Chapter 16

Communication, Technology, and Digital Culture for the Conservation and Enhancement of the Architectural Heritage

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ABSTRACT

In this chapter the main issue is focused on the reconstruction of Reggio and Messina after the earthquake of 1908 has been an opportunity to address the broken and - what is much more difficult and required - the rebalancing of memory and identity of places. Between July 2013 and September 2014 two teams of researchers at the University of Reggio and the MAP CNRS Marseille have formed a partnership to test new communications systems, technology and digital culture applied to cultural and architectural heritage. The responsibilities of the MAP CNRS, directed by Prof. Livio De Luca and the field of investigation and experimentation defined by Atelier of thesis of Prof. Francesca Fatta, found an interaction system useful for the definition of design systems for a Museum of collective memory in Reggio Calabria. The digital experiments were compared with the taking of photogrammetric works recovered from the earthquake of 1908 in Reggio, three-dimensional modeling and integrated reading systems aimed at the restoration and augmented reality.

INTRODUCTION

This paper wants to witness an educational and research that has as its objective a purpose-fold.

The first is to provide students and researchers with the basic techniques and experimental methods for the photo modeling and management models applied to architecture.

The second is to drive these technologies to the preservation and promotion of cultural heritage.

Digital technologies applied to cultural heritage are increasingly popular today as an aid to increase the use of museums and places of culture. The field of cultural heritage is an ideal field of application for digital experiments related to the historical and archaeological heritage.

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These experiments investing disciplines of representation and visual communication, aimed at creating virtual catalogs, at the museum, with the possibility of creating prototypes of parts of the historical, modeling and anamorphic specific sections dedicated to virtual reality and augmented reality.

It then was an experience of educational and research conducted between Reggio Calabria, Marseille, Lyon and Paris; between teachers and students of Mediterranean University, and a team of researchers from the CNRS MAP coordinated by Livio De Luca in the context of the European project “Messaggeri della Conoscenza” (July 2013 - September 2014), during which five students of the Bachelor of Science in Architecture and three tutors were able to follow an intensive program to test the techniques of computer modeling, rendering and virtual reverse modeling 1.

In this experience, the survey has been used as a tool to investigate the architectural reality; the drawing as a graphic language, computer graphics and multimedia, virtual technology for the enhancement of cultural heritage.

The training had a clear experimental approach focuses on the most advanced techniques of instrumental detection and multiscale modeling and rendering, suitable for virtual reality applications.

After the workshop in which they learned the techniques of taking images with photogrammetric systems and construction of 3D models, it has gone to the need to experiment with these tried and tested methods of international environments (virtual tours, immersive and augmented reality) to be able to borrow for the project in working progress of the museum of the city of Reggio Calabria.

It is a new professional capacity for the architect and conservator to consider a renewed idea of enhancing the cultural heritage report for the next experiences in Calabria.

**BACKGROUND**

The city of Reggio Calabria, its local context and history have played an important role in the determination of the this research. The earthquake of 1908 destroyed a large part of the memory of these places.

On December 28, 1908 at 5:21 a roar shook the area of the Strait of Messina. It was a devastating earthquake, one of the worst ever occurred in Europe that destroyed Messina, Reggio Calabria and dozens of other towns of the Tyrrhenian coast, killing more than 100,000 people.

The Russian Navy’s cruiser, Aurora, and some British military ships who were in the Strait at that time, brought first aid. Then the news spread, certainly not as fast as it can happen in our day, and the machinery of international solidarity was set in motion. On the spot came the queen Elena to bring comfort and to manifest the presence of the Kingdom of Italy close to the earthquake victims. An event of enormous scope that was accomplished in a period of a few minutes, and that changed that part of the world that would never be the same again.

On this catastrophe that has dramatically changed the face of a part of the country has been said and written, often creating opportunities for discussion and debate among scholars, educators, researchers and experts in the art of designing and constructing buildings, cities, territories and landscapes. The contribution that we want to provide in this debate concerns a particular project for the recovery of the historical memory of these places.

The earthquake of Reggio and Messina was perhaps the first event of our era “celebrated” with media coverage from newspapers and movies of the early 900 documentary materials relating to news reports, both Italian and foreign, awesome movies, photographs, postcards, and numerous reports.
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