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Urban River Spaces.

Most of us take clean water for granted as it comes rushing out of a tap-we assume it to be a basic amenity when it is not always the case. Wong Hiew Peng detailed an initiative by Habitat For Humanity Bangladesh that supplies clean water and related facilities for drinking and washing to alleviate standards of hygiene and sanitation to communities in need. Nipun photographed and wrote about a nomadic community's ingenious way to harvest water amidst one of the biggest salt deserts in the world.

characteristics of water.

Dear FuturArc readers,

in Busan.

we choose to do now.



Cover design by Hans Lim

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LETTER FROM THE EDITOR

For the Floating Homes projects profile in this issue, we started with an observation that FuturArc Prize (an international Green design competition that focuses on architectural interventions in Asia) has, over the years, attracted an increasing number of solutions for waterside communities or water-related concerns. It has also been noticed that this proliferation of proposals mostly came from Indonesia and Vietnam entrants, a reflection of the daily lives of the people there or a sign of their most urgent needs.

Common among these entries has to do with keeping people afloat, literally-floating cities, communities, or even single buildings-based on the premise that the future will face a kind of deluge on a global scale, which would render land-based survival impossible.

This idea that the future is water has already taken root in some parts of the world with the development of real-life case studies such as OCEANIX City, a large-scale sustainable floating city currently being built

Back to the present, taking water as an elemental cue, this issue reminds us of the necessity of designing with Nature-based principles to include all environmental factors, the lay of the land, as foundational-and not just as remedial steps or mitigation solutions. The latter have proved to be unsustainable most of the time, as Hoa Nguyen and Dzung Do Nguyen highlighted in the Main Feature article on embracing the different aspects of water ecosystems in architectural developments, illustrating with projects in Vietnam. They put it best when they said, "When we root our creations in Nature, resilience comes naturally."

Water is the most intimate reality in the projects highlighted here.

Aga Khan Awards for Architecture 2022 winner Co.Creation.Architects, founded by Khondaker Hasibul Kabir and Suhailey Farzana, spoke with Nipun Prabhakar on how water is such an integral part of Bangladesh that there is no avoiding "water, children and the communities" when engaging with people on the ground through a collaborative process, the outcome of which contributed to the global recognition of

In nature, water flows down due to gravity. Leveraging this can help in the filtration and management of rainwater and stormwater naturally without too much manmade interference, using instead bioswales, bio-ponds, bio-wells, etc. Jin Wellbeing County in Thailand and Bintaro Jaya West District Master Plan in Indonesia are two such projects that have done so, not only to the benefit of the interrelated biodiversity and ecosystems, but also to the well-being of the people who come in touch with the naturally therapeutic

Water in its raw element is a force to be reckoned with, as experienced many a time with typhoons, floods and other natural climatic events. Whether we float, sink or swim in the near future depends largely on what

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This cycle, FuturArc Prize (FAP) 2024: Architecture for Life After ... asks entrants to propose architectural solutions for the continuation of life after either one or both of the following scenarios: Climate Destruction and/or Endings.

and renewal?

The competition is open internationally to students and professionals, with sites in Asia.

Read the full brief: www.futurarc.com/fap2024

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FUTURARC PRIZE2024 ASIA'S LEADING DESIGN COMPETITION

ARCHITECTURE FOR LIFE AFTER

Will your Green design take the prize?

In extreme conditions, how can architecture bring hope



Cheonmachong Tomb in Gyeongju, South Korea is an ancient burial mound (also known as tumulus) dating back to the sixth century CE. | Bule Sky Studio/Shutterstock.com

The ECO Systems Embracing the Cen

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eparable relationship with the land, natural ironment and sociocultural fabric in most ch as Vietnam

D-0,

Embracing the Central Role that Water Plays in Ecology, Culture and Economy by Hoa Nguyen and Dzung Do Nguyen,

Water resource management is seen as a comprehensive and context-sensitive discipline, rather than just the mitigation of threats.

"Water is special also in that, left to itself, it will always lie level, but with the help of God, Nature and the artifice of man, it is capable of assuming an exuberance and vigour, and a symbolism difficult to achieve with any other natural element." John Mayson Whalley1

Life begins with water—this is a fact that goes back to the beginning of human civilisation. Many urban settlements began by organising around river banks and estuaries, where the soil is fertile, fresh water is abundant, and means of subsistence are available. One of the most established and earliest forms of economic exchanges is the trading port, made possible via water-based transit. Singapore and Malacca became prosperous ports, while Ho Chi Minh City and Bangkok expanded from the river bank.²

As history progresses, water began to take on more prominent roles, not just as a part of the natural environment, but also actively incorporated into our landscapes and built environment, as well as our daily and cultural life-habits and ways of living that have been shaped by our interactions with water.

