Heritage Centre.
2. Develop a project of museology and museography with the identified pieces following the established international guidelines.
3. Elaborate a detailed diagnosis of each stone piece in order to develop a restoration program and to ensure their conservation.
4. As an urgent priority, reduce the water level and the moisture at the base of the monolith Bennett.

*Tiwanaku, Bolivia, 29 August 2012*

### Recomendaciones Finales

Los expertos internacionales reunidos en Tiwanaku del **27 al 29 de agosto de 2012**, después de haber efectuado las visitas programadas a Tiwanaku, recomiendan tomar en cuenta las siguientes medidas en la elaboración del futuro Plan de conservación del sitio, que deberá realizarse teniendo en cuenta los lineamientos y decisiones adoptadas por el Comité del Patrimonio Mundial de la UNESCO y presentado para aprobación del Centro del Patrimonio Mundial:

#### I. Técnicas

**1. Formular un plan integral para la investigación y conservación del sitio de Tiwanaku** que contemple las particularidades de cada uno de los monumentos que lo conforman con la participación de un equipo multidisciplinario cuyo objetivo principal este orientado a:

- Definir una zonificación del sitio y de cada uno de sus monumentos que incluya principalmente la determinación de las zonas intangibles, uso público, protección y sus correspondientes medidas regulatorias.
- Identificar y rehabilitar el sistema de drenaje prehispánico del sitio y de cada uno de sus monumentos.

**2. Concluir con los estudios para la implementación de la acometida principal de drenaje en torno al sitio arqueológico.** Este estudio deberá considerar la rehabilitación del drenaje original evidenciado en el sector oeste de Putuni y en el sector de Pumapunku.

**3. Considerar la posibilidad de instalar una estación meteorológica en el sitio** que permita su monitoreo de en función de las necesidades de la investigación y conservación del sitio.

**4. Continuar el seguimiento e investigación de los morteros en campo y laboratorio** para evaluar su comportamiento físico y químico.

**5. Realizar diagnósticos para determinar los diferentes agentes y procesos de deterioro** provocado por factores bióticos y abióticos (químico y físico) en las diferentes estructuras del sitio.

**6. Adaptar barreras ecológicas** en el sitio que permitan mitigar los impactos físicos, químicos, biológico y antrópico tomando en consideración los datos meteorológicos registrados periódicamente.

**7. Finalizar el proyecto de Plan de conservación** para el sitio de Tiwanaku teniendo en cuenta las normas internacionales establecidas en el ámbito de la conservación del patrimonio cultural.

## II. Aspectos de gestión

1. Garantizar **condiciones óptimas de trabajo** para proteger la salud y seguridad del personal encargado de las labores de investigación, conservación y de mantenimiento en el sitio, en aplicación de la “Ley General del trabajo”.
2. **Replantear el circuito de visitas** tomando en cuenta los grados de afectación en cada una de las estructuras que componen el sitio. Este circuito deberá complementarse con un sistema de señalización y señalética de seguridad para los visitantes que corresponda a los estándares internacionales utilizados en sitios “Patrimonio Mundial”.
3. **Promover la capacitación y la concientización de los guías y operadores turísticos** en la protección, conservación, y preservación del sitio, para orientar e informar a los turistas y visitantes.
4. Desarrollar un **programa de sensibilización dirigido a la población local** a través de la organización de talleres participativos con el fin de socializar la significación del sitio, su Valor Universal Excepcional (VUE), así como los resultados de las acciones de investigación y conservación emprendidas.
5. **Efectuar monitoreos periódicos** con el apoyo de un equipo multidisciplinario para la conservación del sitio de Tiwanaku, en colaboración con instituciones especializadas vinculadas a los diferentes ámbitos.
6. En el marco de las prerrogativas del CIAAAT, **nombrar un Director de arqueología en el Área de investigación** prevista por la normativa y definir los responsables de cada uno de los componentes que forman parte del plan de investigación y conservación del sitio.

