my liveable city

ARCHITECTURE

DESIGN

LANDSCAPE

URBAN PLANNING

FOCUS ON
**Adaptation
& Reuse**

AN URBAN OASIS
WITH 2 MILLION SQ. FT. OF
PREMIUM OFFICE SPACE
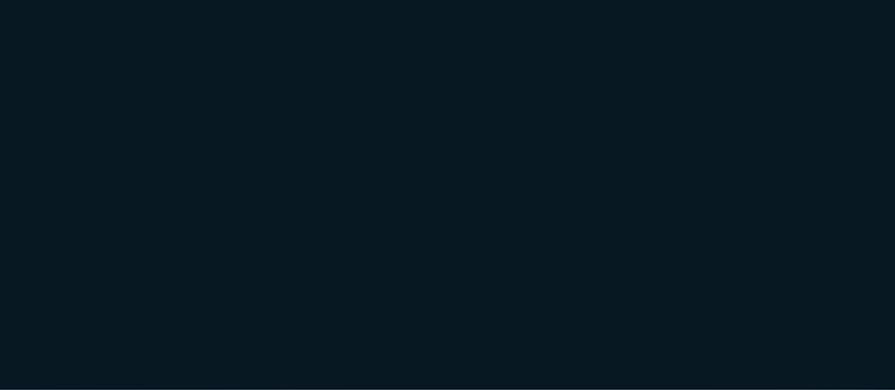
A magazine that inspires and educates in the language of cities.

Stories from India and around the world

Subscribe to our magazine and engage in the metamorphosis of cities
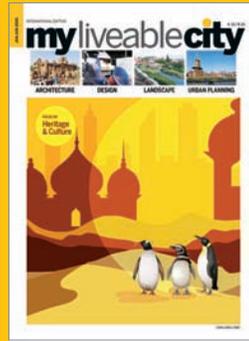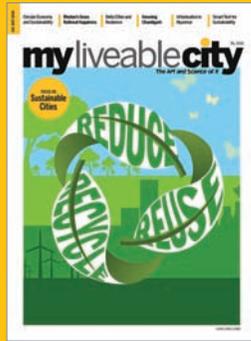
Biannual magazine, *issues dated* **Jan-June, July-Dec**

Please visit our website to place your order for delivery within India or to know more about our International subscription offers

www.myliveablecity.com

SUBSCRIPTION OFFER (*For delivery in India only*)

TERM	No. of issues	Subscription Rate
1 year	2	Rs. 600.00 p. a.

For any queries on bulk subscription offers or to know more about discount offers for students or subscription agents, please contact us at email: subscriptions@myliveablecity.com or call us on +91- 9820126505

Shyam Khandekar
Founder & Editorial Director

An architect, urban designer and planner by training, Shyam has nearly four decades of professional experience designing several prize-winning projects in Europe and India. He has lectured and published extensively on different aspects of Liveable Cities at universities and conferences across the world.

Vinayak Bharne
Executive Editor

A practicing urban designer, city planner and architect by training, Vinayak has designed numerous award-winning projects in the United States, Asia and Central America. He is a Professor of Urbanism at the University of Southern California in Los Angeles and the editor/author of five books on architecture and urban design.

Sometime in the last couple of years, the Earth entered the Anthropocene – a geological epoch in which humans are the dominant force shaping the planet. According to a study published by *Nature* in December 2020, the total mass of everything humans have built and made on the planet, from concrete pavements, metal skyscrapers, dams and roads, to plastic bottles, computers, cars and clothes, is now roughly equal to the biomass of all living things on Earth. And it could surpass this number during this year.

Additionally, researchers at the Weizmann Institute of Science in Israel, after studying the change in the planetary biomass and the mass of human-created products in the last 120 years, came to some startling conclusions: At the start of the 20th century, the mass of human-created stuff weighed only 3% of the global biomass then present. And if trends continue, by 2040, the weight of human-manufactured materials will exceed the planet's biomass by more than twice the number.

If the general message is still unclear, some additional pieces of information may help drive the point home: There may have been twice as much plant biomass on Earth at the onset of the agricultural revolution about 12,000 years ago, before humans started clearing large amounts of forests for land cultivation. Humans and their livestock now outweigh all of Earth's wild mammals and birds by a factor of nearly 20. At 4 billion tonnes, the mass of all of Earth's animals combined now sits at just half of the amount of plastic that has been produced (8 billion tonnes) till now. This is serious food for thought and, more significantly, concern. There is little doubt that human activity and production are adversely transforming the planet and that it will speed up in the future due to increased human ability and growing population.

One of the avenues to reduce this effect and seek long-term sustainability then is to adapt, transform and reuse buildings and urban infrastructure instead of building everything anew.

But the Laws of Short-Term Economics work against achieving such sustainability goals. These laws state that the more value we assign to human labour, the less valuable other assets feel. And vice versa: only in societies where human labour is cheap, other assets are valued highly. This was the India we grew up in, where labour was cheap and so almost everything was repurposed and reused. Old tins, discarded bottles, paper and scrap metal were all given a new use. However, when human labour becomes considerably expensive in relation to building materials, it makes little sense to spend many labour hours to adapt, transform and reuse. The short-sightedness of the Laws of Short-Term Economics is further elucidated by the fact that according to them, a healthy tree in nature only has value if it is cut down and converted into furniture.

These views are leading us to a precipice – the climate crisis facing our planet. This is why the imperative to adapt, recycle, upcycle and reuse has now come centrestage, wherein every action we undertake must reduce the impact of the human race on the earth. In the energy sector, for example, it is now common wisdom to reduce the use of fossil fuels and switch over to renewable energy. Is it not time that the fields of urban development and construction aim at reducing the plundering of our planet's assets? Is it not time to prioritise renewal and renewables? Is it not time to aim for a moratorium on the rampant use of new materials in buildings and the perpetual enlargement of our urban footprints?

The examples in this issue discuss how strategies to adapt, transform, reuse and upcycle can be used creatively at different scales from large-scale urban development (as written by Toshio Taguchi about Yokohama), urban landscape and recreation (as written by Bruce Echberg about Australian cities), the reuse of buildings (as written by Paul Meurs et al about the Netherlands), or the recycling of waste material into public art (as spoken by Subodh Kerkar from Goa). From Aleppo to Leh to New York, numerous other examples and case studies in this issue demonstrate how and why the notion of renewal and reuse is not only beneficial for environmental sustainability, but also pays rich dividends – social, economic and most significantly cultural – enriching and deepening our connections with our past.

Is it not time to aim for a moratorium on the rampant use of new materials in buildings and the perpetual enlargement of our urban footprints?

Also follow us on:
www.myliveablecity.com

f Cities We Like

@CitiesWeLike

in myliveablecity

For editorial queries, email: **shyam@myliveablecity.com**

Amit Arya is an architect with a Master's degree from Cornell University, New York. He has worked on projects in Asia, America and the Middle East and is passionate about architecture and its relationship with the public realm.

J.P.A.M. (Jean-Paul) Corten is employed as senior policy officer on Integrated Conservation at the Cultural Heritage Agency of the Netherlands (Ministry of Education, Culture and Science). He lectures at the Institute for Housing and Urban Development Studies, Erasmus University of Rotterdam. He is also involved in many urban regeneration projects abroad.
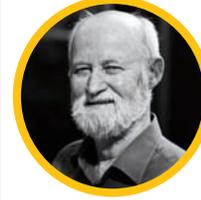
Bruce Echberg is the founding director of Urban Initiatives, a Melbourne-based landscape and urban design studio that focuses on the design of public projects that enhance the quality of Australian towns and cities.

Somi Chatterjee is an architect with specialisation in Conservation Studies. She is the Principal Conservation Architect at Creative Footprints, an interdisciplinary consultancy, Founder-Director of One Station Million Stories, which is in the business of experiential storytelling and Founder-Trustee of Trust for Regeneration of Indian Settlements. Besides working on heritage conservation, management and interpretation, she is also visiting faculty at the School of Architecture and Planning, New Delhi and Jamia Milia Islamia University, New Delhi.

Irene Henry is a Masters of Urban Planning and Policy student at the University of Illinois, Chicago. She specialises in spatial planning and works on creative placemaking with the Lincoln Park Chamber of Commerce.

Jason Judy is a Marketing Director at Gensler with a background in Graphic Design, a degree in Motion Design, and a Master's in Cultural Studies. He seeks the intersections of story and audience, looking to find resonant ways to bridge the two through content development and delivery. He has lived near all four edges of the continental United States and has found Chicago to be a city filled with stories.

Nisar Khan is an Assistant Professor at the Faculty of Architecture & Ekistics, Jamia Millia Islamia, New Delhi. He has formulated and started the M. Arch. course in Urban Regeneration in the Faculty. He completed his Ph.D. on Unauthorised Colonies of Delhi with the perspective of Informal Housing to further his research interests in Urban Studies. He has widely published and presented his research in journals and conferences at the national and international level. He has recently been awarded the Netherlands OKP Scholarship to pursue an International Course on Housing and Urban Development in Rotterdam.

Chetan Kulkarni is a graduate of Urban Design from The University of Texas at Austin School of Architecture. He has collaborated on urban research projects in Mumbai with BMW Guggenheim LAB, XCOOP Architects, Samira Rathod Design Associates and Youth for Unity and Voluntary Action India. He received the European Union Erasmus Mundus Scholarship to be part of the Urban Lab initiative, organised by Universita Della Calabria (Italy).

Buvana Murali is an architect and urban designer with a Master's degree from the University of Michigan. She has worked for over a decade in architecture and urban projects of all scales on three continents. She is passionate about photography and the use of the image as a story-telling device.

Dalia Mokayed was born and raised in Aleppo, Syria, where she received a bachelor's degree in Architecture from the University of Aleppo. She then worked for ten years in heritage conservation, rehabilitation and city planning in the Old City of Aleppo. She is a recent graduate of the USC Heritage Conservation Masters programme and currently works for the Planning Department of the City of Los Angeles. She's also designing art pieces decorated with Arabic calligraphy to help keep Arabic culture and heritage alive.

Mendel Robbers is creative director with the award-winning real-estate developer and investor Schipper Bosch. He is also working as spatial quality consultant for several governmental organisations. He trained as an architect at the Eindhoven University of Technology in the Netherlands and at the Aarhus School of Architecture in Denmark. Previously, he worked at UNStudio, Mecanoo and AMO / OMA.

Maggie Schafer is a Masters of Urban Planning and Policy student at the University of Illinois, Chicago. She currently works as a research assistant studying housing, transportation and community development at the Voorhees Center for Community and Urban Development.

Siddha Sardessai is an architect and interior designer in Panaji, Goa, with significant expertise in residential, corporate office, educational, entertainment and hospitality facilities. His projects have received awards and been featured in books and magazines.

Tashio Tauguchi is an Urban Designer and Researcher based in Yokohama, Japan. After completing his Urban Design studies in the UK, he spent more than a decade under the inspirational leadership of Akira Tamura at the Yokohama City Government's Planning and Coordination Department. A scholar of Planning History, he aims to disseminate Tamura's planning theory and philosophy to younger generations.

Punto Wijayanto is a lecturer at the Department of Architecture, Universitas Trisakti, Jakarta. He is also working as heritage consultant on heritage cities, heritage management and planning, Historic Urban Landscape approach and Heritage Impact Assessment. He obtained his master's degree in urban and regional planning from the Department of Architecture and Planning, UGM, Yogyakarta.

Henry Wishcamper is a theatre artist and planner. His work as a theatre director, producer and playwright have appeared at theatres in New York City, Chicago and across the country. He is an Artistic Associate and member of the Artistic Collective at the Goodman Theatre in Chicago. He served as one of the Goodman's three producers from 2017-2019. He is currently enrolled in the Masters of Urban Planning and Policy Programme at University of Illinois, Chicago. His focus is on how arts, cultural and recreational spaces can be designed and activated to be more effective catalysts for equitable hyperlocal economic, cultural and civic activity.

Justin Wu is a design researcher and strategist based in Chicago, and holds a Bachelor's degree in Cultural Anthropology from Northwestern University. He has experience helping organisations find the intersection between business strategy and human insight. His focus is on using research and design to create ethical and equitable impact for people across the globe.

Architect **Paul Meurs** and architectural historian **Marinke Steenhuis** are partners in SteenhuisMeurs, a research and consultance firm, working in the Dutch heritage industry. SteenhuisMeurs supplies current spatial assignments with a cultural heritage foundation, by interpreting the context and defining the capacity for change. The projects add the historic dimension to designs for buildings, urban areas and cultural landscapes, with the aim to give these new places a memory, inherited qualities and an intriguing narrative.

my liveable city

Contents

Urban Blueprint
A series of case studies that capture the transformational qualities of well-designed cities
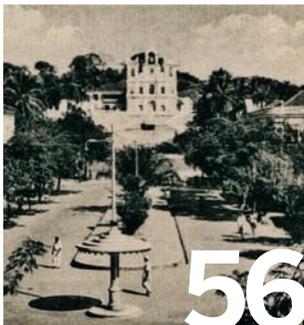
Change Agents
Meeting up with city lovers and organisations who are making a difference

DAIDA Global Awards

Culture Corner
Visual wonders from across the world
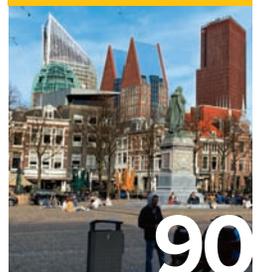
Circular Design at the Organisational Level

With the consumer landscape demanding sustainability, **Justin Wu** recommends using regenerative and renewable circular design models

In a world that is increasingly being confronted by issues of global warming and societal inequality, some organisations and business leaders have been focusing on establishing business practices that are more environmentally and socially responsible. We see it with clothing companies trying to increase sustainable production by creating new products with scraps left over on the manufacturing floor. We see it with more and more organisations becoming Certified B Corporations for their focus on environmental consciousness as well as inclusion and diversity.

We also see a growing social consciousness paired with the ability for anyone to call out organisations who have failed to adopt more sustainable and equitable business practices and help organisations with strong values to rise to the top. While businesses may have been able to excel just focusing on customer experience in the past, consumers today are more aware and more demanding than ever that the products and services they choose come from companies who share their values and put them into practice.

One might execute sustainable business practices by carefully scrutinising operating and business models and analysing how much waste or inequity might exist within a company. In order to provide products and services to consumers, business leaders might have traditionally looked across a linear value chain and measured the number of resources expended and waste produced in each part of its operating model. While the goal of many establishments is to minimise financial expenditure and loss while maximising profit, there is an opportunity to use circular design to re-examine what has traditionally been viewed as loss more as an opportunity to renew and replenish.

Using a service design mentality to understand how a company delivers services and products to consumers relies on looking at the entire organisational meta-system, which in and of itself is comprised of smaller systems, each with its own ecosystem of stakeholders and resources consuming and producing waste in order to move down the value chain.

Looking into this system of systems, there are multiple domains in which business leaders might be able to renew and reuse resources. Digital resources comprise of the technological demand it takes to run a business, such as the use of servers and digital infrastructure needed to store and use data. Physical materials are the resources needed to produce products or goods; not just the materials needed during manufacturing but also physical office space itself. Human labour can also be seen as a domain, as the retention and sustainability of employees is key. End users might also be looked at more renewably, from incorporating feedback into business practices to reducing the amount of their physical consumption and waste by providing them products and services that they can reuse rather than dispose of.

While mapping value chains in this way gives insight into where organisations might become more efficient or minimise waste, true systemic change needs to occur for businesses to adapt to a changing paradigm demanding more equitable and sustainable businesses.

By using circular design, we may be able to uncover opportunities for creating more close loops, where resources that might be wasted in one area of a business may be reused and recycled by another area. Zooming in and out to identify where these loops could be developed might also reveal broader connective threads needed to create sustainable, values-driven organisations. Some

> By using circular design, we may be able to uncover opportunities for creating more close loops, where resources that might be wasted in one area of a business may be reused and recycled by another area

Bottom-line driven organisations could begin examining resource expenditure and waste across four domains
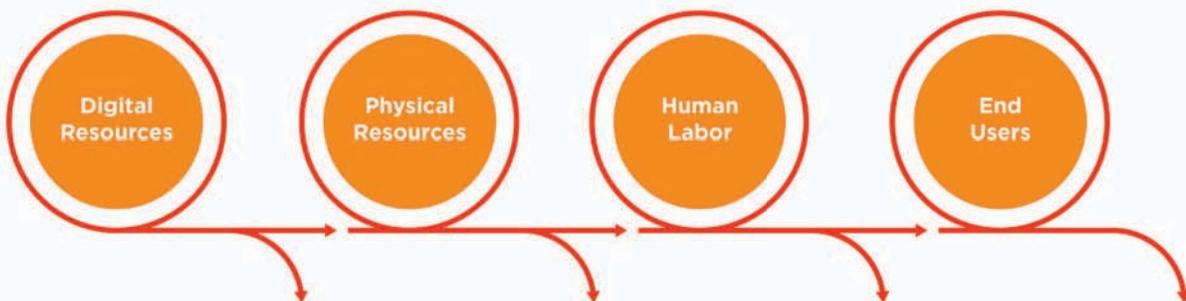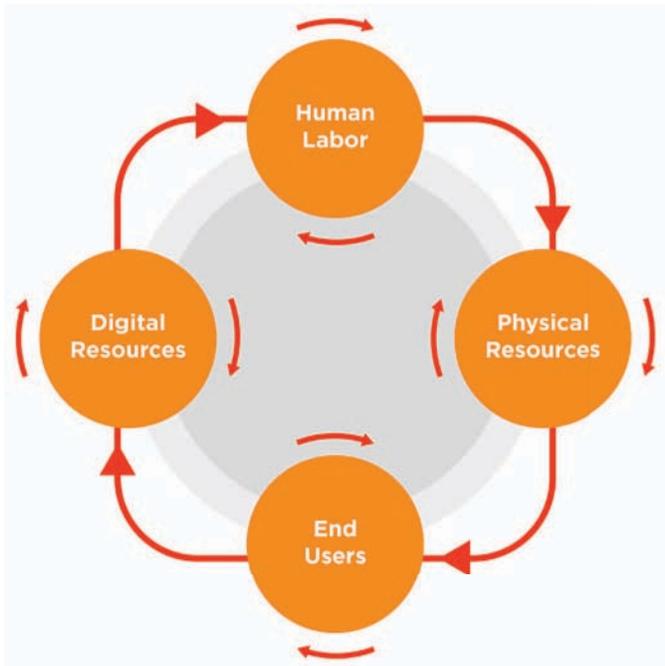
Left: **Restoratively-driven organisations seek to create closed loops where waste from one business area could be reused by another**
Top Right: **The team at Gravity Payments**
Bottom Right: **Indoor farms like this one utilise by-products from a beer manufacturing process as an input to stimulate growth**

The growing demand for sustainable operating models will continue to rise as the public continues to demand a more sustainable global future

companies today have already begun applying circular design, especially within the domains of human labour and physical resources.

At Gravity Payments in Seattle, a credit care processing service, sustainable business policies have been enacted to create a more sustainable employee experience. Dan Price, the CEO of Gravity Payments, announced in 2015 that he would cut his own salary in order to bring the minimum salary of his employees to $70,000 per year. By creating more equity and establishing a liveable minimum salary for the entire workforce, Gravity Payments redirected money that would have exited the overall meta-system and directed it towards the Human Labour system. Giving the entire workforce a more liveable salary meant that employees would have less stress dealing with their personal finances, leading to more employee retention and ultimately seeing higher customer retention and profit.

Bubbly Dynamics in Chicago has created a focus on ecologically responsible industrial development in multiple facilities, one of which is The Plant. They have turned a former meatpacking factory into an incubator for small food businesses to manufacture their products using circular design, focusing on the Physical Resources system and taking physical waste products of a small business as an input for another. For example, the CO_2 emissions from a beer brewery are collected and used in their algae lab and various indoor farms, where they're used as a growth stimulant. By zooming into each small business to analyse their waste resources and zooming out to design how they could be reused, The Plant is able to examine how the Physical Resource system can be more sustainable and keep creating value for the End Users System.

Moovster, a service that evolved from BMW in Germany, is an urban mobility-as-a-service platform that focuses on urban dwellers to adopt more sustainable behaviours. Their digital platform rewards users for choosing sustainable mobility options, such as public transportations, scooters or bike sharing. By diverting physical resources to build more cars or buses, they are looking at shared value between Digital Resources and End Users by encouraging End Users to use existing mobility infrastructures with an overall goal of environmental sustainability.

While all these organisations have designed new processes and structures to recapture value that might otherwise have been wasted, the question still remains as to how an organisation uses circular design to create sustainability across its entire meta-system. While the challenge of creating a business model built to drive renewable value across an entire organisation remains, the growing public demand for businesses to do so will only continue to increase. Similar to the paradigm shift towards exemplary customer experiences, the growing demand for sustainable operating models will continue to rise as the public continues to demand a more sustainable global future.

Business leaders will be called upon to act for the interests of the people and the environment, not just their bottom line (though sustainable business practices also serve their best interests). By potentially building coordinated efforts and shared sustainability goals across an entire executive team, organisations can begin injecting circular design within their businesses or possibly using it as a foundation to build new organisations. ●

Do We Ever Start from Scratch?

Embracing adaptive reuse starts with reframing our understanding of what came before. **Jason Judy** writes about how graphic design can help

Three proofs that we live in an era shaped by *new*: swipe your finger on your device and *new* content immediately appears across a myriad apps; Netflix spent $16 billion on *new* online streaming content in a single year; and planned obsolescence – the industrial design policy of producing goods that rapidly deteriorate or become obsolete – has now become a normalised consumer-driven strategy that incentivises more frequent purchases of *new* replacement products versus repairing or maintaining ageing versions.

With innovation, attention spans and consumer habits fixated on what is new, it is understandable that many of us have shifted resources away from the past to help us find our place in valuing or even shaping what is next. So, what do we do with all that came before and how can it improve the relevance of new work? Visual communication has a well-defined and well-documented relationship to the past and here are two practical reasons to look at what came before as valuable source material to start from.

First, the past is where many visual design

Second, the past is infused with cultural importance and can help designers tell resonant stories. When El Lissitzky created the poster *Beat the Whites with the Red Wedge* in 1919, he was developing a symbolic image for the Russian Civil War. The resulting constructionist art movement and the original context as political propaganda, have been referenced and emulated ever since, resulting in numerous influences in subsequent graphic design works. The cover art for *Walls Come Tumbling Down* (2016, Daniel Rachel), for example, deliberately pays homage to both the visual structure and cultural context of Lissitzky's poster, while adapting original design elements and combining them with music iconography. This connection to the past infuses a hidden story into the design and a richer purpose behind the designer's modern decisions in typography, layout and colour.

In both these examples, we find an emerging Guiding Principle: looking backward can be a fundamentally creative act.

Kirby Ferguson, creator of *Everything is a Remix*, shares that "our creativity comes from

> **The past is infused with cultural importance and can help designers tell resonant stories**

Beat the Whites with the Red Wedge **(El Lissitzky, 1919) is a Soviet propaganda poster that came to symbolise the Russian Civil War, helped introduce the suprematism art movement and heavily influenced the Bauhaus and constructivist movements**

The Hamburger Menu Icon originally created in 1981, has become a constant in UX/UI design

problems have already been solved. For example, the three-bar menu icon, originally designed by Norm Cox for Xerox in 1981, became a broadly adopted symbol in mobile interface design in 2009, and now, when used consistently in the top portion of a website, easily guides users toward a collapsible menu without taking up precious screen space. There may be a future rationale where this icon is redesigned or replaced, but it would be foolish to try and do so without a deep understanding of how the icon developed and why it performs so effectively today.

1: In 2020, the Belarusian football team FC Vitebesk released a commemorative kit inspired by Lissistzky
2: The Slabinja Monument in Croatia, a war memorial for victims of fascism in World War II, is said to be directly inspired by *Beat the Whites with the Red Wedge*
3: The Scottish band Franz Ferdinand paid homage to Lissistzky with album art and a constructivist music video that accompanied their 2004 single release of the song *This Fffire*
4: Derivatives of Lissitzky s work. The symbol used by the Peacekeepers, a private military company in the Australian-American science fiction television series, *Farscape*
5: The jacket art for Daniel Rachel s 2016 book *Walls Come Tumbling Down*, chronicling three social movements heavily shaped by music and politics, which took place in the UK from 1976 to 1992

without, not from within. We are not self-made, we are dependent on one another, and admitting this to ourselves isn't an embrace of mediocrity and derivativeness, it's a liberation from our misconceptions." What came before is not just history, it is the very source material from which we all construct our notions of what can be created and made new.

Ferguson goes on to propose three basic elements of creativity: copy, transform and combine. The order is crucial, as it articulates a journey that begins with learning from the past (copy), moves toward repurposing and improving (transform), and then seeks to innovate or create with a new sum of parts (combine). Not only is this beginning to bring structure to how we might understand the relationship between creativity and the past, but it is also beginning to give shape to how we determine what we call good design.

Adaptive reuse is not simply copying what was; this is plagiarism and violates the notion that using existing work is a creative act. Yet, as Ferguson suggests in his sequence, it is where creativity starts, and many disciplines include copying prior work as a deliberate part of developing the skillset to create. On the other hand, it is misguided to think that any innovative work truly came from nothing before it, or exists as an explicitly new idea. This again is provoked in Ferguson's sequence that sees creativity culminating as an act of combining (remixing) the past into what we perceive as something new.

"There is no such thing as a new idea," remarked author Mark Twain in his autobiography, "We simply take a lot of old ideas and turn them into a sort of mental kaleidoscope."
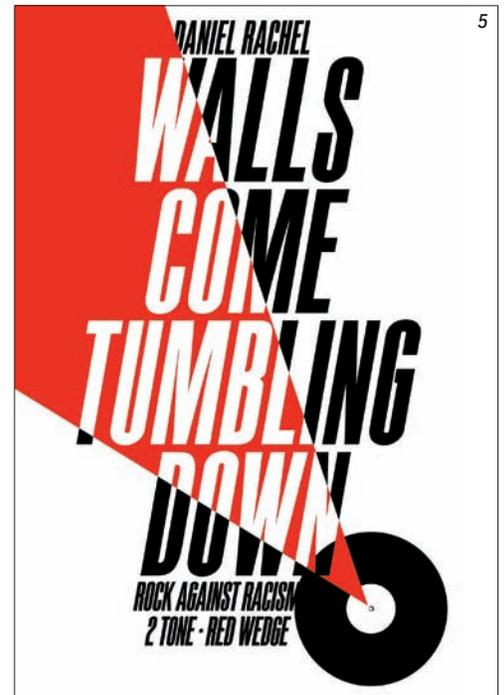
This is not an appeal to disillusionment, but rather a reminder that while innovation and groundbreaking design may feel like the work of enlightened futurists, it is actually thoughtful, deliberate improvement of so much that came before it. Graphic design comfortably celebrates a well-executed homage to the aesthetics and source material of the past. It is all adaptive reuse, and the more we embrace and honour the fertile ground of the past, the better equipped we will be to realise the new work we all crave. ●

Stretching Design Research Beyond the Innovation Industry

Perceiving the need for an inter-personal tool founded in empathy, understanding and context, **Amrita Kulkarni** makes a case for Design Research to be adapted for the personal realm

Back in 2015, I had what seemed like an unusual idea. Working as an innovation consultant, I was in the business of uncovering game-changing user insights and conveying their meaning in impactful and compelling ways. Frameworks — visual representations of a concept, idea or structure — were my bread and butter. As I observed these outcomes of Design Research enable clarity of understanding and effective decision-making with clients, I wondered if I could come up with a framework for how I live my life. I imagined that it would guide me through decisions on how I spend my time, money and energy. Having conducted 'research' on my own activities, behaviours and desires through reflection, I envisioned adapting my professional skill set for use as a personal tool.

The resulting framing proved to be an effective aid in decision-making around tangibles as well as intangibles. Travel, learning, hobbies, friendships and other experiences were easier to structure and prioritise. Continuing to leverage aspects of my professional skill set onto my life beyond work, I applied activities, methods and processes from Design Research to answer questions about life: which holidays should I celebrate in the year? How might I understand my friends better? What activities must I prioritise on vacation? How should I reveal differences in life-philosophies between my parents and I? How could my husband and I collaborate better on raising our baby daughter together?

Looking back, I wonder how differently these life situations may have unfolded had it not been for my adaptation and reuse of Design Research as a tool through these moments. It seems difficult to discern the exact difference these tools made — knowing that they were 'informally' applied — because inevitable life scenarios would have come up and been addressed either way. But would I have reached the same place in the same way without the aid of my new toolset? Probably not.

What is Design Research anyway, and what might its informal adaption to personal life situations look like? Design Research is a codified methodology to uncover insights and opportunities for innovation in the marketplace, rooted in user observation and empathy — understanding what people do, not what they say — and the synthesis of motivation and unmet needs behind this user behaviour. The resulting

> **I wonder how differently these life situations may have unfolded, had it not been for my adaptation and reuse of Design Research as a tool**
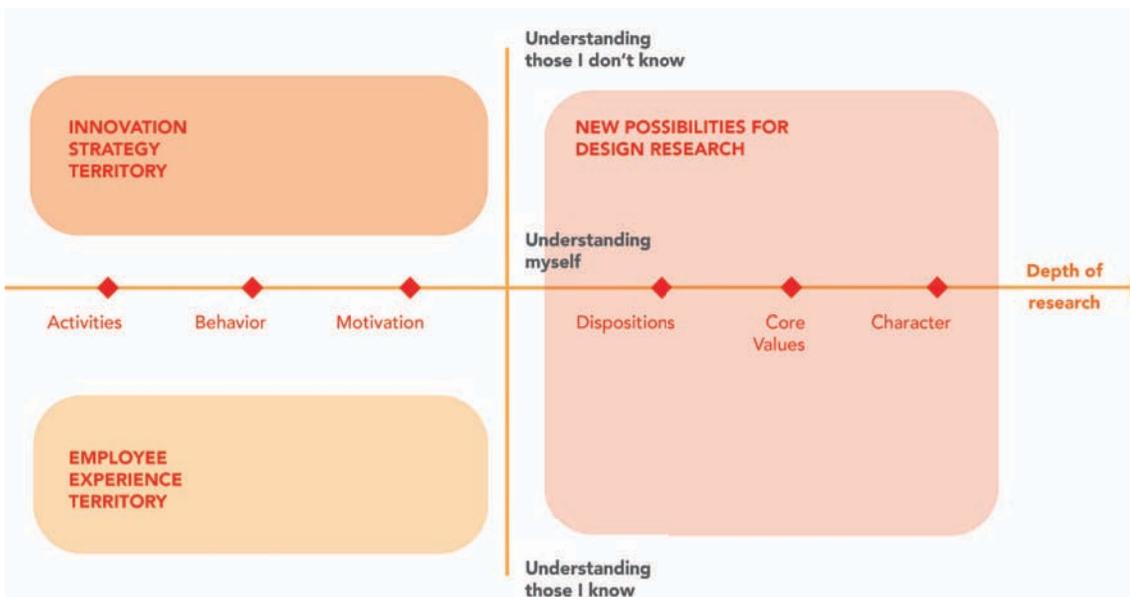
Left: **How we address those less privileged than us shows our true character, they say. Placing those we are researching in such thoughtfully designed contexts enables deeper observation**
Right: **My first scribbles leading to a framework for life, back in 2015**
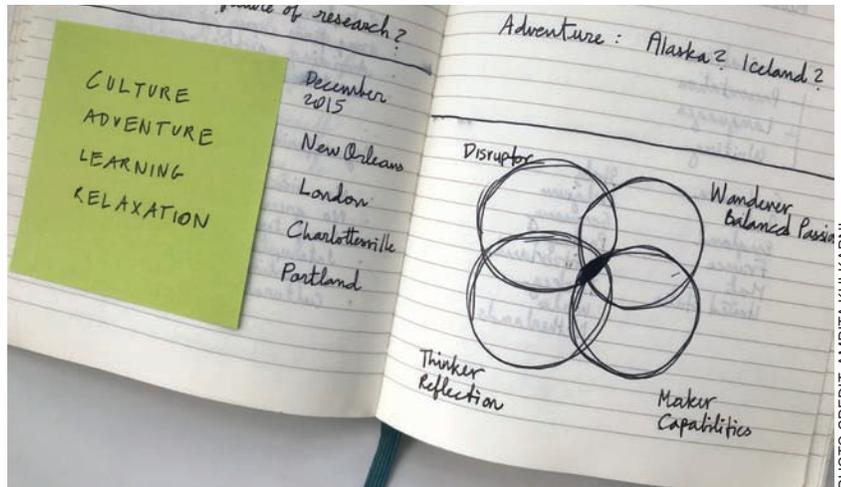
clarity guides the process toward possibilities for products, services or experiences. Although Design Research has been a reliable method to deliver successful innovations in the marketplace, its use has not been formally adopted in the personal realm.

What happens, for example, when someone is looking to uncover common values with other family members? Or when someone desires to better understand unexpressed needs of their spouse or child? Or when someone wants to build deeper empathy with large, global movements unfolding these days? Or when someone is looking to reflect on their own value systems and define their moral north star? Or even when an organisation wants to understand and respond to its neighbours/neighbourhood better? There isn't a universally identified design methodology to address these curiosities or needs, and even if none of them are explicitly intending to innovate, they all seem to be asking for Design Research.

