ICOMOS ICAHM
International Committee on Archaeological Heritage Management

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Malaysia · Scientific Symposium Session


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ICOMOS GA 2026 · SCIENTIFIC SYMPOSIUM SESSION

Heritage Management Planning Systems

Challenges, Lessons Learned and Potential New Approaches

Chair: Dr. Matthias Ripp | Co-Chair: Dr. Matthew Whincop

View session →

ABOUT THE SESSION — OBJECTIVE & SCOPE

Heritage management plans are an internationally recognised tool for safeguarding cultural, natural, archaeological, urban and intangible heritage. Yet climate change, rapid urbanisation, tourism pressure, disasters, conflict and shifting governance are testing these plans — many become outdated, over-detailed without real implementation, or overlook cumulative impacts, Indigenous knowledge and community values. This session examines these shortcomings, shares international examples of more adaptive, area-based and nested planning, and introduces a prototype modular framework developed by an ICAHM expert group to make management planning more flexible, inclusive and implementable across diverse heritage typologies.

THE SURVEY: FIVE DIMENSIONS OF EFFECTIVE MANAGEMENT PLANNING

The questionnaire assesses each dimension on a short rating scale, with room for your own experience.

01	**Strategic Clarity**	A clear, prioritised vision that guides decisions rather than a plan left on the shelf.
02	**Flexibility & Adaptive Capacity**	The ability to respond to change — climate, tourism, disasters — and to update the plan over time.
03	**Contextual Systems Thinking**	Understanding the site as a living system and accounting for cumulative, cross-cutting impacts.
04	**Inclusive Governance**	Shared decision-making with communities, Indigenous knowledge holders and institutions.
05	**Implementation Capacity**	The resources, coordination and monitoring needed to turn the plan into action.

TAKE THE 5-MINUTE SURVEY

Scan the code to share your experience

Or open the survey directly:
Google Forms → Site Manager Survey
Session details: icomosga2026.org.my/en/abstract/sessions

FOREWORD

ICOMOS Scientific Symposium 2026

Session 1 – (ICAHM) Heritage Management Planning Systems: Challenges, Lessons Learned and Potential New Approaches

The aim of this ICOMOS-ICAHM workshop in Kuching is to move towards more effective heritage management planning.

A **brief background** as to how this workshop came about… at the ICAHM conference in San Pedro de Atacama, Chile in 2025, several presentations discussed management planning at cultural heritage sites. Over lunch, a group of 'planners' discussed these presentations and the numerous challenges facing heritage management plans today.

As a consequence, the group suggested that a fundamental re-think of management plans and planning processes was required. This has now evolved into a small working group aim at addressing some of the deficiencies with current planning approaches, along with an increased recognition of the contemporary challenges facing our cultural heritage sites.

This group has recently prepared a paper (in review) titled *"Effective heritage management planning: addressing contemporary* challenges *using a five-dimensional framework"*; whilst the paper was written with a cultural heritage focus, the five dimensions of management planning are equally applicable to planning for natural heritage areas.

These five dimensions form the foundation for this workshop

1. **Strategic Clarity** A clear, prioritised vision that guides decisions rather than a plan left on the shelf.
2. **Flexibility & Adaptive Capacity** The ability to respond to change — climate, tourism, disasters — and to update the plan over time.
3. **Contextual Systems Thinking** Understanding the site as a living system and accounting for cumulative, cross-cutting impacts.
4. **Inclusive Governance** Shared decision-making with communities, Indigenous knowledge holders and institutions.
5. **Implementation Capacity** The resources, coordination and monitoring needed to turn the plan into action.

A session booklet has been compiled to facilitate discussion; the compilation includes an introduction to the five dimensions plus extended abstracts provided by workshop participants addressing a wide range of aspects of cultural heritage management planning.

The **format for the Kuching workshop** is designed to keep participants engaged but also actively involved; it will include:

- A **keynote address** outlining the five dimensions of management planning;
- Five **panel sessions**, each panel focussing on one of those planning dimension;
- A number of short, pre-recorded **presentations** shown during the lunch break;
- A **breakout session,** enabling active participation from anyone in the audience to further brainstorm the five planning dimensions.
- We will finish the event with some proposals of **next steps** – where we need to go from here to achieve more effective planning for our heritage areas.

Matt Whincop

Secretary General of ICAHM (International Committee
on Archaeological Heritage Management)

ICOMOS GA 2026

Session 1: Effective Heritage Management Planning: A Five-Dimensional Framework for a Changing World

Panel 1 - Strategic Clarity (Lead - Aylin Orbaşlı)

Ensure a clear vision and a hierarchy of prioritised, measurable objectives.

Background: Many management plans have a vision or objectives, but often that vision or those objectives are too aspirational and are not measurable. Rarely are those objectives prioritized which then allows a decision-maker to 'cherry-pick' whichever objective is politically convenient at a given time, leading to managerial drift and political opportunism.
Management plans also often fail to provide a shared vision (i.e. across relevant agencies),to assign different objectives to the relevant agencies, or facilitate a coordinated process for multi-agency endorsement of a management plan.

Panel 2 - Flexibility and Adaptive Capacity (Lead - Jon Day)

The ability to adjust plans through regular review, monitoring, and feedback cycles.

Background: Management plans need to be agile and flexible to respond effectively to unexpected natural or socio-political events. There is also a need for management plans to be subject to periodic review cycles to re-assess applicability. Flexibility is also required to integrate new stakeholders or new ideas during implementation of the plan; otherwise, a plan can 'lock in' outdated assumptions about hazards, visitor patterns, or acceptable interventions which can delay necessary course corrections . In an integrated or nested management planning approach, a hierarchy of nested plans enables some component plans to be reviewed and updated as needed while leaving other components fixed and only able to be changed following a comprehensive process of public engagement and /or political involvement.

Panel 3 – Contextual Systems Thinking (Lead – Matthias Ripp)

Planning should reach beyond site boundaries to consider the wider landscape, hydrological systems, administrative settings, and cumulative impacts on which a place depends.

Background: When asked to name their most critical dimension, many respondents referred to *Contextual Systems Thinking* – hardly surprising given external factors such as climate change or increasing tourism are already having profound impacts upon our heritage places. Even more challenging is the issue of cumulative impacts. The context also applies to the administrative and legal contexts within which management operates. It is important to recognise the drivers most consequential for ongoing heritage management — such as hydrological change, urban expansion, climate hazards, tourism pressure — originate predominantly in the wider landscape and cannot be governed by site level instruments alone. Plans should therefore consider the wider interconnected systems within which management decisions need to be undertaken.

Panel 4 - Inclusive Governance (Lead – Matthew Whincop)

The genuine and sustained involvement of agencies, communities and Indigenous rightsholders in decision-making.

Background: Today management plans need to recognise and genuinely involve a wide range of stakeholders. Formal (i.e. top-down), informal (i.e. bottom-up) and personal relationships and power structures often influence management practices, so there is a need to undertake 'real and effective' public participation as part of preparing a management plan – not merely token engagement. This is particularly complex in urban sites. Real and effective public participation takes time and resources, which may be overlooked or lacking in many planning processes. Similarly, there are complexities when involving First Nations or Indigenous Peoples as rightsholders— they are not merely stakeholders. This requires planning processes to incorporate Free, Prior and Informed Consent (FPIC) and equitable governance arrangements.

Panel 5 - Implementation Capacity (Lead – Georgia Cesaro)

The institutional, human, financial and coordination resources needed to deliver a plan, with clear accountability.

Background: When asked to name their weakest dimension in a recent survey, 40% of respondents stated that *Implementation Capacity* was their weakest. The reasons for this may include a lack of resources (financial or personnel), a lack of community support, or insufficient scientific knowledge or technical 'experience' for what is needed to undertake effective implementation. Having an adequate number of personnel may not be sufficient if those staff are inadequately trained or do not have the necessary equipment to undertake what is stipulated in the management plan. In terms of adequate funding, many heritage sites start off with an inflow of funding, but this may not be maintained over time or is inadequate to address new and emerging threats or challenges.

OUTLINE OF SESSION 1 – *THE FIVE DIMENSIONS OF HERITAGE MANAGEMENT PLANNING*

PROPOSED SESSION STRUCTURE

- S1 is envisaged to be an all-day workshop (from 08:30-17:00) on Tues 20th October.
- S1 is not a simple session of successive presentations, but is intended to be interactive discussion amongst S1 participants.
- Foundation for the S1 workshop will be the 'five dimensions of heritage management planning':
    1. Strategic clarity
    2. Flexibility and Adaptive Capacity
    3. Contextual Systems Thinking
    4. Inclusive Governance
    5. Implementation Capacity
- The workshop will include a **keynote**, 5 successive **panel discussions** (one for each planning dimensions); and 5 concurrent **breakout tables** (enabling wide participation).

During the workshop:

- **Panels** (45 mins each)
    - The core of S1 will be five panels, with each focused on one of the five dimensions of heritage management planning.
    - The five panel facilitators will be the S1 Steering group
        1. *Aylin Orbasli*
        2. *Jon Day*
        3. *Matthias Ripp*
        4. *Matthew Whincop*
        5. *Georgia Cesaro*
    - Panellists will be allocated to each panel based on extended abstracts provided by S1 participants.
    - Each panel facilitator will introduce themselves and then ask panellist to do the same (name, position, site, experience: total 15 mins).
    - Facilitator will introduce relevant planning dimension (prepared PPT slides), before asking specific questions of panellists (Qs circulated prior: total 30 mins).
- **Breakout groups** (final 90 mins of S1)
    - Five breakout tables, each to be facilitated by same five panel facilitators whose role is to ensure wider input from all workshop participants.
    - Tables will enable participation from **anyone in the audience** to discuss any of the five dimensions (participants can circulate during this session).
    - A rapporteur for each breakout group will summarise 2-3 key findings.

Expected outputs/outcomes from S1 workshop.

- All **extended abstracts** will be compiled in a digital booklet (available online prior to the workshop along with a summary of the five planning dimensions).
- **Remote presenters** will be invited to pre-record their talk (max 10 mins each) and these will be shown during the lunchtime break.
- Opportunity for **wide-audience participation** during interactive breakout table, each discussing one of the five dimensions of management planning.
- Rapporteur **notes** following breakout groups
- Possible **question using QR code**: *What do you expect from ICOMOS or IUCN to help make your planning system work better?* QR code projected during tea breaks.

PROPOSED RUN-SHEET FOR S1 WORKSHOP (20th October, 08:30-17:00)

Time	Format	Who	Topic/comment
0830-0840 (10 mins)	Plenary	MW	Session opening – Welcome; genesis of this workshop; format of the day (keynote, panels & breakout sessions)
0840-0850 (10 mins)	Plenary	MW	*Icebreaker* – introduce yourself to 2-3 people sitting near you who you have never met!
0850-0910 (20 mins)	Plenary	MR	**Keynote presentation** - Effective heritage management planning: addressing contemporary challenges using a five-dimensional framework *(drawing upon our MDPI paper and survey)*
0910-1000 (50 mins)	Plenary	AO	**Panel 1** - Dimension 1- Strategic clarity Facilitator: Aylin Orbasli • ~~Tsing-Hsiung Hsiao~~/ Chao-Shian Li (Taiwan) #597 • Ifko Sonja (Slovenia) #574 • Zay Myo Lin (Myanmar) #187
1000-1030 (30 mins) ***Morning tea/coffee break***			
1030-1115 (45 mins)	Plenary	JD	**Panel 2** – Dimension 2 - Flexibility and Adaptive Capacity Facilitator: Jon Day • Lap-I Kuok (Macau, China) #747 • Doug Evans (UK) #258 • José Luis de Negreiros Monteiro (Portugal) #131
1115-1200 (45 mins)	Plenary	MR	**Panel 3** - Dimension 3 - Contextual Systems Thinking Facilitator: Matthias Ripp • Katarzyna Palubska (Poland) #394 • Goranka Horjan (Croatia) #323 • Min Li (Japan) #73 • Kim Barrett (Australia) #17
1200-1330 (90 mins) ***Lunch Break – Prerecorded presentations (x4)***			
1330-1415 (45 mins)	Plenary	MW	**Panel 4** - Dimension 4- Inclusive Governance Facilitator: Matthew Whincop • Kate Clark (Australia) #484 • Apoorva Iyengar (India) #693 • Leguizamon Pineda Laura Paloma (Colombia) #620

1415-1500 (45 mins)	Plenary	GC	**Panel 5** - Dimension 5 – Implementation Capacity Facilitator: Giorgia Cesaro • Ruoyu Wang (China) #19 • Richard Grant Gimore III (USA) #19 • Kai-Yang Huang (Taiwan) #130
1500-1530 (30 mins) ***Afternoon tea/coffee break***			
1530-1540 (10 mins)	Plenary	JD	*How the five breakout groups will operate… moving to tables will take 5 mins.* Each table enables participation from anyone in the audience to further discuss any of the 5 dimensions (participants can circulate during this session).
1540-1630 (50 mins)	Breakout tables	All	Five **breakout tables** (one for each dimension); Facilitator to encourage discussion, especially from those who have not yet spoken in the room; rapporteur to record key points in Google slides.
1630-1650 (20 mins)	Plenary	All	Brief **report back to plenary** from each breakout group (~5 mins from each group)
1650-1700 (10 mins)	Plenary	MR	Where to from here? **Next steps** *(a special issue journal compilation?)* and session wrap up

MW Matt Whincop; MR Matthias Ripp; AO Aylin Orbasli; GC Georgia Cesaro; JD Jon Day

Keynote

Session 1 – (ICAHM) Heritage Management Planning Systems: Challenges, Lessons Learned and Potential New Approaches

Effective Heritage Management Planning: A Five-Dimensional Framework for a Changing World

Aylin Orbaşlı[1]; Matthias Ripp[2]; Jon C. Day[3]; Giorgia Cesaro[4]; Matthew Whincop[5]

Keywords: Management Plans; Management Systems; World Heritage; Adaptive Management; Inclusive Governance; Implementation Capacity.

Context and Research Question

Since 2005, the Operational Guidelines for the Implementation of the World Heritage Convention have required every nominated property to have an appropriate management plan or other documented management system. Two decades on, the management plan has become the principal instrument through which States Parties demonstrate their commitment to safeguarding Outstanding Universal Value (OUV), yet evidence that these instruments deliver on their promise remains thin. Third Cycle Periodic Reporting confirms persistent gaps in management capacity, stakeholder involvement and forward-looking planning across all regions, and global assessments of protected-area management effectiveness find that around 14% of surveyed sites lack even the basic requirements for effective operation. At the same time, four converging drivers are transforming the operating environment of heritage management: climate change, which at 3°C of sustained warming could permanently affect up to 19% of cultural World Heritage properties through sea-level rise alone; geopolitical instability, armed conflict and displacement; an increasingly complex stakeholder landscape in which Indigenous Peoples are recognised as rightsholders rather than stakeholders; and a widening mismatch between ever larger, more ambitious plans and the local capacity available to implement them.

This opening keynote of Session S1 asks why management plans so often fail to shape what actually happens at heritage places, and what a better architecture for management planning could look like. It argues that plans fail less from a lack of good intentions or technical instruments than from how they are structured, sequenced and governed: as static, comprehensive documents rather than as living, process-oriented management systems. In doing so, it provides the session with a shared analytical vocabulary for the case studies, lessons learned and new approaches brought together in Kuching.

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Approach and Method

The keynote draws on a two-stage design-research process developed under the auspices of ICOMOS ICAHM. In a first stage, expert workshops defined the problem and hypothesised a prototype framework of five interconnected dimensions of effective heritage management planning:

- **Strategic Clarity:** a clear vision and a hierarchy of prioritised, measurable objectives.
- **Flexibility and Adaptive Capacity:** the ability to adjust plans through regular review, monitoring and feedback cycles.
- **Contextual Systems Thinking:** planning that reaches beyond site boundaries to the landscapes, hydrological systems, administrative settings and cumulative impacts on which a place depends.
- **Inclusive Governance:** the genuine and sustained involvement of agencies, communities and Indigenous rightsholders in decision-making.
- **Implementation Capacity:** the institutional, human, financial and coordination resources needed to deliver a plan, with clear accountability.

The framework was then tested and refined through a systematic literature review of books, peer-reviewed articles and UNESCO, ICOMOS and ICCROM reports from the past twenty years, coded dimension by dimension for documented challenges, solutions, empirical support and gaps, and illustrated with archaeological, urban, natural and multi-centred sites such as Regensburg, Petra and the Great Barrier Reef.

The second stage, now underway, confronts this diagnosis with practitioner experience. An international expert survey asks site managers, coordinators, advisors and researchers to rate the relevance and current performance of each dimension on a five-point scale and to describe their main obstacles. To date, 45 responses have been received from nearly 30 countries across all UNESCO regions, two-thirds of them concerning inscribed World Heritage properties, and covering urban sites, cultural landscapes, archaeological sites and serial properties.

Key Findings and Arguments

The literature review reveals a distinct structural deficiency in each dimension. Without a hierarchy of priorities, decision-makers can select whichever objective is politically convenient, hollowing out the plan's governance function. Static, time-bounded plans attempt to regulate dynamic social-ecological systems and harden into "adaptive rigidities". Plans drawn around site boundaries underestimate drivers such as urban growth, hydrological change, climate hazards and tourism that originate in the wider landscape, and neglect cumulative impacts and nature-culture linkages. Plans framed around a single custodial authority misrepresent the actual governance of most heritage places: although 29 of the 35 reviewed sources refer to communities, meaningful engagement remains the exception. Finally, implementation capacity emerges as a property of well-designed governance systems rather than of individual competence, and is undermined by episodic, consultant-led planning cycles.

Preliminary survey results corroborate this diagnosis from the practitioner's perspective. Every dimension is rated as more relevant than it is currently delivered. The largest gaps concern Implementation Capacity (relevance 3.84

versus performance 2.67 out of 5) and Flexibility and Adaptive Capacity (4.00 versus 2.84), followed by Inclusive Governance (4.07 versus 3.05). The lowest-scoring single item is whether sites have adequate staff, skills and funding to implement their plan (2.59). Asked to name their weakest dimension, 40% of respondents chose Implementation Capacity, while Contextual Systems Thinking and Implementation Capacity were most often named as the most critical dimension right now. Open answers point to scarce staff and funding, cumbersome review procedures, responsibilities fragmented across authorities and municipalities, and political change as the main barriers. Practitioners clearly recognise the systemic pressures their sites face, but lack the institutional means to respond to them.

The keynote therefore argues for reorganisation rather than proliferation. Instead of ever more voluminous plans, it proposes a nested structure that places OUV at the apex of a constitutional vision and cascades through prioritised objectives, mapping and roadmaps, and work packages down to concrete actions. This separates non-negotiable, OUV-anchored commitments from context-sensitive actions that can legitimately evolve, as illustrated by the hierarchical planning of the Great Barrier Reef Marine Park and the prioritised, participatory Petra Integrated Management Plan.

Relevance for Heritage Management Planning Practice

The five dimensions are offered not as a checklist but as an interdependent diagnostic lens: strategic clarity gives adaptive flexibility a stable anchor, systems thinking widens the boundary so that inclusive governance can reach the actors whose decisions affect a place, and implementation capacity determines whether any of these intentions are realised. The framework helps site managers, coordinators and advisory bodies identify specific weaknesses in their own management systems and choose context-appropriate responses rather than a single template.

The keynote also sets the agenda for Session S1. Rather than a sequence of stand-alone presentations, contributions from historic urban centres, archaeological parks, cultural landscapes, serial properties and Indigenous-governed places will be explored through dimension-based small-group work. Each case study thus becomes a test of whether the five dimensions hold across contexts, and of which enabling conditions a shift from compliance documents to living management systems requires: a governance mandate able to host a constitutional plan, institutionalised feedback loops with explicit triggers for review, deliberative spaces that cross administrative boundaries, processes consistent with Free, Prior and Informed Consent where Indigenous rightsholders are involved, and systemic capacity building.

The session's results will feed directly into the second stage of the research, which aims to pilot the nested structure at operational sites and develop practical indicators linking action to intent. The goal is not a more complex instrument, but a more intelligent architecture that matches the complexity of heritage problems with proportionate, adaptable and genuinely governable solutions.

Abstract ID: #13

Jingsen Lian

An Integrative Hazard-Ecology-Perception Framework for Cultural Landscape Planning

Remote Oral Presentation

An Integrative Hazard–Ecology–Perception Framework for Cultural Landscape Planning

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Keywords: cultural landscape planning; geographical hazards; ecological sensitivity; heritage value perception; conservation and development; decision support

Context and research question

Cultural landscape management increasingly operates under multiple pressures that cannot be addressed through conservation boundaries alone. Geographical hazards, ecological degradation, tourism pressure, and changing public perceptions can affect the same heritage landscape simultaneously, yet they are often assessed through separate planning procedures. This fragmentation makes it difficult to determine where conservation should be non-negotiable, where development can be accepted, and how heritage values should be balanced against environmental constraints. The problem is particularly evident in large cultural landscapes composed of many spatial units with different levels of vulnerability and significance.

This study asks how geographical hazards, ecological sensitivity, and heritage value perception can be integrated into a single spatial decision framework for differentiated cultural landscape planning. It develops the Hazard–Ecology–Perception Landscape Planning (HEPLP) framework and tests it at the Chengde Mountain Resort (CMR), a UNESCO World Heritage Site in China. The 5.64 km^2 site contains 144 historically defined scenes and combines mountainous terrain, water systems, forests, architecture, religious landscapes, and tourism functions. Current planning faces three practical limitations. It concentrates mainly on well-preserved scenes rather than the full landscape, treats hazards and ecological conditions largely at area level rather than at the level of individual scenes, and does not systematically incorporate differences between expert and public perceptions of heritage value. The result is a management system in which conservation priorities, environmental vulnerability, and public attention do not always align.

Approach and method

HEPLP organizes these issues into three linked stages. First, geographical hazard risk is assessed for each scene using a 50 m environmental unit. Eight conditioning factors are evaluated through an Information Quantity Model and Analytic Hierarchy Process (AHP). The comparison of the two methods provides a cross-check on the resulting risk

classification. Six hazard levels are identified, and scenes consistently classified at the highest level are treated as a non-negotiable conservation baseline.

Second, ecological sensitivity and heritage value perception are assessed for the remaining scenes. Ecological sensitivity combines environmental and anthropogenic indicators, including land use, slope, elevation, road proximity, and spatial relationships between scenes. Indicator weights are calculated using the Entropy Weight Method and AHP and then combined equally. Heritage value perception is treated as a separate planning layer rather than as contextual background. Five senior conservation and planning experts evaluate historical, cultural, scientific, social, and artistic values. Public perception is derived from 59,852 user-generated comments collected from major Chinese travel and mapping platforms between 2015 and 2025. A large language model is used through a few-shot prompting process to identify and score the same five value categories. Principal Component Analysis is then used to derive integrated expert and public perception scores.

Third, the framework combines ecological sensitivity, expert perception, and public perception into a three-dimensional planning classification. Each dimension is divided into high and low classes using natural breaks, producing eight combinations. Together with the highest-hazard conservation category, the framework identifies nine spatially explicit planning clusters. Sensitivity tests are used to examine the stability of the classification boundaries.

Key findings and arguments

The results show that the three dimensions do not simply overlap. Hazard risk is concentrated mainly in the northwestern mountainous sector, where steep terrain and gully development increase susceptibility to landslides and collapses. Comparison between the hazard models produced a Jaccard similarity of 70.5%, allowing 12 scenes consistently identified as extremely high risk to be designated for complete conservation. Ecological sensitivity also displays a broad northwest–southeast gradient, but its distribution does not fully follow hazard risk. Water bodies, broadleaf forests, and mixed forests receive the highest combined ecological weights, demonstrating that some areas with relatively limited public visibility still perform important environmental functions.

The perception analysis reveals a different spatial pattern. Expert evaluations are relatively consistent across the site, while public perceptions are considerably more polarized and concentrated around the better-known core areas. This distinction matters for planning because highly valued places are not always the most ecologically robust, while ecologically important or historically significant peripheral scenes can remain weakly recognized by visitors. HEPLP therefore makes these mismatches visible instead of reducing them to a single composite score.

The eight non-hazard clusters translate these relationships into differentiated strategies. High ecological sensitivity generally shifts planning toward conservation and low-impact use, but expert and public perception determine what kind of intervention is appropriate. Where ecological sensitivity and both forms of heritage perception are high, conservation remains the priority while visitor flows and long-term development are tightly controlled. Where ecological sensitivity is high but public perception is low, restoration, maintenance, interpretation, or carefully managed presentation can strengthen recognition without increasing physical pressure. Where ecological sensitivity is low and heritage perception is high, more active development or adaptive reuse becomes possible. Areas low across all three dimensions can function as buffers or service spaces rather than competing for intensive heritage investment.

