



ICOMOS CIAV

International Committee  
on Vernacular Architecture

International Council on  
Monuments and Sites

# CIAV NEWSLETTER

QUARTERLY PUBLICATION



**Volume 61**  
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# EDITORIAL

**Hossam Mahdy**

President of CIAV

[hossammahdy1960@yahoo.co.uk](mailto:hossammahdy1960@yahoo.co.uk)



## Dear colleagues and friends,

Warm greetings from CIAV Bureau and from myself.

The following quote is from an article by CIAV Honorary Member Christoph Machat in CIAV Newsletter, issued in August 2009:

The International Committee on Vernacular Architecture (Comité International d'Architecture Vernaculaire - CIAV) is one of the specialized scientific committees, member of the Scientific Council of ICOMOS. It was founded in 1976, the Executive Committee of ICOMOS accepting the requirement expressed by the resolution of the 1975 International Conference for the Conservation of Vernacular Architecture, held in Plovdiv, Bulgaria. The CIAV started working in 1977, headed by the founding President Prof. Dr. Rachele Anguelova, Bulgaria, the permanent seat being installed in Plovdiv. Following the recommendations of the ICOMOS National Committees the Executive Committee of ICOMOS confirmed the 12 permanent (and founding) members from Bulgaria, USSR, Switzerland, Finland, CSSR, Belgium, UK, Greece, Yugoslavia, Romania, Hungary, Turkey and Spain, completed with 10 associate members from Austria, Denmark, France, the Federal and the Democratic Republic of Germany, Italy, Luxembourg, Poland, Sweden, Canada and Australia.

**This means that we should celebrate this year the 50th anniversary of CIAV!**

**How shall we celebrate?**

**All suggestions are welcome.**

**However, your ideas will remain ideas until you are ready to volunteer to work with CIAV Bureau to implement them.**

The founder and editor of the Newsletter at the time was another CIAV Honorary Member Valeria Prietto, who heroically and single-handedly edited the Newsletter for many years. Thanks to Valeria, CIAV's memory is kept and made accessible. And thanks to Shaoyong, CIAV Vice President and the current Editor-in-Chief and thanks to the Edit Team who supports her, the Newsletter continues to the present. Moreover, it became more elegant, divers and rich with information and news about CIAV members and their professional and academic activities in the field of the built vernacular heritage.

The first CIAV Web Café for 2026 took place on 15th March and was a great success. Not only because of the good attendance, but also because of its speaker and the presented subject. Gisle Jakhell, CIAV Honorary Member and the former CIAV president was the speaker. He spoke in his capacity as the leader of the group that is working on the CIAV-ICICH

collaboration to work towards developing a toolkit for the documentation of both the tangible and intangible attributes of the built vernacular heritage. The group is now called VIDA and is seeking opportunities to organize documentation camps in different cultural zones of the world to test approaches and methods. **If you are interested in hosting one of the next camps, please get in touch with Gisle or me.** Gisle gave a great presentation on the first documentation camp that the group organized in China last year, which was planned and led by Shaoyong. A recording of the Web Café talk, and the discussion are uploaded on CIAV YouTube channel. Thanks to Marwa Dabaeih, CIAV Vice President for the wonderful planning and moderating of yet another great talk within the CIAV Web Cafes series.

I am pleased to report that the core team that prepared and organized Africa24 Conference in Mombasa in Kenya has come together and started working on the planning for the next Africa27 Conference to be held in South Africa in July 2027. As the founder of the initiative to proactively engage with Africa, CIAV remains a main partner in the work for Africa27 and the many activities after that for ICOMOS in Africa.

I presented a paper titled "The vernacular in crisis" in a conference at Oxford Brookes

University last year. The paper concluded that "as far as humanity is in crisis, the vernacular is in crisis" because the built vernacular heritage is by people and for people. As terrible aggression and armed conflicts continue, with huge pain for innocent humans, the vernacular heritage is in crisis in Palestine, Iran, Lebanon, Ukraine and wherever peace is violated. But there is always hope. I hope that my next address to you will be in a more peaceful world.

Yours,

**Hossam Mahdy**

CIAV President



## IDMS and Heritage in Crisis: Action, Hope and Solidarity

### Heritage in Crisis: Message by ICOMOS President

In a world shaken by conflict, the mission of ICOMOS reminds us of a simple truth: every monument, every historic site, every cultural landscape we protect carries the story of humanity's shared journey. When these places are threatened, it is not only stones that fall—it is justice, dignity, identity, and understanding.

Today, as conflicts fracture communities across the globe, the work of ICOMOS becomes more urgent.

Safeguarding heritage is safeguarding peace. It is a commitment to dignity, to diversity, and to the belief that cultures can coexist without fear.

Let us continue to raise our voices for the protection of cultural heritage everywhere, especially where it is most at risk.

Let us choose cooperation over division, preservation over destruction, and humanity over hostility.

By protecting the past, we help shape a more peaceful future.

And in that mission, ICOMOS stands as a beacon of hope.

**Teresa Patrício**  
ICOMOS President

### ICOMOS Crisis Response: A Collaborative Approach

As soon as a crisis emerges, the ICOMOS Board works closely with the ICORP (International Scientific Committee on Risk Preparedness) Crisis Monitoring and Response Working Group. The Working Group also partners with the ICOMOS International Scientific Committees, providing support to colleagues on:

- methodologies adapted to the conditions on the ground and the specificities of the crisis;
- provision of resources and guidance on damage assessment, risk preparedness, emergency response, and safeguarding, including documentation, structural stabilisation, fire protection, mural paintings and stained glass protection;
- capacity building on risk preparedness and emergency response;
- whenever possible, on-the-ground actions and assessments are organised to assist ICOMOS members and to strengthen the capacities of local civil and governmental institutions.

### "Expect the Unexpected: Conflict" Webinar, 23 May 2026

As part of the events marking the International Day for Monuments and Sites on 18 April, the ICOMOS ICORP Crisis Monitoring and Response Working Group hosted an online panel entitled « Expect the Unexpected: Conflict ».

This event was organised in coordination with ICOMOS International Scientific Committees and took place on 23 May 2026.

The meeting was open to the ICOMOS network and invited experts. It aimed to address the impacts of armed conflict on cultural heritage and focused on emergency preparedness and response, as well as field-based experiences and current challenges.

ICOMOS stands in unwavering solidarity with affected ICOMOS National Committees and their members.

We honour their courage and commitment and reaffirm our shared dedication to preserving cultural heritage—a source of identity, resilience, and hope.

### IDMS 2026: Global events

ICOMOS National Committees assess and monitor heritage sites affected by the conflict and report back to ICOMOS with invaluable information, enabling our organisation to:

- continually adjust and optimise its support;
- develop cultural diplomacy by engaging with relevant international bodies and partners to advocate for the respect and enforcement of international conventions and the application of international humanitarian law.

For the 2026 edition, the International Day for Monuments and Sites takes on a particularly urgent resonance. Under the theme "Emergency Response for Living Heritage in contexts of Conflicts and Disasters," this year's events highlight the growing threats faced by cultural heritage and the need for rapid, coordinated action to protect it.

On 18 April, initiatives around the world reflect this focus. For more information about all the events that National Committees, International Scientific Committees and other heritage professionals are holding throughout the world:

<https://www.icomos.org/event/idms-2026-global-events/>



## Review of CIAV Webcafé: A Broader View on Cultural Heritage

15th March 2026

At 12:00 GMT on March 15, 2026, the online café themed "A Broader View on Cultural Heritage: How to Include Both Intangible and Tangible Heritage When Documenting a Site" was successfully organized by the ICOMOS International Committee on Vernacular Architecture (ICOMOS-CIAV). The event was convened and chaired by Ms. Marwa Dabaieh, Vice President of ICOMOS-CIAV, with a keynote speech delivered by Mr. Gisle Jakhelln, former President of ICOMOS-CIAV. Following the presentation, experts from international heritage organizations, including ICOMOS-CIAV and the ICOMOS International Committee on Intangible Cultural Heritage (ICOMOS-ICICH), engaged in an in-depth discussion.

This online café focused on the achievements of the VIDA Group—the Vernacular Tangible and Intangible Cultural Heritage Group. Established in October 2022, the group was co-initiated by experts from ICOMOS-CIAV and ICOMOS-ICICH. Its core mission and overall objective are to contribute to the preservation of vernacular architectural heritage for future generations by pioneering a balanced conservation approach that integrates the intangible cultural heritage dimension. Specifically, the working group is dedicated to developing a toolkit/manual for the synchronized documentation of both tangible and intangible cultural elements during the research and protection of vernacular sites. In the field of World Heritage, the long-term goal

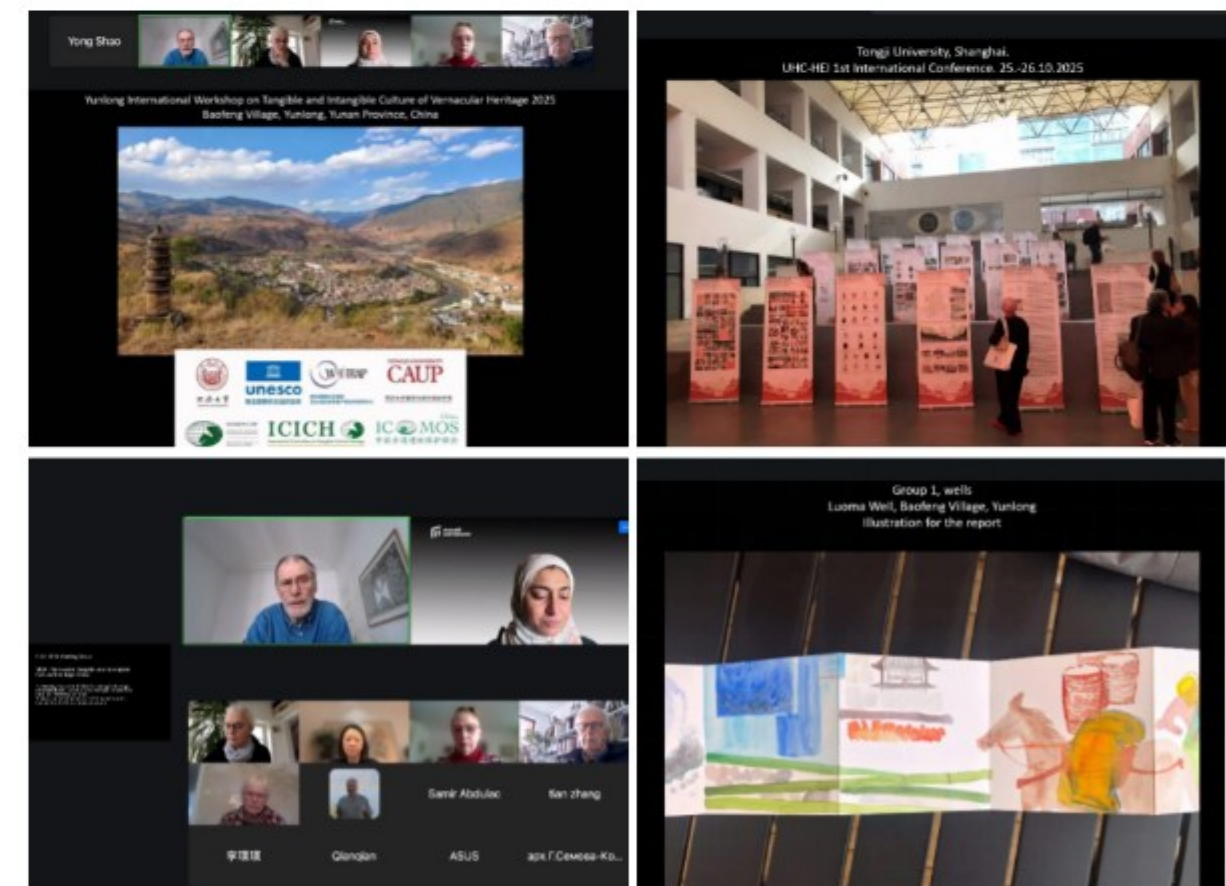
is to apply this toolkit to the documentation of Outstanding Universal Value (OUV) and Heritage Impact Assessments (HIA).

The online café began with an introduction to the VIDA Group by Gisle Jakhelln. He shared the group's founding process and elaborated on the experiences gained from the inaugural VIDA Workshop held in Yunlong County, Dali Bai Autonomous Prefecture, Yunnan Province, China, in October 2025. This workshop was jointly organized by Tongji University, the World Heritage Institute of Training and Research for the Asia and the Pacific Region under the auspices of UNESCO (WHITR-AP), ICOMOS-CIAV, and ICOMOS-ICICH, and hosted by WHITR-AP Shanghai, the College of Architecture and Urban Planning (CAUP) at Tongji University, and the People's Government of Yunlong County.

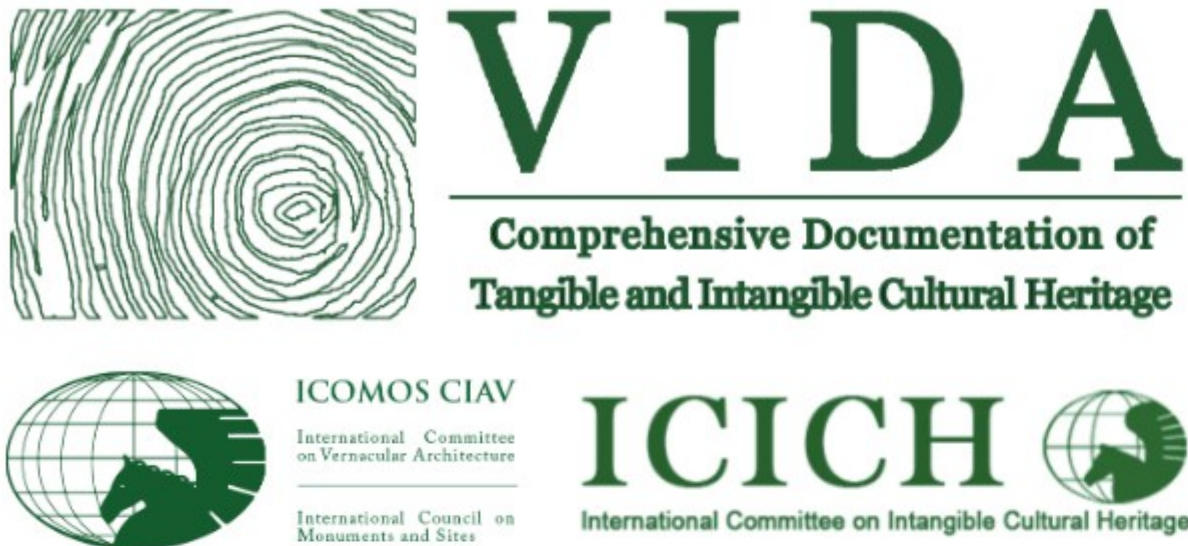
As the first international workshop of the VIDA Group, it took Yunlong's thousand-year-old salt production industry as a case study. It revealed and documented an extraordinary salt culture ecosystem rich in both tangible and intangible

heritage, providing a model for synergistic conservation paths. As the inaugural event of the future VIDA workshop series, it offered experience for organizing international heritage workshops.

Participating experts affirmed the outcomes of the workshop and reached a consensus on continuing the VIDA workshop series. Experts including Lena Palmqvist, Maria Ines Subercaseaux, Amund Sinding-Larsen, Hossam Mahdy, and Shao Yong discussed potential schedules, locations, and formats for future workshops, analyzing the possibility of hosting events in South Asia, the Middle East, and Africa. The experts agreed that tangible and intangible heritage conservation are of equal importance; therefore, the selection of future sites must assess the richness of both heritage types to foster a profound understanding of local cultures. Furthermore, the participants discussed alternative contingency plans for organizing workshops amidst increasing global political and economic uncertainties to ensure the safety and smooth implementation of future activities.



Keynote Speech by Gisle Jakhelln © WHITR-AP Shanghai



## Call for Hosts to Co-organise a VIDA Workshop

VIDA Project | Vernacular, Intangible, Documentation & Architecture

### Framework

Living heritage is frequently an integral component of vernacular contexts, where both tangible and intangible cultural heritage hold equal significance. In many parts of the world, they have coexisted harmoniously; however, in the contemporary world, the focus has often shifted towards preserving tangible heritage in inhabited sites, while intangible cultural heritage receives less attention. Furthermore, when documenting intangible cultural heritage, the significance of the cultural spaces associated with it is often overlooked. This oversight arises from several factors, including the absence of a balanced and shared approach to documenting both tangible and intangible cultural heritage.

### VIDA Group

To address this challenge, a collaborative initiative emerged from expert members of two ICOMOS Committees: CIAV (International Scientific Committee on Vernacular Architecture) and ICICH (International Committee on Intangible Cultural Heritage). The VIDA [Vernacular + Intangible + Documentation + Architecture] group was established with the objective of documenting both tangible and

intangible cultural heritage within vernacular living sites.

### VIDA Group Aims

The VIDA group recognises the intrinsic connection between tangible and intangible cultural heritage and strives to develop a more inclusive and comprehensive approach that integrates both dimensions. To achieve these aims, the group initiated a design thinking process through the organisation of workshops to refine its methodological approach. Within the context of these workshops, VIDA team collaborates with culturally rich vernacular heritage sites and invites local heritage custodians to share their knowledge, international and national experts to guide the workshops, and emerging professionals to contribute to the documentation of living vernacular heritage.

### VIDA Team

**CIAV:** Gisle Jakhell (coord.), Hossam Mahdy, Shao Yong, Mariana Correia, Jelena Pejovic, Zhang Tian

**ICICH:** Eivind Falk, Ananya Bhattacharya, Su Junjie.

### First VIDA Workshop

The first VIDA workshop was held in Yunlong County, in China, from 11-22 October 2025, with highly successful outcomes. The workshop was organised by Tongji University, and WHITR-AP | World Heritage Institute of Training and Research for the Asia and the Pacific Region. Under the Auspices of ICOMOS-CIAV | International Committee for Vernacular Architecture, and ICOMOS-ICICH | International Committee on Intangible Cultural Heritage, this international workshop was based in the documentation of Yunlong millennial salt production.