I see two ways in which Design Research can be adapted to be applicable to general life scenarios: how much deeper you're digging for insight and how differently you're defining actions in response to the insight. In the traditional innovation world, researchers observe user activities to discern behaviour and motivation and gain enough understanding to be able to define specific design solutions for these users. In a personal life scenario, you may want to dig deeper — further than motivation — toward core value systems and character. Understanding what drives a new friend to make decisions that baffle you, or reflecting on your own behaviours for a profound self-awareness or connecting more rigorously with your students through knowledge of their foundational driving forces, produces deeper insight.

What might some of these 'deeper' research methods look like? In aiming to uncover deep-rooted ideologies among people you know or don't — whether you're seeking their

notions of justice, relationships to authority, manifestations of pride, attitudes around life goals, definitions of beauty or interpretations of morals — user observation may prove insufficient. Immersive, vulnerable, honest provocations may be necessary, including revisits to historical narratives, decisions or choices. Such research methods may need to be longitudinal, need multiple sessions, coax responses to intelligently designed stimuli or scenarios and the ability to perceive a truth from numerous interpretations.

In terms of actions that result from this deeper insight: knowing that in personal life we're not necessarily looking to sell a new product or service, actions from this deeper research look different. Maybe you're able to uncover new goals that express a shared value system with your in-laws, or you're able to forge new partnerships with and between those who couldn't see eye-to-eye, or make new decisions on behalf of your community, or figure out who makes for a good co-founder for your start-up, or identify shared actions with your neighbours, or even define your own version of a framework for life.

With divisive politics, philosophies and beliefs increasingly surfacing across many chapters of life, there may not be a better time for a neutral toolkit founded in empathy, understanding and context. Over the deafening noise of clashing value systems and disagreements between conservatism and liberalism, between religious intolerance and inclusion, between privilege and racism, between climate change and non-believers, Design Research offers me hope as a method that can help either side understand the other a bit better, whether these disagreements manifest within yourself, your family or your community. In the very least Design Research pushes us to understand which side we're on and why. Six years ago, adaptation and reuse of Design Research for a personal values framework seemed like an unusual application of a work tool, but now it seems like a no-brainer. ●

JAIME LERNER
1937 – 2021
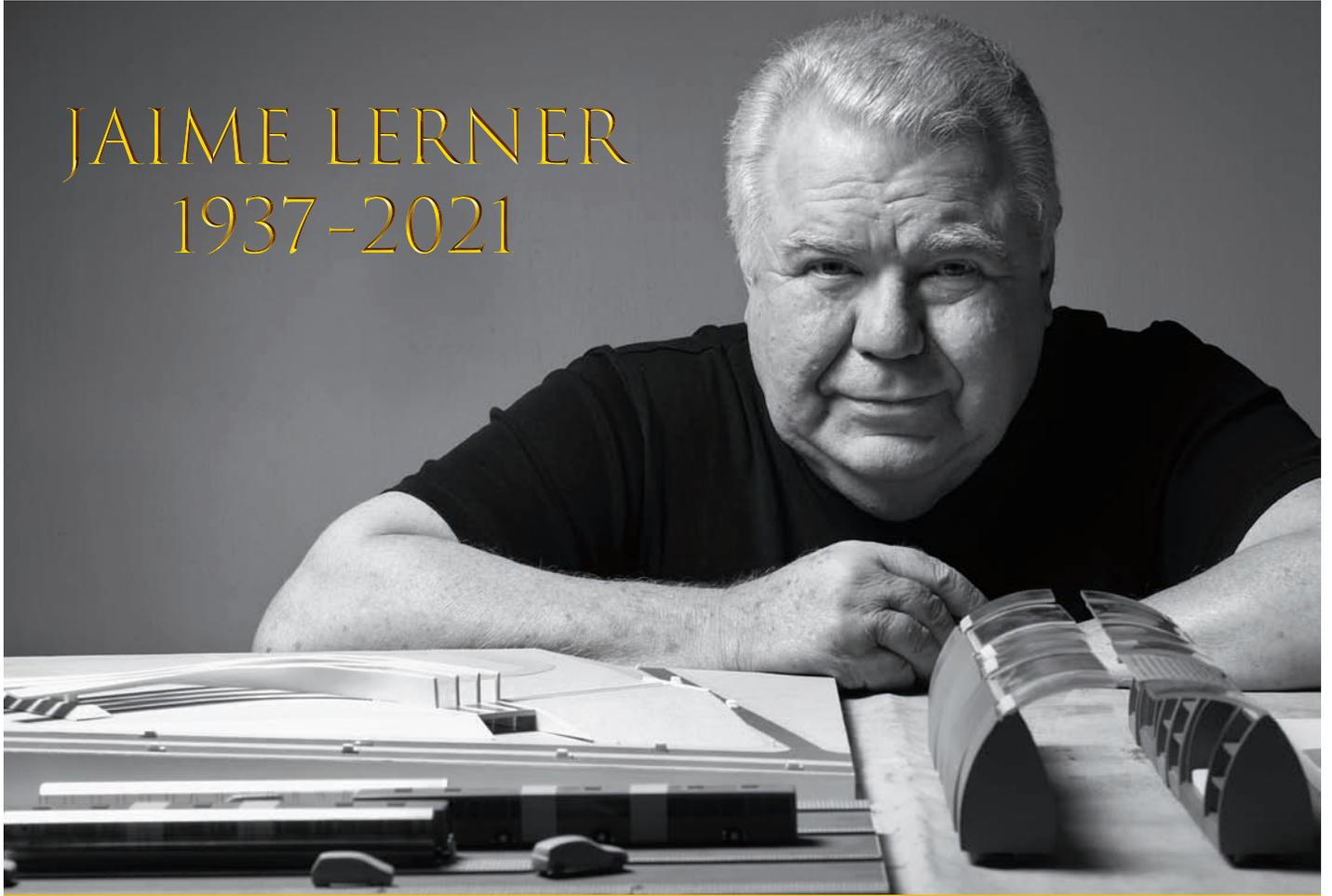
One of the stalwarts of urban planning of the 20th century, Brazilian Planner and Architect Jaime Lerner passed away on 27th May this year.

When most internationally-renowned designers tried to leave their mark by designing iconic buildings, Jaime Lerner concentrated on making cities truly inclusive.

One of the few urban planners with exceptional foresight, he contributed new concepts to cities, including the dedicated rapid-transit bus system in Curitiba. He did this as an urban planner who went beyond his field of expertise and turned administrator and politician   firstly as Mayor of the city of Curitiba and later as the elected Governor of the State of Parana.

Our cities might be much better places to live in if more experts followed his example and became politicians, administrators, activists and publicists.

MY LIVEABLE CITY acknowledged Jaime Lerner s contribution by publishing an interview with him by Paola Huijding in our issue dated October - December 2017. Visit our website **www.myliveablecity.com** *to read the article.*

Reuse, Redevelop and Design

Paul Meurs and **Marinke Steenhuis** tell us how the Dutch deal with heritage

Where there is empty space, there are opportunities for new use – opportunities the Netherlands cannot afford to waste, given the country's urgent need for space: it is densely populated, travel distances are short and there is a social demand for city renovation that preserves existing quality. The creative industries in the Netherlands are leading the way when it comes to repurposing. They use their creativity to bring the right people together, to come up with surprising combinations of user functions, to devise financial solutions that make seemingly unprofitable ideas possible, to find smart new ways to preserve outdated buildings by making them more sustainable and, of course, to create designs that celebrate heritage by repurposing and updating it in ways that respect its cultural-historical value.

What is striking about the Dutch approach is how heritage has become an integral, mature and organic part of decision-making in spatial planning and urban development. Heritage is part of people's daily living environments, and it is always considered when drawing up plans for the future. The old and the new are interwoven in many different ways. As a result, drastic changes to historic buildings are sometimes accepted. This fits in with how the Dutch see their country: as a layered cultural landscape with deep roots reaching back to previous centuries and also as a product of human ingenuity – as a landscape that is constantly changing but always remains recognisable. It should also be noted that repurposing is not limited to the creative class in the Netherlands. It affects people of all ages, social classes and demographics, in both urban and rural areas.

The 'Dutch' approach to heritage is set out in the book *Reuse, Redevelop and Design: How the Dutch Deal with Heritage*, from which this article has been derived. The book was commissioned by the Dutch Ministry of Education, Culture and Science's Cultural Heritage Agency as a way to start a dialogue about heritage with partner countries. Of course, approaches to heritage will differ depending on factors such as time and place, and the current repurposing trend in the Netherlands has a number of fashionable traits, which will probably evolve moving forward. That is why it is important to always be open to alternative approaches, and the best way to do

that is to remain in constant dialogue. *Reuse, Redevelop and Design* is currently on a world tour, accompanied by an exhibition. At each stop of the tour, discussions are held on the basis of relevant current examples. Elsewhere in this magazine, you can read a report on one of our jointly hosted workshops in Jakarta.

The discovery of everything that already exists

Repurposing is not new – it has been happening since the dawn of history, across cultures. One layer at a time, century by century, cities and villages have modernised. In the past, old building materials, outdated buildings and altered city structures were adapted to new uses in clever and organic ways. At some point in the last century and a half, however, organic reuse fell by the wayside. Growth and social changes were so rapid that modern industrial cities could not organically expand around existing structures. A different approach to spatial planning and building emerged, based on growth, innovation, standardisation and economies of scale. Building became synonymous with new build. Vacancy was usually the last stage before demolition and new construction, as entire city districts and landscapes were razed and rebuilt. Opportunities for redevelopment were either overlooked or dismissed as idealistic and unaffordable, and therefore unrealistic. Only large listed buildings were given special treatment. They were renovated and transformed into museums and high-end office buildings – transformations made possible by a large number of grants.

In the 1970s, social dissatisfaction with the large-scale demolition of city centres started to increase. It was an era in which common beliefs and practices were challenged. In 1972, the influential Club of Rome report, *The Limits to Growth*, added a new dimension to the environmental debate, while the 1975 European Architectural Heritage Year changed the way we viewed heritage sites. Citizens became protective of their cities, which led to fierce protests against demolition and large-scale redevelopments, as well as to initiatives to restore old buildings and give them a residential use. This development was in line with the international rediscovery of existing cities, propelled by publications in various countries: in the US Kevin Lynch's *The Image of the City* (1960) and Jane Jacobs' *The Death*

> **Heritage is part of people s daily living environments, and it is always considered when drawing up plans for the future**

PHOTO: OSSIP VAN DUIVENBODE
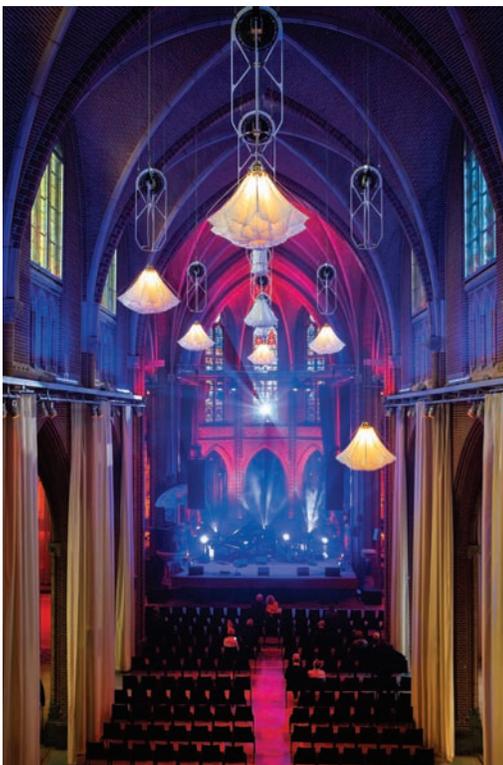
PHOTO: FROUKJE GROENEMANS

Mariënhage convent complex, Eindhoven
Built 1420, repurposed 2017 (listed monument)
Design: diederendirrix, architecten|en|en
Landscape design: Buro Lubbers

Domus Dela is a former convent complex in Eindhoven, which has been converted into a multifunctional meeting centre and hotel. The challenge was to find a new use for the church that would preserve its grand atmosphere while reinventing it as a meeting space for spiritual reflection. The old church was preserved in its original state but can now be used as a multifunctional space thanks to the installation of advanced lighting and the addition of a number of other facilities. The reception and foyer are housed in a modern annex that links the entire complex.

and Life of Great American Cities (1961); in the UK Gordon Cullen's *Townscape* (1961); and in Italy Aldo Rossi's *The Architecture of the City* (1966). None of these authors were against urban renewal; rather, they argued for redevelopment based on existing social and physical logic of the cities.

The protests and proposed urban planning alternatives led to the realisation that old buildings can be used as homes and offices, and that historic centres hold a unique significance in modern and postmodern cities. As it turned out, many people would rather live in a historic building than a brand-new home. Looking for a unique place to live, they discovered old warehouses, vacant school buildings and abandoned bulb and tobacco barns – even though it would take some DIY home restorers years of their lives to turn these buildings into the palatial homes they are today. Professional developers also entered the repurposing market. They focused on larger and more complex projects, such as the redevelopment of factories and office buildings.

The repurposing challenge
Great examples of repurposing can be found all over the world, such as the Meatpacking District in New York, Puerto Madero in Buenos Aires, SESC Pompéia in São Paulo, 798 Art District in Beijing, the Albert Dock in Liverpool and Emscher Park in Germany. The Netherlands has had its fair share of iconic repurposing projects as well, but there have also been a uniquely large number of small-scale redevelopments. As a result of economic and social changes, many thousands of buildings have lost their original function: farmhouses, offices, churches, convents, factories, department stores, warehouses, pumping stations, school buildings, railway stations, shops, community centres, town halls, etc. It seems only natural to explore how all these buildings could be given a new life with a different use. Some distinctive characteristics of the Dutch approach to repurposing are its integral nature, the close cooperation between public and private parties, a strong focus on community involvement, market-oriented heritage care ('conservation through development') and market parties with a sense of cultural heritage and spatial identity.

Transformation requires both physical and social engineering: smart combinations of functions and users that produce synergy benefits and new forms of collectivity. Repurposing sometimes leads to surprising forms of mixed use – offices alongside a restaurant, a theatre inside a former church or a complex comprising artist studios, a café, a museum, shops and a theatre. It also allows people to live and work in buildings that have been made suitable for new uses in ways that fit their surroundings. Repurposed buildings

often serve as so-called placemakers, catalysing the redevelopment of city districts by functioning as familiar and recognisable landmarks. The Netherlands' construction challenge has become a repurposing challenge. In the words of Jane Jacobs: 'Old ideas can sometimes use new buildings. New ideas must use old buildings.'

Changed market
The challenge is to give redundant buildings a new use or to adapt them in such a way that they become suitable for their original use again – in technical, economic and social terms. The number of large companies and multinationals has decreased, and more people are self-employed. They are part of large networks and can work online from anywhere in the world. Today's property users want flexibility, interchangeability, variety, sustainability and social cohesion. There is a demand for residential and office concepts that integrate a building's history, as well as the distinct qualities of its surroundings.

The City of Rotterdam, for example, designated a number of fixer-upper houses: dilapidated listed buildings to be sold at low prices, on the condition that the buyers immediately start investing in renovations. The supporting structures and building shells were overhauled by a contractor, but the buyers had to finish their new homes themselves. The experiment was especially attractive for first-time home buyers and helped keep university-educated young people in the city. For millennials, living in a renovated railway building makes much more sense than moving to a brand-new home in the suburbs. The elderly are also an important target group: many of them want to move back to the city – or move there for the first time – where they feel safe and care facilities are nearby. Outdated office buildings from the 1960s and 1970s, which until recently were widely regarded as eyesores, are often ideal for conversion into housing for specific target groups. And once they have been given a new lease on life, they often – against all expectations – become beloved and cherished homes. Of course, it is impossible and undesirable to preserve every single building. Poorly constructed offices in bad locations will eventually have to be torn down, expensive though that may be.

Flexibility and diversity
The conversion of derelict buildings provides unforeseen opportunities for special uses. It starts with bringing together supply and demand, initiators and spaces. Given the fact that the buildings in question were not designed for their new use, adjustments and additions are inevitable. The space must adapt to its use and

The challenge is to give redundant buildings a new use or to adapt them in such a way that they become suitable for their original use again
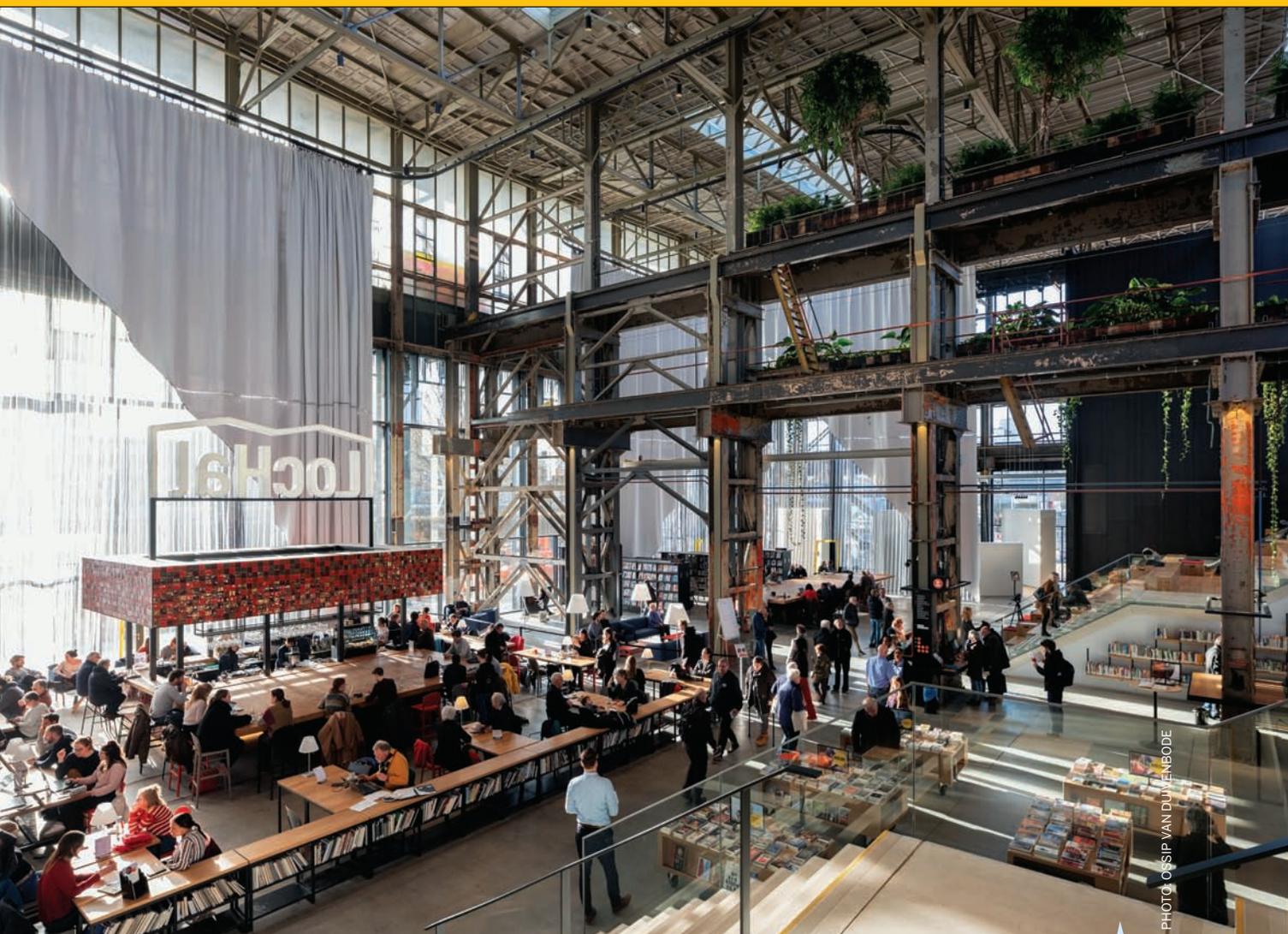
PHOTO: OSSIP VAN DUIVENBODE
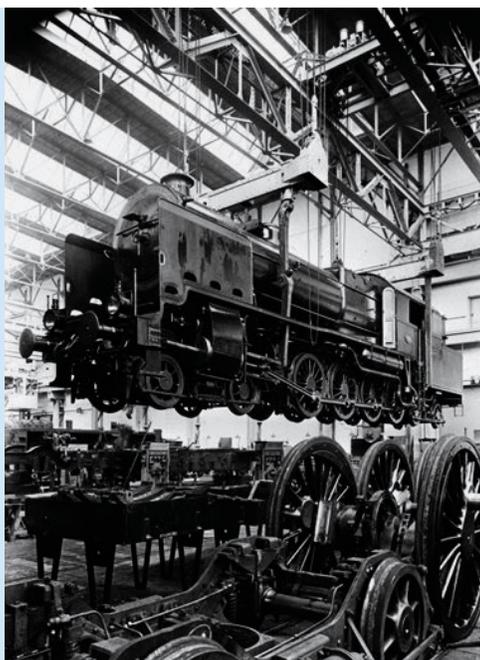
PHOTO: LOCHAL IN 1937

LocHal, Tilburg
Built 1932, repurposed 2017-2019 (municipal monument)
Design: **Civic Architects, Braaksma & Roos Architects and Inside Outside (Petra Blaisse)**
Interior design: **Mecanoo Architects, Tilburg Academy of Architecture students and Donker**

The area behind Tilburg station was once home to a 185-acre train factory, which is now being redeveloped into an extension of the city centre. The monumental factory hall, where locomotives were made, has been redesigned as LocHal: a public space with a library, art institutions and meeting rooms. After it was completed, the repurposed building immediately became an important social and cultural hub in Tilburg. LocHal has an open and rich interior that can change with the seasons, the weeks and weekends, and along with the time of day. The factory hall has been kept intact as much as possible, and can either be used as one space or divided in various different ways thanks to towering curtains hanging from the ceiling.

to its users, and vice versa. This requires a case-by-case approach. The designs have to be functional, feasible and affordable, and they must meet all relevant building standards and regulatory requirements.

In the past, repurposing projects were often initiated by the government, and usually involved large-scale interventions. The financial deficit ('the unprofitable top') would be compensated through subsidies because of the expected upsides, such as area development and social benefits: increased cultural diversity, area upgrading, an influx of high-earning households or the retention of social target groups. Today, the government takes a different approach, as it tries to encourage repurposing by removing as many obstacles as possible for private investors.

New challenges

The government's change of direction is in line with a general rethinking of government's roles and tasks in society. Builders, architects, the historic preservation community and the general public have adapted their roles accordingly. The heritage sector is changing as well. Government institutions sometimes have reservations about issuing permits for repurposing projects that will change the character of a building and add new qualities, as this will have an effect on its historic value. How much can a historic building change before it loses its soul and integrity? The challenge for the heritage sector is to learn to welcome new developments while remaining firm in protecting listed properties against threats to their essence. Developers, on the other hand,

PHOTO: CREATIVE COMMONS ATTRIBUTION-RIJKSDIENST VOOR HET CULTUREEL ERFGOED

Villa Augustus, Dordrecht
Built 1882, repurposed 2007
Design: Daan van der Have, Hans Loos and Dorine de Vos

Dordrecht's former waterworks is beautifully located on the river and features several water basins, a water tower and a pump building. A group of local entrepreneurs decided to buy the complex because of its poetic character. By transforming the water basins into gardens and repurposing the buildings as hotels and restaurants, they managed to create a magical place where people love to come and eat and spend the night. The project has done wonders for Dordrecht – a somewhat sleepy town – and attracts people from far and wide.

PHOTO: ADRIAAN VAN DAM

PHOTO: ADRIAAN VAN DAM

Burgerweeshuis, Amsterdam
Built 1960, repurposed 2018 (listed monument)
Design: **WDJ Architects**
Landscape design: **Atelier Quadrat**
Interior design: **Ex-Interiors**

The Burgerweeshuis orphanage in Amsterdam is an architectural masterpiece by architect Aldo van Eyck. He saw the building as its own small city: a safe and orderly world for children with internal squares and streets. While the orphanage achieved worldwide renown among architects, it only briefly fulfilled its original purpose. After years of neglect, the building was restored and transformed into a project developer's headquarters. The company designed the new layout in line with the logic of the 'city' envisioned by van Eyck. The 'streets' where children used to play are now home to coffee corners and meeting spots, whereas the pavilions have been transformed into well-appointed offices. The monumental space also shows off the project developer's extensive art collection to its best advantage.

For millennials, living in a renovated railway building makes much more sense than moving to a brand-new home in the suburbs

Strijp R, Eindhoven
Built 1946, repurposed 2010
Design: Piet Hein Eek

Strijp R is a former Philips factory site in Eindhoven, which was earmarked for demolition and new construction. The new owner, however, used its industrial past to develop a rich and varied residential area. By repurposing some of the old buildings and building houses in between them, an interesting mix of homes, offices and other functions was created. The old ceramics factory is now home to a designer's workshop, shop, gallery and studios. The new design uses the old factory's atmosphere to its full advantage and powerfully conveys the beauty of imperfection.
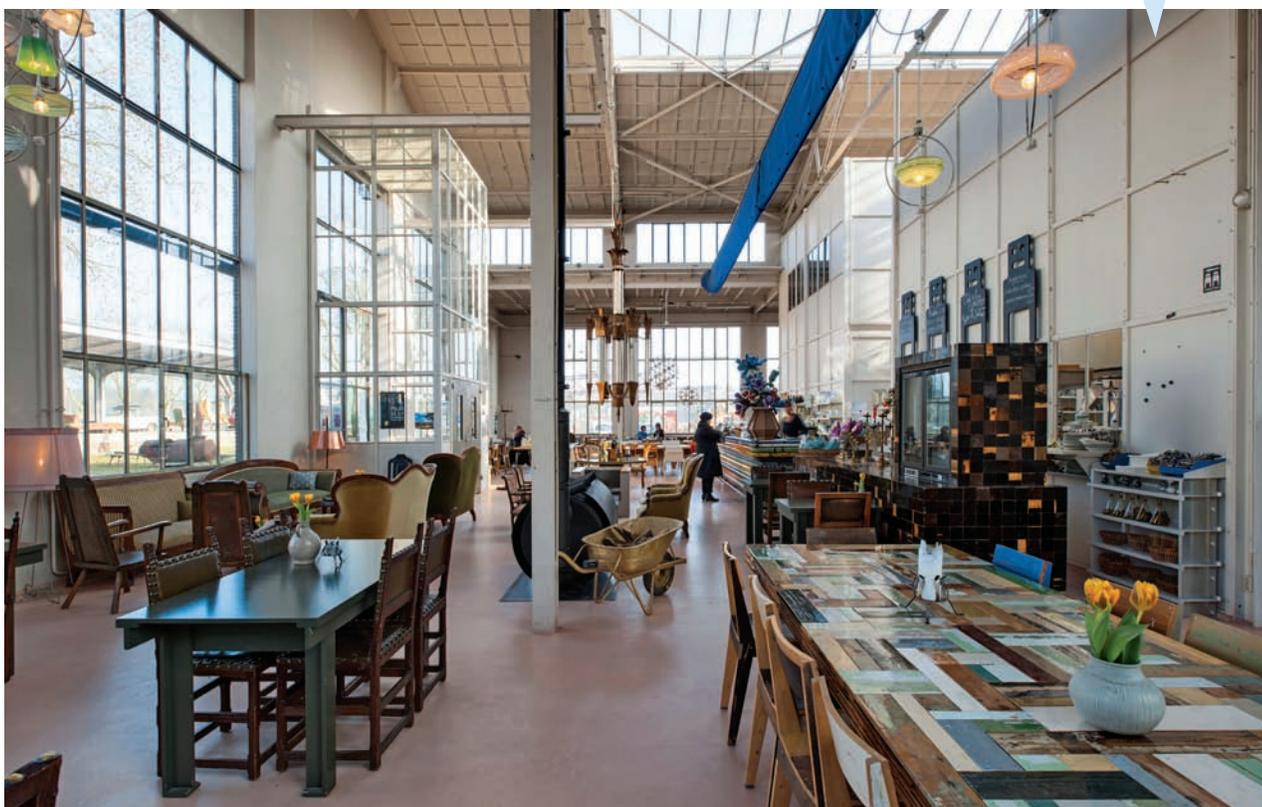
must take a risk by investing in a process of which neither the outcome nor the yield (and profit) are certain in advance. The government can provide support in this, but the new financing and exploitation models that are currently being developed will also help address this issue.

The challenge for architects is to design based on existing cultural values instead of starting from scratch. This requires a specific design approach. Meanwhile, the government is taking a critical look at the existing laws and regulations, which are often designed specifically for new-build projects, and which can interfere with effective redevelopment. Reuse requires flexible rules – without creating an irresponsibly dangerous situation or negative effects on the environment. Finally, the role of citizens has also changed. They are now well organised – socially, politically and legally – and are increasingly able to make their voices heard. Involving them in processes and assigning them joint responsibility for the results can unlock significant creativity, knowledge and support. Like shapeshifters, squatters have changed into developers, local residents have turned into project initiators, and yesterday's demolition companies are today's redevelopers. This is the last necessary step towards a truly integrated approach to repurposing, in which specialists, policymakers and stakeholders work together, each with their own role, responsibility and expertise. ●

Taking Indian Railway Heritage Forward

Somi Chatterjee details an unorthodox view towards heritage conservation to take railway heritage into the future

The entire network of Indian Railways is undergoing a transformation as a part of a station modernisation programme by the Indian government. The approach to conserve the heritage of Indian Railways when the entire network and its component parts are undergoing planned upgradation is the point of enquiry in this article. Since its inception in the 1850s, this is the first organised upgradation to accommodate increased passenger footfall, diversify function, enhance multi-modal integration and direct growth over a 40-year period.

Till date, upgradation focused on operations, infrastructure and amenities within the station, with minimum interaction with the context. The approach now is comprehensive and focuses not only on improvements to operations, capacity, services and user-comfort but also in reintegrating stations within their context. The object is to regain the dominance of the railways as a self-sustaining transport facility and a major economic driver.

Therefore, changes may range from drastic to minor, may be irreversible and sometimes of shock value. The challenge here is to conserve railway heritage through an approach that harmonises the past with the future. Achieving this will require a departure from existing preservation and control bias to one that is adaptive and defines how conservation enables growth. Such an approach is pragmatic and the need of the hour if the potential of industrial heritage is to be harnessed.

There are two primary shortcomings in the existing framework which necessitate separate codes for development in and around railway heritage. Firstly, the existing norms do not facilitate the incremental changes that are normal for a railway station. Secondly, its binary bias excludes unprotected heritage from any form of preservation or acknowledgement.

This is a cause for concern for railway heritage because when the value of 400 randomly selected unprotected stations were compared to 24 protected ones, more than 70% were found of equal value, worthy of protection. Should the same attributes be extrapolated to 8,000 stations, the number that deserves protection would increase exponentially. But, is legal protection enough? Is it the only way to take heritage forward? Can compatible and adaptive use be a solution? This article explores the latter possibility.

Globally, there is no consensus on how to use and visualise the future of heritage. Although adaptive (re)use has been a popular approach, a recent European Union report assessing adaptive reuse practices concluded that it is no silver-bullet. It is a case and context sensitive practice. Using lessons from one project to visualise another, is problematic. However, it conclusively points out that to retain the essence and value of heritage, at least 60% of the original function (or its closest form), should continue. Which means, functionality is important and use is a thread of continuity and retaining both, conveys their value and the importance of physical space. Also, when functional, heritage makes the past palpable, our identities real and instils a sense of responsibility.

The Indian Railways is an international and shared heritage. According to the Railway charter, its heritage includes historic and preserved railways, tourist railways, tramways and railway museums, historic fixed and rolling stock, fixed and moving structures and equipment currently in use or otherwise, archival material, drawings, photographs, publicity material, (films, posters, pamphlets) estimates, journals, designs and prototype models, industries, housing, commercial and administrative establishments and all other types of uses that have enabled the railways to perform and achieve its intended goal. It encompasses all associated features that aided its functioning either in its original or intended or designed form, or may have been modified or discontinued or relocated or assigned a new function. Irrespective of their present state, all such component parts are integral to railway history.

Since initiation of operation, this multidimensional entity created a push-pull factor and pervaded all spheres of sub-continental life, dichotomously. From globalising the hinterland, to stimulating trade and technology, creating industries, cities, laying infrastructure and to initiating a cosmopolitan and consumer culture, the railways have significantly contributed to nation-building. Simultaneously, it also disconnected landscapes, created social (and economic) disparity, divided cities and denuded resources.

Railways are an ensemble of built and open

> **The existing norms do not facilitate the incremental changes that are normal for a railway station**

Railway heritage is more intangible and widespread than its built footprints

spaces, with operational infrastructure and non-operational functions like residences, schools, colleges, clubs, hospitals et al. The interface between stations and a city had two transition zones: first a city-level public space and then a commercial area crossfading into residential, economic or industrial zones. In metropolises, stations led to banks, hotels, warehouses and business hubs through a network of public transport. In fact, railways were first-generation Transit Oriented Development where local, regional and international interests converged.

Railway heritage is more intangible and widespread than its built footprints. It pervaded all sectors and sections of society, lowered barriers, which reinforced our freedom of movement. From upward socio-economic mobility to fostering aspirations, the railways embodied the spirit of possibilities. Ironically, it also acted as a mnemonic prompt of a colonial past, perpetuated some unfavourable practices and spelt doom for others. Therefore, addressing this fact is as important as protecting the railways in their entirety as national heritage.

Stations were planned with provisions for expansion, which is an attribute of railway heritage. Therefore, equating an operational station to a monument and preserving it would be counterproductive. Archaeological heritage being the most popular typology of protected heritage, its technical standards, norms and approach are a common reference nationwide even for non-archaeological types, including the railways. Most works are therefore preservation-oriented to control change. Very few projects involve upgradation and maintenance, which is

undertaken by the public works department and urban local bodies.

