

# CONSERVATION AND RESTORATION OF MAYAN ARCHAEOLOGICAL HERITAGE FROM AN INTERDISCIPLINARY APPROACH

Gaspar Muñoz Cosme<sup>1</sup> and Cristina Vidal Lorenzo<sup>2</sup>

<sup>1</sup>Instituto Universitario de Restauración del Patrimonio de la Universidad Politécnica de Valencia

<sup>2</sup>Departamento de Historia del Arte de la Universitat de València

CONTACT AUTHOR: Gaspar Muñoz Cosme, gmcosme@upv.es

**ABSTRACT:** *The extreme tropical environment where the still half-buried ruins of the ancient Mayan civilisation, noted for the monumentality of their architecture and their refined artistic features, are to be found, accounts for the precariousness of their conservation and the difficulty which we researchers, dedicated to studying and evaluating this rich archaeological heritage, are now faced.*

*Since 2004 a team from the Polytechnic University of Valencia, the University of Valencia and the San Carlos University of Guatemala have joined forces so as to undertake, from an interdisciplinary and inter-institutional approach, an archaeological intervention on the ruins of La Blanca, in Petén, Guatemala, which is the purpose of this study.*

**KEYWORDS:** archaeological heritage, mayan culture, conservation, restoration

Over recent decades, intervention projects on archaeological and architectural heritage have enjoyed great technical and disciplinary complexity. We are far removed from those first interventions in which the pioneers of heritage protection had to face this issue with good intentions rather than means, given that there were few technical resources available. Nowadays, new restoration, conservation and intervention techniques demand the structuring of a highly skilled multidisciplinary team in order to be able to tackle each and every one of the different aspects and tasks that the investigation, conservation and restoration of these heritage assets involve.

One very clear example of scientific research and restoration development can be observed in the Mayan area, by comparing the mechanisms and criteria that were employed ever since the times of the very first scientific projects, some sixty or seventy years ago, with those used nowadays. For many years, interventions in this immense cultural heritage were directed by scholars who at times found themselves faced with the brain-teasing question of “excavating” buildings more than 50 m in height. Whilst it is true that fieldwork in this area must be undertaken employing archaeological methods that record and bear witness to all those findings that may provide us with information on that culture, it is no less so that, when tackling the task of resuscitating these huge pyramids and palaces from their millenary sleep, it is essential to also have other professionals involved, such as architects, surveyors or restorers so as to be able to undertake this task effectively and competently.

Despite the obviousness of the above statement, effective collaboration has not always existed between the different professionals in archaeological projects, much to the detriment of the work undertaken, all of which is due, perhaps, to a lack of planning in the control, documentation, exhumation and conservation requirements of the archaeological asset when beginning an intervention on a Mayan site. This fact, which may have had some justification when fieldwork investigation first began, among other things because neither the archaeological techniques nor the conservation techniques were sufficiently developed, is today inconceivable.

## A SHORT HISTORY

From the dawn of archaeological exploration in the Maya region comes a well-known anecdote on the discovery of the Yaxchilán site, that is very illustrative how the beginnings of this discipline came about, in which the leading role of the discoverer was as important as the finding itself. According to the French explorer, adventurer and scientist, Désiré Charnay, he was very surprised when he found out that a certain “Don Alfredo” had already passed through the city that he was about to “discover”. He was told this by some of the men serving Alfred Maudslay –another great English explorer and one of the pioneers in research into the Maya region-, who were requisitioning supplies to take to Yaxchilán, where “Don Alfredo” was already camped. No doubt the meeting between both explorers was similar to that which had taken place a decade before between Sir Henry Morton Stanley and the explorer and missionary David Livingston on the banks of Lake Tanganyika in 1871, when the former uttered the famous sentence “Dr. Livingstone, I presume”. Désiré Charnay was very worried about his exploration campaign because he needed some great discovery to satisfy the financial backer of his expedition, Pierre Lorillard, a North American of French origin and owner of an important tobacco firm in the United States. Obviously, Yaxchilán was the ideal city to be offered to him, but the unfortunate appearance of “Don Alfredo” seemed to have dashed all his hopes. However, it was not so, as the good manners and courtesy of the English explorer allowed the meeting between the two researchers to be extremely friendly and reassuring for Charnay who saw his desires fulfilled. Désiré Charnay himself tells us what happened:

*De droit et de gauche, des ruines se présentent à ma vue, étranges, presque nouvelles dans leur disposition générale, mais palenquéennes para l'architecture, les détails et la décoration. Je passe, et, remontant le fleuve à 300 mètres au delà, je vois venir à ma rencontre un grand jeune homme blond que je reconnais à première vue pour un Anglais et un gentleman. Nous nous serrons la main ; ma carte lui avait dit mon nom, qu'il connaissait; il me dit le sien : «Alfred Maudslay, de Londres», et,*



Figure 1. Portrait of French 19th century explorer and researcher, Désiré Charnay



Figure 2. Works of the University of Pennsylvania Museum in Tikal



Figure 3. Walls of La Blanca Acropolis



Figure 4. Kitchen in a house of La Blanca village



Figure 5. Surveying work in La Blanca.