The workshop organized a series of field research on Yunlong's salt culture system. Under the guidance of local custodians, experts and emergent professionals visited historic salt villages, ancient salt wells, salt stoves, as well as historic bridges and pathways. Building on daily field research, the workshop arranged corresponding lectures to support systematic reflection on participants' observations and analytical insights within a cultural heritage. Each group followed a four-stage working framework of 'Investigation-Understanding-Documentation-Conservation'. Participants carried out on-site investigations closely engaging with local communities that live and work within these living heritage sites. Participants gathered information on the condition, historical development, and future aspirations of the heritage and its bearers and guardians. Central to this process was an effort to understand the intangible cultural heritage behind the tangible remains, including collective memory, social organization, and traditional craftsmanship. This holistic approach emphasized the interdependence of tangible and intangible heritage in the dynamic conservation and transmission of vernacular heritage.

Following, participants proceeded to the documentation phase, which included mapping key tangible heritage components and recording associated intangible elements, such as functions, meanings, tools, materials, and techniques, supported by audiovisual documentation of the key processes. Collectively, the workshop produced 18 exhibition panels, 4 research reports, and 1 electronic database documenting Yunlong's salt culture ecosystem. Building on experts and students shared understanding, the workshop produced research reports, a heritage database, and conservation strategies for Yunlong, which

will inform future heritage conservation and rural revitalization initiatives. VIDA will continue to develop a corresponding ICOMOS CIAV-ICICH toolkit based on this and the following organised workshops.

### Call for Hosts to Co-organise VIDA Workshop

Considering the encouraging outcomes that emerged from the first VIDA workshop organised in China, VIDA group opens a call to organisations interested on receiving a VIDA workshop. The workshop can be hosted in 2026 or in 2027.

### Criteria to Host a Workshop

To host a workshop, the following criteria should be considered:

#### Site:

- The workshop should be held in a vernacular site.
- The tangible and the intangible dimensions should be balanced.
- Living heritage Custodians should be willing to share their knowledge.
- The vernacular site should have the conditions for documentation to be addressed.

#### Organisation:

- There should be meeting places to work in the documentation process.
- To assure the travel costs and stay for six of the resource people.
- To ensure accessibility for participants with limited funding.

#### To be aware:

- For the ICOMOS-CIAV Charter (1999).
- For the ICOMOS-ICICH Charter (2024).



Review of 2025 Yunlong Workshop: <https://www.whitr-ap.org/index.php?mod=news&classid=1518&newsid=3939&t=show>

# Preview of CIAV 50

## Call for Oral History Interviews & Contributions

### Preview of CIAV 50

In 2026, CIAV marks its 50th anniversary. The anniversary programme combines reflection on CIAV's history with dialogue on current issues and future directions in vernacular heritage.

#### Anniversary Activities



#### 26 September 2026 — CIAV 50th Anniversary Activity (TBD)

A dedicated anniversary event with historical reflection, invited contributions and member exchange.  
The activity will be held via Zoom.



#### 19 October 2026 (TBC) — CIAV Activity during the 22nd ICOMOS General Assembly

An anniversary-related activity in connection with GA2026 in Kuching, Malaysia.  
Date proposed, subject to final confirmation.

GA2026: 17–24 October 2026, Borneo Convention Centre Kuching, Sarawak, Malaysia.

#### Main Themes and Focus



Historical reflections



Oral-history interviews



Image and archive collection



Anniversary presentation



CIAV Charter



Publications and toolkits



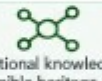
Cross-committee collaboration



Community participation



Climate resilience



Traditional knowledge, intangible heritage and digital technologies

CIAV members, the wider ICOMOS network, emerging professionals and partners are warmly invited to join the anniversary activities.

ICOMOS  
International Council on Monuments and Sites  
Consejo Internacional de Monumentos y Sitios



ICOMOS-CIAV  
International Committee on Vernacular Architecture  
International Council on Monuments and Sites

**50** 1976 2026  
**CIAV**  
50 YEARS  
PEOPLE  
PLACES  
KNOWLEDGE  
FUTURES

#### CIAV 50th Anniversary Event

Conversations on  
the past, present and future  
of vernacular architecture

Saturday  
26 September 2026 13:00 – 14:30  
(Paris time) Online via Zoom

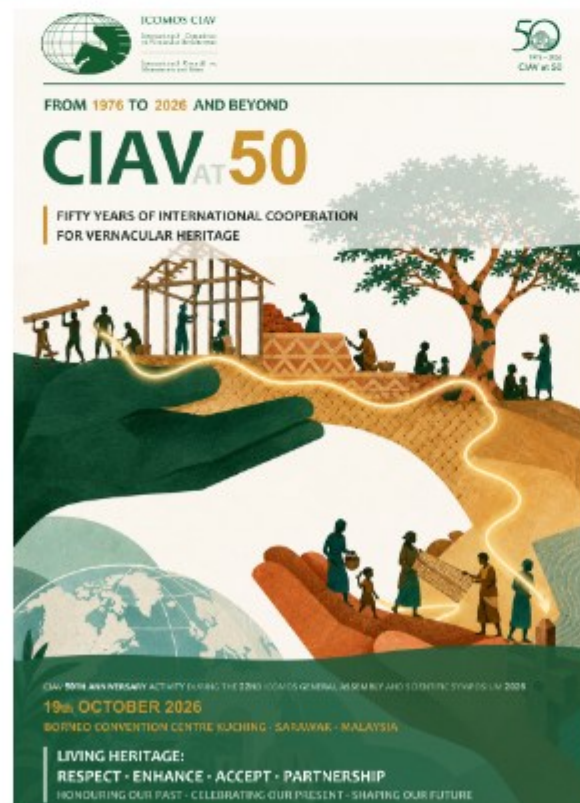
REFLECT | SHARE | LOOK FORWARD

More information and detailed programme to follow.

ICOMOS  
International Council on Monuments and Sites  
Consejo Internacional de Monumentos y Sitios

HERITAGE UNITES US  
PEOPLES | CULTURES | PLACES

Designed by Velika Ivkowska



Designed by Qianqin ZHOU (AI-Assisted)

### Preview of CIAV 50

In 2026, the ICOMOS International Committee on Vernacular Architecture (CIAV) marks its 50th anniversary. Since its establishment in 1976, CIAV has brought together professionals, institutions and communities from around the world to advance the study, conservation and transmission of vernacular architecture and the knowledge, skills and living traditions associated with it.

To commemorate this milestone, CIAV is preparing a series of activities that look back on its 50-year history, document the memories and contributions of its members, and foster discussion on current challenges and future directions for vernacular heritage.

#### 26 September 2026

CIAV 50th Anniversary Activity: A dedicated anniversary event hosted by Velika Ivkowska, bringing together historical reflections, invited contributions and member exchange, with a focus on CIAV's development over the past five decades and its future directions.

- **Time:** 13:00 – 14:30 (Paris time)
- **Zoom Link:** <https://us02web.zoom.us/j/82193091321>
- **Meeting ID:** 82193091321
- **Passcode:** 799237

#### 19 October 2026 (TBC)

CIAV Activity during the 22nd ICOMOS General Assembly: An anniversary activity planned in connection with the 22nd ICOMOS General Assembly and Scientific Symposium (GA2026), to be held from 17 to 24 October 2026 in Kuching, Malaysia, under the theme "Living Heritage: Respect, Enhance, Accept, Partnership." The activity will provide an opportunity for CIAV members and the wider ICOMOS community to meet, exchange and reflect on vernacular heritage. The proposed date remains subject to final confirmation.

CIAV members, the wider ICOMOS network, emerging professionals, partners and everyone committed to vernacular heritage are warmly invited to join us in honouring fifty years of international cooperation and shaping a more inclusive, resilient and sustainable future for vernacular heritage.

### Call for Oral History Interviews

As part of the CIAV 50th anniversary programme, we are preparing a series of oral history interviews and warmly invite you to take part and share your memories and experiences of CIAV.

The interviews will document personal memories, experiences and reflections on CIAV's development, major activities, meetings, collaborations and contributions to vernacular heritage over the past five decades. We would be grateful if you would share your own memories and perspectives and, where appropriate, suggest other long-serving contributors whose experiences should form part of CIAV's 50-year record.

### Call for Contributions

We are also collecting historical materials and personal memories to support the 50th anniversary presentation, historical timeline and archive. We warmly invite you to contribute photographs, publication covers, proceedings, newsletters, meeting records, historical documents and other relevant materials, as well as personal memories or stories related to CIAV's activities and development.

Please share any materials that you consider relevant, particularly those that may help document CIAV's people, meetings, publications, projects, international collaborations and key milestones. These contributions will help us build a more complete and reliable record of CIAV's 50-year history and strengthen the materials presented during the anniversary activities.

**For interview participation, contributions and further information, please contact:**  
[uhc\\_civ@163.com](mailto:uhc_civ@163.com).

# Preview of CIAV Webcafe



ICOMOS - CIAV  
International Committee  
of Vernacular Architecture  
International Council on  
Monuments and Sites

## The Built Vernacular Heritage in Africa

House in a remote village near the granite hills of Kibabong, South Sudan | Diego Delba, WikiCommons, CC BY SA 4.



**Abdoulaye CISSE** | Challenges of Earthen Architecture Conservation in Conflict and Climate Change Context

**Yasmine Maïmouna FOFANA** | Vernacular Sustainability in Tiébélé: A Strained Balance

**Olufemi ADETUNJI** | Creating (Un)Sustainable Futures for Built Heritage in Africa

<https://bit.ly/4y7ix1P>

17 September 2026  
11:00 GMT (via Zoom)

for more information, email [chilangwa.chaiwa@icomos.org](mailto:chilangwa.chaiwa@icomos.org)

### Title

The Built Vernacular Heritage in Africa

### Date and Time

17th September 2026, 11:00 GMT

### Background

The webcafe forms part of an ICOMOS Africa capacity-building initiative developed in response to a recommendation of the ICOMOS General Assembly in Nepal, which called for International Scientific Committees (ISCs) to support National Committees (NCs) in Africa through capacity-building activities. The initiative aims to provide practical knowledge, methodological guidance and opportunities for professional exchange, particularly in areas such as documentation, archiving, digital inventories and risk management of tangible and intangible cultural heritage. Therefore, the International Committee for Vernacular Architecture (CIAV) collaborated with ICOMOS Africa to deliver a webcafe focusing on built vernacular heritage in Africa, highlighting challenges and opportunities for its conservation, sustainability and future development.

### Presenters

**Sir Abdoulaye CISSE** is an Architect who graduated from the Higher School of Engineering, Architecture, and Urban Planning (ESIAU) in 2012 and specialized in earth architecture and DSA heritage at CRATERRE-ENSAG in 2018. He is passionate about architecture and heritage, and have worked in an architecture agency in Mali (AUDEX SARL agency) since 2014 as an Associate Architect on various design and rehabilitation projects for cultural heritage in Mali. He had also been collaborating with the International Center for Earth Construction (CRATERRE) since 2016 on various projects for the rehabilitation of earth architecture on world heritage sites and capacity building in Mali and Niger. He is a member of ICOMOS Mali and deputy secretary general, as an expert member of ICOMOS international scientific committees (ISCEAH, PRERICO, CCWG, CIAV, and EPWG). He had the opportunity to work on the evaluation of nomination files for inscription on the World Heritage list of several sites as an expert and to carry out field evaluation and reactive monitoring missions. His participation in the UNESCO African Experts Mentoring Program was a great opportunity for

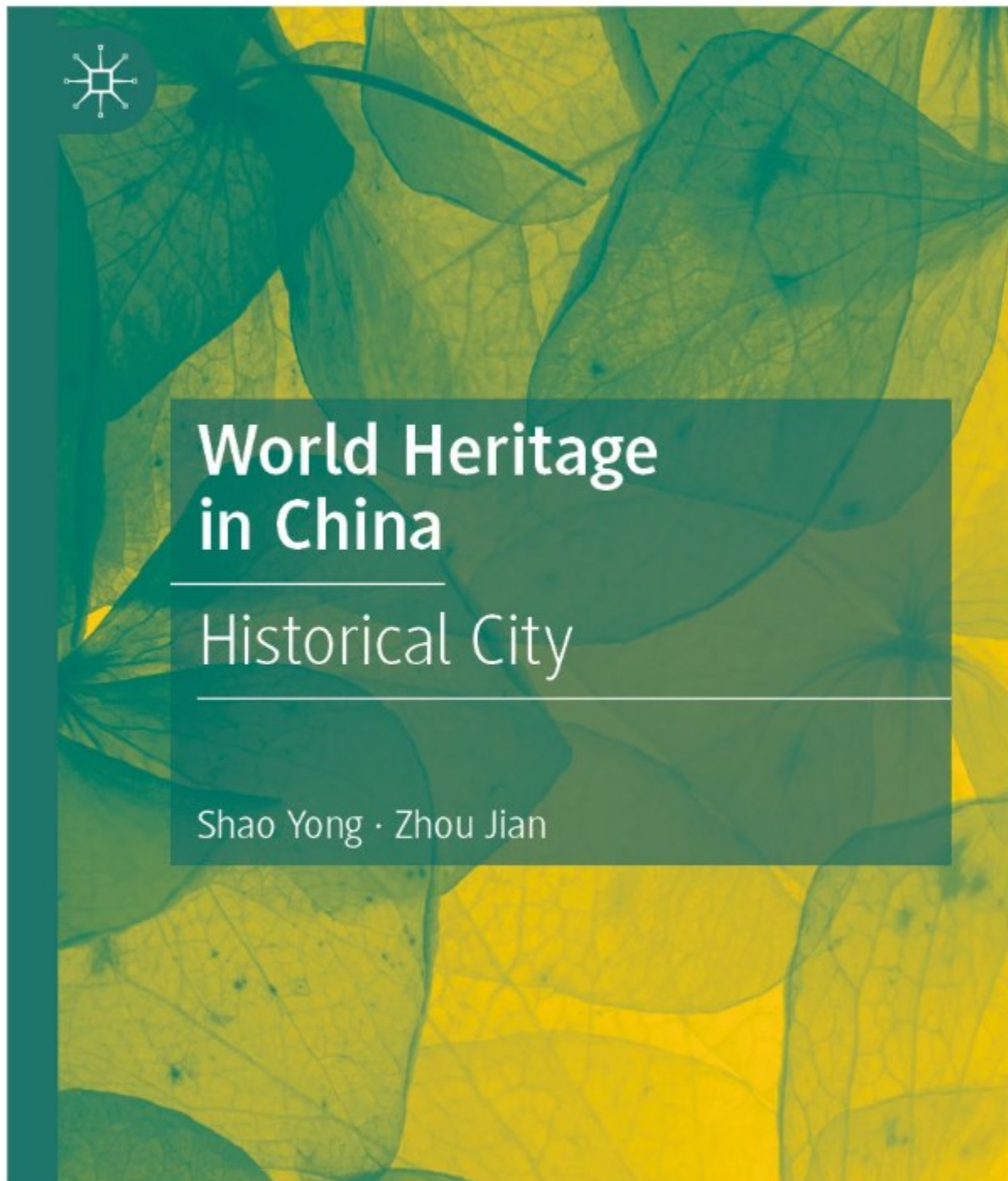
him to participate in several training workshops and field missions to World Heritage sites in 2021-2022. He is also a member of several African networks of earth architecture and heritage professionals and president of the network of young heritage professionals of Mali. ([archicisse@gmail.com](mailto:archicisse@gmail.com))

**Ms Yasmine Maïmouna FOFANA** is a young practising architect and holds a Research Master's degree in Architecture and Urban Development from EAMAU (École Africaine des Métiers de l'Architecture et de l'Urbanisme) in Lomé. Her field research examines vernacular sustainability and the safeguarding of Kassena architecture in Tiébélé, Burkina Faso (UNESCO World Heritage, 2024). She is preparing a doctoral project on earthen vernacular heritage. She has professional experience in architectural practice in Burkina Faso and Côte d'Ivoire. She serves as a Secretary for Communication and External Relations on the Executive Board of ICOMOS Burkina Faso (2026-2029). She is actively engaged in the international heritage and architecture community, she served as rapporteur at the 1st Francophone Emergency Housing Forum (RHUF/ EAMAU, Lomé, July 2025) and presented a paper on architecture as a tool for social reintegration at the 1st International Scientific Colloquium of CERVIDA-DOUNEDON (University of Lomé, November 2025). ([fmaimouna15.yf@gmail.com](mailto:fmaimouna15.yf@gmail.com))

**Dr Olufemi Adetunji** is a climate-heritage scholar whose work bridges sustainability, cultural heritage, and community resilience at School of Humanities and Heritage, University of Lincoln (UK). Through his research involvements, he is one of the voices on climate adaptation for vulnerable heritage sites. His current project focuses on "Elevating Capacity for Climate Change Adaptation and Conservation of Cultural Heritage in Zambia", combining scientific analysis with community-driven approaches. His academic background spans sustainability, urban transformation, climate change, heritage conservation and participatory engagement. As an early-career researcher, he contributes to strengthening climate preparedness and adaptation planning across communities, helping local groups integrate resilience strategies into cultural and environmental management. He is part of global networks shaping understanding of the nexus between climate, heritage and sustainability as an active member of ICOMOS (International Council on Monuments and Sites) and three International Scientific Committees on disaster risk management, energy and sustainability and

