

24th EAA Annual Meeting

BARCELONA,
5-8 SEPTEMBER 2018

REFLECTING FUTURES

Abstract Book VOLUME II



EAA | European Association
of Archaeologists

 UNIVERSITAT DE
BARCELONA

2018
EUROPEAN YEAR
OF CULTURAL
HERITAGE
#EuropeForCulture

Author(s): Sjöblom, Rolf (Luleå University of Technology; Tekedo AB, Nyköping) Hjärthner Holdar, Eva (The Archaeologists in Uppsala) Pearce, Carolyn (Pacific Northwest National Laboratory, Richland) Ogenhall, Erik Englund, Mia (The Archaeologists in Uppsala) McCloy, John (Washington State University, Pullman) Weaver, Jamie (National Institute of Standards and Technology, Gaithersburg) Vicenzie, Edward (Museum Conservation Institute, Smithsonian Institute, Suitland) Peeler, David (Pacific Northwest National Laboratory, Richland) Kruger, Albert (U.S. Department of Energy, Office of River Protection, Richland)

Presentation Format: Oral

Some nuclear waste in the United States is to be stabilized by means of vitrification. The glass is to remain intact in its final disposal facility for thousands and tens of thousands of years. Here, existing theoretical knowledge and results from laboratory experiments need to be supplemented by comparisons with similar material that has existed in a comparable environment for a long time. The hillfort Broborg near Uppsala in Sweden offers such a possibility, and pristine vitrified wall material was obtained in an excavation carried out in October 2017. There are two objectives of the project: firstly, to supply an anthropogenic analogue to the nuclear waste management work, and secondly, to contribute to the cultural heritage of Sweden by illuminating its distant past. This refers to the genesis of the glass, the rationale for and the use of the hillfort as well as the development of the landscape and the local water chemistry. One key issue is the origin of the glass, be it for constructive or destructive purposes, and also if the fire and firing was intentional. This issue has been a basis for arguments among archaeologists for the past 200 years. The artefacts are now under study using x ray tomography, micro XRF and other methods not often utilized previously for this purpose, and comparisons will be made between alternative interpretations using analytic network process analysis. At Broborg, it is obvious that the melting of the amphibole stones has bonded the other stones together by means of vitrification, and thus strengthened the structure, whilst the granite stones themselves have been damaged and mechanically weakened by fire cracking. The site itself was abandoned during the iron age and has been essentially left alone since. The landscape has changed due to land rise and deforestation, as evidenced by e. g. pollen analyses.