*comme je restais quelque peu stupéfait et déçou, Alfred Maudslay, devant ma pensée, me dit aussitôt : 'Ne prenez point ombrage de ma présence; un accident m'a peut-être fait arriver dans ces ruines avant vous, comme un accident vous eût fait arriver avant moi; je ne suis point un rival et vous n'avez rien à craindre. Je ne suis qu'un simple amateur voyageant pour son plaisir; vous êtes un savant et la ville vous appartient: baptisez-la; explorez, photographiez, moulez, vous êtes ici chez vous. Je n'ai pas l'intention d'écrire ni de rien publier; au besoin, ne parlez pas de moi et gardez votre conquête pour vous seul; et maintenant, laissez-moi vous guider; j'ai fait préparer un palais, et votre demeure vous attend.'*

*Je fus profondément touché d'une telle délicatesse; mais je ne pouvais accepter l'offre de mon généreux compagnon de voyage, et nous allons partager en amis la gloire d'avoir exploré cette nouvelle ville. (Charnay, 1885:379).*

Nevertheless, Charnay took advantage of the Maudslay's generosity and named the city *Ville Lorillard*, although that name did not last very long and nowadays it is known as Yaxchilán by everybody.

Later, the intervention in Tikal at the end of the 1950s by the Museum of the University of Pennsylvania, undertaken with abundant resources, heralded a system of work in which different professionals intervened in a grand archaeological project, although that system did not continue to be the habitual one employed on other similar

projects and many Mayan sites in Guatemala, Mexico and Honduras were excavated without adopting the due measures of documentation, restoration and conservation, and without the joint work of specialists in the different fields. Fortunately, the situation changed notably during the final decades of the twentieth century, when interdisciplinary work began once again to be valued, in such a way that professionals from different disciplines joined forces in several projects with the aim of improving results in quality and effectiveness.

Furthermore, it should be borne in mind that these interventions on Mayan archaeological and architectural heritage always constitute scientific research that must be endorsed by the expertise of the directors and researchers involved. This same consideration brings with it the need for the results obtained to be published so that the entire scientific community that works in this field can be kept informed about the latest findings and interpretations arising out of the different projects. Nevertheless, the results of these research projects are often not published and distributed quickly enough.

In short, it is essential nowadays, when seriously planning an intervention project into the cultural heritage of the Maya region, to have an interdisciplinary team that can use the technological means suited to our times in order to achieve a satisfactory result in each of the different facets of the project, and to have a predetermined results publication plan that will ensure publication within a short period of time.



Figure 6. Architectural survey of the buildings on La Blanca Acropolis



Figure 7. Photograph taken by specialists of the graffiti on the inside walls of La Blanca



Figure 8. Archaeological team during the excavation of Burial 1 of La Blanca

### LA BLANCA PROJECT, PETÉN (GUATEMALA)

La Blanca Project arose out of an identification study undertaken in 2003, which formed the basis for the excavation work the following year, with the support of the Spanish Ministry of Culture as part of its promotion and advancement programme for overseas Spanish archaeological research projects. However, the background of this project dates back to the last decade of the last century, when the scientist in charge of the same visited the ruins of La Blanca for the first time and were amazed at the quality of its architecture and the uniqueness of its urban structure, at the same time as noting its link to a small village of the same name that had serious deficiencies in terms of social and economic development. The physical work remained on hold until the right moment was found to begin, even though right from that first moment information began to be gathered on the archaeological site and its nearby village so as to be able to seek the appropriate means for identifying the project. Finally, the La Blanca project began on 15th September 2004.

From the outset fieldwork planning was undertaken. One of the first tasks consisted of archaeological prospecting and drawing up a topographic plan of the entire site with the aim of identifying the most important mounds and buildings that made up the city. It was, therefore, necessary to have a team specialising in topography with recourse to all necessary means. This allowed us to draw up the first topographical plan of the area, a plan that was enlarged the following year to include a surface area of 26 hectares.

At the same time, an architectural plan of all buildings visible at that moment was drawn up, so that, when the archaeological probing stage began, shafts could be accurately located in the survey as a whole and, in particular, on some pre-established axes that followed the orientation of its main buildings. In this way, different stratigraphs could be compared and hence the different building stages of La Blanca established as well as their assignment to the chronological periods established for the Maya region. Having gathered all this information, all the other activities involved in the in-depth excavation, conservation and restoration of the different monumental complexes on the La Blanca site could be planned.