## Recommended Book/Publication

### World Heritage in China: Historical City



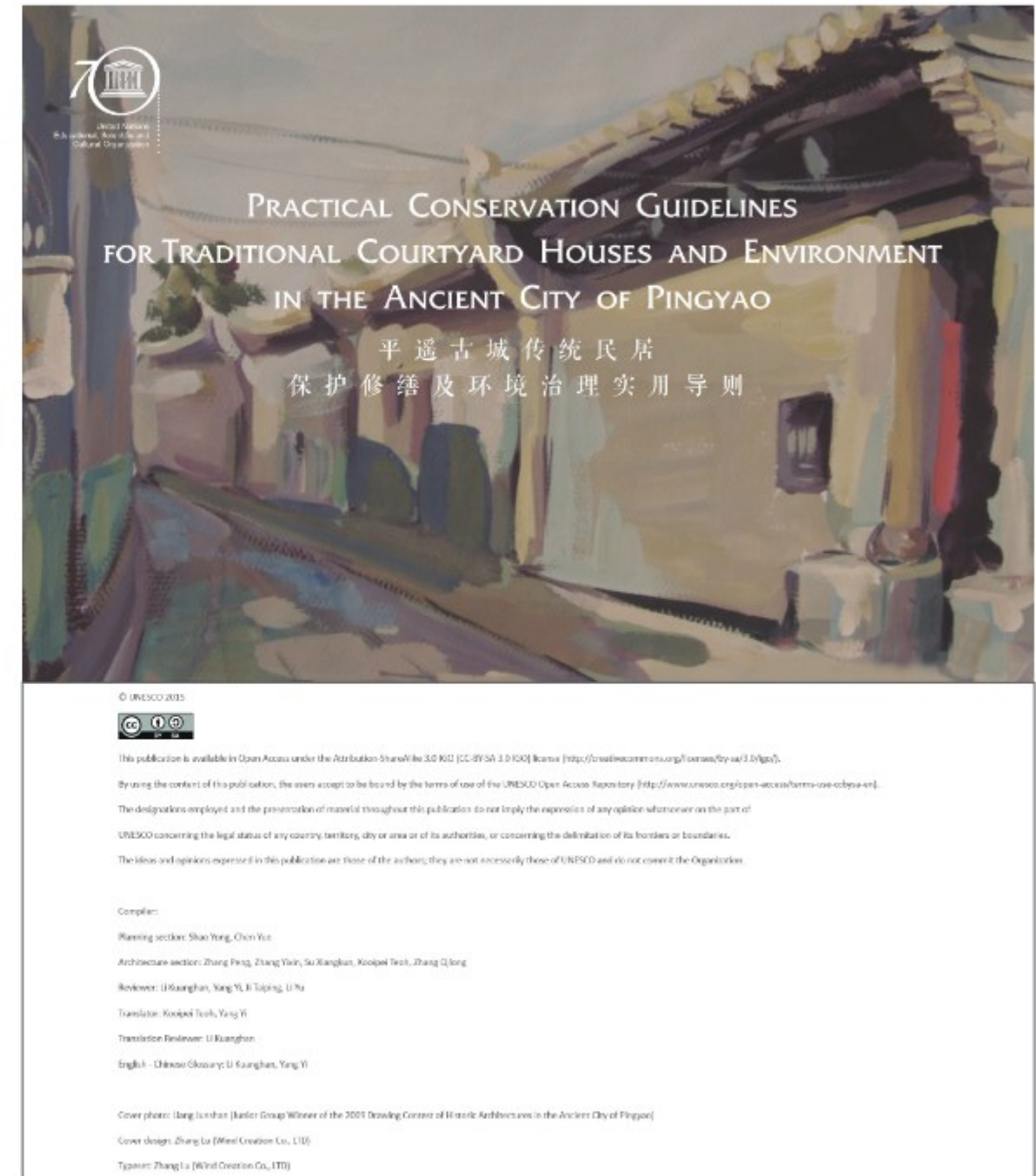
**Language:** English  
**Authors:** SHAO Yong,  
 ZHOU Jian

**Download PDF:**  
[https://link.springer.com/  
 book/10.1007/978-981-96-8721-3](https://link.springer.com/book/10.1007/978-981-96-8721-3)

This book delves deep into China's World Heritage-listed urban sites: Pingyao, Lijiang, Macao, and Kulangsu (Gulangyu), which cities, as living cultural heritage, offer a rich vein of research material. The book uncovers how these cities have evolved over time, bringing insights for understanding the long-term processes shaping urban heritage globally.

## Recommended Book/Publication

### Practical Conservation Guidelines for Traditional Courtyard Houses and Environment in the Ancient City of Pingyao



**Language:** Chinese  
**Authors:** SHAO Yong etc.  
 China, Pingyao County Government

**Download PDF:**  
<https://unesdoc.unesco.org/ark:/48223/pf0000234622>  
<https://unesdoc.unesco.org/ark:/48223/pf0000234621>

This partnership-based project provided funding and traditional craftsmanship to restore Ping Yao's vernacular houses, technical manuals, demonstration projects, and capacity building ensure long-term sustainability.

# Understanding of the Settlements with Coexisting Water and Earth Under the Background of Climate Change

the Case of Liang Village in Pingyao County, China

SHAO Yong, CHEN Yue, SU Jianming



Professor, Urban Planner  
Member of ICOMOS China, Expert  
member of ICOMOS ISCEAH, CIAV; Vice  
President of ICOMOS CIAV 2021-2026

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Global climate change has caused general and serious damage to cultural heritage sites, and earthen settlements and buildings are particularly vulnerable to water-affected disasters. Thus, this paper uses Liang Village in Pingyao County, China, as a case study, linking the human-land study in the Liang Village Sino-French workshop of 2009/2010 to a disaster assessment completed after the devastating rainstorm in October 2021. We found that the village's rain disaster resulted from the vulnerability of earthen material to rainstorms and from the earthen settlement's evolution from a culture emphasising the coexistence of 'water and earth' to a technic fostering the disintegration of 'water and earth'. The latter is the main cause of the village's decrease in its capacity for disaster prevention and damage reduction. Therefore, in the context of global climate change, we find that the reestablishment of the harmonious relationship of water and earth is critical to both rural heritage conservation and village sustainable development. In addition to repairing their relation from the technical perspective of 'planning and design' by planners and architects, it is more crucial for local people to understand and enhance their contemporary appreciation for the traditional 'coexistence of water and earth' concept.

## 1 Threats from global climate change to earthen heritage

### 1.1 Influence of and reactions to current global climate change

In the last several decades, climate change has caused many severe disasters. According to the Centre for Research on the Epidemiology of Disasters (CRED), the world encountered 389 cases of natural disasters in 2020, mainly climate-related. This included 9 cases of drought, 5 cases of extreme temperature, 201 cases of flooding, 19 cases of landslides, 127 cases of storms and 8 cases of wildfire. The number of people affected by natural disasters in 2020 was 98.4 million. The CRED also provides data on disasters from the past decade, which show even higher annual averages in almost all areas, except for flood and storm cases (CRED, UNDRR, and USAID 2021).

To mitigate climate change, several measures have been taken worldwide. The United Nations Framework Convention on Climate Change (UNFCCC) was established in 1992 as an international organisation to support the global response to the threat of climate change. The Paris Climate Agreement is the most recent attempt to establish international cooperation over climate change and was instituted in 2016. It was designed to bring nations together voluntarily to take ambitious action on mitigating climate change while developing adaptation options and strategies and guaranteeing the means of implementation (e.g., climate finance). The Agreement is aimed at holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels' (United Nations 2015).

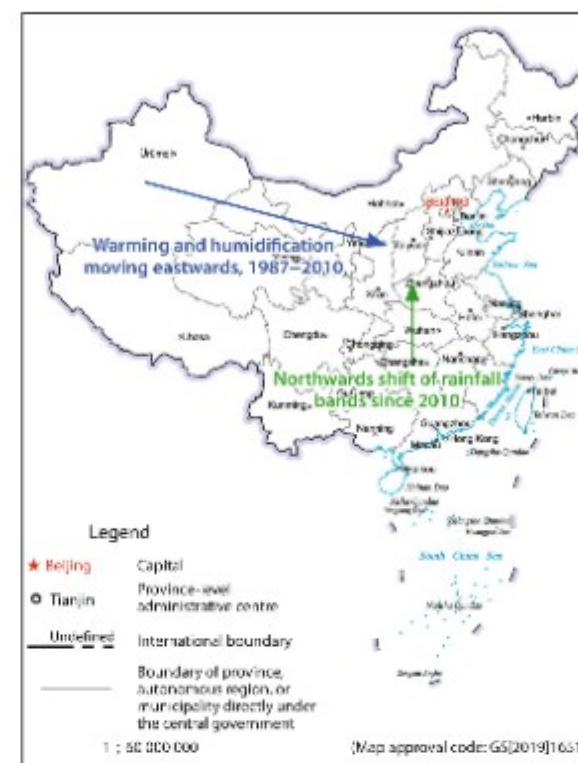


Fig. 1 Trend of Climate Change in China. ©Author. Background map approved by Map Vetting Center, Ministry of Natural Resources, PRC. Map approval code: GS[2019]1651

The built environment is often the major part of the physical infrastructure affected by disasters. Extreme events, such as cyclones and floods, inflict a heavy toll, particularly on structures built with informal building materials and outside safety standards (Scott and Tarazona 2011). Increased climate variability, warmer temperatures, precipitation shifts, and increased humidity will accelerate the deterioration and weathering of stone and metal structures in many cities (Grossi, Brimblecombe, and Harris 2007; Smith, Gomez-Heras, and McCabe 2008; Stewart, Wang, and Nguyen 2011). The increased risks that climate change brings to the built environment also apply to built heritage. In 2017, the 19th Triennial ICOMOS General Assembly meeting in New Delhi adopted Resolution 19GA 2017/30 entitled 'Mobilizing ICOMOS and the cultural heritage community to help meet the challenge of climate change' and established the ICOMOS Climate Change and Heritage Working Group (CCHWG) to support and prioritise the development of ICOMOS's climate-change policies and engagement. In 2019, the CCHWG published 'The Future of Our Past: Engaging Cultural Heritage in Climate Action' (ICOMOS 2019) to catalogue the ways that climate-change drivers impact cultural heritage.

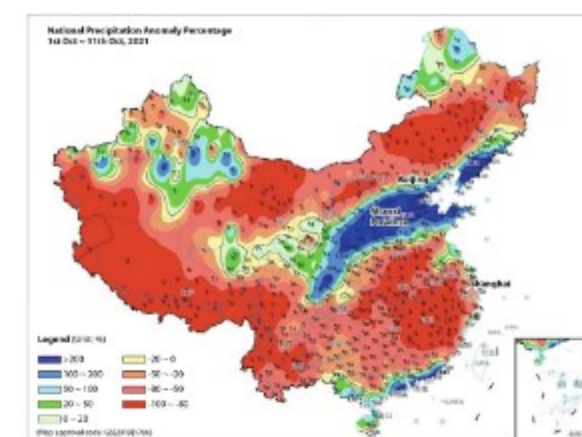


Fig. 2 National Precipitation Anomaly Percentage from 1 October to 11 October 2021. ©NMC: <https://cmdp.ncc-cma.net/cn/index.htm>. Map approval code: GS[2019]1786



Fig. 3 Collapse of village wall and door roof of Liang Village. ©Pingyao County government

### 1.2 Vulnerability of earthen heritage to climate change

Shanxi is located in central China and has a Loess Plateau landscape and an arid climate with approximately 400mm of annual rainfall (Wang, Zhu, and Tong 2016). As one of the main regions of ancient Chinese civilisation, many ancient buildings still exist, including the world heritage site of Pingyao Ancient City. However, since 2010, due to the Northwards movement of warm and humid airflows caused by climate change, continuous rainstorms have become common in traditional drought areas, further causing great destruction to earthen heritage sites (Fig. 1).

In the beginning of October 2021, Shanxi Province suffered from continuous heavy rainfall, causing floods, landslides and other geological disasters. According to the National Meteorological Centre (NMC), from 2 to 7 October, 13 cities and counties in Shanxi received over 200mm of precipitation (1 week reaching a half-year), and the rainfall of Pingyao Ancient City was 20-24 times more than the same period in previous years (Fig. 2).

Our team went to Pingyao on 8th October. After investigating and assessing the disaster of the earthen buildings in Pingyao Ancient City and

the surrounding villages, including Liang Village, we found that 'earth' was very vulnerable when meeting 'water'. Many earthen built heritage sites in this region were severely affected, seriously damaged, and even partially collapsed. In Liang Village, village walls and door roofs had collapsed; although some materials were not earth, they were also damaged by the loss of earth as filling material (Fig. 3).

In the Loess Plateau region, earth is the main building material of buildings, widely used in roofs, walls and other places, even in buildings with wood structures. Due to the arid climate, the earth can remain dry and firm, and a large number of old buildings have been preserved. However, due to the long-term arid environment, people have forgotten another element, water, and they have also forgotten the traditional 'water and earth' concept, which was so important for ancient Chinese people. Although the 2021 flood in Shanxi was 'unconventional', but it does not mean it is a new problem that Chinese people have no experience with. Thus, we have observed the traditional wisdom in dealing with 'earth' and 'water' within a workshop from 10 years ago, and we believe that people's abandonment of this wisdom partially caused the severe damages. This is the key issue that we discuss in this article.

## 2 Analysis of the 'water and earth' concept in traditional Chinese culture

'Water and earth' can be two elements on the surface of land and can also be the general natural conditions and climate. For example,

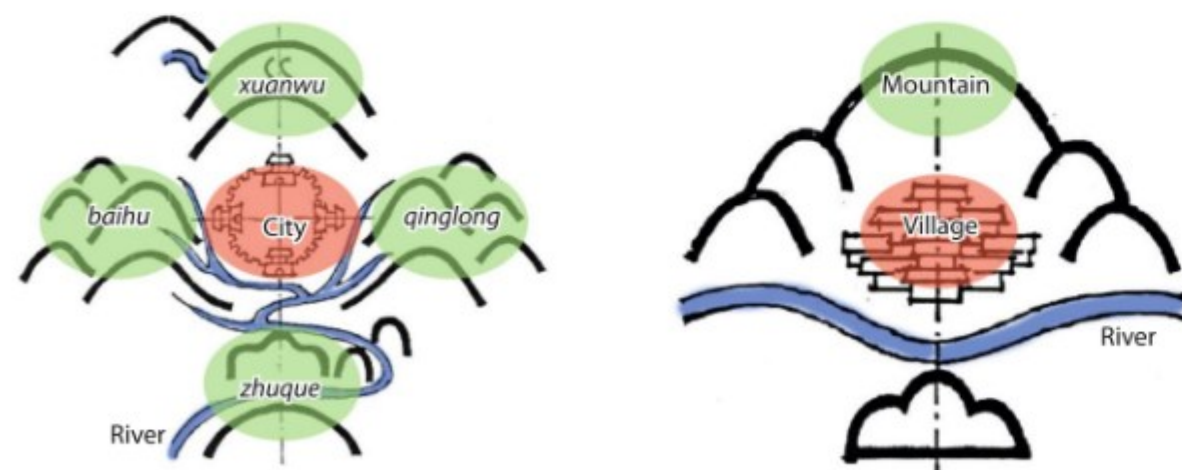


Fig. 4 Traditional Chinese site selection concept, based on fengshui theory. ©Wang and Zhang 2010.

there is a traditional Chinese saying 'shuitu bu fu' (水土不服) people are not accustomed to the local water and earth, which means that if the body is not harmonious with the local climate environment, it is easily affected by illness (Deng 2019). In traditional Chinese culture, 'water' and 'earth' have a contradictory and complementary relationship.

### 2.1 Earth: a stable element and the symbol of spatial order

Earth is the most important carrier of human activities. There was a strong worship of earth in ancient China. For example, in the theory of 'wuxing' (五行, means five elements), earth represents the orientation of the centre, which is the most important of the five elements. In the ancient Yueji (《乐记》), there is a statement that 'earth is the most significant of the five elements' (Pang 1984). There are two main reasons to emphasise the importance of earth: first, China has a long-term agricultural civilisation, and agricultural thoughts are deeply rooted in peoples' minds, so earth (or soil) symbolises agricultural production, which can bring stability to people. Second, earth has a similar meaning as land, which refers to the boundaries of imperial power. Therefore, there is a saying in China 'putianzhixia mo fei wangtu' (普天之下莫非王土, means all the earth/land belongs to the emperor). Thus, earth is given special values.

In this article, we define 'earth' as a natural substance element that can be used as a kind of material and discuss its symbolic meaning in China.

### 2.2 Water: a fluid element and the symbol of spatial vitality

Similarly, there are also two meanings of water in Chinese people's minds. The first one is water in nature. 'Living close to water' is not only a Chinese tradition but also an important feature of human civilisation because water is used for drinking, irrigation, and a better living environment by people who regulate their microclimate. In addition, the second definition is water in mind. Due to the significance of water, a strong worship of water has been produced. People worship water with the first purpose of begging for appropriate rainwater and with the second purpose of begging for the reproduction of people themselves (Xiang 1993).

On this basis, 'water' is a symbol of wealth because people find that places with rich water resources are always wealthy. According to the theory of 'fengshui', water includes rivers, lakes, creeks, etc. and is indispensable for an ideal settlement (Wang and Zhang 2010). To create a comfortable and auspicious environment, it is also necessary to adjust the form or direction of water, which is called 'lishui' (means adjust water) in 'fengshui theory' (Fig. 4) (Wang 2015; Wang and Zhang 2010).

### 2.3 The balance of water and earth constitutes an ideal settlement environment

Given the above two aspects, 'earth' and 'water' are both important natural elements on the surface of the planet. At the same time, they both represent concepts in the ancient Chinese ideological system; the former represents stability and order, while the latter represents fluidity and vitality, and they are equally important and indispensable.

Scholars have been more concerned with the traditional settlements in southern China because the landscapes there are rather variable, and the balanced nature of 'water and earth' is more apparent (Chen and Cao 2015; Luo 2015; Xiao and Cao 2014; Xu, Peng, and Wu 2012). In contrast, for settlements on the Loess Plateau, scholars have always given more attention to the strong earthen characteristics while ignoring the factor of water (Wang and Zhou 2011; Huo and Liu 2005; Wang and Hou 2006). Indeed, neither of these two elements is capable of individually maintaining a good environment. Especially after the 2021 flood in Shanxi, it is thus necessary to reassess and better deal with the

relationship between water and earth to increase the capability of earthen settlements to prevent damage during disasters.

## 3 Liang Village: from 'coexistence of water and earth' to 'disintegration of water and earth'

Liang Village is a typical earthen settlement on the Loess Plateau of China. It is located in the middle of Pingyao County, Shanxi Province, 6km southeast of Pingyao Ancient City (Fig. 5). There is a common popular saying: 'Liang Village initially, then follows Pingyao Ancient City', which



Fig. 5 Location of Liang Village. ©Author. Background map approved by Map Vetting Centre, Ministry of Natural Resources, PRC. Mapapproval code: GS[2019] 1651.



Fig. 6 Spatial pattern of 'living on the terrace and farming in the valley'. ©Tongji University and Ecole de Chaillot 2010

shows that Liang Village has a longer history than Pingyao Ancient City. In June 2007, Liang Village was listed as a National Historical and Cultural Village. In 2012, it was listed as a Chinese Traditional Village.