Relevance for heritage management planning practice

For heritage management planning practice, the main contribution is not simply another assessment index, but a way of translating heterogeneous evidence into operational management units. The framework distinguishes non-negotiable conservation areas from negotiable transitional areas and links different clusters to graded interventions. This allows spatial evidence to inform budgeting, inspection, monitoring, early warning, visitor management, restoration, adaptive reuse, and development control. Rather than applying one rule to an entire protection zone, management can respond to the particular combination of hazard risk, ecological sensitivity, and heritage value found in each landscape unit.

The framework also speaks directly to the five dimensions proposed for Session S1. Strategic Clarity is strengthened by defining explicit conservation baselines and differentiated planning priorities. Flexibility and Adaptive Capacity come from the possibility of updating hazard, ecological, and perception layers as conditions change. Contextual Systems Thinking is embedded in the integration of environmental processes, spatial structure, and social valuation. Inclusive Governance is advanced by placing public perception alongside professional expertise rather than treating it as an afterthought. Implementation Capacity is addressed by converting analytical results into spatially explicit governance units and intervention rules that can be incorporated into existing management systems.

HEPLP is not intended to replace professional judgment or participatory planning. Its value lies in making the evidence behind management choices more visible and comparable. The Chengde case suggests that heritage management planning can move from largely boundary-based and experience-driven control toward a more transparent system in which environmental constraints, heritage values, and public recognition are

assessed together. Future development should incorporate broader stakeholder participation and temporal monitoring, allowing planning units and intervention priorities to be revised as hazards, ecological conditions, and social perceptions change. The framework can therefore support a shift from a static management plan toward a more adaptive and evidence-informed planning system.

Abstract ID: #17

Kim Barrett

The Blue Mountains as a Historic Urban Landscape – The potential for a new and integrated approach to local urban planning and heritage in New South Wales, Australia

Panelist: Dimension 3 Contextual Systems Thinking

The Blue Mountains as a Historic Urban Landscape – The potential for a new and integrated approach to local urban planning and heritage in New South Wales, Australia

Keywords: Historic urban landscapes, urban planning policy, urban growth, Australia

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Context

As urban populations increase globally, cities are under increased pressure for urban renewal and change, and for the delivery of social imperatives including housing. Further, this same increase in global population generates large, and increasingly mobile groups as tourists, visiting places of heritage value, which are often fragile and at risk, as a result of mass visitation and the infrastructure required to accommodate it.

In the context of urban growth, heritage is increasingly treated as a barrier to progress – something to work around rather than work with. This paper challenges that view, arguing that heritage can and should be part of the solution to contemporary urban challenges like housing supply, sustainability and place-making, and that local governments have a key role to play in this policy shift; enabling change to benefit local communities.

Approach

Within the discipline of urban planning, urban conservation has and continues to be framed as a mechanism for protecting individual heritage items and places, often with little or no integration with broader urban planning considerations. In New South Wales (NSW), Australia, this has produced a heritage policy framework that is fundamentally site-based in its orientation; focused on the identification, listing, and regulation of discrete heritage items and conservation areas, rather than on understanding heritage as a dimension of the broader urban landscape. This site-based paradigm has served an important protective function, but is ill-equipped to respond to the scale and complexity of contemporary planning challenges, including urban growth, housing delivery, mass tourism and environmental sustainability.

An improved, integrated approach is required in the Australian planning system to enable meaningful recognition of the value of heritage – its ability to connect communities to the past and contribute to a sense of place, while also allowing for dynamism and change and providing for the needs of modern life. This perspective is not unique to the Australian context. Contemporary scholars largely agree that urban heritage can no longer be considered a separate domain and must be integrated into urban planning processes to reflect the complex interactions between humans and nature, and cultural values embodied in built form (Bandarin & van Oers, 2014). Many question whether traditional heritage assessment tools are sufficient in the face of urban development pressure, to provide convincing understandings of heritage which contribute to community identity and cohesion in modern societies, without resulting in overly technical and arbitrated heritage decision making (Bandarin and van Oers, 2014; Atkinson, 2007; Kirmizi & Karaman, 2021; Ashrafi et al., 2021; Byrne et al., 2003; Lesh, 2024; Clark, 2013; Neilsen & Pojani, 2020; Wells, 2017).

Despite some momentum toward a broader and more integrated view of heritage value; in Australia at least, population growth and development pressure have produced a countervailing narrative in which heritage is framed as a cost to government, developers and private owners. In recent years, intensified urban planning reforms at the NSW government level have introduced standardised policies which override local government planning controls, to enable expedited housing delivery. This has resulted in the almost complete removal of place-based planning and a lack of any meaningful consideration of heritage.

Key arguments

This paper highlights practical strategies like the adaptive reuse of heritage buildings, as a means of retaining urban character and enabling environmentally sustainable outcomes in the face of urban development pressure. However, it specifically focuses upon the UNESCO Recommendation on the Historic Urban Landscape (HUL Recommendation), adopted by the UNESCO General Conference in 2011, as an integrated framework which promotes participatory and place-based planning approaches, embedding heritage meaningfully within its broader social, environmental and spatial contexts. The HUL is defined as the urban area understood as the result of a historic layering of cultural and natural values and attributes, extending beyond a historic centre, to include its urban context and geographical setting (UNESCO, 2011). This supports sustainability, respects local identity, and helps communities evolve without erasing their past. Meaningfully, such an approach provides the opportunity for First Nations knowledge and cultural heritage to move from simple recognition, to become a central and underpinning element of the planning process.

Significantly, the UNESCO HUL Recommendation does not provide a blueprint. It offers one pathway toward integration of heritage within the broader urban planning context, and a framework that must be translated into statutory planning processes to be effective. This distinction is central to assessing its applicability in the Australian planning context. To examine how such a framework might be applied in a constrained but highly significant context, the Blue Mountains, in New South Wales, Australia, is presented as a case study.

The Blue Mountains local government area is within the lands of the Dharug and Gundungurra peoples, and is one of only two cities in the world located inside a UNESCO World Heritage National Park. It is also located on the edge of Sydney, Australia's largest metropolitan area. The Local Government Area is within an urban corridor, inside this outstanding natural World Heritage setting, stretching over 100km and encompassing 27 towns and villages that are home to approximately 80,000 people. Despite this relatively low population, the Blue Mountains receives more than 5 million visitors each year. Its location on the edge of Sydney results in pressure for development to accommodate metropolitan growth, as well as pressure for infrastructure to support large visitor populations.

Despite the World Heritage context of the local government area, there are currently no specific national or state planning requirements for the Blue Mountains, to require a different approach to the rest of Greater Sydney. The Blue Mountains therefore presents a compelling case for a pilot application of the HUL framework. The combination of a World Heritage setting, extensive built heritage, significant environmental constraints, and proximity to Sydney concentrates the tensions of urban growth and heritage, within a highly constrained natural environment. This paper presents the preliminary analysis and early considerations of the Blue Mountains as a Historic Urban Landscape, and how this might be translated and adapted into urban planning policy settings.

Relevance for heritage management planning practice

Such an analysis, while focused on the urban planning context in New South Wales, Australia, identifies the challenges and opportunities presented by an integrated framework such as the UNESCO Historic Urban Landscape Recommendation. Particularly, the prospect of testing the translation of HUL principles into urban planning processes and policies is likely to have broad application in heritage management planning practice.

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Abstract ID: #19

Richard Grant Gilmore III

Below the Bricks: A Nested, Five-Dimensional Model for Archaeological Heritage Management from Campus Projects to City Ordinance

Panelist: Dimension 5 Implementation Capacity

From Campus Trenches to City Policy: A Five-Dimensional, Nested Planning Model for Archaeological Heritage Management in Charleston, South Carolina

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Keywords: archaeological heritage management, urban archaeology, heritage management planning, Section 106, municipal archaeological ordinance, Charleston South Carolina

Context and Question

Charleston, South Carolina, presents an unusually concentrated challenge for archaeological heritage management. More than three centuries of urban occupation, substantial Indigenous and colonial landscapes, the material legacy of enslavement and the African Diaspora, successive episodes of urban expansion, and continuing redevelopment have created an archaeological record that extends beneath a densely occupied and actively changing city. Archaeology is therefore encountered not only through traditional research projects but through building renovation, institutional expansion, utility replacement, public-space improvements, and other routine processes necessary to sustain a living city.

The central challenge is not simply the identification of archaeological resources. It is the management of archaeology within institutions and regulatory systems primarily designed to construct, renovate, maintain, and modernize the built environment. Archaeological heritage management consequently depends on decisions made at several interconnected scales: the individual archaeological site, the development project, the institution undertaking the work, infrastructure systems extending across the city, and ultimately municipal planning and regulatory policy.

This paper asks whether these scales can be understood as a **nested archaeological heritage management system**, and whether the five dimensions identified for this session—**Strategic Clarity, Flexibility and Adaptive Capacity, Contextual Systems Thinking, Inclusive Governance, and Implementation Capacity**—provide a useful framework for understanding why some archaeological interventions generate enduring management value while others remain isolated responses to individual projects.

Approach and Method

The paper draws upon a series of archaeological management experiences in Charleston centered initially on the College of Charleston campus and subsequently extending into city-scale infrastructure and municipal policy. Rather than treating these projects as separate case studies, they are examined as connected components of a developing management system.

At the project level, the College's **2020 Solar Pavilion project** demonstrates the potential for regulatory compliance to become a broader heritage-management opportunity. Federal funding triggered archaeological investigation before construction. Excavations undertaken by faculty and students identified archaeological deposits including a hearth, ceramics, faunal material, and an 1853 slave tag. Rather than terminating with archaeological documentation, the project created opportunities for interpretation and public engagement, demonstrating how flexibility in project design can transform a compliance requirement into a lasting heritage outcome.

Other campus projects—including work associated with **Addlestone Library, the Simons Center for the Arts renovation, and redevelopment at 106 Coming Street**—illustrate a different management challenge: integrating archaeological risk into routine institutional planning. At 106 Coming Street, the presence and potential presence of burial grounds substantially expands the governance environment. Archaeology becomes inseparable from questions concerning human remains, descendant and stakeholder communities, institutional responsibility, development planning, professional expertise, and long-term stewardship.

The analysis then moves beyond the campus to the **lead-service-line mitigation program on the Charleston Peninsula**. Utility replacement demonstrates the cumulative-impact problem particularly clearly. A single narrow trench may appear to represent a limited archaeological intervention; hundreds or thousands of such excavations distributed across a historic urban landscape can collectively constitute a city-scale archaeological event. This change in scale requires archaeological management to move beyond individual project review toward systems capable of anticipating cumulative effects.

Finally, the paper examines Charleston's decades-long effort to develop an **archaeological ordinance**. The ordinance represents the logical extension of the nested model: an attempt to move from reactive mitigation of individual projects toward predictable, anticipatory municipal policy.

Key Findings and Arguments

The Charleston experience suggests that effective archaeological heritage management depends less upon the existence of a single comprehensive management plan than upon the quality of the relationships between management scales.

First, **flexibility and adaptive capacity** are necessary because archaeology introduces uncertainty into construction and redevelopment. Archaeological management must permit responses to unexpected discoveries, changing designs, construction sequencing, and new

research questions without either immobilizing development or sacrificing archaeological significance.

Second, **strategic clarity** requires concentrating archaeological effort where significance and risk intersect. Not every ground disturbance requires the same response. Effective systems therefore require clear thresholds, research priorities, decision points, and mechanisms for escalating archaeological intervention when circumstances warrant it.

Third, archaeological management is fundamentally an issue of **governance**. Decisions about archaeological heritage involve property owners, facilities staff, designers, contractors, archaeologists, regulators, institutional leadership, community organizations, and descendant communities. Management plans that identify archaeological resources without identifying who has authority, who is responsible for action, who bears costs, and who participates in decision-making remain difficult to implement.

Fourth, **contextual systems thinking** changes the unit of analysis. An archaeological deposit should not be understood only as an isolated site or feature. Urban archaeological resources form parts of larger historical landscapes and are simultaneously embedded within contemporary systems of property ownership, infrastructure, transportation, drainage, institutional development, and municipal regulation. The archaeological implications of infrastructure replacement make this particularly visible.

Finally, **implementation capacity** determines whether good intentions become durable practice. Professional expertise, staff time, institutional memory, GIS and archaeological datasets, established procedures, training, contracting mechanisms, and financial resources all shape what can actually be accomplished. Capacity also includes the ability to retain knowledge from one project and apply it to the next rather than repeatedly reconstructing archaeological understanding project by project.

These observations support a nested model in which information and authority move in both directions. Site-level discoveries should inform project decisions, institutional planning, infrastructure strategies, and municipal policy. Conversely, city-scale policy should provide clearer expectations and procedures for institutions and individual projects.

Relevance for Heritage Management Planning Practice

The Charleston cases suggest a shift in emphasis from **managing archaeological sites to managing the systems that continually affect archaeological sites**.

For universities, municipalities, infrastructure providers, and other large landholding institutions, the most effective archaeological planning may therefore be neither entirely site-specific nor exclusively regulatory. It should connect multiple scales of decision-making and allow knowledge generated through individual projects to accumulate into progressively more informed management practice.

This model also suggests that major institutions can function as laboratories for wider policy development. Campus projects provide opportunities to test archaeological review procedures, stakeholder relationships, documentation standards, mitigation strategies, public interpretation, and mechanisms for incorporating archaeological information into capital planning. Lessons generated at this intermediate institutional scale can subsequently inform municipal systems.

Charleston's experience demonstrates both the possibilities and limitations of such an incremental approach. Considerable archaeological knowledge and management expertise can develop through individual interventions, yet without mechanisms that connect these experiences across projects, institutions, infrastructure programs, and city policy, archaeological management remains reactive.

A five-dimensional nested model offers one means of making those connections explicit. Its transferable value lies not in prescribing a single archaeological management system, but in encouraging heritage managers to ask five practical questions across every scale: **Is the objective strategically clear? Can the system adapt? Is the archaeological resource understood within its wider context? Are governance relationships inclusive and explicit? And does sufficient capacity exist to implement what is proposed?**

In historic cities such as Charleston, answering those questions may ultimately be more important than producing another static management plan.

Abstract ID: #73

Min Li

Disaster Risks and Disaster Risk Management Planning Systems at Living World Cultural Heritage Sites: Fourteen Global Case Studies

Panelist: Dimension 3 Contextual Systems Thinking



ICOMOS Scientific Symposium 2026

LIVING HERITAGE: RESPECT, ENHANCE, ACCEPT, PARTNERSHIP

Disaster Risks and Disaster Risk Management Planning Systems at Living World Cultural Heritage Sites: Fourteen Global Case Studies

Min Li[1]; Takeyuki Okubo[2]; Shakya Lata[3]; Dowon Kim[4]; Aya Miyazaki[5]

Session 1: Heritage Management Planning Systems: Challenges, Lessons Learned and Potential New Approaches"

1. Context/question

Living World Cultural Heritage (WCH) sites, including old towns, historic settlements, and cultural landscapes, are characterized by the coexistence of historic fabric and active communities whose cultural practices, livelihoods, and social systems sustain the heritage values of these places. Unlike monument-based heritage sites, living heritage depends on the continuity of everyday activities and community engagement. Consequently, disaster risks affecting living heritage extend beyond physical damage to include disruptions to cultural practices, traditional land-use systems, and community governance structures.

2. Approach or method

In collaboration with ICOMOS International and ICOMOS/ICORP, a questionnaire and interview survey was conducted between March 2023 and October 2025. A total of 65 WCH sites responded to the questionnaire via email, among which 15 sites participated in follow-up interviews via Microsoft Teams, Zoom, and email. Based on these survey results, this study analyzes disaster risks and the current status of disaster risk management (DRM) planning systems at fourteen living WCH sites across diverse geographical and cultural contexts. Questionnaire and interview survey data were integrated to examine disaster risks and existing DRM planning systems. Cross-case comparative analysis was then conducted to identify common risk patterns, institutional and stakeholder arrangements, traditional DRM practices, and key gaps in DRM planning and implementation.

3. Key findings or arguments

The analysis shows that living WCH sites are exposed to multiple natural and human-induced hazards. Frequent natural hazards include earthquakes, floods, landslides, storms, droughts, and coastal erosion. In several cases, the vulnerability of heritage structures is intensified by fragile traditional construction materials and dense historic urban fabrics (e.g., Sukur, Nigeria). Climate-related hazards, particularly drought and extreme weather events, increasingly threaten cultural landscapes and traditional agricultural systems (e.g., Öland, Sweden). Human-induced risks are also significant, including fires, tourism pressure (e.g., Patan, Nepal), vandalism (e.g., Osun Osogbo Sacred Grove, Nigeria), urban development, and armed conflict (e.g., Hebron, Palestine). Moreover, social factors play a critical role in shaping disaster risks. Demographic changes, such as population decline or aging communities, can weaken disaster preparedness and recovery capacity (e.g., Hidden Christian Sites, Japan). Past disasters, including fires, floods, earthquakes, storms, erosion, armed conflict, and climate change, have caused structural

damage to historic buildings, degradation of cultural landscapes (e.g., Bandiagara, Mali), disruption of traditional livelihoods, and displacement of local populations (e.g., Sukur, Nigeria; Hebron, Palestine). In some cases, local communities played a crucial role in fire management and response, and post-earthquake restoration efforts. However, at one WCH site, the lack of craftsmen with traditional restoration skills hindered post-disaster recovery, highlighting the importance of maintaining intangible heritage to support effective recovery after disasters.

The analysis of DRM planning systems indicates that nine of the 14 living WCH sites lack dedicated DRM plans. Instead, disaster countermeasures are often fragmented within broader heritage management or municipal disaster frameworks (e.g., Mazagan, Morocco). This fragmented approach can result in unclear responsibilities, limited coordination among stakeholders, and insufficient monitoring of risk reduction measures. In several cases, although preventive infrastructure and emergency response mechanisms exist, regular training, emergency drills, and evaluation systems remain limited due to financial and institutional constraints (e.g., Djenné, Mali). However, six heritage sites involve complex stakeholder networks to cope with disasters, involving local communities, property owners, religious institutions, and government agencies (e.g., Santo Domingo, Dominican Republic). Survey responses indicate that financial resources for developing DRM plans are provided through various funding mechanisms, including an international loan agreement with the Inter-American Development Bank (Santo Domingo, Dominican Republic) and funding from the national Department of Archaeology (DoA) and local municipalities (Bhaktapur, Nepal). National legislation, such as national disaster management laws, building codes, monument conservation laws, and land-use regulations, often provides the legal basis for heritage protection and disaster risk management.

The study also highlights the critical role of traditional knowledge and indigenous practices in disaster risk reduction and post-disaster recovery. In several living heritage sites, traditional building techniques and environmental management practices contribute significantly to resilience. For example, flexible timber–brick structures with wooden joinery and lime-surkhi mortar in the Kathmandu Valley (Nepal) have demonstrated earthquake-resistant properties and supported post-earthquake reconstruction. Similarly, the Old Towns of Djenné (Mali) rely on traditional flood-adapted earthen construction and maintenance practices suited to the Inner Niger Delta environment. In cultural landscapes such as the Sukur Cultural Landscape (Nigeria), communities apply traditional environmental management practices, including vegetation control and buffer zones, to reduce wildfire risks. The use of traditional materials such as wood, earth bricks, and mud mortar further enhances structural flexibility and reparability, strengthening disaster resilience in historic settlements such as Patan (Nepal). In the historic settlements of Bandiagara (Mali), cultural and ritual associations of resilience through prayers and practice systems have been created to conserve the environment. Integrating these traditional practices into formal DRM strategies is essential for improving the resilience and sustainability of living heritage sites.

4. Relevance for heritage management planning practice

The findings provide practical guidance for integrating disaster risk management into the management of living World Cultural Heritage sites. They highlight the need to move beyond

fragmented, asset-focused approaches toward integrated DRM planning that links heritage conservation, community resilience, traditional knowledge, stakeholder coordination, and preparedness. In particular, heritage management plans should establish clear responsibilities and coordination mechanisms, incorporate regular training and emergency drills, secure sustainable financial and institutional support, and recognize local communities and traditional practices as essential components of disaster preparedness and post-disaster recovery. Such integration can strengthen both the protection of physical heritage and the continuity of the cultural practices and livelihoods that sustain living heritage. In the future, our research will examine disaster risk management planning for living heritage in greater detail.

Keywords: Living World Cultural Heritage; Natural and Human-induced hazards; Armed Conflict; Climate Change; Disaster Risk Management

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Abstract ID: #130

Kai-Yang Huang

Living Heritage on a Former Cold War Frontier: the Conservation of a Wartime Elementary School

Panelist: Dimension 5 Implementation Capacity

Title: Living Heritage on a Former Cold War Frontier: Action-Led Modular Stewardship at Chu-luo Elementary School, Matsu

Author: Kai-Yang Huang
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Keywords: Matsu Islands; living heritage; Cold War heritage; community stewardship; heritage management planning; border archipelago

Context and Research Question

Heritage management planning commonly begins with an assessment of cultural significance, followed by policy formulation and conservation action. However, small, locally meaningful places without statutory heritage designation often enter conservation through community intervention before a formal management framework exists. Their significance may become apparent through cleaning, repair, negotiation, and renewed use. This paper examines how such initiatives can develop into sustainable management systems through the revitalisation of Chu-luo Elementary School in the Matsu Islands, a former Cold War frontier between Taiwan and coastal China.

Established in 1951, the school later occupied classrooms constructed above a hillside air-raid shelter. Following its closure in 1967, the building served as a village office and civil-defence base from 1968 to 1992. Its overlapping functions connected education, military preparedness, welfare distribution, village administration, and everyday social life. These infrastructures helped materialise the border through civilian routines, demonstrating how seemingly peripheral islands participated in the production of state space (Chu & Hsu, 2024). Their subsequent reuse also reveals how island places are constituted through changing relations of boundedness and connection (Pugh, 2013).

By the 2010s, the building had lost its official function and was used informally for storage. In 2019, the Matsu Youth Development Association began renting and rehabilitating it as a youth and community base. What started as a practical search for premises developed into an ongoing heritage process. The paper asks: how can management planning retain the knowledge, relationships, and responsibilities generated through community action while addressing the vulnerabilities of informal stewardship?

Approach and Method

The study combines public cultural-memory records, local newspaper reports, government programme and award documentation, and situated participant observation. The author participated as a volunteer in rehabilitation activities and local cultural initiatives. This position provided access to practical interventions and conversations through which conservation decisions emerged, while requiring explicit recognition that participant experience does not represent the Association, residents, former users, or professional advisers as a unified collective.

The analysis follows episodes in which intervention made previously unrecognised heritage values visible: negotiating the relocation of stored objects, discovering historical inscriptions beneath later paint, debating spatial adaptation, reconnecting former users with material traces, and responding to unintended repainting. These episodes are interpreted through living-heritage and people-centred approaches, which place relationships, knowledge, and continuing custodianship at the centre of conservation (Court & Wijesuriya, 2015; Poulios, 2014). Community is approached as a heterogeneous field of memories, interests, resources, and authority rather than a consensual entity (Waterton & Smith, 2010).

Key Findings and Arguments

First, heritage significance emerged through action and negotiation. Before rehabilitation, residents had used the building to store belongings, including coffins purchased in advance. Their presence reflected local practices associated with mortality, preparedness, and historically uncertain island transport. Relocation therefore required negotiation rather than straightforward clearance. The episode demonstrates that apparently abandoned sites may remain socially occupied. Existing users and informal custodians must be recognised in baseline assessments, even when their relationships are absent from official property records.

Second, material discovery complicated the selection of an authentic past. During paint removal, volunteers uncovered military and administrative slogans beneath later blue-and-white coatings. The inscriptions documented wartime ideological discipline, while the newer surfaces recorded subsequent village beautification. Conservation involved deciding how these layers could coexist, rather than returning the building to a single historical appearance. Experiments with protective coatings and selective treatment allowed older traces to remain legible. The case supports procedures through which unexpected discoveries can interrupt routine work, prompt documentation and consultation, and revise earlier assessments of significance.

Third, renewed use transformed the building into a continuing site of memory production. Return-to-school programmes, mother-language activities, traditional games, workshops, and exhibitions brought different generations into contact with its material features. A former military instructor identified a surviving mark from an accidental handgun discharge, while another resident recalled hearing a shot and fearing an attack. The physical trace enabled separate recollections to be compared. Likewise, the shelter's use for cultural activities, including a 2023 Matsu Biennial exhibition concerning wartime postal communication, connected contemporary interpretation with the building's defensive past. Activation consequently functioned as a means of generating knowledge and monitoring significance.