Indian Railways has developed a set of codes that envisage the future of railway stations and mainstream response to its heritage as an inherent part of the planning process. It ensures that the evolution of the site responds appropriately to heritage and adds value to it. These codes qualify heritage through its values, integrity and authenticity and then set limits of change. These codes were prepared by reconstructing the evolution of the station precincts through archival records and extensive field work, which were analysed in the context of the present requirements of passenger movements, multi-modal integration and other area planning measures.

Different types of station areas were studied to generate, standardise and codify parameters and tools. These stations were selected based on their operational function, nature of ridership, geo-climatic conditions and era of construction. Based on these factors, stations can be classified as port, junction, terminal and halt stations. The most complex and elaborate variant were stations attached to international sea-ports. Following it in scale and complexity were junctions, terminals and then halt stations. Interestingly, several terminals were also converted to halts (like Egmore in Tamil Nadu) and port stations were often terminals and junctions (like Howrah). These were trade hubs, with road and canal ways, and with administrative and defence headquarters, large hospitals and sanatoriums, jails and courts. Most port stations, especially those of the presidencies, were built in classical European styles like the Italianate and Gothic with selected Indian royal symbols.

PHOTO: UNIVERSITY OF HOUSTON DIGITAL LIBRARY / WIKIMEDIA COMMONS

PHOTO: WIELE & KLEIN / WIKIMEDIA COMMONS

Egmore Railway Station, which was once an asylum, converted into a redoubt and then a railway station. The black and white images are archival photographs showing the entire public frontage
Top Left: **Egmore Railway Station (1908)**
Top Right: **Egmore Railway Station (1913)**
Bottom: **Egmore Railway Station today**

PHOTO: PLANEMAD / WIKIMEDIA COMMONS

At capitals of princely states and provinces, junctions and terminals showed a hybrid of provincial features built on a European form. And, unless purely for defence functions, such stations always had a city-level public space leading to a *sadar* (large wholesale market) bazaar.

To intervene, retrofit or regenerate station areas will require addressing the interrelation of built and open spaces, with synchronised networks of mobility and public spaces during perspective or layout planning. The effective volume and form of development must respond to the context, be compatible with the socio-economic aspirations and encourage creative risk-averse solutions. Aesthetics also form an important determinant as stations

were marker elements of a city and an embodiment of high design taste. Such details will specify the form and limits of developments and special consideration at the onset of project formulation.

For example, any proposal for the Howrah terminal and junction port station should capture the value of the linkages between the station and its precinct that evolved in the early 1900s and the fact that it is eastern India's busiest interchange facility today. The change in movement patterns and growth in surface and sub-surface infrastructure show how an international network of trading ports, custom houses and corporate offices and industrial facilities like jute and cotton mills, factories for industrial

Legend:
- Railway track
- 1943 Tram Network
- Tram line
- Station Cab roads
- Main access roads to station
- Bus interchange
- Taxi/cab interchange
- Ferry interchange
- Tram interchange
- IPT interchange
- Howrah Station area
- Platforms
- Heritage structure
- Water bodies
- Open/ green space
- Taxi zone in front of station
- Uber booking zone
- Parking (2 & 4 wheeler)
- Existing river edge
- Earlier river edge
- B.B.D. Bagh circular railway station

Base map source : Arunava Sarkar
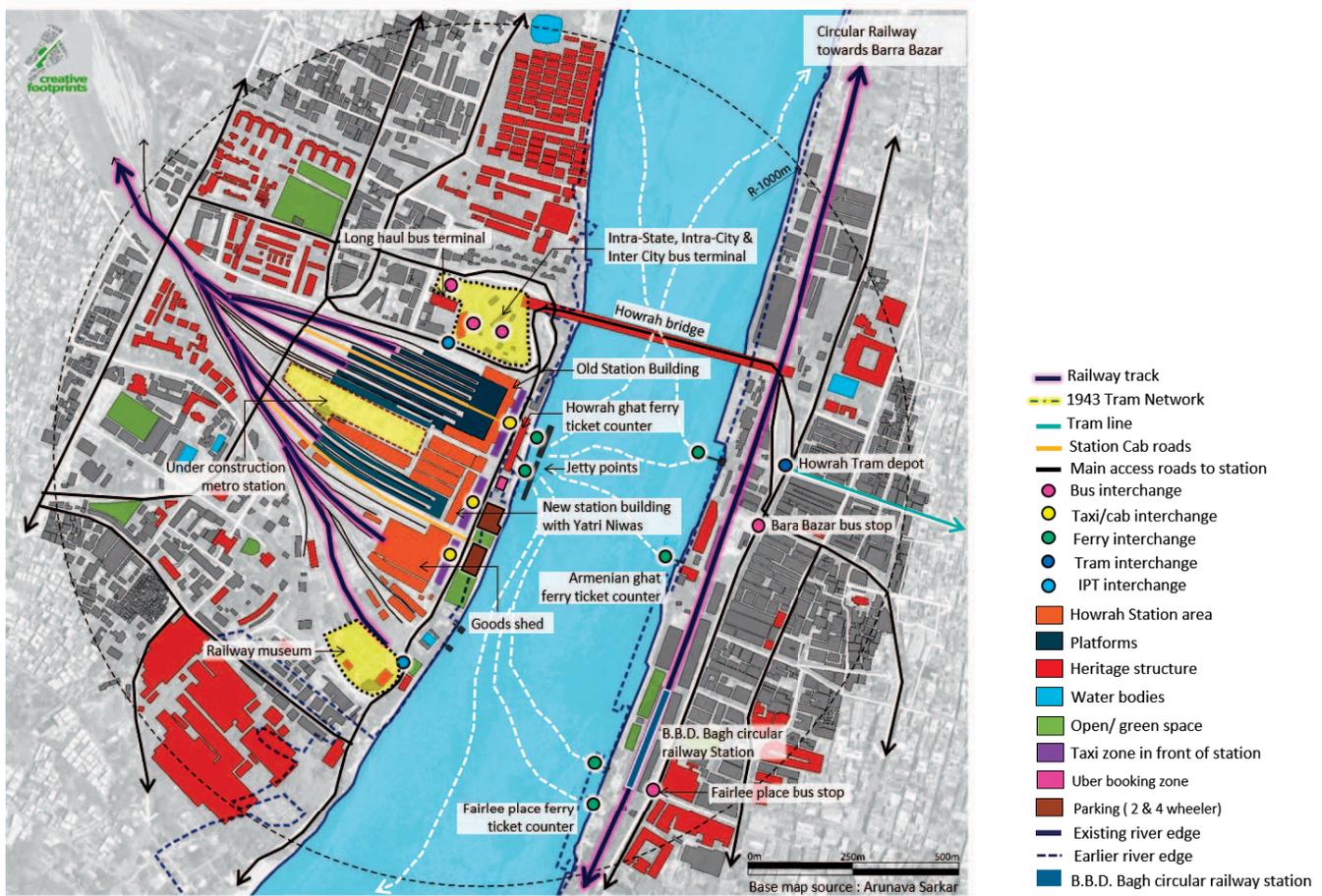
Top: **Map showing location of present day interchange nodes and functions in the precinct of Howrah Station** *Bottom Left & Right:* **Public space of Howrah Station flanked by the station building and the Strand (road). This space is now used as a taxi stand**

Left: **Shimla Station showing the layout of the station and the restrictions in terms of available space**
Right: **Congestion during peak hours at the Dehradun terminal station**

machine parts, salt pans and producer areas in the hinterland interacted at the station area. The station building is a marker element and functioned like an interface between platforms inside and the precinct outside. This created a symbiotic relationship, where the station building only hosts basic amenities to facilitate rail travel and is dependent on and instrumental in boosting business of the surrounding area. A range of transport modes, commercial facilities, hospitality, healthcare and recreational services of different price-points are within walking distance. Over time, uses have intensified, diversified and sometimes atrophied. This is reflected in the movement and fluctuations of footfall. Hence, layout planning will incorporate these as determinants to project the future.

This is very different from opportunities offered by the Kalka-Shimla Mountain Railway line. Operational since 1903, it mainly ferried British officers to the summer capital Shimla, and its stations were mere pitstops. Today, it is a World Heritage Site and its riders are mainly tourists. Any upgradation of the station or its rolling stock must comply with World Heritage protocols and a typical expansion is unlikely as there is no space.

For instance, the layout of Shimla station was designed to direct passengers towards the army cantonment, the Ridge and the bazaar. Conventional financial modelling considers this a loss to the exchequer. If it had been adapted as urban-hill-transport, it would on one hand save the heritage and on the other, put it to a more viable use. This idea when proposed for Gwalior's light railway services yielded encouraging results.

At a component level, a survey of the Dehradun terminus provided interesting information on how station buildings and their infrastructure were modified due to changing purpose and technology. Though a terminal today, this station was designed as a halt station with a small-sized public space mainly for the army and those traveling to Mussoorie. When its extension failed, the station was expanded to host functions and the city engulfed it from three sides. Today, at peak hours, the station area gets congested, decreasing prospects of value-capture.

Considering the above, compatible and adaptive continued use of stations is crucial and should:

• Not compel permanent alteration of existing layouts, built volume or that which defines its character. For example, the 'public' face of a station is sacrosanct and extensions and new constructions must ensure its visual dominance. This is achieved through planed view corridors, contextual architectural design and manipulations of new volumes at the layout planning level. This will also indicate the scope for value-capture.

• Not require irreversible transformation of structural, spatial, architectural and ornamental systems or that which comprises a character-defining feature. It is to protect the inherent diversity and significance of built heritage characteristic of the railways through high quality design application of technology. And, as such projects offer increased visibility, they should encourage competency and industry participation.

• Keep in the forefront the spirit of independence and the ability of the railways to steer growth. This makes it imperative to select a function and subsequent use that are socially relevant and integrative, linking the railway with its context. Uses that are exclusive and non-circular are against the spirit of the railways.

• Capture all revenue streams and accentuate the multiplier effect inherent to the railways. This would require proposals to be light-footed and flexible to account for the gap in time between project planning and implementation. The project horizon being 40 years, conservation plans must provide indicators to assess relevance of proposals.

• Not compromise the degree of adaptability of the whole or part of the heritage. This restores the right of the future generation to access heritage in its true form.

• Conveying original function and use or its intent is fundamental to communicate its importance. It also sanctifies the effort to safeguard its future. ●

PARKING LOTS TO PUBLIC REALMS

Strategies for Reclaiming Autopian Spaces

Maggie Schafer and **Irene Henry** describe a range of strategies to adapt and reclaim vacant parking spaces in the United States

A majority of land in cities within the United States is dedicated to streets, parking lots, garages, bridges and highways; this ubiquity of autopian infrastructure has led us to simply take its existence for granted. Perhaps no usage of car-oriented pavement is as conspicuous as the parking lot. The freedom of driving an autonomous vehicle comes with many tangible disadvantages in the form of insurance and tickets, but one that most residents of the United States frequently overlook is the chokehold that parking lots have on urban landscapes. Concrete smothers native green spaces and destroys the attraction of once dense, walkable urban streets with expansive land harbours for giant sports utility vehicles.

Ironically, many parking spaces are underutilised by cars as consumers transition to online retail and abandon traditional malls and strips. Vast lots, often covering dozens of acres, exist idly for cars while ignoring natural ecologies and human-scale needs. A drastic change in land use allocation has long been necessary, however, the effects of the Covid-19 pandemic have intensified the urgency. The inhalation

of only a few virus particles has the potential to infect individuals, creating dangerous, difficult situations for the service industry and exacerbating existing crises of housing needs and lack of safe public spaces. Repurposing empty parking lots provides an opportunity to alleviate these issues.

This essay explores ways of reclaiming dedicated parking spaces for more community-oriented needs ranging from the least to the most resource intensive. At the low end of the intensity scale, tactical urbanist techniques require little more than a few plucky individuals with creative ideas to reconfigure spaces through 'Do It Yourself' (D.I.Y.) initiatives. More financial resources can enable traditional infill projects, such as new urbanist developments focusing on walkable, mixed-use designs to create a more permanent physical metamorphosis on a parcel-level scale. The broadest modifications to land use emerge from policy changes that aim to transform an entire community's relationship to parking and automobiles. These can include lifting parking space minimums, requiring lots to be shared with other land uses and charging for parking.

In a country plagued by sprawling, automobile-dependent infrastructure, the parking lot maintains a depressing omnipresence

Left: **Abandoned parking lot in the old Chicago Union Stockyards area**
Right: **Huge empty parking lots outside Austin, Texas**
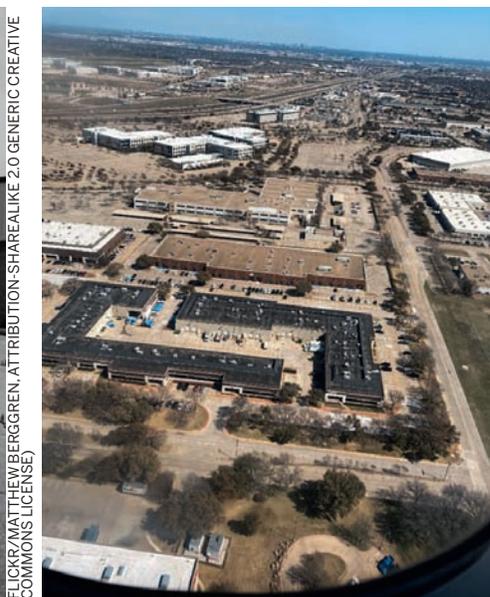
Parking Lot Land Use in North America

Experts estimate that the United States is home to between 105 million and 2 billion parking spots, with most estimates hovering around 500 million (Kimmelman, 2012). That is 3,590 square miles dedicated to idle, unoccupied vehicles. One study showed an average of eight parking spots for every person, with more pavement-heavy areas like Houston, Texas, boasting a whopping 30 per person (2012). In a country plagued by sprawling, automobile-dependent infrastructure, the parking lot maintains a depressing omnipresence. While dense urban areas are likely to offer street parking, some of which is metered or permitted to prevent overcrowding, the suburban parking lot is an entirely different beast. These often cover dozens of acres, sometimes taking up more space than the buildings and spaces they serve. The United States' northern neighbour, Canada, is home to the world's largest parking lot: the 20,000 parking spaces of West Edmonton Mall stretch over 73 acres. These concrete fields are welcoming to automobiles, buses and trucks, but create a decidedly unpleasant environment for pedestrians, public transit users and natural ecologies.

When first gaining prominence during the 1970s, the parking lot was associated with the convenience and freedom once tied to the car. The psychological ideals mirrored those of supermarkets: patrons could bathe in an abundance of choices! Yet many of the lots continue to be underutilised, even more so as shopping moves online and the malls and big box stores associated with them fall into obsolescence.

Covid-19 Implications

The antiquated nature of vast stretches of parking lots became even more pronounced as the Covid-19 pandemic forced people to shelter in place. The threat of an airborne virus ground the bustling global cadence of life to an ominous standstill, with streets and public spaces becoming bare skeletons of their previous existence. While many sectors transitioned to remote work and learning, essential workers still needed methods of transportation and pedestrians required more space to adhere to social-distancing measures. Local governments enacted temporary changes to streets such as new bike lanes, adjusted traffic signals and automobile bans so that people could walk, bike and gather at a safe distance in open air.

Many of the changes had been touted for years by urban planners and advocates seeking to reduce vehicle fatalities, traffic congestion and greenhouse gas emissions. However, some of the changes were less foreseen, such as the extension of restaurant seating, church services and even classrooms into now-vacant parking lots, streets and parking spaces.

Repurposing Parking: Solutions Ranging from Low-to-High Intensity

The metamorphosis of parking spaces and vacant lots into places for humans has been occurring by different actors for various purposes over the past couple of decades. The following section establishes a scale to analyse the types of changes happening across the country and the numerous ways in which people are reclaiming automobile space for human use.

Low Intensity (Unsanctioned): Tactical Urbanism

At the low end of the repurposing scale, tactical urbanist initiatives often arise from the desire of a few authorised or non-authorised individuals to transform a public space. Also known as 'city repair', 'guerilla urbanism' and 'D.I.Y. urbanism', these changes to the public realm are defined as short-term local collaborations that are deliberate and low-risk. The street or parking lot becomes a laboratory of sorts for testing spatial theories both inexpensively and with flexibility. The effects of these small-scale actions can be observed in real time, allowing for moderate adjustments to be made before attempting to implement large-scale modifications.

Perhaps the most famous example of tactical urbanism is Park(ing) Day, an annual observance of people reclaiming spaces ordinarily designated for a rotating cast of automobiles. *The Washington Post* claims this phenomenon originated in 2005 when a San Francisco art studio established a tiny park in a metered parking space for two hours. Although originally a one-time occurrence to demonstrate the benefits of green urban space to residents and city officials, Park(ing) Day is now observed in hundreds of cities around the world on the third Saturday of September. As an accessible path for any urban dweller to reimagine public space, the possibilities have expanded to include a kaleidoscope of creativity: dinner parties, lawn games, art galleries, free bike repair shops, health clinics, bowling lanes, chess tournaments and even a wedding ceremony.

'Chair bombing' is similar to Park(ing) Day in scale and objective. This tactical urbanist technique is used when ordinary city dwellers determine that an area of the public realm lacks communal amenities, leading to an illegal remedying of the problem by adding chairs typically made of found materials. Ciudad Emergente states the first registered occurrence of this guerrilla intervention was performed by DoTank, a Brooklyn business design company.

According to *Garden Collage* magazine, an

These concrete fields are welcoming to automobiles, buses and trucks, but create a decidedly unpleasant environment for pedestrians

older form of D.I.Y. urbanism known as 'guerrilla gardening' began in 1973 when a frustrated resident of New York's Lower East Side gathered a small team to plant vegetables, flowers and trees in an abandoned lot. While commonly associated with vegetable gardens, guerrilla gardening involves any non-sanctioned act of gardening on either private or publicly owned land. These illicit urban horticulturists typically do the initial planting in the middle of the night, or use 'seed bombs' – truffle-sized mixtures of clay, compost, and seeds – thrown into the desired location from a bike or car, or simply dropped surreptitiously while passing by. The official Guerrilla Gardening website has a forum organised by region for interested parties to share tips, determine best locations or collaborate on local projects.

Low Intensity (Sanctioned): Temporary Installments

The advantage of tactical urbanism is that residents and city officials alike catch a glimpse of a possible future for their cityscapes. These often-fleeting views of an alternate urban environment sometimes inspire more permanent changes

such as parklets, pop-up cafes, people plazas and farmers markets.

Park(ing) Day, the unofficial mode of imaginatively transforming streets into creative urban realms, resulted in a more permanent modification: the parklet. The San Francisco art studio's tiny green space sparked an interest in converting parking spaces into colourful oases of outdoor seating, greenery and bike parking. With urban planners recognising their mistakes of building an auto-centric public realm, the ascent of parklets in cities across the U.S. signals a dawning comprehension that we must design streets for people. Parklets invite passersby to sit, enjoy the day, talk with a friend or stranger and appreciate the convivial nature of city life. The National Association of City Transportation Officials (NACTO) now has recommendations in its *Urban Street Design Guide* for best applications and considerations in implementing parklets.

On streets with insufficient sidewalk area for tables, restaurants work with the city to exchange parking spaces for outdoor dining accommodations, offering restaurants an attractive way to advertise their business while

Park(ing) Day 2019 in Larimer Square, Denver, Colorado

On streets with insufficient sidewalk area for tables, restaurants work with the city to exchange parking spaces for outdoor dining accommodations

also improving the pedestrian realm. Like many trends, these pop-up cafes began in New York City, but have since sprouted up around the country.

The Covid-19 pandemic has made their utility even more pronounced. With indoor dining restricted in capacity or altogether banned in many places around the country, more than half of US restaurants transitioned to take-out and delivery only options, and over 70% had to decrease staffing in March and April of 2020 (Sowder, 2020). In order to respond to the pandemic crisis, restaurants had to find creative solutions to sustain their customer base while staying safe and following local and state-level guidelines.

Many city codes require restaurant owners to provide 10 parking spaces for every 1000 square feet of restaurant floor area, which translates to three times more room for cars than for diners (Grabar, 2020). Expanding seating to these generous parking spaces and lots allowed restaurants to increase capacity, leading to heightened revenue and the ability to rehire staff. By August of 2020, over a third of New York City restaurants were participating in the city's sidewalk and curbside seating initiative (Sowder, 2020). The gradual emergence of outdoor and cafe seating across the country has demonstrated what urban planners have been promoting for the last decade or so: we can and must reimagine the streetscape if we are going to have active, healthy, vibrant cities.

The parklet movement also gave rise to 'pavements to plazas' installations around the nation. According to re:Streets, this initiative began in New York City with the 'Greenlight for Midtown' programme, which initially developed as a traffic-calming measure in one of the city's most hazardous pedestrian areas. The temporary closure of Broadway between 47th to 42nd Streets for all vehicle traffic, along with the installation of chairs, umbrella-covered tables and planters, resulted in such widespread approval and drastic

reduction in pedestrian injuries that the city implemented a permanent plaza.

Medium Intensity: Private Development

With larger private and public investments, developers have the ability to completely transform individual parking lots. These transformations can range from simple additions of green space and sidewalks to a full repurposing of property.

In areas where a large amount of parking is still necessary due to zoning regulations or actual need, alterations can be made to lots to provide an environment that is friendlier to people and natural surroundings. Sidewalks and swaths of green spaces create a safer, more welcoming atmosphere for pedestrians, while people-friendly plazas and areas for outdoor dining invite the individual to linger. Replacing traditional asphalt with permeable pavements can restore hydrological balance to reduce stormwater runoff and prevent erosion.

Other areas may summon a more drastic redevelopment of space dedicated to parking lots. Real estate experts predict that wide-spread adoption of ride hailing services and dwindling levels of car ownership will cut the need for parking spaces in the U.S. by half over the next three decades. As a result, many developers are replacing parking lots with mixed use development. This is especially true in growing urban centers, though suburban areas are also taking note. The redevelopment of underutilised land, often referred to as 'infill', promotes changing vacant space such as parking lots into more walkable and inviting areas where citizens can work, live and play. While cars do not dominate this landscape, they can certainly be accommodated: parking can be discreetly located behind buildings or in parking garages. Further, many developers are designing parking areas in a manner that supports future conversion to office spaces or residential units.

Left & Right: **Customers enjoying outdoor dining**

Parklets invite passersby to sit, enjoy the day, talk with a friend or stranger and appreciate the convivial nature of city life

Bethesda Row: Parking lot to infill development

Another option for redeveloping underutilised parking spaces focuses on the restoration of natural ecology. The City of Seattle, WA, transformed a large parking lot into the Thornton Creek Water Quality Channel. According to its website, this development not only offers housing units and retail space, but also features nearly three acres of lush plantings, pedestrian pathways and a waterway. These channels and pools mimic the performance of a natural creek. Not only are they lovely to look at, but they also treat stormwater runoff for 680 acres of surrounding land. Landscaping with plant species that are native to the area is another element of natural restoration. Native plants are naturally adapted to the climate of their regions, meaning they are lower maintenance. They restore natural biodiversity by attracting pollinators and insects, which in turn attract the birds and mammals that feed on them.

Conversion of parking lots to natural areas can occur in tandem with for-profit developments, such as the example of Thornton Creek, or independently through community efforts. Local groups or nonprofit organisations can initiate transformations, or municipalities can choose to fund and support these projects.

High Intensity: Policy Transformation

The aforementioned developments must work within the boundaries of existing codes or with variances approved by the municipality. To make a larger impact, policy must be adjusted to allow for developments with fewer parking lots, and to create a less auto-dependent landscape overall. University of California Los Angeles (UCLA) professor Donald Shoup explains that there are three elements of modern zoning that promote an auto-oriented, parking-lot dependent lifestyle: single-use zoning, maximum-density zoning and minimum on-site parking requirements.

Single-use zoning designates that residential, commercial and other buildings must be located in separate spheres. This means residents live in one place, work in another and shop and dine in yet another. Driving from one realm to the next becomes a necessity and, at each stop, cars need a place to rest. Maximum density zoning ensures that spaces remain low to the ground, are spread out and thus difficult to traverse on foot or bike. Zoning that creates high-density and mixed-use spaces can create '15-minute neighbourhoods' where people can walk from their homes to retail and recreation spots all within 15 minutes. When people don't need a car to get from point
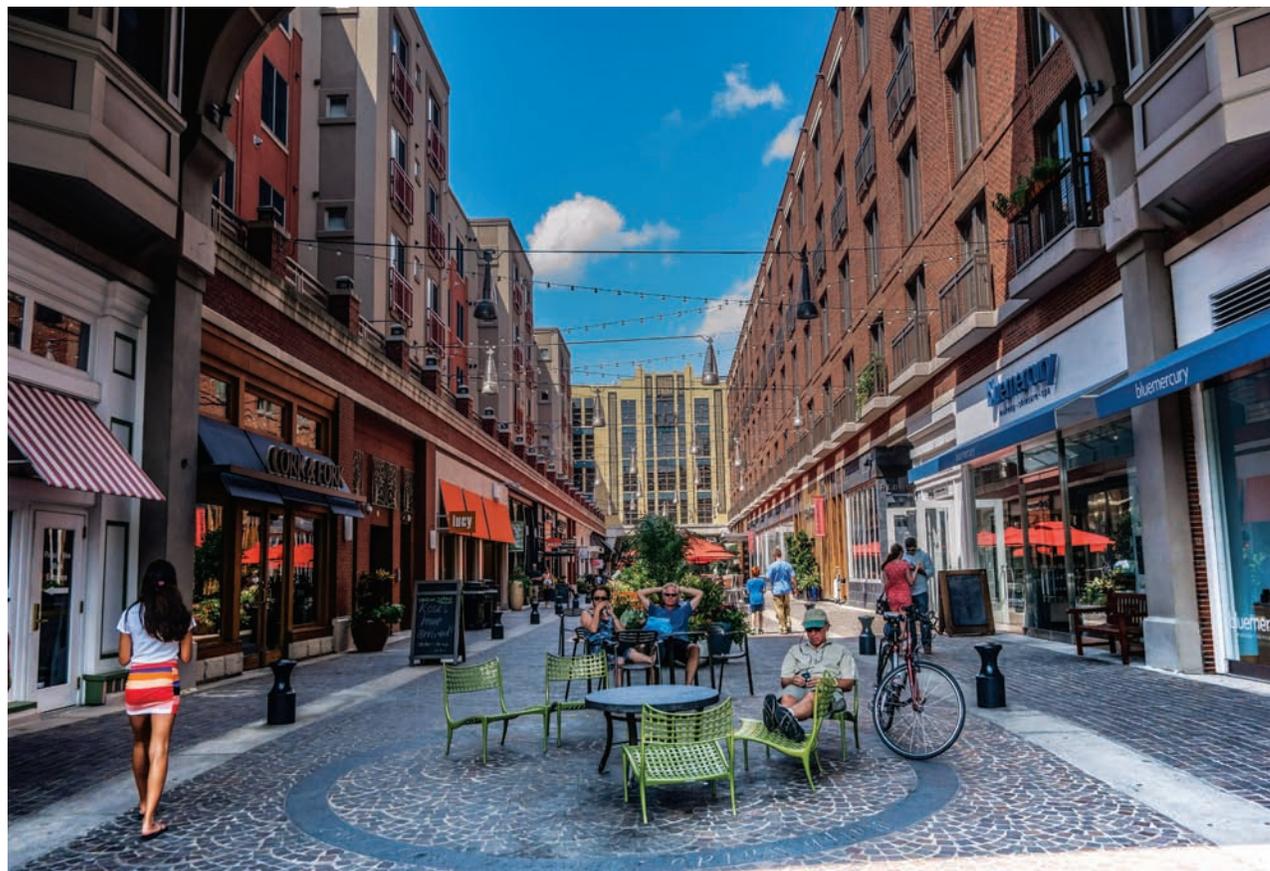
SOURCE: FLICKR/EHPIEN, ATTRIBUTION-NONCOMMERCIAL-NODERIVS 2.0 GENERIC (BY-NC-ND 2.0) CREATIVE COMMONS LICENSE)

Restored native prairie in Illinois

A to point B, they don't need a spot to park.

Most municipalities also have minimum on-site parking requirements, which call for developers to build a certain number of parking spaces with every building. The Congress of New Urbanism promotes policy changes to lessen these requirements. When parking is necessary, zoning should require it to be behind buildings so as to deflect from its prominence. A popular alternative to on-site parking comes from the 'park-once' strategy. With this, municipal parking structures are provided within a pedestrian-shed, enabling people to park in one spot and walk to various destinations within the shed.

Beyond zoning, municipalities can also do their part to help fund major development projects. They can offer tax incentives to developers who consider replacing parking lots with more human-scaled spaces and can even work side-by-side with developers on private-public initiatives. Funding can come directly from the municipal budget, or can be accessed through grants. Fortunately, there exists a multitude of federal, state and private programmes that offer grants for transit-oriented development.

Conclusion

Parking lots take up far too much space in the United States landscape, but the U.S. is not the only country drowning in seas of asphalt. Between 2011 and 2013, China used more cement than the U.S did during the entire 20th century (McCarthy, 2015). It is easy to imagine there were more than a few parking lots built with that cement, yet with a rapid increase in vehicle ownership, many drivers perceive a large deficit in major Chinese cities. Similarly, the large Australian cities of Brisbane, Sydney and Melbourne boast between 25,000 and 42,000 parking spots each, yet in high-demand areas, parking spaces often cost more than cars themselves (ABC News, 2017).

This is a global problem: our planet cannot afford any more land covered in fields of asphalt. Fortunately, the fight against parking lots has also been widespread. The Institute for Transportation and Development Policy has successfully encouraged a decrease in minimum parking requirements in traditionally auto-oriented Mexican and Brazilian cities. Many European cities have implemented parking policies that not only reduce the number of parking spaces within a city, but also reduce the number of vehicles in general. Private citizens, community organisations, public developers and municipal, state and federal governments must all mobilise to transform our landscape back into one that accommodates more than unused vehicles. Canadian folk singer Joni Mitchell bemoaned the paving of paradise back in the 1970s; with inevitable depletion of fossil fuels and other natural resources, now is the time to change that tune. ●

Citations:
ABC News. (2017, November 06). Should we get rid of parking spaces to free up land in our cities? Retrieved May 05, 2021, from https://www.abc.net.au/news/2017-10-30/should-we-get-rid-of-car-parks-to-free-up-land-in-our-cities/9099272
Grabar, H. (2020, April 29). Street Food. Slate Magazine. https://slate.com/business/2020/04/restaurants-reopen-outside-coronavirus.html
Kimmelman, M. (2012, January 06). Paved, but still alive. Retrieved May 05, 2021, from https://www.nytimes.com/2012/01/08/arts/design/taking-parking-lots-seriously-as-public-spaces.html
McCarthy, N. (2015, February 22). China used more concrete in 3 years than The U.S. used in the entire 20th Century [Infographic]. Retrieved May 05, 2021, from https://www.forbes.com/sites/niallmccarthy/2014/12/05/china-used-more-concrete-in-3-years-than-the-u-s-used-in-the-entire-20th-century infographic/?sh=4726e1794131
Sowder, A. (2020, August 24). How the pandemic is bringing dining to streets, sidewalks, and parking lots in the United States. The Centre for Evidence-Based Medicine. https://www.cebm.net/2020/08/how-the-pandemic-is-bringing-dining-to-streets-sidewalks-and-parking-lots-in-the-united-states/

Strategic Adaptations

Chetan Kulkarni tells us how communities across India can sustain themselves by adapting with their natural context through planning and engagement

Adaptation of communities with their natural ecosystems involves a balancing act between development and conservation. That is, a balance between developing land to address growth of communities, with measures such as conservation of vital ecological processes, to deter any ill effects. A strategic framework of adaptation to aid this balance is driven by two factors: an effective planning strategy and innovative partnerships between the various stakeholders that can sustain over time. In this way, communities empowered with knowledge and skills can engage with the planning strategy to drive positive change.

