3

CONSERVING ASIA’S VERNACULAR WATER URBANISMS

Vinayak Bharne

Introduction

Over recent decades, heritage conservation has undergone a radical rethinking due to new understandings of the environmental and ecological limitations of existing theory, policy, and practice. The disciplinary boundaries of heritage conservation have expanded through the influences of social, geographical and natural sciences to embrace numerous urgent concerns such as natural disasters, global warming and climate change. The act of identifying, protecting, restoring and reusing buildings, districts and built landscapes of historic and cultural significance is transforming into a far more reflective process of ecological reform with deep socio-economic consequences. The agency of heritage conservation is being re-thought, not just as an effort in cultural amelioration, but a strategic endeavour towards an environmentally sustainable future.

This shift has, among other things, brought vernacular urbanisms to the forefront of the contemporary conservation discourse. Numerous pre-industrial, indigenous landscapes, many tracing back to historic times, are gaining attention as didactic precedents for, and aspects of, contemporary design. Many such fragile, ecological landscapes, particularly in less developed societies, face an uncertain future due to unpredictable political forces and ambiguous management. They not only require our urgent attention, but also far subtler conservation approaches towards their future. This renewed focus on the vernacular, is evidence of an increasing moral imperative of environmental protection that seeks to prioritize ecological dimensions and their socio-cultural accompaniments over the conservation of a single built object or artefact. This imperative seeks to identify deeper concerns as the driver for engaging with what we value as built heritage.

This chapter contributes to this discussion by focusing on three vernacular ‘water urbanisms’ (De Meulder and Shannon 2008) in the Asia-Pacific region, whose formal, social, economic and cultural characteristics stem from the need to collect, harvest or distribute water: (1) the hiti water system of Nepal; (2) the Banaue Rice Terraces in the Philippines; and (3) the Polders of Bangladesh. The choice of these three examples is deliberate on a number of grounds: They are from different nations in the Asia-Pacific region, thereby offering insights into the overlaps and differences between their historic trajectories as well as their current socio-political structures – aspects crucial to any discussion on the future of these places. Additionally, the three places are from different ecological conditions, and thereby help expand the environmental aspects of this discussion in a comparative manner: The hitis are located in urban contexts; the Banaue Rice Terraces are exurban, rural places; and the Polders are elements of a coastal geography.
In a period of hydrological uncertainty and climate change, what is the place of vernacular water urbanisms in the larger conservation discourse? Is the global water crisis a lens for excavating the deeper relationships of cultural identities with traditional urbanisms? Do such vernacular systems and landscapes offer alternative perspectives on the relationship between heritage conservation and contemporary urbanism? Do indigenous water urbanisms expand the prerogatives and goals of contemporary conservation practice?

**The hiti water system of Nepal**

There have been times when the design of water-infrastructure has been inseparable from the cultural identity of a place. One thinks of the aqueducts and fountains of Rome, the mosaic-clad water tanks of Khiva, the *acequias* (water channels) of New Mexico, and the *tirthas* (sacred reservoirs) of Banaras. These infrastructures did not just supply water; they also created compelling urban settings whose image was indelibly linked to the social, political and cultural pride of their respective habitats.

The *hiti* water system of Nepal is a case in point (Figures 3.1 and 3.2). Also called *Dhunge Dhara*, this traditional infrastructure has provided and distributed water for approximately 1500 years and in this process created intimate interfaces with the culture’s social and religious dimensions. The *hiti*’s earliest mention dates to inscriptions found in *Hadi Gaun* as early as 550 CE, when it was established

*Figure 3.1 Hiti at Hiranaya Varna Mahavihar, Patan.*
*Source: Suraj Belbase/Wikimedia Commons*
by Lichhavi King Mandev I, and the oldest existing hiti is the Manga Hiti constructed in 570 CE in Patan (Manandhar 2013). Most existing hitis were established between the fourteenth to sixteenth centuries in the three major kingdoms of the time and the last recorded hiti, the Sun Dhara in Kathmandu, was constructed by Queen Lalit Tripura Sundari Devi in 1828 CE (Pradhan 1990). Over the ages, the hiti system has served as a source of water for drinking, bathing, laundry, and worship, with rulers governing the entire network and family groups bearing the responsibility for its maintenance and regulation (Molden et al. 2016). An estimated 95 per cent of hiti are today concentrated in the Kathmandu Valley, Nepal’s largest metropolitan area, making it an ideal place to study the contemporary condition of these indigenous artefacts.