Fourth, informality enabled experimentation while exposing conservation to administrative discontinuity. Without statutory designation, community actors could adapt the site incrementally and respond to discoveries. Yet in November 2024, a contractor undertaking a village-environment project mistakenly repainted façade columns. Subsequent discussion among authorities, residents, and the Association resulted in an agreement to restore the earlier appearance and improve communication. The incident revealed that conservation knowledge held by volunteers may fail to reach contractors or public agencies. Successful local care therefore requires transferable procedures and institutional recognition.

Finally, voluntary labour was both an enabling resource and a structural vulnerability. Rehabilitation depended on donated time, practical skills, personal relationships, and organisational commitment. When knowledge remains embodied in a few individuals, leadership changes can erase the reasoning behind conservation decisions. Sustainable management must retain this reasoning and support succession, rather than assume an indefinite supply of unpaid effort.

Relevance for Heritage Management Planning Practice

The paper proposes **action-led modular stewardship** as a practical response for small, undesignated heritage places. This is an iterative process in which action, observation, documentation, negotiation, evaluation, and adjustment continually inform one another. It translates knowledge generated through use into an accessible management structure.

The proposed system combines a durable strategic vision with five revisable modules. Significance and memory records chronology, material features, oral testimony, and unresolved questions, distinguishing documentary evidence from recollection and interpretation. Fabric, maintenance, and change identifies retention priorities, acceptable adaptations, and procedures for reviewing unexpected discoveries or potentially destructive work. Use, interpretation, and programming evaluates activities according to their contribution to relationships, learning, knowledge, and conservation. Governance and decision-making clarifies responsibilities, consultation requirements, and the evidence supporting decisions. Risk, capacity, and succession addresses maintenance resources, inspections, emergency procedures, volunteer handovers, and archive continuity.

For practitioners, this approach offers a proportionate way to formalise existing care without imposing a management document beyond local implementation capacity. It treats disagreement as evidence of plural values and recognises recurring activities as opportunities to update knowledge. Community stewardship remains supported by administrative coordination and, where necessary, stronger statutory protection.

On frontier islands, heritage planning must also retain the relations through which schooling, defence, welfare, and administration shaped everyday life. Chu-luo's significance extends across generations and institutions while remaining anchored in its material setting. The principal contribution is therefore to understand planning as the organisation of a continuing capacity to care: preserving what community action discovers and making that knowledge available to future custodians.

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Abstract ID: #131

José Luis de Negreiros Monteiro

Resilient Archaeology in Portugal: Climate Risks, Renewable Energy Pressures and the Role of GIS, Impact Assessment and Public Participation

Panelist: Dimension 2 Flexibility and Adaptive Capacity

Resilient Archaeology in Portugal: Climate Risks, Renewable Energy Pressures and the Role of GIS, Impact Assessment and Public Participation

José Monteiro[1]; Ana Nunes[2]; Alexandra Estorninho[3]; Filipa Bragança[4]

Keywords: Renewable Energy; Cultural Heritage; Heritage Impact Assessment; Megalithic Landscapes; Cumulative Impacts; Adaptive Heritage Management.

Context and Research Question

The expansion of renewable energy infrastructures is essential to achieving climate neutrality objectives but also poses significant challenges for the protection of archaeological heritage and cultural landscapes. Using the Alentejo Megalithic Landscape in Portugal as a case study, this paper examines how Heritage Impact Assessment (HIA), Geographic Information Systems (GIS), and public participation can contribute to reconciling renewable energy development with heritage conservation. The study focuses on large-scale photovoltaic projects proposed north of Évora, affecting approximately 1,850 hectares and interacting with a landscape that includes more than 2,000 megalithic monuments currently undergoing a joint heritage designation process. The research highlights not only direct impacts on archaeological sites but also indirect and cumulative impacts resulting from landscape fragmentation, visual intrusion, and the alteration of historical and symbolic relationships between monuments and their surroundings. GIS-based spatial analysis is employed to identify conflicts between heritage resources and development proposals, while HIA provides a framework for assessing impacts on archaeological landscapes. Public participation further strengthens decision-making by incorporating local knowledge and community concerns. The paper proposes an Adaptive Heritage Management Model integrating archaeological inventories, landscape characterisation, GIS vulnerability assessment, renewable energy planning, impact assessment, and stakeholder engagement. This approach demonstrates how climate-transition objectives can be pursued while ensuring the long-term conservation and resilience of archaeological landscapes.

Approach and Method

The study adopts an integrated methodological framework combining Heritage Impact Assessment (HIA), Environmental Impact Assessment (EIA) procedures, Geographic Information Systems (GIS), and public participation to evaluate the effects of renewable energy development on archaeological heritage and cultural landscapes.

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The assessment considers three main categories of impact:

- Direct impacts involve the physical disturbance or destruction of archaeological remains resulting from construction activities and associated infrastructure.
- Indirect impacts relate to changes in the visual, spatial, and functional setting of heritage assets, affecting their interpretation and significance without necessarily causing physical damage.
- Cumulative impacts are assessed through the combined effects of multiple existing, approved, and proposed developments within the same territory.

Attention is given to the integrity of archaeological landscapes. Moving beyond site-based approaches, the analysis examines how territorial transformations may affect the historical, spatial, symbolic, and functional relationships that underpin landscape significance. GIS-based spatial analysis is used to identify heritage sensitivity, landscape connectivity, and potential conflicts between heritage conservation and renewable energy projects.

Public participation complements the assessment by incorporating local knowledge, community perspectives, and stakeholder contributions, thereby improving the identification of heritage values and strengthening the transparency and legitimacy of decision-making processes.

Key Findings and Arguments

The case study focuses on three major photovoltaic projects proposed for the Divor area and surrounding territory:

- Divor Photovoltaic Power Plant (under development);
- Sol de Évora Photovoltaic Power Plant (under assessment);
- Graça do Divor Photovoltaic Power Plant (under assessment).

Together, these projects occupy approximately 1,850 hectares. Within their Study Areas, around 122 heritage sites have been identified, all previously recorded in heritage databases and/or territorial planning instruments. Of these, 12 megalithic monuments are included in the ongoing classification process of the Alentejo Megalithic Landscape.

The results indicate that the assessment of impacts cannot be restricted to individual archaeological sites located within project boundaries. Although direct impacts on archaeological remains are significant, the most substantial concern relates to the transformation of the broader archaeological landscape. The proposed developments introduce extensive visual and spatial changes into a territory whose cultural significance derives not only from the monuments themselves but also from the relationships between monuments, topography, visibility patterns, movement routes, and historical land use.

The study argues that the alteration of the landscape setting of megalithic monuments should not be regarded merely as an indirect effect. In landscapes whose heritage value derives from the integrity of spatial and visual relationships, the disruption of those relationships constitutes a direct impact on the cultural landscape itself. Such transformations are often irreversible and may compromise the authenticity, legibility, and significance of the heritage resource.

The analysis further demonstrates the importance of cumulative impact assessment. In addition to the solar plants themselves, associated infrastructure, including substations and high-voltage transmission lines, contributes to

landscape fragmentation and visual intrusion. While these components are commonly assessed through separate procedures, their combined effects can significantly exceed the impacts predicted through project-by-project evaluation. The cumulative concentration of energy infrastructure within a relatively confined territory therefore presents a major challenge for current assessment methodologies.

Another important finding concerns the role of public participation. The debates generated by the photovoltaic projects in the Évora region have demonstrated the capacity of local communities, civic platforms, and heritage experts to contribute valuable information regarding landscape values and heritage significance. Public engagement has helped identify concerns related to landscape integrity and cultural identity that are not always adequately addressed through conventional technical assessments. The case therefore illustrates how participatory processes can enhance both the quality and legitimacy of heritage management decisions.

Relevance for Heritage Management Planning Practice

The case of the Alentejo Megalithic Landscape demonstrates the need to move beyond traditional monument-centred approaches towards territorial and landscape-based heritage management frameworks. The increasing scale of renewable energy development requires assessment methodologies capable of addressing cumulative, spatial, and long-term effects rather than focusing solely on individual project impacts.

The study highlights the importance of integrating archaeological sensitivity mapping, landscape characterisation, and GIS-based vulnerability assessments into the earliest stages of renewable energy planning. Such approaches can support the identification of suitable locations for development while minimising conflicts with heritage values. The findings also reinforce the need for stronger coordination between heritage management, environmental assessment, and spatial planning systems.

An adaptive heritage management model offers a potential framework for addressing these challenges. Such a model combines archaeological inventories, landscape characterisation, GIS vulnerability assessment, renewable energy planning, Heritage Impact Assessment, public participation, and continuous monitoring within a dynamic decision-making process. Rather than treating heritage conservation and energy transition as competing objectives, adaptive management seeks to balance both through evidence-based planning and periodic reassessment of outcomes.

Ultimately, the experience of Évora demonstrates that the energy transition should not be viewed as incompatible with heritage conservation. However, achieving this balance requires more strategic and preventative approaches capable of identifying risks before projects reach advanced stages of development. The use of digital tools, integrated assessment methodologies, and meaningful public participation can contribute to more resilient and sustainable heritage management practices, ensuring that the decarbonisation of the economy proceeds without compromising the preservation and transmission of cultural heritage to future generations.

Abstract ID: #187

Zay Myo Lin

The Encroachment of Non-Native Flora in Pagan: Challenges in Heritage Management Planning and Regulatory Frameworks

Panelist: Dimension 1 Strategic Clarity

Extended Abstract: ICOMOS GA2026 (Session S1)

Title: The Encroachment of Non-Native Flora in Pagan: Challenges in Heritage Management Planning and Regulatory Frameworks

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Keywords: Heritage Management Planning, Biological Invasion, Pagan/Bagan, Cultural Landscape, Legal Frameworks, Burra Charter

1. Context and Research Question

Pagan (Bagan), situated on a bend of the Ayeyarwady River in the central dry zone of Myanmar, represents a layered cultural landscape featuring over 3,500 recorded Buddhist monuments constructed between the 11th and 13th centuries CE. In 2019, the serial property was inscribed on the UNESCO World Heritage List under criteria (iii), (iv), and (vi). Epigraphic records establish that the historical identity of Pagan was fundamentally arid. The 1102 CE Shwe-zigon inscription designates the region as *"Tatta-desa"* (Pali for 'dry zone'), while the 1277 CE Shin Disapramok inscription at Mingalarzedi describes it as *"Thampdipa"* ('copper-red colored dry zone'). Historical baseline records—including Colesworthy Grant's 1855 watercolors, 1907–1908 cadastral surveys, and 1954 aerial photography—confirm that the landscape remained an open, windswept plain sparsely shadowed by specific indigenous dry-zone trees.

Since 2016, an unnoticed transformation has taken hold. Driven by modern climate perceptions, local misconceptions that "greener is cooler," and commercialized tourism services offering tree-planting packages for birthdays, anniversaries, and Buddhist merit-making, massive afforestation has occurred. Government agencies, private entities, and tourists have introduced over **6,000 non-indigenous trees annually** across **more than 9,333 acres** of the property zone.

This unmonitored biological invasion introduces deep-rooting species that cause root-pitting, mortar washout, and structural cracking in ancient brick monuments. Simultaneously, artificial lawn and sprinkler installations (e.g., at Dhammayangyi Temple) increase microclimatic humidity, accelerating moss and algae growth on historic masonry. Transforming the copper-red plain into a "colorful" green landscape compromises the visual authenticity and Outstanding Universal Value (OUV) of the property.

Research Question: How do current heritage management planning systems and legal frameworks fail to regulate biological invasions driven by socio-religious practices, and how can holistic conservation frameworks (such as the Burra Charter) be operationalized to balance living cultural practices with structural preservation?

2. Approach and Method

This research uses an interdisciplinary methodology combining diachronic landscape analysis, physical diagnostics, and regulatory policy review across Pagan:

- **Diachronic Spatial Mapping:** Integrating historical epigraphy, 1855 watercolor surveys, 1907–1908 topographical surveys, 1954 aerial photography, and 2024 satellite/drone geomatics to measure long-term land-cover transformations and map the spatial density of non-native species relative to monument clusters.
- **Botanical and Physical Biodeterioration Diagnostics:** Cross-referencing **28 indigenous plant species** identified in 11th–13th-century stone inscriptions (e.g., *Borassus flabellifer*, *Acacia leucophloea*, *Tamarindus indica*, *Azadirachta indica*) against modern non-native introductions (*Delonix regia*, *Tabebuia*, *Cassia fistula*). Field inspections utilize non-destructive testing (NDT), root-penetration depth mapping, and microclimatic humidity monitoring to assess structural pitting, vault cracking, and surface bio-reclamation (moss/algae).
- **Legal and Policy Framework Audit:** Reviewing national heritage legislation—including the *Law for Protection and Preservation of Cultural Heritage Regions No. 20/2019*, the *Protection and Preservation of Ancient Monuments Law 2015*, and the *2019 Pagan Management Plan*—against international charters, specifically evaluating the applicability of the ICOMOS Burra Charter.

3. Key Findings and Arguments

Key Empirical Findings (The Field Evidence)

- **Historical Aridity (Epigraphic Baseline):** Epigraphic inscriptions (1102 CE and 1277 CE) alongside 1855 watercolor surveys, 1907 maps, and 1954 aerial photographs prove Pagan was historically a non-green, copper-red arid plain.
- **Quantified Invasion Scale:** Over 6,000 non-indigenous trees are planted annually across 9,333+ acres of the World Heritage property zone.
- **Disruption of Native Ethnobotany:** Modern greening replaces 28 epigraphically verified native functional species (*Borassus flabellifer*, *Acacia leucophloea*) with invasive non-natives (*Delonix regia*, *Tabebuia*, *Cassia fistula*).
- **Physical Deterioration Vectors:** Deep root systems act as mechanical wedges inside vaulting joints, while temple lawn sprinklers artificially raise microclimatic humidity, triggering moss and algae colonization.
- **Legislative Void:** *Law No. 20/2019* and the *Protection and Preservation of Ancient Monuments Law 2015* lack explicit provisions or bylaws governing biological colonization or invasive species management.

Core Academic Arguments (The Thesis & Implications)

- **Compromise of Outstanding Universal Value (OUV):** Unchecked afforestation is an unrecognized biological threat that directly degrades the visual authenticity, historic sightlines, and OUV of the cultural landscape.
- **Misaligned Cultural & Tourism Drivers:** Well-intentioned religious merit-making and tourism packages inadvertently drive structural destruction when operating without biological conservation oversight.

- **Systemic Policy Failure:** Reactive, surface-level weed pulling is structurally ineffective; biological hazard control must be legally embedded into core and buffer zone management frameworks.

4. Relevance for Heritage Management Planning Practice

By evaluating Pagan's ecological and regulatory shifts, this study offers actionable recommendations for heritage management planning systems in tropical environments:

- **Operationalizing the Burra Charter Framework:** Site management systems should adopt Burra Charter principles, mandating that the cultural significance and historical context of a landscape be fully understood before any environmental interventions or greening projects are approved.
- **Enacting Species-Specific Regulatory Bylaws:** Legislative bylaws under Law No. 20/2019 must be updated to legally define and protect Pagan's historic vegetation profile. A legally binding "Pagan Native Flora Inventory" based on the 28 epigraphically verified species should be established, strictly prohibiting non-native introductions within core and buffer zones.
- **Re-channeling Responsible Tourism and Merit-Making:** Rather than banning religious tree planting, management plans must establish "responsible tourism" guidelines. Merit-making practices should be redirected away from sensitive monument zones toward designated ecological restoration buffer areas, exclusively using vetted native dry-zone species.
- **Integrated Spatial & Biological Monitoring:** Management authorities must incorporate routine drone geomatics, NDT physical diagnostics, and microclimatic monitoring into daily site maintenance protocols to detect and neutralize root penetration before irreversible structural loss occurs.

Abstract ID: #227

Chiara Ronchini

Climate Adaptation Across Borders: Governance Lessons from The Great Spa Towns of Europe

Remote Oral Presentation

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Climate Adaptation Across Borders: Governance Lessons from The Great Spa Towns of Europe (GSTE)

Extended Abstract

Context and Question

Serial transnational World Heritage properties face a distinctive challenge: climate risks manifest locally, but their impacts are collective. For the GSTE – eleven spa towns across seven countries but one World Heritage property – this vulnerability is acute, affecting the shared attributes that express its Outstanding Universal Value (OUV): spa architecture, therapeutic landscapes and the continuing spa function, all already affected by climate change.

What governance and management conditions enable a serial transnational World Heritage property to coordinate climate risk assessment and adaptation – and where do the real constraints lie?

Approach and Method

Management of the GSTE is undertaken through a two-tier system: a Property Management Plan, consisting of a shared monitoring framework and action plan setting collective priorities, complemented by local management plans for each component town. Together these function as an integrated, nested planning system. Climate adaptation was not extensively addressed in the current Property Management Plan; its absence was identified as a priority gap and embedded as a cross-cutting action for the revised Plan. Yet institutional structures of this kind can set collective priorities but cannot compel uniform action: engagement across the eleven towns is inevitably uneven, shaped by differing political contexts, national frameworks and local capacity.

Two programmes are under way. In Baden bei Wien (Austria), the Climate Vulnerability Index (CVI) was tested through a participatory workshop in October 2025. The CVI intersects documented heritage values and attributes with climate threat scenarios to identify priority risks and adaptive strategies. In parallel, the Preserving Legacies programme is being applied in Bath (UK), Spa (Belgium) and Vichy (France) through capacity building and community workshops in 2026. Both pilots were initiated with willing towns and external project funding – a deliberate strategy of testing methodologies where conditions are favourable and building the evidence base

for scaling up, recognising that funding for climate action across the property remains project-based rather than systematic.

Both methodologies share the same underlying logic: starting from heritage attributes and values, applying robust climate science and data, identifying hazards and impacts, and validating findings with stakeholders. Crucially, both are embedded within the GSTE's shared management system, which provides the institutional capacity to read component-level findings collectively and translate them into property-wide strategy.

Key Findings and Arguments

Outcomes from Baden bei Wien confirm high vulnerability of the property component's OUV alongside substantial but not yet fully activated adaptive capacity. Importantly, this vulnerability was assessed as leading to community vulnerability from the anticipated impacts on the heritage attributes. Baden bei Wien was selected as a pilot precisely because its attributes – mineral springs, spa architecture, therapeutic landscapes – are shared expressions of the OUV across all 11 towns. A key insight from the CVI process is that knowledge of climate effects upon one component may be transferable to, and inform the management of, the wider property: if one component demonstrates significant climate vulnerability, the series as a whole is implicated.

The Preserving Legacies workshops are generating early insights into community perceptions of climate risk and locally specific adaptive responses across three further component towns.

Two property-wide participatory workshops – involving all Mayors, States Parties heritage focal points, Site Managers and the GSTE Youth Forum – are structured around climate risk identification: the first in April 2026, the second planned for December 2026. These operationalise the GSTE's participatory governance model, translating findings into collective priorities in the revised Property Management Plan, while enabling cumulative impact assessment across the serial property.

A significant milestone was reached at the GSTE workshop held in Vichy in April 2026, which brought together 33 participants including Mayors, IGC members and Site Managers from all 11 towns, alongside a parallel online GSTE Youth Forum session. The first collective property-wide hazard-attribute risk mapping confirmed that the Therapeutic Spa Landscape is the most consistently at-risk attribute, exposed simultaneously to extreme heat, drought and flooding. Mineral Springs emerged as a critical unknown: divergent assessments across towns point to a shared scientific gap and make joint research an urgent property-wide priority. Notably, the Youth Forum's independent assessment converged with the in-person group's findings, demonstrating the value of inclusive, multi-generational governance in building shared understanding of collective risk.

In response, the GSTE has recently established a Hydrogeology Working Group of scientific experts, specifically to address this gap and deepen understanding of climate impacts on the mineral springs across the property. It is also anticipated that the revised Property Management Plan will include a dedicated action on addressing climate

vulnerability across the property – a formal commitment embedding climate adaptation within the GSTE's management cycle, and a significant step in moving from dialogue to implementation.

Relevance for Heritage Management Planning Practice

The GSTE case speaks directly to the session's five dimensions. On governance: the property's participatory model – involving Mayors, States Parties, Site Managers and Youth Forum in shared decision-making – demonstrates how inclusive governance can function at transnational scale. On flexibility and adaptive management: the nested planning system enables the management cycle to absorb new findings from climate pilots and translate them into revised priorities. On context: the property-wide climate risk mapping illustrates the value of reading cumulative impacts collectively, rather than site by site. On capacity: the two pilots are building institutional knowledge and shared tools that can scale across the network. On strategy: the anticipated PMP action on climate vulnerability provides the strategic link between vision and implementation.

The GSTE experience suggests that coordinating climate adaptation at serial transnational level requires methodology, but also the governance and management infrastructure surrounding it. A management system capable of coordinating action across borders offers a pathway for translating site-specific findings into property-wide strategy. The main challenges lie in sustaining coordinated monitoring across different national frameworks, securing consistent funding beyond individual projects, and navigating the political complexity of scaling up from willing pilot towns to collective property-wide action. Central to this is the coordination role of the Secretariat – essential for driving the process forward yet requires sustained resources and political commitment across all member states.

Just as vulnerability is shared across components, so is adaptive capacity: when one component develops and implements effective responses, the management system provides the infrastructure to translate those lessons across the property as a whole. Climate change is a global phenomenon, but its impacts are local – and it is precisely in the strength of the network, in shared ownership, joint action and collective learning, that the GSTE's resilience lies. This model offers transferable principles for other serial and transnational properties navigating collective vulnerability and distributed governance.

Keywords: serial transnational heritage; climate adaptation; participatory governance; cumulative impact; World Heritage management; adaptive management; nested planning

Abstract ID: #258

Douglas Evans

Fire Risk Management Planning for Cultural Heritage: Current Challenges and the new ICOMOS Fire Guidelines as a Framework for Practical Action

Panelist: Dimension 2 Flexibility and Adaptive Capacity

Session S1 - Heritage Management Planning Systems: Challenges, Lessons Learned and Potential New Approaches

Title: Fire Risk Management Planning for Cultural Heritage: Current Challenges and the New ICOMOS Guidelines as a Framework for Practical Action

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Abstract:

Fire remains one of the most destructive and irreversible threats to cultural heritage worldwide, and yet heritage management plans too often fail to address fire risk effectively. Analysis of fire events across diverse heritage contexts, from historic urban ensembles and places of worship to archaeological landscapes and museum collections, consistently reveals three recurring failures: elevated and poorly understood site-specific risks, inadequate fire risk management planning, and deficiencies in emergency response. Despite a growing body of international guidance, including UNESCO's Fire Risk Management Guide (2024), NFPA 909 and 914, and CFPA Europe's guidelines for historic buildings, fire risk management plans for cultural heritage sites remain inconsistently developed, frequently prescriptive, difficult to implement, and rarely updated. Plans are frequently produced as compliance documents rather than living tools for risk reduction, and they commonly fail to integrate heritage values, community knowledge, or emergency responder capabilities and input. These are the same shortcomings Session 1 has identified in heritage management planning more broadly.

The limitations of existing guidance run deeper than inconsistent application. The guidance available is primarily technical: it advises on how to manage fire risk, with very little about where fire risk management decisions for cultural heritage should logically flow from. UNESCO (2024), NFPA 909 and 914, and the CFPA Europe guidelines all begin from a fire engineering framework into which heritage considerations are incorporated. For cultural heritage sites, and particularly for living heritage communities where knowledge, authority, and practice are inseparable from the place being protected, that ordering is the wrong way round. Plans that begin from technical frameworks and add cultural context afterwards will lack the legitimacy needed for implementation. The problem is not only technical; it is one of framework.

The new 'ICOMOS Guidelines for Protecting Cultural Heritage from Damage and Loss Caused by Fire' directly address these shortcomings. They represent a paradigm shift: from fire engineering applied to heritage, to heritage conservation applied to fire. Developed collaboratively by four ICOMOS international scientific committees, the Guidelines establish twelve principles that together reframe fire risk management as a continuous, risk-informed cycle encompassing awareness, assessment, planning, implementation, monitoring, and updating. The Guidelines do not replace existing technical guidance; they provide the conservation framework within which that guidance should be selected and applied. The starting point is heritage significance, not fire engineering.

Several principles mark substantive departures from current practice. Principle 4 places heritage significance, authenticity, and integrity as the foundation of fire risk management, ahead of technical requirements; no existing guidance makes this the logical first step. Principle 6 applies performance-based assessment to heritage conservation outcomes as well as life safety. Principle 8 gives Indigenous and traditional knowledge formal standing as primary evidence in risk assessment and planning, alongside written documentation. Principle 9 addresses fire vulnerability during construction, rehabilitation, and restoration projects, a period of acutely elevated risk that much existing guidance treats only in passing.

