### **WHY 3D?**



# Challenges and solutions with the use of 3D visu alizations in cultural history disciplines

The Archaeology Department of Aarhus University and Øhavsmuseet are arranging a oneday seminar on the subject of 3D visualization and reconstructions in cultural history disciplines on the 21st of August 2014. The intention of the seminar is to provide a forum and a platform for the presentation and discussion of the subject in Denmark. Despite a general interest in 3D visualizations within cultural history disciplines, determined work on this subject in Denmark has until now been either sporadic or limited to few individuals. The ambition of the seminar is to enhance and solidify the presence of this new tool and media in the archaeological and historical sciences. The seminar "Why 3D?" marks the first collaborative effort by major research institutions to lay the groundwork for a sustained discussion and development of 3D visualization techniques and their use in the cultural history disciplines.

The theme "Why 3D?" finds motivation in our interest for the theoretical and methodological implications of the use of 3D media in the study of the cultural heritage. We have had these increasingly powerful 3D visualisation technologies at our disposal for years, and yet we have just begun to grasp the scientific value and potentials inherent to it. In consideration of the above, presentations should focus on theoretical and methodological aspects of the application of 3D visualizations within the cultural history disciplines, comprise a certain degree of problematization and lay only minor emphasis on technological or engineering aspects. Speakers are invited to present own research, big as we as small projects and experiences, either discussing or showcasing why 3D visualizations should - or should not - be considered an important contribution to archaeological and historical research.

The organizers invite presentations within a broad range of subjects, such as 3D documentation, 3D reconstruction, sound riverberation models, implementation of 3D technologies for research purposes, 3D visualization of remote sensing data, infrastructures management of 3D data, relevant methodological implications, theoretical approaches, virtual archaeology, digital cultural heritage (3D-formats only), use of 3D visualizations for dissemination purposes, 3D immersive environments.

Even though the seminar focuses on the use of 3D visualizations in cultural historical disciplines, the organizers warmly welcome presentations of scholars and experts of other disciplines, which share same interest for 3D visualizations, among others, geology and earth sciences, cognitive science, computer sciences, Human-Computer Interaction, semiotics, media and communication. Also in these cases, emphasis should lay on problematizations of relevance for cultural heritage and cultural historical studies.

University students are also invited to contribute as speakers with own experiences and, if preferred, short presentations. In these cases, the organizers are willing to offer assistance with help and suggestions.

The seminar "Why 3D?" will be held the 21st of August 2014 at Campus Moesgård (depart-

ment of archaeology of the Institute of Culture and Society, Aarhus University). Presentations will preferably be in English, but Danish will be accepted too. The maximal length of each presentation is 15 minutes, in order to allow discussion. Shorter presentations are also welcome.

The deadline for the application is the 23rd of April 2014. The application form and an abstract should be sent either to Matteo Pilati (*mpilati@hum.au.dk*) or to Nicolai Garhøj Larsen (*ngl@ohavsmuseet.dk*). The applications should contain: Name and surname, institutional affiliation (if any), e-mail address, disciplinary background (e.g. archaeology, geology, acoustics, etc), lecture title, an abstract, type of presentation (PowerPoint, Prezi, virtual tour, animation, ...). The abstract should not be longer than 200 words. The final programme, the list of accepted presentations and the abstracts will be published on the 1st of June 2014.

The seminar's papers will be published by Øhavsmuseets Forlag. The organizers are searching for funding for a paper publication, but the papers will be published digitally under all circumstances. Papers should be in English and not longer than 10 standard pages, illustrations included (max. 2040 characters per page).

Auditor attendance to the seminar "Why 3D?" is open to anybody. Students are particularly welcome. Enrollment as auditor is not compulsory, but for organizational reasons we encourage auditors to register the attendance either on the Facebook page of the seminar or by mail to *mpilati@hum.au.dk*.

#### About 3D-Kulturarv, the organizing group

3DK is an informal network gathered to enable contact and debate between academics who share a strong interest in 3D as a media and paradigm for scientific research and dissemination. The founders of the network are of the belief that such a forum for 3D media has been sorely missing in a Danish context. For more than 10 years, cultural history sciences have increasingly begun using 3D in various forms as a tool; yet there has been little contact between various groups and individuals dealing with this media. 3DK aims to redress this situation. The members of 3DK are defined by a scientific and cultural historical approach to the media. The members of 3DK use 3D in very different ways and through a multitude of different software tools, stretching from 3D documentation with laser scanner and computer vision to hand-modelled reconstruction.

If you want to join or just to look around, please visit our Facebook page: *www.facebook.com/groups/3Dkulturarv/* 

#### Highlights of digital expertise of Øhavsmuseet

The archaeological unit of Øhavsmuseet, Arkæologi Sydfyn (Archaeology South Funen), is concerned with two main areas of interest concerning the use of 3D. Research in 3D reconstruction focuses primarily on Iron Age houses and the development of a practical methodology for 3D documentation. The former area is headed by Nicolai Garhøj Larsen, who is an experienced researcher in the field of 3D reconstruction, having reconstructed a number of prehistoric dwellings and has written some of the earliest Danish essays on the matter of vir-

tual archaeology. The latter area is headed by Christian Thomsen, a marine archaeologist, whose research has mostly focused on digital techniques for documenting ship wrecks, and now works on applying similar techniques to the methodology of excavation and documentation in archaeology as a whole.

## Highlights of digital expertise of the archaeology department of Aarhus University

Since the mid 80ies the Archaeology Department of Aarhus University has pursued a special interest in the application of digital computing in archaeology. In particular emeritus Torsten Madsen and lecturer Jens-Bjørn Riis-Andresen promoted research and education within digital recording, management and analysis of archaeological data, e-Infrastructures and statistical methods. Expressions of the early interest of the Department for the subject were the publication of the biannual newsletter KARK (Komputer-støttet ARKæologi) from 1989 to 1994 and the organisation of the international CAA conference (Computing Applications and Quantitative Methods in Archaeology) in 1992 at Moesgård.

Since 2007, the Archaeological IT-unit of the Department of Archaeology, a team of four experts in surveying, data management, GIS, 3D modelling, 3D data capture and various disseminating formats, led by Peter Jensen and located at Moesgård, has supported various archaeology related research and dissemination projects of Aarhus University, Moesgård Museum and many other culture heritage institutions.

The Department of Archaeology has recently strengthened its digital profile with a PhD-program in Digital Heritage and Virtual Culture. Together with Aarhus University's DigHumLAb, the Department is member of the Centre for Digital Heritage, which includes the cultural heritage departments of the universities of York, Uppsala and Leiden.