TURNING OF THE TIDE

Most recently, in the past century or so, climate change has turned water from an object of awe and inspiration into one of immense threat to our sustainable development. Water is now frequently associated with unpredictable rainfalls, uncontrollable floods, rising sea levels, loss of groundwater and sinking cities. Natural disasters involving water are not modern affairs, but with urban sprawl and expansion of our built footprint, we feel these threats and the resulting damage more severely than ever. In the past year, Vietnam has seen many of its mountainous cities such as Sapa and Da Lat being hit with severe floods, a rarity in the past.³ With the increase in both frequency and intensity of climate-related calamities, issues of climate refugees and material destruction have become common news headlines.

Once threatened, humanity is quick to put up our defences. We see large investments into dykes, embankments and various measures to keep water away, to safeguard our assets and developments. However, the force of water is much larger than our efforts, and much of this has backfired, evidently seen in many cases across the world. From India⁴ to the United States,⁵ the intensive construction of levees to enclose certain regions for protection has either led to deadly flooding elsewhere, or have failed to withstand catastrophic events.

Managing water threats cannot be equated with keeping water at bay. New movements like Living with water^{6,7} have arisen, in which water resource management is seen as a comprehensive and contextsensitive discipline, rather than just the mitigation of threats. In this approach, resisting water is often seen as futile, while embracing water and looking towards it for solutions, often in the form of green infrastructure, water-sensitive urban design and architecture, allow for gentler forms of accommodation to water, while providing important social, economic and identity anchors for the city.

Here, we advocate the role of water in planning, design and architecture to be central at various scales and through various forms of integration into our economy and society. Illustrating with case studies across Vietnam, a country rich with water resource and river networks, the main roles of water we aim to illustrate here are:

- 1) water as the source of ecological abundance—the natural ecosystem:
- 2) water as the defining element of individual and social organisation—the cultural ecosystem
- 3) water as the provision of livelihoods and development opportunities—the economic ecosystem;
- 4) and how design and architecture follow through from our relationships with water.

WATER AS THE SOURCE OF ECOLOGICAL ABUNDANCE AND DIVERSITY

In Nature, water is fundamental in sustaining all life, as well as maintaining biodiversity and wildlife, including many freshwater species such as fish and birds. According to the World Wildlife Fund, freshwater ecosystems cover less than one per cent of Earth's surface, yet are home to at least 10 per cent of Earth's species.⁸ These in turn provide ecosystem services to human societies, such as maintaining mental and physical well-being for people, providing education and recreational opportunities.⁹



In the citv of Hue, the capital during the monarchy era of Vietnam, water typologies played an important role in the daily lives of the people. The rich biodiversity was a defining element of Hue, and bird diversity was a prominent feature. According to King Thieu Tri who reigned in the 1800s, Dong Lam forest in Hue was one of the 20 heavenly sites on Earth. The kings and gueens of the past, according to historical records, frequently visited this area for leisure and recreational bird-hunting.¹⁰

However, modern day development and built-up have reduced much of this natural asset, with the loss of grasslands, waterways and mudflats, leading to a decline in local biodiversity. Development of settlements in various parts of the region have also reduced the connectivity and ecological pathways for animals, thus segregating their natural habitats.

Restoring biodiversity and revitalising ecological infrastructure

In a new township project in Hue master-planned by enCity, in conjunction with urban elements such as commercial and residential functions, original elements of the landscape that enabled biodiversity were studied and restored. A deep dive into the existing and previously abundant bird diversity laid the foundation for the extent of revitalisation necessary for the project to achieve its historical ecological heritage.



