WRENCH

Whispers of Time
Heritage as Narratives of Climate Change

D2.2 | Transdisciplinary research | Online webinars

Book of abstracts

A Belmont Forum Project

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Oral History: Tips from History and Anthropology for Bottom-Up Research

Speakers: Marco Armiero & Samuele Andreoni,
Universitat Autònoma de Barcelona (UAB)

Date: January, 14th, 2025

Abstract: Heritage is often seen as a static, pure form of history. However, from anthropological and historical perspectives, it is better understood as an ongoing process shaped by human and more-than-human interactions with the world.
This webinar explores oral history as a tool to emphasize the dynamic nature of heritage and its political significance. Oral history uncovers hidden, conflicting, and diverse narratives that challenge the dominant accounts found in books or archives by engaging directly with memory. Memory is not merely a repository of facts but a process of meaning-making, deeply connected to power dynamics such as gender, class, and identity.
Drawing on Ernesto De Martino's insights, oral history and ethnography amplify subaltern voices and critically examine the researcher's perspective and role. This bottom-up approach fosters reciprocity and challenges traditional power relations between the researcher and the researched. Finally, oral history plays a vital role in living heritage, breathing new life into existing practices while creating space for their evolution and conservation in the present

Structural modelling and analysis of heritage buildings

Speakers: Corrado Chisari & Mattia Zizi
University of Campania Luigi Vanvitelli (UNICAMP)

Date: February, 27th, 2025

Abstract: The safeguarding and protection of historical masonry buildings, representing a considerable percentage of tangible cultural heritage worldwide, needs multi-disciplinary approaches - in which history, engineering, and architecture are intimately connected to each other - supported by advanced numerical tools able to predict the response of the structure under different loading scenarios. In this webinar, the concepts and methodologies which are used in structural modelling and analysis are reviewed with the perspective of the specificities intrinsic to historical heritage, affecting material, geometrical and action modelling. With focus on ancient masonry, the different collapse modes frequently observed will be detailed together with the most appropriate simulation approaches adopted in research. It will be shown how the selection of the proper modelling approach is paramount for a realistic estimation of load bearing capacity and damage evolution but is also dictated by the computational resources available.
Issues related to the geometrical representation of structures which are often the results of stratifications, additions, removals, change of use and exceptional past events (floods, earthquakes, fires, etc.) are also described, together with the use of model updating to enhance the description of the building.

Unveiling data: How History of Science and Technology can help us problematize environmental data.

Speaker: Andrea Álvarez Laorden
Universitat Autònoma de Barcelona (UAB), CLIMASAT Research group

Date: March, 13th, 2025

Abstract: Our relationships with the environment are increasingly mediated by data, becoming technologies capable to influence how we perceive and act on it. As such, historians of science and technology, together with geographers, political ecologists, and feminist scholars have grown interest in opening the black-box of data in the past years. With the pressing environmental crisis of today, it is significant to investigate the power imbalances behind the production, circulation, analysis, and use of environmental data to understand the construction of an increasingly datafied environment. In this webinar, we will explore case studies and current literature on data history to collectively reflect on why problematizing data matters.

Non-destructive material testing and structural health monitoring of historic masonry buildings

Speakers: Ashraf S. Osman & Bartolomeo Pantò
Durham University (DU)

Date: April, 10th, 2025

Abstract: Historic masonry buildings are often characterized by high geometrical irregularity and material inhomogeneity. Detailed information on structural geometry and material parameters is fundamental to building reliable numerical models that can predict the structure's response through time and under different loading scenarios (which will be the object of Webinar #3). Standard survey techniques available for modern structures, such as invasive inspections or destructive material tests, are inapplicable for historic structures because they can compromise cultural value. Moreover, invasive tests are expensive and can be performed in a limited number, which may not give enough spatial information through the structures. For this reason, non-destructive testing and monitoring techniques have been increasingly employed in cultural heritage conservation.
This webinar aims to introduce and discuss the main non-invasive in-situ material tests and in-situ dynamic structural identification for historic masonry structures, also reporting a few relevant case studies in view of WRENCH's (material) pilot sites. In addition, the webinar discusses the effects of time and environmental agents on structures (including possible effects of geotechnical aspects regarding climate change issues). Finally, the webinar discusses aspects of continuous structural health monitoring of heritage structures: physical quantities to monitor, data analysis and storage, and indicators of ongoing damage evolution.

Insurgent (living) heritage? Community museums, ecomuseums and other stories to inspire a trans-disciplinary research project

Speakers: Manuelina M. Duarte Candido, WRENCH Advisory Board (AB)
& Giusy Pappalardo, Universitat Autònoma de Barcelona (UAB)

Date: May, 08th, 2025

Abstract: Heritage can be framed in different ways, and the literature offers a variety of categories that are often trapped in dichotomies (such as material vs. immaterial heritage; natural vs. cultural heritage), as well as categories that try to overcome such dichotomies through more holistic concepts, such as territorial heritage or, as the WRENCH project explores, that of living heritage.
With this webinar focused on insurgencies, we want to introduce the concept Museology uses since the 70s, integral or integrated museum, and reflect together on the possibilities of framing heritage, of any kind, not as a monolithic concept, but as the result of a process of heritagization that takes into account the perceptions, demands, needs and dreams of people from the grassroots who live with the heritage, define what heritage is for them, use it and transform it. We'll focus on experiences coming from marginalized communities that have used the process of heritagization as an opportunity for emancipation, give examples from a variety of geographies of how specific types of museums, ecomuseums, or other forms beyond any codified label can function as tools that catalyze such emancipatory processes, and conclude by suggesting some possible research methods that could be included in the WRENCH toolbox.

Climate change and extremes using CMIP6 climate models

Speaker: Ismail Yücel
Orta Doğu Teknik Üniversitesi
Middle East Technical Universitty (ODTU-METU)

Date: June, 12th, 2025

Abstract: The impact of global warming on climate events such as floods, droughts, wildfires, and heatwaves, which affect various sectors worldwide, has been examined in many studies. Researches show that the intensity of extreme events has increased globally due to climate change. Therefore, understanding how these climate extremes alter at the regional and local levels is a major subject to be carefully considered. This study examines the facts about the past and current climate conditions globally. The latest release of Coupled Model Intercomparison Project Phase 6 (CMIP6) climate models with two future scenarios of SSP245 and SSP585 over the period 2015–2100 are utilized in diagnosing climate conditions and extremes. The resolution of CMIP6 climate models was dynamically downscaled to obtain 9 km and 3 km resolution using a regional climate model, called Weather, Research and Forecasting (WRF) model for the study area covering the climatological Mediterranean hot spot, Türkiye. These models reflect past and future climate conditions based on different climate scenarios. The produced data were analyzed under the categories of precipitation and temperature, and changes in extreme climate events were examined spatially and temporally.

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2024

https://doi.org/10.5281/zenodo.18625710

PCI2024-153536