

## REPORT ON THE CONFERENCE ENTITLED “NEW DIGITAL TECHNOLOGIES AND HUNGARIAN INNOVATIONS IN HERITAGE MANAGEMENT – ARCHAEOLOGY, HISTORICAL LANDSCAPE AND BUILT HERITAGE” AND THE RELATED EXHIBITION<sup>1</sup>

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*In modern heritage preservation a particularly important role is given to new digital technologies that make it possible to map, interpret and present archaeological or architectural heritage in an ever greater variety of ways. The Archaeolingua Foundation and CEU (Central European University) organized this conference with precisely the goal of displaying the results that have been achieved up until now using these methods, showing both Hungarian professionals and the general public alike how they are able to expand the possibilities of scientific research. The conference held in Budapest at the building complex of the Hungarian Academy of Sciences' Research Institute for the Humanities was at the same time also connected to the scientific initiatives that the EU has set as programs of highlighted importance for the forthcoming period. The EU would like new information technologies applicable to cultural heritage to be developed and employed that will assist in making cultural heritage preservation and research more effective in EU countries.*



Fig. 1: József Laszlovszky and Erzsébet Jerem at the event on February 6<sup>th</sup> (photo: Péter Hámori)



Fig. 2: One of the conference's keynote speakers, Wolfgang Neubauer (photo: Péter Hámori)



Fig. 3: The conference participants (photo: Péter Hámori)

<sup>1</sup> A detailed program can be found at the [abstract volume](#) of the conference.



These days innumerable international conferences deal with similar topics, sometimes even with the participation of Hungarian presenters, but this kind of a mustering of expertise here in Hungary had yet to take place. Thanks to the efforts of the organizers, all in all the presenters represented 15 different Hungarian institutions, and for the most part the program faithfully reflected the state of the research here. The lectures on the topic and the professional diversity of the presenters were genuinely worthy of attention, and the renowned foreign keynote speakers that were invited – Stefano Campana, Sorin Hermon and Wolfgang Neubauer<sup>2</sup> – were also captivating. As one of them pointed out in particular, we have no need for real shame here even in international



Fig. 4: Unmanned aerial vehicle at the exhibition held at the Galeria Centralis, Pazirik Ltd. (photo: Péter Hámori)

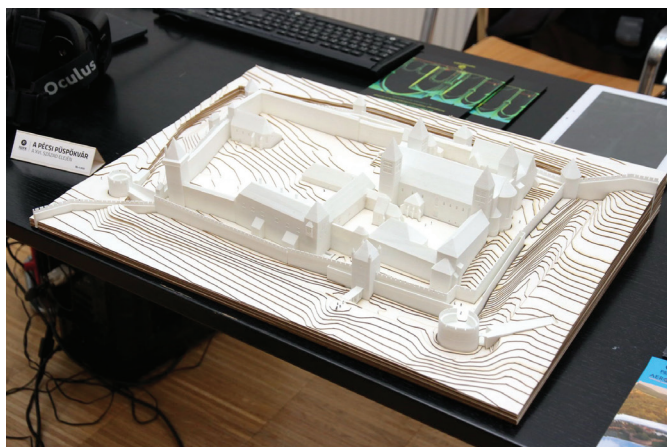


Fig. 5: A reconstruction made using a 3D printer, Pazirik Ltd. (photo: Péter Hámori)



Fig. 6: The exhibit materials of Pazirik Ltd. (photo: Péter Hámori)

comparison, and the presentations were equal in quality of any similar event abroad.

The employees of the Forster Gyula National Heritage Preservation and Property Management Center – in accordance with their work – for the most part brought up the possibilities within the methods of archaeological reconnaissance and non-invasive site identification. They presented various technological solutions in connection with this topic, such as geophysical and aerial radar surveys. The representatives of Pázmány Péter Catholic University, the Janus Pannonius Museum of Pécs and the Eötvös Loránd University's Institute of Archaeology in their presentations outlined



Fig. 7: The Mensor 3D exhibit – holo pyramid and holo film (photo: Péter Hámori)

<sup>2</sup> Stefano Campana, Advanced MC Research Fellow, University of Cambridge / Professor, Università degli Studi di Siena; Sorin Hermon, The Cyprus Institute; Wolfgang Neubauer, Director, Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology / Professor, Universität Wien



the possibilities for the broader research and interpretation of cultural heritage. In addition to the methods presented, the reports introduced the results that have been achieved to this point as well as the experiences they have had employing the particular technologies. Numerous presentations – for example the report of the University of Pécs and Aeroart Ltd. – also touched upon the cost efficiency of these methods and even mentioned the issues related to the legal regulation of the various technologies.