CLIMATE FOCUS | MAIN FEATURE





Olive-backed Pipit

Image courtesy of enCity and BioSEA

2 Bird diversity that was once present in Hue province 3 The master plan for the site of a new township project in Hue is organised around a central mangrove that is extensively connected to surrounding greeneries on-site and beyond

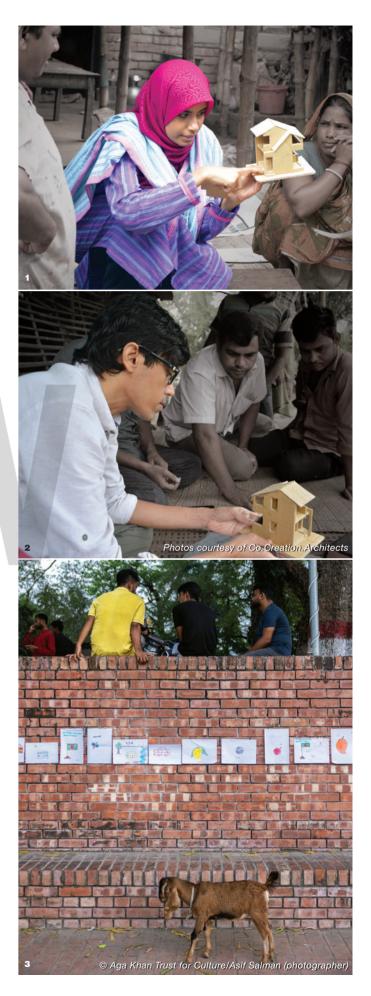
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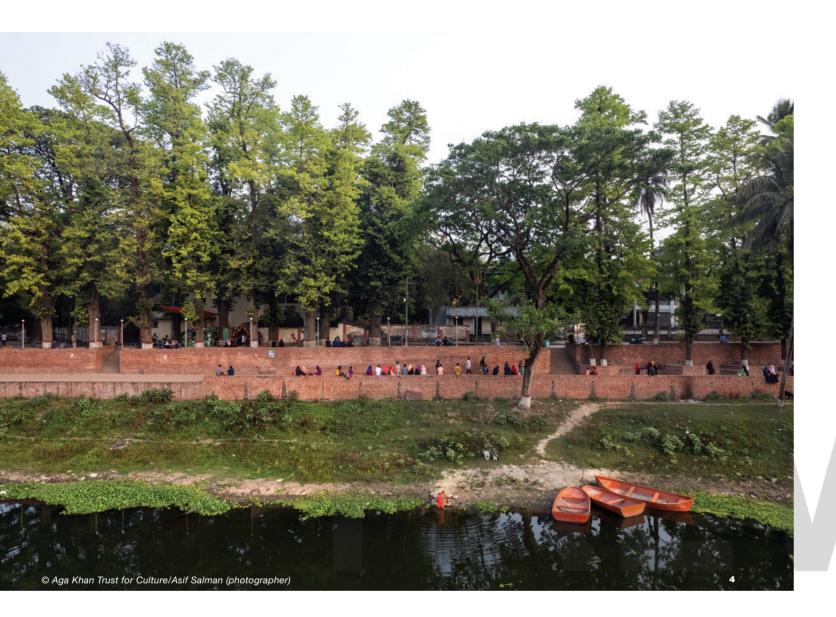
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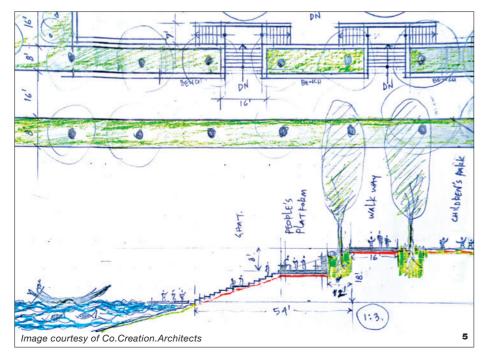
KHONDAKER HASIBUL KABIR & SUHAILEY FARZANA

Founders, Co.Creation.Architects

by Nipun Prabhakar







Today, when we inquire about people's aspirations, the resounding desire everywhere is for clean, accessible water.

Khondaker Hasibul Kabir & Suhailey Farzana are architects based in Bangladesh and one of the winners of the prestigious Aga Khan Awards for Architecture 2022. Together, they identify as community architects, co-founding Co.Creation. Architects (CCA) in 2015, Based in Jhenaidah, Bandladesh, CCA focuses on engaging with marginalised communities and ecological landscapes, believing that by valuing and empowering them, we can create a better world with/for all. They are also the co-founders of Platform of Community Action and Architecture (POCAA), active since 2013, and collaborate regionally through the Community Architects Network (CAN) and the Asian Coalition for Housing Rights (ACHR). Kabir teaches Landscape and Architecture at BRAC University and is a visiting faculty at Bengal Institute for Architecture, Landscapes and Settlements, and Suhailey advises for Learning through Play initiative of BRAC Institute of Educational Development.

