Editorial

Marta Lorenzon*, Moritz Kinzel, Guðný Zoëga, Marwa Dabaieh

Earthen Architecture in Nordic Countries: Future Directions

https://doi.org/10.1515/opar-2022-0350
received November 30, 2023; accepted December 1, 2023

Abstract: Throughout prehistory, earthen architecture has played a pivotal role in establishing a sustainable and easily maintainable built environment, showcasing humanity’s capacity to design and construct intricate structures using eco-friendly and cost-effective materials. This special issue underscores the enduring significance of earthen architecture in our historical and contemporary understanding of sustainable building practices.

Keywords: earthen architecture, turf, geoarchaeology, building archaeology, ethnoarchaeology, mudbricks

This special issue “Bricks Under the Scope: Microscopic and Macroscopic Approaches to the Study of Earthen Architecture” is the result of a series of NOS-HS workshops on the “Earthen Architecture in Nordic research: Historic knowledge, Social impact and Sustainability.” The workshop series promoted multidisciplinary approaches to the study of historical earthen architecture, enhancing collaborations among Nordic and non-Nordic scholars, diverse research groups, and earthen architecture professionals working in the field of archaeology, architecture, and heritage conservation. Therefore, we were joining forces of four Nordic universities – University of Helsinki, Malmö University, Hólar University, and the University of Copenhagen together with the German Archaeological Institute/Istanbul to create and expand the network of earthen research through our workshop series.

Since prehistory, earthen architecture has had a fundamental role in creating a sustainable and easily maintained built environment and it is one of the best representations of our ability as people to design and build complex architecture, employing sustainable and economical efficient materials. The presence of earthen architecture in arid, temperate, and humid environments (e.g. Egypt, Iceland, Turkey, Norway, Greece, Sweden, Netherlands, and Italy) demonstrates its success and far-reaching implementation in diverse communities across the globe and over time (Dabaieh & Alwall, 2018; Kinzel, 2018; Lorenzon, 2023; Ruano Posada, 2021). The articles in this special issue well exemplified the complexity of studying and working with earthen architecture.

In this reflective contribution, we want to highlight some of the discourses that emerged during the workshop series and design possible future direction for the holistic study of earthen architecture. While

* Corresponding author: Marta Lorenzon, Faculty of Arts, University of Helsinki, Fabininkatu 24, Helsinki, 00014, Finland, e-mail: marta.lorenzon@helsinki.fi
Moritz Kinzel: German Archaeological Institute, Istanbul, Turkey
Guðný Zoëga: Hólar University, Hólar, Iceland
Marwa Dabaieh: Faculty of Culture and Society, Malmö University, Malmö, Sweden
ORCID: Marta Lorenzon 0000-0003-4747-5241; Moritz Kinzel 0000-0002-5836-9797; Guðný Zoëga 0000-0002-1887-7703; Marwa Dabaieh 0000-0001-7754-0927

Open Access. © 2023 the author(s), published by De Gruyter. This work is licensed under the Creative Commons Attribution 4.0 International License.
the technological aspects of the earthen architecture chaîne opératoire are often investigated by individual researchers within their own disciplines, in this workshop series, we strived to develop interdisciplinary collaboration and to understand the socio-cultural impact of earthen architecture on local communities, their environment, its long-term sustainability, and the ways in which modern conservation practices insert themselves into a sustainable preservation of cultural heritage.

In our first workshop “Earthen architecture in archaeological contexts: micro and macro approaches,” University of Helsinki, 9th–10th November 2021 organized by Marta Lorenzon, Benjamin Cutillas-Victoria, and Moritz Kinzel included both academic scholars and representatives of heritage organizations focused on geoarchaeological, anthropological, and ethnoarchaeological approaches to investigate earthen construction within archaeological contexts. Geoarchaeological approaches enable us to identify the sources of raw materials in conjunction with reconstructing the mode of building materials' manufacture and construction, this provides us with relevant data to perform the anthropological analysis to answer questions regarding mode of production, gender roles, type of labour, and the relationship between communities and their natural environment. The concept of earthen building material as both ecofacts and artefacts has the potential to open new lines of research on sustainability and socio-cultural relevance of earthen architecture in past societies. The workshop opened the three trajectories we followed throughout the workshop series: 1) earthen building materials in prehistory and their adaptation to climate zones; 2) the use of turf in historic periods in Central and Northern Europe; and 3) the use of earth material for sustainable, environmental-friendly architecture in the past, present, and future.