The significant increase in rural to urban migration in India between the census of 2001 and 2011 indicated that processes of urbanisation fuelled the move of people to cities. However, due to the unaffordable cost of living and long commute to workplaces, residents have relocated from metropolitan Indian cities to peri-urban or rural areas. For this populace that resides outside metro areas, the need to encourage conservation of the environment among peri-

Ecological strategies initiated by the TI (Trans Indus) community
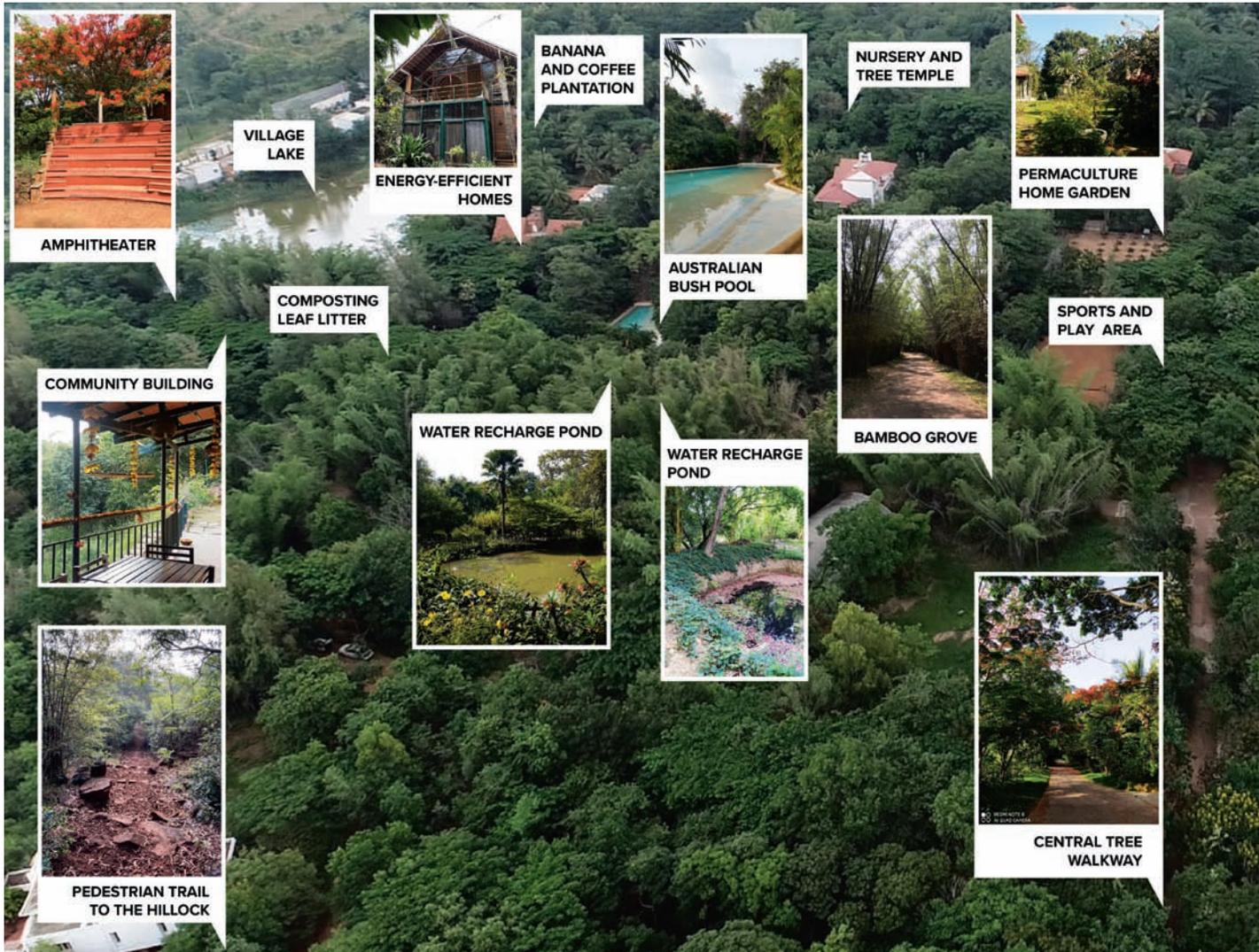
AMPHITHEATER

VILLAGE LAKE

ENERGY-EFFICIENT HOMES

BANANA AND COFFEE PLANTATION

NURSERY AND TREE TEMPLE

PERMACULTURE HOME GARDEN

COMPOSTING LEAF LITTER

AUSTRALIAN BUSH POOL

SPORTS AND PLAY AREA

COMMUNITY BUILDING

WATER RECHARGE POND

WATER RECHARGE POND

BAMBOO GROVE

PEDESTRIAN TRAIL TO THE HILLOCK

CENTRAL TREE WALKWAY

A strategic framework of adaptation to aid this balance is driven by two factors: an effective planning strategy and innovative partnerships between the various stakeholders

urban communities and to secure the livelihood of those dependent on the environment in village communities, highlights the importance of ecologically adaptive planning.

Permaculture practice in the peri-urban context

Residents, such as information technology professionals, who previously lived in the city of Bengaluru moved into the TI Ecovillage when it was set up in the mid-1990s; it is located 25 kilometres from the Bengaluru City Railway Station. The TI (Trans Indus) community found it prudent to promote self-sufficiency through a set of site development and planning strategies. With less than a third of its site as built area, the practice of permaculture in the community was manifested through a suite of ecological initiatives observed within the remaining two-thirds of the area including the lake. In the late-1990s, shortly after TI was set up, the community

undertook serious afforestation exercises to plant trees of native species. A water conservation effort that was initiated two decades ago, has seen an increased number of recharge wells to harvest rainwater and recharge the groundwater table to benefit TI as well as the neighbouring villages.

Besides coffee, banana and coconut plantations, there is a plant nursery for organic farming of seasonal vegetables. The saplings for vegetative trees and plants are grown here and then shared within the community to grow in individual kitchen gardens. The community is committed to practices of waste treatment such as wet waste in compost pits at individual homes, harder bio-materials using an electric shredder and upcycling of plastic, paper and electronic waste through agencies specialised in their disposal. Furthermore, the residents use greywater from kitchens and home appliances for planted areas. Through this comprehensive set of permaculture practices, the TI community has maintained a sustainable mode of coexistence with its natural context.

Design-It-Yourself (DIY) approach for adaptive site planning

The innovative ecological practices performed by the TI community make it a rare example among peri-urban housing developments in India. Constrained by the regulatory framework, they are typically developer-driven and therefore focused on being efficient and duplicable with the configuration of 'bedroom, hall and kitchen' of housing units. The spirit of participation required from a community to influence the design of their homes and open spaces is absent in this format of development. This spirit was ushered in by a project based in Lonavala, 40 kilometres from the city of Pune in the state of Maharashtra in India. Shilpa and Pinkish Shah of S+PS Architects designed a contextual sophistication of the universal ideas of 'do-it-yourself' and 'mass customisation'. The resultant Design-It-Yourself (Design.I.Y.) process enabled potential homeowners to participate in the design of their homes within the framework set up by the architects.

The Design.I.Y. process circumvented the limitations of the floor space index (FSI), by devising the metric of housing development to be a unit of 'an open adaptable space with good height, a veranda and a patch of green with the open sky above.' By choosing the configuration of their private garden spaces, it helped homeowners adapt their private open space with a spill-over of domestic activities, into the shared open spaces on the site such as the central street, the central garden and the green buffer areas complemented by an existing site landscape of

PERMACULTURE COMMUNITY GARDEN

COFFEE PLANTATION

FOREST COMMONS

PERMACULTURE AND ORGANIC FARMING
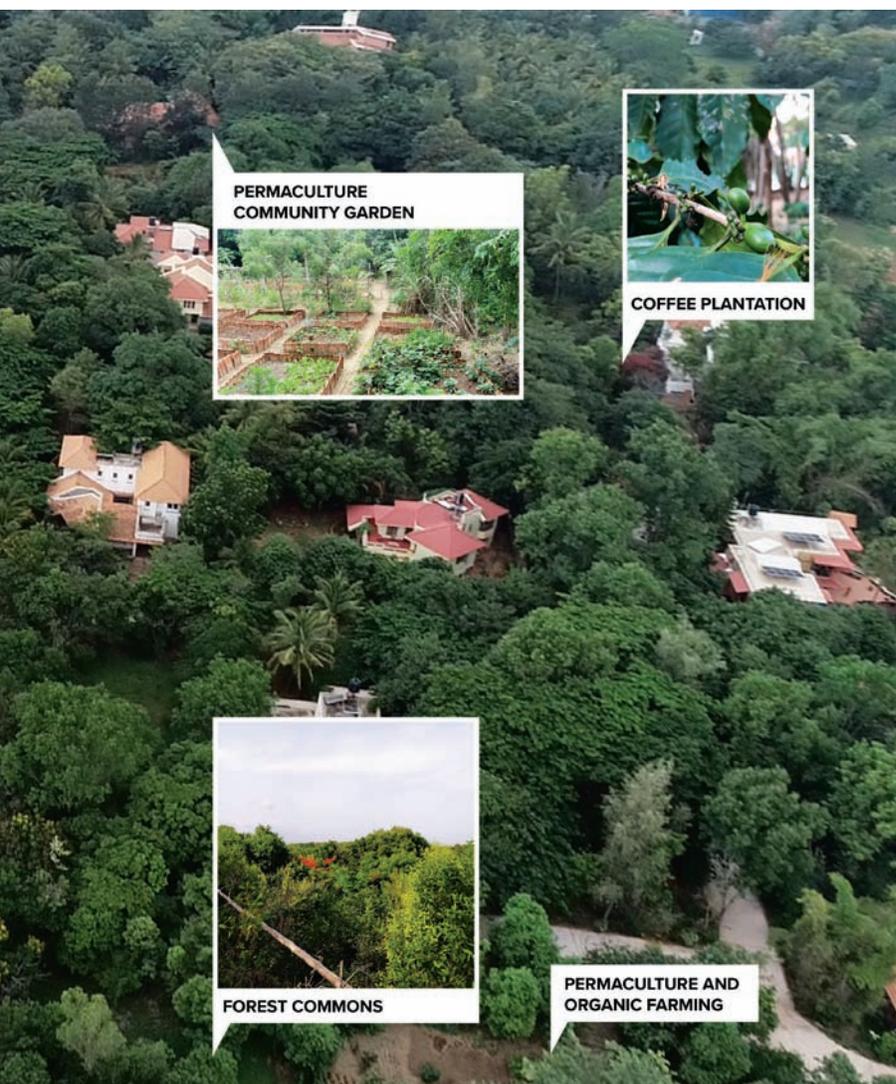
COURTESY: TI ECOVILLAGE, BANGALORE
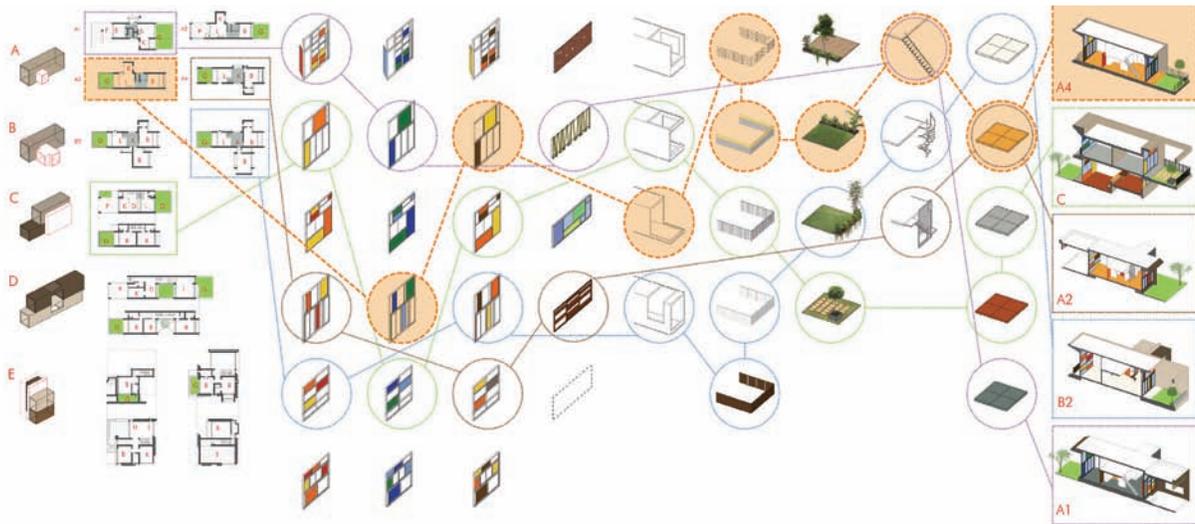
large mature trees. The 'central street' was crossed by pedestrian paths to create pocket parks and play areas with the architects ultimately hoping for the natural context around the Indrayani River flowing close to the site 'to take over through these green spaces.'

Besides the choice in range of sizes and configurations, homeowners were guided by the 'component-matrix' to select the building elements that formed the design of their house, including stairs, railings, screens, windows and tiles. The offer of choice motivated residents to take a deep dive into how these materials may respond over time as they age, get used and are impacted by weather events. This prompted a shift from choosing a finished unit preconceived by the developer, towards having influence over the design of their community open spaces, as well as sustainable use and upcycling parts of their individual housing unit.

The Design.I.Y. housing and TI eco-village make an argument for communities that emerge in peri-urban areas of India. Environmental protection without the infrastructure to sustain it, is equivalent to a cause without a controlled effect; and development without an environmental responsibility is an effect without a cause to structure it. While these peri-urban developments demonstrated adaptive arrangements that empowered the residents, they are especially relevant in rural contexts wherein entire village communities are dependent on the natural ecosystems for their livelihood.

Conservation of nature for livelihood

These communities are designated as ICCAs or Territories and Areas Conserved by Indigenous People and Local Communities, known as Community Conserved Areas (CCAs) in India. The definition of CCAs is "natural ecosystems,

Top: **Longitudinal street section of Design.I.Y housing showing the types of open spaces**
*Bottom*: **Design-It-Yourself component matrix for residents to choose their garden+house unit configuration**

including those with minimum to substantial human influence, containing significant wildlife and biodiversity value, being conserved by communities for cultural, religious, livelihood, or political purposes, using customary laws or other effective means," as adopted by Kalpavriksh Environmental Action Group, based in Pune. While this definition gives a general understanding for all CCAs across India, the conservation practices documented in the Directory of CCAs published by Kalpavriksh, range from 'strict protection to regulated multiple-use,' as demonstrated in the following CCAs.

In the coastal backwaters of the Ashtamudi Estuary in the state of Kerala, the fishing communities are engaged in clam-picking and selling domestically. With the Fisheries Department initiating clam fisheries for exports, the surge in clam-picking by fisherfolk and the shell mining lobby polluted the Ashtamudi Lake due to more boats and excessive exploitation of marine resources. The increased salinity of the lake due to stoppage of freshwater inflow from Kallada River, destroyed the spawning grounds of the fish in Ashtamudi Lake. To expedite ecological regeneration of its polluted waters, Ashtamudi Lake was designated by the Ramsar Convention as an internationally important wetland ecosystem site in 2012. Despite recurrent violation of coastal regulatory zone norms for development, the village communities dependent on the lake for yields from clam picking have remained persistent in trying to regenerate the wetland ecosystem and secure their livelihood.

The management of natural resources like forests that stretch over large areas common to many villages, is important in order to protect regional biodiversity and wildlife corridors. This collective effort to preserve and restore contiguous forest cover, and in turn aid the livelihoods of many village communities, was steered by a non-governmental organisation called the Timbaktu Collective at Kalpavalli Forests in the state of Andhra Pradesh. This forest area that traditionally existed as a village commons for centuries, came to be governed in the early 1990s by the Kalpavalli Tree Growers' Cooperative, structured as 'a federation of 10 village-level committees' centred around forest protection. These large-scale conservation efforts are delegated between individual committees and collective committees, to undertake fire control, seed dibbling, soil and water conservation works, protection and monitoring of forest areas, and planning decisions around orchard plantations.

Beyond skillful management of land and natural resources, the village forest panchayat (elected council) (VFP) in Halkar Village near Uttara Kannada district in the state of
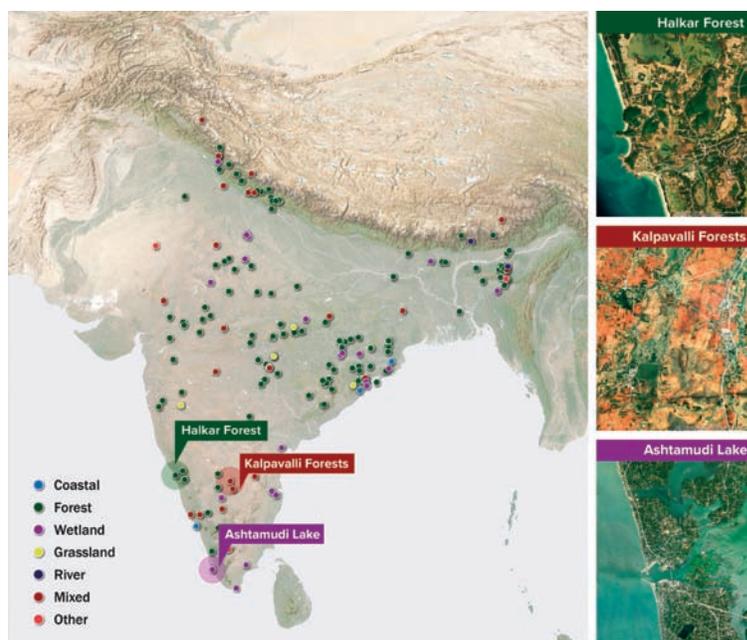
Community Conserved Areas (CCAs) mapped in India by Kalpavriksh Environmental Action Group

Karnataka, managed ownership and access for a democratic system of resource sharing. The democratic accessibility to the forest resources for conservation of the ecosystem, soil and streams found support from the Forests Department to let the VFP have virtual control over the forest to the village community, although the land is still legally under the forest department. The community in Halkar evolved a sustainable process of rice cultivation and fishing. The shallow parts of estuaries were made suitable for rice cultivation as the farmers built earthen embankments to control the flow of water. Mangrove plantations along earthen dams held the soil firmly, which aided pisciculture in the estuarine area. However, the regeneration through these natural means proved insufficient in the face of increased demand. The case of Halkar Village illustrated the need for greater connectivity to markets and for education of farmers to grow various tree species and participate in decision making processes with all stakeholders.

Learning from the experience of these CCAs, their role and participation in the development trajectory of India can be strengthened by identifying opportunities for conservation-based livelihood through a suitability mapping of the ecosystem for agriculture, biodiversity protection and ecosystem management as well as sharing of knowledge and skills around creative upcycling, recycling of waste, creation of edible landscapes and rejuvenation of ecological processes. Finally, strategic adaptation of communities in any natural landscape can thrive only if they are founded on an establishment of trust between the community residents with governments, international organisations or other stakeholder interests. ●

The Post-War Rebirth of Yokohama

Toshio Taguchi on the projects that revitalised the Japanese city under the influence of Akira Tamura

Yokohama today

Yokohama is the second largest city in Japan with a population of 3.7 million spanning 437 square kilometres. It is a port city that was first opened to foreign trade in 1854 at the end of the feudal Samurai era. Since then, Yokohama has developed as a modern industrial and residential city, adjoining Japan's largest city, Tokyo.

This article explains the special character of Yokohama today and how innovative planning in the post-World War II period enabled Yokohama to retain its unique history and landscapes while at the same time accommodating the rapid growth of industry and population. The Yokohama Municipal Government was the first in post-war Japan to seriously consult with communities and effectively negotiate on their behalf for high-quality urban design.

The Impact of World War II

Japan experienced its first democratic government, free from interference from army generals, following its defeat in 1945. However, as time passed, conservative politicians and bureaucrats of the pre-war era gradually returned to the forefront and started to promote economic growth by establishing a highly centralised governmental system. Local government was relegated to a subordinate role under direction from national ministries and agencies.

> **Local government was relegated to a subordinate role under direction from national ministries and agencies**

Aerial photo of Yokohama with its port and Mt. Fuji, symbol of Japan, in the background

PHOTO COURTESY : THE CITY OF YOKOHAMA

Left: **Yokohama in ruins, November 1945**
Right: **View of Yokohama after the bombing in 1945**

Yokohama remained in part control of the Americans after 1945, including a rundown airfield that occupied part of the central city in a dilapidated state until the 1960s.

Key figures in Yokohama s planning rebirth

Ichio Asukata, a member of the National Parliament of the Japanese Socialist Party, won the 1963 election against his conservative counterparts to become the Mayor of Yokohama for a term that extended to 1978. He came up with the idea of direct democracy by citizens and created a citizen-centred local administration, which was later named the 'Liberal Local Governmental Movement'. Asukata was determined to reduce the central government's influence over many areas of action and policy that had an impact on local communities.

The challenges initiated by Yokohama were followed by other liberal local governments and would ultimately lead to the reform of the centralised system of government in Japan.

The first term of the Asukata administration was an era of sprawl in greater Tokyo as a result of rapid economic and population growth. The air was polluted by exhaust fumes from factories and cars, and the water was contaminated by factory effluent and domestic sewage. The previous city administrations had been unable to respond effectively. Participation of citizens and the active involvement of local governments were essential to ensure better outcomes in Yokohama and throughout Japan.

Akira Tamura is the second key figure in Yokohama's revival. He studied architecture, law and politics at the University of Tokyo before working in the government followed by a period with the Metabolism Group, a visionary Japanese planning consultancy led by Takashi Asaka. While with this group, Tamura devised a new planning and administration system to enable Japan's vertically divided government to function as a unified organisation.

Asukata and Tamura got to work quickly and in 1964 proposed a number of visionary long-term projects to strengthen the overall structure of the city later named 'The Six Spine Project'. This plan was adopted by the city government but it was not equipped to implement it in the face of central government policies, limited resources
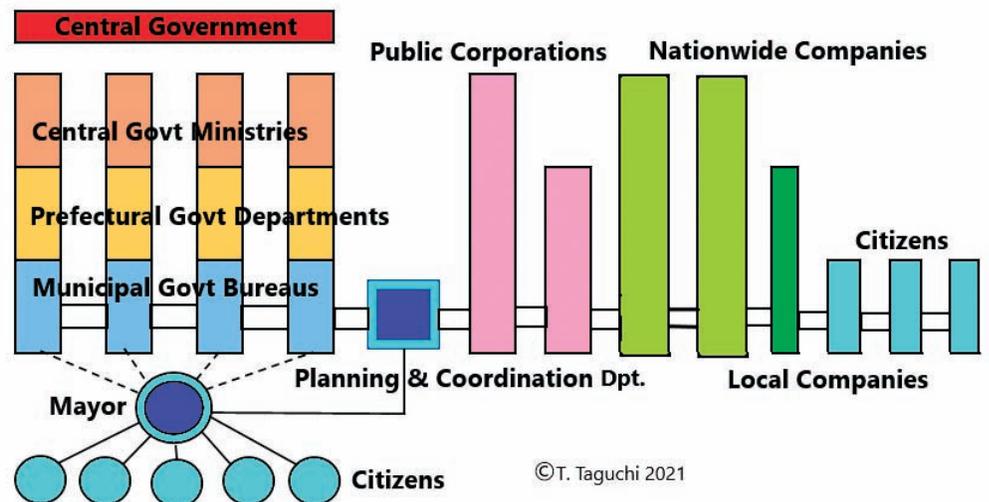
The conceptual framework of Planning and Coordination by Tamura

©T. Taguchi 2021

and residents who were not used to being consulted by the government.

In 1968 Tamura, then 41 years old, was invited to join the new Yokohama City Administration as chief planner. He started by setting up a new Planning and Coordination Department of 20 young multi-discipline professionals working as a collaborative team to take on the task of negotiating the facilitation of the plan with all concerned including federal departments, the private sector and local communities.

The Six Spine Projects

1. Revitalisation of the central business district

This involved reallocation of industrial land uses, the re-establishment of existing Central Business District (CBD) buildings and uses, together with the integration of new road and rail infrastructure. The expanded new CBD is a rich mix of old and new precincts that are directly connected to a new attractive landscaped public foreshore that includes a new centrepiece of the Osanbashi Yokohama International Ferry Terminal.

2. Kanazawa land reclamation project

This was a land reclamation project that

Locations of the Six Spine Projects in Yokohama

No.3 Kohhoku New Town Project preserving urban agriculture

To Tokyo

No.4 Urban Motorway Networks

Surface railway line

Bullet train line

No.5 Municipal Subway Networks

No.6 Bay Bridge Project

No.1 Revitalization of the Central Business/Commercial District

No.2 Kanazawa Reclamation Project with Industrial/Residential developments
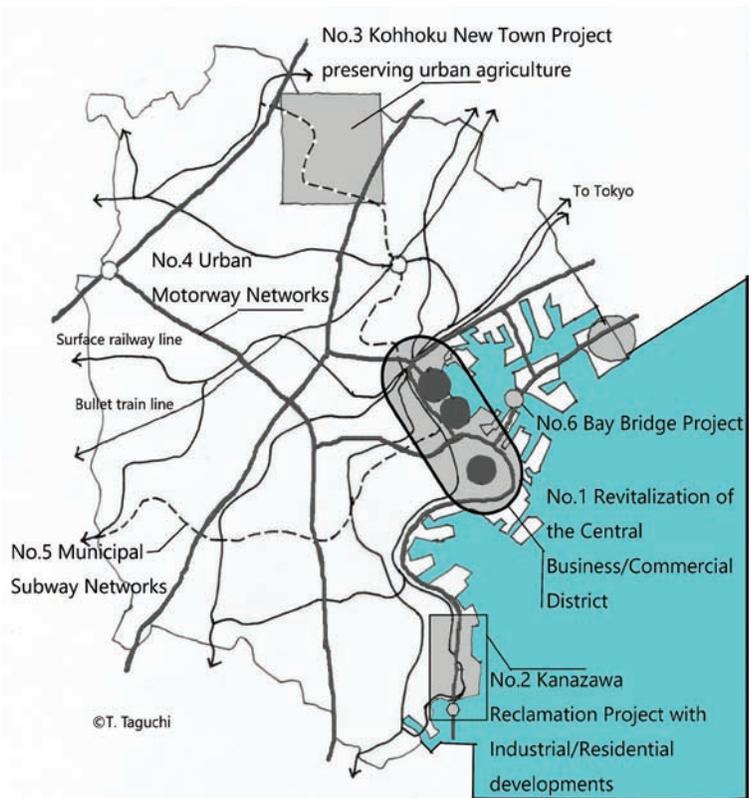
©T. Taguchi

GRAPHICS: ©T. TAGUCHI

Minato Mirai district at night

PHOTO: WIKIPEDIA COMMONS

The central green mall of Minato Mirai

Minato Mirai is, in many ways, a mature embodiment of Le Corbusier s vision of Ville Radiese

accommodated industrial uses relocated from the CBD together with new residential uses.

3. Kohhoko new town project
A new residential area to the north of central Yokohama that broke new ground in community building and preserved significant traditional farming areas.

4. Re-imagining the planned urban motorway network
This was a major battle for Yokohama City because the powerful national road building authority was planning an elevated freeway through the entire length of Yokohama CBD severely compromising its future. They were persuaded, against all odds, to build the road link below ground at significant extra cost.

5. Municipal subway networks
The post-war era saw the development of a new subway network that required careful integration with the developing new city centre.

6. Bay Bridge project
An additional urban infrastructure project symbolising the port city of Yokohama that required careful integration through negotiation with national levels of government and land stakeholders.

The Redevelopment of the Minato Mirai Area
The Minato Mirai Project is a redevelopment of Yokohama's central waterfront area, which aimed to create an integrated CBD spanning a total area of 186 hectares (110 hectares of existing land and 76 hectares of reclaimed land). This new CBD was designed to connect two existing CBDs: the old Kannai district and the new Yokohama station district.

Large parts of this site were occupied by a 20 ha. shipyard owned by Mitsubishi Heavy Industries. Negotiating the relocation of this use to the Kanazawa Land Reclaimation Site was very ambitious for a local authority to negotiate without significant funds and powers. The site was also occupied by freight yards managed by the national rail authority. The process of negotiation and relocation uses from this site took two decades of persistent effort and was continued faithfully by Tamura's planning and co-ordination team well beyond his tenure at Yokohama.

Implementation of this project started in 1983 and at this point the plan is over 90% complete. It now includes:
- Landmark tower: A 300-metre, high-rise commercial, business and hotel complex was built and is operated by Mitsubishi Estate.
- Global headquarters of Nissan Motors.
- A waterfront convention centre and hotel.

GRAPHICS: ©T. TAGUCHI
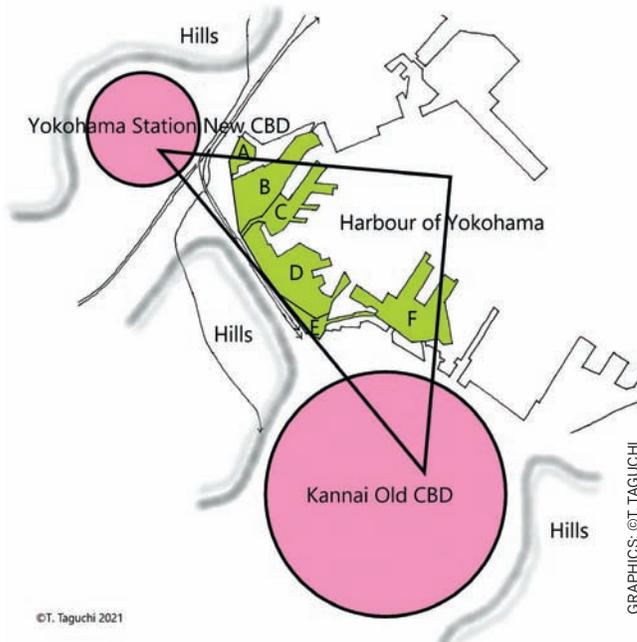
Conceptual map of the role of the Minato Mirai Project integrating two existing central business districts

Asukata and Tamura got to work quickly and proposed a number of visionary long-term projects named The Six Spine Project

● Cultural facilities including galleries, technology museums and a children's centre.
● Office, retail, food and high-density residential uses.
● Open space throughout the precinct and on the foreshore.
● Ground level and elevated walkways connecting to the subway system and adjoining areas.

Minato Mirai replaced relocated industrial uses and, together with further land reclamation, has created an attractive setting for residents and workers. It has also become a popular tourist destination within the greater Tokyo metropolitan region. It is well integrated with the extended CBD and additional recovered public foreshore. It is, in many ways, a mature embodiment of Le Corbusier's vision of Ville Radiese. It stands in contrast with older areas of Yokohama CBD and adds to the richness of the city.

The legacy of Akira Tamura (1926-2010)
The contribution of Akira Tamura to postwar Japan is quite well understood by Japanese professional planners and policy makers, but less well known outside Japan. He was awarded the Japanese Institute of Architecture's Grand Prize in 2000 for 'Formulation of theories and methods of innovative urban planning and their practice'.

His legacy and work are actively being studied and promoted by a not-for-profit organisation called the Akira Tamura Memorial Organisation. They aim to promote his work and legacy and have recently translated Tamura's book, *Yokohama: The Making Of A City*, which expands on this story and can be downloaded without cost at *https://www.machi-initiative.com/yokohama-the-making-of-a-city/* ●

ALEPPO
Rebuilding Cities After a Crisis

Dalia Mokayed explains why communities need to play a vital role in rebuilding a war-torn city to help it rise from the ashes and become more liveable than before

"Each tragedy has its silver lining. When cities are destroyed beyond recognition in conflicts, the need for rebuilding presents an opportunity for the community to redraw the physical landscape, to make it stronger and grander than it was before."
- Robert Frost, *A Servant to Servants,* (from his collection of poems *North of Boston,* 1915)

Heritage conservation and the renewal of historic cities are about the maintenance and the preservation of the built environment. The concept is different when it comes to rebuilding cities after a crisis. When a city is destroyed beyond recognition, the need to rebuild provides a fresh opportunity for the community to accept the change and redraw the physical landscape, to make it stronger than it was before. War is considered the most violent form of destruction, which in addition to human loss, commits devastating violence against the urban fabric of cities.

The city of Aleppo has suffered damage over history for many reasons. It was invaded several times and destroyed by enemies as well as by earthquakes. The latest destruction of Aleppo during the Syrian War is one of the most devastating in modern history and the 21st century.

Aleppo could be considered one of the oldest human settlements and one of the most picturesque cities in the Middle East. The most important city in modern north Syria and the second largest city in the country after the capital Damascus. Aleppo was a Syrian mosaic; it was the home of diverse ethnicities and faith communities. Arab and Turkish, Kurdish and Armenian, Christian, Muslim and Jewish, all lived peacefully on this land for ages.

Aleppo is considered one of the oldest continuously inhabited cities in the world. It was, for a long time, the cultural and commercial centre in north Syria. The commercial role of Aleppo started as early as the 2nd millennium BCE. It was an important trade centre and a destination for trade caravans on the famous silk route, which connected the east and the west. It reached its peak between the 16th and the 18th

> **Aleppo is considered one of the oldest continuously inhabited cities in the world**

PHOTO: AUTHOR

Citadel of Aleppo

centuries CE. One of the great religious centres of ancient times, the sanctuary of the storm god Adda was discovered in Aleppo at the location of the citadel. The traditional fabric extended horizontally around the citadel and outside the defensive walls to cover an area of 465 hectares. It includes souqs (traditional markets), mosques and madrasas of the old city.[1]

The old city still maintains the Roman street layout from the Hellenistic Period and some of the buildings from the 6th century, like the Saint Helena Byzantine Cathedral, which was converted to an Islamic school (Al- Halawiyah Madrasa). It also maintains buildings and remains from the Ayyubid and Mamluk mosques and schools and many Ottoman period structures.

Similar to conflicts, heritage can also be destroyed in peace times. During the 20th century, as a result of the urban modernisation plans in the city, fundamental changes affected parts of the traditional fabric of the old city. The plans, which were proposed to connect the old city to the modern expansion and provide automobile access to the old city, were implemented during the French mandate period from 1920 to 1946. The concept, which was similar to Haussman's modernisation of Paris between 1853 and 1870, affected the old city and caused a systematic

destruction in the old neighbourhood. Despite the changes in the historic fabric, the city still maintains its traditional urban character as an Islamic urban area with a rich heritage and long history.[2] The Ancient City of Aleppo was added to the World Heritage list of UNESCO in 1986. After becoming a World Heritage Site in 1996, Aleppo received national and international attention and many initiatives and financial support under the umbrella of the Rehabilitation Project of the Old City of Aleppo, which produced impressive results.

In July 2012, a date that marked the second year of conflict in Syria, Aleppo became part of the war, with the result that it very quickly became the most disastrously affected city. Aleppo had the largest share of damage to its built environment, loss of human lives and mass migration and relocation. During the conflict, it was almost impossible to access many areas in the old city of Aleppo; only militant forces from both sides were able to record the damage and publish it in the media.