WATER AND COMMUNITIES

NP: We'd like to delve into the recurring theme of water in your projects, such as Urban River Spaces and the Platform for Hope. Is this a deliberate design philosophy or did it evolve naturally?

KHK: Water is an integral part of our landscape. Bangladesh experiences both dry and wet seasons. During the latter, over 70 per cent of the land is submerged; when it floods, 80-90 per cent of it goes under water. During the rainy season, people here use boats, and at other times, they use motorcycles and other vehicles to traverse across the same landscape. It's different from the teachings we received in universities as those courses are designed for dry landscapes. We used to ask ourselves when we were students on why we do not think that way (through the perspective of the local context).

When you are on field, there's no avoiding the water, children and the communities. That's why we engaged with them, and this was a discovery, not a deliberate plan. We found it to be the fulfilling path.

SF: We have a river in our city, named Naboganga, and we're gradually turning away from it. However, when we spoke with the people, we found that access to water was a top priority. Even the city's vision was to reorient itself towards the water. Therefore, our initial focus had to be on the waterfront, as that's what the community prioritised in their first request.

KHK: It's interesting to note how perceptions have evolved over time. It seems that in the past, architects, and perhaps even the common people, didn't fully appreciate the significance of these waterways. The value of clean water was underestimated because pollution levels were much lower, and people used to swim in these rivers extensively.

In our municipality alone, there are over 300 ponds and thousands of access points to the river that runs right through the heart of our city. Unlike our capital city, Dhaka, which developed on one side of the river, our city originated on both sides of the river due to its favourable conditions. Right from the outset, there were bridges connecting both sides, and within the municipality, there are around 4.5 kilometres of river with 11 well-constructed bridges-a rarity in our country.

Today, when we inquire about people's aspirations, the resounding desire everywhere is for clean, accessible water, a testament to the changing times and priorities.

1 Suhailev Farzana 2 Khondaker Hasibul Kabir 3 Urban River Spaces, public ghat, for which CCA was one of the winners of the Aga Khan Awards for Architecture 2022 4 View of the public ghat along the Naboganga river 5 Urban River Spaces: section of the public ghat, the first aspiration of the citizens

TOWARDS A HEALTHIER, MORE RESILIENT FUTURE IN FLOOD-PRONE KURIGRAM: INTERVENTIONS FOR CLEAN WATER AND SANITATION

by Wong Hiew Peng

Known as the face of poverty in Bangladesh, Kurigram district in the north is home to 2.4 million people. Over 70 per cent of the population is poor,¹ almost three times the national poverty rate of 24.3 per cent. One in two persons in Kurigram is extremely poor.

Caught in an intractable cycle of poverty and inequities, the people in Kurigram are most affected by water, sanitation and hygiene insecurity. Based on government data as of 2011, one in three persons in Kurigram uses a non-sanitary toilet and 11 per cent do not have access to a toilet of any kind. Low-income families also lack access to affordable financing and skilled workers to build or improve sanitation facilities. While tube wells are used by almost everyone in Kurigram, only six in 10 families have their own tube wells.

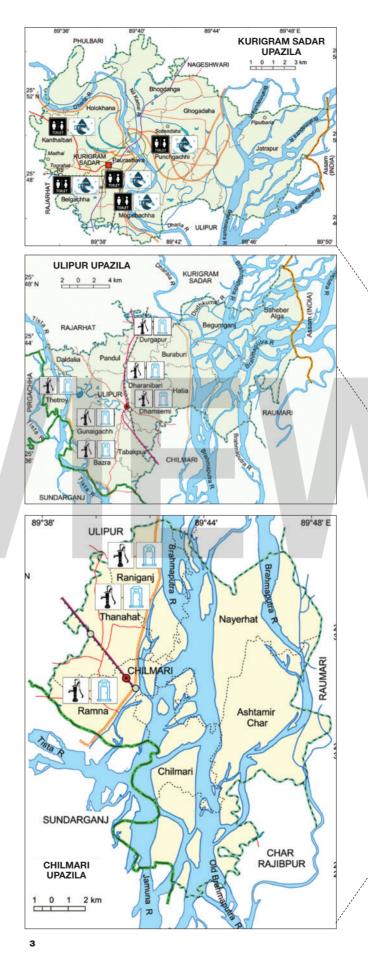
In July 2023, a rise in the water level of major rivers—there are 16 rivers that flow through Kurigram—caused roads to be submerged. According to local media reports,² flood waters entered houses and people faced sanitation problems and a lack of safe drinking water.

