Title: Architecture for Archeology - identifying new modular and flexible types of shelter adaptable to the diverse needs of archaeological sites

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Summary

With the construction of coverings in the Valle dei Templi of Agrigento, the management of the Park Agency is carrying out an experimental action which can produce innovation in the context of lightweight and temporary structures. The "Architecture X Acheology" workshop explored the state of the art in terms of works protecting archaeological landmarks, with the goal of identifying new modular and flexible structures which are adaptable to the diverse needs of archaeological sites. Parametric and computational strategies are the bases used for the design of the shelters.

The Park, which covers 1,300 hectares, preserves an extraordinary monumental and landscape patrimony. Though visited by millions of tourists, the archaeological sites are not appropriately equipped for tourist use. To better use this enormous cultural resource and to make it an active agent of the regional economy, it is of strategic importance to equip it with new facilities which are appropriate for today. For this purpose, the workshop has seen professors and students of Politecnico di Milano, Palermo University, and of Tokyo University involved in the construction of experimental prototypes for the protection of archaeological finds and excavation sites. The shelters produced during the workshop —other than having a functional and aesthetic value— form the first nucleus of a park of modern architecture within an archaeological park. The paper describe the willingness to systematize the great potential value which the interdisciplinary prospect of integration between architecture, structure and archaeology, offer to the disciplines in terms of research and analysis.

Keywords: Archeology, Architecture, Innovation, Digital Fabrication, Shelter

1. Introduction

"Architecture x Archeology" is a co-joint workshop held at the Parco Archeologico Valle dei Templi di Agrigento, together with Tokyo University, Politecnico di Milano, and University of Palermo, with the aim to design and build three pavilions for covering and safeguarding archeological excavations, and for protecting archeologists from atmospherical agents such as sun and rain.

The workshop offered an up to date study about shelter structures for archeological sites. It aimed at producing modular and flexible structure adjustable to different scenarios and needs. The workshop was divided in to two parts: the first preliminary part -45 days- took place at each respective university of the players involved. The second phase -7 days- took place on site.

The first preliminary part introduced issues relating to the complexity of designing within archeological sites, applications of computational design, structural stability, and practical solutions for quick physical materialization within limited time and budget. The second part explored culture and nature of Akragas (old name for Agrigento) which served as a pretext for further exploring design for archeological sites.

Three teams, each comprised of 6 to 10 members, ultimately produced three full-scale shelters to test out their ideas, methodologies, proposals, and materials. Despite differences in use of software

(Rhinoceros, Grasshopper, BIM, Autocad), principal material (wood, bamboo, stones, micro-perforated polycarbonate), fabrication method (CNC routing, manual sawing), and budget (from 1,000 EUR to 6,000 EUR, including all costs) it was possible to make comparisons and analysis during the process and later in three distinct outcomes.

1.1   Functional Program: Shelters

Due to the complexity of the touristic fruition of Agrigento's archeological site the workshop focused only on shelter for covering and safeguarding archeological excavations.

This theme represents an unsolved issue of many open air archeological sites in Italy. In fact, archeological excavations needs a particular protection against atmospherical events that may bring back the excavations to their original conditions.

Moreover, the shelter theme represents a complex theme because induces a substantial modification of the site aspect. In case of construction -besides technical problems such as anchoring the tructure to the ground- the site will be inescapably changed by the addition of a new volume on the site. In this sense, the team were asked to see their respective project as a shape that merges and connects to the landscape, and not as an opposing element. The three teams tested different technical and material solutions, all respectful of the historical heritage.

The experimented solutions were of two types:

1) Shelter with a light structure easy to move and disassemble.

2) Shelter with a medium-light structure easy to move and disassemble.

2.   Archeology and Architecture

According to architect-archeologist Sebastiano Tusa, the relationship between archeology and architecture has always been characterized by several, interlinking factors including historical perspectives, technological aspects, issues relating to restoration and the link with the local territory. No matter how tight this relationship has been, it has not always been linear and calm, both of which are necessary qualities for advancing the state of the art in this area. Differences due to background, epistemological divergences, academic contradictions and reciprocal individualism have produced a fracture between architecture and archeology - not only concerning research and analysis, but also the design of new facilities, restoration, and the transformation of the asset into a more fruitful experience: it seems logical to say that is time for architecture and archeology to start talking to and understanding each other.

2.1   Sicilian Context

Architect Giuseppe Guerrera – former director of a master course on architecture and archeology offered at the University of Palermo – reckons that Sicily is not rich of primary resources, it does not have an industrial reality big enough to sustain the Sicilian economy and, finally, the tertiary sector is not in very good shape, in spite of its strategic position in the middle of the Mediterranean Sea. Thus, maybe the real resource for a concrete economic and social development is not mass tourism, but cultural tourism, a sector on which regions like Tuscany and Umbria have prospered. If Sicily is to become a region capable of supporting a successful tourism industry, it is necessary to design and build adequate structures that are currently lacking: it is mandatory to update our heritage and natural sites for a better fruition.

2.2   Architecture for Archeology

Archeological sites could be one of the most important touristic resources of Sicily. However, archeological sites, even though they are visited by millions of visitors every year, are lacking adequate and up-to-date infrastructures. In addition, this present lack of infrastructure creates obstacles to archeologists and researchers in further excavations. In order to effectively exploit Sicily's cultural and historical heritage, new facilities that respect the historical context yet remain open to the future need to be built. As the first in a series of workshops, the projects designed will form the basis of a catalogue for actual construction, and will contribute to strengthening the collaboration between the academic world and the Archeological Park of Agrigento.