

Editorial Issue 1/2025

Narratives on Water History and Heritage: Agents of Value-Based Adaptive Design Approaches

Carola Hein, Matteo D'Agostino, Maëlle Salzinger and Zuzanna Sliwinska

Blue Papers aims to inspire new approaches to water, culture, heritage and sustainable development. We believe historical and historiographical analysis can help shift the discourse from strategies focused on short-term gains to long-term approaches that consider both historical dynamics and the potential consequences of future developments. An analytical focus on water – its materiality and flows – can help shift the discourse from disconnected, monodisciplinary approaches to spatial, social and cultural analysis, connecting multiple scales, diverse stakeholders and local characteristics over time.

In the TU Delft MSc courses Adaptive Strategies and Urban Archipelago, Carola Hein and her team invite students to develop a new “water mindset,” to reflect on historic ecosystemic practices, rethink spatial typologies and develop new design methods (Hein et al. 2024; De Martino et al. 2023). By including these student projects in *Blue Papers* and on the PortCityFutures website, we hope to encourage water professionals, designers, citizens and decision-makers to think differently about water.¹

Education and exhibitions also play a critical role in reshaping how we value water heritage outside academia. The Global Network of Water Museums (WAMU-NET) aims to reintegrate values of historical ecosystemic approaches into modern discourses, where water is often regarded solely as a commodity. Through its World Inventory toolkit,² WAMU-NET is facilitating the development of new narratives about water and new awareness of water among educators, cultural institutions and the wider public.

Together with WAMU-NET, *Blue Papers* has produced a thematic issue on ancient hydro-technologies (AHTs), comprised of articles published in the journal's first seven issues as well as an

1. Contributions from Adaptive Strategies 2023 and other years, <https://www.portcityfutures.nl/ar0110-adaptive-strategies-designing-scenarios-for-port-cities>; Urban Archipelago, <https://www.portcityfutures.nl/ar2aa017-urban-archipelago-designing-for-new-maritime-mindsets>.

2. The World Inventory of Water Museums is freely available through the WAMU-NET website. <https://www.watermuseums.net/activities/world-inventory/>.

original preface, editorial and a contribution to *The Voices of Water* – a video exhibition promoting ancient hydro-technologies showcased at the 10th World Water Forum.³ This thematic issue draws on the collective wisdom of the past to rethink future approaches to water management and spatial design, providing examples of historically successful AHTs where community needs and values were in balance with ecosystem dynamics and local practices that prioritized environmental regeneration (Hein et al. 2025). It provides policymakers with insights into the multitude of approaches to drinking water, aquaculture, agriculture, transportation, and flood control, which although ingenious, have often been disregarded.

In the age of globalization and social media, citizens and (water) practitioners are bombarded with conflicting messages about the environment, climate change and social justice. Rather than pointing to particular narratives we think should be prioritized, we aim to provide tools that enable actors to reflect on the solutions they wish to support, help them identify underlying values and associated narratives. We emphasize the importance of tracing connections between values, narratives and water system design. In this way, we equip actors to become critical agents of change, with the skills and knowledge to co-create different ways of living and designing with water. Moreover, we believe that through a process of value deliberation and water-sensitive design new narratives about sustainable and inclusive futures can emerge organically and evolve over time. The value case approach, presented in this issue through several articles discussing its application in the analysis of water systems, offers a theoretical and methodological starting point.

Physical space supports narratives with sensorial experiences and images that people can relate to. For the lake of Annecy in France, discussed in two articles of this issue, the narrative of the lake's pristine waters – that enhance the city's attractiveness – is reinforced by the lived physical experiences of Annecy's residents and tourists who view the lake, hike around it, swim or sail in it. At the same time, physical spaces embody the values that guided their design, even if those values have changed. In this sense, the places we shaped in the past continue to shape us today – an idea expressed in a popular quotation from an address by Winston Churchill to the House of Commons in 1943: "We shape our buildings; thereafter they shape us." Some places shaped in the past, including water spaces, like wells or fountains, are readily apparent in a cityscape, while others often go unnoticed, such as underground water infrastructure. Everyday, people see water, bathe in it, drink it, cook and clean with it in buildings and cities, yet, few people connect these activities to the need to preserve and clean water. Calling attention to water, especially in innovative ways, can help raise awareness in a wider audience. Our design of the future reflects how we read and interpret the present and the past. Architects and designers can help by generating comprehensive design approaches. We need to put a renewed commitment to holistic, nature-aligned water management at the center of larger discourses, both in policy-making and in the field of practice.

3. The "Voices of Water" exhibition is accessible online through the WAMU-NET website. <https://www.watermuseums.net/campaigns/the-voices-of-water/>.

This issue brings together diverse contributions that address these themes and argue for the integration of historical and traditional knowledge in contemporary designs and water management systems.

Carola Hein opens part 1 of the issue, "Challenges, Concepts and New Approaches," by proposing a value case approach to the design of water systems that assumes that historical decisions about building, governing and living in cities and landscapes are more than purely technical or economic matters. In her article, she explains how her thinking has evolved over the years, leading her to connect changes in spatial, social and cultural conditions over time, informing both her pedagogy and research practice.