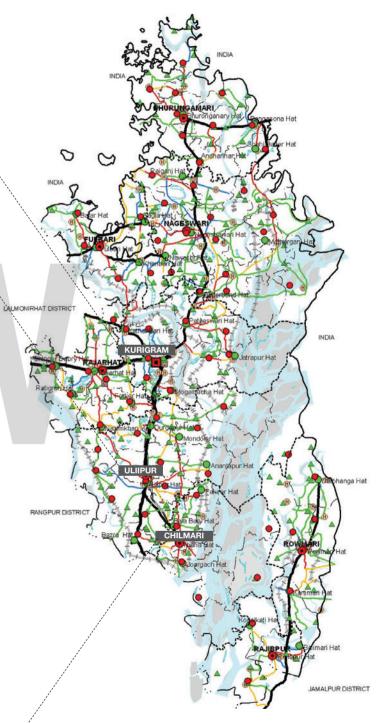
ACCESS TO CLEAN WATER AND SANITATION

In Kurigram's Chilmari, Ulipur and Kurigram Sadar subdistricts, a multiyear initiative was rolled out to address the abovementioned problems. Completed in June 2023, people could continue to use the renovated tube wells and newly constructed toilets despite the floods. Sound project design principles played a key role, as well as consultation with local communities and authorities. For example, the project team, having learnt that floodwater rose to between 2.5 feet and 3 feet, had the renovated tube wells and newly constructed toilets in flood-prone Kurigram on 3-feet-high plinths.

1 Sadhona Rani using the tube wells in Ulipur, Kurigram, Bangladesh 2 Lotifa Begum with her grandson Labib standing in front of the sanitary toilet in Ulipur, Kurigram, Bangladesh 3 District map of Kurigam showing the distribution of the WASH facilities in the subdistricts of Kurigam Sadar; Ulipur; Chilmari (from top)







VIETNAM THE NETHERLANDS

LIVING ON WATER: FLOATING HOMES

Over the years of hosting FuturArc Prize (an international design competition that focuses on Green architectural interventions in Asia), it has often been observed that a substantial number of ideas proposed—and increasingly so—were solutions for waterside communities or water-related concerns, regardless of what the cycle's theme is about in terms of envisioning a sustainable future.

This is especially so for entrants from countries such as Indonesia and Vietnam, where water is inevitably tied to their climatic, cultural, geographical and socio-economic fabrics. Among the most popular architectural interventions proposed has been the floating house.

Here, we look at two examples of such an architectural typology to consider its practical applications and correlation with the larger environment and other hydrological systems. How would a floating house be designed and built for different aquatic locales and what would their interface with the water's edge be like? How would it manage its internal plumbing processes and water needs? Are we ready to deploy them at scale so as to better prepare for inundation scenarios due to climate change? Or are we still prototyping to testbed different materials and ecosystems adaptabilities?

One is a floating house prototype that has been fashioned by a Vietnamese architect and his team in an attempt to address the impending issue of sea level rise and its impact on those living on water; and the other an actual floating house in the Netherlands—another country that is inextricably linked with water.