Throughout the following excavation campaigns undertaken (2005, 2006 and 2007), therefore, the work team consisted of archaeologists, surveyors, architects, restorers, art historians, photographers, draughtsmen, biologists, chemists, physical anthropologists, engineers and sociologists and it has not been ruled out that, in the following seasons, it may be necessary to include other professionals who can contribute new knowledge and analyses from the point of view of other disciplines so as to enrich the intervention.

All These specialists are coordinated by the project directors who establish the action guidelines and the objectives of each of the disciplines. By doing so, a comprehensive study is gradually built up from the different analytical points of view that compiles and inter-relates all the information that can be extracted from the archaeological site (Muñoz and Vidal Eds., 2005 and 2006 and Vidal and Muñoz Eds., 2007).

This work method, that obviously presents a certain complexity in planning and coordination, has the advantage of being able to deal with, examine, check and analyse each item of information that make up the body of the project by the individuals most qualified to do so and by those who are capable of obtaining concrete results that, although in isolation may not represent an important finding, together with the rest form an overall final result aimed at fulfilling the general objectives of the research.

Setting off from these premises, La Blanca Project has placed a special emphasis on the process of control, documentation, and conservation *in situ* of the exhumed remains, in the conviction that only by minute attention to these excavation stages can one avoid the irreparable damage to archaeological remains and loss of contextual information so necessary for their later interpretation and the reconstruction of the site's history.

The work between excavators and restorers has in this sense been fundamental in successfully conserving the stucco coatings, pigment remains and the numerous graffiti inscribed in the walls of the palaces of La Blanca, as well as the bone remains exhumed (Carrascosa and Lastras 2006 and 2007 a and b).

Thanks to that, we are now in the position to undertake a unique and comprehensive study of these so interesting and so little-studied manifestations of Mayan art. At the same time, the fact that we have practically complete burials in the laboratory is considerably facilitating the bio-anthropological and paleo-pathological study, something essential bearing in mind that, in humid Mayan land, bone remains are usually conserved in a very precarious state. Likewise, the appropriate *in situ* conservation of pigment remains is enabling us to establish what colours were originally used in La Blanca's architecture, as well as to undertake chemical analyses on their origin and composition, something that is only possible when the sample has been properly protected.

Similarly, throughout the intervention process into the ruins of La Blanca, joint activity has been undertaken by archaeologists and architects, conscious of the fact that, in the Maya area, the building excavation must always be supervised and led by specialists with wide knowledge on the architecture of that civilisation, its typologies and



Figure 9. Restoration team consolidating Burial 5 of La Blanca



Figure 10. Cleaning and consolidation of stucco on the palace walls of La Blanca



Figure 11. Typical visitors from the neighbouring village

its structural and constructive systems, so as to prevent situations which may endanger the integrity of the buildings excavated and the prestige of the excavators. When, in the excavation process, the aim is also to recover and appraise buildings, these specialists must also be those in charge of supervising the three stages that this type of activity entails: urgent consolidation, provisional consolidation and definitive restoration (Muñoz, 1992: 108-111).

These three stages are based on the consideration that the state in which the buildings are exhumed, following more than a thousand years of being buried, is a fragile state, both due to the conditions of the original materials themselves and to the partial destruction of the buildings themselves, all of which is not helped by the extreme tropical climatic conditions. Therefore, it is essential to apply a protocol of consolidation conduct that allows the necessary measures to be taken immediately in order to prevent irreversible damage that may cause

a radical change in the equilibrium of the excavated building. This constitutes the first stage, or urgent consolidation, that should be undertaken immediately on excavation. After an initial study of the building and the subsequent surveying, a second stage or provisional consolidation has to be tackled in which the necessary measures are taken for consolidation and protection, so that the building can remain stable for a greater period of time without suffering deterioration. Finally, and once the complete studies on the architectural and typological characteristics, its insertion into the corresponding urban setting, as well as an evaluation of its structural state have been carried out, the definitive restoration action can be undertaken so as to leave the building in perfect conservation condition, at the same time as providing a better idea of what it was really like for possible visitors.

From the study and analysis of the architectural reality of the buildings excavated, a great deal of information can be extracted on



Figure 12. Schoolchildren's visit to the ruins from La Blanca village

the materials and building systems employed on the site, as well as on the constructive pathologies that may arise, which is of great use in subsequent excavation processes undertaken.

All the data produced in subsequent architectural surveys of exhumed buildings is incorporated into the general topographic plan initially undertaken, so gradually approaching the architectural reality of the city in its original state.