As mentioned above, the main empirical evidence for this study was obtained from a Sino-French workshop in Liang Village from 2009 to 2010. In this workshop, which 4 teachers and 21 students participated in, the characteristics of the relationship between earth and water were deeply studied, and we obtained two important findings. First, the settlement had a strong characteristic of the combination of rich water and earth, which was very significant. Second, there was an evolution from the 'coexistence of water and earth' to the 'disintegration of water and earth', which corresponds to the village's devolution from prosperity to decline.

### 3.1 'Coexistence of water and earth'

#### 3.1.1 Settlement site selection: close to water on the Loess Plateau

Liang Village is located in the core area of the largest Loess Plateau in the world. The natural Huiji River and its tributaries pass through the village on the east and west sides, forming a regional landscape with interlaced sandy terraces and valleys. The ancestors of Liang Village made clever use of the relationship between water and earth and formed a spatial pattern of living on the terrace and farming in the valley' through generations of transformation. A higher terrace for living could not only provide a good place to defend but also prevent damage from floods. Moreover, it was convenient for villagers in the valley, which had a good irrigation system for agriculture. Therefore, even in its period of increasing population, Liang Village did not sprawl continuously but selected another neighbouring terrace to build a new settlement on while leaving the valley as a natural space for water conservation and agriculture.

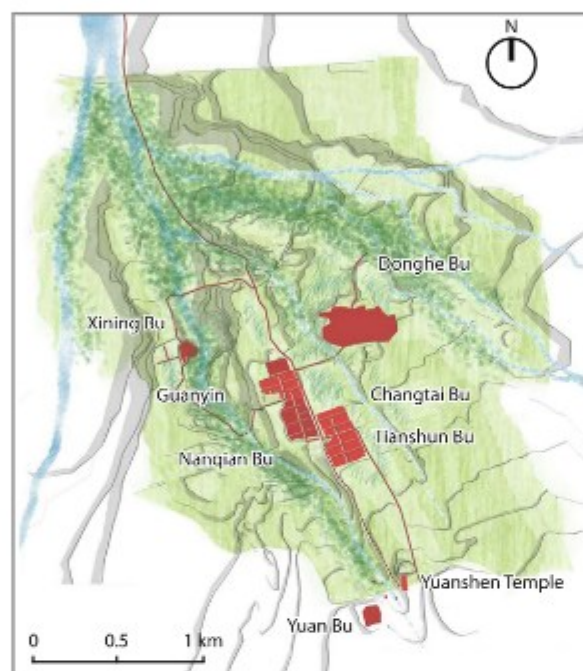


Fig. 7 Natural environment with the coexistence of water and earth. ©Tongji University and Ecole de Chaillot 2010

According to a historical study, the ancestors of Liang Village preferred to build houses by the cliffs on the east side of the tributary of the Huiji River, forming the initial Yaodongs. Then, three settlement units, Donghe Bu, Xining Bu and Nanqian Bu, were built on the terrace. Next, it continued to expand on the flat area with the completion of Changtai Bu and Tianshun Bu. Finally, three settlement clusters were completed, and between them were the valleys with water and farmland.

Clearly, the site selection of Liang Village took great advantage of water, especially the terrace that was close to the mainstream of the Huiji River. Subsequently, an abundant underground water source was found in the south of the village, which brought great benefits to agriculture, ultimately making Liang Village into a rich lotus root town. Thus, a local folk song, Praise Local Products (《夸土产》) sings, good rice in Yuanshen Temple and fine lotus roots in

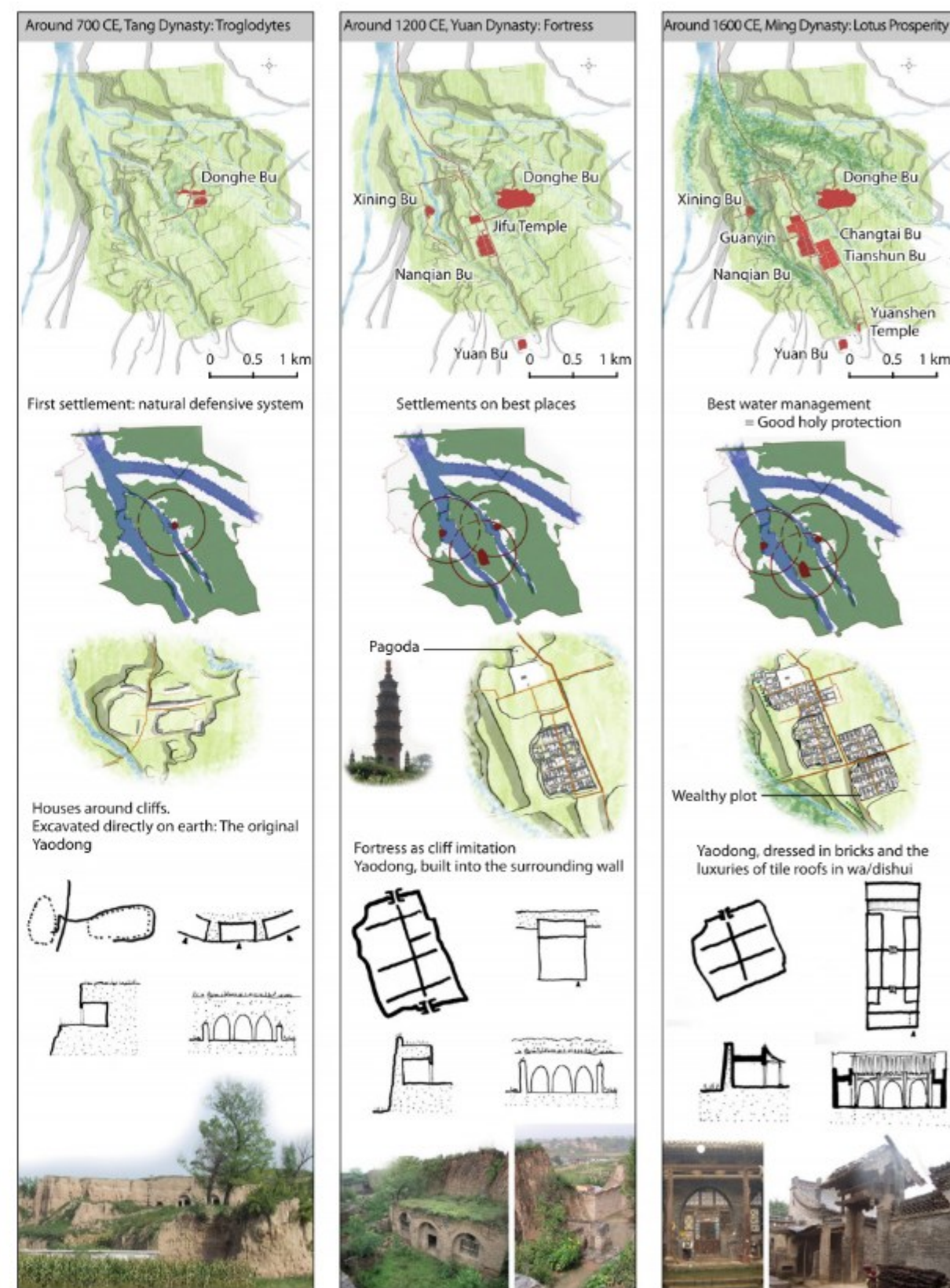


Fig. 8 From the Tang Dynasty to the Ming Dynasty: From the Loess Plateau to rich lotus roots. ©Tongji University and Ecole de Chaillot 2010

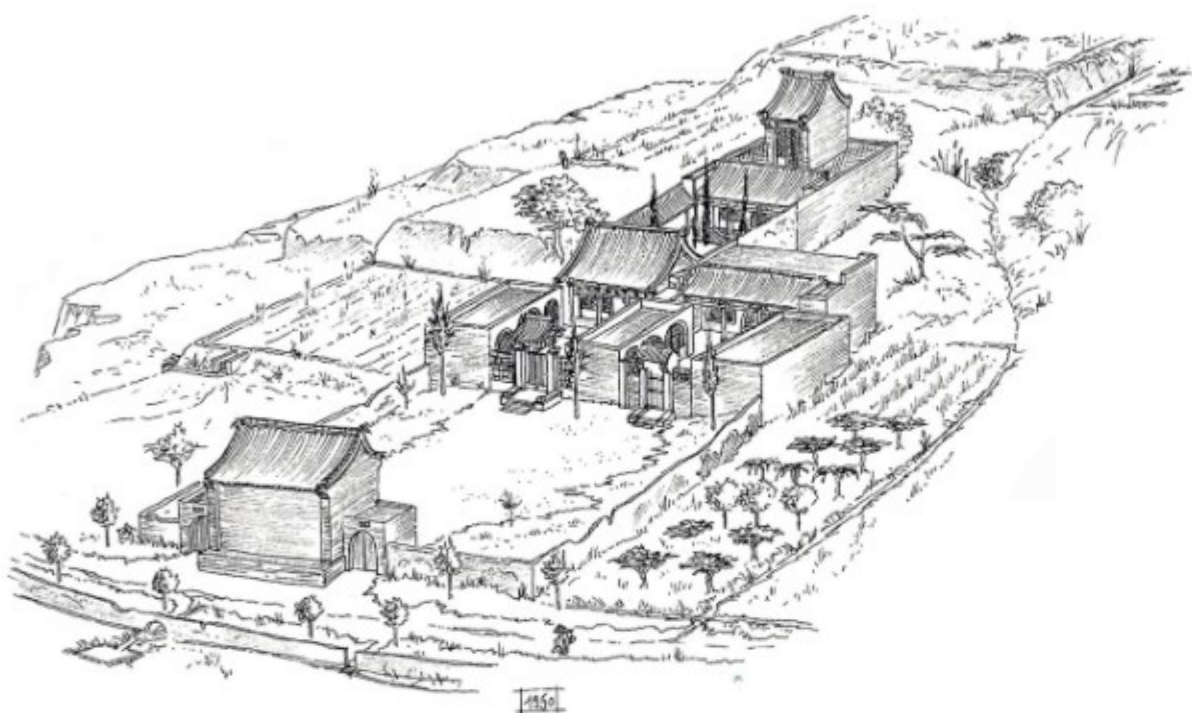


Fig. 9 Layout of Yuanshen Temple. ©Tongji University and Ecole de Chaillot 2010

Liang Village (源祠的大米梁村的藕). With the advantage of water, Liang Village became rich because of the cultivation of lotus roots, and it formed a beautiful landscape and liveable space on the arid Loess Plateau.

Because of the lack of water in this arid region, the ancestors of Liang Village cherished the high-quality spring water source and were grateful for the liveable environment provided by nature. Thus, this spring water source was regarded as a god by villagers. To thank it, they named it Shen Quan' (神泉, means sacred spring), built a fence to protect the outlets of the spring, and even established a temple, Yuanshen Temple' (源神祠, means temple for the god of water), on the east side to sacrifice to the god of water. The Yuanshen Temple was located between the fields amid the stage and the wells, taking the natural mountains and water systems as its background, underscoring the history of the endless awe and prayers for water sources among the villagers (Figs. 7 and 9).

### 3.1.2 Water circulation system inside the earthen settlement: water storage and drainage

As a single-family group settlement, Liang Village formed a typical Confucian space, with the features of clan hierarchy, large family tradition and defence demand. These social features were all reflected in the spaces. The

settlement used the 'Bu' walls (the village walls) as its strict development boundaries, with two gates on the north and south to safeguard the large family. The spatial layout was distinct, which distinguished the public, semipublic and private spaces, while the spaces at all levels were connected by the fishbone street network with primary and secondary relationships.

For a settlement on the terrace, water circulation was an important and challenging part of the liveable space in this region. By manipulating the microterrain, the problems of water provision and flood prevention were impressively resolved for such a closed earthen settlement in the arid Loess Plateau region.

First, the ancestors carefully built a rainwater storage system in the village. The rainwater collection port and passages were well preserved on the top of the 'Bu' walls. Fishbone streets and lanes with a certain slope also had water passages. Rainwater went through the streets, collected in the tanks under the central street, the lowest place in the village, and was stored for daily use. It was very important in dry seasons or in defensive situations. Even today, while the original wells and underground aquifers have dried up, this water collection system can still be used. This was the elastic mechanism that Liang villagers created in response to their arid climate (Fig. 10).



Fig. 10 Rainwater collection and storage system in Nanqian Bu. ©Tongji University and Ecole de Chaillot 2010

Meanwhile, due to the occasionally large amounts of rainwater, the above system was also very efficient for drainage. Liang Village Stage Square was not only very secluded in terms of the treatment of the microterrain in accordance with the relationship between the opera stage, stand and the square but also excellent at collecting rainwater and then draining it out of the square quickly via its natural slope (Fig. 11).

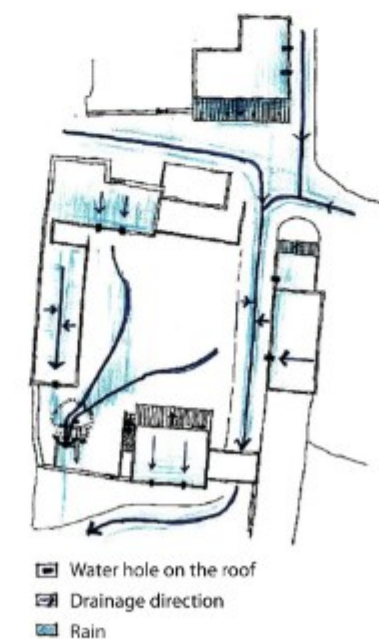


Fig. 11 Topographic microprocessing in the stage square and underground rainwater collection and drain systems. © Tongji University and Ecole de Chaillot 2010

### 3.1.3 Architecture treatment: local earthen material and protection against rain

Limited by local conditions, traditional buildings were made of local materials, such as earth and bricks, which had the unique effect of warming in winter and cooling in summer and reflected the unique local characteristics and a typical vernacular architecture. There were three main types of local buildings, almost all of which used earth as the main building material. The first was Yaodong, which leaned against mountains and made use of earth directly. The second was the independent Yaodong, which could be built widely on flat ground, the upper layer of which was covered with earth. The third type was a brick house, the walls of which were mostly adobe with a roof with a thick earthen layer. To protect this earthen layer from rainwater, tiles were used to drain water quickly. (Fig. 12). Except for the residential buildings, other architectural elements in the settlement, such as the gate and the 'Bu' walls, were mainly built of earth and were also treated in detail to make rainwater flow quickly and prevent erosion.

Accordingly, historic Liang Village obviously reached a 'dynamic balance' by addressing the relationship between 'earth' and 'water'. On the one hand, 'earth' was widely used as the main material in construction; on the other hand, 'water' was smartly treated as a fluid element to bring vitality to this relatively stable and conservative earthen settlement.



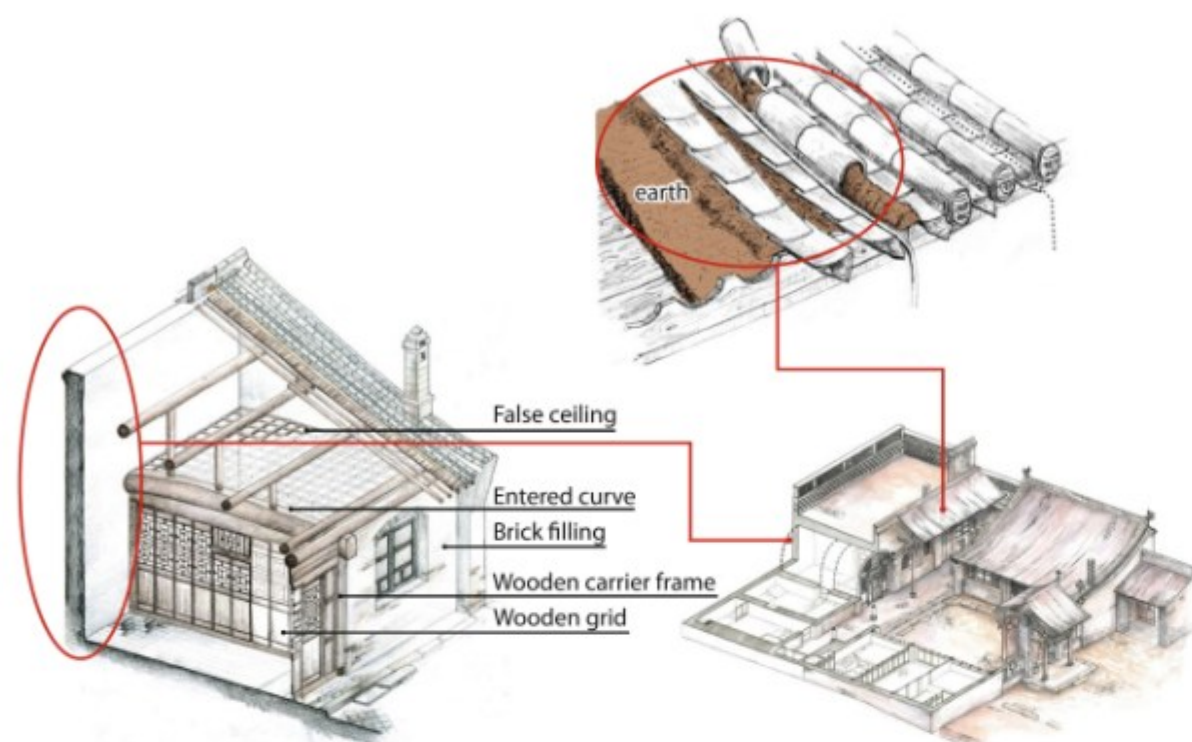


Fig. 12 Earthen material and the detailed treatment to prevent rainwater in Shanxi residential architectures. ©Tongji University and Ecole de Chaillot 2012

### 3.2 'Disintegration of water and earth'

#### 3.2.1 Rural environment: water source exhaustion and farmland degradation

The increases in population caused greater demands on agricultural production, especially during the Great Leap Forward (1957-1960). Villages drilled wells in a radical way to obtain water for irrigation, which not only caused the rapid decline in the groundwater level but also caused irreversible destruction to the groundwater layer and eventually caused the drying up of water sources. Meanwhile, the construction of the reservoir to the north of the village accelerated the drying of the river. This further caused the valley north of the village, which attached the rivers, to gradually shrink, and the fertile cultivated land was also gradually degraded. Finally, the landscape of the rivers and valleys surrounding the village was weakened (Fig. 13).