The working principle of the hiti network is based on an interflow and base-flow process. Interflow is the lateral movement of water in the earth’s unsaturated zone that first returns to the surface or enters a stream prior to becoming groundwater. Base-flow is derived from bedrock water storage near surface valley soils with water percolating into groundwater and then flowing to a water body. Upstream ponds or aquifers are connected to a depression in the ground through pipelines and canals, and eventually made visible as channelized spouts of water along a vertical wall, accompanied by shrines, conduits, ponds, canals, reservoirs, and wells. As such, hitis have various shapes and sizes, though most spaces are square or rectangular in shape. The spouts are made of stone, and those inside royal palaces and public squares are sometimes decorated with gold.

Over the ages, hitis have evolved into significant social spaces. Many of Kathmandu’s urban areas are named after hitis – Bhotahiti, Thanhit, Marshhit, Kohiti, etc. Historically a community organization called ‘guthi’ consisting of community members associated with the local government manages and

Figure 3.2 Naga Hiti, Bhaktapur Durbar Square.
Source: Suraj Belbase/Wikimedia Commons

Asia’s vernacular water urbanisms

69
sustains the activities around hitis. Today, hitis are important meeting spaces for women, who are the primary water gatherers in families. The act of water gathering at a hiti has evolved into a daily ritual; a break from housework and a place for local gossip and information gathering on social life.

More importantly, hitis have come to bear deep sacred meaning. The Nepalese people follow both Hinduism and Buddhism and over time, hitis have become important religious settings for offering ‘pure’ water to the divine, making them nothing less than public shrines. Women are not allowed to use the hiti during the menstruation period. One must remove shoes before entering the hiti space, and the use of soap is strictly prohibited (Pradhan 1990). The design of the hiti’s water spouts usually contains spiritual symbols: most have sculptures of the water goddess, or makara (motifs of mythological water guardians) such as the crocodile, cow, goat, elephant, tiger and rooster, with water flowing from their mouth. Hitis have become the settings for numerous jatras (festivals) and religious ceremonies such as the Indra Jatra, Machhendra Nath Jatra, and Sithi Nakha that celebrate the water guardians and rain gods. Using water from the hitis as part of daily worship accords the same religious merit as worship at a holy Buddhist and Hindu place (Pradhan 1990). For example, during the Sithi Nakha in May, prior to the monsoon season, people gather in groups to clean and repair the hitis and their accompanying wells and ponds (Molden et al. 2016). This ritual is triggered by the belief that rain water gathered from a hiti has far greater sacred value than that from a metal pipe.

According to the 2009 report by the Non-Government Organization Forum for Urban Water & Sanitation, out of the Kathmandu Valley’s 389 hitis, 45 have been demolished, 68 are permanently dry, and 43 are connected with illegal municipal water pipelines. European-inspired pipe water systems were introduced by the Rana rulers in the late 1800s, and the rising appeal of piped water between the 1950s-70s led to the vivid decline in hiti use (Joshi, 2015). During the late Rana Perio civil war from 1996 to 2006, hiti systems received minimal formal care, and increasing rapid urbanization led to their further decline (Molden et al. 2016).

Additionally, rapid uncontrolled development in the Kathmandu Valley has had significant impact on these systems. The deeper foundations of high-rise buildings have resulted in the demolition of several underground water channels (Khadge and Tiwari 2014). Subterranean water has been contaminated due to the deterioration of traditional filtration systems and polluted by sewage and solid waste. Urban expansion has resulted in the paving of agricultural fields, parks, gardens, and open space increasing surface runoff. Consequently, hiti reservoirs are no longer been recharged with fresh water. An increasingly modernizing lifestyle has fragmented traditional social organization and ritual resulting in ambiguous financial support and ownership of hitis.