Principles 3 and 8 together address one of the most persistent failures in current practice: the exclusion of community knowledge from fire risk management planning. In living heritage communities, knowledge of a site's fire character, its vulnerabilities, and the consequences of fire for ongoing cultural practice is held collectively. It is transmitted through relationships, oral tradition, and stewardship rather than written records. Standard fire risk management frameworks, built around written documentation, credentialled experts, and fully accountable processes, carry assumptions that do not apply in high-context societies, where knowledge and authority operate through relationship and practice rather than formal systems. The ICOMOS Guidelines address this directly by positioning cultural context as the foundation from which fire risk management strategies should emerge, rather than as a consideration layered over an existing technical framework. They open a practical path forward for communities whose ways of knowing are not primarily documentary. This is new ground in the international field.

Critically, the Guidelines move beyond generic checklists to offer specific and practical direction. They ground fire strategies in the significance, authenticity, and integrity of each site; mandate meaningful engagement with emergency responders, local communities, and Indigenous knowledge holders from the outset; and require performance-based, outcome-focused approaches that accommodate the constraints and values of cultural heritage both tangible and intangible.

Most significantly for heritage management practice, the Guidelines introduce a new, more flexible and implementable model for fire risk management planning, one that is site-specific and yet adjustable, and designed for regular review rather than one-off production. Principle 12 integrates this cycle explicitly with broader conservation management planning, including World Heritage nominations, periodic reporting, and state of conservation processes. Structurally, it functions as a thematic module within a larger management system: regularly reviewed, generating prioritised action plans, and anchored to each site's strategic conservation objectives. That approach aligns directly with the modular, layered planning system Session S1 proposes as a prototype for more adaptive and implementable heritage management.

This model is applicable across the full spectrum of heritage typologies Session S1 addresses, from fragile archaeological sites to historic urban areas facing complex governance and resource constraints. The persistent gap between fire risk management planning intention and on-the-ground fire risk reduction is not primarily a technical failure. It is a framework failure. This paper argues that the new ICOMOS Guidelines on Fire provide the principled framework and the practical tools needed to begin closing it.

Keywords: fire risk management, cultural heritage, ICOMOS Guidelines, living heritage, high-context societies, performance-based approach

Abstract ID: #304

Lee Hwajong

Preliminary Study on GIS-based Spatial Analysis Against Climate Change within the Process of Archaeological Heritage Management Planning

Poster Presentation

GIS Based Spatial Analysis for Climate Responsive Archaeological Heritage Management Planning

A Preliminary Study of Tangchundaeseong Fortress

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Keywords: *Tangchundaeseong Fortress; climate change; heritage management planning; GIS spatial analysis; MaxEnt*

Context and Research Question

Climate change is increasing the frequency and intensity of extreme rainfall, creating growing risks for immovable cultural heritage. Stone-built fortifications on steep mountain slopes are particularly vulnerable because rainfall interacts with topography, drainage, foundation stability, and backfill loss, eventually leading to wall deformation or collapse. In the Republic of Korea, management practice still relies largely on periodic inspection and repair after damage. A shift is therefore needed from reactive intervention toward preventive management that can identify vulnerable sections before collapse occurs.

Existing climate-risk assessments for cultural heritage in Korea have two important limitations. Their spatial units are often too coarse to distinguish individual wall sections, and risk-factor weights frequently depend on qualitative expert judgement. Presence-only spatial prediction offers a response because it is designed for situations in which confirmed occurrence data are available but reliable absence data are difficult to establish. In heritage-disaster records, the absence of a recorded collapse does not necessarily indicate that a location is safe.

This study asks whether GIS-based spatial prediction using observed collapse data can identify susceptible sections of stone-built fortress walls and translate the outputs into practical management priorities. Tangchundaeseong Fortress in Seoul was selected as the application site. It forms part of the historic capital defence system and is associated with the World Heritage nomination process for the Capital Fortifications of Hanyang. Its mountainous stone-built sections are suitable for testing a spatially differentiated approach to rainfall-related collapse susceptibility.

Approach and Method

Because Tangchundaeseong itself provides too few precisely located collapse cases for model training, the study separated the training dataset from the application site. Records of rainfall-induced collapse were collected from nine comparable stone-built mountain fortresses in Korea. Twelve collapse sections representing thirteen recorded events were divided into 5 x 5 m spatial cells, producing 328 presence cells. Background conditions were represented by cells within a 30 m corridor along the fortress walls.

Eight terrain and hydrological variables were generated from a 1:5,000 digital elevation model: slope, slope length, planform curvature, specific catchment area, Topographic Wetness Index (TWI), Stream Power Index (SPI), Topographic Position Index (TPI), and Terrain Ruggedness Index (TRI). They represent processes through which runoff, water concentration, erosion, and terrain position may influence wall stability. Correlation analysis and variable-importance screening retained five variables for the final model: TPI, TRI, SPI, TWI, and planform curvature.

A Maximum Entropy model, or MaxEnt, was used to compare the environmental characteristics of observed collapse cells with the surrounding background environment. Model performance was evaluated through three complementary procedures: a 20% presence test, comparison with 99 null models generated from randomly selected pseudo-presence locations, and fortress-level cross-validation in which each fortress was excluded from training in turn and predicted using the remaining sites. The third procedure was essential because the objective was not simply to reproduce known collapse locations, but to test whether relationships learned from one group of fortresses could be transferred to another heritage property.

Key Findings and Arguments

The final model showed meaningful discriminatory performance. The mean AUC of the 20% presence test was 0.740. The 99 null models produced a mean AUC of 0.516, and none exceeded the real model, indicating that its performance was unlikely to have arisen by chance ($p = 0.01$). Fortress-level cross-validation produced a mean AUC of 0.684 and a pooled AUC of 0.718. Useful discriminatory capacity was therefore retained when prediction was transferred to fortresses excluded from model training.

Among the retained variables, TPI was the strongest predictor, accounting for 60.5% of percent contribution and 36.4% of permutation importance. Higher susceptibility was associated particularly with wall sections located on relatively elevated ridges and projecting terrain, while TRI also indicated increased susceptibility in locally rugged terrain. These patterns show that rainfall-related collapse susceptibility is not distributed uniformly along fortress walls but is structured by identifiable topographic conditions.

The trained model was projected onto 7,252 cells along the stone-built sections of Tangchundaeseong. The mean predicted value was 0.531, and the upper 10% threshold was 0.749. Relatively high values were concentrated along upper ridge sections toward Bukhansan and in areas where wall alignments change direction. The upper 10% of predicted values was used as a practical basis for proposing priority management sections.

These outputs should not be interpreted as absolute probabilities of future collapse. The model represents terrain-related susceptibility rather than a complete climate-risk assessment. It does not yet incorporate wall construction, wall height, backfill condition, repair history, or rainfall intensity as an exposure variable, and the Tangchundaeseong projection has not yet undergone field validation. Nevertheless, the study demonstrates that recorded damage data can be converted into a quantitative and spatially explicit form that supports management prioritisation.

Relevance for Heritage Management Planning Practice

The main relevance of this study lies not simply in producing a GIS susceptibility map, but in showing how spatial prediction can be incorporated into the heritage management-planning process. Conventional management plans often document existing conditions and establish periodic actions. Climate change, however, requires systems capable of revising priorities as environmental pressures and evidence change. GIS-based susceptibility modelling can support this transition by identifying sections requiring closer inspection, directing limited monitoring resources, and providing a reproducible basis for prioritising preventive intervention.

In relation to the five dimensions proposed for Session S1, the study is particularly relevant to Flexibility and Adaptive Capacity, Contextual Systems Thinking, and Implementation Capacity. First, spatial susceptibility assessment can strengthen adaptive capacity by allowing management priorities to be updated as new damage records, environmental data, or monitoring results become available. The model can thus operate within a recurring cycle of assessment, prioritisation, monitoring, and revision rather than treating a management plan as a static document.

Second, the approach contributes to Contextual Systems Thinking by treating wall collapse not as an isolated material failure but as the outcome of interactions between the heritage structure and its surrounding terrain and hydrological environment. The spatial unit of management consequently extends beyond the masonry itself to the landscape processes that affect its stability.

Third, the study addresses Implementation Capacity by translating analytical results into management-relevant spatial priorities. The proposed priority sections at Tangchundaeseong demonstrate how predictive analysis can support inspection schedules, targeted monitoring, field verification, and preventive maintenance. The model does not replace professional judgement or field investigation. It provides a quantitative decision-support layer that helps heritage managers determine where limited resources should be directed first.

Climate-responsive heritage management requires more than adding climate change as another risk category within an existing plan. It requires systems that incorporate updated evidence and translate it into spatial priorities and preventive action. The Tangchundaeseong case suggests that GIS-based presence-only prediction can help move archaeological heritage management from reactive repair toward a preventive, adaptive, and evidence-based approach.

Abstract ID: #323

Horjan Goranka

A Value-Based Management Model for Archaeological Sites

Panelist: Dimension 3 Contextual Systems thinking

A Value-Based Management Model for Archaeological and Heritage Sites

From International Standards to an Implementable Management Plan

Session 1

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Jadran Antolović is a Croatian heritage management expert with a background in law and economics and a professor of project, cultural and public-sector management. Over 39 years he has held senior posts at the Croatian Ministry of Culture, including Assistant Minister, State Secretary and Deputy Minister, and has led heritage management, revitalisation and tourism projects in Croatia and internationally with UNESCO, ICOMOS Croatia and public institutions. He has authored several books on heritage protection, economic valuation and cultural management.

Keywords: heritage management planning; value-based approach; adaptive management; scalability; stakeholder engagement; risk and climate resilience

Context and question

Heritage sites are managed today under converging pressures: unmanaged visitor flows, fragmented governance and ownership, accelerating climate risk, and thin or absent data. The international community has responded with an extensive corpus of guidance from UNESCO, ICOMOS, ICOM and ICCROM. The problem is not the absence of standards but the difficulty of applying them.

Practice in Croatia and comparable contexts shows a persistent pattern the authors term fragmentary management: some standards are implemented, others silently omitted, and the gaps filled with improvisation. This is rarely unwillingness. The guidance is now so extensive that it is seldom read in full, and managers with limited staff experience it as an unattainable standard rather than a usable tool. Fragmentary management is therefore a structural risk in itself, compounding precisely where capacity is weakest.

A second problem is asymmetry of use: the values that attract visitors are eroded by their presence, while other sites face the opposite difficulty of underuse and financial fragility. Both conditions threaten the values that justified protection.

The paper therefore asks: how can the international corpus be converted into a planning instrument that is scalable across very different institutional capacities and oriented towards implementation rather than formal completeness?

Approach and method

The paper derives from *Upravljanje baštinskim lokalitetima* (Managing Heritage Sites), a handbook prepared by the authors as an operational tool for practitioners. Its method was a systematic review and synthesis of the standards corpus into a single framework. Artificial intelligence was used to process and cross-map the sources, with expert validation at every stage — reported here as a secondary finding, since reconciling overlapping international instruments would otherwise have been slow and laborious.

The framework rests on a value-based model. When a site is legally protected, three values are fixed—heritage, ownership and social—and their preservation enables three further values: educational, economic and developmental. The six are interdependent rather than hierarchical, and each should be elaborated through required information, tools, performance indicators and primary stakeholders.

Making a successful plan is phased: a preparatory phase, facilitated workshops and structured inter-phase data collection. Stakeholders' involvement is crucial - operational team and an advisory body with a RACI matrix assigning responsibility for every task. Data governance rests on a shared Data Room, a Data Gap Log and a minimum dataset of ten questions permitting a first iteration even where documentation is missing.

Integrated instruments include zoning of core area, buffer zone and wider setting; a stakeholder power-interest matrix with four models of participatory governance; a four-level condition scale; a probability-impact risk matrix with climate vulnerability assessment; Heritage Impact Assessment thresholds and Historic Urban Landscape tools; four-dimensional carrying capacity with Limits of Acceptable Change; SMART objectives with monitoring cycles; and financial sustainability models.

Key findings and arguments

First, systematisation is itself a management intervention: one structured view of the standards that apply reduces fragmentary implementation more effectively than issuing further guidance.

Second, value identification must be plural. Where values are established through a conservation lens alone, plans describe physical fabric well but fail in implementation: too few stakeholders have any stake in them.

Third, carrying capacity is multidimensional. Physical and conservation, ecological, perceptual and managerial capacity each impose different limits, and the binding constraint differs by zone. Limits of Acceptable Change reframe the question from how many visitors a site can hold to which changes are acceptable. High visitation raises short-term revenue while degrading the authenticity that attracts the visitors who stay longest and spend most.

Fourth, financial sustainability is a precondition of conservation, not an administrative annex. A site that cannot fund its mission cannot retain expertise or maintain fabric, however well protected in law. The framework argues for diversification across at least five sources, a reserve covering six to twelve months of core costs, and alignment of funding with conservation priorities; Croatian experience with heritage rent illustrates one mechanism by which beneficiaries contribute.

Fifth, ownership structure is the strongest single predictor of management difficulty, and unresolved property questions block every other measure.

Sixth, adequacy outweighs perfection. A manager who can show measurable progress against identified values after five years is more successful than one who produced a flawless plan that was never implemented. The plan is a living document, improved with each monitoring and revision cycle.

Finally, ethics constitutes a layer above the legal minimum. The ICOM Code of Ethics adopted in June 2026 devotes one of its five chapters to governance, asserting professional autonomy, resistance to financial and political pressure, and the duty of governing bodies to secure resources for long-term operation. This

emphasis on institutional permanence is decisive for heritage sites, which are demanding to maintain and where continuity of care is indispensable.

Relevance for heritage management planning practice

The framework offers a scalable planning template: the level of protection changes the scope of obligation, not the logic of management. For many sites the plan is a voluntary instrument; for nationally protected properties it requires statutory conservation approval; for World Heritage properties it follows the fuller protocol of the Convention and Operational Guidelines. In every case it must be proportionate to the capacity of the managing body, favouring a realistic number of objectives over formal completeness.

Three entry points support this. The minimum dataset allows under-documented sites to begin immediately. An annex of evaluation criteria enables self-assessment and external review by ministries and funders. Three reading pathways—sequential, problem-based and reference—let managers use the framework according to their situation rather than reading it whole.

The approach is reflexive about its own risk: a long methodological document can discourage the small institution it is meant to serve, so guidance on what may reasonably be omitted is part of the method. The contribution lies in closing the distance between international guidance and daily practice, especially in resource-constrained settings.

Abstract ID: #344

Thuy-Dung Tran

Reconciling Urban Heritage: Local Perceptions and Management Planning Systems in Da Lat's Post-colonial Landscape

Remote Oral Presentation

Reconciling Urban Heritage: Local Perceptions and Management Planning Systems in Da Lat's Post-colonial Landscape

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Session 1: Heritage Management Planning Systems: Challenges, Lessons Learned and Potential New Approaches"

Da Lat, a highland city built at the beginning of the twentieth century, possesses a unique urban structure where French colonial architecture integrates harmoniously into the mountainous topography and cool climate of Lang Biang plateau. An artificial body of water created in the middle of the city, Xuan Huong Lake, witnesses numerous historic urban master plans, starting with Ernest Hébrard's 1923 plan to Thierry Hau's 2012 Master Plan and anchors the heritage axis of 2045 Master Plan. Despites its rich context, current heritage management in Da Lat faces monumental challenges. Conservation efforts struggle against the conflict between rigid preservation models typical of post-colonial cities, which freeze monuments as static physical artifacts and the evolving of the living experiences and social realities of the residents' days to days interact with these urban structures. Indeed, Da Lat is widely celebrated as a major tourist destination, yet this popularity breeds overtourism and uncontrolled urban growth, leading to natural disaster vulnerability and threatening the protection of the city's distinctive character. On the other hand, the local community daily life fluctuates between two seasonal states consisting of profound tranquility on normal days and intense stress during peak tourist seasons. Furthermore, local heritage management overlooks these living and seasonal realities, offering little-to-none guidance on adapting historical properties for current practical usage. Unable to meet evolving functional strains under intense tourism pressures, many heritage structures suffer alterations, eventual abandonment, and demolition. This dual impact of unguided local adaptation and management oversight during the seasonal differences driving an emergency research problem. Hence, this research addresses these questions:

- How people appropriate Da Lat urban heritage spaces during these contrasting situations? Or how their impressions, emotions and cognitions regarding heritage structures transform between different seasons?
- Could these appropriations guide new approach for heritage management planning of Da Lat to foster social relevance and physical sustainability within this challenging contemporary context?
- Which lessons learned for the tangible and intangible heritage preservation can be applied for other post-colonial city under social, economic and environmental threats?

The study adopts a decolonial framework that shifts the conservation focus away from preserving the rigid, static purity of French colonial monuments. It conceptualizes heritage as a living cultural process, the intangible, emotional connections formed by the local population. The research employs a mixed-methods designed to decode both the tangible urban and architectural heritage and the intangible visual impression and cultural narratives of the city.

Firstly, we quantify the residents and tourists' visual preferences surrounding Xuan Huong Lake. Historical photographs are mapped to contemporary views. By applying image segmentation technique, the research quantifies the visual composition then categorized them into three distinct landscape: dominant architecture, architecture in harmony with nature, and obscured architecture. It then matches with survey to evaluate public aesthetic preferences and local imaginaries. These visual evaluations demonstrate that both residents and tourists prefer landscapes where architecture is harmoniously integrated with surroundings pine forest and waterscape. This suggests that the aesthetic value of colonial buildings in the visual preference does not exist in isolation, but is deeply connected to its natural surrounding.

Secondly, we explore the emotional attachment of resident on Da Lat's heritage, providing the qualitative depth needed to explain the visual preferences identified previously. This involves a content analysis of thirty-seven local poems and songs during the period of 1938–2023 to extract and categorize key terms under themes like landscape, nostalgia, romance. Semi-structured interviews are conducted with local heritage experts, architects, and residents, comparing historical-current images and reflecting on iconic musical pieces. This subjective exploration underscores how poetry and music actively construct the community's collective memory and give meaning to the physical structures. This approach demonstrates that heritage conservation cannot be treated merely as technical zoning. Instead, it must be understood as an interactive process where the tangible built environment is constantly reinterpreted and sustained by the community's lived experiences.

Finally, the study reveals several tensions that challenge existing preservation practices. First, it exposes a major friction between global heritage standards, such as those derived from the Venice Charter of 1964, and subjective local preferences. While official frameworks prioritize physical authenticity and isolating monuments, the Da Lat community deeply values a holistic, ecological harmony where colonial villas are integrated with the natural landscape, particularly the iconic pine forests and artificial lake. Furthermore, visual impression and cultural narratives reveal that colonial architecture is rarely appreciated as is but be part to a nostalgic backdrop to express romance, adoration, and longing. This reveals that local heritage connection is highly seasonal. While the city offers mental restoration and social interaction on peaceful days, peak tourist seasons bring extreme overcrowding and commercialization, turning these spaces into high-stress zones that displace local residents emotional states. Current management systems fail to address this seasonal displacement, alienating locals from their own heritage core.

These insights reveal critical flaws in Da Lat's current planning system under the 2030 Master Plan. While it protects over fifteen hundred colonial villas, it relies strictly on rigid parameters like height, construction density, and setbacks. This technocratic approach ignores seasonal tourism dynamics, the ecological depletion of the natural landscape, and the emotional and coping strategies of residents facing rapid urbanization. The findings supply vital empirical evidence to support Vietnam's Heritage Law of 2025, which encourages digital transformation and community participation suggesting urban planners move beyond static criteria to incorporate dynamic visual assessments and emotional mapping as mandatory planning components.

For future potential, this research opens up a breakthrough path for preserving collective memory by digitizing local songs, poetry, historical photos, and linguistic narratives. This forms the scientific foundation for developing web-based GIS system to create historical and emotional mapping where community can participate to the process of preserve the current heritage core

through their memories, impressions and emotions. Mapping these emotional anchors enables a humane, multi-dimensional management system supporting heritage conservation and leveling Da Lat's urban heritage to its status as a UNESCO Creative City of Music.

Keywords: Local Perceptions, Planning Systems, Intangible Heritage, Post-colonial, Vietnam.

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Abstract ID: #394

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Bottom-up Governance Models in European Mountain Fortresses: New Participatory Approaches in the Preparation of a Transnational Serial Nomination

Panelist: Dimension 3 Contextual Systems Thinking

Bottom-up Governance Models in European Mountain Fortresses: New Participatory Approaches in the Preparation of a Transnational Serial Nomination

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Keywords: bottom-up heritage governance, mountain fortresses, local communities, participatory heritage management, transnational serial nomination

Context and research question

Participatory and community-based approaches have become increasingly important in contemporary heritage governance. However, participation is still frequently understood as consultation, in which local communities are invited to comment on decisions formulated by public authorities or heritage institutions. Less attention has been given to situations in which small local communities progressively develop their own heritage-management capacity, mobilize external resources, establish institutional partnerships and eventually initiate transnational cooperation.

This paper examines this process through the proposed transnational serial World Heritage property of four early modern European mountain fortresses: Srebrna Góra Fortress in Poland, Königstein Fortress in Germany, and Fenestrelle and Rocca d'Anfo fortresses in Italy. Since 2020, the initiative has focused on supporting small mountain communities (500–2,000 inhabitants) in their efforts to achieve recognition of the largest European mountain fortresses as World Heritage sites, generally with limited local resources and significant conservation, management and development challenges. Their legal, administrative and ownership systems differ, but they share the need to manage extensive fortifications and their surrounding historic landscapes while maintaining their social, cultural and economic relevance.

Srebrna Góra provides the 'origin case' for examining how long-term local heritage governance can develop into a transnational framework. The fortress was constructed as a Prussian military stronghold and forms part of the military and architectural heritage of the former German territories incorporated into Poland after the Second World War. Its contemporary management therefore involves the reinterpretation of historically difficult heritage. Post-war population displacement and the socialist political system limited civic participation, while German and Prussian heritage could be perceived through narratives of the former enemy. The subsequent local process of recognizing, protecting, interpreting and adaptively reusing the fortress demonstrates a gradual transformation of its social meaning and its integration into contemporary regional identity and European heritage discourse.

The process has developed over more than two decades. In 2002, Srebrna Góra established Poland's first cultural park, introducing a new form of active heritage protection and an institutional framework for local-government involvement in managing the historic town and fortress landscape. A municipal company was established to manage the fortress. In 2004, the fortress was recognized as a Historic Monument of Poland, the highest national form of heritage recognition. Between 2005 and 2013, five scientific conferences and publications strengthened research and professional knowledge. Between 2021 and 2024, major conservation works, supported by Norwegian funding and the Ministry of Culture, involved approximately EUR 13 million in investment. In 2022–2023, adaptive reuse introduced museum, hotel and restaurant functions. In 2025, the fortress was included on Poland's UNESCO Tentative List as part of the proposed transnational serial property.

The research question is therefore: how can a long-term, locally initiated heritage management system evolve into a transnational management model within the framework of a serial World Heritage nomination, and how can such a model strengthen the capacity of small mountain communities to protect and manage extensive and interpretatively challenging post-military heritage?

Approach and method

The study uses a qualitative case-study approach based on direct observation and participation in the heritage-management and nomination process around Srebrna Góra since 2020. Srebrna Góra is analyzed as the origin case, while Königstein, Fenestrelle and Rocca d'Anfo provide the wider comparative context for examining how different local management systems can cooperate within one serial property.

The analysis focuses on four dimensions: institutional capacity, knowledge production, stakeholder mobilization, and the integration of conservation with spatial and development planning. Attention is given to the transition from local heritage initiatives to multi-level and transnational governance.

Since 2020, the four components have developed regular cooperation through monthly meetings, online exchanges and on-site workshops. A common cooperation and management framework is based on joint research, coordinated promotion of the serial property, organizational and expert support for individual components, and regular international workshops. These workshops expand and exchange professional knowledge in conservation, interpretation, tourism, landscape management and spatial planning. The framework does not seek to standardize individual management systems, but connects them through shared objectives, continuous knowledge exchange and coordinated activities, creating a multi-level and transnational governance model for an extensive European heritage property.

Key findings and arguments

The principal finding is that heritage resilience is a cumulative process of governance capacity-building, rather than a function of financial resources alone. The Srebrna Góra

trajectory demonstrates how local protection, institutionalization, national recognition, research, external resource mobilization, adaptive reuse, tourism and education can progressively create the capacity required for international cooperation. Local actors have consequently moved from being recipients of externally defined conservation policies to becoming initiators, managers, knowledge producers and coordinators.

The establishment of the cultural park in 2002 was particularly important because it provided an institutional basis for integrating heritage protection with local-government responsibilities and landscape management. The subsequent municipal management structure connected conservation with everyday operational management. The fortress therefore became a testing ground for combining monument protection, spatial planning, tourism, education and local development.