Due to the exhaustion of the water sources, people's worship of nature also disappeared; therefore, the Yuanshen Temple, which was divine in history, became unimportant. In the 1970s, the spring water source was renamed the Hongqi Well (red flag well), and a mechanical pump was built next to it. In the 1980s, a motorway passed through the Yuanshen Temple



Fig. 13 New buildings with urban sprawl and dry valleys. ©Author



Fig. 14 Yuanshen Temple after the flood. ©Author



Fig. 15 Status quo of the south and north facades of the wall before restoration. ©Tongji University, Ecole de Chaillot and China Academy of Art 2010

and separated the temple into two parts: the opera stage on the north of the road and the other part on the opposite side. The spirit and space of this sacred historic site were completely destroyed. The internal space of the temple was used as a primary school for a period and was later abandoned. Unfortunately, the temple was also heavily damaged in the 2021 flood in Shanxi (Fig. 14).

#### 3.2.2 Settlement form: urban sprawl and modern infrastructure intervention

With the increase in population, the five traditional 'Bu' walls could no longer accommodate all of the people, so it was inevitable to create new living space. However, in the twentieth century, due to improved productivity, the ability to transform nature also increased. Therefore, the villagers abandoned the traditional method of site selection and chose to sprawl adjacent to the old section, which was obviously more convenient.

Similarly, in the new settlement construction, due to the collapse of traditional family concepts and the reduction in defence needs, the traditional urban form, with a strict boundary and a grading structure, was replaced by a more open, efficient and homogenous space. However, with the breaking of the spatial hierarchy, the subtle terrain differences also disappeared. Thus, the village had to rely on a sewer system to drain water, not the natural topography.

Meanwhile, people's worship of water also changed in a subtle way. There were two causes. First, the ideology changed; nature worship was thought to be a feudalistic superstition that should be abandoned amid the New Culture Movement in China in the 1910s and 1920s. Second, the development of technology, especially the popularity of tap water, rendered the relationship between people and nature

increasingly indistinct. Thus, the traditional rainwater collecting system was deemed unimportant.

#### 3.2.3 Earthen building: loss of function and threat from water vapour

Whether it was a public building or a residential building, a lack of functions further fostered the destruction of earthen building quality. Most buildings have faced obvious problems such as humidity, weathering, roof leakage, damage to wood components, settlement and deformation. Moreover, with the development of building materials and technology, as well as the improvement of economies and living demands, concrete and ceramic tiles have replaced bricks and earth and have become increasingly popular. In contrast, a large number of traditional architectural spaces have been abandoned, and various pathologies have emerged as a result.

For earthen materials, the greatest threat has come from water vapour, which has caused cracks, spalling, ravines, flooding and other common pathologies due to rainfall and humidity. Regarding the wall on the south side of Xining Bu in Liang Village, for example, after years of erosion, the drainage system was especially destroyed, and the wall was seriously damaged. There were thus many structural pathologies, such as structural cracks, destructive gullies, overturning and settlement, and more surface pathologies, such as microcracks, spalling, scouring gullies, alkalisation and plaster loss, in the wall (Figs. 15, 16 and 17).

Therefore, various spiritual and physical transitions fundamentally caused Liang Village to shift from emphasising the coexistence of water and earth' to allowing the 'disintegration of water and earth'. Thus, the loss of 'water' directly caused the deterioration of the ecological environment and the fragility

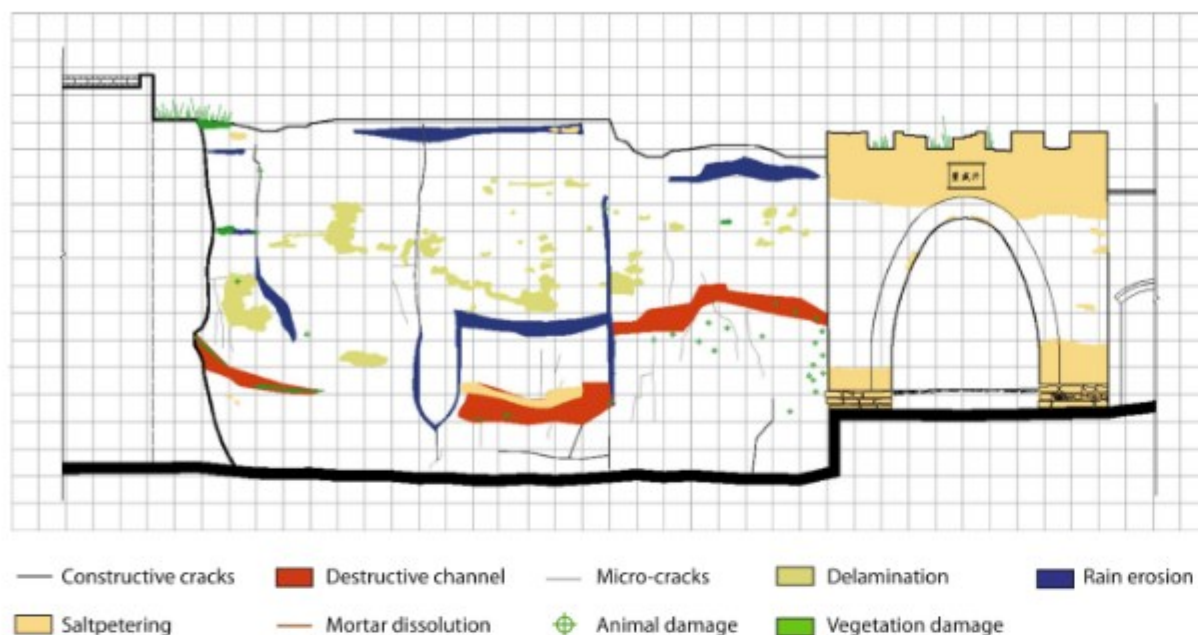


Fig. 16 Pathological analysis of the south facade of the wall. ©Tongji University, Ecole de Chaillot and China Academy of Art 2010

of the ecosystem. Since 'water' was incredibly significant as a kind of conditioner in the ecosystem, thus the loss of 'water' not only made the environment no longer flexible but also eroded the vitality of the earthen settlement.

## 4 The contemporary value and the relationship recovery of water and earth

### 4.1 The contemporary value of water and earth

Under the concept of sustainable development, there are new meanings for the traditional elements of 'water' and 'earth'.

#### 4.1.1 The ecological function of 'earth'

In recent decades, environmentalists, ecologists and architects have realised that earthen material is itself a kind of green material. As a local material, it not only consumes little nonrenewable energy (oil, natural gas, etc.) during processing, production, transportation or construction but also has a minimal carbon footprint (Cancio and Avrami 2015). Furthermore, raw earth has good heat preservation and insulation performance, which can control for the loss of heat. It is particularly prominent in Yaodong buildings. For example, in winter, earth absorbs heat and stores heat during the day and then releases heat indoors at night. Warm in winter and cool in summer are therefore the most praised advantages of Yaodong buildings (Shen 2020).

#### 4.1.2 The resilience of 'water'

Resilience as an academic term was first put forward by Canadian ecologist C. S. Holling in 1973. It means the persistence of relationships within a system and is a measure of the ability of these systems to absorb changes in state variables, driving variables, and parameters and persist (Holling 1973). Due to the vulnerability of traditional cities when facing external disturbances, such as natural disasters, the concept of resilience was introduced to cities. City managers hope that 'resilient cities' are more integrated and forward-looking concerning disaster prevention, climate-change adaptation and risk management (Yang and Lin 2015). Hence, the establishment of an adaptable and resilient urban water system is an important part of a resilient city (Rijke et al. 2013).

In response to the serious problem of the urban water ecological crises, the government of China published a series of policies about 'Sponge City' in 2013. The aim of these policies is to make cities like sponges, with good performance in adapting to environmental changes and responding to natural disasters. When it rains, such cities can absorb, store, seep, and purify water, and after rainfall, these cities can 'release' the stored water and make use of it as needed (MOHURD 2014). Therefore, it has been gradually observed that the resilience effect of water is both obvious and significant.

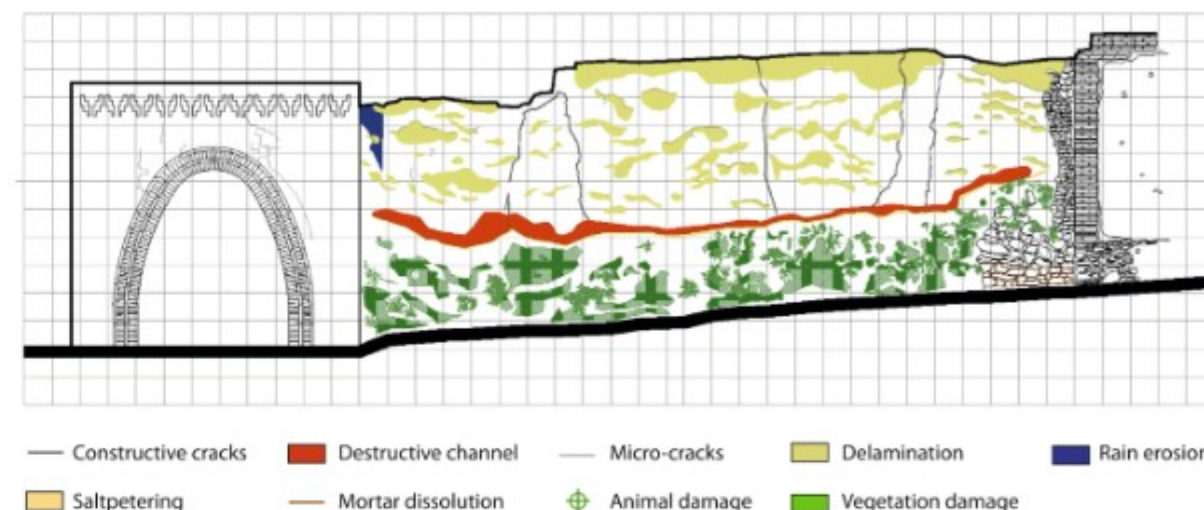


Fig. 17 Pathological analysis of the north facade of the wall. ©Tongji University, Ecole de Chaillot and China Academy of Art 2010

### 4.2 Exploration of the relationship recovery of water and earth in Liang Village

Based on this understanding, a decade ago, the workshop team made efforts to restore the relationship of water and earth through urban planning. The working team put forward a design strategy regarding the environment, urban form and building levels after an in-depth analysis of the characteristics and evolution of the 'water and earth' of Liang Village and a comprehensive consideration of the needs of contemporary production and life. Its aim was to effectively restore the village's relationship between 'water and earth,' to better demonstrate the characteristics of the village, and finally to form a new harmonious relationship between humans and nature.

#### 4.2.1 Environment: restoration of the 'water and earth' relationship

According to the traditional characteristics of Liang Village, such as following fengshui theory and considering security and defence, as well as its current heritage distribution features, the conservation and development plan of Liang Village was proposed. There were several strategies in the plan, such as the delimitation of the ecological protection areas, the built heritage protection areas and the areas where construction would be conditionally permitted. The target of these strategies was to protect the spatial order and spatial pattern with the characteristics of living on the terrace and farming in the valley' in Liang Village (Fig. 18).

To improve the drought environment and thus

to enhance the resilience of the village to cope with natural disasters that may occur again in the future, the remaining water conservancy facilities and irrigation system were rearranged. Initially, rainwater would be collected and filtered for daily use by the villagers. The domestic wastewater, once used, would flow to the fields. Through ingenious terrain treatment and pipe arrangement, the wastewater should be fully utilised for plant irrigation. Meanwhile, the excess water will be refiltered by the ecological purification function of plants, such as reeds, and finally returned to the village for daily use by the residents; thus, a water circulation system could be established. To protect the surface runoff, we also suggested building a plank road system in the valley that would be fully integrated with terrain (Fig. 19).

Because of the important symbolic meaning of the Yuanshen Temple and the water source, it is necessary to restore the harmonious historical relationship between people, god and nature through landscape restoration. First, the traffic road that separates the temple and stage should be diverted from the south of the stage to recover the original integrated layout of the temple. Second, more green plants should be added around the water source to gradually form a good ecological environment. Last, Yuanshen Temple should fulfil new functions as a public facility for ecological restoration with planned exhibitions, cultural tourism and management. Although it does not retain its original sacrificial function, the temple can allow people to gain respect for nature, restoring the power and wisdom of the balance between man and nature (Fig. 20).

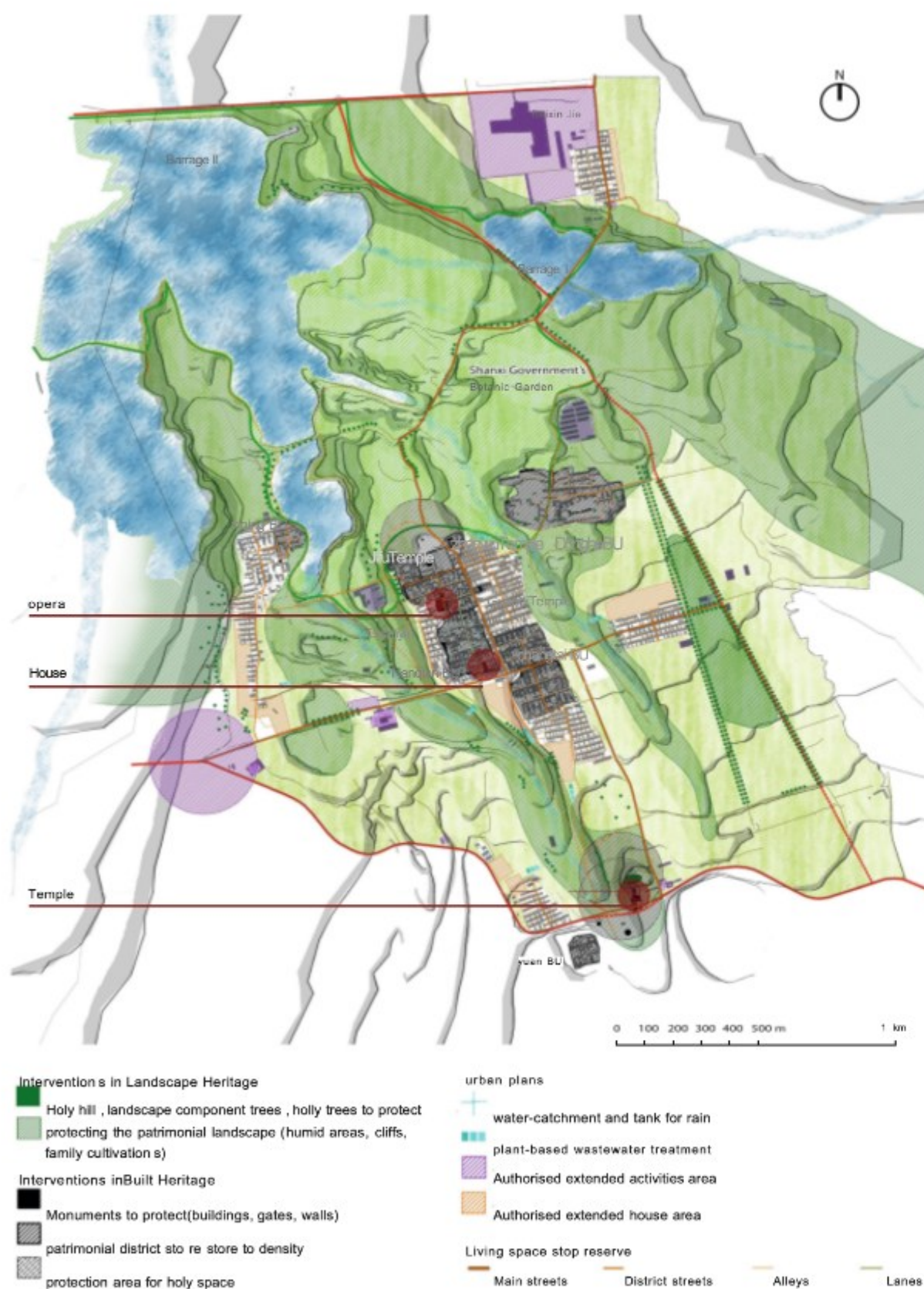


Fig. 18 Conservation and development plan of Liang Village. © Tongji University and Ecole de Chaillot 2010

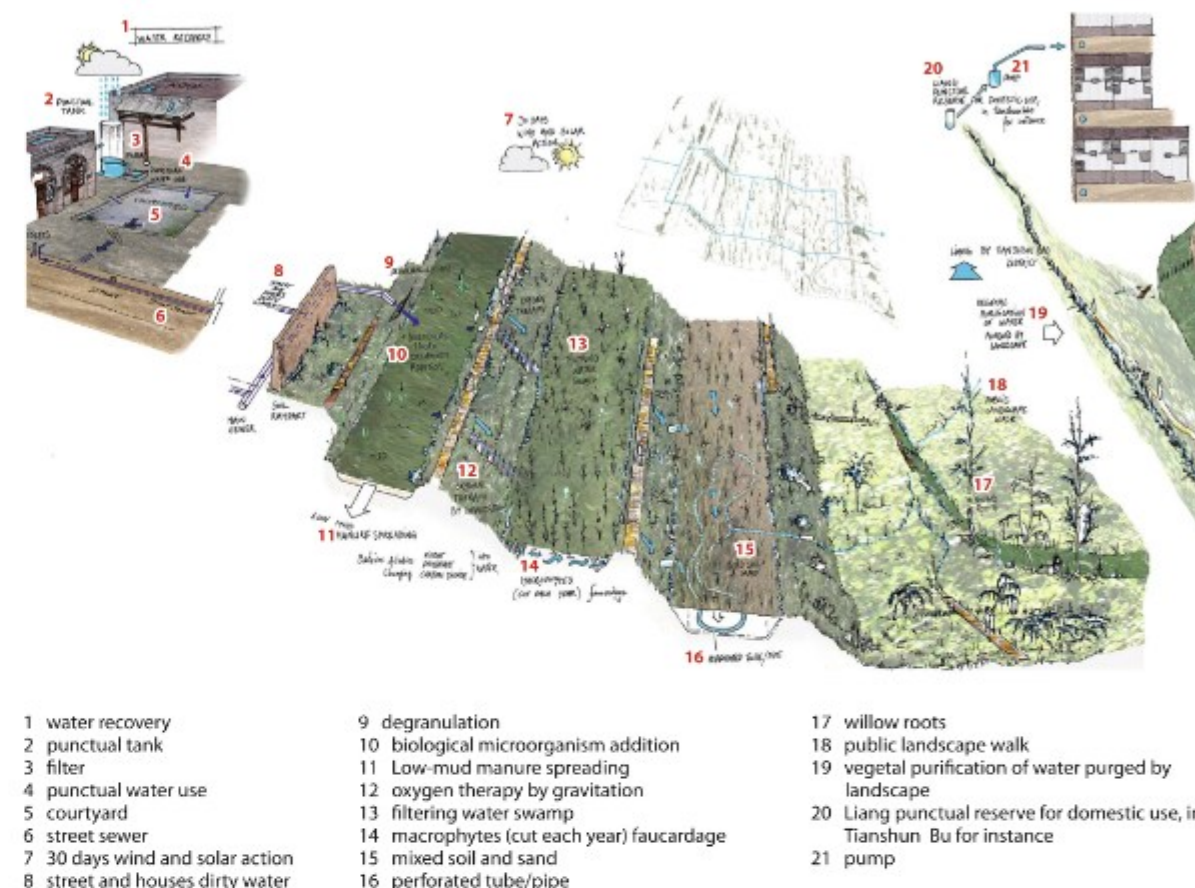


Fig. 19 Rainwater collection system in the region, from settlement to building. © Tongji University and Ecole de Chaillot 2010

#### 4.2.2 Settlement: site protection and terrain restoration

In addition to protecting the traditional sites, including the 'Bu' walls and gates, street system and the traditional courtyards, it was also necessary to repair and enhance the damaged elements. The most important one to repair was the stage square at the centre of the village. Specifically, the northwest gate, the affiliated buildings and the detailed paintings needed to be repaired to strengthen the central position of the stage and to foster the cultural functions of watching and performing to revive the centre of the village. Meanwhile, to recover the original drain system, it was also necessary to repair the microterrain of the square because some terrain has been artificially altered and would easily block water. (Fig. 21).