Today, in the Kathmandu Valley alone, there 233 hiti systems still in working condition, and their upkeep and investment towards their revitalization is justified on a number of grounds. The restoration of supply canals can serve to replenish the ponds contributing to the recharge of aquifers. Additionally, stone spouts, wells and ponds, as part of the traditional water supply network, can supply irrigation water to agricultural areas, helping increase crop yields. Canals, primarily serving to irrigate land, can also serve to recharge the ponds and aquifers, especially in Nepal’s dry seasons. As the current piped water supply system cannot reliably meet water demand in Nepal, traditional water sources, such as the stone spouts and wells, can help meet the water demands of local communities, with excess water redistributed on a strategic basis. And with the traditional stone spouts understood as a sacred heritage by their users, their status as culturally significant urban artefacts further reinforces why they deserve attention. If the hiti system and its components (such as spouts and water sources) are to be preserved and restored to function as contemporary water sources, their reconstruction must be carried out with due recognition to the hydrological cycle.

Hiti restoration has its challenges however. It can involve the relocation of structures and buildings near the spouts, many of which encroach on public property. The impervious surfaces of such buildings limit natural rainwater infiltration and can significantly compromise the quality and quantity of
water in the aquifers. Since the spouts obtain water from shallow aquifers, such buildings can also affect spout supply lines. Additionally, surface pollution can lead to the contamination of spouts, and currently, most if not all of the hiti spouts are reported to be effected in some way.

Nepal's current municipal systems have been unable to provide adequate drinking water to residents due to the disrepair of piped systems coupled with limited resources, and weak management. Most of the low-income demographic has had to subsequently depend on the historic hiti system to fulfill their water needs. An estimated 4 million people in the Kathmandu Valley have lived amidst this serious water crisis, especially after the 2015 earthquake. As noted above, while operation and maintenance methods of hitis are already part of local knowledge, their revitalization also has several environmental benefits. The revitalization of the hiti system, is a necessary, large-scale project which can make a significant and reliable contribution to the availability and augmentation of the fresh drinking water supply for Nepal today.

The Banaue Rice Terraces, Philippines

The Banaue Rice Terraces in the Cordillera Administrative Region of Luzon, Philippines, are speculated by anthropologist Otley Beyer to be around 2,000 years old (Figures 3.3 and 3.4). These elaborate agro-ecosystems were carved into the mountains by the Ifugao people largely by hand at an altitude of approximately 1,500 meters (4,900 feet) above sea level. They are composed of eight interrelating levels starting from the highest elevation: (i) inalah (public forest); (ii) muyong (privately owned forest lots); (iii)
kaingin (slash-and-burn farms); (iv) magulun (communal grasslands); (v) mabilau (cane grasslands); (vi) payo (rice terraces); (vii) boble (settlements); and (viii) wangwang (irrigation outflow in rivers.)

This agrarian mega-landscape is intricately related to the Ifugao social hierarchy. Farmers owning rice paddies are considered the elite of the Ifugao society; those who do not are considered lower in social status. A property is considered a family rather than an individual asset, and the ownership of forestlands, valued for timber, is typically shared by a group of kinsmen and their families. A rice field by contrast is considered the property of the family head. When a field is abandoned, a ‘caretaker’ is given the right to till the land until the rightful owner repossesses it. Rice is regarded as a ‘prestige crop’ and homemade rice wine is used in rituals engaging with deceased ancestors (Manahan 1997). The significance of rice and the terraces to Ifugao culture and life is paramount from a socio-economic as well as cultural standpoint.

Traditionally, the workings of these man-made agrarian terrains followed an elaborate communal pattern: Maintenance work and water rights were based on cooperative arrangements and common-pool resources. Male farmers maintained the terraces, with specific social contracts holding them accountable for annual activities such as planting, harvesting, and repairing broken walls and channels. Codes of conduct regulated daily practices. For example, if a farmer was unable to perform daily work in the field, he would have to provide prepared rice to feed the group who harvested that day.

Figure 3.4 Male farmers maintain the terraces, with specific social contracts holding them accountable for annual activities such as planting, harvesting, and repairing broken walls and channels.

Source: Captaincid/Wikimedia Commons
Likewise, communities that used the same down-flowing water channel shared management duties of maintenance and upkeep (Acabado and Martin 2015; Ostrom 1990). This communal structure was part of a long tradition that fostered social relations and economic vitality in the region.