Knowledge of production was essential. Five scientific conferences and related publications organized between 2005 and 2013 created a professional knowledge base before the UNESCO nomination process, supporting conservation, interpretation, adaptive reuse and comparative research. This demonstrates that knowledge production is a capacity-building mechanism of heritage governance.

Adaptive reuse connected conservation with contemporary community needs. Museum, hotel and restaurant functions introduced in 2022–2023 support the physical, social and economic relevance of the extensive fortifications. Their management also requires cooperation among heritage managers, municipal authorities, planners, conservation services, landowners and local communities. The cultural park provides an institutional basis for negotiating these interests within the wider mountain landscape.

The transnational dimension demonstrates the potential of serial governance as a capacity multiplier. The four fortresses operate within different legal, administrative and ownership systems, making a uniform management model neither possible nor desirable. Instead, cooperation enables exchange of local experience, professional knowledge, organizational and expert support for components with limited administrative capacity, and joint promotion of the fortresses as a shared European heritage phenomenon.

Cooperation also provides a framework for reinterpreting military heritage through shared European themes, including soldiers' everyday lives, engineering, logistics, technological innovation, scientific knowledge and mountain defense. This places difficult national histories within broader European processes while retaining each component's specific historical context.

Recent awards provide evidence of the outcomes of the long-term Srebrna Góra process: the Golden Certificate of the Polish Tourist Organization in 2025, followed in 2026 by the "Teraz Polska" emblem and the "Well-Maintained Historic Site 2026" award for cultural space and landscape revitalization.

Significance of heritage management planning

The principal contribution of the case lies in understanding participation as governance capacity-building rather than consultation, and in extending this concept from the individual heritage site to the serial property.

The serial nomination demonstrates that international cooperation need not be initiated by national institutions and subsequently implemented locally. Locally developed management capacity can drive transnational cooperation. In this case, Srebrna Góra provided the starting point for cooperation with three other small towns hosting mountain fortresses.

The proposed serial nomination should therefore be understood not simply as the aggregation of four heritage sites or a mechanism for recognizing shared Outstanding Universal Value. The nomination process itself can become a governance instrument: a durable framework for joint research, knowledge exchange, organizational and expert support, professional mobility, coordinated promotion and comparative learning.

The experience demonstrates that a transnational serial World Heritage nomination can function as a long-term governance-development process. International recognition becomes not the starting point of participation, but a later stage through which small local communities strengthen their capacity to conserve, adapt, interpret and communicate extensive European heritage.

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Ruoyu Wang

When Universal Frameworks Encounter Local Conflicts: Adaptive Heritage Management Addressing Tree-Rock Conflicts in Classical Chinese Gardens

Panelist: Dimension 5 Implementation Capacity

From General Heritage Value Frameworks to Local Decision-Making: Adaptive Heritage Management of Tree–Rock Conflicts in Artificial Rockeries of Chinese Classical Gardens

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1. Context and Research Question

Heritage management planning is typically grounded in the identification of heritage values, yet comprehensive value assessment does not necessarily translate into effective decision-making in specific conflict situations. For living heritage that remains in use, continues to evolve through natural processes, and is governed by multiple stakeholders, the key issue is not simply whether an element "has value," but how decisions should be made when heritage values, risks, and governance responsibilities come into conflict (UNESCO et al., 2026).

The relationship between vegetation and artificial rockeries in Chinese classical gardens presents a typical micro-level conflict: vegetation contributes to the formation of the rockery's Scenery-Realm, while its continued growth may also threaten the overall safety of the rockery. In practice, two main dilemmas can be identified. The first is value–risk misalignment, in which ordinary plants, despite lacking statutory protection status, may make significant contributions to Scenery-Realm Value. The second is the separation of responsibilities, in which ancient and famous trees and artificial rockeries fall under different management systems, requiring joint inter-departmental assessment when conflicts arise.

This study therefore asks: how can heritage values rooted in a specific cultural context be translated into a decision-making procedure that connects value identification, risk control, and governance action?

2. Approach and Framework

This study introduces Kai Gu's concept of Scenery-Realm Value as a localized operational approach to heritage value in Chinese traditional gardens. Rather than replacing established heritage value frameworks, it is used to identify the specific physical and experiential attributes that should be sustained in rockery interventions. The Scenery-Realm of a rockery is shaped not only by the rockery itself, but also by its integrated relationships with vegetation, water, architecture, and the visitor experience (Gu, 2018; Gu & Qian, 2021).

The study first employs literature coding and expert judgement to structure the Scenery-Realm Value of artificial rockeries, following the MECE principle, into three dimensions—Scenery, Realm, and Meaning—and 17 sub-indicators. A five-level scoring system combined with Analytic Hierarchy Process (AHP) weighting is then used to generate the Scenery-Realm Value index, V_mountain (Fig.1) (Saaty, 2008). Rather than assigning an absolute "total value" to the heritage asset, the index is intended to identify the value sensitivity of different rockery units.

Dimension	Category	Indicator
Scenery	S1 Scenery of the Rockery Itself	S1.1 Rockery-stacking Craftsmanship
		S1.2 Rockery Form
	S2 Relational Scenery	S2.1 Mountain–Water Relationship
		S2.2 Mountain–Vegetation Relationship
		S2.3 Mountain–Architecture Relationship
		S2.4 Mountain–Site Relationship
	S3 Sensory Phenomena	S3.1 Visual Phenomena
		S3.2 Soundscape
		S3.3 Olfactory Experience
Realm	R1 Sense of Realm	R1.1 Recognizability of Realm Character
		R1.2 Depth and Extension of Spatial Scale
		R1.3 Vividness and Immersiveness of Realm Experience
	R2 Sequence of Realm Experience	R2.1 Compatibility between Touring Behaviour and Realm Experience
		R2.2 Transformation of Realm Experience
Meaning	M1 External Literary Framing	M1.1 Correspondence between Literary Meaning and Site Framing
	M2 Internal Aesthetic Meaning	M2.1 Translation of Poetic-Pictorial Sensibility and Cultural Imagery
		M2.2 Dynamic Force (shi) and Vital Spirit

Fig 1. Indicator System and Quantification Framework for Rockery Scenery–Realm Value

On this basis, a Value–Risk–Governance (VRG) adaptive decision-making framework is developed. Plant-induced structural risk to the rockery, represented as R, is classified through the observation of deterioration phenomena (Fig.2). R is then combined with V_mountain to form a value–risk matrix, which is used to determine management priorities and intervention limits for vegetation-related conflicts (Fig.3). High-value, high-risk units are placed within a priority decision zone, where the objective is to minimise heritage value loss while meeting minimum safety requirements.

Structural Damage Type	Damage Manifestation
R1 Stone-block Instability Positional change	Inclination, rotation, or horizontal / vertical displacement of an individual stone or a local group of stones
R2 Stone Fracture Intra-block failure	Internal cracking of an individual stone or a local group of stones induced by mechanical loading
R3 Stress-induced Separation at Stone Interfaces Inter-block failure	Failure of the original mechanical contact between adjacent stones, manifested as separation of interlocking surfaces, debonding of mortar joints, and relative displacement or loosening of stones

Fig 2. Assessment Framework for Plant-induced Structural Risk to Rockeries

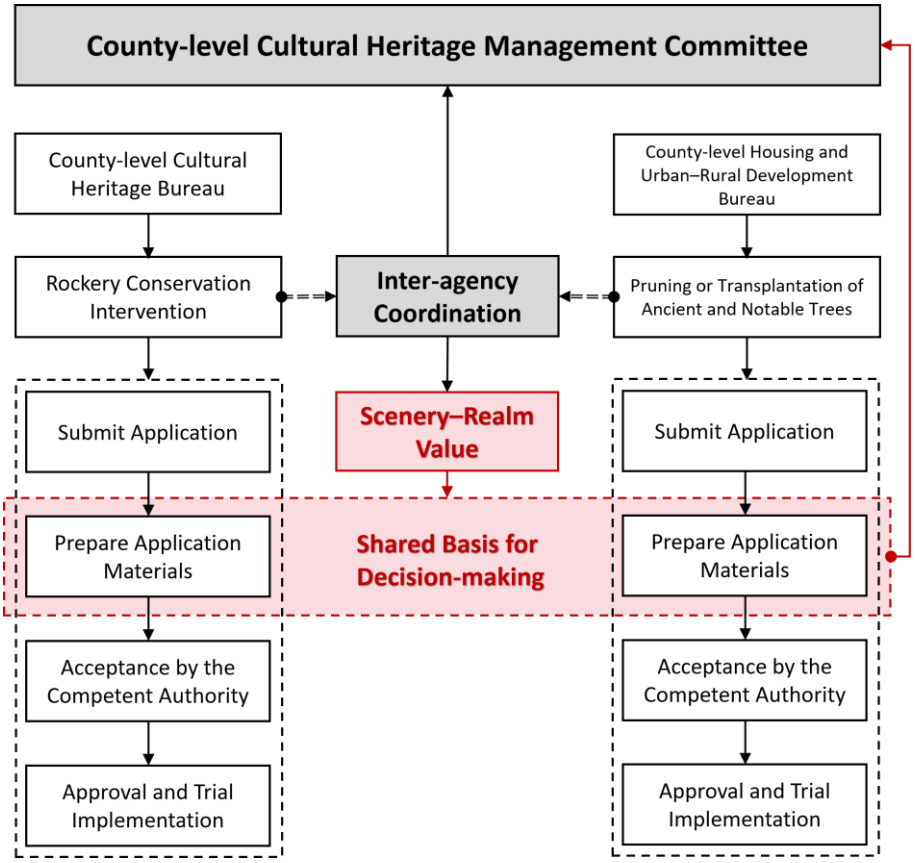


Fig 3. Value–Risk Matrix for Tree–Rock Conflicts in Rockeries

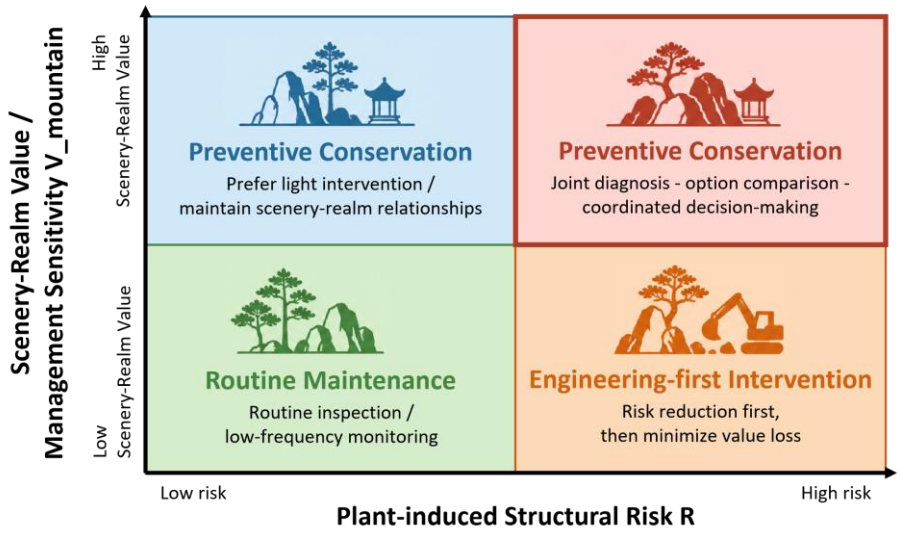


Fig 4. Inter-agency Coordination Mechanism for Tree–Rock Conflict Management

For individual plants, the framework further introduces Scenery-Realm contribution, V_tree contribution. This variable assesses the plant's contribution to the rockery's Scenery-Realm by comparing changes under alternative scenarios, such as pruning, removal, or replacement, rather than evaluating the plant's statutory or ecological value. Different intervention options k are subsequently compared in terms of their residual risk, R_k, and associated value loss, Delta V_mountain(k). Among options that satisfy safety requirements, preference is given to

measures that result in lower value loss, lower levels of intervention, and greater reversibility.

The governance component clarifies who should participate in decision-making. Ordinary plants with a high Scenery-Realm contribution may be incorporated into case-specific conservation decisions, while cases involving ancient and famous trees trigger joint assessment among cultural heritage authorities, landscape and greening authorities, and other relevant management bodies (Fig.4). The VRG framework therefore does not establish a separate management system; rather, it provides a joint diagnosis–scenario comparison–decision-making module that can be embedded within existing heritage management plans.

3. Case Applications and Key Arguments

The framework is preliminarily applied to two Chinese classical gardens: the Mountain Villa with Embracing Beauty in Suzhou and Qiyuan Garden in Jiaxing.

The Mountain Villa with Embracing Beauty illustrates the problem of value–risk misalignment. Historical studies show that vegetation is not merely supplementary greenery around the rockery. The location, height, crown form, and planting pattern of trees participate directly in the perception of mountain form, spatial boundaries, visual composition, and the visitor's understanding of the rockery (Shi & Zhou, 2022). Historical replacement and pruning of vegetation have already altered some of these relationships (Yun et al., 2022). For example, changes involving the black pine and the current reduction of the trunks and crowns of hackberry trees may contribute to the protection of the rockery, but at the same time weaken historically significant planting compositions and scenery effects (Fig. 5). The case therefore demonstrates that plant management cannot be determined solely by statutory status or structural risk; the plant's contribution to the rockery experience must also be considered.

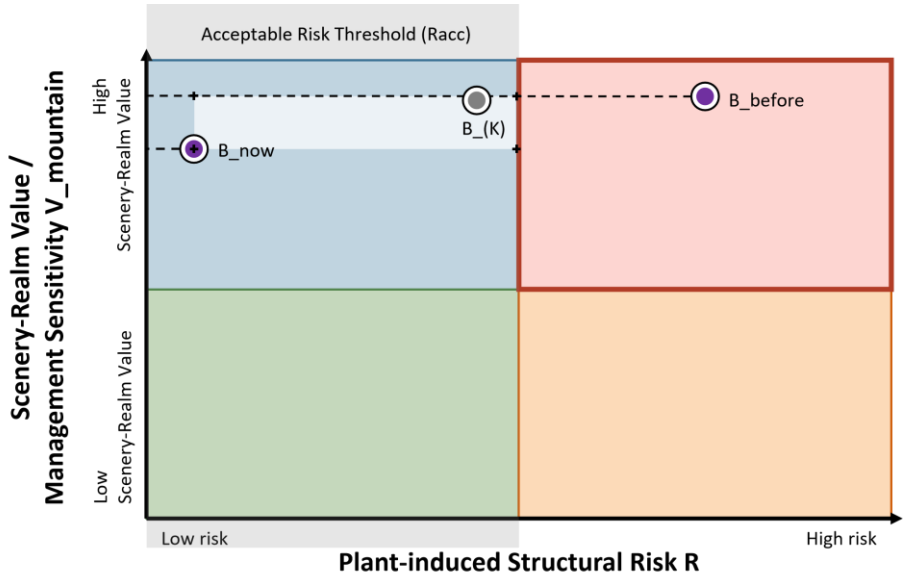


Fig 5. Value–Risk Assessment and Intervention Option Comparison for the Tree–Rock Conflict at the Mountain Villa with Embracing Beauty

Qiyuan Garden represents the separation-of-responsibilities problem. Existing surveys show that a number of ancient trees grow directly on or adjacent to the artificial rockeries, and some trees are associated with cracking, local instability, or other potential structural concerns (Gan, 2019). However, causal relationships between individual trees and specific rockery

deterioration cannot be inferred from vegetation condition alone. They require combined arboricultural diagnosis and structural inspection of the rockery. The key issue in this case is therefore not to decide in advance whether “the tree” or “the rockery” should take priority, but to establish a joint decision-making process based on shared evidence across different professional and administrative systems (Fig.6) (State Council of the People’s Republic of China, 2025).

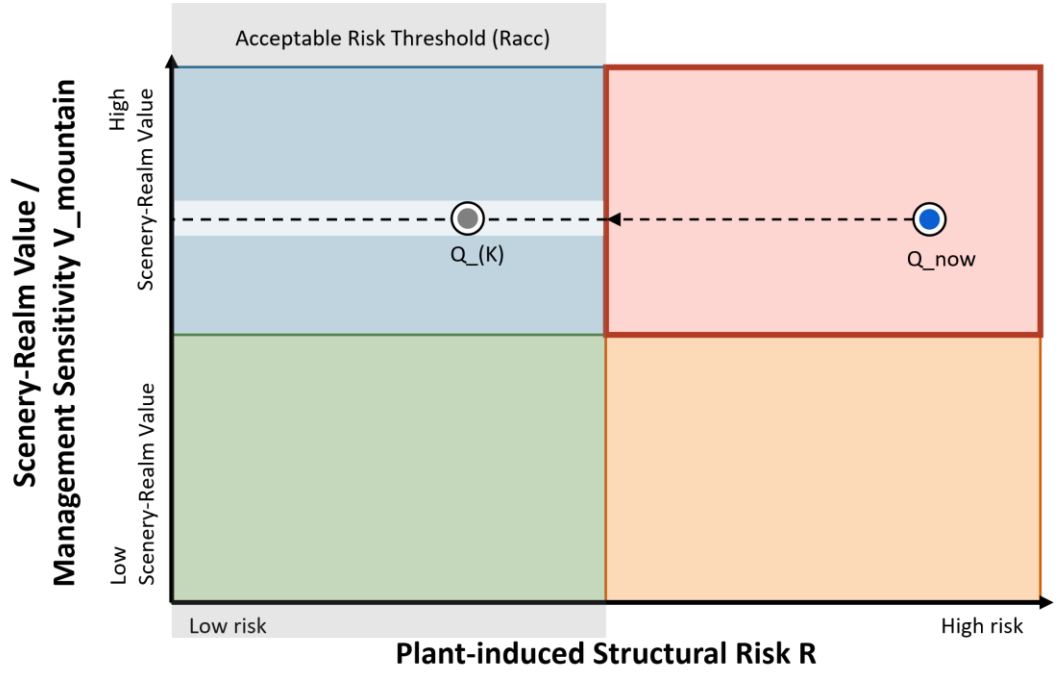


Fig 6. Value–Risk Assessment and Coordinated Governance of the Tree–Rock Conflict at Qiyuan Garden

Together, the two cases suggest that the purpose of quantifying heritage value is not to add another value inventory. Rather, it enables managers to explain why a particular tree matters to heritage value, how urgent the associated risk is, what would be lost under different interventions, and who should share responsibility for the decision.

4. Relevance for Heritage Management Planning Practice

The VRG framework is conceived as a modular conflict-management tool that can be incorporated into existing heritage management planning systems. Value assessment identifies management sensitivity; risk assessment establishes the urgency of action; plant-contribution analysis and scenario comparison support intervention choices that minimise heritage value loss; and the governance component clarifies the actors who should participate in the decision.

Continuous monitoring after intervention further transforms a one-off decision into an adaptive cycle of diagnosis–decision–implementation–monitoring–reassessment. As trees continue to grow, structural conditions change, and scenery-realm relationships evolve, both risk and value contribution can be periodically reassessed and management responses adjusted accordingly (UNESCO et al., 2026).

The study therefore does not propose replacing general heritage value frameworks with a culture-specific concept. Instead, it argues that general heritage principles require culturally

grounded operational tools if they are to guide practical action in specific conflict situations. The approach may also be applicable to other conflicts in historic gardens, including vegetation–architecture, vegetation–water relationships, and broader interactions between dynamic natural processes and cultural heritage fabric.

Keywords: Living Heritage, Chinese Classical Gardens, Artificial Rockery, Tree–Rock Conflict, Scenery-Realm Value, Adaptive Heritage Management

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Abstract ID: #421

Kechen Xu

Tourism-Pressure Responsive Integrity Assessment: A Three-dimensional Framework for World Heritage — Evidence from Quanzhou, China

Poster Presentation

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Session S1: Heritage Management Planning Systems: Challenges, Lessons Learned and Potential New Approaches

Tourism-Pressure Responsive Integrity Assessment: A Three-dimensional Framework for World Heritage — Evidence from Quanzhou, China

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Keywords: Heritage Integrity; Integrity Assessment; Mass Tourism; Historic District; Adaptive Management Planning; Quanzhou

1. Context and question

Heritage inscription may intensify the tourism pressures that threaten outstanding universal value (OUV), a tension increasingly discussed as the post-inscription challenge of contemporary World Heritage management. Inscribed in 2021 as *Quanzhou: Emporium of the World in Song-Yuan China*, Quanzhou is a representative case. In 2025 the historic city received approximately 16 million visitors, more than four times that of 2020; tourist accommodation bed spaces have increased approximately eightfold; and the resident population of the core historic district has continued to decline.

These changes are not the discrete impact events that management plans and periodic reporting are designed to identify. They are incremental, spatially uneven, and in many cases occur without any measurable change in the condition of protected attributes: buildings remain standing and formally protected while their use, occupancy and associated social practices change. Current practice addresses this condition only partially. Integrity is generally assessed as a static property of attributes, verified against a threshold and stated for the property as a whole. A property-level statement cannot represent internal spatial variation, and attribute condition alone does not register functional or social change. This paper therefore asks how heritage integrity can be assessed at a spatial resolution sufficient to support differentiated management decisions, and across dimensions that include functional and social conditions rather than physical condition alone.

2. Approach and method

This paper proposes a **Tourism-Pressure Responsive Integrity Assessment (TPRIA)** framework, which reconceptualizes heritage integrity beyond static attribute-compliance toward the dynamic capacity of historic urban fabric to sustain its outstanding universal value under anthropogenic stress. Grounded in urban morphology, socio-spatial theory and critical heritage studies, TPRIA operationalizes integrity across three interrelated dimensions, each measured through four indicators (**Appendix Tab.**). ***Morphological Robustness (MR)*** concerns the stability and recoverability of the physical fabric, and whether a unit retains the spatial basis to resist demolition, insertion and fragmentation. ***Functional Intactness (FI)*** concerns whether residential, livelihood and service functions continue to operate and whether daily life can be sustained under peak visitor pressure. ***Social Continuity (SC)***

concerns the persistence of the resident population and its cultural practice: resident retention, migrant share, and the concentration of living intangible heritage activities.

The present application is a single-period assessment based on 2025 data. It establishes a baseline rather than a measured trajectory; the pattern reported below is read against documented visitor and population trends rather than repeated measurement. The framework is applied to 240 plot series within the *Xijie Historic District*, Quanzhou **(Fig.1-2)**. A plot series is a group of plots fronting the same street and related in form or function, typically sharing shape, size or subdivision logic; it records a common pattern of development and is an established meso-scale unit in urban morphology. Indicator values are normalized, negatively signed indicators reversed, and aggregated into three dimension scores. Each unit is classified as High (H) or Low (L) on each dimension relative to the sample median, generating 8 combinatorial integrity profiles.

3. Key findings and arguments

Read across the 240 plot series, integrity in *Xijie* appears less as a level than as a composition. Only 35 units retain all three dimensions together, and three quarters of the sample are High in one or two and Low in the rest **(Fig.3-6)**. Tourism pressure has not so much removed heritage from the district as separated its components: fabric is conserved in one place, everyday function persists in another, and the resident community in a third. The district survives as an assemblage of partial integrities rather than as a continuous whole.

The differentiation runs with depth from the street rather than across the district. Loss of functional intactness and social continuity concentrates on the main street frontage and at the commercial ends, and diminishes into the interior lanes, where daily facilities and residents remain. Accessibility, produced by the fabric's own hierarchy of street, lane and courtyard, mediates where pressure lands. The frontage is at once the most protected element, the element carrying the district's morphological signature, and the element where function and community are most reduced.

Two consequences follow. Building condition, the attribute most closely monitored, varies least across the sample and therefore distinguishes least; the variation lies in the dimensions regulation does not address. And social continuity persists in units whose fabric is degraded, while it is absent in the best-conserved precinct, the Kaiyuan Temple: physical conservation neither secures community continuity nor is required by it. What has been lost differs between units, and so must the measures.

4. Relevance for heritage management planning practice

TPRIA is designed to conclude in a management decision rather than in a score. Each of the eight integrity profiles is mapped onto a differentiated conservation strategy:

Exemplary Robustness **(H-H-H)**, strict conservation with proactive safeguarding;

Socially Attrited **(H-H-L)**, community revitalization and benefit balancing;

Functional Void **(H-L-H)**, functional activation and facility infill;

Morphological Shell **(H-L-L)**, catalytic intervention and structural reconfiguration;

Fabric Erosion **(L-H-H)**, morphological repair with organic guidance;

Commercial Substitution **(L-H-L)**, risk control and cultural compensation;

Community Island **(L-L-H)**, basic upgrading with respect for community autonomy;

Systemic Decline **(L-L-L)**, emergency safeguards and strategic reservation.