1

1 Floating Bamboo House (FB House) 2 by H&P Architects, Vietnam



JIN WELLBEING COUNTY

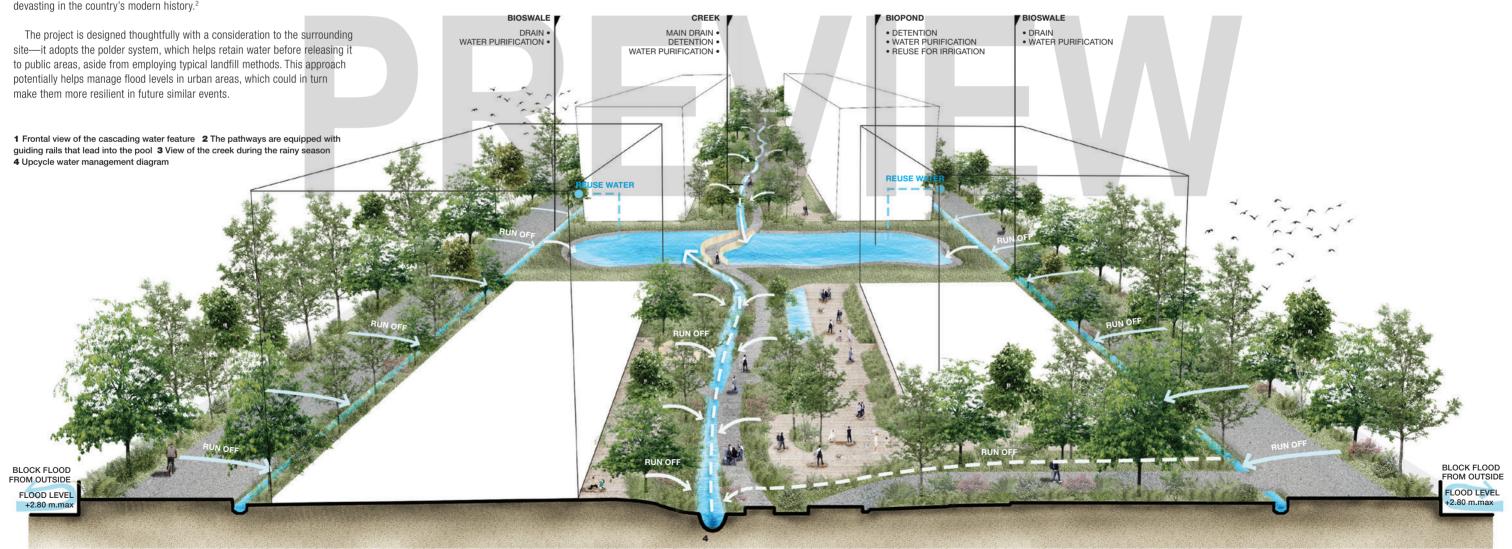
It is not often that one comes across a project that is developed with the older population's well-being in mind, let alone one that does so with deep consideration of the physical, ecological and hydrological conditions of the site, making them central to the whole architectural and landscape scheme.

The Chao Phraya, deemed the most important waterway in central Thailand, is a major river that flows through Bangkok. Its low alluvial plain forms the centre of the country.¹

Jin Wellbeing County is located in the Chao Phraya floodplain, specifically in Pathum Thani. This suburb of Bangkok is previously known for its agricultural lowland, and as such, has undergone seasonal flooding. However, as the area becomes increasingly urbanised over time with more manmade structures, the natural flow of water gets disrupted, leading to critical flooding. An example of the severity of flooding could be seen during Thailand's 2011 flood, affecting Bangkok and its suburbs, considered one of the most devasting in the country's modern history.²







All images courtesy of Shma Company Limited



VIRDAS: AN INGENIOUS WATER HARVESTING MARVEL OF BANNI'S SUSTAINABLE LANDSCAPE

by Nipun Prabhakar

In the heart of Banni, a remote expanse famed for its grasslands and one of the biggest salt deserts in the world, a testament to human ingenuity quietly thrives amidst the arid beauty.

Spread across 2,500 square kilometres, Banni presents a challenging landscape where daily life is a battle against soaring temperatures that can reach a searing 48 degrees Celsius. Yet, within this unforgiving terrain, the once-nomadic Maldhari community, skilled cattle herders who have now settled in Gujarat's rugged Kutch region, have harnessed nature's gift—the gift of fresh water. The virda system is their answer to procuring this lifesustaining resource, a solution that thrives even in a region where rainfall is a rare blessing and groundwater is brackish.¹

The virda system is a network of strategically placed wells within shallow depressions called jheels. As jheels dry up, people dig deeper to tap subsurface water through an ingeniously evolved structure called virda. These virdas are the only internal source of fresh water in Banni grasslands.

Ramesh Bhatti, project director at Sahjeevan and a dedicated social worker with over two decades of experience in the region, revealed an intriguing aspect of the nomadic pastoralist communities in Banni. They had a practical tradition, a rule of thumb, which guided them to freshwater sources wherever clusters of desi babool (*Vachellia nilotica*) trees grew. Over time, they settled in these areas, forming close-knit hamlets known as *vands*. They also found that after rainwater infiltrated the soil, it was stored at a level above the salty groundwater because of the difference in their density.²

1 The virda system is a network of strategically placed wells within shallow depressions called jheels

All photos courtesy of Nipun Prabhakar unless otherwise stated



As an extension of her immersive involvement with the Rebuilding Pavilion at the International Union of Architects (UIA) World Congress of Architects, Copenhagen (see report in Happenings section), Bhawna Jaimini spoke to three architects from different parts of the world to present practical examples in an attempt to map a discourse on adaptive reuse to advocate rebuilding efforts in the face of a planet in crisis.