In December 2014, while the conflict continued, the DGAM (Directorate General of Antiquities and Museums) feared the loss of the archives of the city and started digitising the records and plans of castles, museums, archaeological sites and mosques in the province

12th C. - 15th C.

16th C. - 19th C.

19th C. - 20th C.

2010
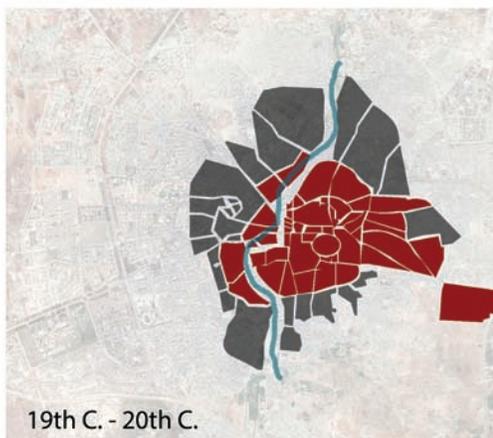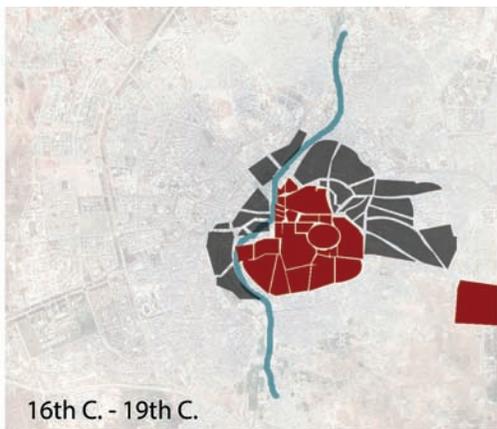
Urban development of the city of Aleppo
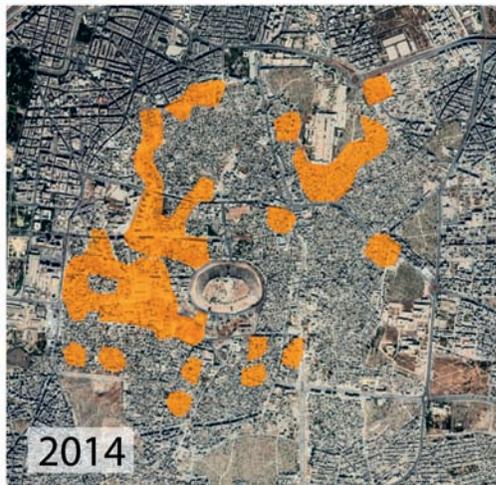
Damage Assessment in the Old City of Aleppo during the conflict

BASED ON THE FIVE-YEAR DESTRUCTION: OVER VIEW 2013-2017, UNESCO REPORT

of Aleppo in general including the citadel of Aleppo and the monuments of the ancient city as part of the campaign. They also worked on the documentation of the neighbourhoods that are located outside the boundaries of the old city of Aleppo that contain buildings and structures from the French mandatory period.

The DGAM worked in Aleppo in cooperation with local communities and stakeholders including the Municipality of Aleppo (represented by the Directorate of the Old City), the Directorate of the Old City of Aleppo, the University, the GCES and international organisations like UNESCO, ICOM, ICOMOS, ICCROM, the Arab Regional Center for World Heritage (ARC-WH) in Bahrain and the World Monument Fund (WMF) in exchanging visions and data, raising awareness and building capacity in the city. The local professionals of Aleppo showed an incredible dedication in the documentation work, undertaking mitigation actions during the conflict, as well as emergency measures for the recovery phase by participating in the working meetings with the Aleppo City Council, the DGAM and NGOs to identify

adequate proposals and coordinate action.[2]

In 2016, the old neighbourhoods were accessible after the efforts of the Directorate of the old city to clear the rubble and assess the damage. According to the General Company for Engineering Studies in Syria (GCES) assessment report published in 2017, 20.5% of the city's fabric is severely damaged and needs rebuilding, 9.8% of it is destroyed, 58.8% of the city's fabric is slightly damaged but can be rehabilitated and 20.7% of the city's fabric is intact. The damage affected many important city historic monuments including the Great Omayyad Mosque and its 1000-year-old Omayyad minaret, the area around the citadel of Aleppo in the heart of the old city, the traditional linear market, which is considered one of the longest covered traditional markets in the world and many others. Another damage assessment was done by UNESCO, which used five different levels to assess the physical situation of the historic properties inside the Old City of Aleppo and documented a detailed list of damage at 518 cadastral-plotted buildings.

The reconstruction in the city of Aleppo started in 2016 when the old city was free of conflict.

The government, the people of Aleppo and the international organisations were all ready to offer knowledge, experience, time and efforts to rebuild old Aleppo

The renewal of an ancient city like Aleppo should take an approach that supports the rebuilding of the community together with the built environment

The government, the people of Aleppo and the international organisations were all ready to offer knowledge, experience, time and efforts to rebuild old Aleppo. UNESCO considered providing consultation, staff training and monitoring of the reconstruction work to make sure that the reconstruction and restoration are being carried out based on the approved restoration guidelines.

The traditional fabric of the old city of Aleppo was based on the idea of providing privacy to the residents in their own houses. The city has always been a safe and convenient place for the residents that combines residential buildings, trade and business, religious and community gathering destinations. The Aga Khan Trust for Culture provided an intervention plan that covered three main areas in the old city; these areas were chosen because they include a variety of uses and priorities were defined based on the historic importance and the extent of damage. The local community is also making

an important contribution in the post-war recovery phase. Home and shop owners as well as wealthy residents funded the rebuilding and the restoration of many buildings and historic monuments, especially the religious buildings that were a priority in this process. The restoration of the Maronite Eparchy (St. Elijah), which was funded by the ACN (Aid to the Church in Need), an international body, and the restoration of the Great Umayyad Mosque as well as the reconstruction of the completely destroyed minaret, which is also funded by another international body, are both examples of prioritising the city landmarks in the rebuilding process. Many residential neighbourhoods were devastated, some of them were flattened to the ground like Al Aqaba, Al Farafra and the entrance of Al Jdaydeh in the area that connects Al Khandak street with Al Hatab square.

Even though these areas of the old city are in urgent need of reconstruction, the focus is on the reconstruction of the religious buildings
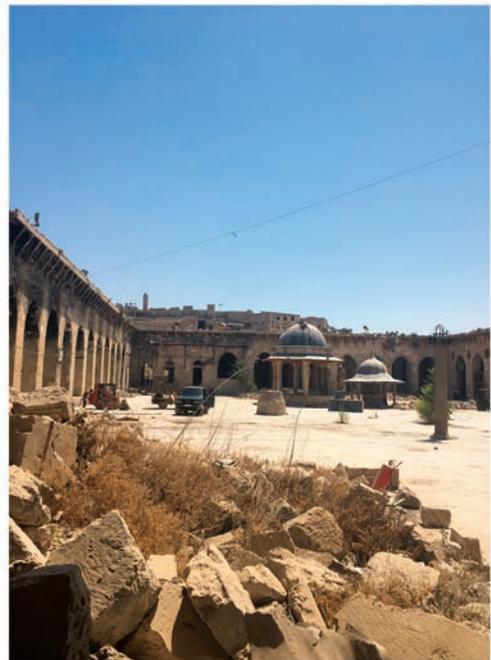
Damage in the old city of Aleppo

PHOTO: AUTHOR

and the traditional markets. Rebuilding the residential neighbourhoods is necessary for the return of the inhabitants of the old city. It is as important as rebuilding the identity of the people by reconstructing their dearest places and bringing back their most meaningful symbols. The residents of the old city can help in deciding where to start and what to rebuild; this may bring a bottom-up decision-making strategy to the table, instead of the top-down strategy that is already being considered since the beginning of the post-war rebuilding process.

Reconstruction of cities post-war is not a new concept; it has always been more than rebuilding the destroyed monuments and making the cities look as they did before the conflict. This makes it different from the urban renewal of modern cities in peaceful times. The renewal of an ancient city like Aleppo, with a rich tangible and intangible heritage, should take an approach that supports the rebuilding of the community together with the built environment. This includes rebuilding the cultural identity of the people. Many aspects of Aleppo's intangible heritage were affected during the conflict and the displacement of the residents, which makes it important to target people, educate them and raise their awareness of the value of their heritage and make them part of the decision making. People of the city can heal the heritage and heritage can heal them in a reciprocal relationship to create a healthy post-conflict society.

Conflicts are one of the reasons for the change in the urban and social structure in the city. It should be a reason to generate a new way of thinking and new strategies. The consequences of conflict and change are part of the lifecycle of the city and the history of any heritage site. When a transformation occurs and the change happens in the urban built environment and the social structure of the city, it can't simply return to what it used to look like earlier. The rebuilding should bring opportunities to improve the quality of social life and serve in the reconstruction of the wounded communities. Most of the challenges that may hamper the rebuilding process are related in many ways to political decisions in the country, international intervention and deciding who is going to be allowed to participate in this phase.

Yet, there is a chance to find a balance in rebuilding Aleppo, where actors from the local community can participate in this practice. Those actors could be a group of representatives from the local community who care about the old city; many of them have the experience. This group includes historians, preservationists, architectural historians, craftsmen, merchants and shop owners who can enrich the decision-making

Reconstruction of a religious building in Old Aleppo

process. Many of the commercial and touristic property owners took charge of restoring their properties to bring back life to the old city. These included antique shops, craft shops, restaurants and hotel owners. The reconstruction process could be the key to solve the problems in the old city, which were a result of earlier interventions, like the multi-storey buildings in many neighbourhoods. The rebuilding should bring opportunities to improve the quality of social life and serve in the reconstruction of the wounded communities.

This paper is an attempt to encourage the collection of all the efforts and guidelines to help serve the recovery of the historic part of Aleppo and make sure that Aleppo can become a good example for the recovery of cities from disasters in the future. A major lesson, where a World Heritage Site like the old city of Aleppo has been devastated as a result of the conflict in a world that widely understands the importance of cultural heritage for humanity, is that there must be more efforts to protect cultural heritage from destruction during conflicts. The international world should come together to protect its heritage. ●

References:
*1. Centre, UNESCO World Heritage. "Ancient City of Aleppo." UNESCO World Heritage Centre. Accessed September 4, 2020 https://whc.unesco.org/en/list/21.
2. Perini, Silvia.*
"Towards a Protection of the Syrian Cultural Heritage: A Summary of the International Responses Volume II." *www.heritageforpeace.org, October 2014. http://www.heritageforpeace.org/wp-content/uploads/2014/10/Towards-a-protection-of-the-Syrian-cultural-heritage_Oct-2014.pdf.*

River and Creek Corridors Get a New Life

Bruce Echberg takes the example of Merri Creek to show us how

The evolving role of creeks, rivers and drainage reservations

Most towns and cities in Australia have waterways flowing through them. In the early development of our cities, they were often the backyards of factories where waste water and materials were discarded. Creeks and their immediate flood zones were often narrowed by landfill and waste to the point where they were then piped or formed as concrete channels to drain more efficiently in flood events. Rivers and drainage reservations also became easy targets for high voltage powerlines and major new roads and freeways. These reservations were generally fenced off to exclude public access because of perceived danger. Creek lines were also often chosen for local government municipal boundaries. This had the effect of ensuring that the land they occupied was the responsibility of multiple local and state government authorities with differing responsibilities and objectives. It also meant that drainage ways became neglected and their value as natural systems declined.

In the 1970s it became apparent that creek corridors had potential as linear open spaces because, being flood prone, they were unsuitable

New apartment development, a shared path and native parkland adjoining the Merri Creek just a few kilometres from central Melbourne

for building developments and were already being used as sports fields. The final factor in the rediscovery of drainage reservations was the gradual withdrawal of industrial uses when inner and mid-ring urban property values increased. These uses either declined or relocated to new purpose-made industrial areas with better transport connections. A wave of rezoning began to occur in the larger cities that is enabling medium and higher density residential development, which for the first time began to value drainage lines for their visual and recreational potential.

This article focusses on just one such creek line in Melbourne which was a leader, but is now very typical of change happening in all the larger Australian cities.

Merri Creek

The Merri Creek flows about 60 kms through Melbourne's northern suburbs to join the Yarra River before it reaches Port Phillip Bay. It has five further tributaries. Merri Creek and its immediate surrounds comprise several ecosystems that include threatened flora and fauna. A range of local community groups interested in conservation and open space along the creek were formed in the 1970s.

They started to clean up their section of the creek and plant new native plants, but had an unacceptably high failure of restoration work because of lack of knowledge and inappropriate council maintenance practices. It was soon realised that there was a need to get all parties to share knowledge and work together and in 1976 the Merri Creek Community Co-ordinating Committee (MCCC) was formed, which eventually expanded to include eight municipal

councils and more than 20 local community groups. This organisation has continued to develop and become more sophisticated in its planning, community education and work. More detailed information can be found on the organisation's website (https://mcmc.org.au/).

THE IMPROVEMENTS ACHIEVED ALONG MERRI CREEK

Walking and Cycling Paths and Connected Bridges

This work is being done in response to community pressure, incrementally funded by councils and other grants. The current standard is a 3-metre wide 'shared path', which is a two-way

Top: **Map showing Merri Creek**
Bottom: **The opening day of a new footbridge across Merri Creek in 1989 and a current image**

WORKING TOGETHER
Community action to reclaim Merri Creek

By the 1970s, the Merri Creek in the northern suburbs was in a bad state. But the local community recognised its potential to provide valuable green space, and began taking collective action to effect change.
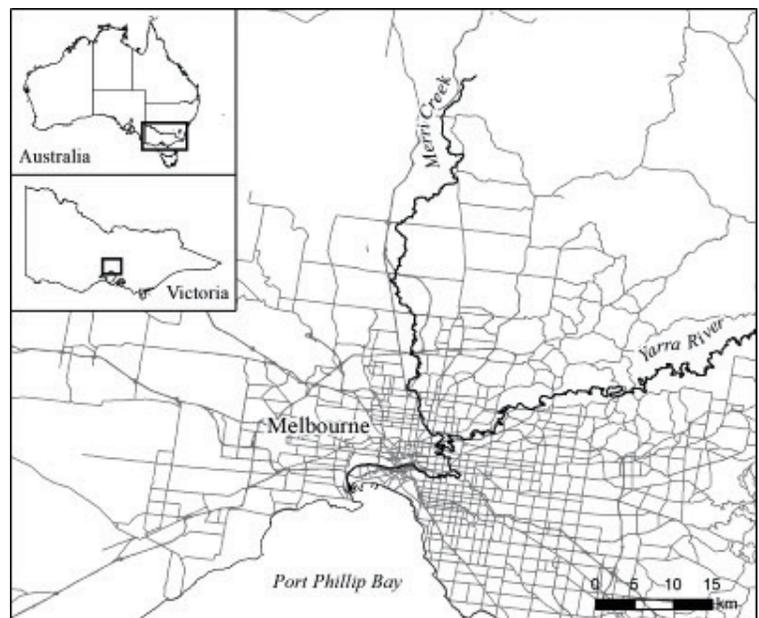
concrete path designed for bikes and walkers with bridges to span the creek where necessary. Underpasses or overpasses have been developed at major roads to enable cyclists and walkers to avoid conflict and noise on busy roads. These paths are increasingly well used by recreational cyclists and walkers of all ages. The next phase of their development is likely to be the provision of separated walking paths to reduce conflicts and improve capacity and safety.

The paths were especially busy during Covid lockdowns. It is now possible to ride off-road on connected trails within Melbourne for hundreds of kilometres. Many are also convenient for trips to work or to other sporting or community destinations.

Landscape Restoration

Merri Creek was typical of many minor waterways being filled with weeds and rubbish and lined by industry and back fences. The land and waterways have been systematically cleaned and replanted with indigenous species as access paths were developed.

This has been a gradual process using volunteer and trained staff. Follow-up maintenance has been critical to ensure indigenous plant communities establish and stabilise themselves. Wetlands have been reformed to accommodate a wide range of plants and fauna habitats.

Planning, Co-ordination and Education

The renewal of Merri Creek has been a 40-year project involving many hundreds of community volunteers, employees, contractors and staff of councils and government departments. While it has involved funding by government and private

Walking and Cycling Paths and Connected Bridges
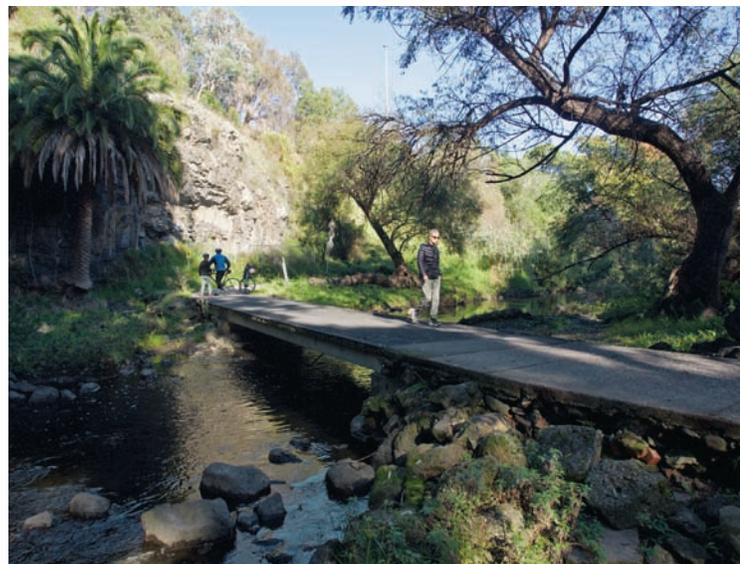
Left & Right: **Kirkdale Reserve along Merri Creek was an open cut stone quarry during the 19th century providing building materials for early Melbourne. Stone was hoisted from the creek bed using gantries and pulleys which are now interpreted with artworks**

Consideration of the creek corridor has included ways to better integrate adjoining parks, schools and sporting facilities

donations of money and time, it has not been a significant design or construction project in terms of funding. It is still very much a work in progress with many more projects at the planning stages.

Over the course of the project, considerable scientific work has been done to better understand the natural systems that had been close to destruction and are being renewed. In addition, aboriginal history along the creek is being documented and, where possible, protected and interpreted. Native birds, fish and animals are gradually returning as vegetation is restored.

Consideration of the creek corridor has included ways to better integrate adjoining parks, schools and sporting facilities as well as to accommodate changes from industrial uses that turned their back on the creek. Now new residential and public uses present a more active and attractive edge to the creek corridor.

The project has been of great educational benefit for the community as they have seen the natural systems return to life and learned how to propagate, plant and maintain sections of the creek. Young children experience nature along the creek from their earliest days in a pram or on a bike and they learn about nature first hand in all seasons. They also continue to learn safely and independently through school years and into their old age by doing courses or volunteering.

Covid lockdowns in 2020 saw the considerable health and recreational benefits that natural, open spaces like these can offer local communities with intensive use by walkers and cyclists.

Biodiversity and Carbon Benefits
The restoration of native habitat through planting of trees, shrubs, understory grasses

and ground cover plants in a cohesive network across the city will be of increasing benefit in a climate emergency. It will help reduce the impact of climate events like flooding through absorption of water and reduced flooding and erosion during storm events. It will also reduce urban heat locally during increasingly frequent heatwaves. The medical profession suggests that this type of open space will have increasing value in maintaining mental and physical health for all ages.

Melbourne has many other linear open spaces along the rivers, drainage lines, rail lines and the bay foreshore that are gradually being developed as green networks accessible to walkers and cyclists. Green networks through many Australian towns and cities are becoming increasingly important as cities become more intensively developed.

Hard pavements for roads and parking increase urban heat and rapid drainage of polluted water. Renewal of cities at higher density reduces private gardens and further increases drainage and urban heat. These factors are being tracked by Greener Spaces Better Places, which have mapped Australia's green canopy cover, by local government area, to track the change since 2014. They highlight issues of sustainable cities including changes in hard surfaces and urban greening. Despite almost a decade of research and advocacy, and planting of millions of trees, many urban areas have declining canopy and biodiversity within both public and private land.

We still have much to do in the coming decade to change this trend and maintain the liveability of our towns and cities beyond 2030. The continued enhancement of Merri Creek and many other similar drainage corridors will be an important contribution. ●

The New Cultural Economy

Henry Wishcamper gives us a glimpse into efforts to transform abandoned buildings into poly-use community hubs on Chicago s South Side

Visionary Black artists, activists and community developers have transformed abandoned buildings and vacant lots into a network of bustling community arts and recreational centres in neighbourhoods across Chicago's South Side. For years, these spaces have anchored their local economies, created vibrant cultural opportunities for their communities and acted as a bulwark against disinvestment. Community residents toiled to sustain these spaces despite insufficient funding and attention by the city government, private funders and the media.

Today, these longstanding community hubs form the backbone of a new cultural economy of music venues, galleries, theatres, house museums, creative incubators, artist lofts, wine bars, brew pubs, coffee shops and restaurants that Black entrepreneurs, artists and developers are building in neighbourhoods from Bronzeville to Washington Park to Woodlawn and South Shore. This new cultural economy has the potential to reshape Chicago's tourism map, create equitable economic opportunities and enhance the quality of life for long-term residents on the South Side. There is growing support in both the city government and the philanthropic community to fund these projects. Nonetheless, it is still a delicate ecosystem that is vulnerable to being swallowed up by more powerful economic forces with deep political connections unless planners, elected officials and powerful private stakeholders take continuous active measures to support the

artists, activists, entrepreneurs and community developers forging this new cultural economy.

The Obama Presidential Center is scheduled to break ground in Jackson Park on Chicago's South Side in August this year. The $500 million museum and civic center anticipates attracting 625,000–760,000 visitors with an economic impact of $246 million per year. Without question, the Obama Center will change the economy and spatial landscape of the South Side. The question is: how equitable will that transformation be?

Chicago has a long history of segregation, disinvestment, racially discriminatory land use policies and racially discriminatory financing policies in both the public and private sectors. Today, maps of Chicago charting a wide variety of spatial inequities all look remarkably similar. Chicago's predominantly white North Side has far greater access to fresh food, hospitals, public transportation, employment opportunities, home loans and other resources than the predominantly Black and Latinx South and West Sides. Churches, performance venues, manufacturing facilities, warehouses, schools, post offices, banks and other historically or architecturally significant buildings sit empty, in various stages of disrepair, throughout the South and West Sides.

These deep patterns of spatial inequity reverberate through the public discourse about the impact of the Obama Presidential Center on the neighbourhoods that surround it. There is both excitement for the Center's promise of transformational economic growth and concern

Deep patterns of spatial inequity reverberate through the public discourse about the impact of the Obama Presidential Center

Left: **Exterior of The Forum in Chicago s Bronzeville Neighbourhood**
Right: **The Forum Hall stage**

PHOTO: KRYSTAL CORLEY AND USED BY PERMISSION OF URBAN JUNCTURE.
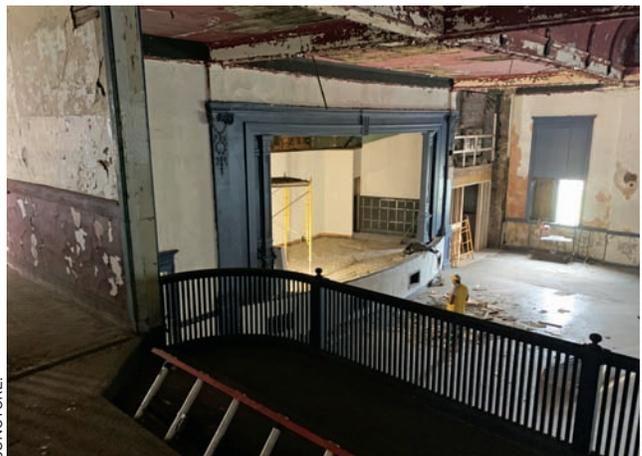
PHOTO: BERNARD LOYD/USED BY PERMISSION OF URBAN JUNCTURE

Sam Trump performs for the #ForumFridays series

that it will lead to gentrification, displacement and a lack of economic benefits for long-time residents.

Black artists, activists and community developers have converted abandoned and underused buildings into lively centers of commerce and cultural activity in the neighbourhoods adjacent to the Obama Center location:

• Theaster Gates and Rebuild Foundation restored a vacant historic bank building in South Shore and reopened it as the Stony Island Arts Bank, a hybrid gallery space, library, media archive and community centre.

• Urban Juncture transformed a mostly abandoned multi-use building at the 51st Street Green Line Station in Bronzeville into a dynamic ecosystem of incubators including the Bronzeville Incubator, Bronzeville Cookin', a Culinary Incubator offering 'Cuisines of the African Diaspora' and Boxville, a shipping container marketplace that currently houses 10 small, start-up enterprises.

• Blacks in Green converted two empty storefronts in West Woodlawn into the Green Living Room, which includes training facilities for jobs in the green economy, community meeting spaces, a coffee shop, retail space and a performance area.

I use the term 'poly-use community hubs' to describe these dynamic public spaces anchored by arts, cultural and recreational programming. Poly-use community hubs combine a broad array of for-profit, non-profit and public services and feature robust opportunities for small businesses, economic development, green space and easily accessible public services. As money and tourists begin to flood into the neighbourhoods surrounding the Obama Center, poly-use community hubs with local ownership/leadership offer a resilient model for equitable hyperlocal economic and community development.

I am currently working with Urban Juncture on the restoration of The Forum, a stunning 1897 performance and civic hall in Bronzeville. For the first three quarters of the 20th century, The Forum stood at the center of the cultural, political and retail life of Chicago's Black Metropolis. It closed in the 1970s when Bronzeville's population dropped precipitously and sat empty for almost 50 years. It was scheduled for demolition by the city in 2011 when Urban Juncture stepped in to purchase it. I believe The Forum is a perfect example of the transformative possibilities of poly-use community hubs.

The Forum is adjacent to the 43rd Street Green Line station. Today, despite the more than 1,000 people who board the L train at the 43rd Street Green Line station on a daily basis and an Average Annual Daily Traffic (AADT) count of nearly 9,000, there are no retail enterprises within a block of the station. There are vacant lots across from The Forum on both 43rd Street and Calumet.

The Forum complex includes the 550-seat Forum Hall, seven retail units and additional spaces that can be used for a variety of hospitality and entertainment purposes. The Forum complex

Black artists, activists and community developers have converted abandoned and underused buildings into lively centers of commerce and cultural activity

The artist in me sees a bustling building filled with live music, theatre, dance and visual arts

will house a bustling cluster of for-profit and non-profit enterprises devoted to telling complex, vital stories about the Black experience, culture and history in Chicago and the United States.

50 years of vacancy has taken its toll on The Forum. Urban Juncture has stabilised the building's roofs and masonry and many of its floors and windows. However, there is still an enormous amount of work to be done to restore it to its former glory. The restoration and rehabilitation of abandoned buildings – particularly ones that qualify for landmark designation – create a number of financing, construction and engineering challenges. To be successful, The Forum will require a complex mixture of funding sources including TIF, municipal grants, federal and state historic tax credits, debt equity and philanthropy.

The City of Chicago has introduced several ambitious initiatives designed to catalyse equitable economic growth on the city's South and West Sides:

• The $750 million INVEST South/West initiative targets 12 commercial corridors in 10 communities. In March, the city announced it will invest $65 million in the first three INVEST South/West competition winners. Each of the selected projects consists of the restoration of abandoned or underused public buildings into mixed-use developments that include retail and some arts or recreational programming.

• The Neighbourhood Opportunity Fund (NOF), which began in 2016, uses funds generated from new development in the Loop (Chicago's central business district) to invest in developments in retail corridors in the South and West Sides. NOF Small Project grants of up to $250,000 are intended to offer start-up capital to entrepreneurs and small businesses to launch enterprises that will have a 'catalytic impact' on their neighbourhoods (City of Chicago, 2021).

• The newly announced 77 Arts programme is a $60 million "citywide arts recovery and reopening programme," designed to fund arts activities in each of Chicago's 77 community areas (City of Chicago, 2021).

These programmes cannot rectify decades of racially discriminatory financing policies in both the public and private sectors that continue to impact Black community developers' ability to access capital. Nonetheless, these ambitious programmes are likely to catalyse more equitable economic and spatial development in neighbourhoods in the South and West Sides.

As I walk through the glorious Forum Hall or stand amidst the rubble of the newly excavated basement of the West Annex retail units, or step out onto the roof as a Green Line train rumbles by, I feel as if I can see a future. It's not the future, not

by a long shot; but it is a future that is within grasp.

The artist in me sees a bustling building filled with live music, theatre, dance, visual arts, community photography projects, knitting circles and book clubs, recording studios for music and podcasts, green screen studios, and post-production facilities; safe, fun places for kids to go after school to make stop-motion animation, live theatre and other dynamic education experiences, delicious food and space to hang out and talk with friends, gathering spaces for community groups, panel discussions, weddings, galas and civic debate.

The planner in me sees a South Side with a cultural economy anchored (but not dominated) by the Obama Center, grounded in years of effort by visionary Black artists, activists and entrepreneurs like Theaster Gates, Bernard Loyd, Naomi Davis, Eric Williams and so many others. A Chicago where individuals with big ideas but limited access to capital can leverage innovative funding programmes to launch restaurants, performance venues, galleries and boutiques in retail corridors that flourish after years of disinvestment. A thriving economy that generates economic benefits for long-term residents and a replicable model for cities across the country that want to spur equitable hyperlocal economic and community development.

At the same time, the cynic in me sees powerful developers co-opting much of the funding from these new municipal funding initiatives: bankers unwilling to provide debt equity necessary to capitalise projects they don't fully understand, economic development officials continuing to focus their efforts on recruiting major national retailers and fulfillment centres. Aldermen blocking individual projects that don't fit their personal political agendas, gentrification and displacement and the economic growth created by the Obama Center primarily benefiting the wealthy and powerful.

The Obama Center and the $750 million of Invest South/West funding will dramatically change the economy and spatial landscape of Chicago's South Side over the next decade. What that new future looks like – and who benefits – is still uncertain. Funding choices made by elected officials, planners, bankers and philanthropists will place a thumb on the scale in determining what this future looks like. Transforming abandoned buildings and vacant lots into locally owned, poly-use community hubs like The Forum provide a bridge between the vibrant cultural heritage of the Black South Side and a new resilient and equitable cultural economy. Public and private funders should use all the tools in their arsenals to ensure these spaces have the greatest opportunity to anchor this new equitable cultural economy. ●

A Strategy to Upgrade Panaji Church Square

Vinayak Bharne and **Siddha Sardessai**, founders of the Goa Urban Design (GUD) Collaborative, show us how a strategic step-by-step sequence of modest design efforts can help transform a city over time

Our cities are in a continuous process of upgradation because their social, economic, political and technical dimensions are in constant flux. Urban growth, shifting demographics, changing citizen whims, new infrastructure and altering market conditions, all demand consistent revisits to the process and products that nurture everyday urban life. Urbanism is the act of constant improvisation, negotiation and upgradation to enable a city's evolution.

One of the most consequential methods of urban upgradation is the transformation of a city's public spaces. It is in the spaces between buildings – plazas, streets, parks – that rich urban life can be consciously enhanced for one and all. A city's public spaces are owned and maintained by the municipality and engaging with them is easier than negotiating with private entities such as developers and corporations. Public spaces by default are the charged domains of an everyday demographic, be it through informal daily gatherings or annual festivals. The potential for reflective urban design to upgrade these urban containers to address current realities can go a long way.

Many such noble and ambitious projects, however, do not get off the ground. Lack of political backing, citizen skepticism and large financial investment often become impediments to their implementation. This is particularly true in less affluent societies with stark economic polarisations, where a city's priorities are more complex compared to regulated and prosperous ones. Here, any investment in urban upgradation cannot afford to cater to a demographic of choice. It has to be a far more holistic strategy aimed at creating inclusive places that augment the lives of the rich and poor, young and old.

