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Advanced Technologies for Historical Cities Visualization

We have arrived at a time for deepening the scholarly analysis of documents that validate and/or reveal urban circumstances. Traditional methodologies of architectural and urban history must remain the foundation of digital approaches because the study of a city will always necessitate scholarly decryption of information and visual sources that connect them to their broader context. For this reason, iconographic and textual documents in archives and libraries – primary data of exceptional value not only from an historical point of view, but also for interpretative inflections – can now be embedded as a part of the new scientific-methodological practice that digital applications offer.

Key words:
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Museum

ADVANCED TECHNOLOGIES FOR HISTORICAL CITIES VISUALIZATION

This special volume, “Advanced Technologies for Historical Cities Visualization,” assembles a collection of essays that demonstrate the application of digital methods to a range of cultural sites. This relatively novel methodological approach to the fields of architectural and urban history has resulted in new forms of documentation and understandings as well as innovative public facing, scholarly outcomes via multimedia visualizations. This compilation of essays serves as a moment to reflect upon the growth of this methodology over the past ten years since its infancy, especially with regard to the application of emerging technologies; the resultant expansion of skill sets, expertise, and collaboration; and finally, the volume and types of public facing initiatives represented by international workshops and exhibitions.

Most important, this volume serves to emphasize that use of select digital tools has advanced scholarly knowledge and historical understandings about built environments— how buildings reveal past, lived experiences— from Antiquity to the present day. Future progress involves extension beyond the many lessons learned about these innovative historical studies and their visualizations of urban phenomenon. Looking forward, we would like to highlight the following salient points:

- how to expand our scope to include urban studies programs with engaging on-going research related to a wide variety of cities and their distinctive phenomena;
- how partnership and collaboration might organically become more capacious (with presently unanticipated tasks in the future), as we work in concert with complementary institutions, expertise, and new sites of research;
- how to visualize the progressive transformation of cities over time in pioneering virtual environments, namely with emerging technologies;
- how to highlight each city’s distinctive features, built and natural, that mutually

reinforce a its urban evolution and its identity;

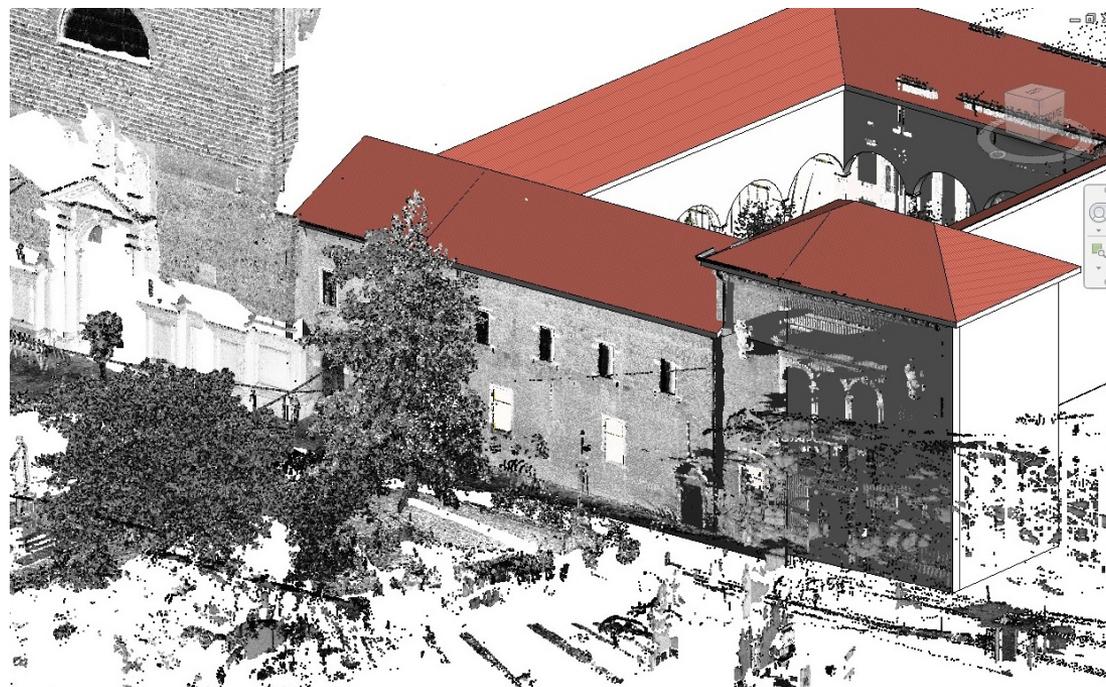
- how to articulate clearly and transparently the complex intersection of involved social, political, and economic forces in virtual form;
- how to animate in a multi-sensory manner the phenomenology of an urban center’s everyday life and experiences from the past to the present?

A FORWARD-THINKING METHODOLOGY & INNOVATIVE VISUALIZATIONS

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foundation of digital approaches because the study of a city will always necessitate scholarly decryption of information and visual sources that connect them to their broader context. For this reason, iconographic and textual documents in archives and libraries – primary data of exceptional value not only from an historical point of view, but also for interpretative inflections – can now be embedded as a part of the new scientific-methodological practice that digital applications offer.

An ambitious enterprise within digital humanities, the advancement of architectural and urban histories necessitates an expanded network of contributors with varying expertise and multi-disciplinary backgrounds. No longer are simple models or digital maps of the city the goal, but rather the creation of dynamic interactive and interoperable displays that can show complex urban systems via new modes of



communication. In this, visual presentation strategies parallel the complex, ever-changing vitality of the cities themselves.

For these reasons, this marks an exciting moment for the field of architectural and urban history. New processes and codes for communicating knowledge-based visualizations have assumed a decidedly important role. The latest technologies have emerged within the professional industry to benefit directly academic research initiatives. Most notably, ICT (Information Communication Technology) has made an impact on the conception, design, and modes of communication for exhibitions. We have finally reached a moment when the academic world has begun to embrace the use of visualization technologies largely due to the scholarly transparency of involved processes. This has led to renewed and increased interest in the disciplines of Representation and Visual Studies not only as academic fields within universities, but also the complementary role they play in helping art and architectural historians formulate visual narratives that deliver substantive research content in an interactive manner, most notably for museums or on-site exhibitions.

The opportunity to edit this volume has led us to reflect on the strategies of representation and its tools as privileged instruments for understanding architectural monuments and their broader urban contexts as well as for their cognitive-communicative significance and, ultimately, erudite, yet engaging content. In response to the quality and rigor of digital visualizations, representational strategies have necessarily developed a high-level of transparency regarding the representation of certainty and uncertainty. For this reason, digital technologies have found ways to display content and concomitantly point to, if not actually contain, repositories of the primary and secondary materials, visual and written, that ground final visualization products. In this way, digital visualizations of historical content have the capacity to present a more fully three-dimensional revelation and subsequent analysis of data than traditional publications might offer in certain contexts.

In conclusion, using a range of technologies, such as computerized platforms and interoperable databases and models, web sites, mobile applications, and

augmented and virtual realities, it is possible to initiate new considerations about the ways in which architectural structures embody any number of social, economic, religious, and political forces, and how they, and their urban environments, are constantly in fluctuation, responding to historical circumstances and systemic urban phenomena. Looking toward the future, we can expect an integrated reading of varying types of information in visually driven narrative formats that might permit comparative analyses, and, therefore, relational understandings of urban networks. Eventually, cities will become not only museums of knowledge, but ones that have the capacity to speak to one another about continuity and change, differences and similarities.