The rainwater collection system inside the village needed to be repaired and strengthened to improve the village's ability to cope with extreme climates. Moreover, the village's microclimate needed to be adjusted through water circulation to create a more liveable environment for the residents (Fig. 22).

#### 4.2.3 Architecture: restoration with traditional savoir-faire

For earthen material, the core target was to decrease the threat from water vapour. Taking the wall on the south side of Xining Bu in Liang Village as an example, the workshop team made several efforts to realise this target. First, they planned to restore the underground drainage system before repairing the body of the wall. Then, to increase the strength of the material, they chose to add lime or rice slurry but not cement, which is impermeable and may adversely introduce more vapour into the earth.

#### 4.3 The Implementation of the plan and the limitations of the workshop

After the workshop, the local authority carefully considered the suggestions from the workshop team and immediately implemented two restoration projects: the wall on the south side of Xining Bu and the damaged stage square drainage system. The core of these two restorations was to deal with the relationship between water and earth. The key to the former project was to dredge the underground drainage



Fig. 20 Landscape restoration. © Tongji University and Ecole de Chaillot 2010



Fig. 21 Regeneration of the stage square and recovery of the microterrain. © Tongji University and Ecole de Chaillot 2010

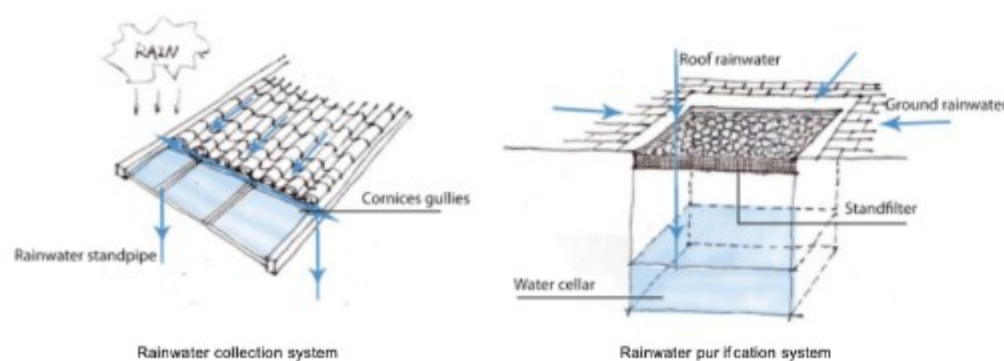


Fig. 22 Rainwater collection system for traditional residential buildings. © Tongji University and Ecole de Chaillot 2010

system so that the water vapour could be discharged without damaging the wall, while the key to the latter was to adjust the terrain so that the rainwater could drain quickly without clogging. The effects of these two projects have been excellent; not only have the structures remained in good condition for 10 years but they also avoided any damage from the flood disaster in 2021.

However, except for these two projects, most of the proposals in the workshop were not adopted. There are two reasons for this. First, the workshop's implication is systematic, comprehensive, and even idealistic; however, for Liang Village, there are great difficulties in concept changing, obtaining financial support and village management, which make it difficult to implement. Second, the actual problems of the village are more complex, such as the serious problems of industries and population decline. Due to their limited time and ability, the workshop team did not consider these aspects, thus making their suggestions incapable of solving the most fundamental problems of the village (Figs. 23 and 24).

## 5 Discussion and conclusion

Liang Village's case is a very good example of the importance of the coexistence of water and earth. When the ancestors fully respected the natural environment, they cleverly used two major elements, water and earth, to create an ecological, liveable and beautiful settlement, an ancient society with low productivity. When modern people ignore the laws of nature, they destroy the harmonious relationship between water and earth, thereby causing serious environmental damage. Although the implementation of the workshop was very limited, the impacts of the flood disaster on these two projects further validated our judgement.

Global climate change seems to be a new vast challenge to earthen heritage conservation work, and it seems to be inevitable for earthen heritage to suffer from rain and floods. However, if we change our minds, if we harness the traditional wisdom contained in the heritage itself, we may avoid or at least decrease such losses. The important concept of 'water and earth' in traditional Chinese culture is full of wisdom; something that seems to be an 'earth' problem (such as the cracking of an earthen wall) can be due to 'water' (such as rainwater erosion). In contrast, something that seems to be a 'water'



Fig. 23 The effect of the wall after restoration. © Author



Fig. 24 The status of the stage square after the 2021 flood. © Author

problem (such as flood disasters) can be resolved by 'earth' (such as terrain treatment). Therefore, improving the disaster prevention capabilities of earthen heritage is not simply handling 'earth' issues but should involve strengthening the coordination of 'water' and 'earth'. In short, the core of the 'water and earth' concept is the harmonious relationship between people and nature.

It is also necessary to state that in actual conservation work, we should more comprehensively consider local economic, social, cultural and management realities and adhere to the concept of people-centred to formulate and implement conservation plans. This

inevitably entails long-term and comprehensive work that requires the joint efforts of all salient professionals and parties. Liang Village's case therefore demonstrates a method of treating earthen settlements and provides ideas for earthen settlement conservation in other regions.

### Abbreviations

CRED: Centre for Research on the Epidemiology of Disasters; UNFCCC: United Nations Framework Convention on Climate Change; CCHWG: Climate Change and Heritage Working Group; NMC: National Meteorological Centre.

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Mr. John Hurd in on-site guidance. ©Author

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# The Role of the Terra Conferences in Promoting and Conserving Vernacular Earthen Architecture

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Vernacular earthen heritage, constructed with local materials and techniques, embodies sustainability and cultural identity. Despite formal recognition through the 1999 ICOMOS Charter, Terra conferences have addressed this heritage since 1972, promoting conservation and the integration of traditional knowledge. The Getty Conservation Institute (GCI) analyzed long-term trends in the field of earthen heritage conservation (Sprega, 2026). This paper specifically examines how vernacular earthen heritage has been represented over time. It identifies conservation challenges, maps the regions most studied, and evaluates evolving protection strategies. It also highlights the conferences' role in raising awareness, fostering community participation, and supporting the revitalization of historic rural and urban earthen centers.

## 1. Introduction

Vernacular heritage, rooted in cultural, environmental, and historical traditions, expresses the identity of communities worldwide. Among its forms, earthen heritage holds a central place, as earth is a widely available and locally sourced material that showcases community ingenuity (Houben & Guillaud, 1994) while representing some of the most vulnerable and overlooked heritage assets. These forms have often been marginalized within mainstream heritage conservation discourse.

Carlos et al. (2022) examined the limited recognition of vernacular earthen heritage within international frameworks, noting that conservation efforts traditionally prioritized monumental or archaeologically significant structures. Influential early works, such as Bernard Rudofsky's *Architecture Without Architects* (1964), and scholars like Paul Oliver, brought greater visibility to the cultural and environmental significance of traditional construction practices, including earthen techniques (Vellinga, 2014). However, heritage conservation efforts often overlooked vernacular forms that did not align with conventional criteria for Outstanding Universal Value (Correia et al., 2014). This selective focus led to a conceptual gap, where many historically and culturally significant vernacular structures received less attention compared to more prominent architectural landmarks.

Efforts to address this disparity have been directed by documents such as the Charter on the Built Vernacular Heritage (1999), which underscores the importance of vernacular buildings as living expressions of cultural diversity and community identity (ICOMOS,

1999). The Charter advocates for the involvement of local communities in the conservation process, recognizing that the significance of vernacular heritage lies in its continuous use and adaptation. It also emphasizes that vernacular architecture should not be viewed in isolation but as part of an integrated cultural landscape, reflecting the dynamic interplay between people, their environment, and their built forms.

This Charter was one of the products of the work of the International Scientific Committee on Vernacular Architecture (CIAV) established under ICOMOS in 1979 (Macht, 2001). CIAV plays a crucial role in advancing the study, documentation, and protection of vernacular heritage globally.

The VerSus project and its continuation VerSus+/Heritage for PEOPLE further advanced the recognition of vernacular architecture by identifying sustainable design strategies rooted in traditional practices (Mileto et al., 2020). Expanding on the principles established by VerSus, VerSus+ emphasizes the transmission of vernacular knowledge to broader society, demonstrating how historical construction methods, and earthen techniques, can inform contemporary sustainable architecture.

Despite these advancements, vernacular architecture, especially made with earthen materials, remains vulnerable to threats such as urbanization, economic pressures, and environmental changes. The integration of vernacular architecture into mainstream heritage discourse continues to evolve, driven by a growing acknowledgment of its role in sustaining cultural identities and promoting sustainable development practices (Vegas et al., 2022).

The purpose of this paper is to explore the role of the Terra Conference proceedings in promoting vernacular earthen heritage. By examining the published proceedings of these conferences, this paper aims to establish how they have influenced recognition, conservation strategies, and academic discourse surrounding vernacular heritage.

## 2. The evolution of the Terra conferences

The Terra conference series has played a pivotal role in advancing the study and conservation of earthen heritage, fostering global exchange among researchers, practitioners, and policymakers (Cancino, 2022). The first two symposia, held in Yazd, Iran, in the 1970s, laid

the foundation for future discussions, focusing on both material preservation and the cultural value of earthen architecture. Kassai (1972), in his study presented at the First Colloquium on Mudbrick Conservation, classified Iranian earthen monuments into two categories: isolated monuments and living monuments integrated into the urban fabric. While his classification emphasized the monumental value of these structures, it also introduced the concept that vernacular settlements play a crucial role in the longevity and functionality of earthen heritage. This perspective reinforced the need to maintain traditional knowledge and ensure the active use of historic structures.

As the Terra gathering gained momentum, they became increasingly interdisciplinary and geographically diverse. The 4th International Symposium in Peru (1983) further emphasized the intersection between vernacular and earthen heritage, by integrating discussions on traditional knowledge, adaptive reuse, and conservation strategies (Argumedo, 1980). By the 1990s and early 2000s, the conferences broadened their scope, officially introducing the term "Terra" in 1993, reflecting a more comprehensive understanding of earthen architecture and its cultural significance worldwide.

Over time, the Terra events continued to evolve, addressing urgent conservation challenges such as sustainability, climate resilience, and community engagement. The 2008 conference in Mali, the first to be held in Africa, focused on intangible practices and living heritage, recognizing the social and cultural dimensions of conservation. Similarly, Terra 2012 in Peru emphasized the growing threat of climate change to earthen structures, fostering discussions on disaster risk management and environmental adaptation strategies. The rebranding of Terra 2016 in Lyon as a "World Congress" reflected the increasing scale and influence of these gatherings, reinforcing their role as a leading platform for international earthen heritage discourse. The most recent conference, Terra 2022 in Santa Fe, New Mexico, brought renewed attention to community-based conservation, emphasizing the need to integrate local communities into preservation efforts. This event reinforced the idea that vernacular heritage must remain a living tradition, sustained through active participation, education, and knowledge-sharing between practitioners and local stakeholders.

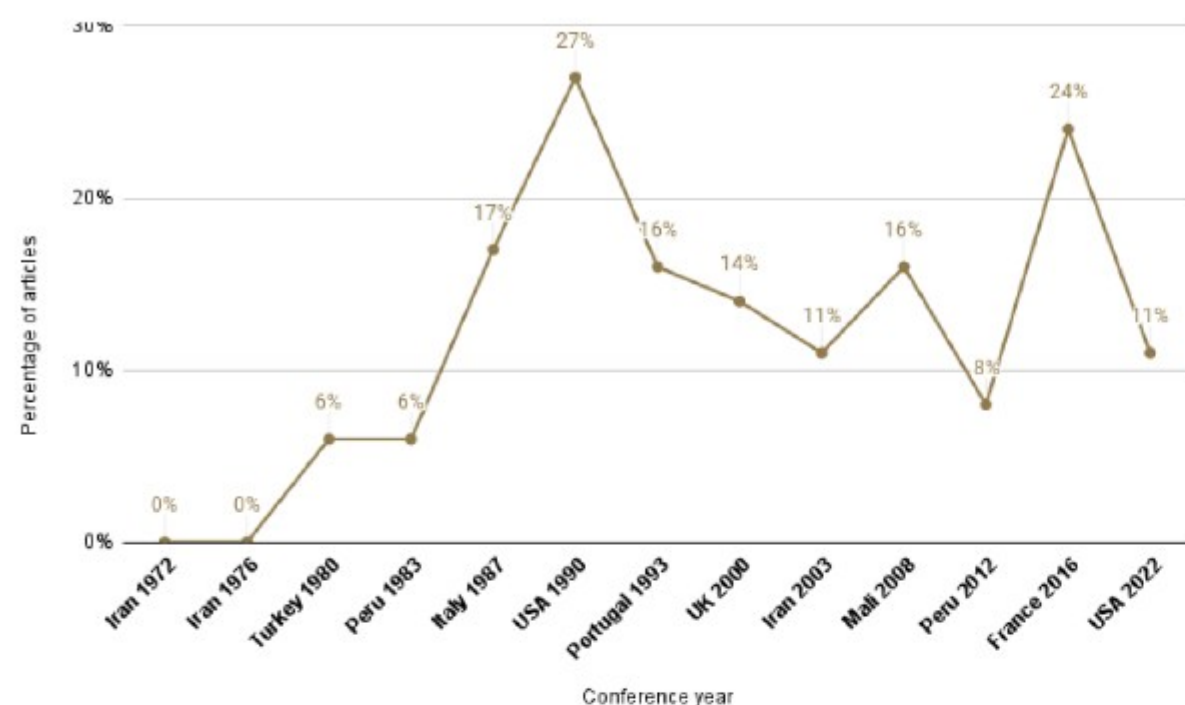


Fig. 1 Analysis of trends in published articles on vernacular heritage in Terra conference proceedings. ©Author

### 3. Methodology

This study systematically examines the representation and evolving discourse on vernacular earthen architecture within the Terra events. While 636 papers have been published across 13 Terra proceedings, only 98 specifically address vernacular earthen architecture (approximately 15%). This subset was analysed to identify key trends in research and conservation efforts, focusing on four primary aspects: the geographic distribution of studies, the predominant construction techniques documented, the research methodologies applied, and the conservation interventions proposed. By evaluating these elements, the study aims to assess how vernacular earthen heritage has been approached over time and how conservation priorities have evolved.

The research framework was developed using a structured set of criteria for comparative analysis, drawing on the approach established by Matero and Cancino in their study of earlier Terra conferences (Matero et al., 2000). Their research examined shifts in archaeological and general conservation, revealing changes in focus, methodologies, and regional representation over time. Expanding on their methodology, this study applies selected criteria to evaluate past and current concerns in vernacular earthen architecture conservation, enabling a comparison of research directions and highlighting emerging trends.

The first stage of analysis categorized the 98 papers based on their geographic focus, identifying regions where vernacular earthen architecture has been most studied and highlighting research gaps. The second stage examined the construction techniques documented in each study, capturing a range of traditional building methods such as adobe, rammed earth, cob, wattle and daub, and various earth finishing techniques. Understanding these methods provided insight into how conservation strategies have been adapted to different materials and regional contexts. The analysis then explored the primary causes of deterioration, which included environmental factors, natural hazards, urban expansion, abandonment, biological threats, and structural weaknesses. Additionally, the loss of local and traditional knowledge surrounding conservation practices and maintenance emerged as a key factor contributing to the decline of vernacular earthen structures. The final stage assessed the conservation interventions proposed in the studies, reviewing efforts related to documentation, structural stabilization, material treatments, educational initiatives, and policy development.

To ensure consistency and accuracy, the classification process aligned with the terminology and themes present in the original papers. The dataset was normalized to account for variations in the number of papers presented at different Terra conferences, enabling

proportional representation and facilitating trend analysis. Since many papers addressed multiple criteria, they were classified into multiple relevant categories to retain maximum information.

## 4. Results and discussion

### 4.1. Vernacular heritage trend

Vernacular earthen heritage has been a recurring yet fluctuating theme within the Terra conferences. An analysis of the 13 proceedings reveals that the proportion of papers dedicated to vernacular heritage has varied between 0% and 30% across different editions (Fig. 1). In early events, vernacular topics were largely absent, but interest emerged during the Third International Symposium on Mud-Brick (Adobe) Preservation in Turkey with Jacques Verite's (1980) study on the rehabilitation and adaptive reuse of North African vernacular earthen buildings, highlighting their cultural and functional relevance.