This is where the idea of Incremental Urbanism matters. It is about implementing a place-making vision through multiple steps, starting with a modest one and following up with others over time. This approach has numerous advantages: First, it diminishes the pressure of a single large initial fiscal investment.
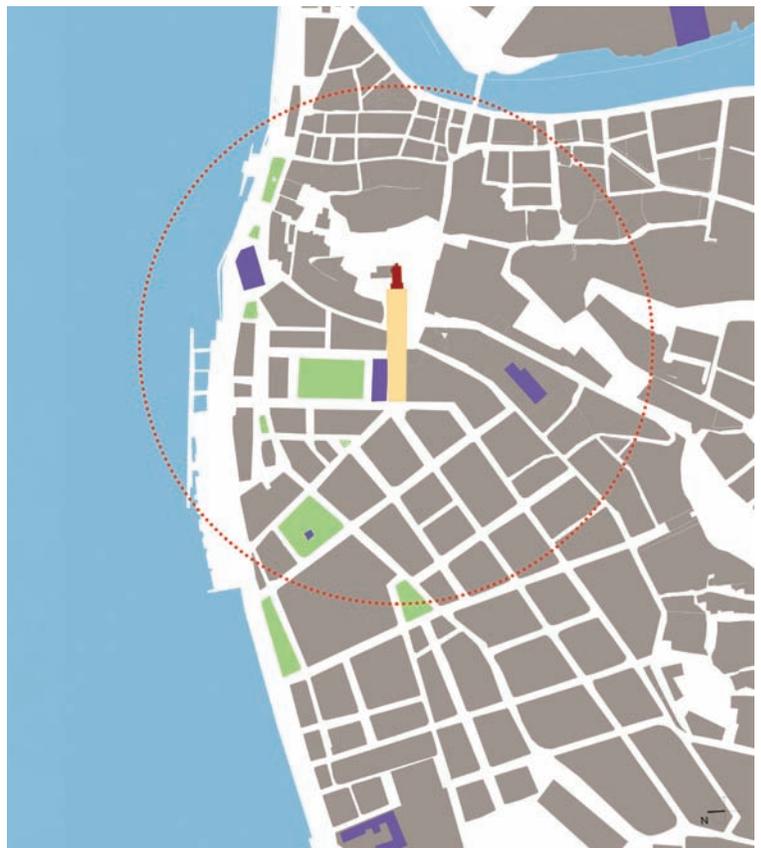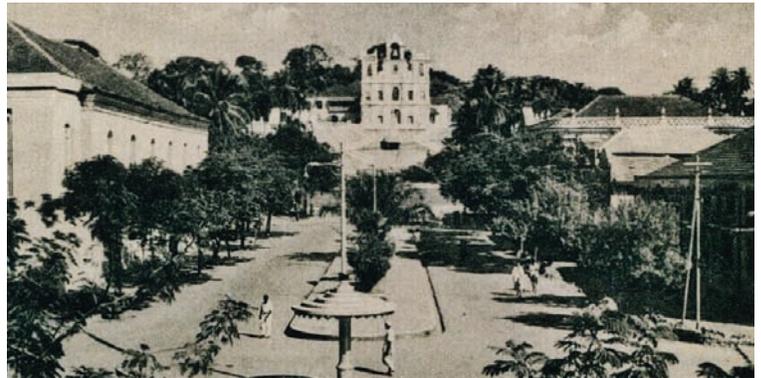
*Top:* **View of Panjim Church Square, circa 1900. Note the Camara Municipal (Town Hall) to the left**
Bottom: **Panaji Church Square in its urban context. The church is in red. The square is in beige. The purple rectangle to the left of the square shows the demolished Camara Municipal (Town Hall) or a future public building. The red circle indicates a 5-minute walk shed (400-metre radius) around the square**

EXISTING CONDITIONS

Vacant Town Hall site

View of Church Square from the elevated church staircase

Parked cars and two-wheelers currently crowd the Church Square

Road intersection and median at the base of the church

PAST, PRESENT & FUTURE

Church Square with Town Hall, circa 1957

Current condition: The Town Hall site is vacant while the Church Square is crowded by parked cars on a daily basis

In the short term, parking from within the Church Square is relocated to the vacant Town Hall site. The square is enhanced with wider sidewalks and landscape
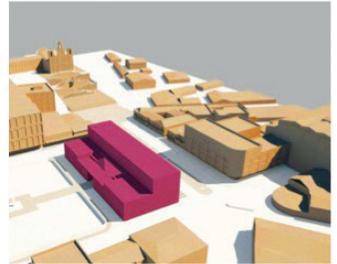
In the long term, a new public building could occupy the former Town Hall site, after Panaji has implemented a comprehensive parking and traffic management plan

INCREMENTAL UPGRADATION
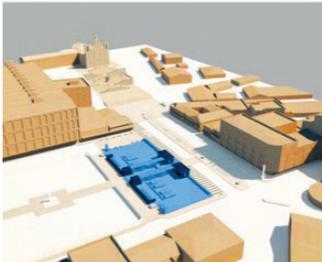
Step 1: Relocate parking from both sides of the square into a new parking lot on the vacant Town Hall site

Step 2: Redesign the street fragment adjacent to the parking lot as a flexible zone, that can become a vendor's plaza and outdoor dining space
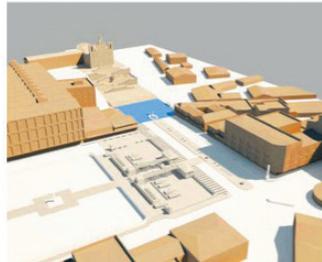
Step 3: Augment the vast asphalt intersection at the base of the church as a new plaza
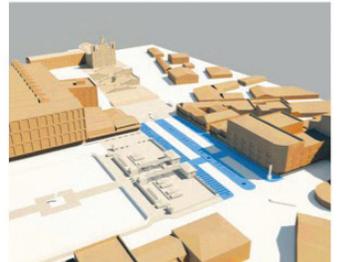
Step 4: Widen the sidewalks, and enhance the Church Square with pedestrian crossings, lighting, street furniture and landscape, making it a pedestrian-friendly node

One of the most consequential methods of urban upgradation is the transformation of a city's public spaces

Second, it keeps much of the economic activity of a place intact in the early phases. Third, it does not dramatically disrupt daily life, making it more acceptable to the public. And fourth, each step becomes a barometer to gauge successes and shortcomings that help inform the next one. Incremental Urbanism is thus a direct contrast to the idea of generating urban transformation through large built-at-once projects that take colossal amounts of investment and time while halting the daily activity of a place.

One of the most important aspects of Incremental Urbanism is the first step that will chart the vision's implementation trajectory in due course. How modest or not should this step be and why? Can it usher immediate change for the better? Can it be framed around aspects of a place that are currently underused? Can it be less intrusive? The nature of this first step is

crucial. Neither can it afford to be too politically controversial, nor physically disruptive.

Upgrading Panaji Church Square

What follows is our proposal for upgrading a major public space in the historic city of Panaji, the capital of Goa, India, based on this approach. Panaji was built from scratch by the Portuguese in the 17th century during their colonial rule in Goa following the capital's relocation from Velha Goa. It was planned along the banks of the Mandovi River with a seven-kilometre-long promenade and a grid of streets interspersed with *largos* (squares), *jardins* (gardens) and *cais* (wharfs.) Some of these gardens remain intact today, but the squares have been severely compromised due to increasing automobile traffic, inadequate parking management and contextually insensitive architecture.
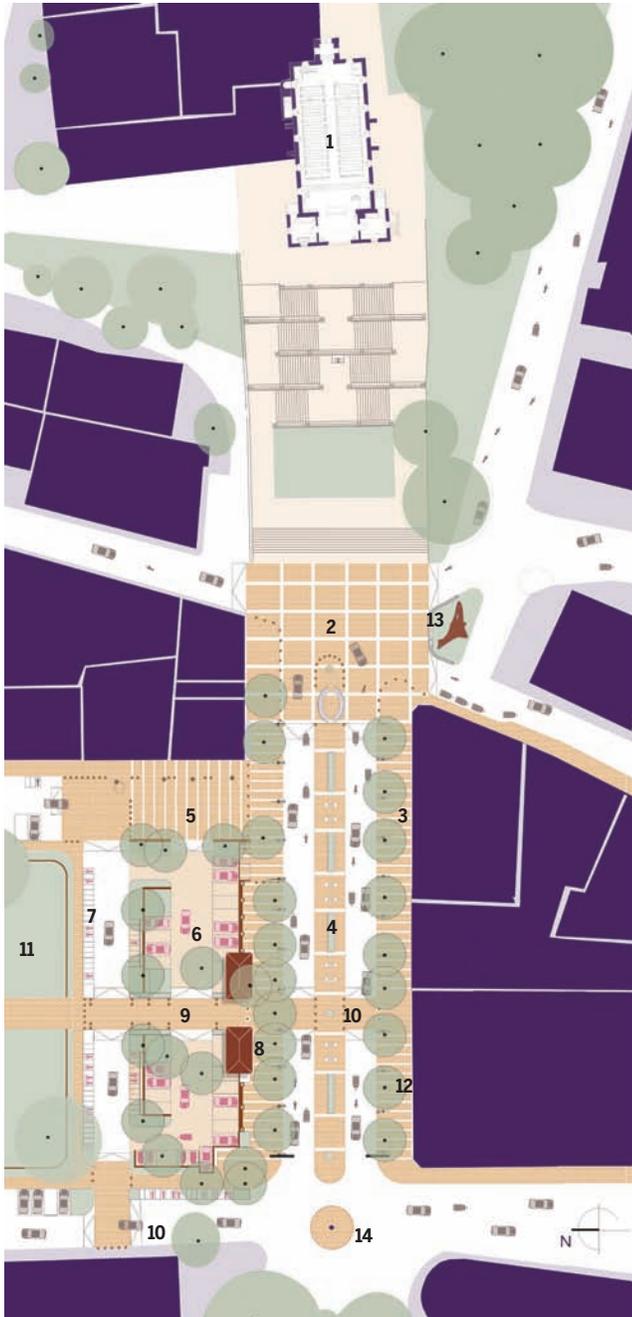
Site Plan of upgraded Church Square:

1. Our Lady of the Immaculate Conception Church
2. New Plaza de Flores
3. Widened and paved sidewalk
4. Enhanced existing raised median
5. Flex Street/Vendors Zone
6. New parking lot
7. Two-wheeler parking
8. New pavilion
9. New pedestrian walkway
10. Raised crosswalk with aprons
11. Existing public garden
12. Existing trees
13. Landscaped island with public art
14. New traffic booth

Current (*top*) and Proposed (*bottom*) sections through Panaji Church Square. The white horizontal lines indicate the width of the sidewalks
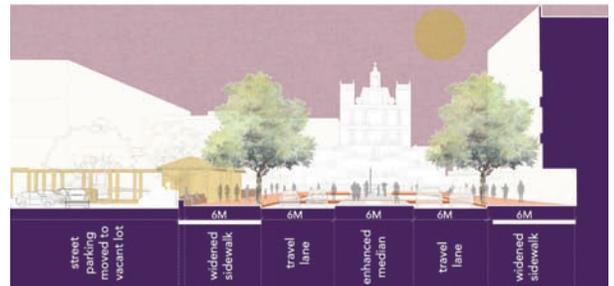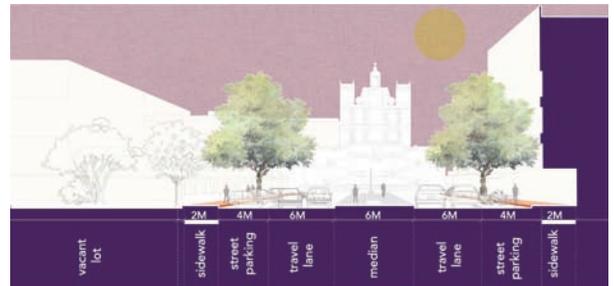
Long section through Panaji Church Square. The elevated church is to the left
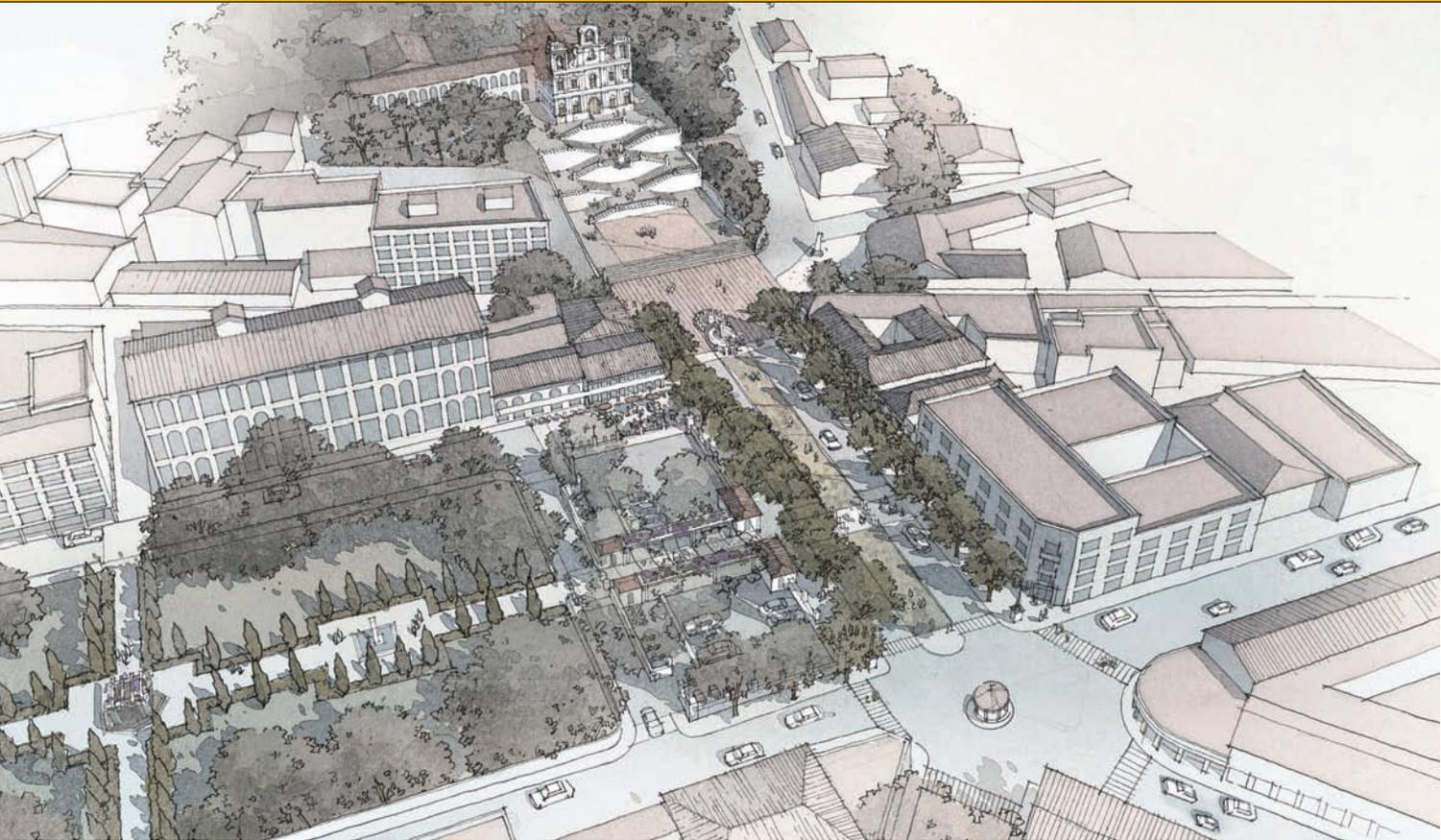
The Church Square was originally planned as Panaji's civic heart, marked by two prominent buildings: the iconic Our Lady of the Immaculate Conception Church with its grand terraced stairway and the Camara Municipal (Town Hall), which was demolished in 1958. The Town Hall site has since remained vacant, and efforts to convert it into a children's play area as an extension of the adjacent garden have failed. It is currently an empty lot awaiting better use.

The Church Square is currently compromised in multiple ways. While its mature trees visually bind the space together, mediocre development along its southern side has severely diminished its physical character. Parking is the biggest impediment, and the space occupied by vehicles and two-wheelers compared to pedestrians is almost 3:1. The square's narrow sidewalks, though crowded with people, serve as mere transit paths rather than places to be in. Save the historic raised central median that serves as a pause point from the surrounding traffic, there is nothing to encourage one to enjoy this beautiful historic public space.

There are aesthetic shortcomings as well. The utilitarian triangular island created to channelise traffic flow diminishes the authenticity of the original design. The laterite stone steps descending from the church are received by a vast asphalted intersection. The trees lining the square appear tortured as they remain rooted under the asphalt. For one of Goa's most important public spaces, the Church Square hardly lives up to its potential as a vibrant urban centre nurturing rich formal and informal activity, with people dining, shopping and hanging out.

Sequential steps towards a larger vision

Our long-term vision is to restore Panaji Church Square as the city's civic heart. It includes, among other things, respecting the original vision and building a new public edifice on the vacant Town Hall lot thereby completing the edges of the square and the adjacent park. This is, however, an expensive proposition that will take significant financial capital and time, and it will not immediately resolve any of the square's ongoing problems. As such, it cannot be the starting point for this effort.

Our strategy begins with a simple first move that is easily implementable, least disruptive, financially modest and capable of bearing an immediate effect on the square's daily experience. Stemming from our observations of the current condition, we propose to relocate the parking along the edges of the square into the

A modest individual step if done intelligently can be a worthy upgrade in its own right, setting the stage for others to follow

vacant former Town Hall lot. Our studies reveal that the lot can accommodate a comparable number of cars and two-wheelers as are currently parked within the square. The new parking lot may be augmented with pavilions and arcades that connect the square to the park with a pedestrian walkway. This first step will also involve parking reinforcement to ensure that ad-hoc and illegal parking will not occur within the square.

In time, the next step could be the redesign of a portion of the street directly adjacent to this parking lot as a flexible zone. Thanks to a continuous street grid, closing a small portion of this street to vehicles will not disrupt traffic flow on a daily basis. This zone could serve as a street food area with hawkers, while reverting back to a traffic street when needed. It will help concentrate informal uses in an identifiable

place and create a new outdoor dining plaza encouraging people to linger at this node. And it will enable all this without disrupting the existing traffic flow within the square or around the park.

With the parking now regulated, a succeeding step could involve augmenting the vast asphalted intersection at the base of the church with new decorative paving. This will visually bookend the square, while extending the elevated ground of the church to the public space below. More importantly, it will set the stage for more ambitious designs in the future such as paving the entire linear square with a non-asphalted surface, making it a unique space within the city.

The most ambitious step in this effort is the widening of the sidewalks, which is why we propose that it occur at a later stage. This step

Impressions of the upgraded Church Square.
Top: Typical mid-day view. Note the widened sidewalks, and the pedestrian crossing that connects the two sides of the square
Bottom: Festive late evening view. The square is closed to traffic, making it a pedestrian-only space. String lights define the two sides with the central axis left open to afford an uninterrupted view of the church

will result in traffic disruption and may even need the square to be sealed off to vehicles while construction is completed. It will involve infrastructural upgrades including new lighting, along with cross walks, street furniture and new landscape. This expensive step must build on the success of the previous ones and occur with some empirical evidence that its financial investment will bring commensurate social and economic returns.

In the future, if Panaji implements a comprehensive city-wide traffic and parking management plan encouraging walkability, multi-modality and shared parking, a new public building could be built in the parking lot, completing the Church Square. Other public spaces within the city could also be upgraded in tandem with similar incremental steps. The streets connecting these spaces could also be upgraded, creating a beautiful open space network that could significantly enhance the quality of daily public life in the city.

Coda

The key lesson from this strategy is about not letting long-term visions and ambitions hamper short-term steps that can trigger immediate positive urban transformation. A modest individual step if done intelligently can be a worthy upgrade in its own right, setting the stage for others to follow. And the combined sequence of small, medium and large steps can, together, eventually complete a coherent long-term vision within the political and economic realities of the city

The art of Incremental Urbanism is not about a priori experimentation aimed at fulfilling a single person's visions or ambitions however noble they may be. It is about seeding practical strategies and tactics for immediate positive change no matter how modest they may be. It is about learning from their shortcomings, building on their merits and engaging collaboratively with politicians, citizens and stakeholders, to make intelligent decisions towards shaping and reshaping our cities incrementally, one step at a time. ●

Top: **Widened sidewalk of Panaji Church Square. The new parking lot is to the left**
Bottom: **Vendors and Hawkers zone adjacent to the parking lot. This flexible space becomes an outdoor dining place, and can also become a traffic street when needed**

PROJECT CREDITS:
Urban Design & Architecture:
Vinayak Bharne and Siddha Sardessai

Design Team:
Anisha Belgaonkar Gayatri Talavdekar Rutu Kelekar Shuchi Mishra

Aerial Perspective:
J J Zanetta

Historical Inputs:
Sanjeev Sardessai

A Tale of Two Beaux Arts Buildings

Buvana Murali and **Amit Arya** give us a look at the adaptive reuse of the James Farley Post Office building into Moynihan Train Hall

"*Any city gets what it admires, will pay for, and, ultimately, deserves... And we will probably be judged not by the monuments we build but by those we have destroyed.*" - *Ada Louis Huxtable*

It's been a year since the global pandemic has ravaged New York City calling to question the very notions of public space. Commuting in crowded trains is hardly a thought on people's minds right now. Yet, defying all odds, the city saw the opening of Moynihan Station, a 45,000 sq.m. space for a new train hall that reused an underutilised beaux arts post office. At the opening ceremony, the Governor of New York State said: "Senator Daniel Patrick Moynihan was a man of true vision. He saw the potential in an underutilised post office and knew that if done correctly, this facility could not only give New York the transit hub it has long deserved, but serve as a monument to the public itself. As dark as 2020 has been, this new hall will bring the light, literally and figuratively, for

The original James Farley Post Office Building built in 1912 as a terminal post office with Penn Station

IMAGE COURTESY: SHORPY.COM
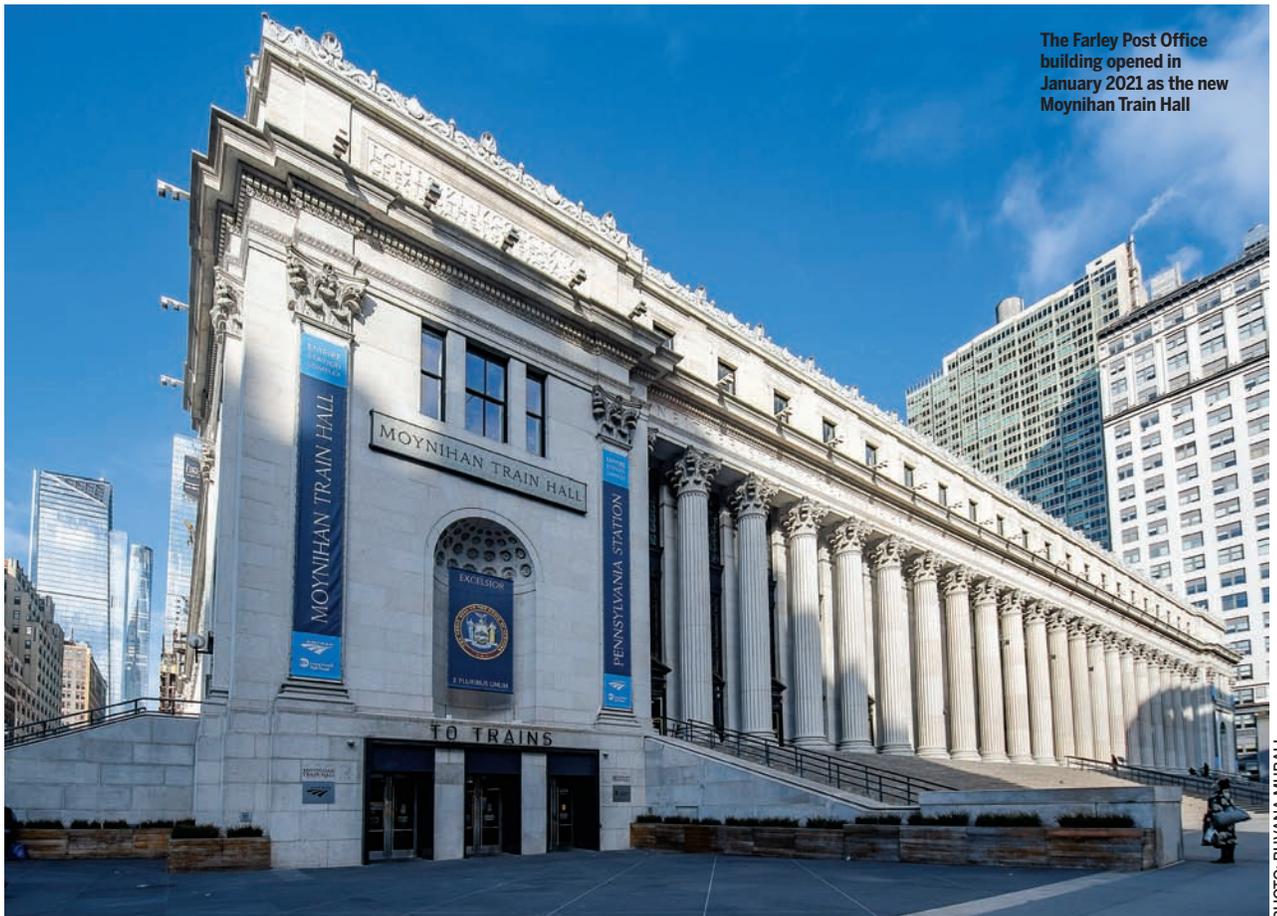
The Farley Post Office building opened in January 2021 as the new Moynihan Train Hall

PHOTO: BUVANA MURALI

Penn Station is one of the busiest train stations in the world and accommodates more passengers than LaGuardia, John F. Kennedy and Newark International Airports combined

everyone who visits this great city."

And light it does bring, through the one-acre large glass barrel vaults hovering 30 metres above what was once the mail sorting room of the James Farley Post Office; the second largest building in New York City at the time of its construction. The new Moynihan Train Hall, an exemplary study in adaptive reuse, provides the much-needed respite from the warrens of Penn Station. For decades, Penn Station's 700,000 commuters were desperately underserved by its three-metre-high artificially lit tunnels and accompanying chaos, as they navigated their way up from its underground concourse levels to New York streets. Penn Station is one of the busiest train stations in the world and accommodates more passengers than LaGuardia, John F. Kennedy and Newark International Airports combined, in a space that is de facto the basement of Madison Square Garden. For the past 60 years, since the demolition and consequent redevelopment of the erstwhile monumental train hall into a sports arena, arriving in the city has been the complete anticlimax of the gateway it deserves. The new Moynihan Train Hall, in recalling the vaulted concourse of the original Penn Station, manages to restore a semblance of its grand civic gesture. The 30-metres high skylight that holds an acre of glass is held by three of the building's original steel trusses with an intricate lattice framework, soaring above the concourse and bathing passengers in natural light.

It is the result of a public-private partnership 30 years in the making, surviving numerous

governments and schemes to get it going, and finally breaking ground five years ago. This station is also emblematic of all the reparations to right the wrong committed by the demolition of the beaux arts beauty of Penn Station. In return for that action, the city gained a historic preservation movement that saved thousands of landmark buildings including the James Farley Post Office, which is now the Moynihan Train Hall.

Crossing the Hudson River to Manhattan

The histories of Moynihan Station and its original 'twin' Penn Station across the street are inextricably linked and talking of one is incomplete without mentioning the other. It is a tale of tunneling across the Hudson and East Rivers to bring inland trains into Manhattan and creating a gateway deemed worthy of New York City. This 16-acre patch of land along the western edge of Manhattan, between 7th and 9th Avenues, bears witness to many of New York's historical events, including the rise of the railways, its fall with the coming of affordable automobile and air travel, the birth of a preservationist movement, the death of the post office as an institution and the rehabilitation of the building as a station for the next era of public transportation.

Until the early 20th century, trains coming from the United States hinterland terminated on the western edge of the Hudson River in New Jersey from where ferries completed the final stretch of arrival to Manhattan. Pennsylvania Rail Road (PRR) – one of the biggest railroad companies – saw an incredible opportunity to tunnel through the Hudson River and converge into an 'immense passenger station' in Manhattan. The vision was to bring trains from the inland areas in the west and from Long Island further east. Inspired by the striking marriage of art and industry in the Gare d'Orsay in Paris, PRR president Alexander Cassatt charged the architects McKim, Mead and White to envision a space that would celebrate "the entrance to one of the great metropolitan cities of the world." The architects turned to the imperial scale of public buildings in Ancient Rome, 'and were guided by a vision of civic grandeur, translating the mundane business of boarding trains into a stately procession, and subsuming the commotion of constant movement and disorganised crowds into the stations' overriding order.[1]

When it opened in 1910, Penn Station was the largest train station in the world and the 4th largest building. The terminal was immense; its central waiting room was the size of a football field and 50-metre-tall arched glass and steel trusses soared above the hall and the city's largest indoor

A historical photograph showing the main concourse halls of the original Penn Station - the gateway to the city

PENNSYLVANIA STATION. NEW YORK CITY
Seventh Avenue and Thirty-Second Street
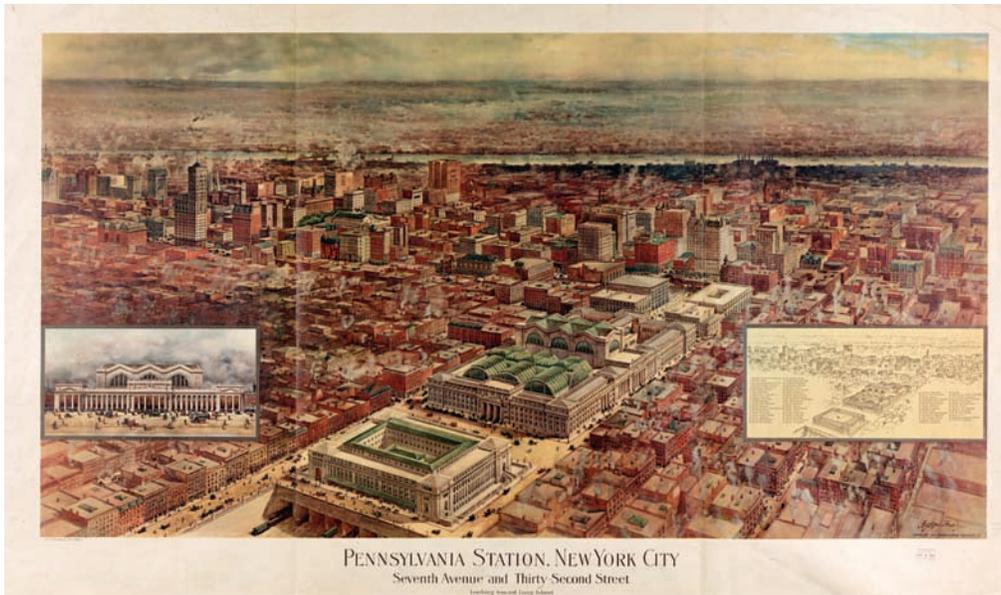
Top: A historical map showing the original McKim, Mead and White Penn Station with the Farley Post Office in the foreground
Bottom: Aerial rendering of the transformed post office into Moynihan Train Hall showing the courtyard as a light-filled concourse space

public space. Its 15-metre-wide grand stairs almost spanned an entire city block. Its capacity grew from 200,000 passengers when it began to almost 100 million passengers at its peak in 1945. Not only did these tunnels and the station open up New York to the rest of the US, it also opened up the city to the suburbs. Within 10 years of operation, 2/3rd of its passengers were suburban commuters.

This was also a time when mail was transported by rail and post offices and train stations were collocated. PRR mooted the idea to build a post office building of comparable scale across the avenue as an architectural bookend to McKim, Mead & White's gloried station. When built in 1912, the James Farley Building – then the terminal post office – occupied two full city blocks and matched the grandeur and scale of Penn Station across the avenue. It was designed by the same architects responsible for Penn Station, in whose vision, two edifices read as part of one large 'civic complex'. The building was a veritable labyrinth, straddling several of the tracks that served Penn Station. Chutes, conveyor belts and elevators from the post office delivered mail directly to the underground station platforms. These century-old links positioned the post office almost perfectly for its use as Moynihan Train Hall.