The Banaue Rice Terraces were designated a World Heritage Site (WHS) in 1995, bringing increased attention to the region as a tourist destination and enhancing the areas marketing potential as an export economy. The National Food Authority of the Philippines subsequently introduced commercial rice developed by the International Rice Research Institute in the region, and with the dominance of non-local rice varieties, and the commercialization of rice, Ifugao farmers have been able to profit economically by selling these new crops.

The production of non-local rice varieties, however, does not involve the traditional rice-harvesting rituals, and this has resulted in decreased community kinship. Social cognition in the region has also changed due to market economy pressures. Women, who traditionally led rituals, are now ignored in the rice culture, since men lead and support the export of rice. The cultural practice of rice harvesting is dying. Over hundreds of years, Ifugao rice farmers have passed on knowledge that newer generations are gradually abandoning, as they seek more urban opportunities for economic stability.

In the 1960s, the National Irrigation Administration (NIA), took control of all the irrigation systems within the nation. The agency sought to divert water into urban areas, bureaucratized water uses and dammed several water channels, including a number from the Ifugao region. It required farmers to pay the government for the maintenance of the channels and dams and continued to administer the pay-out process while leaving the responsibility of repairs and maintenance to locals (Acabado 2010).

This has significantly affected on-ground maintenance. Dams leading to urban areas have redistributed Ifugao water away from the agricultural community without compensation to the farmers. The shift from co-operative water rights to government ownership has become a source of conflict among Ifugao farmers. It has affected the local socio-political dynamic surrounding the Ifugao agricultural system and is also shrinking the Ifugao’s agency over the terraces their ancestors created. The government has not missed the importance of the UNESCO World Heritage Site designation. But there is rising concern that government control of the area’s natural resources may result in unilateral moves such as rapidly built roads and transit infrastructure to encourage tourism. This could result in new tax policies on the crops, and also seed new development in proximate areas.

Meanwhile, fields across the Ifugao region remain threatened by other factors. There is the threat of cross-contamination by Indonesian worms and snails. Natural disasters, such as typhoons and earthquakes, also endanger the rice terraces. In 2011, a typhoon caused several small landslides that buried segments of the terraces, and due to the bureaucratic nature of repairs, the terraces still remain in disrepair. Earthquakes also cause shifts in water flows, redistributing harvested water to the wrong small farm.

Such threats put the terraces on the List of World Heritage in Danger in 2001. Subsequently, increasing issues and concerns were studied and addressed through efforts of the Provincial Government and related national agencies, such as the Ifugao Terraces Commission that was set up in 1994. This commission helped create, a ten-year master plan covering issues of management, conservation and socio-economic dynamics. In June 2012, the terraces, have been delisted from the roster, recognizing effective management and development efforts. Currently, the terraces are under the management of the Provincial Government of Ifugao and the National Commission for Culture and the Arts. Ongoing government efforts aimed at improving economic conditions of the community through its various programmes remain hopeful and encouraging.

**The Polders of Bangladesh**

Bangladesh is located at the cusp of three rivers – the Ganga, the Brahmaputra, and the Meghna – and is also intersected by approximately 200 rivers and tributaries that create numerous tidal inlets, creeks, and estuaries, as extensions of these major water bodies. The nation’s coastal river delta is one of the
largest, and youngest, in the world. Since the earliest human migrations to Bangladesh, coastal settlements have served to benefit from this dense riverine network and the fertile agricultural land surrounding them. But the area also has a long history of flooding, and frequent coastal hazards including annual cyclones and land erosion, has resulted in the rapid deterioration of the coast (Azam 2011).

Polders are a protective response to this phenomenon (Figure 3.5). They were originally constructed in the early 1960s under the Coastal Embankment Project and established to protect low-lying areas from inundation and salinity intrusion. Physically, polders are enclosed by embankments or dikes creating an artificial land-water entity. Sluice gates allow water to flow into the polder to help in agricultural production while allowing it to be filtered out as needed (Rosenberg 2019). Today the Bangladesh’s polders comprise nearly 4000 miles of embankments protecting more than a million hectares of land.