REBUILDING BEFORE BUILDING

by Bhawna Jaimini

It is 24 degrees Celsius on an autumn day in London, where I am writing this, an unprecedented record for the United Kingdom where heatwave conditions have become exceedingly common in the last few years. Though this temperature might not seem 'hot' enough to warrant a heatwave warning if you come from a tropical region like I do, it is definitely a cause for concern in historically cold countries like the United Kingdom where buildings are designed to trap heat. "Temperatures of 30 to 35 degrees [Celsius] are normal and are sometimes considered even pleasant, but it's the architecture here that makes it more unbearable because it is just not suited for rising temperatures," Sheeba Shetty, an architect from India who now works for Transport for London, shared her experience of the heatwave that has swept England in early September.

For now, people are buying electric fans where sales went up to 1,630 per cent¹ in July 2022—to cope up with the unexpected heatwaves. There is a palpable anxiety that can be felt about the uncertain times, which will succeed these heatwaves in the future. The increasing number of disasters compounded by the climate crisis in the rest of the world has made it clear that time is not on our side. From wildfires in Canada and Hawaii to floods in Libya, Greece and Hong Kong, almost no country was left untouched by the wrath of the climate crisis. And as if the climate crisis was not enough to upend the daily rhythms of our lives, there is war and conflict peeling away layer after layer of normalcy in countries like Afghanistan, Sudan, Syria and Ukraine, among others.

The damage that has been done to the environment by these recent events will take years to repair and heal. And what has become increasingly clear is that the world will not heal with the ways of yesterday, but by envisioning radical new ways embedded not in values of mindless growth and development, but through approaches that respect all forms of life on this planet, which includes reimagining how we practise architecture. To find and understand what this reimagination could look like, I spoke to three architects practising in distinctly different geographical contexts-Rwanda, India and Denmark-to find slivers of hope for a new world that is not built from scratch, but rather rebuilt from the old to meet the challenges of a fragile and vulnerable world.

1 Empower Hubs (Nyagashanga), Rwanda 2 Studio 877, India 3 Transformation of a former factory into affordable guality housing, Denmark

MILESTONES

Global

Setting a Rebuilding Agenda for a **Broken Battered World**

Notes from the Rebuilding Pavilion at the World Congress of Architects. Copenhagen

by Bhawna Jaimini

On an unusually warm spring afternoon, I received an unexpected email from Ingeborg Hau, Chief Advisor, Architecture and Sustainable Development Goals, for the International Union of Architects (UIA) World Congress of Architects 2023. The event was to be held in Copenhagen between 2 and 6 July 2023. It was not the usual speaker or panellist invitation email-Hau was on a mission to assemble a team of international architects and practitioners to design, build and programme the Rebuilding Pavilion. With the theme of the Congress being Leave No One Behind, Hau felt there was an urgent need to highlight rebuilding efforts in architecture, urbanism and beyond, in the wake of recent catastrophic events of climate crisis and war.

An international team of architects and artists from Denmark, Nigeria, Bangladesh, Syria, Greenland, India and Ukraine met for the first time in April over the course of a three-day intensive hybrid workshop to conceptualise, design and prepare an implementation plan for the pavilion. Uncannily, this team of individuals, who had never worked or even heard of each other, shared similar uneasiness with pavilions being statement objects that embody a high aesthetic value but low engagement level. In the age of Instagram and TikTok-driven designs, the team wanted to push the narrative of a pavilion by conceptualising it as a place for pause.







almost like a space similar to a home that will act as a refuge in the sea of closed-room presentations and seminars. In terms of materials. there was a unanimous agreement on using waste materials or biomaterials that would either be upcycled or could be reused later. What also emerged in the three days was the decision to work with a courtyard typology for the pavilion, as the courtyard is both culturally and architecturally significant in multiple regions around the world.

Over the course of the next three months, the team met multiple times to discuss and detail out the design and implementation strategy. alongside creating a programme of events and activities to be hosted at the pavilion. The building material finally chosen for the pavilion was a mixture of nature boards and a combination of wooden and steel panels. The nature boards inside the courtyard were created through a bio-based process where mycelium and hemp grow together inside a panel form. The pavilion's structure was built from reused construction wood from a storage and workshop facility in the historic Carlsberg area in Copenhagen. After the congress was over, all the materials went back to their manufacturers, vendors and keepers to find another use and life somewhere else.