The loss of the monument to what was perceived as progress, catalysed the architectural preservationist movement in the United States

Redevelopment of Penn station: An act of vandalism

By 1945, train ridership had peaked and close to 100 million passengers a year walked through Penn Station's doors. After the war, rail travel began to decline. The hard-to-maintain behemoth fell into major disrepair and was soon covered in grime and advertisements. In the 1960s, faced with the future of imminent bankruptcy, the PRR took the most economically-driven decision and sold their air-rights, allowing for the demolition of the main building and train shed, to make room for a new entertainment arena: Madison Square Garden. This decision kept the underground infrastructure and platforms intact and decapitated the 'non-functional aesthetical' portions of the building – its soaring ceilings, grand foyers and above-ground halls. The station's mezzanines were downsized and moved underground in rooms 'bereft of light or character.' [2]

Amongst the uproar that followed the demolition, several voices were from modern architects and urbanists of the time including Jane Jacobs, Philip Johnson and Robert Venturi, who called it "…. a monumental act of vandalism…" The loss of the monument to what was perceived as progress, catalysed the architectural preservationist movement in the United States and a watershed New York Landmarks Law was passed. Since its creation, the law has helped save Penn Station's sister terminal, Grand Central and 30,000

Left: **Step into the light - one of several day-lit courtyards of Moynihan Train Hall**
Bottom: **A new gateway to the city: The conversion of the old mail sorting room into a light filled concourse. The design retains three existing steel trusses and adds a newly engineered vaulted glass roof that allows daylight to fill passenger spaces and create a contemporary public space**

PHOTO: BUVANA MURALI
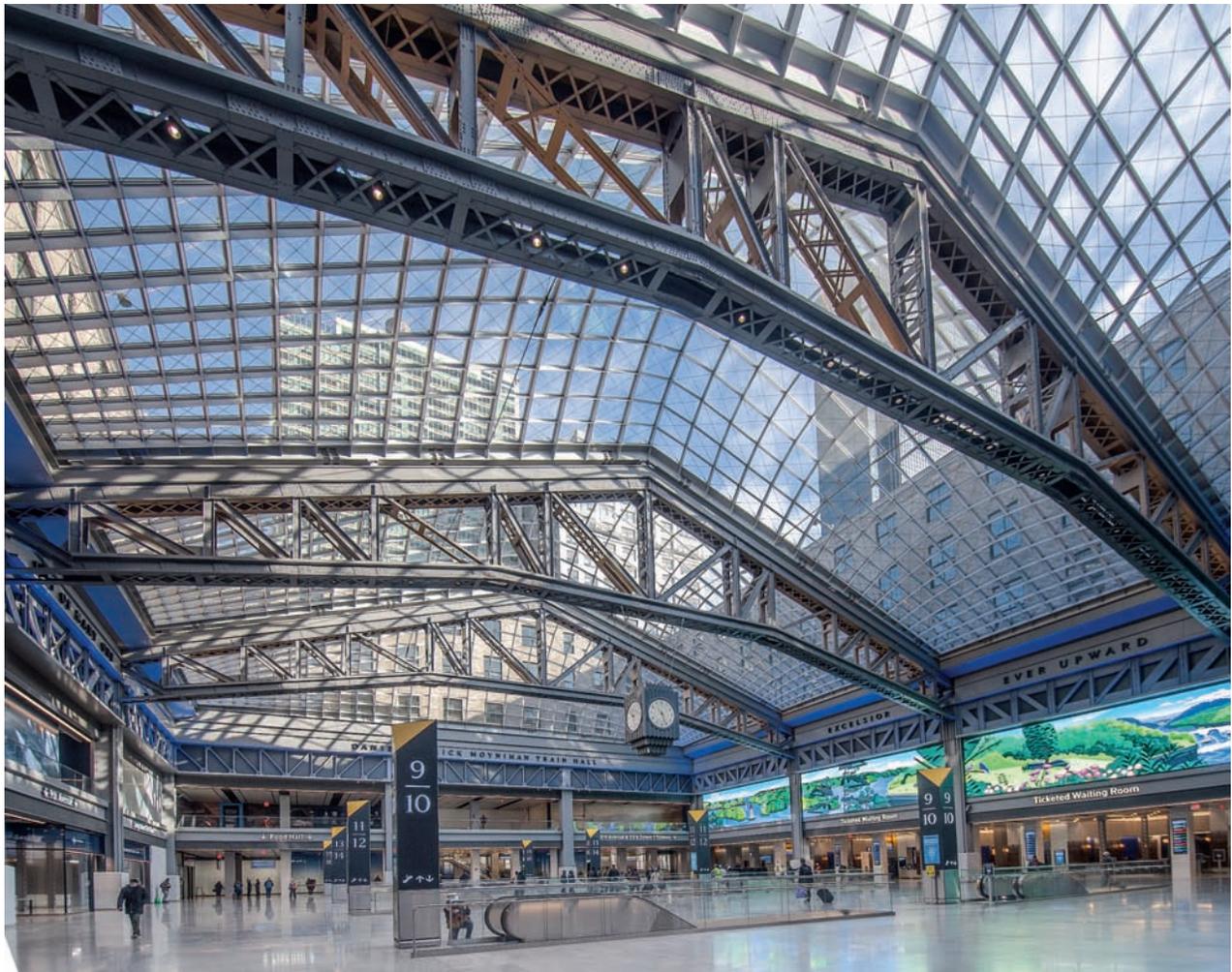
PHOTO: BUVANA MURALI

Left: **A section through the Moynihan Station s new concourse showing connections to below grade platforms creating a new transit experience**
Bottom: **The new passenger waiting areas that recast the post office s legacy in modern materials and language**

other historic buildings around the city from destruction.[3]

A new opportunity from reviving the old

By the early 1990s, the post office building was severely underutilised and started moving its operations to another facility. The idea of repurposing it as a train hall was first floated nearly 30 years ago by Daniel Patrick Moynihan, a senator for New York. Designed to the same grandeur and scale, Farley's mail-sorting facility, with its access to railway platforms under Eighth Avenue, could potentially restore, if not fully return, the lost icon. The complicated infrastructural proposal passed through various attempts, architects and bureaucrats for years until finally, in 2016, the architecture firm Skidmore, Owings & Merrill, which had been working on various conversion schemes since the 1990s was awarded the job.[4] In five years, an army of design consultants weathered all including a global pandemic to deliver a station that is reminiscent of the old Penn Station. The design preserves three existing trusses infilled with a modern lattice layering the hall's history and industrial quality with a contemporary expression.

By no means does the Moynihan Train Hall expand the capacity of the original Penn Station. It is simply an extension of a handful of its platforms, the remainder of which are still dependent on Penn Station across the street. As spectacular as it is as a train hall, Moynihan will only serve about 5 to 15 per cent of Penn Station's ridership. Before the pandemic, some 700,000 people used underground tunnels daily, three times the number it was built to handle. If as many as one million or more want to use it in the coming years, the project will need more tracks and platforms

and new tunnels under the Hudson River. The economy of the Eastern Seaboard depends on it and on increasing Penn Station's capacity.

A step in the right direction

The new hall is a necessary first step in addressing much of the transportation issues and the blight of the existing Penn Station. The project has been decades in the making and is a testimony to the city's resilience and commitment to civic space. Not only has it survived multiple recessions and administrations, it has continued construction activity through the pandemic. At the peak of the pandemic, when people were sounding the death knell of the city, Facebook signed one of New York City's largest commercial leases in the Farley Building, providing a much-needed booster to NY real estate.

Ada Louise Huxtable is right: our built environment is a reflection of its inhabitants and what they value and a city is the result of our shared values, collective decision making and our willingness to fight for what we deserve. In Moynihan Hall, by elevating the human experience and creating a gateway worthy of New York, the city certainly got what it deserved. ●

References:
1. Conquering Gotham: Building Penn Station and Its Tunnels, *Jill Jonnes, Penguin Books*
2. *https://www.nytimes. com/2007/11/02/ opinion/02fri3.html*
3. *https://behindthescenes. nyhistory.org/penn-station-masterpiece/*
4. *https://www.nytimes. com/2021/01/11/arts/design/ moynihan-train-hall-review. html*

https://www.nationalreview. com/2018/10/rebuild-penn-station-and-rectify-a-crime-against-architecture/
https://www.myleszhang. org/2020/07/09/penn-station/

A Case for Regeneration Through Adaptive Reuse

Old town Leh, Ladakh, has been overwhelmed with tourists and needs to be preserved. **Nisar Khan** explains how this can be achieved

Ladakh is a cultural and climatic region in a remote part of North India. Located at the intersection of Central-Asia on the west, Tibet on the east and the Indian peninsula on the south, the region of Ladakh is historically significant for trade and cultural exchanges. Although Ladakh is a melting pot of cultures, the influence of Tibetan elements is more pronounced. Which is why it is also called a microcosm of Tibet in India.

Unlike most Himalayan ranges that are green and receive significant precipitation, Ladakh is distinct for its cold and dry desert climate. The landscape of Ladakh is characterised by ranges of barren mountains punctuated by imposing monasteries strategically placed along the trade routes. These monasteries are located high on the hills and often accompany settlements located down the slope. This settlement pattern was primarily to provide protection against attacks from invaders and also to gain sunlight for an extended period of time. While the region is very arid, the streams bring water down the glaciers and create oases for the cultivation of paddy and vegetables. Apple and apricot are the main plantations among fruits. Also, the plantation of poplar trees – the main source of timber in the region – has increased in recent years. The sepia background is contrasted by the colourful Tibetan prayer flags and white painted mini stupas called chorten found all over. The general ensemble of landscape elements in Ladakh offers an

In the absence of any such formal initiative, the town is changing fast, over-tourism being the main catalyst

Typical Ladakhi landscape

ALL PHOTOS: AUTHOR
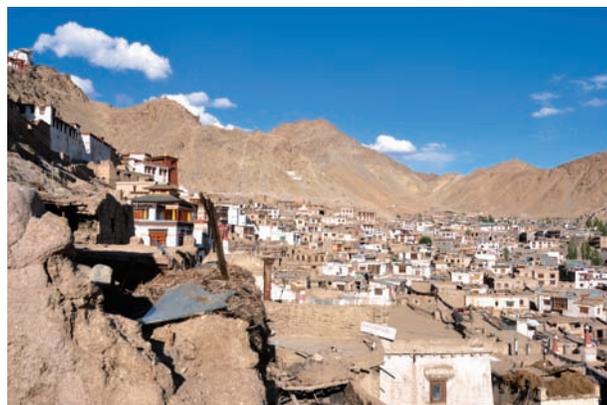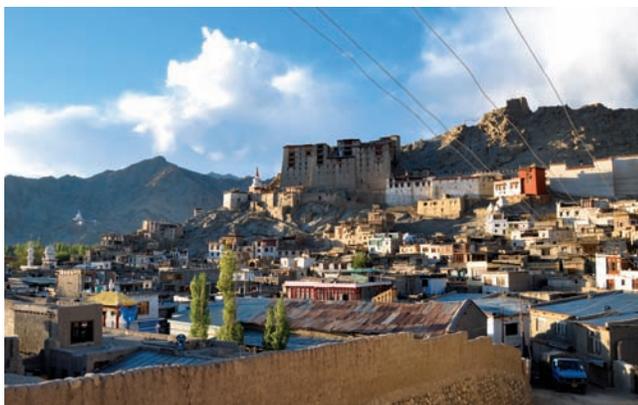
Top Left: **Old Town Leh. Leh Palace is seen up the Namgyal Hill**
Top Right: **Core of Old Town as seen from the Namgyal Stupa**
Bottom: **Urbanscape showing exquisite mud architecture of Old Town Leh**

exceptionally mystical, surreal and exotic scenery to the visitor.

Leh is the principal town of Ladakh, located on the junction of major trade routes connecting Srinagar, Lhasa and Manali. Leh emerged as a major trade and cultural destination soon after King Senge Namgyal shifted his capital from the neighbouring Shey in the early 17th century. The king marked the new capital by building an imposing nine-storey palace, which was the tallest structure in Ladakh and Tibet until Potala Palace was built in Lhasa. The setting of the palace follows the spatial hierarchy as seen in the Ladakhi settlements. On the peak of the Namgyal Hill is Tsemo Gompa followed by the Leh Palace, which is located mid-way on the slopes. Below the palace are the monasteries and mansions of the important nobles while the houses of the common populace are located on the lower slopes. Since the town is built on the slope, the settlement pattern exhibits a compact arrangement of built fabric with meandering streets. The intersections of these streets function as public spaces and are marked by the presence of the chorten stupas, the most prominent being called Gateway Chorten due to its portal-like form.

The core area of Leh constitutes the Leh Palace and the settlement down the Namgyal Hill as described above. The main commercial area, called Leh Bazar, adjoins the core area on the western side as wide and straight market streets meeting at the Jama Masjid junction. The

Top Left: **Typical Ladakhi windows and balconies**
Top Right: **Entrance to an ordinary house in Leh with typical Tibetan lintel**
Below: **An ordinary house in Leh showing stone masonry at lower level and adobe bricks at upper level**

form and arrangement of buildings and spaces in Old Town Leh were dictated by the principle to provide protection against invasions. Earlier, the old town was surrounded by a rammed earth fortification that can still be identified by the presence of gateway chortens. Buildings were spaced out allowing uninterrupted sunlight in cold climatic conditions.

The architecture of Old Town Leh is characterised by remarkable mud construction employing Tibetan elements. The walls are constructed primarily using adobe bricks and rammed earth. Foundation and plinth levels are often constructed in rubble masonry using locally available stone. Timber is used for spanning the roofs and lintels. Window openings are accentuated by frames and projected lintels imparting Tibetan character to the town. Every building has one characteristic large window

facing the sun and identifying the living space. Spatially, living room and kitchen are combined in a single large space, which is located on the upper floor, while the lower floor is used for keeping animals and storage. Courtyards are also present in larger houses. Temples are painted in a distinct red colour, monasteries are painted in white and ordinary residential buildings are plastered in mud or painted white.

The architecture of Leh is an illustration of extremely refined Ladakhi traditions, which evolved over many centuries using local materials imparting exceptional climatic comfort, durability and a distinct character to the town. Moreover, this is the only instance of multi-storeyed mud architecture in India which is comparable to the World Heritage Sites of Shibam in Yemen, Bam in Iran and Diriyah in Saudi Arabia in scale and architectural richness. Needless to say, these

Many old mud houses were demolished to construct guest houses and hotels using modern materials and amenities

attributes make Leh an ideal case for urban conservation. However, in the absence of any such formal initiative, the town is changing fast, over-tourism being the main catalyst.

Due to its proximity to the border, the entry into Ladakh was restricted until 1974. Even now, the region remains disconnected from the rest of the country during the entire winter season. This inaccessibility, in fact, helped in preserving the tradition and culture until circa 2000. After that, tourism in Ladakh started to witness an exponential rise. This was due to its depiction in the popular movie *3 Idiots* as well as by the Government of India's special LTC package for its employees. Presently, the tourists in the peak season outnumber the native population by three to four times.

While this rise in the tourism industry brought economic growth to the region, it adversely impacted the architecture of Leh. Because of poor infrastructure and water scarcity, the population from Leh started shifting to the agricultural fields on the western fringe. As there were no more threats from invaders, the dwellers of the old town preferred living in houses built in the open agricultural fields with streams of water flowing nearby. This rendered the old town irrelevant to the people and the mud buildings started to crumble over time.

The market area of the old town continued to function, but saw transformations in the buildings. The characteristic mud and timber structures were replaced with two- to three-storey brick and concrete buildings housing cafes, restaurants, emporiums, souvenir shops etc. for the tourists. At the same time, guest houses and hotels started to emerge on the outskirts of the town and many in the agricultural fields where the people have already shifted. The owners of the agricultural fields found running guest houses a lucrative and easy business, though they continued growing vegetables and paddy in the open portions. These guest houses and hotels are built using concrete with modern amenities to suit tourists.

During the same period, the parts of the core area of the old town continued to remain abandoned with mud houses turning into ruins due to neglect. Many of these houses were demolished to function as godowns and tenements to rent out to the migrant labourers who come every year in the summer months to work mainly in the construction industry. Overall, the phase after the year 2000 marked the beginning of the loss of historic fabric in the old town.

Around 2005, the arrival of tourists encouraged some local inhabitants to start tourism-related businesses. This brought about positive changes in the area. The biggest contribution has been by an international

Top Left: **Leh as seen from the Namgyal Hill. Old Town is towards the bottom while sprawl is towards the top**
Top Right: **Abandoned buildings of Old Town Leh**
Bottom Left: **Main Bazaar in Leh showing modern transformations**
Bottom Right: **Archival picture of Main Bazaar, Leh (1873)**
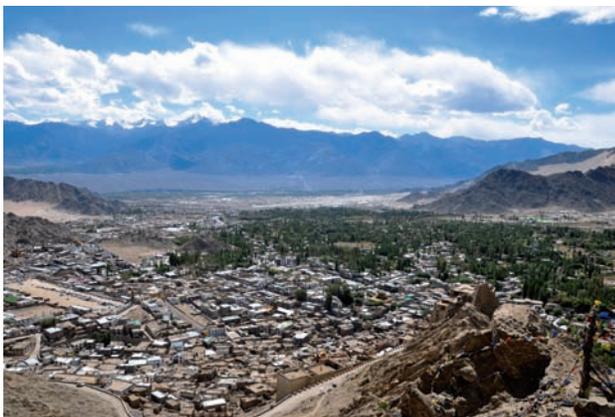
PHOTO: YARKUND MISSION

The adaptive reuse model is commonly seen in the historic cities of Europe and is considered an effective urban regeneration strategy

organisation called Tibetan Heritage Fund (THF), which carried out conservation of some houses under the Leh Old Town Initiative (LOTI). One of the prominent examples is Lala's Cafe that is run in a restored house and serves local delicacies. Another example is the restoration of Munshi House by Ladakh Arts and Media Organisation (LAMO) into a gallery and interpretation centre.

However, these projects remained prototypical and the conservation initiatives did not spread to the rest of the old town. With further increase in tourism after 2010, extreme transformations were witnessed. Many old mud houses were demolished to construct guest houses and hotels using modern materials and amenities. They are typically three- to four-storeyed high and look alien to the urbanscape of the old town.

Until the year 2010, THF listed around 200 buildings in the old town that illustrate mud architecture. Out of those only 25% of the buildings were in a habitable state while around 50% were in various stages of decay. Given the situation, in 2008 the World Monument Fund (WMF) declared Old Town Leh among the 100 most endangered sites. The loss of mud buildings in the old town is a permanent loss of Ladakhi architectural and urban heritage. It is also counterproductive to tourism as the old town in itself has the potential to act as the main tourism resource.

While it is clear that Old Town Leh is an important and irreplaceable urban heritage asset, it can also be seen from the discussion so far that piecemeal projects of restorative conservation are not adequate for the regeneration of the entire old town, which will require formulation of a comprehensive plan. While funding for the infrastructure upgradation like street paving, water supply and sanitation is usually available through various national and local sources, there are very limited funding provisions for the houses because they are privately owned.

One of the urban regeneration models commonly used in such a situation is Adaptive Reuse, which goes beyond the idea of restoration and works on the principles of circular economy and urban recycling. Since these houses are abandoned, they have lost their relevance as residential property resulting in their demolition and construction of new buildings that generate income. In adaptive reuse, the same houses can be repurposed by restoring their architectural characteristics, upgrading them with modern amenities and even expanding the space using compatible architecture. While the new function introduced to these houses generates revenue to compensate for the restoration costs, it also facilitates the regular maintenance unlike vanity restoration projects. Successful similar examples of adaptive reuse of mud towns are Diriyah, Al Majmaah in Saudi Arabia and Bastakia in Dubai. In India, Fort Kochi and Fontainhas in Panjim are

Top Left: **Decayed and abandoned buildings in Old Town Leh**
Top Right: **Lala s Cafe. An example of community-led reuse of a mud house in Old Town Leh**
Bottom Left: **Munshi House after Adaptive Reuse by LAMO**
Bottom Right: **Restoration of Sofi House by THF under architect Andre Alexander**

OLD TOWN LEH

0 10 20 50 M

- Landmarks
- Mud Buildings
- Mud Buildings in dilapidated state
- Buildings reconstructed using modern materials
- Chorten

Leh Palace

Namgyal Stupa

Gompa Soma

Lompo House

Masjid

Munshi House

Red Chamba

Lakruk House

Gateway Chorten

Jama Masjid

Lala's Cafe

Leh Bazar

Leh Jakhang

Leh Bazar

Gateway

MAP: ADAPTED FROM GOOGLE SATELLITE IMAGE AUTHOR 2021

Top: **Map of Old Town Leh**
Middle: **Diriyah mud town regeneration plan**
Bottom: **Al Majmaah town in Saudi Arabia restored and adaptively reused as a tourist site**

examples of settlement-level adaptive reuse.

For the entire scale of Old Town Leh, a comprehensive plan will need to be prepared starting with inventorying the abandoned houses, which will have to be earmarked for new functions based on their locations and spatial layouts. The essence of adaptive reuse at settlement scale lies in providing wide-ranging functions like cafes, restaurants, guesthouses, hotels, galleries, souvenir shops, emporiums, craft workshops, museums etc. This variation in the function breaks the monotony in the tourist experience and results in inter-related economic activities complementing one another.

The adaptive reuse model is commonly seen in the historic cities of Europe and is considered an effective urban regeneration strategy. In India, urban regeneration is in its infancy and adaptive reuse is carried out as solitary projects. However, Old Town Leh being the last example of a Tibetan town, after Lhasa has been heavily redeveloped, needs to be salvaged immediately and regenerated by employing the adaptive reuse model. In the case of Leh, adaptive reuse is the only model that holds the potential of dovetailing the regeneration of the old town with tourism and economic development. ●

Adapting Historic Structures to Current Needs

Jean-Paul Corten, Mendel Robbers and **Punto Wijayanto** describe
the creation of M-Bloc

One of the most thrilling places to visit in Indonesia today is Jakarta's M-Bloc. Here, a young generation meets, not only to enjoy leisure time, but to create a new culture and work for social renewal. Where did these dynamics suddenly come from, and where are they headed? These were the central questions addressed during the Workshop 'Reuse, Redevelop and Design' jointly held in February 2020 by Jakarta's Trisakti University and Tarumanagara University, the Cultural Heritage Agency of the Netherlands and the Dutch based developer Schipper Bosch. The workshop was part of a larger cooperation programme, aiming for knowledge exchange in heritage management. The challenges of adapting historic structures to current needs is, after all, not restricted by country borders, but is a global topic. For that reason, both countries joined forces to find common solutions. Another article in this issue further elaborates on this cooperation programme.

Past developments

When on August 11, 1955 Mrs. Rachmi Hatta, wife of Indonesia's vice-president, conducted the opening ceremony of the Pertjetakan Printworks, the young nation found itself at the forefront of modernity. The new plant was the largest and most up-to-date printworks in the world. Finally, Indonesia had the facility to print its currency on its own soil. The Printworks was located at the very heart of Kebayoran Baru, the latest extension of Jakarta, planned and designed according to current trends.

The modern plant consisted of two parallel assembly halls of some 100 metres each, preceded by a rectangular, two-storey office building with an overhanging roof, in the typical Indonesian Art-Deco style. The design of the representative structures was by the Dutch-based architectural firm Fermont-Cuypers, which had been one of the leading architects in the country during colonial times. Other assembly halls and storage facilities would gradually fill the remaining compound in the coming decades as the company expanded. The entire compound was enclosed on all four sides, to form a safety zone, with dwellings for employees and staff. The two gatehouses flanking the entrance gate at jl. (jalan, or street) Sunan

The workshop was part of a larger cooperation programme, aiming for knowledge exchange in heritage management

PHOTO: COLLECTION JOH. ENSCHEDE, OBTAINED THROUGH O. NORBRUIS

The Pertjekan Printworks shortly after construction, around 1955

Left: **Development Plan for Kebayoran Baru as designed under the leadership of ir. Soesilo in 1948**
Right: **Current façade of Peruri s headquarters**

Kalijaga as well as the two-storey dwellings on jl. Trunoyo, were designed by the same architectural office. The remaining dwellings, all constructed in the so-called Yankee-style, were designed by Indonesian architect Moetalib Danoeningrat.

The design and construction of the buildings was strongly influenced by the former coloniser and the public limited company was run by the Dutch-based Joh. Enschede. This firm had already printed the currency used in the Dutch-Indies before independence and was well acquainted with the local situation. Therefore, it was logical to give them the assignment. However, this highlighted the ambiguous position of the self-conscious independent nation, aiming at modernity but depending on its former coloniser for the same.

This uncertainty was solved in 1958 when the Printworks were nationalised and became a state-owned enterprise. In 1971 the Printworks merged with the coin minting company to become the Percetakan Uang Republik Indonesia (PERURI), producing banknotes, coins and security papers. In 2005, production was relocated to Karawang, leaving only the administrative functions in the huge compound in Jakarta. Thus, large parts of the complex became redundant along with most of its staff dwellings. The once industrious heart of Kebayoran Baru now has to redefine its position, offering great opportunities to accommodate the current needs of a developing society.

The development of Kebayoran Baru was rooted in a colonial past. First plans for the extension of the fast-developing metropole date back to 1937. Execution of the plans started

under Dutch rule, but only took off after transfer of sovereignty in 1949. The new country's Ministry of Public Works took responsibility for conducting the strictly centralised works, under the leadership of ir. Soesilo, who had been involved in the planning since the 1940s. The design of the new extension was largely based on Dutch ideals of the garden city, following the example of Menteng. Large boulevards of green formed the backbone of the multifunctional city quarter, which would house both higher and lower income groups. At the same time, it had to accommodate work facilities, commercial functions and public services. This self-sufficiency of the new city quarter aimed at bringing relief to the overwhelmingly growing traffic in the capital city. The spacious plans offered opportunities for future adaptation, development or growth.

Soon after completion, adaptation became paramount. Jakarta's population grew much faster than anticipated and Kebaroyan Baru was soon encircled by new city quarters. The once peripheral city quarter became the central hotspot of an ever-expanding metropole. Due to this newly acquired position, and its well-designed connection to the rest of the city, development pressure quickly increased. To bring relief to the pressing development needs, the former central planning principles of Soesilo were abandoned in the 1980s and public land was transferred to private developers. Many shopping malls and luxury apartment blocks came up, obstructing balanced development and flagging urban quality. On a planning level, the main challenge for the new development of the Peruri

The challenges of adapting historic structures to current needs is not restricted by country borders

Top: **Main entrance of the current M-Bloc**
Bottom Left: **The Peruri 88 proposal by MVRDV and Wijiya Karya**
Bottom Right: **Former staff dwellings have been turned into retail stores**

site was to restore balanced growth and the urban qualities of the modernist plan.

Current situation

In 2012, a first proposal for redevelopment of the Peruri site was drafted, named 'Peruri 88'. The proposal, prepared with support from the reputable Dutch architectural firm MVRDV, presented a vertical city of 88 floors and 360,000 m² consisting of mixed-use development including luxury housing, offices and commercial space as well as internal and external public spaces. The plan is in line with the privatisation which started in the 1980s and it takes full advantage of the strategic location. Already in Soesilo's masterplan, Blok M, the central part of Kebayoran Baru where the Peruri site is located, was envisioned as the transportation and transfer hub. Today, with the first phase of the Mass Transit Rapid (MTR) Jakarta inaugurated in 2019, Blok M

may be the most accessible location in the entire country. The Peruri site has two metro stations located within six-minutes walking distance.

Awaiting further debate and final decision on its future development, in 2019 Peruri offered an opportunity to a group of creative people to use their properties for cultural activities, as a means of placemaking. This creative community of artists, architects, branding consultants, etc. has taken on the ambitious task of supporting local products and local communities. They try to achieve this goal by re-programming the existing structures for cultural gatherings, social meetings and the purchase of local products. The new name for the place is 'M-Bloc', referring to Blok M in Soesilo's Master Plan for Kebayoran Baru. In the 1980s, Blok M attracted youngsters; M-Bloc consequently targets millennials.

Peruri allowed the use of 6,500 m² of land, which consists of 16 units of two-storey ex-

The fundamental question was: How to deal with divisive social segregation and developments that are increasingly vulnerable to gentrification?

Professionals have an understandable urge to exclude as many restrictive conditions and complexities from their projects as possible

residential dwellings along jl. Panglima Polim and a former printing warehouse. The front row of buildings is for food and beverage shops and for creative stores. The former printing warehouse is now used for music concerts and restaurants. People visiting M-Bloc can also enjoy outdoor activities in the so called 'brandgang area', the open space connecting the two parts. This popular place is always crowded, especially when a concert is on.

M-Bloc is an outstanding example of giving temporary use to old structures as a means of placemaking, which is currently a topical strategy in urban development. This is never a lasting solution, but it offers opportunities to debate a sustainable future. The four partners instrumental in establishing M-bloc jointly organised a workshop to analyse the future potential of the existing structures of the Peruri complex.

Future perspectives
The workshop 'Reuse, Redevelop and Design',

held from February 3-7, 2020, aimed at defining alternatives for the Peruri 88 concept, building upon the historic features of the site and the city quarter, while maintaining its current use. Most of the 16 participants of the workshop were master students and some were young professionals. During the workshop, input was provided by experts like Jacob Gatot Surarjo, architect and co-founder of M Bloc Space, representative of the Ministry of Education and Culture, the Pusat Dokumentasi Arsitektur, PT MRT and also representative of Jakarta's Human Settlement, Spatial Planning and Land Issue Agency. The results of the workshop were presented at the Erasmus Huis, the cultural centre of the Netherlands in Jakarta.

The first observation made at the workshop was the planning paradox in the recent history of the Peruri site. The planning of the eye-catching Peruri 88 in 2012 attracted the attention of the international architectural press. Following this planning brainstorming, M-Bloc was constructed

PHOTO: AUTHOR

PHOTO: MR. JACOB GATOT SURA

PHOTO: AUTHOR

Top: **Refurbished Brandgang area is now a cultural hub**
Bottom Left: **Participants of the workshop Reuse, Redevelop and Design in front of the current Peruri headquarters**
Bottom Right: **Participants of the workshop doing fieldwork at the Peruri site**

Left: **Analyses of the site by the workshop participants**
Right: **One of the four student proposals for the redevelopment of the Peruri site**

on the site. The contrast could not have been more glaring. Peruri 88 had ignored the existing, while M-Bloc embraced what was already there. This is illustrative for the spatial planning discipline that currently stands at a crossroads: Tabula Rasa (starting afresh) versus Tabula Scripta (building upon the existing).

Professionals have an understandable urge to exclude as many restrictive conditions and complexities as possible from their projects. The goal of the workshop was to build upon the existing and work with it's complexity. The workshop stimulated the participants to be part of an interplay of a wildfire of forces that can only be controlled to a very limited extent. The participants were urged to better observe and better reflect, in order to tap into a different and more relevant form of creativity. One that goes beyond spatial, aesthetic solutions. The stratification-strategy included historic, spatial, programmatic and social dimensions, as well as understanding that the ultimate form of doing the right thing first and foremost lies in observation and reflection. The 16 participants of different professional backgrounds were divided into four groups to ensure the complexity of collaboration. Undoubtedly, the ability to join forces in many different settings defines the success of working with such a strategy as a professional.

Within a week, each group had to come up with a proposal that contained both thorough analysis of the site and a set of possible interventions in software and hardware. The participants of the workshop carefully worked around M-Bloc and spent much time working with the available information on the boundaries, the interfaces between them and how and where

people fit in. New insights were incorporated into the programme and novel spatial solutions were introduced, carefully situated next to, in or on top of existing buildings. It is notable that none of the groups opposed the value of the existing buildings nor the position of M-Bloc, and perceived it as a permanent asset for the area. All efforts were made to turn the area into an even more successful hub of new businesses and public-used spaces with a vital, entrepreneurial and cultural character.

Towards a stratification strategy

The workshop proved that the efforts of M-Bloc to attract people back into the existing buildings on the site were appreciated and was seen as a motivating power for future plans. All groups agreed that the site should attract a more diverse group of people and posed the fundamental question: How to deal with divisive social segregation and developments that are increasingly vulnerable to gentrification? This proved that taking the broader view enriches the professionals and takes them beyond their spatial design expertise. It also proves that working with the existing doesn't mean that it can't be debated or adjusted.

During the final presentation at the Erasmus Huis, it was concluded that although the workshop did not come up with the ultimate re-development plan for the Peruri site, it does show a way forward in finding a sustainable future for the site. A stratification strategy, including a holistic analysis of interests and needs will tap into the potentials and qualities that already exist. Thus the site is no longer perceived as an empty sheet but as a written page, offering social and economic relevance and options for creativity. ●

Upcycling Waste to Art

Noted Goan artist-activist-urbanist **Subodh Kerkar** converses with **Vinayak Bharne** about his art projects that help clean the city and recycle litter

VB: What s most inspiring about your efforts is the blurring of the boundaries between art, urbanism and activism. How did you come to this notion of using art as a socio-political catalyst?

SK: Art has the power to communicate important socio-cultural ideas. I consider myself a politically and environmentally conscious artist and activist. The land I come from, Goa, is a beautiful part of India with a high literacy rate. But despite this there is litter everywhere. People throw plastic bottles and other plastic waste, one of the issues closest to my heart. So, I decided to work with plastic waste, to draw attention to the litter lying around.

I am a student of Mahatma Gandhi. He was very innovative when he launched his satyagrahas (non-violent agitations) – the Salt satyagraha for example. So, when I started thinking, what satyagraha would Gandhi launch today, I realised that he would launch an 'anti-litter' satyagraha, because this country is full of litter. The litter we see in our environment is a reflection of the litter inside the mind. The environment can be clean only when the mind is clean and healthy. Anti-litter is one of my major art projects.

Your anti-litter projects do not just result in works of art, they also educate people about environmental degradation and engage in communal processes that clean the city. Can you elaborate on the projects that are innovative tactics towards urban renewal?

I collected about 1,50,000 plastic bottles from the roadside with the help of my friends, volunteers and school students and created this huge artwork, called 'Carpet of Joy'. The project attracted attention. Lots of school children came to see it and I requested the teachers to make the students take a pledge: 'We shall not litter'. I have created such artworks in other parts of the country too, including Mussoorie, a hill station in the Himalayas. Using 1,50,000 plastic bottles is not really going to rid the country of litter. But the message has been spread.

For the last two years, I have created many drawings on materials I found on the seashore.

I used to go for walks on the beach with my father every day from the age of six to sixteen, and that habit has continued. When I go for a walk early in the morning, especially during the monsoons, I find a lot of materials, pieces of wood, pieces of old boats and many other things, which are washed ashore by the ocean. I put them in the backpack I carry and bring them to my studio. I clean and dry them, treat them with anti-termite solution. Sometimes they also need a little bit of repairing and cutting. And then I draw on them. I have done hundreds of these drawings and will continue doing them since I enjoy creating on my random finds. The

Subodh Kerkar

Carpet of Joy

Top Left: **Fruit of the Ocean**
Top Right: **Fishing Disc**
Bottom: **The Flying Carpet**

textures that the ocean has created on these pieces of wood are divine and difficult to replicate. I think these works of mine are collaborative works with the ocean. The ocean is my partner in art making.

I have also created artworks using truck tyres. I found this material in Jaipur. There was a shop next to Hawa Mahal, which was selling recycled truck tyres, strips, sheets that were used for making slippers for poor people, baskets for the construction industry. I found the stuff interesting and have used it to create various works, 'Flying Carpet' is one. I have even used this material to create walls in my

museum. One of the art pieces is created with thorns of triphala trees. I created lungs with a lock and covered the lungs with big thorns of the triphala tree, suggesting pathological lungs. This is representative of the Covid times, since death during Covid has been basically due to damage to the lungs. So, this work is in response to Covid.

I have done many other works too in response to Covid, like suspending one of the branches of the triphala tree upside down and calling it 'Bronchial Horrors'.

What made you start Museum of Goa?

I started Museum of Goa in 2015. I realised that

Art is not just decorating walls and halls. It is about decorating the soul and enriching your life

One of the most important functions of art is to transform societies to make people see and think plural

in a country like India, with a population of 1.3 billion, not more than one lakh people connect with contemporary art. The idea that my work would be seen by a very small percentage of Indians, started bothering me. I understand there is a huge cultural divide in our country. Most people – and I am not talking about farmers and labourers but about educated people – have never had an opportunity to connect with contemporary art. I find this pathetic and believe that everyone has the right to enjoy creative work. Art is not just decorating walls and halls. It is about decorating the soul and enriching your life.