The three dimensions support one another: the fabric houses everyday facilities, facilities hold residents, and residents keep the fabric in use. Strategies should therefore be chosen for their effect on all three, not on the dimension recorded as Low. Priority follows reversibility. Units Low in two or three dimensions come first, together with fabric of high protection grade, because loss in these cases is final. Units Low in one dimension follow, since a single measure can still restore it. Units High on all three require monitoring rather than intervention.

The mapping addresses three problems common in management planning. First, plans are often too detailed to implement. This framework yields eight strategy classes rather than 240 prescriptions, and because the plot series matches the scale of existing statutory instruments, those classes can be written directly into them. What the site manager receives is a small set of bounded decisions, which is a question of implementation capacity rather than analytical ambition.

Second, plans are also fixed at the moment of drafting; here a unit that changes profile between assessments is a defined trigger for revision, so the plan states in advance what would oblige it to change, and adaptive capacity is carried by the instrument rather than deferred to the next planning cycle.

Finally, cumulative pressure is often too diffuse to act on; naming the dimension and the location makes it a matter for ordinary planning decisions, while the interdependence of the three dimensions keeps each decision legible against the district as a system rather than as an isolated remedy.

Beyond Quanzhou, TPRIA offers a transferable methodology for World Heritage properties facing mass tourism as a chronic anthropogenic pressure, and a means of considering morphological conservation, functional viability and community continuity within a single planning process.

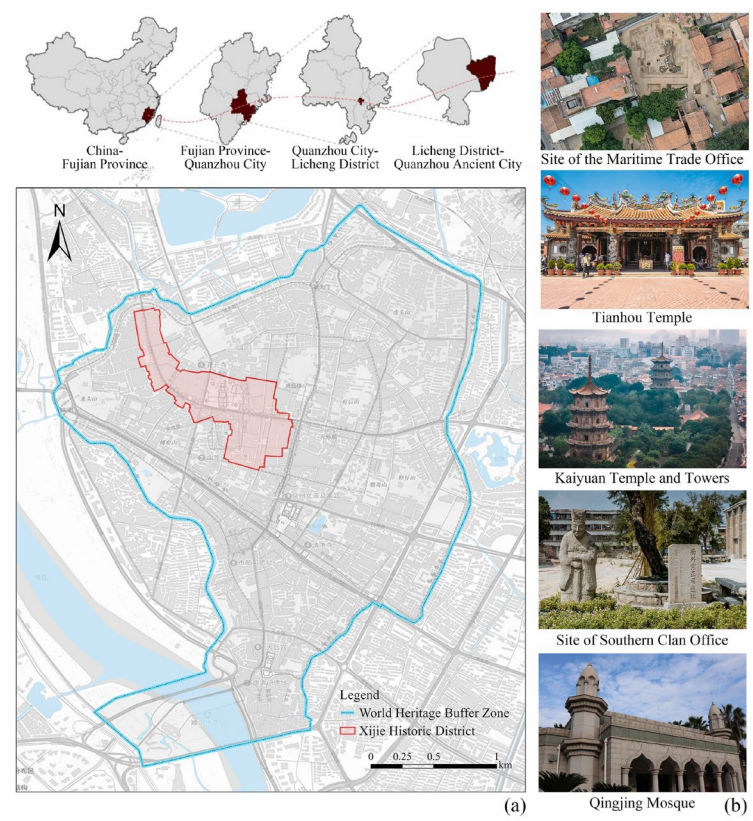


Fig.1 Study area of Quanzhou Ancient City: (a) Location of Quanzhou; (b) Landscape of architectural heritage.

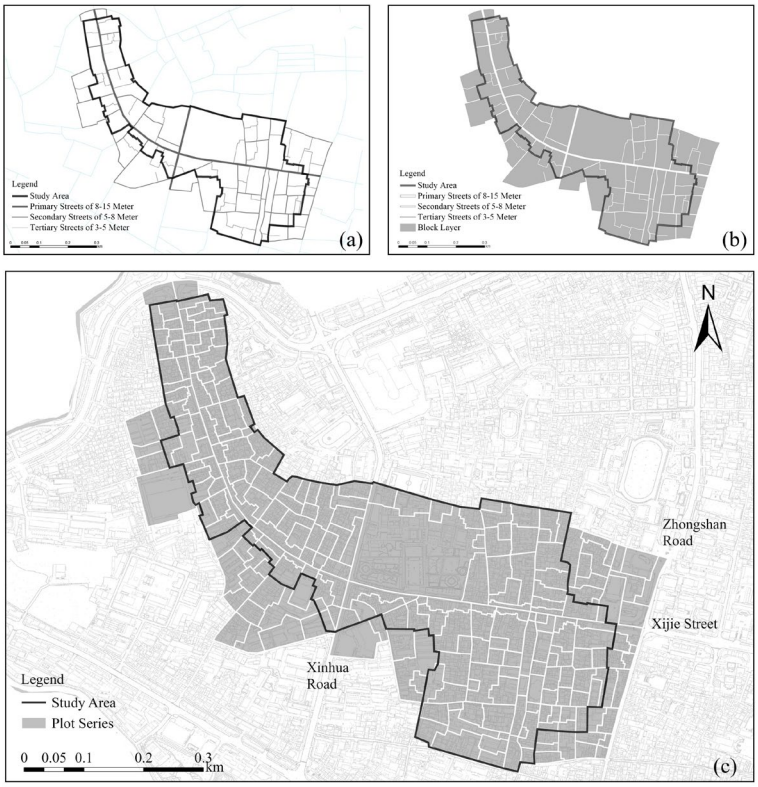


Fig.2 Study area of Xijie Historic District: (a) Street layer; (b) Block layer; (c) Plot series layer.



Fig.3 Morphological robustness evaluation result.



Fig.4 Functional Intactness evaluation result.

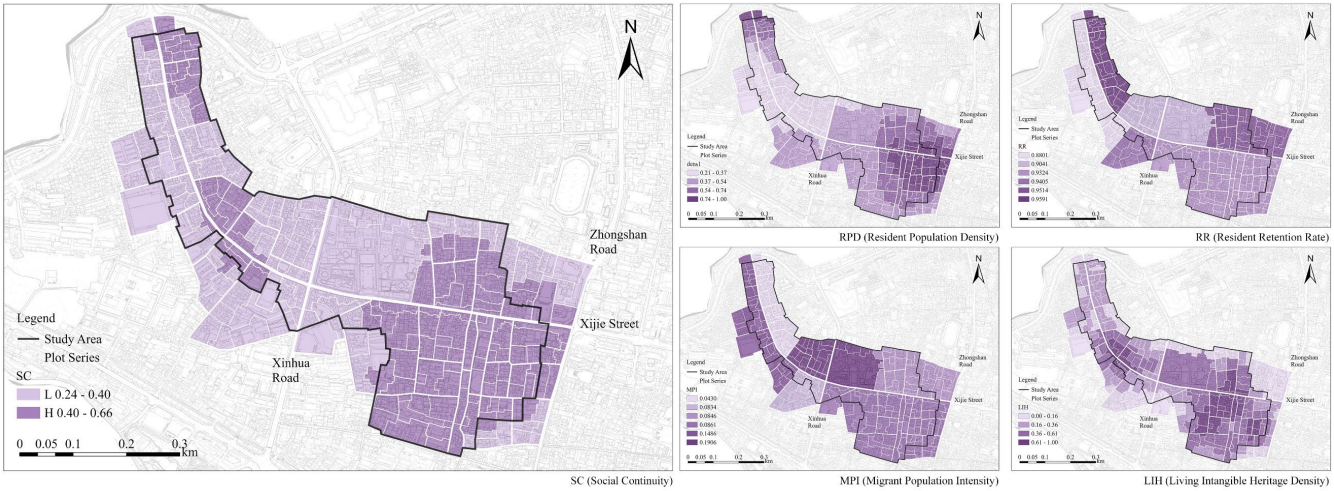


Fig.5 Social Continuity evaluation result.

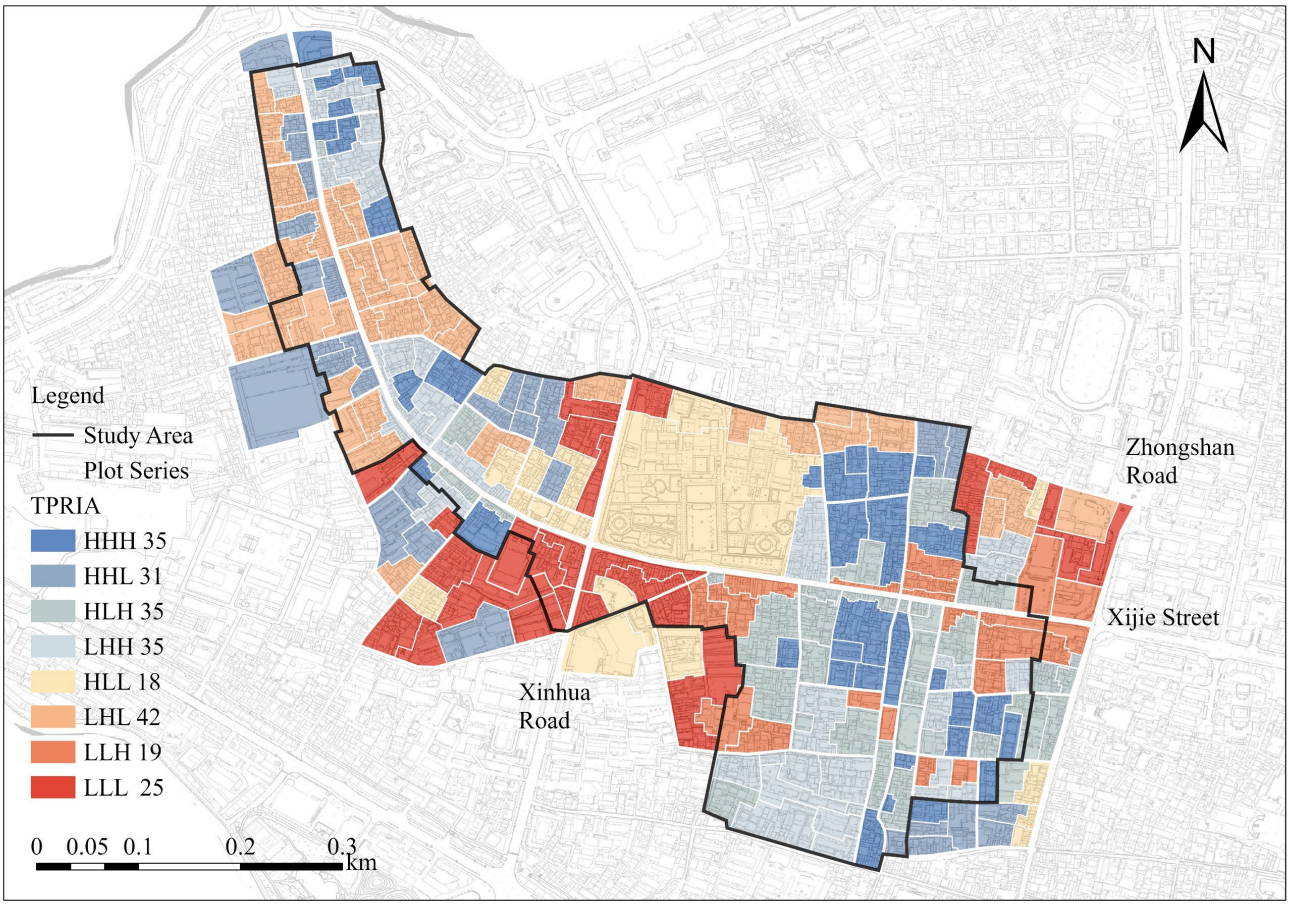


Fig.6 Tourism-Pressure Responsive Integrity Assessment (TPRIA) evaluation result.

Appendix Tab. TPRIA Indicator System: Definitions, Data Sources and Calculation Methods

Dimension	Indicator	Abbr.	Definition and Rationale	Data Source	Calculation Method
Morphological Robustness	**Building Quality**	**BQ**	Physical soundness of the building stock within a plot. Higher values indicate better-preserved buildings and a stronger material basis for resisting tourism-driven physical alteration.	Field survey	**i.** Assign linear scores to the four building-quality classes A–D: intact = 1.0, fair = 0.67, poor = 0.33, vacant/to be built = 0.0. **ii.** Compute the floor-area-weighted mean quality of the plot series: $$Q = \frac{\sum(S_i \times A_i)}{\sum A_i}$$ where S_i is the quality score of building i and A_i its floor area. **iii.** Results range from 0 to 1; no further normalization is required.
	Building Protection Value	**BPV**	Overall strength of the statutory protection applied to the buildings of a plot. Higher values mean stricter institutional protection and better-retained heritage attributes.	Conservation Plan for the Quanzhou Historic and Cultural City (revised edition)	**i.** Assign five-level scores according to the protection grade defined in the current conservation plan: protection = 1.0, retention = 0.8, restoration = 0.6, improvement = 0.4, renewal = 0.2. **ii.** Compute the floor-area-weighted mean protection value of the plot series: $$Q = \frac{\sum(V_i \times A_i)}{\sum A_i}$$ where V_i is the protection-value score of building i and A_i its floor area. **iii.** Results range from 0 to 1; no further normalization is required.
	Plot Morphological Compactness	**PMC**	Geometric regularity of the plot pattern. Irregular plots indicate spatial reorganization induced by tourism development and are a morphological signal of fabric erosion.	OpenStreetMap	**i.** Measure the area S_i (m^2) and perimeter C_i (m) of each plot in GIS. **ii.** Compute morphological regularity using the square compactness formula: $$SQC = \left(\frac{S_i}{C_i}\right) \times \left(\frac{4\sqrt{S_i}}{S_i}\right) = \frac{4\sqrt{S_i}}{C_i}$$ i.e. the area-to-perimeter ratio of the plot divided by that of a square of equal area. SQC approaching 1 indicates a square-like form; approaching 1.13, a circular form. **iii.** Min–max normalize all plot SQC values to 0–1.
	Fabric Network Robustness	**FNR**	Connectivity robustness of the topological network of the building cluster. Highly connected fabric resists the fragmentation caused by demolition or the insertion of tourist facilities, reflecting the structural resilience of the plot.	Network analysis in Python	**i.** Following percolation theory, treat buildings within the study area as nodes and the spatial relations between adjacent buildings as edges, and construct a building adjacency network. **ii.** Compute the connectivity and network-robustness score of each building through network analysis in Python. **iii.** Aggregate building scores to the plot series using floor area as the weight: $$Q_{raw} = \frac{\sum(R_i \times A_i)}{\sum A_i}$$ where R_i is the network-robustness score of building i. **iv.** Min–max normalize all plot Q_raw values to 0–1.

Functional Intactness	**Public Facility Mix**	**PFM**	Diversity of public facilities serving residents' everyday life. A richer mix shows that the plot still supports residential needs rather than tourism services alone.	Amap (Gaode) POI	**i.** Retrieve POI data for the study area from the Amap platform and classify them into eight categories — tourism, catering, accommodation, religion, daily services, leisure, medical care and shopping — yielding 1,400 valid POIs. **ii.** For each plot series n, count the facilities of each category P_i and the total number of facilities P_n. **iii.** Compute the public facility mix using the Shannon entropy formula: $$PFM = -\sum N_n \times \left\{\left(\frac{P_i}{P_n}\right) \times ln\left(\frac{P_i}{P_n}\right)\right\}$$ where N_n is the number of facility categories present in plot n, P_i the number of facilities of category i, and P_n the total number of facilities in the plot. **iv.** Min–max normalize all plot PFM values to 0.5–1.
	Tourist-to-Resident Facility Ratio	**TFR**	Degree to which the facilities of a plot serve visitors rather than residents. A stronger tourist orientation means that everyday residential space is more heavily squeezed and functional intactness is lower.	Amap (Gaode) POI	**i.** Assign a tourism-orientation coefficient w_k to each of the eight POI categories: tourism = 1.0, accommodation = 1.0, shopping = 0.5, catering = 0.5, leisure = 0.5, religion = 0.2, daily services = 0.2, medical care = 0.2. **ii.** Compute the weighted tourism-orientation ratio R of each plot: $$R = \frac{\sum(N_k \times w_k)}{N_v}$$ where N_k is the number of facilities of category k, w_k its tourism-orientation coefficient, and N_v the total number of valid facilities in the plot. **iii.** Min–max normalize all plot R values to 0–1. **iv.** Negative indicator: enters the composite index with a reversed sign.
	Tourism Replacement Rate	**TRR**	Extent to which tourism commerce and services have replaced residential floor area — a direct measure of the erosion of functional intactness. Higher rates mean more severely shrinking living space.	Amap (Gaode) POI Field survey	**i.** Based on field survey, classify buildings into seven functional combinations and score them by degree of tourism replacement (H = housing, W = work, A = services): H = 0.0, HW = 0.2, HWA = 0.5, HA = 0.5, W = 0.6, WA = 0.6, A = 1.0. **ii.** Compute the floor-area-weighted mean replacement rate of the plot series: $$Q = \frac{\sum(F_i \times A_i)}{\sum A_i}$$ where F_i is the functional replacement score of building i. **iii.** Results range from 0 to 1; no further normalization is required. **iv.** Negative indicator: enters the composite index with a reversed sign.
	Accommodation Capacity Intensity	**ACI**	Intensity of tourist accommodation capacity, representing overnight visitor stay. Higher values usually indicate stronger conversion of dwellings into short-term rentals and guesthouses, greater displacement of residential functions, and thus weaker functional intactness and higher overtourism risk.	Amap (Gaode) POI Ctrip	**i.** Using Amap accommodation POIs as the base table, match them with Ctrip accommodation entries by name and location to obtain the number of rooms of each establishment. **ii.** Locate the matched establishments within the plot-series units, sum the rooms per plot series, and compute capacity intensity (rooms per unit plot area). **iii.** Min–max normalize all plot values to 0–1.

Social Continuity	**Resident Population Density**	**RPD**	Late-night weekday population heat derives mainly from actual residents and thus excludes tourist interference. Tourist plots with low night-time vitality reveal the gentrification symptom of substantial resident out-migration.	Baidu heat map 23:00 on 8, 15 and 22 April 2025 (three weekdays)	**i.** Collect Baidu heat-map data at 23:00 on three weekdays (Tuesdays) in April 2025; late-night hours of a weekday in a non-peak tourist month effectively exclude interference from the tourist population. **ii.** Extract the mean value of the KDE raster within each plot series and take the median of the three observations to eliminate single-day anomalies. **iii.** Min–max normalize all plot ρ_plot values to 0–1.
	Resident Retention Rate	**RR**	Actual retention share of registered local residents once the migrant population is removed — a direct measure of whether the community's social structure has undergone tourism-driven replacement.	Government population statistics	**i.** Taking the community as the unit, compute the retention rate of original residents from sub-district population statistics (definition C): $$RR = \frac{P_r - P_m}{P_r}$$ where P_r is the registered (hukou) population of the community and P_m its migrant population. **ii.** Assign each community's retention rate to all plot series within its administrative boundary (all plots in the same community take the same value). **iii.** Min–max normalize all plot values to 0–1.
	Migrant Population Intensity	**MPI**	Share of the migrant population in the everyday life of the plot, indicating how far the demographic structure has shifted towards newcomers and how far the original social network has been diluted.	Government population statistics	**i.** Taking the community as the unit, compute migrant intensity from sub-district population statistics: $$MPI = \frac{P_m}{P_{pr}}$$ where P_m is the migrant population of the community and P_{pr} its permanent resident population. **ii.** Assign each community's value to all plot series within its administrative boundary. **iii.** Min–max normalize all plot values to 0–1. **iv.** Negative indicator: reversed when the composite index is synthesized (1 − normalized value).
	Living Intangible Heritage Density	**LIH**	Spatial concentration of living intangible-heritage practices in the community. Plots with high kernel density show that the community still actively maintains traditional rituals and social activities, implying stronger social continuity.	Conservation Plan for the Quanzhou Historic and Cultural City (revised edition) Amap (Gaode) POI	**i.** Drawing on the conservation plan and POI data, map living-heritage spaces such as territorial temples, ancestral halls and opera stages as point features. **ii.** Apply kernel density estimation (KDE) to these points with an appropriate bandwidth: $$KDE(x) = \frac{1}{nh}\sum K\left(\frac{x - x_i}{h}\right)$$ where n is the total number of point features, h the search bandwidth and K the kernel function. **iii.** Take the mean of the KDE raster within each plot series as the plot score. **iv.** Min–max normalize all plot KDE means to 0–1.

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Orpita Chowdhury

Cultural Landscape Management in Peripheral Shrinking Regions: Lessons from the IBA Thüringen in Schwarzatal

Poster Presentation



ICOMOS Scientific Symposium 2026

LIVING HERITAGE: RESPECT, ENHANCE, ACCEPT, PARTNERSHIP

Cultural Landscape Management in Peripheral Shrinking Regions: Lessons from the IBA Thüringen in Schwarzatal

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Session 1: Heritage Management Planning Systems: Challenges, Lessons Learned and Potential New Approaches

Keywords: Cultural Landscape Management, HUL Recommendations, HBUD Spiral Metamodel, Peripheral Shrinking Regions, Temporary planning instruments, Post-IBA durability

Extended Abstract

Context and Research Problem

Schwarzatal is a rural valley in Landkreis Saalfeld-Rudolstadt in the historic region of Thüringen in Germany. Its built environment carries the legacy of pre-industrial glassmaking, nineteenth-century Sommerfrische resort culture, German Democratic Republic (GDR)-era worker holidays and three decades of post-reunification vacancy. At present, the valley lies well above the national vacancy average with an ageing population. It also holds a large number of unlisted buildings with heritage value which do not fall under existing heritage management frameworks, such as - the 2011 UNESCO Historic Urban Landscape (HUL) Recommendation. The heritage significance of Schwarzatal is constituted not only by individually listed monuments but by a dispersed and largely unlisted typological ensemble of Sommerfrische Architecture, without a single mandated governance authority. However, governance of cultural landscape requires multi-sectoral cooperation across cross-boundary institutional systems including heritage and nature conservation, spatial planning, development policy etc. to fully operationalize the regional resources (Gailing, 2012, p.147). In Schwarzatal, those systems remain fragmented across multiple authorities with no uniform mandate, producing a scalar gap in cultural landscape governance that this research identifies as the central management problem.

The Internationale Bauausstellung (IBA) Thüringen (2012-2023) worked as a temporary planning instrument under the regional StadtLand framework. The initiative utilized an experimental governance structure where the cultural landscape management was handled through a civil society network named Zukunftswerkstatt Schwarzatal, outside conventional municipal planning structures. The initiative developed several projects in the area throughout the decade, however, four IBA project episodes in Schwarzatal - Schloss Schwarzburg, Sommerfrische

Architekturen, Wasserfrische, Bahnhof Rottenbach, were framed as replicable models for the wider regional development. As observed in general IBA institutional format, this program rendered a deliberate act of extraordinary measure where various decision-makers engaged actively to recover the exhausted capacity of local conventional instruments (Becker and Hesse, 2021, p.15).

Approach and Method

This paper draws on an ongoing MA thesis evaluating the IBA Thüringen project episodes through a combination of two frameworks. The HUL Recommendation defines a normative outcome standard for heritage-integrated landscape management, whereas the Heritage Based Urban Development (HBUD) Spiral Metamodel (Ripp, 2021, Gustafsson and Ripp, 2022) provides a process evaluation tool which works through five iterative phases: Scoping, Analysis, Development, Implementation and Evaluation. The methodological contribution lies in applying this combination of frameworks to a non-urban and low-resource peripheral context, considering neither framework was originally designed for a rural landscape like Schwarzatal. It assesses to what extent heritage, landscape and sustainability concerns were integrated across each of the four IBA project episodes. Primary sources are IBA Thüringen project documentation across a decade of IBA Publications, supplemented by planning instruments, conservation inventories and semi-structured interviews conducted with IBA Thüringen project leadership, Zunkunfswerkstatt Schwarzatal leadership and cooperative representatives. A research fieldtrip to the IBA project episode sites provided direct observational evidence of post-IBA conditions (Fieldtrip, 21-24 Aug 2026). The process-quality judgements using the HBUD spiral framework are expressed as Present, Compressed or Absent. The outcome-adequacy judgements using the HUL framework are expressed as Adequate, Partial or Absent.