The Rebuilding Pavilion opened to the public on the morning of 3 July at the Bella Centre in Copenhagen, the main venue for the congress. The entrance of the pavilion was a patchwork fabric panel stitched by women from vulnerable areas in Copenhagen out of waste fabric. The focal point of the pavilion was a linden tree in the courtyard, which was replanted after the congress in a garden in Northern Zealand where it will hopefully grow to be at least 30 metres tall. The tree gave a sense of a living space to the courtyard, which hosted informal roundtable sessions, workshops and tea ceremonies.

The furniture, which included benches, chairs and sofa, was all borrowed from different organisations including the Royal Danish Academy-all of which went back to their rightful owners after providing rest to frantic congress attendees running between presentations. Amongst such attendees were legendary architects Jan Gehl and Yasmeen Lari who frequented the pavilion, either to catch a breath or interact with the young generation of architects.

From discussing the urgent needs of rebuilding war-torn countries like Svria and Ukraine, to discussing Nature-based solutions for a climate crisis-equipped world, and the need to do it all with care, collaboration and compassion, the Rebuilding Pavilion was able to hold many conversations around building less and rebuilding more. I was fortunate to have moderated one such conversation on fostering knowledge exchange between the global North and the global South, outside the usual developmental paradigm where the former is looked upon as a giver of aid. expertise, etc., while the latter is seen always in need of resources. The climate crisis-and to some degree the war in Ukraine-has revealed



done by architect N. S. Nebelong in 1883; it was sourced by the Danish company Genbyg-the largest online webshop in Denmark for reused building materials-that provided all wood for the pavilion



that the world at large is in need of rebuilding, both materially and philosophically.

To push the point across, the pavilion courtyard also exhibited projects showcasing rebuilding efforts around the world. The pavilion, though now dismantled with its materials serving other purposes, is not done yet. It seeks to find different forms in other parts of the world to build consensus on collaborative and compassionate rebuilding that is gentle to the planet while serving the interests of the people in need. It seeks to be a movement where each of us can pause to ask. "Can we rebuild what we have, before starting from scratch?"

Malavsia

Collaborations to Strengthen Malavsia's Climate Action at IGEM 2023

Regional collaboration

This year, the theme of International Greentech & Eco Products Exhibition & Conference Malavsia (IGEM) 2023 was Race Towards Net Zero: Leadership for Climate Action. Held at the Kuala Lumpur Convention Centre from 4 to 6 October 2023, the exhibition was organised along the sub-themes of Empowering Cities: Electrifying Mobility: Decarbonising Energy: Accelerating Circularity: and Conserving Biodiversity. FuturArc was invited as media partner for the event and we contributed FuturArc magazines and digital content via app to the attendees, enhancing the overall knowledge sharing amongst the industry professionals.

In the welcoming remarks, YB Nik Nazmi Nik Ahmad, Minister of Natural Resources, Environment and Climate Change (NRECC), said: "For ASEAN to be a determining factor in the just energy transition, we need to discuss and reach consensus on pressing and pertinent topics such as regional inter-connectivity partnerships, energy storage, carbon capture, green financing, hydrogen economy and ASEAN future grid, among others."

A key highlight to support such regional collaboration was the AtoZero (Accelerate to Net Zero) ASEAN Summit & Exhibition, which was colocated and ran concurrently with IGEM 2023. This summit convened key stakeholders across the net zero value chain to comprehensively explore pathways, policies and business opportunities to drive the global net zero transition agenda. "AtoZero ASEAN is a significant inclusion into IGEM to enable us to drive leadership dialogues, investments and innovations around ASEAN's net zero pathways," said the Minister.

The opening day also saw the soft launch of Malaysia's Pavilion for the 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP 28), which will reflect the nation's commitment towards reducing greenhouse gas emissions.

Planning for adaptation

On 6 October, the Climate Change Conversations Forum was held to urge more organisations to revisit their business operations and sustainability plans. The panel featured four speakers from logistics, energy, government and banking sectors.

During the forum, Malaysian Green Technology and Climate Change Corporation (MGTC) conducted an online polling to gauge the audience's level of awareness and action plans. Seventy per cent of the audience felt that climate change would affect their organisation, and 91 per cent expressed concern about the threats posed by climate change. Areas they wished for Malaysia's National Adaptation Plan to address were flood mitigation, food security, access to data, emission reduction, governance, regulation and responsible consumption.



Inspired by origami forms, The Float by Studio RAP was able to be constructed with longer spans compared to conventional structures.

THE.

Photo by Riccardo De Vecchi Read more on page 52.