I decided that I must democratise art. When I decided to start Museum of Goa (MOG) with my own resources, most of my friends laughed at me. They said 'you are going to go bankrupt soon'.

I had some money; I was 55 years old and I had a plot of land. People asked me to put the money in the bank and retire happily. But I decided to use all the money to create the museum and it has proved to be extremely successful. Before Covid, we had 300 people visiting the museum every day and 90% of the people who visited MOG had never been to any contemporary art space in their life. Their sense of wonderment and joy was palpable. And social media has further expanded my constituency of art appreciators. My decision to create the museum, democratise art and break the cultural barriers was the right decision.

How do you see the deeper potential of art as a transformative agency in social, political and cultural renewal?
Art has many functions. One of its most

Top: **Lockdown of the lungs**
Bottom Left & Right: **Paintings of Goan fisherfolk on wood washed ashore by the ocean**

Left: **Chillies**
Right: **Oyster Anchor**

important functions is to establish a kind of symbiosis between yourself and your environment. Art makes you at peace with yourself and the world. Art makes you empathise. In India particularly, we are going through this crisis of polarisation of communities. Today there is a lot of hatred. One of the most important functions of art is to transform societies to make people see and think plural. Because art tells you that there is not only one point of view, but there can be many points of view, there can be many interpretations. This reminds me of a beautiful poem by Rumi, who says that beyond the field of right and the field of wrong, there is another field, let us meet there. I think art also helps guide you to that field. This is one of the most important functions of art. Art is also the universal language of mankind. Art does not belong to one particular country, race, religion or sect. Art belongs to everybody. It makes people believe they are citizens of the world.

How do you see the relationship of art and the city?

I think the richness of a city should be calculated not just by the number of buildings it has, but what art the city has, what is the quality of that art. And in that sense, I would say that India has been a little bit unfortunate in terms of public art for the last almost 200 years. This does not mean that we do not have artists, we have a lot of good artists in this country. But somehow the

political will to create public art is lacking. This is because most politicians do not understand art. They are not trained in art. They actually belong to that group who have no connection with contemporary art. So, it is very important to take public art seriously because it definitely enriches a city. Art is the sign of how civilised a city is. Art is the thermometre of civilisation.

What projects are you currently working on?

I am working on the 'Indian Ocean' project, where I will visit about 25 ports along the Indian Ocean. I will work with old pieces of boats and other artefacts connected with navigational history, because the Indian Ocean has a rich navigational history. Much before the new world was discovered, the Indian Ocean was buzzing with trade and even during the Harrapan Civilisation (2,500 BC), we had Arab ships coming to the Indian Coast. I want to relive this history using art.

One of my plans is to create an object using old ship material (wooden pieces), and then throw it in the ocean so that these sculptures will eventually find themselves on new shores. I will use a GPS system for monitoring their movement in the ocean. I also have an idea of creating an island, as a work of art, where soils from all countries of the world will be deposited. We could have a sculpture area and a community hall where young people could come and think of universalism and one peaceful world. •

Art is the sign of how civilised a city is. Art is the thermometer of civilisation

GLOBAL AWARDS

The annual DAIDA foundation Global Urban Thesis Award
aims to acknowledge and support master graduates who, through their work, help
improve the urban infrastructure and living conditions for vulnerable groups in the
rapidly growing cities of developing economies.
Eligible participants are master programme students with either a research or design
component in subjects related to cities and/or urban environmental landscape.

The theme for the year 2021 of the DAIDA Global Awards is THE INCLUSIVE CITY.
For more information visit: www.myliveablecity.com

The theme for the DAIDA Global Awards 2020 was WATER & URBAN DEVELOPMENT.
Extracts from the prize winners theses are showcased on the following pages.

Urban Waterscapes and Water Service Provision in Informal Settlements

Maria Carmela Valverde Gonzales shares some insights on water and development to present lessons on how to move towards sustainable water access in urban slums

Maria Carmela Valverde Gonzales

1st PRIZE

Ain Shams University, Egypt

During a pandemic, with climatic variability and uncertain future water availability, finding safe water is crucial to protect the health of families around the world and to secure the development of any human settlement. According to the World Health Organisation, globally there are 785 million people without access to basic drinking water services and by 2025, half of the population will live in water-stress areas. The Lima Metropolitan Area (LMA), the second biggest city built in a desert after Cairo, is already under water stress with only 125 m3/hab./year of water available and over 1.5 million people without access to safe water.

The problem

Rapid expansion and unreliable state services have increased the difficulties to sustain water security in urban and peri-urban areas of Lima, Peru. Moreover, water is inefficiently allocated, regressively priced and of limited access in the periphery, due to the lack of official infrastructure networks of the water utility Sedapal. These multiple layers of scarcity have increasingly affected the vulnerability of urban slums.

The research aims to highlight the diverse water delivery configurations of informal settlements from the peri-urban hillsides and their everyday practices when dealing with the absence of direct tap water networks. The study was conducted in three neighbourhoods from the Jose Carlos Mariategui (JCM) settlement in Lima East, which is a representative sample due to socio-spatial, ecological and technological factors.

The water supply profile in Lima's peri-urban slums

Multiple water delivery configurations
The understanding of the water supply practices in disconnected areas reflects on a framework of analysis that discusses spatial, managerial and techno-environmental dimensions. From this perspective, there are four main types of water supply co-existing in JCM: (1) The provision of 'formal' water infrastructure networks through State programmes, (2) Self-provision through water trucks, (3) Selling of water by neighbours with water and sewerage connections. (4) Public metered water standpipes from Sedapal. The latter composes the primary source of a community-led system, an example of a socio-technical arrangement, self-built and managed collectively. It aims to draw water progressively to households uphill and to reduce individual struggles of costs and time spent on the downhill collection.

Everyday practices for water access
These describe the adaptation strategies at the household and community level to secure daily needs. The most representative findings highlight the mechanisms of chasing alternative taps to cope with the irregular supply, solidarity behaviours between households or in-between communities, water-reusing practices, and contingency responses against water theft. At the community level, the transactions between seller and buyer reveal the managerial practices between the community leaders and Sedapal to negotiate for regular water standpipe supply.

Water trucks provision
Water through various methods
Erratic supply to drinking water networks
Permanent water supply

Source: Metzger & et.al. 2015

0   5km
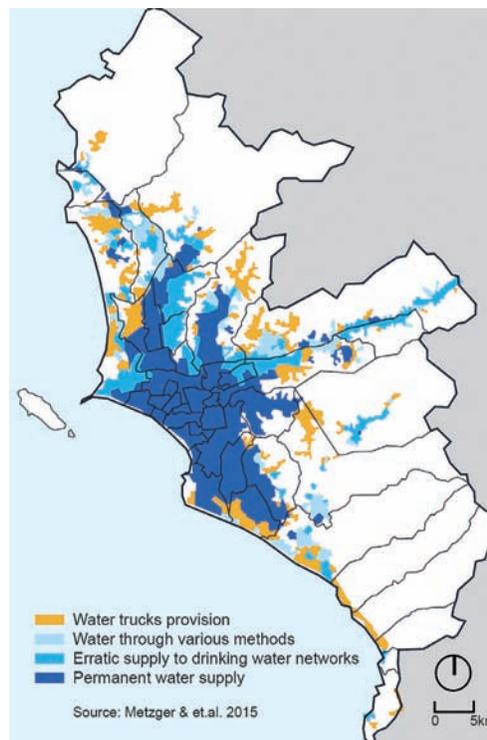
Inequality of water service provision in Lima, Peru

Left: **The site context of Jose Carlos Mariategui settlement**
Right: **Everyday practices for chasing alternative taps**

Beyond formal-informal water service provision

It is argued that existing water supply systems in informal hillside areas draw from the interlinkages between formal-informal provisions. The 'formal' supply is the extension of public standpipes, regulated and operated by Sedapal, combined with 'unofficial' arrangements of community poly tanks and hoses adapted to the topography. Formal rules of water utility coexist with informal norms, structures and patterns of behaviour. It demonstrates that this hybrid system displays organisation in progressive water access with valued attributes of formality. These findings correlate with academic studies on fluid formal-informal waterscapes and water governance capacities of the water-poor in cities of the Global South.

Water access sustainability

The research sheds light on the existent hybrid provision and analyses the access sustainability of the community-led scheme through their socio-technical, organisational, economic, socio-cultural and environmental aspects.

Overall, the scheme builds upon organisational-institutional arrangements for distribution, regulation and maintenance. It is positioned as a low-cost unofficial technology against water insecurity. The logic for collective gain is limited to the financial independence of the community, lack of alternative water sources and erratic water standpipe supply. The underlying effects on the occupied 'Lomas' ecosystem and human health are also evident if urban expansion and inefficient water disposal continue.

Proposed short-term measures capitalise on the strength and limitations of community-based organisations (CBO) to trigger a direct impact on their livelihoods. For instance, enhancing the community capabilities, promoting a coordinated vision for structural urban change and developing alternative water sources that encourage productive waterscapes as a source of income for residents. Moreover, recommendations at a medium scale pay special attention to the awareness of untreated wastewater and water-sensitive prototypes that encourage the recycling discipline into safe reusing methods.

Policy implications

It seems necessary to bridge the gap between the State and the CBO for planning comprehensible water and sanitation services of disconnected neighbourhoods. The State programmes for the extension of water networks have encouraged further expansion of informal areas while promoting a political clientelism approach. The acknowledgment of heterogeneous systems within water policies requires strengthening the capacity of private, public and community actors to improve stewardship and help to delineate sustained interventions that go beyond supply augmentation. Policies must call for broader discussions in the crosscutting links of safe land tenure that echo in the manifestation of inequalities such as affordability and irregularity issues.

Conclusions

The research seeks to contribute to the academic debates on water delivery configurations in the global south. It outlines opportunities for planners and policymakers of a long-term sustainable solution to invisibilised urban water delivery configurations, overshadowed everyday doings for access to water in informal areas and urban waterscapes that shape and are being shaped by the socio-spatial organisation of the settlement. The heterogeneity of service provision in informal settlements in hillsides exposes a hybrid provision that exceeds statutory-conventional piped water systems. Thus, further study of sustainable pro-poor alternatives that encompass the formal-informal interlinkages and water governance capacities is required. ●

Formal rules of water utility coexist with informal norms, structures and patterns of behaviour

Women, Water and Vulnerability

Ishita Vedamuthu shows us the reality of an urban resettlement site in Chennai, India

Ishita Vedamuthu

2nd PRIZE

IHS, Erasmus University Netherlands

The shocks of climatic disasters in an age of unprecedented rapid urbanisation and development are not spread uniformly, but are disproportionate, making some sections of the population more vulnerable than others. Narrowing down the elusive concept of vulnerability calls for answering the questions: "Who is vulnerable? What are they vulnerable to?", and invariably leads to the big question, "Why are they vulnerable?".

A marginalised section of women in Chennai, India, who were once inhabitants of the voids of the city, were pushed to the periphery by river restoration and development projects, as well as resettlement drives that shadowed the Indian Ocean Tsunami (2004) and the unprecedented flood in Chennai (December, 2015). These women now reside in Kannagi Nagar, a settlement of more than 15,000 dwellings, situated on a low-lying marshland deemed unfit for inhabitation and construction, which has now become the case and basis for a Gynocentric Social Vulnerability Framework for Urban Displaced populations and Resettlement sites. By bridging gaps in climate change and Development-induced Displacement and Resettlement (DIDR) literature, the objective of this thesis was to explore which factors explain the varying levels of vulnerability of women who have been resettled or are currently residing in a resettlement colony due to extreme climatic events.

Literature has shown that a city's robustness is affected by discriminatory social customs that weaken marginalised groups, especially women. Rapid development coupled with the effects of climate change has made the discourse on urban vulnerability and displacement a matter of contention. Urban displacement poses a significant threat to the urban poor in the face of climate change. Besides unsettling livelihoods and the social fabric of communities, the displaced are forced to cope with the inequalities and inadequacies of peri-urban areas, in the milieu of the impending perils of the climate crisis.

The case of Kannagi Nagar is neither a culmination of unique circumstances nor is it a new phenomenon. Displacement or dislocation is an effect that has repeatedly occurred over centuries, caused by war, disasters and large-scale infrastructure projects. Displacement caused

by planned development is usually deliberate, premeditated and, more often than not, results in the population being more vulnerable and impoverished. Followed by a thorough review of literature, the theoretical framework thus developed is a generalisable framework, applicable across similar resettlement sites and adaptable to any climatic event and is called: A Gynocentric Social Vulnerability Framework for Urban Displaced Populations and Resettlement sites.

Social vulnerability and its operationalisation in the framework, adopts the view that the Sustainable Livelihoods Approach takes to vulnerability: a function of the Exposure and the Sensitivity of the women, their homes and livelihoods to climatic disasters, i.e., the potential impact of flooding and drought, in combination with their Adaptive Capacity (as recommended

> A city s robustness is affected by discriminatory social customs that weaken marginalised groups, especially women
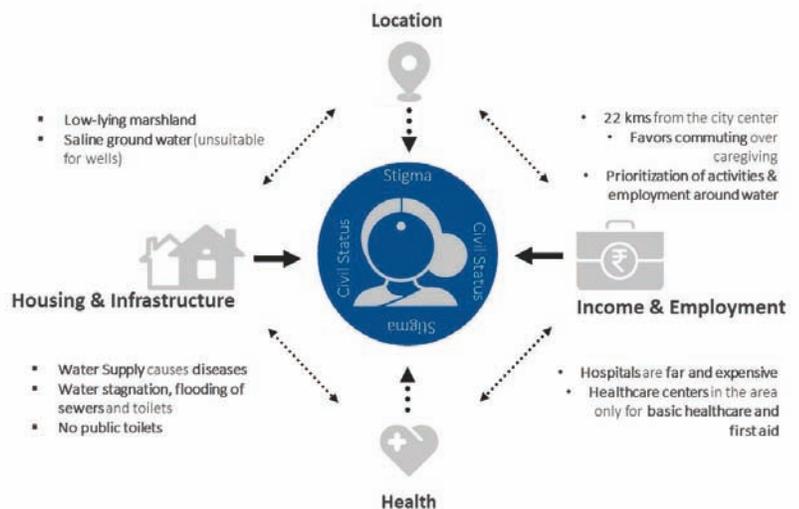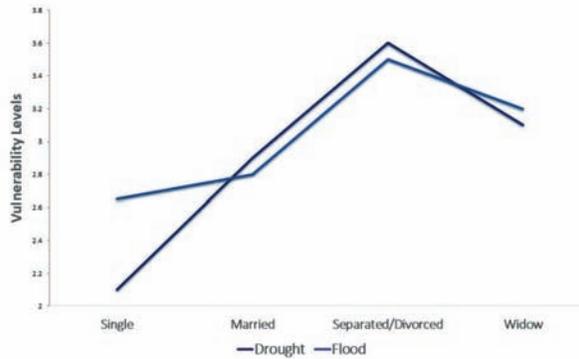
Unsustainable Water Supply in Kannagi Nagar

Chennai Metro Water Supply and Sewerage Board (CMWSSB)

Tamil Nadu Slum Clearance Board (TNSCB)

Women

Approx. 30 kms

Nemmeli Desalination Plant

Centrally located Tanks in Kannagi Nagar

Underground sumps connected to **Handpumps and collected at street-level** (Currently putting women at risk of Covid-19)
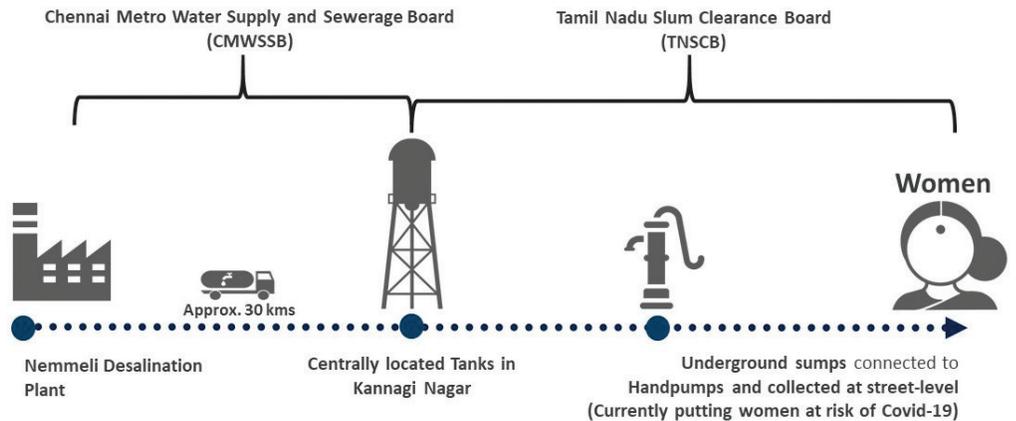
by McCarthy et. al, (2001) and acknowledged by the UN's Intergovernmental Panel on Climate Change (IPCC). The model takes into account the mediating variable 'inherent characteristics' that make women inherently vulnerable to all disasters. These inherent characteristics in combination with their social vulnerability to flooding and drought make for the various levels of social vulnerability displayed by the women. The framework extends Cernea's Risks and Reconstruction framework and is adapted to suit the age of the site and the gendered urban context under the variable 'Outcomes of Resettlement'. This variable includes the income and employment outcomes, health outcomes, as well as the location outcomes (access to community assets and services) of urban resettlement sites and takes into account the quality of the built environment.

The significance of 'the context' is a recurrent feature in the scientific literature of today, as well as in this study. Chennai's propensity to extreme water events is evident in the repeated depressions and cyclonic storms, resulting in flooding. On the other hand, it has had its fair share of dry spells, with the city facing extreme water scarcity during the summer months. June 19, 2019 was declared as Day-Zero by city officials in Chennai: all major reservoirs had run dry. The following month, a total of 150 women were surveyed leading to a snowball of purposeful samples of semi-structured interviews and focus-group discussions with the women residents. Applying this framework to the case of Kannagi Nagar revealed what makes these settlements and their populations vulnerable to extreme water events. The unavailability of employment and services, compounded by the lack of foresight and planning in the construction of the housing colony exacerbated their vulnerability to water scarcity.

The site of Kannagi Nagar lacked the convenience and security of employment nearby, something the slums in the city had given them. The site's propensity to flooding and water stagnation, the quality and quantity of water provided to the settlement and the absence of economical, specialised healthcare led to the deterioration and neglect of the community's health. However, Kannagi Nagar is a 20-year-old resettlement site that has now been absorbed into city limits. While the inadequacies of housing and infrastructure and the struggles of the women and their families persist, the colony has come a long way. The relatively newer sites of Perumbakkam and Semmenchery in Chennai face worse predicaments. While the study did not cover younger sites, recommendations have been made to accommodate the age of resettlement sites.

The women of Kannagi Nagar, specifically, are caught in a feedback loop of the negative outcomes of resettlement exacerbating their socio-economic vulnerabilities. The woman's position and role in society, as well as in her household, made a significant difference to their vulnerability. "For me it has been very difficult. I work in two houses in Thiruvanmayur (8.3 kms away). I could be spending the time I take to travel, with my kids or doing housework. Also, I am almost always at work when they supply water at the pumps and even if I leave early from there... by the time I am home the taps have run dry," says Sita, 37, mother of two who lives with her husband's parents. Her story is an example of how women are affected when the planning of a settlement favours commuting over childcare and disregards the woman's point of view. This study is an attempt at including the untold female perspective. Since the pandemic, the residents of colonies like Kannagi Nagar are now regarded 'essential workers', and it's high time cities let them know how essential they are. ●

Refabricating Taichung s Productive Landscape

Jui-Yi Hung conducts a design investigation into the coastal region of Taichung City, Taiwan

Jui-Yi Hung

JOINT 3rd PRIZE

KU Leuven, Belgium

Taiwan's contemporary productive landscape is undergoing rapid urbanisation, leading to a decline in agricultural land and unemployment in farming. Taichung City, like most of the country's metropolitan regions, is witness to massive urban development and various government proposals that reconfigure farmlands into programmes that yield higher economic profits.

This design research thesis focuses on the coastal region of Taichung City, located in the western part of the Dadu Plateau that divides Taichung into mountainous and coastal regions. Historically, international trade brought prosperity to the region, particularly during Japanese colonialism when industrialisation was introduced for agricultural production (primarily rice and sugar). Fertile alluvial soil and a systematic irrigation framework resulted in a great degree of efficiency. At the same time, diverse commercial activities were naturally attracted to the coast and prospered in the vicinity of a natural harbour. However, over time, various development and infrastructure projects were launched to achieve ever-higher profits. The landscape was brutally exploited and massive land reclamation changed natural ecologies: water and flora/fauna ecologies were fundamentally sacrificed.

Robust industrial areas arose near the coast and small factories began to occupy cultivated plots, filling fields with concrete. Ultimately, a fragmented land occupation is evident in the region's rigid grid system. The dispersed patterns reveal a mix of urban activities, resource extraction and agriculture (Fig 1). The systematic irrigation structure between the coast and the plateau began to lose its primary purpose under such invasions. The increase in rainfall, as a consequence of climate change, further increased the flood vulnerability of the region. Chaotic circumstances from climate, pollution, fragmentation, urbanisation, etc. pose threats to the liveability of the inhabitants as well as the environment. At the same time, the territory continues to suffer from massive deforestation due to real estate development

on the plateau and the expansion of industrial zones near the coastline. The little farmland that remains is often abandoned, since the younger segment of the population is increasingly interested in non-farm work, while the ageing population cannot cope with the required physical work. Water and air pollution from

Top: **Fig 1: Existing fragmentation of landscape, Taichung**
Bottom: **Fig 2: Vision of territorial structure in 2100**

Top: **Fig 3: Transitions and adaptations (2050, 2080, 2100)**
Bottom: **Fig 4: Taichung s proposed new green and blue infrastructure to guide innovative development**

The thesis develops a vision that accentuates the ecology of the region, which is being rapidly transformed

continual environmental disruptions pose threats to food and water security as well as the overall health of inhabitants. Finally, the growing severity of climate change intensifies flooding in the coastal plain.

The thesis develops a vision that accentuates the ecology of the region, which is being rapidly transformed. The design works across a number of scales, from territorial to urban design, seeking opportunities for the re-establishment of natural ecologies in the coastal region. Strategies were developed to mitigate industrial pollution and adapt to predict consequences of the climate crisis. At the scale of the territory, forest figures are strengthened as are coastal wetlands. Abandoned open spaces were recognised as strategic opportunities for new rural-urban relationships and to create a flexible mosaic system in the agriculture fields. Robust forest and wetland systems were proposed and new typologies were developed to respond to new ecologies (Fig. 2).

The project sought to weave ecology into the rigid, grid geometry of the irrigation system through a process of landscape transformation and with new interplays between nature and socio-economic activities. Through the reconfiguration of the existing geometry, ecology could be accentuated to work simultaneously with urban demands and the climate crisis. The approach is one of initiating natural processes and succession thus gradually reconquering the landscape to form a flexible mosaic that is attuned to a future that necessitates more space for water. Flooding thus became an evident generator of new spatial relationships and ecological qualities rather than a threat. It was developed over time, in order to respond to the growing challenges.

By 2050, a mosaic pattern would be woven into the field following the grid system for flood mitigation in the most vulnerable areas. In 2080, transformation of the mosaic pattern will proceed in the cultivation fields and industrial sites, which would otherwise be threatened by severe flooding. Finally, by 2100, further evoluti on in the mosaic would result in a new productive landscape where the grid geometry would lose its rigidity by renaturalisation of the flood plain (Fig. 3). The dynamic mosaic pattern will, in turn, correspond with flooding severity through time, where native vegetation adapts to wetland ecosystems. New urban morphologies and typologies are developed to create a flood resilient way of living, working, moving and producing within the territory (Fig. 4). •

Re-Establishing the Lost Linkages of Srinagar s Water System

Syed Suhaib Naqshbandi

JOINT 3rd PRIZE

Jamia Millia Islamia, India

Syed Suhaib Naqshbandi s thesis explains how the traditional wisdom of water management and flood control can help face Global Climate Change

The ingenious system of irrigation, flood prevention and water management developed by the past generation has helped flood-prone regions across the world to sustain through the ages with water becoming an integral element of their cultural landscape. Such traditional wisdom can also be seen manifested in the landscape of the Western Himalayas, specifically the bowl-shaped Valley of Kashmir in India. The indigenous practice of making *khuls* (traditional waterways) is an extensive system of irrigation and water navigation made by diverting water from the source stream through small interwoven canals.

The intricate human relationship with water has allowed Srinagar, the capital of Kashmir, to emerge as a distinct cultural and economically prosperous civilisation in the past. According to a historic source (Nilmata Purana) the entire landform of the region has emerged from the water; it is because of this natural resource that Srinagar later emerged as an important trade hub on the erstwhile Silk Route. Water has contributed significantly to the growth of the

Left: **Market boats on Mar Khul (waterway), Srinagar** *Middle:* **Homes of artisans abutting the waterway in Srinagar around 1870 AD** *Right:* **How a restored waterway can act as an inclusive liveable space for the neighbourhood of the old city (Shahre-Khas) of Srinagar**

SOURCE: WIKIMEDIA COMMONS

SOURCE: WIKIMEDIA COMMONS

SOURCE: AUTHOR

UPGRADATION OF SHAHR E KHAS FABRIC

RESTORATION OF MAR KH

BUDSHAH TOMB

ZAINAKADAL HERITAGE MARKET

CAFES-HOTELS

JHELUM WATERFRONT

STREET

MAR KHUL

DEWAT

KHUL

UPGRADATION OF BUDSHAH TOMB PRECINCT
The precinct of Budshah tomb is upgraded as a usable public green space along Jhelum Waterfront.

REVIVAL OF DERELICT HERITAGE MARKET
The traditional arts, craft and retail markets are proposed to be revived to boost the economy and cultural activities of Shahre Khas. The ground floors are restored into retail, craft shops and above floors are retrofitted to be used as art galleries and boutique hotels.

RETROFITTING OF COMMERCIAL COMPLEX
The existing underused commercial complex is proposed to be retrofitted into cafes, boutique hotels and retail.

SECTION

Part proposal of restored Mar Khul connecting the fragmented water system of Srinagar

JHELUM

CRAFT EXHIBITION CENTRE
Adaptive reuse of Beopar Mandal Complex is proposed for upgrdation of craft clusters of ShahreKhas.

GHATS (yarbal)
Ghats are proposed as hotspots for gender inclusive social spaces for interaction along with nodes for water transport.

RETROFITTING
Retrofitting is proposed to convert existing decayed commercial buildings into cafes and boutique hotels.

RESTORED BRIDGES
The historical bridges are restored to enhance connectivity between neighbourhoods and create oppurtunity to interact over bridges which are historical social spaces in Srinagar.

CULTURAL & ECONOMIC CONCERNS

COPPERCRAFT CLUSTER SARAF KADAL

UPGRADATION OF COPPER CRAFT CLUSTER
Decentralised workshops and product display centres are proposed along with the khul to boost the socio-economy of artisans associated with the copper craft.

How the restoration of a waterway can be the impetus for the regeneration of an entire area abutting it

Water has contributed significantly to the growth of the region in the otherwise landlocked area

region in the otherwise landlocked area; the products and services obtained from water made the region self-reliant in food and other supplies. The overall human interaction for cultural, religious and economic purposes was significant in the past, however, the human-water linkage started to loosen as the water system decayed. In the present scenario, minuscule interactions withstand. Today, the water system has fallen into disuse and is continuously swallowed by urbanisation pressures. The isolated vision to the water system adds more complexities and degenerative layers.

My research primarily focuses on having a holistic view of the water system and makes the following suggestions:
1. Measures to enhance the human relationship with the water system.
2. Identify and create strategies for restoration of lost water linkage (Mar Khul in the old city core of Srinagar). ●

Adding a New Layer of History

Contributed by Shyam Khandekar

As cities renew themselves, Urban Designers are left with the difficult choice of either removing old layers of history and building new ones, or adapting the old structures drastically to fit new urban functions in them. Both these choices have pros and cons.

The first choice may lead to more efficient new buildings, but these are built at the cost of erasing a layer of history of the city and thus losing part of its cultural heritage.

The second choice can often be a compromise between creating new functions restricted by the scale of the historic buildings, while at the same time risking the loss of the historic character.

This photograph of Het Plein in The Hague, Netherlands, shows a third approach. This historic square, next to the Parliament complex, is at the heart of the historic city and was conceptualised as an urban square in the late 17th century, in the tradition of the formal European square. Over the decades, while a few larger buildings of the Ministry of Foreign Affairs and also of the Ministry of Justice got pride of place facing the square, a substantial number of buildings remained small-scale. This square, with its trees and the statue of William of Orange at its middle, is now used by many restaurants and is bustling with activities in the evenings and nights, visited by citizens and visitors alike.

The photo shows how when the Ministries got bigger and needed larger buildings, the old buildings were retained and the new allowed to form a larger backdrop to the historic urban context.

In summer, when the trees are full of leaves, visitors to a restaurant on Het Plein continue to enjoy the historic ambiance and, as they sip wine on its terrace, are totally oblivious of the tall buildings of the ministries in the background. ●

A deep dive into what is important for all of us

Affordable Housing, Inclusive Cities
EDITED BY VINAYAK BHARNE & SHYAM KHANDEKAR

Published: 2019

DESIGNING FOR SUSTAINABILITY THROUGH UPCYCLING
Learning from Paleiskwartier, Netherlands

ONTWERPEN VOOR DUURZAAMHEID DOOR HERONTWIKKELING
Leren van Paleiskwartier, Nederland

SHYAM KHANDEKAR Essays: VINAYAK BHARNE
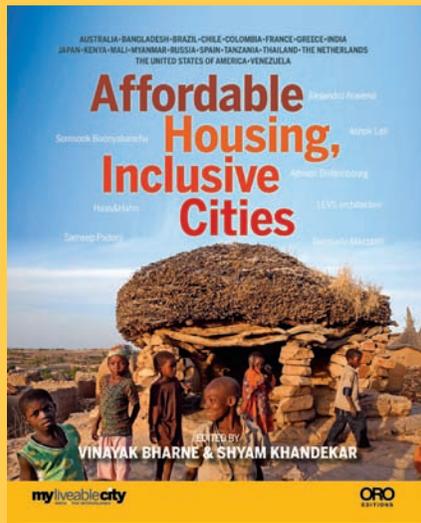
Published: 2020

UPCOMING releases

Reflections During the COVID-19 Pandemic
URBANISM BEYOND 2020
Vinayak Bharne

Releasing: Q3 2021

STREETS FOR ALL
EDITED BY SHYAM KHANDEKAR & VINAYAK BHARNE
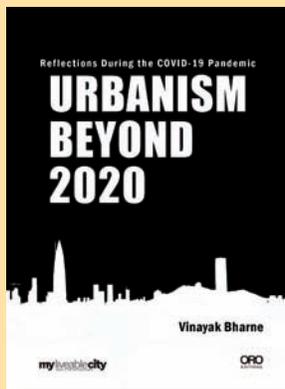
Releasing: Q4 2021
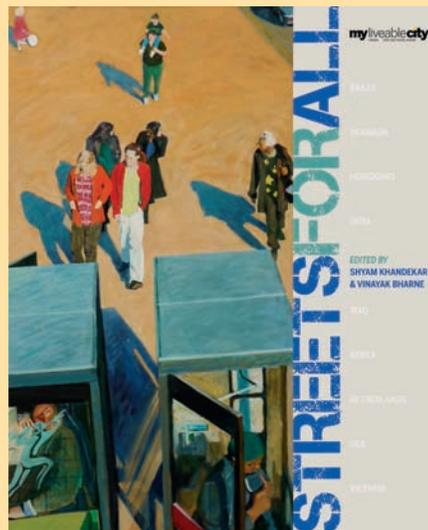
MY LIVEABLE CITY
Children s Book
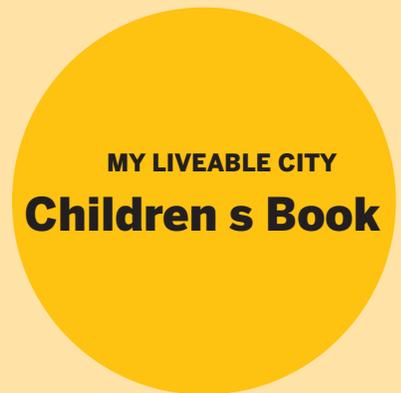
Releasing: 2022

A must-have collection for every architect, urban planner, designer and city lover.

To Purchase or Pre-book your copies log on to www.myliveablecity.com

f **Cities We Like**   ✗ **@CitiesWeLike**   in **myliveablecity**

my liveable **city**
INDIA + THE NETHERLANDS

...but our dreams are big!

MAGAZINE•BOOKS•EDUCATIONAL PROGRAMS•CONFERENCES•URBAN ACTIVATION•KNOWLEDGE TOURS

With small steps we are inspiring cities to become more inclusive, liveable, sustainable and respectful of the environment.
As our family of believers grows, we know we can.
And you, your city and all of us, can become the change we need to see.

Over the last 6 years we ve shared our beliefs with and among others: The International New Town Institute, KRVIA, Erasmus University Rotterdam, Nirlon Knowledge Park, Alembic City, National Institute of Urban Affairs, KU Leuven, ORO Editions, DAIDA Foundation, HUDCO, Citizens Alliance (Delhi), National Housing Bank, SPA Bhopal, HDFC, ISHRAE, Intelligent Community Forum (New York), IGBC, Finch Buildings, readers and contributors from over 100 cities around the world.

www.myliveablecity.com (f) Cities We Like (t) @CitiesWeLike

myliveablecity
INDIA + THE NETHERLANDS