There are numerous examples of polder networks around the world, but Bangladesh is among the few designed for the establishment of communities. A majority of the people living within and around the polder network are agriculture producers and labourers (Alam 2016). Yet, since the beginning, the polder network has been adversely impacted due to a general lack of maintenance, funding, and government intervention. During a severe cyclone in the 1970s thousands died in areas lacking polder development, compared to those within safeguarded ones. Following that disaster, several people
formerly living outside polders have moved within them, and today, an estimated 8 million people occupy them. It is therefore imperative to restore the polders not just to safeguard the occupants’ lives, but also continue to build upon Bangladesh’s legacy of innovative vernacular methods dedicated to their citizens’ livelihoods. Today, an estimated 44 of the 123 polders are currently at risk of overtopping in a severe cyclone (IRIN News 2013). Restoration and conservation costs are estimated to be nearly US$900 million by 2050, with annual recurrent costs of US$18 million (IRIN News 2013).

Polder related livelihoods are largely dependent on agricultural crops, mostly entailing rice production. The fertile polder land provided an increase in rice production of up to 300 percent, compared to the previous non-polder agricultural land (Islam 2006). Manoranjan Kumar Mondal, a scientist who grew up in the polders notes that polders were able to uplift the socio-economic condition of the residents, boost family income, and foster close community ties (Nair 2014). However, by the 1980s many polders suffered from internal congestion and siltation, leading to increased poverty and migration. Today, with a net cultivable area of nearly 2 million hectares, the polders offer ample opportunity for enough agriculture to increase the quality of life for all occupants. But, as highlighted by the CGIAR Challenge Program on Water and Food (2014) report, the polder land is extremely underutilized. Farmers have the ability to grow multiple crops, which is standard for the region, but this cannot occur without the restoration of the polder network.

This is not an easy subject. Annual cyclones of increasing intensity have continuously eroded the polder network foundations. Cyclone Sidr in 2007 flooded 3.45 million households. Cyclone Mahasen in 2013 called for the evacuation of more than one million people. Additionally, sea level rise has continued to threaten polder sluice gates which allow the removal of water to avoid long-term flooding. It is estimated that by 2050, the sea level will rise by 1.24 feet (GlobalChange.gov n.d.). World Bank studies indicate that Bangladesh will be one of the most affected countries in South Asia in the upcoming decades, and sea level rise coupled with extreme weather patterns will ultimately affect food production, infrastructure, and livelihoods. Today, poor maintenance and storm damage have exceeded the limitations of these dikes, threatening some 42 million coastal residents and their communities.

There is however, an ambitious project underway to restore the polders. The Government of the People’s Republic of Bangladesh has initiated the Coastal Embankment Improvement Project, Phase-1 (CEIP-1), with funds borrowed from the World Bank and grant monies issued by the bank under its pilot programme for climate resilience. The geotechnical work involved in this major upgradation will use soil to increase embankment height and width with locally produced concrete blocks serving as slope reinforcement. Mangrove and other salt-tolerant plant species will also help further reinforce the embankment forelands. Sluice gates will be upgraded, with some redesigned to include sliding gates to enable the sluices to let water both in and out. Polder dwellers, particularly squatters, who must be relocated during construction will be given money to assist with the move. Although a permanent relocation is desired, it will not be enforced, and people will be allowed to return to the embankments once construction is complete. An estimated 129 polders will be upgraded as a part of the project. Upon completion, existing embankments along the sea, estuaries, rivers, and their associated drainage channels will have been upgraded to offer greater protection from storm surges, and sea level rise.

Indigenous water urbanisms in prospect

The three examples discussed above are, as mentioned in the beginning of this chapter, not only from varied ecological and geo-political conditions, but also from varied nature-habitat gradients: The hitis are the most urban of the three and intersect directly in complex ways with the physical urban condition of Nepalese cities. The Banaue Rice Terraces are rural places with vast natural terrains interspersed by intimate villages. The Polders in turn are parts of a coastal landscape representing a third typology of habitat that is neither as urban as the hiti, nor as rural as the rice terraces. Despite these
obvious contrasts, the combined narrative of this study highlights the complex technical, economic and cultural challenges that underlie their restoration and conservation. Indigenous hydro-urbanisms are often fragile systems, and unless consistently maintained, do not lend themselves to easy retrofit or reuse once abandoned. It is possible to enhance active or recently dormant systems, but such efforts typically require highly specialized labour. Their low expenditure in comparison to the high maintenance charges of wells and motor pumps presents a definite advantage particularly in rural areas, making them a safer long-term water provision. But from an economic standpoint, the conservation of these systems is not an in-expensive proposition.