Without exception the conference participants emphasized that these methods cannot replace traditional procedures, but through their application even wider ranging examinations can be performed in connection with the processing of the individual relics and sites. Furthermore, an important aspect is the utilization of the new results for tourism purposes, which is worth consideration in addition to scientific research. 3D reconstructions in themselves are spectacular visual elements in modern research that not only make it possible to represent space – in the most favored form for the younger generations – but in addition to this they can serve as the basis for a scientific database that for example can aid in the identification of the master sculptor who made an antique statue or in the more precise surveying and restoration of various buildings. At the conference the spectacular presentation by the representatives of Mensor3D Ltd. demonstrated how the three dimensional modeling of particular archaeological sites and objects is being used in certain excavations and exhibitions even in Hungary (Szentendre, Ferenczy Museum, *Heritage 3D – The Digital Documentation of Cultural Heritage*).

A number of renowned foreign presenters also appeared at the conference, directors of international workshops and projects where similar technical solutions have been used for a long time. They presented their professional experiences and even spoke about the future role of these technologies, emphasizing that currently both here and abroad we are at the beginning of a long process that will be able to assist heritage preservation research in many areas that as yet have only been examined in part. Alongside all of this, however, it should not be forgotten that these modern technologies have several dangers and drawbacks as well. For example, the methods for ever more precise surveying of archaeological sites are able to aid not only heritage preservation, but also those who want to profit from the looting of this same heritage. That is to say, these results and technologies can be easily exploited (and perhaps in certain areas this had already occurred)



Fig. 8: *Spatial analysis of the ancient temples – the poster of the Narmer Architecture Studio (Budapest) on their project at Egypt (photo: Péter Hámori)*

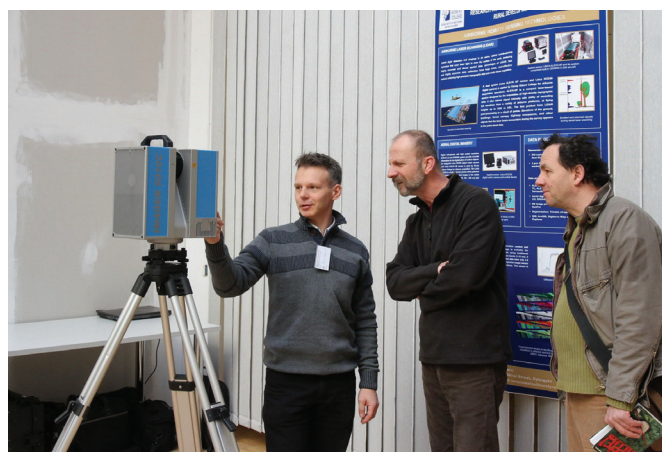


Fig. 9: *Building scanning at the exhibition thanks to Mensor3D (photo: Péter Hámori)*

by illegal treasure hunters and the three dimensional documentation techniques could in certain cases be utilized for the development and improvement of the counterfeiting of relics.

A one-day exhibition at the Galeria Centralis was also organized in connection with the conference. Here, posters and digital presentations supplemented or illustrated the ideas from the talks that had been presented in a manner that the general public could more easily understand. The success of these numerous projects encompassing a wide range of professional interests clearly shows that there is a serious demand for the ever wider application of these technologies, and although financial abilities in Hungary are obviously limited when compared to those abroad, Hungarian institutions, companies and researchers have already been able to produce spectacular results. We can only hope that this development will not bog down, and in fact it may receive a new impetus thanks to the Cultural Heritage Studies Program recently begun at CEU.



*Fig. 10: The exhibition at the Galeria Centralis  
(photo: Péter Hámori)*