Significant attention to vernacular earthen architecture emerged at the Sixth International Conference of Earthen Architecture (Adobe 90), where 27% of papers addressed this topic. Articles from this event emphasized the historical and cultural dimensions of traditional earthen buildings and their connection to living practices and community engagement (Agnew & Taylor, 1990).

The accompanying "Spectacular Vernacular" exhibition, held during the Terra event, further reinforced the recognition of vernacular traditions as dynamic cultural expressions.

This increase coincided with several important developments. Such as the publication of CRATerre's *Traité de construction en terre* (1979) and the establishment of the GAIA training program (ICCROM, 1993), both of which were pivotal in promoting vernacular earthen traditions in conservation discourse. Following Adobe 90, vernacular-focused research declined, dropping to 11% by Terra 2003, as technical conservation and material science gained prominence. However, the Twelfth World Congress on Earthen Architecture (Lyon, 2016) saw a resurgence (24%), particularly emphasizing documentation, inventory, and traditional knowledge. Although Terra 2022 witnessed a decline to 11%, intangible heritage, cultural expressions, and traditional crafts—closely tied to vernacular practices—gained renewed attention.

### 4.2. Regional representation

The regional distribution of research on vernacular earthen architecture reveals a strong concentration in Europe, with 34 papers, including Italy, the United Kingdom, and Spain emerging as key contributors (Figs. 2 & 3). This reflects a well-established research tradition and institutional engagement in vernacular architecture conservation.

Africa follows with 24 papers, particularly focused on North and West African regions, where traditional earthen construction remains widespread. Asia (18 papers) shows concentrated research efforts in India and West Asian countries, while Central and South America (17 papers) demonstrate strong engagement, especially in Argentina, Brazil, and Peru. The presence in the

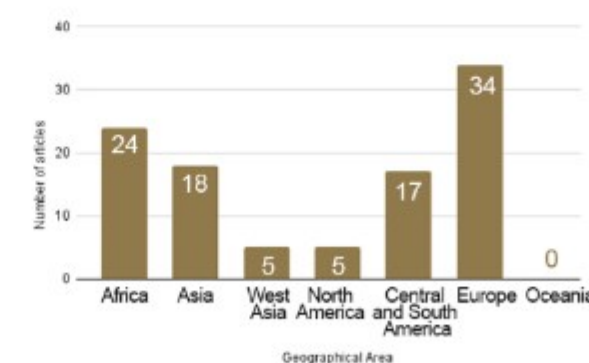


Fig. 2 Number of studies on vernacular heritage conducted across various geographical areas. ©Author



Fig. 3 Number of studies on vernacular heritage conducted across various countries. ©Author

region of organizations like PROTERRA (the Ibero-American Network of Earthen Architecture and Construction) and the SIACOT conference series has played a pivotal role in fostering academic discussions, promoting scientific projects, and advancing global knowledge dissemination on vernacular earthen heritage.

In contrast, North America has only 5 papers, indicating limited research activity in this field, while Oceania is entirely absent from the dataset. This highlights the influence of conference host locations in shaping research priorities, as well as the need for broader research collaborations, increased funding, and greater representation of underexplored regions to ensure a more comprehensive and globally inclusive understanding of vernacular earthen architecture.

#### 4.3. Type of construction

The distribution of construction techniques across the Terra proceedings highlights the evolving scope of vernacular earthen architecture studies. Adobe (earth-block) remains the most studied technique, accounting for 35.7% as early conferences primarily focused on this form of construction (Fig. 4). However, as research progressed, a broader range of construction techniques gained recognition. Initially, discussions centered on mud brick and adobe conservation, but by the Rome 1987 meeting, the term "earthen architecture" was introduced to encompass a more diverse array of building traditions. Rammed earth (18.6%), wattle-and-daub (15.5%), and cob (12.4%) emerged as significant areas of study, reflecting regional variations in earthen architecture. Interest in earthen finishing techniques (11.6%) also grew, emphasizing the focus in the majority of conferences of surface treatments and conservation methods, while the remaining 3.9% encompasses less common or hybrid techniques.

#### 4.4. Causes of decay

The analysis of all articles identifies environmental decay (17.5%) and natural hazards (17.5%) as the leading causes of deterioration affecting vernacular earthen structures (Fig. 5). These findings highlight the inherent vulnerability of such buildings to erosion, moisture infiltration, seismic activity, and extreme weather events, emphasizing the ongoing challenges in their preservation and resilience against climate-

related threats. Disuse and abandonment (15.8%) also play a significant role, as neglected structures deteriorate rapidly without regular maintenance. Additionally, urban development (12.3%) threatens vernacular architecture through infrastructure expansion, modernization, and the replacement of traditional structures with contemporary materials.

Emerging challenges are also evident in the chart, particularly the loss of local knowledge (7.0%) and inadequate material interventions (3.5%), both of which highlight a decline in traditional construction skills, maintenance practices, and community awareness. The weakening of intergenerational knowledge transfer results in improper conservation approaches that may not align with the structural and cultural needs of earthen buildings. Climate change (12.3%) further exacerbates deterioration, with rising temperatures, extreme weather patterns, and shifting environmental conditions accelerating structural instability. Additional contributing factors include biological hazards (5.3%), such as pests and vegetation growth, material and structural defects (5.3%), and man-made hazards (3.5%), including vandalism and inappropriate modifications.

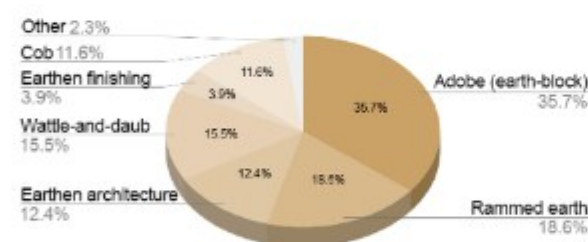


Fig. 4 Analysis of constructive techniques across all the Terra conference proceedings. ©Author

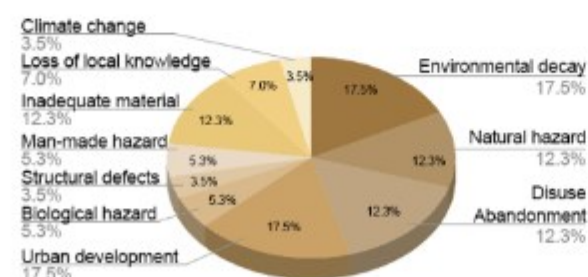


Fig. 5 Analysis of causes of decay across all the Terra conference proceedings. ©Author

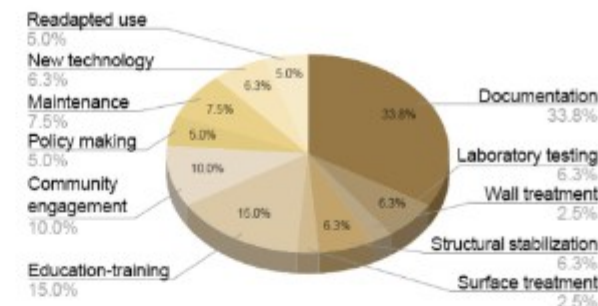


Fig. 6 Analysis of conservation interventions and approaches in Terra conference proceedings. ©Author

#### 4.5. Conservation Interventions

The distribution of conservation interventions and approaches applied to vernacular earthen architecture highlights documentation (33.8%) as the most prevalent strategy (Fig. 6). This underscores the importance of architectural recording for the understanding and conservation of vernacular structures.

This is followed by structural stabilization, consolidation, and monitoring (15%), which reflects the necessity of reinforcing vulnerable structures to ensure their long-term stability. Surface treatment (10%) and wall treatment (6.3%) highlight interventions focused on material protection, addressing erosion, water damage, and external deterioration.

Education, capacity building, and training (6.3%) play a crucial role in strengthening local knowledge and technical expertise, while community involvement (7.5%) underscores the importance of participatory conservation approaches that integrate local stakeholders. Policy and regulation-based approaches, including building standards and guidelines (5%) demonstrate efforts to formalize conservation strategies. Conservation repairs and maintenance (5%), along with rehabilitation and adaptive reuse (5%), emphasize the significance of keeping earthen structures functional and integrated within their communities.

Overall, the distribution of interventions reflects a multidisciplinary approach, balancing scientific, structural, social, and policy-driven strategies to ensure the sustainable preservation of vernacular earthen heritage. The lower representation of new technology (2.5%) indicates that while scientific advancements are being explored, they have not yet become a dominant feature in vernacular conservation strategies.

## 5. Conclusion

This study highlights the evolving role of the Terra conferences in advancing the discourse on vernacular earthen architecture. Since their inception, these conferences have facilitated knowledge exchange, addressed critical conservation challenges, and broadened recognition of vernacular heritage. While early symposia primarily emphasized monumental adobe structures, later events expanded their scope to incorporate diverse traditional earthen techniques and cultural contexts, reflecting a growing awareness of regional variations and sustainability. Although vernacular studies remain integral to Terra conferences, their prominence has fluctuated as thematic priorities shift toward broader issues such as disaster risk management, sustainability, and intangible heritage. This study underscores the need to reinforce vernacular architecture as a fundamental component of earthen heritage conservation, ensuring future research balances technical preservation with cultural, social, and environmental considerations.

Enhancing geographical inclusivity is essential for strengthening global engagement. Events like The Tenth International Conference on the Study and Conservation of Earthen Architectural Heritage in Mali (2008) and the AFRICA24 Conference organized by ICOMOS have played crucial roles in increasing awareness and expertise in underrepresented regions. Expanding such initiatives will encourage local scholars and practitioners to contribute to the global dialogue on earthen heritage.

Moving forward, fostering community participation, capacity building, and policy integration will be key to securing the future of vernacular architecture. By integrating traditional knowledge, promoting regional representation, and strengthening heritage policies, Terra conferences—along with other global initiatives—can continue to play a transformative role in sustainable conservation efforts.

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## One Island, Many Mediterraneans: Corsican Vernacular Architecture as a Culture of Adaptation

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Corsican rural architecture is often described in terms of its austerity, compact volumes, and powerful masonry. Yet this formal reading is insufficient to account for its diversity. The vernacular house is simultaneously a building, a tool of production, a family space, a social sign, and a component of a wider territory. Drawing on the corpus established by Henri Raulin and Georges Ravis-Gordant, this article proposes that Corsica's vernacular heritage should be understood as an open system of adaptation. Its distinctiveness stems neither from cultural isolation nor from an accumulation of foreign influences, but from the local transformation of resources, techniques, and models circulating throughout the Mediterranean. Such an interpretation calls for the preservation not only of architectural forms, but also of the relationships between material, landscape, uses, and collective memory.

### Introduction - Vernacular Architecture as a Relationship

The rural house cannot be understood as an isolated object. It belongs to a system comprising the dwelling, agricultural buildings, paths, cultivated terraces, gardens, water resources, and spaces of sociability. Its materials reveal the geology of the territory; its entrances organise relationships between people, animals, and crops; and its dimensions reflect the composition and status of a family. It is therefore a built archive of the relationship a society maintains with its environment. This approach underpins the *Corpus of French Rural Architecture*, whose volume devoted to Corsica was published in 1978. Its purpose was neither to produce an exhaustive inventory nor to select the finest examples, but to identify significant genres, types, and variants. Architectural surveys were combined with historical, ethnological, linguistic, economic, and technical research. The house was examined as the product of a set of constraints and practices rather than as the expression of a homogeneous regional style.

This method remains highly relevant to the study of vernacular heritage. It demonstrates that Corsican architecture cannot be reduced to a picturesque image of stone walls, pantile roofs, and hilltop villages. Instead, it results from a continuous process of adaptation negotiated between available resources, topography, productive activities, family relationships, and contact with other Mediterranean territories. The challenge is therefore to understand how an architecture can be both deeply local and permeated by external circulation. Corsica is neither an isolated conservatory nor a territory passively subjected to imported models. It is a place where techniques sometimes shared by several Mediterranean regions have been

selected, transformed, and integrated into particular social organisations.

## 1. A Distinctiveness Shaped by Circulation

Corsica's position at the heart of the western Mediterranean might encourage every architectural form to be explained through an external influence - Genoese, Pisan, Sardinian, Provençal, Tuscan, or North African. Raulin and Ravis-Giordani nevertheless urge caution. A resemblance between two techniques or forms does not prove historical descent. Comparable resources and constraints may produce convergent solutions without necessarily involving direct transmission. Dry-stone construction provides one example. It is found in Corsica, but also in the Balearic Islands, Apulia, Sardinia, and Provence. Corsican pastoral shelters may be compared with barracas, trulli, or bories, but their similarity is insufficient to establish a common origin. The availability of schist or limestone slabs and granite blocks, combined with an agricultural and pastoral context, encouraged the same economy of

means in several regions. Vernacular architecture thus belongs to a shared Mediterranean culture of stone, although its local expressions are not interchangeable.

The same caution is required when considering beaten-earth terrace roofs. Once found in north-western Corsica, the Niolo, and parts of the island's central region, they rested on a timber and wattle structure. Comparable systems exist across much of the Mediterranean, particularly in the mountainous regions of the Maghreb. This similarity opens up cultural hypotheses but does not allow their introduction to be attributed with certainty to any particular settlement or occupation. The corpus therefore emphasises the difference between observing technical continuity and demonstrating historical transmission.

Other forms of circulation are better documented. From the nineteenth century onwards, specialist labour from Italy, particularly Tuscany and Lunigiana, was employed in the building trades. The figures cited by the authors indicate that, in 1854, as many as half of the



Fig. 2 Map of the Mediterranean Sea, highlighting Corsica's position at the heart of the western Mediterranean for cultural and technical circulation. © Author

stonemasons working on the island may have been of Italian origin. Cornices, certain types of joinery, loggias, arcades, and the composition of elite residences provide more direct evidence of these exchanges. In such cases, identifiable workers and master builders contributed to the transfer of details and models derived from learned Italian architecture. Corsican architecture thus stands at the intersection of several dynamics. Some techniques belong to a very ancient Mediterranean building tradition; others resulted from documented movements of workers and models; and still others represent specifically local responses. Distinctiveness lies not in the purity of an origin, but in the manner in which these elements were combined.

## 2. Material as the Primary Geography of Architecture

The diversity of Corsican dwellings is first linked to the diversity of the island's geology. A broad distinction can be drawn between the granitic regions of the west and south and the schist or limestone regions of the north-east. This geography of materials does not mechanically produce architectural forms, but it determines the dimensions of building elements, masonry techniques, roof pitches, and the possibilities for openings. Schist provides relatively thin slabs and rubble stone that is easy to use. It favours stone-slab roofing, relieving arches, small ventilation openings, projecting slabs

used as canopies, corbels, and various features incorporated into facades. Granite generally requires a different approach: the blocks are heavier, lintels may be monolithic, and the walls have a different thickness and texture. Pantile roofs are more closely associated with granitic regions, while masonry colours range from the dark grey of schist to the lighter tones of granite and limestone.

Architecture does not merely use the materials available; it also transforms the territory itself. In the north and centre of the island, slopes are reshaped by retaining walls and agricultural terraces. These structures are not simply a landscape backdrop: they belong to the same building culture as the houses. The walls that retain the earth, the thresholds that negotiate the terrain, and the masonry of the dwellings all derive from a shared knowledge of stone, soil, and water flow. Roofing systems likewise demonstrate the communities' capacity for adaptation. Alongside pantiles and stone slabs, earth roofs and scandule, split wooden shingles made from pine or chestnut, were once used. The timber was split along the grain to reduce water penetration. The technique recalls Alpine roofing, but its incorporation into Corsican sheepfolds and mountain houses gives it a particular meaning. At the time of the survey, these roofs had already become rare, as had earth terraces, whose principle survived only on a few ancillary buildings.



Fig. 1 House fortification in Casaglione, illustrating the integration of Corsican vernacular architecture with the natural landscape. © Author

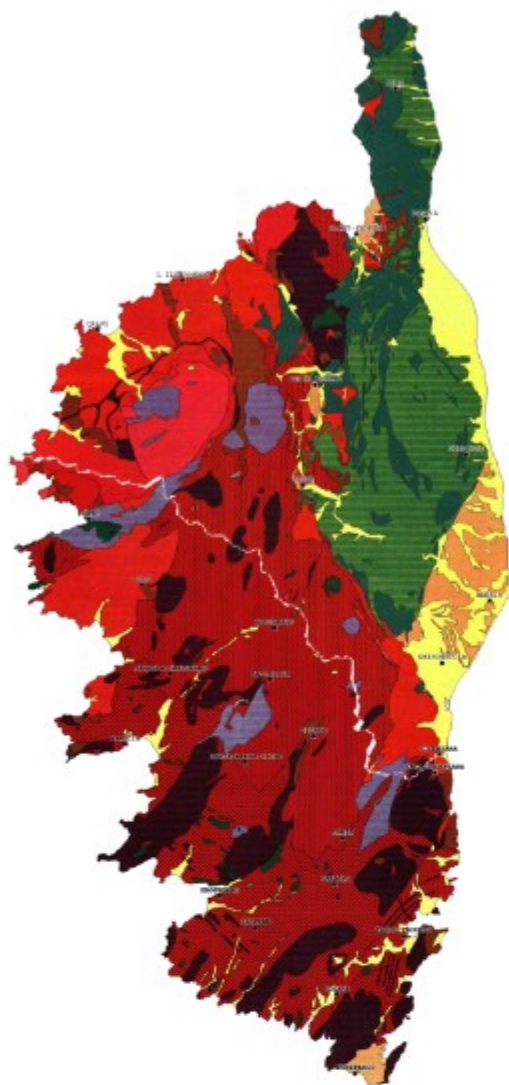


Fig. 3 Geological map of Corsica, showcasing the granitic, schist, and limestone regions that shape local building techniques. © Author

This observation reveals a major difficulty in conserving vernacular heritage. The most fragile elements, or those least compatible with modern standards, disappear first. Plant-based roofs, timber structures, earth mortars, and small agricultural buildings are replaced more rapidly than substantial masonry. An interpretation limited to the buildings that survive may therefore convey a mineral and immutable image of an architecture that was historically far more diverse.

### 3. The House as an Evolving Grammar

The Corsican house does not conform to an ideal typology. The corpus distinguishes

between programme constraints, architectural components, and construction processes. Houses can therefore be compared according to their site, intended family use, internal organisation, roof, staircase, or material, without establishing a hierarchy between these solutions. This method brings architecture closer to language. Doors, windows, stairs, fireplaces, and balconies form an available vocabulary. Their combination within a particular house constitutes a syntax. Vernacular builders did not necessarily produce drawings in advance; they worked from known models, templates, previous experience, and tested solutions. Each building became a variant, obtained through reproduction, adaptation, or rearrangement.