The long-term sustenance of a restored indigenous systems also has its own social complexities. Studies of comparable indigenous hydro-infrastructure, such as the qanats of Iran, offer valuable insights in this regard. The cost of excavating a historic qanat proves to be more than double that of a deep well with pumps. As such, qanats, if regularly dredged and repaired have proven to have an almost unlimited life span, compared to the typical twenty-year life-span of a well, thereby justifying their upkeep (Haeri 2003). But the case of the qanats also reveals that the success of such efforts is only possible thorough communal willingness and participation. For example, in the 2000 pilot qanat renovation effort in the Syrian village of Shalalah Saghirah, east of Aleppo the qanat was cleaned, with its technical impact measured by a flow meter, and sixteen young community members trained for its upkeep. But when the project team returned in summer 2002, though the qanat was providing a substantial amount of water, the community was again divided with social tensions, and the qanat’s future remained dubious (Wessels and Hoogeveen 1996). The conservation of indigenous systems especially in agrarian and rural areas must therefore be done on a case by case basis after a careful analysis of the social pulse of the place.

An aspect that cannot afford be ignored is that of water contamination. With rapid and increasing urbanization in places such as Nepal, Philippines and Bangladesh, surface water with industrial pollutants lands up being absorbed into the substrata eventually impacting the aquifer. Since indigenous hydro-systems such as the hiti are aquifer-dependent, this argues for a broader multi-disciplinary approach to conservation efforts. It suggests a conscious intersection of mainstream conservation practices with the geological and hydrological sciences. It calls for the accurate mapping of the precise location and condition of the vernacular infrastructure, as well as its condition along the hydrological geography. It expands the scope of the conservation effort beyond the object and artefact into the larger geological context within which it performs.

From both an environmental and social standpoint, the three examples discussed in this chapter remind us that the ‘urban water crisis’ will demand significant shifts in our perception of water, its use, and its related infrastructure; that the attitudes to obtaining, distributing and using water, the very life-blood of any community is a thing to be celebrated not hidden; and that the mainstream expressions of urban infrastructure as utilitarian footnotes need to be transformed into visible armatures for the cultural and spiritual enrichment of people. From an environmental standpoint, two aspects transport indigenous water systems to the top of the sustainability chart: First, their long-term dependability and viability as drought-resilient systems; second, their ability to conserve the optimum amount of water from a limited source through minimal evaporation. These qualities are worthy enough to justify their strategic conservation in a time of climatic and hydrological uncertainty.

The future of vernacular water urbanisms and their hydro-infrastructure remains a complex subject across the world, and certainly across the Asia-Pacific region, where policy, administration and reinforcement is more ambiguous compared to developed nations. The overarching question is therefore whether or not the future of such indigenous systems can be successfully incentivized. How can strategies and policies inspire and instigate communities and administrations to engage in maintaining indigenous systems as both practical and useful elements beyond their profound cultural value? There is no doubt that vernacular water urbanisms will die in many portions of their cities. The question is:
will they survive in others? As indigenous artefacts on the seeming path to extinction, perhaps it is in their death that their value will eventually be realized, giving them a new life. Whatever the case, their destiny is intrinsically tied to the decisions and directions of their city’s future growth patterns, and the extent to which these places will succeed in transforming their petrified bureaucracies towards socio-cultural appropriations for a time of unparalleled environmental and economic crisis. The task at hand for these societies is to mediate the ongoing dialogues between tradition versus modernity, and unapologetically choose between the volatile whims of a mainstream urbanity, or the deeper wisdom of sustainable policies, patient capital, and long-term investment. The eventual destiny – whether as an active agent for future sustainable city-making or a long-forgotten anachronism – will emerge from this choice.