The article by Jordi Morató Farreras, Olga Lucía Sánchez Santander and José Luis Martín reminds us of the imminent future of water scarcity and ecosystem degradation, arguing for the integration of traditional knowledge into modern water management. Similarly, Vladimiro Andrea Boselli, Massimiliano Borroni, Jalal Kassout, Muhammad Houssni, Athmane Kettouch and Simone Cristoforetti analyze the evolution and spread of ingenious qanat systems and their role in fostering cultural continuity. Together, these contributions demonstrate that ancient hydro-technologies offer valuable lessons regarding the efficient use of resources with a minimal carbon footprint. Following this theme, Anne Poelina's interview foregrounds the management of Australia's Fitzroy River basin in local communities as a way to diverge from exploitative economies by organizing a multi-disciplinary and intergenerational council of river custodians.

Focusing on sustainability transition narratives and policies in France, Maëlle Salzinger echoes Anne Poelina's claim for approaches that speak to public interest. She critiques the tendency of dominant political narratives to emphasize the short-term costs of sustainability transitions, which encourages fear and results in low social support for climate policies. She offers an alternative, which places water heritage and local values at the center of sustainability transition narratives to inspire local communities and ground future policies.

The second article by Carola Hein closes the first section of this issue of *Blue Papers* by presenting methods to analytically connect dissociated water uses and practices, thereby facilitating holistic and long-term development and design. Hein presents the making of the value case approach through the connection and development of methodologies that allow for the investigation of spaces, stakeholders and sociocultural practices over time. This effort lays the foundation for creating shared missions and visions through participatory activities and workshops.

Part 2 features the application of the value case approach for Lake Annecy in France by Maëlle Salzinger, and the revival of the *peshwa nahar* system in the city of Pune, India, by Radhika Mulla and Pallavee Gokhale. The two articles describe the application of methodologies acquired through the professional education course Water Systems Design: Learning from the Past for Resilient Water Futures to leverage heritage and its linked ecological and local values to develop holistic visions and actionable development agendas in Annecy and Pune, respectively.⁴

The issue continues with three methodological case studies presented by students and instructors of the on-campus courses led by Carola Hein and colleagues. The three contributions hinge on the potential of integrating heritage conservation and traditional practices in modern design strategies.

Drawing on his personal experience, David Sauer considers the links between rural water management in Mexico and spatial development and the potential to promote water awareness and justice on the outskirts of Mexico City. Through research and design developed in his graduation thesis at Delft University of Technology, he highlights the efficiency and values of the *ejido* system and relates it to the diverse water needs of today's urban settlements. Regina Klinger, Nicola Vollmer and Aylin Yazici expand on their work in the MSc course Urban Archipelago, in which they explored the physicality and embodied experiences of the water system in Tetouan, Morocco. They designed a soundscape aimed at reconnecting local citizens with the historic *skundo* water system, while modern approaches to water distribution threaten the *skundo* system's structures and associated traditional values. Marlies Augustijn, Mila Avellar Montezuma, Beate Begon, Jean-Paul Corten and Carola Hein describe the education and research behind a multi-stakeholder workshop focused on the Netherlands' community of Scheveningen, which faces serious threats from sea level rise. They highlight the possibilities for safeguarding heritage and adapting the coast through nature-based approaches and urban blue-green networks featuring flexible infrastructures.

The historical analysis for informing spatial development in the issue's opening article is echoed by Roeland Emaus and Sylvia Leenaers, who call for landscape policies grounded in long-term material and sociocultural changes, using an innovative mapping technique that reconstructs decades of landscape transformation from historical aerial photos. Similarly, Zuzanna Sliwinska's study of the dynamics behind Hong Kong's declining wetlands and fishponds reframes them not as passive ecological sites, but as living environments shaped by cultural practices and historical land use. Building on the work of Emaus, Leenaers and Hein, Sliwinska highlights the importance of integrating cultural heritage into conservation efforts, arguing that only by recognizing the relevant values can we effectively connect ecological regeneration, climate adaptation and urban development.

This issue of the *Blue Papers* concludes with two interviews exploring the process of establishing a "water museum" as part of the Global Network of Water Museums. Lachie Carracher, a member of the Fitzroy River Council, introduces his efforts, along with researchers and local communities, to establish Living Water Heritage – a digital platform and virtual museum that collects and valorizes the multifold Indigenous knowledge and heritage of the Martuwarra (Fitzroy River) basin.

4. Water Systems Design: Learning from the Past for Resilient Water Futures is an online professional education course developed by Carola Hein, Matteo D'Agostino, Carlien Donkor, Lea Kayrouz and Zuzanna Sliwinska in collaboration with the TU Delft Extension School. More information is at: <https://online-learning.tudelft.nl/courses/water-systems-design-learning-from-the-past-for-resilient-water-futures/>.

Alioune Dème discusses the significance of the West Africa Museum of Water, based in Senegal. The museum was created following commitments made in Dakar during the 2022 World Water Forum and is the result of a partnership among several river basin organizations in the Senegal River region.

References

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