#### TOWARDS A VISITABLE ARCHAEOLOGICAL SITE

One of the fundamental aims of the La Blanca Project is that this Maya city and its architectural ruins may be culturally appreciated by possible visitors and, especially, by the neighbouring towns. Hence, regardless of all the scientific research process, it was considered necessary to undertake an appraisal of its architectural heritage, so that the city and its buildings could be observed and appreciated by all the visitors arriving on site. This aim is essential in order to overturn the concept of ruins that the neighbouring towns have held for a long time; they only saw in them a possible economic benefit by looting them in order to find archaeological pieces to be sold at an illegal market. Showing the value that the Maya ruins have for the populations of the neighbouring towns is essential so that those populations begin to appreciate and value their cultural heritage and to identify it with their past history and with the present that must lead towards social, economic and cultural development.

For all these reasons, it is essential, on finishing the research and restoration tasks, that the La Blanca archaeological site be an attractive and explicit location that attracts cultural visitors from neighbouring towns and more far off places by generating a flow of low-intensity cultural tourism that can provide certain economic benefits and development to the La Blanca population. In fact, it should be said

that since the beginning of the excavation work in 2004 up till now, the number of visitors has increased, encouraged to a certain extent by tourism agencies who have included this site in their tour routes on considering that it already possesses sufficient visible elements to be visited in a satisfying way.

#### BIBLIOGRAPHY

Carrascosa, B. y Lastras, M. (2006): "Tratamientos de conservación y restauración del cuarto de los grafitos", en *La Blanca. Arquitectura y clasicismo*, eds. G. Muñoz y C. Vidal, Editorial UPV, Valencia, 79-87.

Carrascosa, B. y Lastras, M. (2007): "Conservación *in situ*. Revestimientos interiores de los edificios 6J1 y 6J2", en *La Blanca y su entorno*, eds. C. Vidal y G. Muñoz, Editorial UPV, Valencia, 29-38.

Carrascosa, B. y Lastras, M. (2007): "Conservación y extracción de restos óseos", en *La Blanca y su entorno*, eds. C. Vidal y G. Muñoz, Editorial UPV, Valencia, 97-104.

Charnay, D. (1885): *Les anciennes villes du Nouveau Monde*, Librairie Hachette et Cie., Paris.

Muñoz Cosme, G. (1992): Informe sobre la restauración arquitectónica en la ciudad de Oxkintok, en *Oxkintok 4*, Ministerio de Cultura, Madrid.

Muñoz Cosme, G. y Vidal Lorenzo, C. (Eds.) (2005): *La Blanca. Arqueología y desarrollo*, Editorial UPV, Valencia.

Muñoz Cosme, G. y Vidal Lorenzo, C. (Eds.) (2006): *La Blanca. Arquitectura y clasicismo*, Editorial UPV, Valencia.

Vidal Lorenzo, C. y Muñoz Cosme, G. (Eds.) (2007): *La Blanca y su entorno*, Editorial UPV, Valencia.

## AUTHORS

**Gaspar Muñoz Cosme** has a Doctorate in Architecture from the Polytechnic University of Valencia, is a Professor at the Department of Architectural Composition at the Polytechnic University of Valencia and researcher at the IRP. He has taken part, as an architectural restorer, in various projects in Europe and America and is Director of Architecture and Restoration for the La Blanca Project (Guatemala).

**Cristina Vidal Lorenzo** has a Doctorate in Geography and History from the Universidad Complutense of Madrid, and has been a member of various archaeological expeditions in Europe and America. She is a Professor at the Department of the History of Art at the University of Valencia and Scientific Director of the La Blanca Project (Guatemala).

---

*Versión española*

TÍTULO: *La conservación y restauración del patrimonio arqueológico maya desde un enfoque interdisciplinar*

RESUMEN: *El medio tropical extremo en el que se encuentran, aún semienterradas, las ruinas de la antigua civilización maya, caracterizadas por la monumentalidad de su arquitectura y sus refinadas manifestaciones artísticas, ha determinado la precariedad de su conservación y la dificultad con la que hoy en día nos encontramos los investigadores dedicados al estudio y puesta en valor de este rico patrimonio arqueológico.*

*En este sentido, y desde al año 2004, un equipo de la Universidad Politécnica de Valencia, la Universidad de Valencia y la Universidad San Carlos de Guatemala ha aunado sus esfuerzos para, desde un enfoque interdisciplinar e interinstitucional abordar la intervención arqueológica de las ruinas de La Blanca, en Petén, Guatemala, objeto de este trabajo.*

PALABRAS CLAVES: *patrimonio arqueológico, cultura maya, conservación, restauración*