Conclusion

This chapter sought among other things to examine how heritage conservation can expand its discourse through an engagement with indigenous water urbanisms. The first expansion occurs through an emphasis on ecology. Today, in the wake of climate change and global warming, ecology should be an increasingly dominant lens of inquiry in any urban design and heritage conservation effort. Issues of water scarcity, extreme storms, and flooding that underlie this discussion are emblematic of a larger scenario that also encompasses melting glaciers and the thermal expansion of the oceans. Such truisms suggest a re-framing of conservation through ecological issues tantamount with its architectural and socio-economic aspects. Additionally, an ecological lens also serves to expand a conservation effort’s perceived physical boundaries. It emphasizes the evolving relationships between buildings, open spaces, and natural features that have shaped the larger local and even regional context, far beyond a singular entity or object. The act of identifying, protecting, restoring and reusing built ‘heritage’ – be it buildings, districts, landscapes or entire towns and regions of historic or cultural significance – is increasingly recognized as a far more strategic act of urban and ecological transformation (Bharne and Sandmeier 2019).

This study also reveals the multiple ways in which heritage conservation intersects with social and populist dimensions, and how they might have significant bearing on the ways we read the process and end goals of a conservation effort. The case of the hiti highlights connections of religion and ritual acknowledging the intangible aspects of a setting – people’s beliefs, cultural traits and knowledge structures – and their eventual embodiment into the physical signatures of a place. Here, the act of heritage conservation is about augmenting cultural identity by negotiating issues of tradition, authenticity, continuity, and change at multiple scales. The case of the Banaue Rice Terraces highlights the social intersections of indigene and modernity, indicating the strategic need for pragmatic rather than nostalgic approaches to fragile, aging places. It reminds us of the tensions between traditional values, versus emerging aspirations of a new generation that seeks other expressions, many of which directly contradict their historic patterns. The act of conservation in this case is one of striking a strategic equilibrium between both. The case of the Polders highlights how heritage intersects with issues of economic impoverishment and geographic uncertainty. The idea of conservation here is to achieve a pragmatic augmentation of both, while celebrating the underlying cultural patterns of the place.

The combined narrative of this study reminds us that origins and deep pasts are not the only ways of understanding a place. Shifting histories can mutate into new and unforeseen guises – at once an architectural and anthropological issue. The environmental challenges facing the Bangladesh Polders today, the political challenges surrounding the future of the Banaue Rice Terraces and the hiti are reminders that heritage is not an embalmed but a dynamic, evolving idea. The conservation of heritage must therefore transcend its exclusively historic and monumental values to consider how people’s values and community aspirations can contribute to its contemporary presence.
Such realizations are already shifting the field of heritage conservation globally, moving them from the realm of the expert-professional to the territory of the ordinary. The role of the contemporary conservationist as a professional expert is being superseded by new processes and initiatives, wherein conservation practice is now becoming the domain of ordinary citizens and activists, and numerous other actors that did not traditionally play a role on the heritage conservation stage (Manzini 2015).

Like the three cases discussed in this chapter, numerous places in the Global South today not only contain some of the oldest and most fragile examples of cultural heritage but offer a heritage conservation discourse that is a counterpoint to the formal and authorized one of the West. While an elaboration on this aspect is beyond the scope of this chapter, it is nonetheless important to emphasize that the efficacy of heritage conservation efforts will eventually emerge from the specific political and administrative realities of these places, and these differences will have a direct impact on the place of heritage within the evolving built environment. Varying trajectories of urban growth, post-colonialism, post-independence, post-industrialization, and populist dispositions will all have bearings on the variable between aspiration and implementation. The specific players that engage in acts of conservation, and the actual processes and products that bring about bigger and deeper changes will themselves be significantly different. This discussion on conserving Asia’s indigenous water urbanisms must be understood as part this larger evolving rubric.

Acknowledgements

I wish to acknowledge three students from the University of Southern California School of Architecture for their assistance and contributions to this chapter: Yi Xiao (Hiti), Katrina Castaneda (Ifugao Rice Terraces), and Christopher Purcell (Polders).

References


CGIAR Challenge Program on Water and Food. (2014) Messages from the Ganges Basin development challenge: Unlocking the production potential of the polders of the coastal zone of Bangladesh through water management investment and reform, Dhaka: CGIAR.


Asia’s vernacular water urbanisms