Key Findings

Findings, drawn from the review of project documentation suggest that the historic significance was explicitly identified as a heritage value in the IBA Schloss Schwarzburg project episode, which is reflected in the project design and objective of increasing visibility and public accessibility. For the rest of the project episodes, the degree to which heritage values shaped the process appears to have varied considerably. This variation tracks a specific and consistent factor as composition of actors present at the Scoping phase. The two IBA episodes where landscape planning and/or tourism actors were present from Scoping onward - Wasserfrische and Bahnhof Rottenbach, achieved Adequate outcomes in Knowledge and planning tools under the HUL framework. Despite comparable institutional resources, other two IBA episodes - Schloss Schwarzburg and Sommerfrische Architekruen reached only Partial outcomes where the same actors were absent. This indicates a process-caused gap instead of a capacity-caused gap because

the particular actor type was engaged and aided better outcomes in the same regional context. A different Scoping decision evidenced to have resolved the gap without additional resources, confirming that actor composition at the earliest planning phase propagates forward directly into outcome adequacy.

Two framework-level findings emerge from the cross-episode synthesis. First, Regulatory systems category of the HUL Framework is calibrated to safeguard heritage from development. It performed structurally weak where the primary threat to heritage value is not instant demolition but vacancy, abandonment and slow physical decay, such as - Schwarzatal. Three of four IBA episodes reached only Partial outcomes on Regulatory systems, not due to absence of law, but absence of right actions by the right authority on time for required intervention. Second, Evaluation phase of the HBUD spiral framework rated Compressed across all four IBA episodes, confirming the anticipation from the author that the unspecified and undesignated manner of the Evaluation phase responsibility is often neglected once the time-limited external instrument has concluded (Ripp, 2021, p.170).

Post-IBA Durability and Relevance for Practice

Two years after the IBA Thüringen ended, the research investigates how well the project outcomes have lasted and whether the intended replication has happened. As per evidence, the only mechanism that was produced and outlasts the IBA Thüringen engagement in Schwarzatal at present, is a financial mechanism named Sondervermögen StadtLand Thüringen, administered by Stiftung trias (IBA Magazin 7/2021, p.33). There is no equivalent evaluative mechanism that was created for further development or intended replication in the wider region. Furthermore, Former IBA Thüringen Project Coordinator argued that a comprehensive and long-duration approach could be effective to achieve meaningful results in regional development programs against the short duration IBA (Interview, Ulrike Rothe, 2026). Zunkunftswerksatt Schwarzatal Director also agreed that even though IBA Thüringen brought multi-sectoral cooperation and visibility for regional development, it failed to fully address the needs and challenges of the landscape (Interview, Burkhardt Kolbmüller, 2026).

The lessons it draws are aimed at practitioners and researchers working in comparable peripheral shrinking regions where management of cultural landscape must function under low institutional capacity, uncertain investment and no guarantee of continuity once temporary and experimental planning instruments conclude. Thus, the research directly engages with the session's concern with implementation capacity and adaptive flexibility, questioning whether a temporary and experimental planning instrument can develop a durable governance arrangement to outlast it. The prototype for a modular, layered management system addresses three structural shortfalls this case documents. Firstly, its emphasis on regular prioritized monitoring responds to

the Evaluation gap as monitoring requires a designated post-conclusion body with an explicit mandate, capable of restarting a Scoping phase. Secondly, its thematic modules, explicitly including conservation, community engagement and tourism, address the Scoping shortfall, specifying required actor composition from early stage can prevent process-caused gaps. Thirdly, the Regulatory systems category of the HUL framework require adaptation for rural peripheral shrinking contexts, enabling reactivation and reuse dimension in the tool. Additionally, ensemble level identification methods for unlisted typological heritage must be a pre-condition for any heritage management and planning system in comparable context. In conclusion, the Schwarzatal case demonstrates that durable outcomes are achievable when it is structurally designed before a time-limited external instrument concludes and a designated body holds the mandate to evaluate and reactivate a new or continuing planning cycle.

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Catherine (Kate) Clark

Playing with the past: using active learning to develop critical skills in cultural heritage management planning

Panelist: Dimension 4 Inclusive Governance

GA 2026 Session 1 The Five Dimensions of heritage management planning

Extended abstract

Playing with the past: using active learning to develop critical skills in cultural heritage management planning

Kate Clark, Western Sydney University

Key words: values-based thinking; active learning; critical thinking; cultural heritage management planning; inclusive heritage

Cultural heritage management planning is not just a technical process: it requires skills in deep listening, critical thinking, compassion and complexity, and community engagement. In 2019 I published a book of creative activities to help practitioners develop critical thinking skills in heritage practice, including site management planning (Clark 2019a). That book was inspired by the experience of publishing guidance on integrated, inclusive site management planning with the UK Heritage Fund, the largest funder of heritage projects in the UK. Despite asking planners to engage with communities and take an integrated approach, most planners struggled to do so. That experience taught me that although you can write guidance on issues such as flexibility, strategic clarity or governance, it is even more important to help heritage planners build their own critical thinking and listening skills.



Cultural heritage management planning matters; caring for what we have now can potentially deliver wider benefits such as addressing climate change, social justice and better placemaking (Avrami 2020; Avrami 2022; Orbasli and Vellinga 2020). Sadly, héritage management plans are often nice-looking documents that do little more than alienate communities, annoy developers, frustrate heritage managers and sit on the shelf. Poor heritage management planning cannot be solved by simply writing better guidance: instead, the problem is much deeper. Heritage planning is a systemic thinking process, that involves engaging with people and what they care about, across a diverse range of issues; it involves both technical heritage management knowledge and people skill(Clark 2001). It means working with a wide range of stakeholders with conflicting values and working across disciplinary boundaries that span tangible and intangible, natural and cultural heritage. Sustaining heritage also involves

dealing with practical issues ranging from access, interpretation and inclusion, to transport, health and safety, climate change, physical decay, maintenance and new development(de la Torre et al. 2005)

I learned about this the late 1990s when I was involved in introducing new guidance on inclusive, integrated heritage site management planning for the UK Heritage Fund. The fund is the largest funder of heritage in the UK; it takes an integrated approach, working across natural and cultural, tangible and intangible heritage(Heritage Fund 2019). From early on, under the leadership of key figures in driving inclusive approaches to heritage such as Liz Forgan and Carole Souter (Clark 2007; Clark 2025b) the Fund adopted an innovative people-based approach to heritage (Heritage Lottery Fund 2005), defining heritage as 'what you value,' (Heritage Fund 2023). In 1998 the Fund introduced new guidance on conservation management plans and impact assessment; the aim was to ensure that applicants had thought about the long-term sustainability of their sites, as well as immediate projects, and had engaged with their communities (Heritage Lottery Fund 1998; Heritage Lottery Fund 2002). The HLF guidance drew on the Burra Charter values-based thinking process (Australia ICOMOS 2013), holistic landscape management planning, early work on environmental impact assessment (Clark 2025a) and the world heritage site management planning (Feilden and Jokilehto 1993). It was also inspired by the early Getty Conservation Institute thinking around more inclusive approaches to values in site management planning (Avrami, Mason, and de la Torre 2000) and the work of anthropologists such as Seth Low (Low 2002). The guidance was part of a wider shift towards values-based thinking in UK heritage conservation (Clark 2019b).

Initially we hoped that writing guidance and providing financial support would help heritage site managers to achieve a more proactive culture of integrated, values-based thinking about long-term site sustainability. We were wrong (Clark 2022). I read and commented on many plans, and identified a consistent set of challenges: plans were often long, beautifully presented documents produced by experts with little engagement with people on the ground; they failed to consider wider community values; and often focussed mainly on the area of expertise of the planner rather than the wider issues. Within a year or two they were mostly forgotten. Too often they were post-hoc justifications for a particular project rather than a more holistic long-term view of the challenges of sustaining the site. Despite including impact assessment in the original guidance to show how plans could be used to manage change in the future, this was largely ignored. Sadly, my attempts to provide what I thought was constructive feedback were not seen as helpful.

This was as much a skills issue as a guidance issue, so we turned to active learning. Education experts in the policy team developed a training program to introduce all new staff to the Fund's core philosophy of access, integration and inclusion. The aim was to help staff assess applications and provide feedback to applicants. I also developed more intensive activities for applicants and their advisors, specifically around site management planning, including the planning process, how to review a plan and think about stakeholder engagement, and offered workshops to students on post-graduate heritage courses across the UK.

As such intensive training was not sustainable, I created *Playing with the Past* to 'train the trainers' (Clark 2019a). The book provides heritage teachers with activities and games to introduce the core tenets of integrated, inclusive heritage practice. The active learning approach borrows techniques from acting and theatre games, business games, language teaching and education (Boal 2002). The core of the book is 'The Big Picture': five activities that introduce the basic steps in values-based heritage site management planning: *what have you got, why does it matter, what is happening to it, what needs to be done about it and who needs to be involved?* Other activities expand on the knowledge and skills that come into cultural heritage management such as interpretation, health and safety, visitor engagement, impact assessment and strategic planning. The aim is not to provide technical guidance, but to help heritage planners engage with others, apply critical thinking and develop listening skills.

Each activity centres on how people value something; this is not *heritage values* in the sense of statutory criteria, but *the intrinsic, instrumental and individual/institutional cultural values* that people attribute to each other and the world around them (Holden and Hewison 2004; Clark 2006). Values-based thinking is key to cultural heritage management; it is a critical skill that recognises that ultimately heritage management planning involves dealing with other people's contested and often conflicting values (Avrami et al. 2019). The biggest danger is to assume that because a site is protected, that planners know what matters to people. Instead, the role of the planner is to listen to those that know the place best, including the local team on the ground and the community around them. Navigating the space between the reasons for protecting a site and local values is one of the biggest challenges of effective planning.

Since then, I have learned that the challenges of good management planning are not unique to cultural heritage; recent experience in transport planning and appraisal has shown that thinking holistically and strategically about managing change and interventions into existing places is a

complex, contested, value-laden process (Welsh Government 2024). It is easy to see planning and appraisal as a tick-box exercise that must be done to get money or planning permission, or even to achieve world heritage status, rather than a vital decision-making tool. Ironically the experience of working in other sectors has also shown how the critical values-based thinking from heritage practice can be applied to almost any other area (Clark in press) .

There is no doubt that strategic clarity, flexibility, systems thinking, inclusive governance and integration are important aspects of good management planning for heritage, as for any other field. But ultimately heritage management planning involves helping the team on the ground to find a way through often complex, competing issues and ideas of value, in a way that brings compassion and clarity to the process. In a society that emphasises growth and innovation, the skills of caring for and sustaining what we have now is more important than ever (Clark 2026).

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Abstract ID: #574

IFKO Sonja

An inclusive sustainability-led approach to strengthen heritage ecosystems and foster the green transformation of local communities

Panelist: Dimension 1 Strategic Clarity

An inclusive sustainability-led approach to strengthen heritage ecosystems and foster the green transformation of local communities

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Category: Session S1

The hypothesis of the Slovenian national interdisciplinary project *Heritage for Inclusive Sustainable Transformation* (HEI-Transform) was that immovable cultural heritage, together with all its movable assets and intangible manifestations, constitutes the local communities' sustainable capital. Unused or underused heritage sites represent dormant sustainable capital that, through adaptive reuse, can significantly contribute to a more effective sustainable transformation of local communities and build their resilience. To test this hypothesis, a broad interdisciplinary group of 37 researchers from 14 fields was formed, together with societal stakeholders from the national and local levels, involving more than 120 coworkers across all project stages, drawn from political, financial, and social stakeholder groups, as well as a fourth stakeholder group consisting of researchers and planning groups of university professors and their students.

The methodological approach used was transdisciplinary knowledge integration, grounded in ecological economics (Jahn et al., 2012; Lang et al., 2012). This novel approach to cultural heritage enables inclusive knowledge development, in which researchers collaborate with other societal stakeholders at different stages of research. We also substantiated the hypothesis by drawing on our experience from four experimental adaptive reuse laboratories across different heritage types in four municipalities. Transdisciplinary knowledge integration enabled us to define the potential impacts and benefits of reactivating dormant sustainable heritage capital through adaptive reuse for local communities. We drew on findings from a wide range of European projects, focusing on the already defined impacts and benefits of heritage from projects such as Cultural Heritage Counts for Europe (CHCfE Consortium, 2015) and Circular Models Leveraging Investments in Cultural Heritage Adaptive Reuse (Fusco Gerard & Gravagnuolo, 2025), as well as the recommendations of the Davos Declaration High-quality Baukultur for Europe! (2018), the New European Bauhaus (European Commission, 2021), and the European Cultural Heritage Green Paper (Potts et al., 2021).

We chose this methodological approach because, in practice, complications often cast heritage as an obstacle to development rather than an opportunity, even though numerous studies have demonstrated its multifaceted benefits for local communities. In our view, this gap between expert-developed theoretical knowledge and the reality of practice in specific project implementations stems from a lack of knowledge about how to apply that theory effectively in practice. This is not just a problem in Slovenia but a broader one as well. Therefore, throughout all four years, our research focused on facilitating known multidimensional contributions as much as possible and, above all, on guiding them through the planning process so they are based on the needs and possibilities of the local community. Our response is a newly developed, dynamic approach to sustainability-led inclusive heritage planning and management, supported by interdisciplinary analysis and enabling inclusive decision-making on issues crucial to the lives of the communities to whom the heritage belongs.

By drawing on the circular sustainable economy model and the values-based Burra Charter process (Australia ICOMOS, 2013), the newly developed approach to sustainability-led planning aims to realise the built heritage's multidimensional sustainable potential as comprehensively as possible, without diminishing its essential values. It enables the regenerative effects of adaptive reuse of heritage. This was made possible by adopting the perspective of essential sustainable instrumental heritage values. The sustainable instrumental impacts of heritage are distributed across four pillars/domains of sustainable heritage capital: cultural, social, economic, and environmental, while the perspective of essential values is considered through expert valuations and the values that the relevant heritage represents for local stakeholders.

To help bridge the gap between contemporary theoretical knowledge and the reality of heritage management and planning practice – which, through the application of the sustainability-led approach, can directly enhance the regenerative benefits of heritage for the sustainable transformation of local communities, build their resilience, and thereby improve the quality of life for all – we have developed a toolbox as the central outcome of the HEI-Transform project. We named it the "Cultural Heritage 4.0 Model" (CH 4.0 Model) to reflect its four dimensions of sustainability: cultural, social, economic, and environmental. It offers inclusive, sustainability-based guidance for adaptive reuse projects at their earliest stages, tailored to changing local contexts.

The CH 4.0 Model comprises seven phases: five ex-ante phases, an implementation phase, and an ex-post phase, totalling 18 steps. Based on the municipality's development profile, which, in the first step, outlines its development characteristics, the proposed project can be adapted to the needs and potentials of the local community, thereby contributing to the mutual strengthening of both the heritage ecosystem and the community to which it belongs. The model is complex because discussing interventions in the highest-quality parts of our built environment involves complex planning processes. It includes two verification phases to assess impacts on essential heritage capital and all four sustainable instrumental capitals of heritage. The impacts on the essential values are assessed using the adapted methodology developed in 2022 for heritage impact assessment (HIA) in a World Heritage context (Court et al., 2022). While the sustainable capitals' attributes were predetermined for ease of use, the attributes of the essential heritage values must be determined through expert assessment in accordance with the simplified HIA methodology.

The CH 4.0 Model was optimised based on experience from the four RevitLabs experimental laboratories, where we collaborated with local stakeholders in four municipalities. In each municipality, three adaptive reuse proposals were developed in collaboration with local stakeholders for typologically distinct areas of abandoned or underused heritage sites (industrial area, castle complex, historic town core, and cultural landscape with archaeological heritage).

The relevance of the developed toolbox, and thus of the newly proposed sustainability-led approach, lies in its direct applicability to planning practice. To ensure its widest possible use, it has been made openly accessible on the online platform of the University of Ljubljana's Institute for Sustainable Protection of Heritage. We believe professionals in municipal services and ministries, and above all potential investors and heritage planners, would benefit most from it. The model guides each user step by step through sustainability-led planning and enables inclusive decision-making on heritage, delivering not only sustainable but regenerative benefits and involving local stakeholders from the outset. Although it was developed within a national context, it draws on internationally developed knowledge and guidance documents. We therefore assume it can be applied, with minor adaptations, in other contexts as well, particularly where there is a desire to accelerate sustainability-led, inclusive guidance for project solutions through adaptive reuse. The sustainability-led heritage planning approach and the CH 4.0 Model enable the direct

systemic integration of heritage into various sectors of the local environment as early as the planning phase, laying the foundation for systemic integration at higher levels. We hope that together they provide an answer to the call for better systemic integration of heritage in planning, as highlighted already by the Amsterdam Declaration in 1975 and, more recently, advanced by projects such as the CHARTER Alliance (Corr et al., 2021) and in the book Cultural Heritage Re-imagined: A Systemic Approach to Theory, Practice, and Management (Ripp et al., 2026). The most essential factor in achieving sustainable heritage goals is to implement concrete action in local communities, as adaptive reuse of heritage brings regenerative impacts and consequently fosters sustainable transformation at all levels.

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Keywords: inclusive sustainability-led approach, built heritage as sustainable capital, adaptive reuse, transdisciplinary knowledge integration

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Abstract ID: #597

Ting-Hsiung Hsiao

From Restoration to Empowerment: Urban-Rural Heritage Governance under Public–Private Partnerships

Panelist: Dimension 1 Strategic Clarity

From Restoration to Empowerment: Urban-Rural Heritage Governance under Public–Private Partnerships

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Extended Abstract

Context and research question

Heritage management plans are expected to connect the protection of significance with decisions about use, resources, participation and long-term care. In privately owned, small-scale historic buildings, however, these elements often fall under separate programmes, contracts and regulatory systems. A completed conservation project therefore does not necessarily produce an authorised, viable or publicly accessible place. In Taiwan, many older buildings also fall outside statutory heritage protection, while public support is often organised through short-term grants or commissions.

This study asks how public-private arrangements can operate as adaptive heritage management systems when authority and responsibility are dispersed. It focuses on X-Basic Planning Co., Ltd., a Taiwan-based intermediary organisation working across historical research, repair planning, regulatory coordination, cultural interpretation and operational development. Public-private partnership is framed here in a broad governance sense—encompassing ownership, grants, commissions, leases, permissions, and operation—where the intermediary acts as a boundary-spanning actor operating within a landscape of dispersed authority rather than managing a formal statutory PPP. The study further asks whether intermediary practice can move heritage projects from physical restoration towards empowerment, understood as an increased practical capacity among owners, operators and local actors to use buildings, mobilise resources, retain knowledge and continue action when an original project pathway changes.

Approach and method

The research combines a qualitative portfolio review of ten projects involving X-Basic Planning with a process-oriented comparison of Chang-Yuan Hospital and Changhua Railway Hospital. The cases comprise five statutory and five non-designated places, with varied ownership across metropolitan and remote rural locations. The portfolio identifies differences in entry points, institutional settings, intended uses and continuity, but does not treat the cases as equivalent or fully assessed.

The two focal cases provide more detailed evidence of governance over time. Sources include three semi-structured interviews, project records, statutory heritage registers, review documents, regulations, organisational materials and field observations. Chang-Yuan Hospital traces X-Basic Planning's involvement from 2017, before statutory recognition, through phased repair, interpretation, public opening, historic-building registration and operation. Changhua Railway Hospital traces the organisation's involvement after monument designation and restoration, when a proposed combination of cultural use and community day care encountered separate heritage and health-authorisation processes.

Enhancing Our Heritage Toolkit 2.0 (EoH 2.0) is adapted as an analytical lens rather than applied as a complete management-effectiveness assessment (UNESCO et al., 2023). Its twelve tools were translated for small historic spaces and used to examine values and objectives, contextual pressures, governance arrangements, legal frameworks, resources, implementation, outputs and observed change. Formal performance ratings were not used because the cases lack common baselines, monitoring periods and World Heritage management structures. Additional questions addressed urban-rural conditions, public-private arrangements, intermediary practice and the conversion of restored space into capacities for use and action.

Key findings and arguments

The comparison first shows that strategic clarity may develop through action rather than precede it in a completed plan. At Chang-Yuan Hospital, the owner's intention to retain the building did not initially provide a settled reuse brief, funding structure or statutory pathway. Repair, historical research, family collections, exhibitions and partial public access gradually clarified what the building could preserve and support. Later works retained knowledge and interpretive choices from the earlier phase. Registration as a historic building on 31 October 2024 consolidated legal recognition after repair had been

completed, while full opening on 7 June 2025 carried earlier research into public use. Strategic direction was therefore built through staged decisions and continuing relationships.

Second, flexibility depends on the ability to reorganise a project when institutional approvals do not align. At Changhua Railway Hospital, the proposed day-care use eventually obtained heritage approval after revision, but this did not secure the separate authorisation required for a long-term-care service. This institutional friction underscores how cross-sectoral regulatory silos—specifically between heritage conservation mandates and public health licensing—can constrain adaptive reuse even when spatial and architectural approvals are successfully negotiated. The day-care contract ended in 2023. The operator retained its lease and reported that physical improvements, training use and local relationships supported exhibitions, courses, performances and periodic public activities. The intended service and one intermediary relationship ended, while other material and organisational outcomes remained available. Adaptive capacity consequently belongs to the wider governance system, not to a single organisation or plan.

Third, contextual systems thinking changes the unit of analysis from the isolated building to the connections that allow it to function. Across the portfolio, differences in market demand, access to specialist knowledge, public programmes, property arrangements and local networks affected the options available to each project. Urban locations did not automatically ensure viable operation, as shown by the repeated adjustments to the use of the historic shop house now occupied by BackerHouse in Taipei. Conversely, projects outside metropolitan cores could draw on family histories, local industries and public cultural programmes as resources. Urban-rural variation is treated as conditions shaping governance and implementation, not as a binary comparison of performance.

Fourth, inclusive governance requires attention to decision rights as well as participation. Owners, operators, authorities, professionals and community organisations entered at different stages and did not possess equal power to approve or sustain a proposed use. Intermediation helped connect these actors, but could not remove conflicts between property rights, conservation requirements, service regulations and operational risk. Empowerment was

most visible where knowledge, spatial improvements or partnerships remained usable beyond a specific commission. It was weaker where participation did not alter authority or where a proposed public function remained unauthorised. Restoration can therefore create conditions for empowerment, but does not guarantee it.

Finally, knowledge circulation became part of implementation capacity. Project investigation at New State House connected historical images and family oral history with repair and subsequent operation. Publications, talks and the book *Beyond Aged*, which brings together thirty-two reuse cases, made project experience accessible to owners, practitioners and wider publics. These outputs demonstrate an emerging knowledge platform, although their long-term uptake and effects have not yet been evaluated.

Relevance for heritage management planning practice

The findings suggest that management planning for small-scale, privately owned heritage should combine a stable normative core with revisable operational modules. The stable core should identify values, non-negotiable conservation requirements, responsibilities and decision authority. Revisable modules should address proposed use, funding, permissions, implementation, operation, monitoring and handover, allowing them to change without severing accumulated knowledge and relationships. This structure links the five concerns of the session. Strategic clarity requires explicit values. Flexibility, on the other hand, demands revisable operational pathways that can adapt when policies fail. By tracing spatial and social dependencies beyond the property line, this approach exposes how inclusive governance must account for systemic exclusions, framing coordination and handover as essential professional labour.

The study does not establish long-term financial sustainability or social impact; organisational learning cannot compensate for an unrealised public service. Its contribution is more limited and practical: heritage management effectiveness can be examined through the continuity, redirection and interruption of knowledge, relationships, resources and uses across a project lifecycle. Intermediary-led public-private arrangements are valuable where they preserve these connections across institutional transitions, while their limits reveal which

decisions remain dependent on statutory authority, ownership and sustained operational commitment.

Keyword: heritage management planning; public–private partnerships; intermediary organisations; adaptive governance; empowerment

Abstract ID: #620

Leguizamon Pineda Laura Paloma

Chiribiquete National Park, World Heritage Site (Colombia): new approaches for collaborative management of archaeological heritage in a peacebuilding context

Panelist: Dimension 4 Inclusive Governance

Chiribiquete National Park, World Heritage Site (Colombia): new approaches for collaborative management of archaeological heritage in a peacebuilding context

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Keywords:
World Heritage, Archaeological Heritage, Heritage Management, Communities, Armed Conflict, Peacebuilding

Context

Chiribiquete National Park was inscribed on the World Heritage List in 2018 as a mixed site due to its biological diversity and ancient rock art, which are estimated to date back to 18.000 years. It is located in one of the prioritised regions of the National Peace Agreement (2016) in Colombia, where local communities are striving to advance economically, environmentally, and socially as part of a 'post-conflict' era that it is still confronted with the significant challenge in terms of an armed uprising at the national and regional levels. In consequence, Chiribiquete offers a unique opportunity to examine how archaeological heritage performs new social roles and meanings in the context of peacebuilding and how novel heritage management models can be explored in light of actual social needs and realities.