Our second workshop: “Conservation of earthen architecture: a practice for zero carbon emission” took place in Lund, 20th–21st June 2022, and was organized by Marwa Dabaieh.

It was carried out in collaboration with ISCEAH (International Scientific Committee on Earthen Architecture Heritage), which is one of the ICOMOS (International Council for Monuments and Sites) committees. The workshop brought together participants from academia and practice sharing knowledge and experience. The aim was to fill in the gap between scientific approaches and what is actively applied in the real world. In addition, craftsmen and skilled labourers in traditional earthen techniques were invited to share their experiences as some of the traditional knowledge is about to disappear and such a mix of expertise is needed to create a more sustainable form of construction. The main overarching theme was around traditional and contemporary approaches for earthen architecture conservation with a focus on zero-carbon and climate-neutral approaches in using mud as a building material and earthen techniques as an environmentally friendly construction method.

The specific contributions to the workshop covered multiple topics around resilience in earthen conservation, high-tech versus low-tech, earthen vernacular conservation for contemporary use. The meeting concluded with a hand-on workshop testing various earth building techniques and soil mixtures for rammed earth and mudbrick constructions, allowing us to create materials for comparisons with archaeological data.

The third workshop “Historical earthen architecture: a lesson in sustainability and negotiation” at Hólar University, 13th–14th September 2022, was organized by Guðný Zoég. It focused on how historical earthen constructions serve as memorials of people’s manipulation and negotiation of their surroundings and how their interpretation may hold the key to developing sustainable building concepts for the future. The aim was to bring together relevant scholars and professionals outside academia to discuss Nordic vernacular earthen architecture, how it has been and is perceived, and how landscape and available resources influence architectural forms, building quality, and, to a degree, functionality. Earthen materials, with their possibilities and restrictions, have provided each generation with the tools to re-invent and re-purpose their uses, to suit new realities and fashions. In many Nordic cultures, there is a duality of sentiment regarding the traditional earthen vernacular architecture. On the one hand, these structures are seen as having protected and ensured survivability in capricious northern climates; on the other hand, they represent poverty and substandard living conditions. A specific focus was on the use of turf in the context of Central and Northern Europe in historical periods.

These conflicting ideas have been – and in some cases still are – played out with such architecture either perceived as a national treasure or as hovels, reminiscent of times best forgotten. Changing attitudes towards sustainable living and increased interest in every-day living conditions of past peoples offer a way forward to examine and re-discover these buildings and building materials.
The final workshop “Earthen Architecture in Northern Countries – Future Directions” was held at Inari, Finland 28th–30th November 2023, organized by Marta Lorenzon and Lucia Ruano Posada. During this meeting, possible future directions in research on earthen building processes were discussed. Aspects of concepts regarding conservation of earthen structures were controversially discussed on site at the Sami Museum Siida. How to conserve structures that actually are meant to disappear?

It is clear to us that while excavation and documentation of earthen building remains is complicated, their preservation is also a challenge. Which is the best practice? What to preserve? The material or the techniques? The appearance, the ruin, or the concept?

The contributions of this special issue represent the variety of approaches discussed during this workshop series, specifically the novel development of investigating earthen architecture to gain more in-depth understanding on the relationship between the natural and built environment (see Cutillas-Victoria, Lorenzon, & Yagüe, 2023, Uzdurum, Schönicke, Kinzel, & Baraniski, 2023), communities’ response to earthen practices (see Ben Charif, Belakehal, & Zerari, 2023; Zöega, Sigurðardóttir, & Zoëga, 2023), sustainability of vernacular architecture (see Romankiewicz, 2023), the socio-cultural impact in past and present societies (see Beltrame, Rafanelli, Quaratesi, Mirão, & Coradeschi, 2023; Hamari, 2023), and the mechanism to develop a zero-carbon emission model of preservation.

The contributions are not just the result of presented material from the workshop series. They actually go far beyond and combine individually presented paper to a multi-scalar perspective – case study and methodology wise. They present therefore a wide range of methods for studying earthen building (materials) on a macro- and micro-scale. In the future, more of these interdisciplinary research projects, more exchange across projects, and more sampling/analyses of earthen materials are needed to further improve our understanding of earthen architecture.

In envisioning the future direction of the Earthen Architecture Research Network, our mission extends beyond mere scholarly pursuits – we aim to forge a vibrant alliance, a tightly knit network to exchange data and develop an in-depth exploration of earthen architectural processes.

