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BLOG POST

Conservation of the Fortress of São Sebastião, Ilha de Mozambique

April 25, 2014 | by Maurizio Berti

The Fortress and Other Buildings

The approach to the reading of the materials and structures of the fortress of São Sebastião in Ilha de Moçambique must be accompanied by knowledge of the stages that marked its building. This architecture should be fully examined, and the studies, prior to the 1980s, of its transformations should be resumed to understand its history and its current physical structure. From my survey it seemed that the idea of designing the fortifications as a set of flexible rather than brittle materials was seriously considered in the seventeenth century transformations at the bulwarks São Gabriel to the southwest and Santa Bárbara to the southeast. This hypothesis, obviously, should be verified by tests and stratigraphic surveys.

In 1991 UNESCO included Ilha de Moçambique on the World Heritage List. This date was preceded and followed by numerous activities in the cultural and political fields. The document that best expresses the desire to learn, restore, and enhance the heritage of Ilha in a period of neglect and general disinterest is the Relatório/Report Ilha de Moçambique published in English and Portuguese by the Secretaria de Estado da Cultura of Moçambique and Arkitektskolen i Aarhus in Denmark, dated 1982–1985.

Roofs

first phase of restoration had been largely implemented.

In the tender documents for the rehabilitation works by UNESCO, the strategy governing their action seemed very clear; the rehabilitation was intended as a part of a wider program of cultural preservation and social development. In brief, restoration has to become an extraordinary opportunity to improve the conditions of society as a whole; the process is time-consuming and takes in the various aspects of a society strongly focused on economic development, but still keeping its historical and traditional characters. The choice of prolonging the process of the heritage conservation is also beneficial to the recovery of the fortress, because of the complexity and the participation of different social elements.

Thanks to the studies and applications of the past three decades we can now say that the restoration of a historical monument of great size requires a programmatic approach distributed along a reasonable period of time. Facing complex historical layers in structures, forms, and uses, designers and contractors are generally able to identify the most appropriate technical solutions for a good rehabilitation or restoration. But they are often faced with the need for substantial financial resources. In this case an intelligent conservation program may establish a protocol of interventions distributed over a long period of time and hierarchically arranged according to those criteria of necessity and urgency of the monument itself.

The work at the top of the hierarchy was the restoration of the high platforms and the terraced roofs, completed in 2009. The work has achieved two important tasks: the drastic reduction in the degradation of the structure, now effectively protected from sea storms and torrential rains, thus eliminating the phenomenon of walls disaggregation due to the reformation of soluble salts; secondly, the restoration of the system of collection and storage of rainwater for domestic use by the islanders and their guests.

Today, the fortress is no longer a great monument in a state of abandonment and an incipient condition of decay, but is now protected and made safer by implemented structural safeguards, so can be visited by scholars and tourists and

maintenance schedule for each subsequent building site. The owner can take care of this monument with a modest amount of money, adopting simple maintenance practices and following the guidelines developed by restorers, pending, during and after each restoration yard phase.

Plasters and Mortars

The coral stone buildings require a constant care of the plasters that, together with roofs, ensure the necessary level of protection of the walls to avoid the phenomenon of disintegration due to salt.

The practice of patching may be performed as in the past, using slightly porous plasters to avoid the penetration of marine aerosol and rain. Looking at some remains on the high curtain walls is very easy to recognize that the fortress of Ilha de Moçambique was plastered in the past, as was also the fortress of Ilha do Ibo. Restoration of plastering is an issue to be faced with special care for formal, historic, and material reasons.

With reference to the fortresses of Moçambique and Ibo, we see two different treatments on surfaces of curtain walls during the most recent restoration. In the case of São João Baptista fort of Ibo, in 2007 some missing parts of the curtain wall were restored and the whole painting was renewed with whitewash. Otherwise, during the restoration of 2009, the curtain wall of the fortress of São Sebastião was only integrated in some limited points, but not protected by a new painting imitated from remains of ancient painting still existing today. The two solutions were probably suggested by the different condition in which the walls of two architectures were maintained in recent decades, while still both military buildings were in use: the periodic renewal of the whitewash in the fort of Ibo and the abandonment of the practice of surface protection in the fortress of Moçambique.

Finally, why these two different maintenance practices in the recent past? The simple answer is suggested by the observations that we have above titled “Different hardness in coral rocks.”

In the construction of the roof terrace and in mixing the mortar for plastering is

a comprehensive knowledge of this traditional technology. During my studies I have limited myself to visit some sites where the liquid murrapa was used, to observe the conditions for growth of this climbing plant and, at last, to find its botanical classification.

Murrapa

Mentioned by historian Alexandre Lobato and sociologist Carlos Lopes Bento, the traditional use of a product called murrapa has been investigated by two scholars, Pedro Quirino de Fonseca and Julio Carrilho. Their observations about the uses of murrapa were part of studies on Ilha de Moçambique and Ilha de Ibo. Their description is limited to the process performed at the building site: the stems of the plant are cut in pieces and are then placed in a container full of water for twenty-four hours or more. During this period of time a gel layer formed by the cut pieces is produced on the surface. This gel mixed with lime makes the mortar rigid and impermeable.

Accompanied by a mason of Ilha de Moçambique, I reached a place called Lumbo where specimens of murrapa grow. Taking a sample of leaves and stems I could finally acknowledge the scientific classification of the plant. In Brian Morris's systematic definition the murrapa is classified as *Cissus integrifolia*. In addition to the botanical characteristics, Morris also reports a regional name Mthambe (Nthambitambi), very similar to Ntamba (Ntambatamba), a name used in Ibo, as Carrilho reveals.

In the handbook *Conservation and Design Guidelines for Zanzibar Stone Town*, published by the Aga Khan Trust for Culture, we find the information that in Zanzibar a seaweed extract is used as a binder in lime whitewashing. The seaweed is *Eucheuma Denticulatum*, which grows along the coast of Zanzibar.

The use of natural substances as binding materials in the mixture or as a protection should be studied specifically. We know that the substance produced by the murrapa is used in traditional practices, but there is no evidence as to the quality of the effects.

I observed this effect in an earth plaster applied to the reed walls of a traditional

solution as repellent or waterproofing on walls or terraces made of coral limestone. I said “solution,” but perhaps it is more appropriate to say “emulsion.” Once clotted, this substance is almost insoluble in water. However, if the trunks of murrapa stems are crushed and put to soak in water for about a week, it continues to create a substance that tends to coagulate and separate from water. Until the liquid of murrapa is immersed in water, perhaps we can speak of a colloidal solution. This substance can pass from a liquid to a semi-solid state and vice versa when, for example, it is transferred from the soaking container to another one for sieving its impurities.

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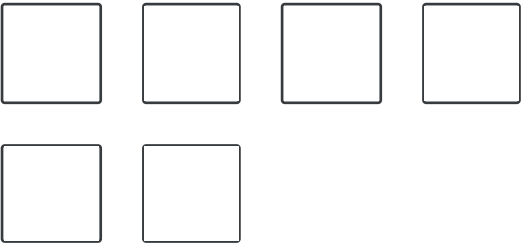
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