Approach/methods

The discussion presented herein is founded on the author's experience as site manager from 2020 to 2023, and on her ongoing doctoral research from 2023 to the present. Discussions on heritage management held by the author and the World Heritage Site's team have been exploring new approaches to integrating local communities into the management of the site, moving forward to a *people-centred approach* that enables an understanding of the actual social realities and needs. Likewise, discussions on the role that archaeological heritage is currently playing in a period of 'post-conflict' and peacebuilding are based on interviews conducted by the author and their corresponding qualitative analysis following the methodology of Grounded-Theory

(Thornberg & Keane, 2022; Charmaz, 2005; Corbin & Strauss, 2008)), including several coding phases of the transcribed interviews. The author is currently undertaking the analysis phase, seeking to integrate the results of the interviews coding with the main concepts guiding the research: heritage as social process (Apaydin, 2018; Harvey, 2001; Smith, 2006), place (Ashworth et al., 2007; Aucoin, 2017; Merschdorf & Blaschke, 2018), and peacebuilding (Frère & Wilen, 2015; Galtung, 1976). The author is also currently exploring the concept of ontological security (Giddens, 1991) as a feasible and useful concept to better comprehend and integrate the contributions of heritage in the process of building peace in the region.

Key findings

Despite the fact that the research is still ongoing, the data collected has already provided key insights on different matters.

1. Despite the fact that the research was initially centred on the study of archaeological heritage (rock art paintings), it became evident that participants employed the term 'heritage' to denote a concept that was integrated with both cultural (archaeological heritage) and natural heritage. In this sense, for communities, heritage, as something to be protected and passed on, is inherently connected to the natural environment as an integral component of the archaeological site, and in this case, of the World Heritage Site.

2. Heritage has been playing an important role in shaping new social identities and memories among local communities that are directly (or indirectly) involved in the management and protection of the rock art sites, as well as fostering a renewed sense of belonging to the place. These elements have contributed to the development of new ways of living together and resolving conflicts, thereby building social cohesion and resilience.

3. Data collected in this research, as well as the results of expert research on armed conflict in Colombia, point to a resurgence of armed conflict nationwide, and in particular the beginning of a new cycle of political violence following the 2016 Peace Agreement (Gutiérrez Sanín, 2020; Ávila, 2022). In this context, communities in the World Heritage Site are beginning to grapple with the initial resurgence of armed conflict in the region.

4. Ontological security is defined as a "sense of safety in the world" that enables individuals to endure and confront potentially devastating situations and threats (Giddens, 1991). Data suggest that heritage is playing an important role in building social cohesion within communities by shaping new social identities and memories. This research posits that, in doing so, heritage is contributing to the social resilience and ontological security of the communities involved.

5. This research proposes that social resilience and ontological security foster reconciliation and are key elements to building peace at a local level. These elements may also be crucial in enabling these communities to withstand the new cycle of armed conflict that is emerging in the region.

Relevance for heritage management planning

This case study provides data that enables the author to argue that heritage, as a social construct, can play a significant role in terms of ontological security, offering communities a means of social resilience and survival during a periods of upheaval, such as those experienced between a past armed conflict, the current need of building peace and a resurgence of a new period of armed conflict in the region.

This highlights the need for a more comprehensive approach to heritage management in terms of:

1) An understanding of heritage as a social process with multiple layers, integrating cultural and natural elements.

2) Given the important role of heritage in communities and in terms of ontological security within wider social, economic and political contexts (including the new cycle of armed conflict), it is clear that people must be included as an integral part of the World Heritage Site management framework. It is essential to recognise and respect the social rights of communities over heritage, while also fostering the contributions of heritage to society, including in terms of ontological security and peacebuilding. Therefore, site managers and heritage professionals should acknowledge the role of heritage in society and in wider social, economic and political contexts, acting accordingly with awareness and responsibility.

3) These elements align with both a *heritage-place-approach* (recognising the integration of heritage in wider contexts) and a *people-centred-approach* (recognising the role of communities in co-producing and protecting heritage). In consequence, heritage management models on the site should evolve to properly understand social realities and needs, and to more effectively integrate local communities within a *people-centred-approach*.

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Abstract ID: #638

Alula Tesfay Asfha

From Emergency Documentation to Modular Management: Post-Conflict Heritage Planning in Tigray, Ethiopia

Poster Presentation

Abstract ID: #693

Apoorva Iyengar

Collective Stewardship in Practice: Community-led Governance in a Complex Urban World Heritage Site

Panelist: Dimension 4 Inclusive Governance

Collective Stewardship in Practice: Community-led Governance in a Complex Urban World Heritage Site

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Keywords: Community-led governance; collective stewardship; urban World Heritage; historic urban landscape; participatory heritage management; Mumbai

Urban World Heritage Sites are governed through increasingly complex networks of stakeholders and agencies. And yet, formal management structures often struggle to coordinate these interests at the scale and pace required by living urban environments. In this scenario, local communities and civic societies can play a great supporting role in the day-to-day management of heritage properties, especially in large urban settings.

In the 1990s, rapid urban expansion in India led to the loss of under-recognised local heritage. In response, citizen groups began advocating for heritage conservation in many cities. Mumbai emerged as a leader in such initiatives, becoming the first Indian city to integrate heritage conservation into urban planning policies in 1995 (Chainani n.d.). Heritage lists and guidelines were incorporated into the city's Development Control Regulations, classifying buildings into Grades I, IIA, IIB, III, and Precincts based on their significance (Urban Development Department, Mumbai 2018, 273–279). While this marked a significant step, the focus remained primarily on colonial and pre-colonial built heritage, with modern, natural heritage and precincts receiving less legal protection. To oversee implementation, Mumbai established its first Heritage Conservation Committee (MHCC) in 1995, which continues to advise the local government on all heritage-related matters under the Development Control Regulations (Chainani n.d.). What remains unique to a city like Mumbai is that citizen-driven organisations continue to play a vital role in bridging the gap between government-level development plans and ground-level realities while dealing with heritage within complex urban environments. Organisations like the Urban Design Research Institute (UDRI), Kala Ghoda Association, Art Deco Mumbai Trust, and

FORT Heritage Conservation Association have a long history of heritage advocacy, continuing to monitor the upkeep of local heritage neighbourhoods.

Mumbai is home to three UNESCO World Heritage properties, including the ‘Victorian Gothic and Art Deco Ensembles of Mumbai’, inscribed in 2018. The site represents a layered historic urban landscape within the core of Mumbai’s Island City. Spanning 66.34 hectares (with a 378.78-hectare buffer zone), the site comprises a large open space, the Oval Maidan at its heart, with 19th-century Victorian Gothic institutional buildings and the 20th-century Art Deco residential fabric along Marine Drive and the Backbay Reclamation. Beyond its architectural significance, the site is notable for the process of its inscription, which was spearheaded over fourteen years by local residents and civil society organisations rather than state-led initiatives. The same civic networks that helped produce the World Heritage designation subsequently became part of its informal local-led governance infrastructure.

This paper examines the evolution of a community-led governance and management model in the post-inscription phase, focusing on the emergence of collective stewardship as a networked approach, in the absence of a formally designated local nodal authority. Operating within a dense and continuously inhabited urban context, the site presents a complex matrix of stakeholders, including private residents, institutional owners, municipal bodies, tourists and advocacy groups. In response, multiple citizen-led organisations have assumed complementary stewardship roles, collaboratively addressing management concerns across precincts.

The paper focuses on the experience of the FORT Heritage Conservation Association (FORT), a collective of Resident Associations and not-for-profit organization, working to ensure the protection of the heritage buildings and precincts in the Fort, Churchgate, and Marine Drive areas of Mumbai. It brings together six Resident Associations representing different dimensions of the urban landscape such as urban planning, housing, open spaces, heritage areas and precincts. The main goals of FORT are to ensure the protection of the heritage buildings and precincts in the Ensemble by regular site inspection and monitoring; to ensure that the Inscription and its Outstanding Universal Value are upheld in the future; and to continuously engage with local authorities through advocacy and outreach activities.

The paper examines how this form of stewardship operates through a range of interventions. These include correspondence and representations to civic authorities; Right to Information (RTI) applications; review of Mumbai Heritage Conservation Committee (MHCC) proceedings; monitoring of government notifications and proposed development projects; and engagement with interventions that may affect the visual and physical integrity of the World Heritage property. For example, following sustained advocacy by FORT since 2022, the large unauthorised LED display board at the National Gallery of Modern Art (NGMA) was removed in June 2025. FORT also facilitated the replacement of an intrusive commercial signboard at Moonlight Building with a more heritage-sensitive design, while continuing to engage with authorities regarding new interventions affecting the visual integrity of the World Heritage Site. Such interventions demonstrate how relatively small, incremental actions can contribute to the protection of the broader heritage character and the Outstanding Universal Value of the World Heritage Site. Drawing on a range of initiatives undertaken across the World Heritage property, including the development and implementation of an urban-scale signage management plan aimed at improving public awareness, building- and site-level advocacy efforts, and a climate risk assessment study, the paper examines how collaborative stewardship is translated into practice.

Situating this case within broader debates on historic urban landscape management, the paper highlights key challenges faced by such community-led governance structures: limited institutional authority/ co-ordination and fragmented regulatory frameworks. Very often, citizen groups have to continuously engage with multiple stakeholders of the site in a sustained manner for long periods of time. This demonstrates the importance of similar local-led governance measures, which are essential for the day-to-day monitoring and protection of heritage areas.

Through these examples, the paper argues that collective stewardship can function as an adaptive governance strategy, enabling local capacity and incremental interventions to address institutional gaps. It argues that such models are particularly relevant for rapidly transforming urban centres in the Global South, where formal governance structures often struggle to address the layered realities of living heritage sites and collective stewardship can complement statutory governance methods. The

Mumbai case offers transferable insights into participatory governance, multi-stakeholder coordination, and the integration of climate considerations within heritage management frameworks.

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Kuok, Lap I

Backstage Heritage in a Tourist City: Assemblage Mismatch and Living Utilities in Macao's Chi Lam Vai

Panelist: Dimension 2 Flexibility and Adaptive Capacity

Backstage Heritage in a Tourist City: Assemblage Mismatch and Living Utilities in Macao's Chi Lam Vai

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Keywords: *Historic Centre of Macao; staged authenticity; living heritage; informal settlement*

Context and Question

Following the Historic Centre of Macao's 2005 World Heritage inscription, *vai* (圍; lit. enclosure) has gained recognition as a legacy of Chinese communal life within the city's historical urban fabric. On the compact Macao Peninsula, the frontstage of heritage tourism substantially overlaps with the backstage of residential life. Conservation planning must therefore address both the legibility of inherited urban form and residents' capacity to continue living within it.

Chi Lam Vai (茨林圍; Pátio do Espinho), behind the iconic Ruins of St Paul's, makes this tension visible. It is both Macao's largest surviving informal settlement and a designated historical urban fabric under the 2024 Protection and Management Plan (Administrative Regulation No. 4/2024). Unlike the typical image of a narrow lane lined with Chinese-style row houses, Chi Lam Vai has at least four lanes, deteriorating dwellings, inadequate utility infrastructure, and incomplete property registration. This raises a question: what happens when the formal fixedness sustaining a monument's memorial function governs living heritage valued for the adaptability of everyday life and cultural practices?

Extending MacCannell's (1973) frontstage–backstage continuum of authenticity, the study approaches Chi Lam Vai as "backstage heritage," focusing on ordinary urban life continuing within a heritage landscape consumed by tourism. This framing highlights the uneven relation between resources made available through heritage recognition and constraints imposed on infrastructure and amenity improvement. The study traces the historical and institutional production of this unevenness and examines civil practitioners' responses. It then considers the planning implications of leaving heritage open to reorientation as its understanding and living conditions change.

Approach and Method

The study combines historical contextual analysis, policy review, and field investigation. Gazetteers, street directories, maps, government records, and previous research reconstruct the changing recognition of *vai* from a fluid communal living unit to a colonial street category and protected morphological object. The policy review compares the 2014 and 2018 consultation documents with the 2024 Protection and Management Plan. It also examines 144 Urbanistic Conditions Plans concerning 82 *vai* (Land and Urban Construction Bureau, n.d.), tracing the translation of general principles into case-specific controls. Field investigation combines site observation, interviews with organizations involved in Chi Lam Vai's regeneration, and community-produced materials.

The evidence is interpreted through "assemblage mismatch," extending from urban assemblage approaches (Dovey, 2012; McFarlane, 2011). Assemblage mismatch describes partial misalignments among historical narratives, institutional resources, legal categories, physical forms, and everyday practices arising from different historical and administrative logics. In Chi Lam Vai, this mismatch appears in three relations: between morphological protection and living utilities, between the local history of the *vai* and the broader St Paul's cultural-landscape narrative, and between formal building control and informal environmental improvement. Assemblage mismatch thus indicates the management gap, and occasional openings for responding actions, encountered when the plan meets the inhabited settlement.

Key findings and arguments

The contextual analysis identifies a category conflict between the historical recognition and the modern management of *vai*. Across Guangdong from the 16th to 19th centuries, *vai* referred less to a predetermined architectural or street type than to collective habitation within a shared territory, with forms that adapted to changing social and environmental conditions. Early *vai* in Macao retained this fluidity, and some names and communities could even survive relocation and substantial physical change. From the mid-19th century, Portuguese fiscal and urban administration gradually translated *vai* into street categories such as *beco* and *patio*, and partially modified some into more administratively legible configurations. Modern research concentrated on these colonial examples, while the conservation framework converted its architectural features into a typical morphological model. This classification disassembles *vai* into manageable physical objects while under-recognizing its historical capacity to adapt as an integrated living unit. Chi Lam Vai's management gap therefore arises from the mismatch between the heritage object recognized by the framework and the inhabited settlement being managed.

The policy review finds that this category conflict is reproduced through administrative implementation. The case-specific flexibility in Urbanistic Conditions Plans mainly involves selecting different combinations of controls concerning height, massing, façades,

materials, air-conditioning placement, and street alignment according to present physical features. This system can regulate small-scale or single-building projects and maintain visual continuity, but cannot readily guide settlement-scale transformation. Chi Lam Vai is consequently caught in a double bind: it is over-recognized as a heritage object whose passageways and open spaces are fixed, yet under-recognized as a living settlement that lacks the formal property status required for utility-network upgrading and possible land adjustment. Protection and management become ineffective when the settlement needs to continue its unfinished development as an adequate urban neighbourhood.

Field investigation shows civil practitioners working provisionally within this gap through a coordinating approach that they described as "middle route," translating residents' needs and connecting them with formal and informal resources across public agencies and civil organizations. This approach is currently implemented through two provisional tactics:

1. **Expanding the local narrative**. Voluntary environmental work recovered structures associated with the former St Paul's College and communally significant objects, supporting a multilayered narrative that aligns the settlement with tourism planning around the Ruins and broadens access to public services, subsidies, and civic partnerships.
2. **Narrowing the administrative object**. A pilot individual utility improvement proceeded as a minor equipment installation, keeping review focused on the equipment and its visual compatibility without activating a full examination of the dwelling's informal status.

Overall, the findings show that the current framework protects a morphology derived from a narrowed understanding of vai but provides no formal route for addressing the settlement's urgent living needs. Civil organizations can respond only by working through limited administrative openings, leaving property status and settlement-scale utility upgrading unresolved. Their interventions buy time for broader discussion of Chi Lam Vai's future development but cannot substitute for it. The paper therefore proposes "heritage in progress," framing heritage status as a phase of intensified historical recognition and calibration within continuing urban development, rather than conservation's ultimate objective.

Relevance for heritage management planning practice

Chi Lam Vai reveals that civil practice is more adaptive than institutional management. The framework designates the settlement as street-based urban fabric, making protection an additional constraint. It neither addresses the development impasse created by unresolved property status nor permits improvements beyond predetermined morphology. Trained civil organizations instead use provisional tactics to connect residents' needs with public services, subsidies, and administrative openings. Their partial improvements and dialogue with public agencies expose the institutional gap. Chi Lam Vai thus directly challenges the

street-based urbanscape conservation approach and the idea of heritage as a remnant of a long-finished building.

Heritage management should not add morphological restrictions to the impasse produced by the ordinary urban administration, but provide a supplementary route for reconsidering whether this administrative limbo remains justifiable considering *vai*'s historical adaptability and Chi Lam Vai's unfinished development towards an adequate urban neighbourhood. Heritage status therefore provides an entry point for administrative negotiation beyond ordinary procedures. Material remnants, meanwhile, should be analyzed as evidence of the site's historical lineage and used to evaluate how proposals for transformation or adaptive reuse interpret that lineage, rather than be treated as templates fixing a single interpretation or spatial form. Until such a route is established, trained civil organizations remain intermediaries between urgent living needs and relevant public institutions.

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Laura Nicolini

Conservation and Management Plans for Mediterranean World Heritage Archaeological Sites in the Face of Climate Change, Conflicts, and Political Instability

Remote Oral Presentation



ICOMOS Scientific Symposium 2026

LIVING HERITAGE: RESPECT, ENHANCE, ACCEPT, PARTNERSHIP

- CALL FOR ABSTRACT

Conservation and Management Plans for Mediterranean World Heritage Archaeological Sites in the Face of Climate Change, Conflicts, and Political Instability

Laura Nicolini[1]; Gaetano Palumbo[2]

Session 1: ***"Heritage Management Planning Systems: Challenges, Lessons Learned and Potential New Approaches"***

The archaeological heritage of the Mediterranean constitutes one of the most important and diverse heritage complexes in the world. The region is home to an exceptional concentration of UNESCO World Heritage sites which bear witness to the evolution of numerous civilisations and constitute a heritage of universal value for present and future generations. However, over the last two decades, these cultural assets have been subjected to an increasingly severe combination of threats arising from environmental processes, socio-economic and geopolitical factors. These include, in particular, rising sea levels, coastal erosion, the salinisation of soils and groundwater, extreme weather events, rising temperatures, biodiversity loss, settlement and tourism pressures, armed conflicts, institutional instability and insufficient resources allocated to conservation. Several scientific studies have identified the Mediterranean basin as one of the main 'hotspots' of climate change on a global scale, where the effects predicted for the coming decades could seriously jeopardise the conservation of archaeological heritage, particularly at coastal sites of low- and middle-income countries facing structural conditions such as financial, institutional, and governance constraints. The Mediterranean coastal archaeological heritage provides a unique laboratory for observing the interaction between climate change, socio-institutional fragility, ongoing conflicts and shifting international cooperation policies, as well as their cumulative impacts on conservation. This paper combines findings from the first two years of Laura Nicolini's doctoral research on UNESCO sites in the central-eastern Mediterranean, with Gaetano Palumbo's strategic perspective built on over thirty years of international experience in CMPs.

The complex geopolitical context of the doctoral research is increasingly unstable, challenging both conservation approaches and their underlying assumptions. While Mediterranean countries share a commitment to preserving archaeological sites, the concept of conservation has evolved from the 1964 Venice Charter through the notion of authenticity introduced in the Nara Document (1994) and the Faro Convention (2005), which emphasizes community involvement. Over the past 25 years, debates have focused on value-based CMPs, protecting Outstanding Universal Value, and risk-mitigation strategies. However, these theoretical, methodological, and scientific elaborations seem to be put to the test in the current instability, which also undermines predictive models and weakens community engagement, particularly in regions affected by migration and social transformation. Even the fundamental principle of community involvement and the preservation of traditional knowledge, which transforms the local population from a simple recipient to a protagonist in the management of its cultural and natural heritage, seems to lose its meaning in much of the Mediterranean coast and beyond, where radical social transformations due to voluntary or forced diasporas and massive migratory phenomena have an impact on community perception of common heritage. At the same time, shifts in donor strategies -such as the EU's Global Gateway- suggest a move toward more geopolitically driven, top-down

approaches.

The research aims to identify innovative, replicable, and sustainable approaches and strategies for resilient and adaptive management to strengthen the long-term conservation of the coastal archaeological heritage sites in low- and middle-income countries, taking into account future climate scenarios and regional political instability. The doctoral research applies a multi-criteria methodology to investigate five multidisciplinary analytical dimensions of the selected Conservation and Management Plans: 1. Institutional Governance; 2. Implementation Capacity; 3. Integration of climate change; 4. Community participation, heritage interpretation, living heritage, and shared meanings; 5. Monitoring and Adaptive Management. This analysis integrates qualitative and quantitative research techniques to provide a comprehensive and well-founded understanding of the CMPs' capacity to strengthen long-term cultural heritage protection in the current complexity generated by the compound risks (urban and tourism pressure, climate change, political instability and conflicts, and other emerging challenges) that Mediterranean countries are facing. The study identifies the CMP's strengths, limitations, and opportunities for improvement. Combining documentary analysis, fieldwork, expert consultations, and a series of semi-structured interviews conducted with site managers, national authorities, and heritage professionals, the research investigates the potential contribution of Conservation and Management Plans to institutional resilience, interpreted within the broader context of the Sustainable Development Goals. To this end, the doctoral research conducts a comparative analysis of CMPs from selected World Heritage archaeological sites (Butrint in Albania, Tyre in Lebanon, Carthage in Tunisia, and Paestum in Italy, the latter considered as best practice). They are assessed in terms of capacity to address these compound challenges, using a multidimensional assessment framework centred on the concepts of "institutional and cultural resilience".

The findings reveal an extremely varied picture. The management of Butrint shows a high level of compliance with UNESCO management standards; the management structure has recently been revised and includes a new management and conservation plan, implemented through detailed sector-specific plans. However, the looming threat of severe decay and possible loss of those mosaics that are flooded either seasonally or permanently appears to be overlooked or not effectively addressed. At this site, pressure from tourism combines with that of urban development and land-use changes, which the control mechanisms struggle to counteract. It is worth noting that informed local communities are asserting their right to participation and demanding controls on speculative practices, and have ultimately succeeded in ensuring that community participation is embedded within management policies. The Paestum site stands as a model of excellence in the management and promotion of cultural heritage: an example of this is the structural monitoring project for the Temple of Neptune, the data from which is available online in real time for study and research purposes. The management team's ability to secure funding and forge institutional and scientific partnerships is commendable. However, there is also a real risk of losing heritage elements that are of secondary importance compared with the site as a whole. The role of the overarching management structure for the entire National Park, including the Archaeological Sites of Paestum, appears to ensure control over pressures aimed at altering the landscape. Coordination and institutional cooperation between the management levels of the two organisations is challenging. The case of Tyre highlights the structural vulnerability of a management system that remains heavily dependent on international support for the development and implementation of conservation measures and is severely affected by regional political instability. The Conservation Plan dates back to 2002, when climate change and the role of local



communities had not yet become central issues in heritage management. Nevertheless, the Plan is credited with having introduced a values-based approach that integrates conservation, tourism development and local socio-economic objectives. Despite the slow but significant progress made over the last two decades in terms of conservation, institutional cooperation and capacity-building, the ongoing conflicts are undermining these achievements and severely limiting maintenance activities. They have also demonstrated that the vulnerability of heritage extends beyond the archaeological fabric and encompasses the loss of living heritage as a consequence of forced displacement, which disrupts community life characterised by traditional rituals and activities and weakens the bonds between people, places and memory. The Carthage WHS is characterised by a fragmented and inconsistent management framework, reflecting the diversity of the archaeological areas within it. Following the major international conservation programmes undertaken at the start of the 21st century, a new phase of investment is focusing on the regeneration of the Byrsa Acropolis and the restoration of the National Museum of Carthage. Ongoing archaeological research is also expanding our understanding of the site and drawing attention to emerging environmental threats, including the rising water table in the Punic Tophet. Despite considerable institutional efforts, the overlapping of responsibilities between public bodies continues to undermine coordinated management and the ability to control intense urban pressure. Awareness of the risks associated with climate change has not yet translated into planned adaptation measures, leaving increasingly degraded areas, such as the Punic harbours, particularly vulnerable. There is still no comprehensive archaeological, conservation and enhancement strategy for the site. In this context, the long-standing concern for safeguarding Carthage's historical identity takes on renewed significance in this new phase in the history of the Mediterranean we are now facing.
In response, the study identifies key priorities: placing shared heritage at the center of peacebuilding and social cohesion; strengthening genuine community participation; promoting knowledge sharing and new models of site interpretation; advancing open-source GIS-based knowledge digitalization; and enabling continuous monitoring through satellite technologies supported by artificial intelligence. An overarching cultural policy aimed at the promotion of countries' initiatives for the recovery and communication of the WHSs' Mediterranean past can provide a basis for dialogue, mutual recognition, and reconciliation between different identities, thereby helping to foster a sense of belonging to a shared and interconnected Mediterranean cultural heritage.

Keywords: World Heritage Conservation and Management Plans, Climate Change, Mediterranean Basin, Social Cohesion Policies

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Doğa Dolay

In-Between Living Heritage and World Heritage: The Multi-Layered Cultural Landscape of Bergama (Pergamon)

Poster Presentation