Recent trends in architectural design to re-humanize buildings by using local materials but with a modern twist may also lead to new ways of using earth in modern constructions and the contributions to this special issue well exemplified as millennia of experience should have some impact on the acceptance of earthen building materials as reliable construction materials (Heatherwick, 2023).

However, the last 100 years has seen a massive loss of traditional knowledge and craftsmanship. It is time for rediscovering technologies/knowledge via experimental archaeology, analyses – systematic sampling, ethno-architectural (archaeological) studies, and detailed architectural studies.

What kind of research on earthen architecture would be needed in future to get a better understanding and to also promote new construction with earth? First, we are in need of more comparative, interdisciplinary studies both on macro- and on microscale of historical materials. Furthermore, there is a well-proven need to take the process of building and the role of individuals in the building process into account to advance our understanding of the chaîne opératoire. Who is actually doing what, when, and why? Are there certain tasks allocated to certain genders? How is this reflected in the historical records? How is it perceived today? What social contract is established at the building site?

On a wide scale, how to disseminate knowledge about earthen building techniques and advantages? Besides scientific papers and public lectures, hands-on workshops (“heritage craft schools”) have been proven to be a very accessible format to learn about various earthen building techniques and to transfer knowledge about earthen architecture (for turf, see https://www.glaumbaer.is/is/safnfræðsla/forverkaskólinn or for collaborative training program directed by Dr. Ing. Claudia Bührig [DAI-Berlin] in Jordan-Gerasa for stone masonry see https://www.archernet.org/2018/06/01/archernet-im-portraet-dr-ing-claudia-buehrig/). Perhaps traveling exhibitions on aspects or specific traditions of earth building or illustrated manuals/catalogues could reach out to a wider audience and range of experts providing the much needed basis for future use and acceptance of this sustainable way of construction. One of the major challenges of disappearing skills and craftsmen is how to preserve long term and to maintain access to the know-how about different techniques. Raising awareness and revitalizing the appreciation of traditional skills through hands-on courses could be a
proactive way to archive this knowledge alongside active conservation measures acquired by restoring historical and archaeological structures through crafts schools.

While we may have a path set forward to record past earthen practices, there are still several obstacles in the future use of earthen building materials. First, earthen structures are rarely understood to be a part of central and northern European architectural heritage. This kind of architecture is mainly linked to countries in the Global South. However, as shown in two contributions here, earthen architecture is an important and understudied part of the Nordic architectural heritage, specifically when considering turf structures, e.g., in Iceland, Scotland, or Sami Gjøahti in Norway, Sweden, or Finland.

Second, the perception of earthen architecture is still loaded with some negative connotations: being old fashioned, unhealthy, and a symbol of poverty, etc. Last, few countries have implemented new building regulations for earthen construction. This latter aspect is particularly relevant to keep earthen structures functional and in use. Only a functioning, well-maintained, and used building can ensure the survival of (historical) structures, materials, and techniques.

However, the need of putting constant efforts into the maintenance of the structures is seen as an obstacle as modern approaches to real estate. Facility management is run by economics, which is not always aligned with heritage conservation interests and knowledge preservation. On the other hand, maintenance is a crucial element of knowledge transfer, eco-friendly life cycle, low carbon footprint, and the sustainability of buildings. Building with earth can be an answer to the changing climate conditions with the rising – extreme – weather events we are witnessing today. The articles in the workshop series and in this special issue are an active contribution towards the future by studying the past. Local traditions can help us to define answers to global challenges. This is what we can contribute with our Nordic approach not only to the study of earthen building, but also to a general better understanding of this traditional craftsmanship and its future. Where to go on from here? Back to Earth!

Acknowledgments: We thank the journal editors, Katarzyna Michalak and Joakim Goldhahn, as well as all the participants of the four NOS-HS funded workshops. Thanks are also due to the Centre of Excellence in Ancient Near Eastern Empires research assistants Caro Liikanen, Sauli Pietarinen, Jasmin Ruotsalainen and Anu Ketonen, and to all the reviewers that helped improve this special issue. Open access funded by Nordic research councils in the Humanities and Social Sciences (NOS-HS).

Funding information: We would like to thank the Joint Committee for Nordic research councils in the Humanities and Social Sciences (NOS-HS) for funding the workshop series “Earthen Architecture in Nordic research: Historic knowledge, Social impact and Sustainability” (Decision no. 335096) and this publication.

Conflict of interest: The authors state no conflict of interest.

References