This understanding moves beyond two opposing yet equally reductive representations. The first imagines tradition as the endless repetition of identical forms. The second regards every difference as an autonomous micro-regional style. The same principles could be transformed according to slope, resources, family composition, or changes in agricultural activity. Dwellings are generally grouped, particularly in villages. Ridge-top and hillside locations respond both to the constraints of the terrain, the pursuit of security, and the need to preserve cultivable land. Houses may be attached or separated by narrow passages. The slope produces substantial differences between facades: a floor entered at ground level uphill may correspond to several storeys downhill.

The rural house is often organised vertically. Lower levels accommodate animals, tools, stores, or production equipment. The dwelling occupies the upper floors, while crops are kept in the attic. This superimposition is not universal: in Cap Corse, the Bozio, and certain farms in the south, agricultural buildings may be separated from the house. It nevertheless remains a frequent principle, bringing land, production, and domestic life together within a limited footprint. The house in Morosaglia, described as the reference specimen, makes this arrangement particularly clear. The lower levels contain agricultural functions and animals; the living rooms are situated above; and the top floor contains the *fucone*, a space combining hearth, kitchen, and chestnut drying. The domestic fire thus becomes a productive infrastructure. Heat and smoke contribute to food preservation, while the elevated position of the hearth protects family privacy.

This arrangement shows how inadequate contemporary criteria of functional separation are for interpreting vernacular dwellings. Spaces do not correspond to single, permanent functions. The same room may serve for preparation, gathering, heating, and agricultural processing. Its heritage value lies as much in this versatility as in the material features that support it.

### 4. Thresholds, Neighbourhood Relations, and Social Organisation

Architectural forms also express social relationships. The external staircase, common in many parts of Corsica, is not merely a means of overcoming a change in level. It frees internal space, separates agricultural premises from the dwelling, and sometimes creates a sheltered area beneath its landing. It may accommodate a bench, a workplace, or a resting place. Above all, it materialises the transition between the village's collective space and the family domain. From the first steps, the resident or visitor symbolically leaves the street without yet having entered the house. The landing is therefore simultaneously a route, an extension of the dwelling, and a stage for sociability. Its dimensions and treatment may also express the status of the family.

Public space in a Corsican village is not always reduced to a clearly defined central square. Passages, widened areas, stairways, and thresholds form a succession of small meeting places. Residents work, talk, and rest in the immediate vicinity of their homes. The boundaries between public and private are legible, but they remain substantial and negotiated. Sociability is primarily based on neighbourhood and family ties. The saying recorded by Ravis-Giordani, 'neighbours are cousins', expresses this closeness. Related families frequently live near one another, while neighbourhood relations generate obligations comparable to those of kinship. Mutual assistance is evident in agricultural work, construction, and funerary rites, particularly when neighbouring women prepare a meal for a bereaved family.

The house also preserves material traces of property relations. Projecting bonding stones placed at the corners, known as 'witnesses', technically allow for future extension but also assert a right over adjoining land. Conversely, a narrow gap left between two walls may express

one owner's refusal to allow a neighbour to bear upon their construction. Architecture thus records agreements, conflicts, and customary rules. The relationship between house and family is even embedded in vocabulary. The term *casata* denotes the family group; *casale* refers to jointly held landed property; and some words used for relatives by marriage derive from the term for an attached structure. The house therefore does not merely represent the family: it constitutes one of its material forms. Inheritance divisions may lead to the internal subdivision of space or the gradual enlargement of the building. Houses are extended lengthwise, built upwards, or provided with new entrances. This capacity for transformation is essential. The apparent irregularity of some groups of buildings is not a sign of an absence of composition; it results from the successive inscription of several generations within the same structure.

### 5. Conserving a Heritage in Transformation

In the introduction to the corpus, Jean Cuisenier identifies three threats: the abandonment of villages; alterations carried out with materials and plans alien to existing arrangements; and, conversely, the fixing of houses in a condition that makes them unsuitable for any use. This third threat is particularly significant. Vernacular heritage can disappear through destruction, but also through museumification. Conserving a rural house cannot therefore mean artificially restoring it to a particular date or to an allegedly authentic image. Many buildings are the result of successive extensions, divisions, changes of use, and repairs. Erasing these transformations would remove part of their history.

The first responsibility is documentation. Surveys must relate built forms to uses, resources, and territory. Masonry cannot be understood without the quarry or soil from which its stone came; an agricultural building without the pastoral routes to which it was connected; a drying house without the associated food practices; or a subdivided house without the history of its transmission. The second responsibility is to preserve differences. Systematically replacing renders, roofs, joinery, or small buildings with a standardised palette produces a homogeneous image that may never have existed. The diversity of schists, granites, limestones, tiles, stone slabs, mortars, and timber elements has documentary as well as aesthetic value. The third is to maintain usability. Requirements for comfort, safety, and

habitability must be incorporated, but they can be addressed by drawing on the intelligence of existing construction: the thermal mass of walls, adaptation to slope, intermediate spaces, attic ventilation, the versatility of rooms, and the possibility of measured extensions. Finally, conservation must include skills and narratives. A roof of scandule cannot be sustainably preserved without knowledge of the timber, its splitting, and its installation. A dry-stone wall loses part of its meaning when separated from the agricultural practices that maintained the terraces. The objective is not necessarily to reproduce former rural economies exactly, but to transmit an understanding of the relationships that produced these forms.

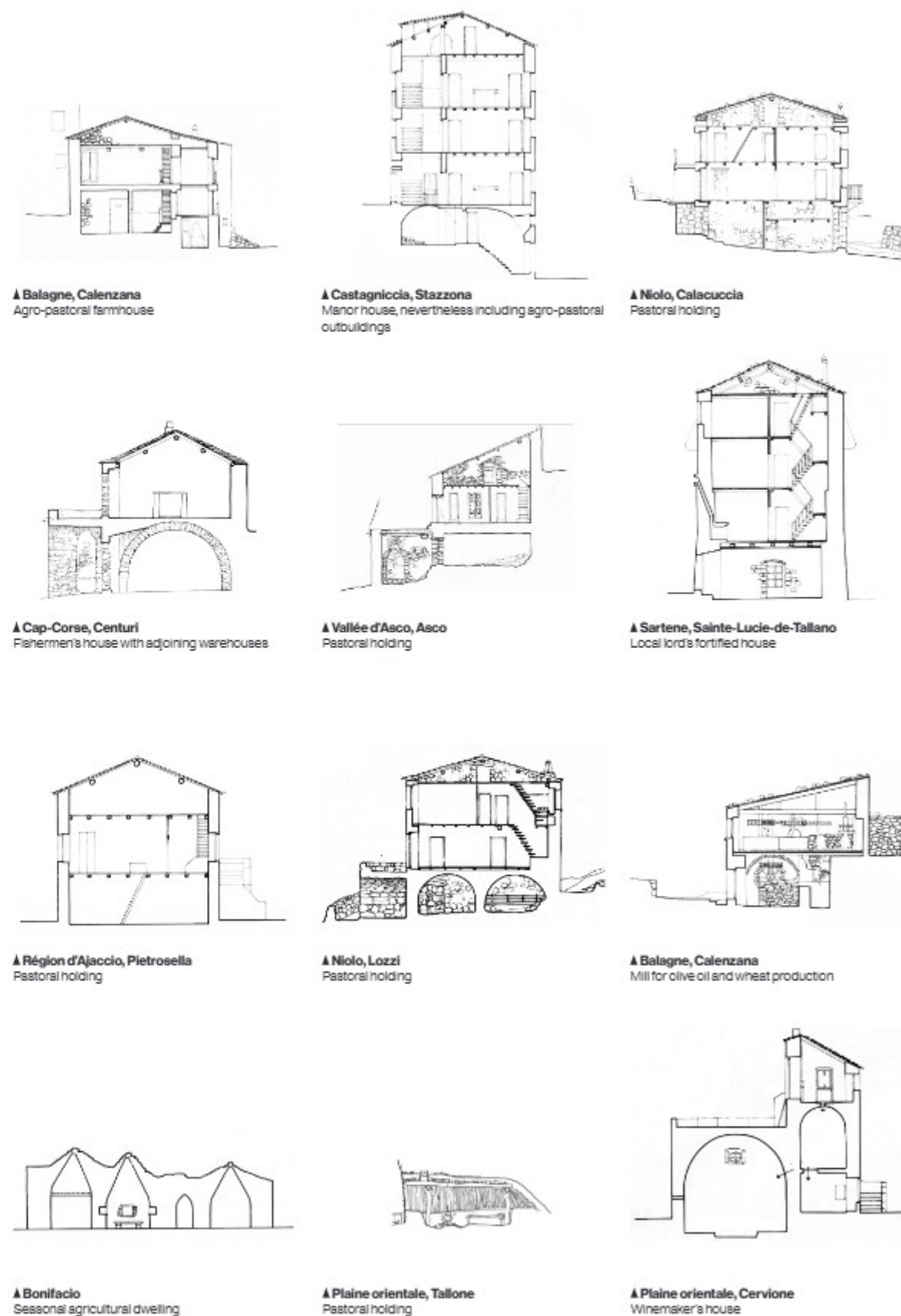
### Conclusion - A Culture of Adaptation

Corsican vernacular architecture belongs fully to the Mediterranean world, but it is neither a reduced model of that world nor one of its peripheries. Its connections with Sardinia, Italy, Provence, the Alpine world, and the Maghreb take different forms: convergences linked to resources, the circulation of techniques, the movement of workers, borrowings from learned architecture, and the persistence of ancient practices. Its distinctiveness lies in the local transformation of these contributions. Mountain terrain, geology, pastoral and agricultural economies, family structures, forms of ownership, and neighbourhood relations all acted as filters. The Corsican house is therefore less a stable type than a grammar: a set of materials, devices, and rules capable of producing variants adapted to each situation. This interpretation changes the objectives of conservation. It is not enough to preserve a few houses considered representative or to reproduce their most visible signs. The possibility of understanding their relationships with soils, production, families, and communities must also be maintained. Vernacular heritage does not reside solely in the permanence of stone. It lies in architecture's capacity to accommodate time, evolve with its inhabitants, and keep legible the conditions that brought it into being.

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### APPENDIX: Atlas of Corsican Vernacular House Sections



(Demonstrating the diversity of architectural typologies and internal organisations. All drawings © Author)

# Bureau Member

SHAO Yong



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## Education Background

SHAO Yong holds a PhD in Urban Planning from Tongji University(2003), an MSc and Bachelor in Urban Planning and Design from Tongji University(1996 and 1993). She followed the training of the Architecte et urbaniste de l'État (AUE) in École de Chaillot and École des Ponts et Chaussée, Cité de l'Architecture et du Patrimoine, France(1999-2000).

## Working Experience

Shao Yong served as Tenue Full Professor of College of Architecture and Urban Planning at Tongji University, Director of UNESCO World Heritage Training and Research Center for the Asia-Pacific Region (WHTR-AP Shanghai), Director of Heritage Conservation and Culture Revitalization Institute, Shanghai Tongji Urban Planning & Design Institute CO., LTD, and member of the editorial board of Built Heritage and Heritage Architecture.

Professor Shao Yong has long been committed to research, teaching, and practice in the fields of World Heritage, heritage conservation, urban regeneration and rural revitalization. She has led over 200 heritage conservation projects. Her publications include *Equilibre et Harmonie: Protection et Mise en Valeur du Patrimoine Architectural, Urban et Paysager en France and World Heritage in China - Historical City*. She has also published more than 70 academic papers. She has received the UNESCO Asia-Pacific Awards for Cultural Heritage Conservation three times for the historical cities and vernacular architecture heritage. In 2021, Shao Yong was awarded the "Chevalier des Arts et des Lettres" of France. In 2024, she was elected as an Academician of the French Academy of Architecture.

## Projects

**Conservation and revitalization of Salt village in Yunlong (2022 to now)**  
 A holistic approach integrating cultural and natural heritage, as well as tangible and intangible heritage, is employed to protect 17 traditional salt-producing villages, while simultaneously driving rural revitalization through the development of salt culture.

Source: UHC 遗产保护与文化复兴



**Conservation and revitalization of Langtou village (2022 to now)**  
 Langtou Village's revitalization uses a culture-led, participatory approach with a Chief Planner System. It integrates heritage into daily life, adds communal spaces, and supports small-scale entrepreneurship. This socially inclusive model empowers local culture, offering a sustainable path to reverse rural decline.



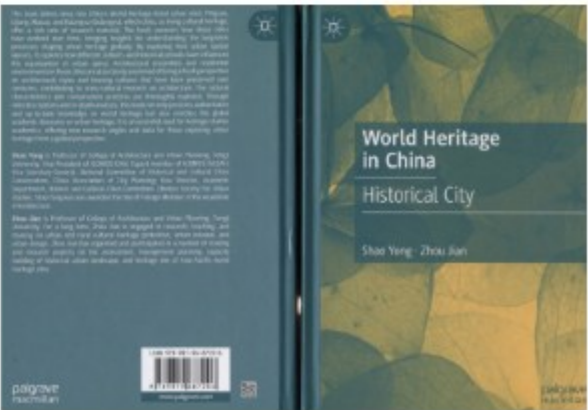
**Conservation and management of World Heritage Pingyao Ancient City (2006 to now)**  
 This partnership-based project provided funding and traditional craftsmanship to restore Ping Yao's vernacular houses. Technical manuals, demonstration projects, and capacity building ensure long-term sustainability. The initiative significantly contributes to the viability of courtyard residences and received the UNESCO Asia-Pacific Heritage Award.



**Conservation and Management of Water Towns of the Yangtze River (1996 to now)**  
 The project restores the authentic significance and function of the towns' waterways and historic settlements, while accommodating modern needs and anticipated growth. Major investment by the government for public works and by residents for individual structures creates a commendable model of sustainable long-term public-private partnership.



**World Heritage in China - Historical City (2025)**  
 This book delves deep into China's World Heritage-listed urban sites: Pingyao, Lijiang, Macao, and Kulangsu (Gulangyu), which cities, as living cultural heritage, offer a rich vein of research material. The book uncovers how these cities have evolved over time, bringing insights for understanding the long-term processes shaping urban heritage globally.



## New Member Introduction

Léo Diehl-Carboni



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### Education Background

**2024-2026** Heritage architect, DSA in Architecture and Heritage, ENSA Paris-Belleville.

**2025** Certification Tangible and Intangible Culture of Vernacular Heritage 2025, Yunlong International Workshop, Tongji University, UNESCO (WHITR-AP), International Committee for Vernacular Architecture (ICOMOS-CIAV), ICOMOS-ICICH.

**2022-2023** Habilitation à la maîtrise d'œuvre en son nom propre, «From critical regionalism to the architecture of resistance: a return to local resources», ENSA Paris-La Vilette, congratulations from the jury.

**2023** Transition Seed 2023 certification, The Eco-Century Project, École polytechnique fédérale de Lausanne, United Nations Environment Programme, Brailard Foundation, Geneva.

**2022** Diplôme d'État d'architecte, «The (in)visible traces of the landscape », ENSA Versailles, first class honours.

**2021** Master's thesis, «Ruin versus creation», ENSA Versailles, first class honours.

**2021** Master's cycle, ENSA Versailles - Faculdade de arquitectura da Universidade do Porto (FAUP).

### Working Experience

**2026-Today** Bureau (in)visible, Co-founder and partner of an architecture, urbanism and heritage practice.

**2022-2026** Collectif (in)visible, Co-founder and partner of an architecture collective.

**2022-2024** Orma architettura, Architecture and heritage agency, project manager, Corte, Haute-Corse

**2021** DATA architectes, internship in an architecture agency, Bagnolet, France

### Projects

#### The Climatorium of Possibilities - European 18 (2026)

From the urbanised seafront to the agricultural, hedgerow hinterland, Jullouville (France) is shaped by alternating contractions and expansions driven by mass movements: the tide, tracing its shifting foreshore; the Thar, generously irrigating it while overflowing or drying with climatic hazards; holidaymakers and visitors filling its villas in high season before leaving as autumn arrives; and migratory birds gathering at the exceptional stopover of the Mare du Bouillon nature reserve. As laureates, drawing on vernacular architecture, we approached this abundance of dynamics and environments as both richness, vulnerability and tension.

*Project axonometry, Bureau (in)visible*



#### Mbazza Kongo, living heritage (2026/2028)

The project seeks to regenerate the historic capital of the Kongo Kingdom through its living heritage. The project places vernacular architecture, local materials, traditional building techniques and Kongo spatial practices at the centre of its approach. It connects built heritage with oral histories, rituals, crafts, landscapes and the everyday knowledge of local communities. Workshops and training programmes will support artisans and younger generations in preserving and adapting these vernacular skills. Through local co-construction, heritage becomes a resource for cultural transmission, sustainable development.

*Photo of Mbazza Kongo, .DR*



#### Trétaigne, social housing (2026)

Built in 1903–1904 by Henri Sauvage and Charles Sarazin, 7 rue de Trétaigne, Paris. Designed for the Société des Logements Hygiéniques à Bon Marché, it combined housing with shared facilities, a popular university, cooperative restaurant, and rooftop solarium. This study examines the building's development and later alterations, focusing on its exposed concrete frame, brick infill, bow windows, and hygienist details. It then provides a technical and energy assessment to identify priorities for conservation. Finally, it proposes strategies for restoration, rehabilitation, enhancement, and extension, balancing contemporary requirements with the protection of this listed historic monument.

*Perspective view of the restoration project, Bureau (in)visible*



#### The (in)visible traces of the landscape (2022-2023)

The research questions the (in)visible traces that the extraction of building materials leaves within the landscape. Architecture can be understood both as an additive force, building, developing, structuring, and as a subtractive force, excavating, demolishing, consuming. From this perspective, the choice of building materials and their implementation must be fundamentally reconsidered. Inspired by vernacular architecture, components and assemblies, frames, walls, pillars, roofs, claddings, foundations, can become powerful architectural tools, shaping a vision of coexistence between landscape, climate and inhabited space.

*Photo of the exhibition in the Triennial of Lisbon, Bureau (in)visible*



