

Chapter 12

Surfing Between Disciplines: Interdisciplinarity of Architectural Digital Heritage

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ABSTRACT

The aim of the chapter is to reflect on how ICT and digital tools and methodologies influence the study of architectural heritage, favouring interdisciplinary interactions. First, the chapter analyses the characteristics of digital heritage from real built contents in relation with the general concept of heritage. Then, it discusses the communicative characteristics of 3-D digital models and the related issues, common among the different disciplines. Finally, it presents the peculiar aspects of architectural heritage and the building information modeling applied to architectural heritage as a specific kind of digital procedure naturally born for this kind of heritage. In conclusion, it highlights new trends and points out issues in transdisciplinary temptations.

INTRODUCTION

Reflecting on the concept of “Digital Heritage”, Pescarin (2016) highlights a double approach based on ‘tracks’ and ‘themes’, respectively referred to the words “digital” and “heritage”. The “digital” approach includes the following ‘tracks’: 1) Digitization and Acquisition, 2) Computer Graphics and Interaction, 3) Analysis and Interpretation, 4) Theory, Methodologies, Preservation and Standards, 5) Digital Heritage Projects and Applications. While the “heritage” approach includes five ‘themes’ according to UNESCO classification: a) Built Heritage from monuments to archaeological sites, cities, and landscapes, b) Culture & Traditions from folklife to languages, crafts, song and dance, c) Museums & Collections from movable objects to the museums, d) Libraries & Archives documentary heritage from books to audiovisual and e) Art & Creativity from digital / new media art to creative digital and online culture (p.1-2). Interesting are her conclusions: She highlights the role of the ‘human dimension’ and the

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Surfing Between Disciplines

importance of “narrativity”, realized with different kind of outputs: “Which trends can be recognized, looking at this overlapping area, which is Digital Heritage, through presented projects and demonstrations? One of the first element to appear is the position of the ‘human dimension’, considered more and more a key element. Heritage professionals necessities are better taken into consideration, from digital projects early stages; end users, such as visitors of museums, tends to be involved in some cases during the planning phase. The ‘wow’ effect of ICT technologies for heritage researchers, practitioners and curators is now diminishing, while the sustainability of digital projects and their effectiveness as referred to a specific goal, in constantly increasing. The role of design and co-creation is emerging [...], filling the gap among audience, developer and heritage curator. The role of ‘narrativity’ is also considered as important as the coding, for the success of a digital heritage project [...]. Mixed digital outputs (i.e. serious games including short movies, VR immersive applications that includes passive and active moments, etc.) are experimenting different levels of user interaction and involvement, while trying at the same time to find and define new communication styles and approaches, since the traditional proved to be unsatisfactory [...]. Finally, most of the projects have demonstrated a high interest toward the quality of user involvement, a topic currently under investigation from different perspectives” (p.3). The lesson are two: Designers and users are the heart of the process and the most important role is not played by amazing and photorealistic images but by “narrativity”, that is photorealism could be important but the cultural involvement is essential.

Previously, in 1999, in the UNESCO’s *World Heritage Magazine*, Stone described “Virtual Heritage” as “the utilization of technology for interpretation, conservation and preservation of Natural, Cultural and World Heritage” (Stone 1999). According to this definition, ‘virtual heritage’ is not in opposition to traditional one – it does not substitutes cultural heritage in a virtual dimension – but it is a tool for heritage interpretation, presentation and conservation. Virtual heritage and cultural heritage live together.

Afterwards, from the publication of the *Charter on the Preservation of the Digital Heritage* (UNESCO, 2003) many pages have been written on the concept of “Digital Heritage”. The Charter explains: “The digital heritage consists of unique resources of human knowledge and expression. It embraces cultural, educational, scientific and administrative resources, as well as technical, legal, medical and other kinds of information created digitally, or converted into digital form from existing analogue resources. Where resources are “born digital”, there is no other format but the digital object. Digital materials include texts, databases, still and moving images, audio, graphics, software and web pages, among a wide and growing range of formats” (Art.1).

Today there is the awareness that technologies cannot be seen as mere aid instruments for surveying or visualization, but they favour a development of research methodologies for knowledge, understanding, interpretation, presentation, and conservation. Computer-based visualization takes ever more importance, according to the line of visual computing, i.e. the analysis technique based on the visual representation of data. It favors the study of large amount of data, and of complex systems of heterogeneous data (textual, visual, audio, etc.). Those data can derive from various kinds or phenomena, also from non-visual ones. In fact, visual computing consists in the representation of multi-dimensional digital environments, where there is a complex interaction of an elevated number of agents simulating different kinds of data and information. The images of data provide information and through the manipulation of the images, we can observe, interact with, compute and control the data and the information, and create new knowledge (Card, Mackinlay, & Shneiderman, 1999).

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