## III. Cuestiones Normativas

1. Promover el apoyo y **facilitar el proceso de regulación urbana de la ciudad de Tiwanaku (identificación de zonas de crecimiento urbano, definir** altura de edificaciones, materiales de construcción y tipología arquitectónica), con especial atención en el área adyacente a la zona protegida.
2. Elaborar un **mapa de actores claves** para la gestión y la conservación del sitio.
3. **Compilar y centralizar toda la documentación existente** producto de las investigaciones anteriores y estudiar la posibilidad de crear un centro de documentación sobre el sitio de Tiwanaku con el correspondiente equipo y facilidades técnicas.
4. **Promover nuevos convenios para fortalecer capacidades en los ámbitos de la conservación y la gestión** del sitio con entidades académicas nacionales e internacionales.
5. Concluir en la brevedad posible la **designación del futuro Director del CIAAAT**.
6. **Fortalecer el sistema actual de cooperación inter-institucional** con el fin de facilitar la adopción e implementación de las medidas para la investigación y conservación del sitio.
7. **Fortalecer la cooperación institucional de las entidades involucradas** para una gestión adecuada del sitio y los museos.
8. **Promover programas de cooperación e intercambio de experiencias** en el campo de la conservación y museografía.

## IV. PUERTA DEL SOL

1. Realizar una **evaluación estructural de la cimentación**.
2. Proponer un **sistema que permita aislar la capilaridad de la base de la estructura**.
3. **Recabar toda la información disponible** y elaborar un registro periódico que permita un monitoreo detallado de la estructura y su iconografía.
4. Tomando en consideración el estado actual de conservación de la estructura, **mantener su ubicación actual dados los riesgos que implican su movilización**.

## V. PUTUNI

1. **Evaluar la pertinencia de la restitución de los muros con piedra y la utilización de la técnica de la pirca y la técnica de sillares**, previo estudio de la técnica de diferenciación en los futuros trabajos de mantenimiento y conservación en relación al alineamiento de las piezas originales.
2. En caso de continuar con la restitución de muros utilizando el adobe revestido con barro, se deberá mantener el **alineamiento con los elementos originales** de piedra considerando que ya existe una clara diferenciación en el acabado de los materiales.

## VI. AKAPANA

1. **Realizar de manera prioritaria estudios de mecánica de suelos** y aprovechar dichos estudios para reforzar la información arqueológica.
2. **Restringir el acceso público a la pirámide** para evitar la degradación del suelo, en previsión de la realización de los futuros trabajos de investigación arqueológica.
3. Implementar de manera preventiva **un sistema de canales de evacuación de las aguas pluviales desde la parte superior de la pirámide y continuar el trabajo de control de aguas pluviales**.
4. Implementar de manera preventiva una **cobertura vegetal en las áreas expuestas que mitiguen los efectos de la erosión hídrica y eólica**.

## VII. PUMAPUNKU

1. **Registro de cada una las piedras y levantamiento con el apoyo de un escáner 3D**.
2. Una vez concluidos los trabajos, **reducir la altura del talud de las excavaciones** para evitar la aceleración de los vientos que incrementan el efecto de la erosión en las piedras originales.
3. **Desarrollar y ejecutar un proyecto de conservación definitivo en el sector sur** considerando que las excavaciones arqueológicas están concluidas. Así mismo se recomienda la utilización de los geoblocks y/o piedra chancada en los pisos de las plataformas con la finalidad de evitar la erosión.



## VIII. MUSEO CERÁMICO

1. **Realizar de manera urgente un inventario detallado de las piezas existentes en el museo** con el fin de determinar la cantidad de material cultural, el grado de importancia y su grado de deterioro. Posteriormente, se deberá elaborar un registro con base en los trabajos en curso desarrollado por el Ministerio de Culturas, de las piezas identificadas tomando en consideración los lineamientos internacionales establecidos.
2. **Realizar e implementar un proyecto de mantenimiento de la cubierta del edificio.**
3. Evaluar la posibilidad de establecer una **cooperación con entidades especializadas en el área de conservación de patrimonio mueble** con la finalidad de brindar condiciones eficientes de preservación del material cultural con mayor nivel de vulnerabilidad.

## IX. MUSEO LÍTICO

1. **Desarrollar de manera urgente un proyecto que incluya la ingeniería del detalle** para asegurar la reparación de la cubierta del museo y presentarlo para estudio al Centro del Patrimonio Mundial.
2. **Elaborar un proyecto de museología y museografía** con las piezas identificadas siguiendo los lineamientos internacionales establecidos.
3. **Elaborar un diagnóstico detallado de cada una de las piezas líticas para poder desarrollar un programa de restauración y poder asegurar su conservación.**
4. **Reducir de manera prioritaria y urgente el nivel de agua y la humedad en la base del monolito Bennett.**

*Tiwanaku, Bolivia, 29 de Agosto de 2012*