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Effects of conservation interventions on the archaeological Roman site of Merida (Spain). Advance of research.

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Abstract

Research on the assessment of the effects of conservation/restoration treatments on stone material has been significant in recent years, with focus on the early observation of decay caused by the application of these treatments. However, in the case of archaeological sites, research is still scarce and few studies on the subject have been published. Restoration, as everything else, has changed according to trends, mainly guided by the release of new products and technologies, an experimental field where scientific assessment of suitability, efficacy and durability pre-evaluations of treatments are not always conducted. Some efforts have been made to solve this problem in the architectural field, where functional needs and technical requirements force to set clear standards. Unfortunately, archaeological sites, unlike historic buildings, have specific features that preclude the extrapolation of these results. A critical review of the methodologies, products and restoration materials is necessary, coupled with deeper research on degradation mechanisms caused by these treatments in the mid- and long-term. The aim of this paper is to introduce the research on the above issues using Merida as a case study.

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Keywords: Conservation; Treatments; Stone; Archaeology, Merida, Restoration.

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1. Introduction

Nowadays all experts involved in conservation of cultural heritage have to deal with the effects of past and even relatively recent restorations, in cases where it has lead to degradation and where application of restoration criteria and methodology still lack deep scientific research. This deficiency is even more accentuated in the case of archaeological sites. Since the 50's and 60's, with the arrival of synthetic polymers and other chemical products used for cleaning, consolidating or protecting cultural heritage, new products have been used indiscriminately, with no previous knowledge of its effects on archaeological remains. This being an experimental discipline undoubtedly entails remarkable advantages, as well as a considerable number of risks, especially when some techniques and products are used or applied with no previous laboratory testing.

For different reasons, other disciplines in the field of conservation science, such as painting or architecture, even restoration of archaeological objects, have demonstrated certain concern on the effects or alterations caused by former treatments. The conservation of archaeological sites, a relatively modern discipline (in systematic and scientific terms), is a complex discipline where too many factors apply and the particularities and individual features of each site preclude the application of universal rules. Research in stone conservation also has a long tradition in identification of pathologies, mechanisms of degradation and development of treatments. However, the effects of some of those treatments in the mid and long-term are still poorly described.

Few studies have been conducted on the effects that conservation interventions have had on original stone material after some years, even decades, and most of them focused on the conservation of historical buildings and on consolidation and hydrophobic or protective treatments [1-10].

Merida is an ancient Roman city that was listed World Heritage Site by UNESCO in 1993 (Figure 1). Excavation began in 1911 and the first restorations were performed in the early 20's with the anastylosis project on the theater (Figure 2). For this case study we count with an evolution of criteria, techniques and products, since the early 20's until the present day, thus showing a wide range of analysis cases.

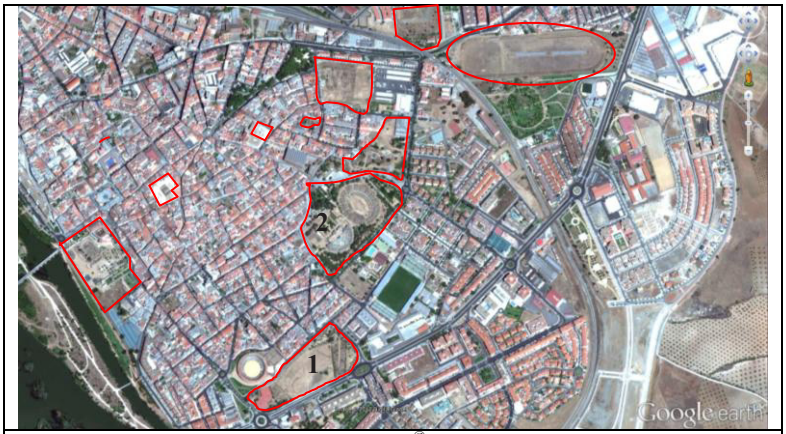

Fig. 1: Orthophoto from Google Earth© where main archaeological sites inside the urban area are marked in red.

This research is initially focused in two archaeological areas, House of Mitreo (1) and Roman Theater (2) (Fig.1).