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Land scape

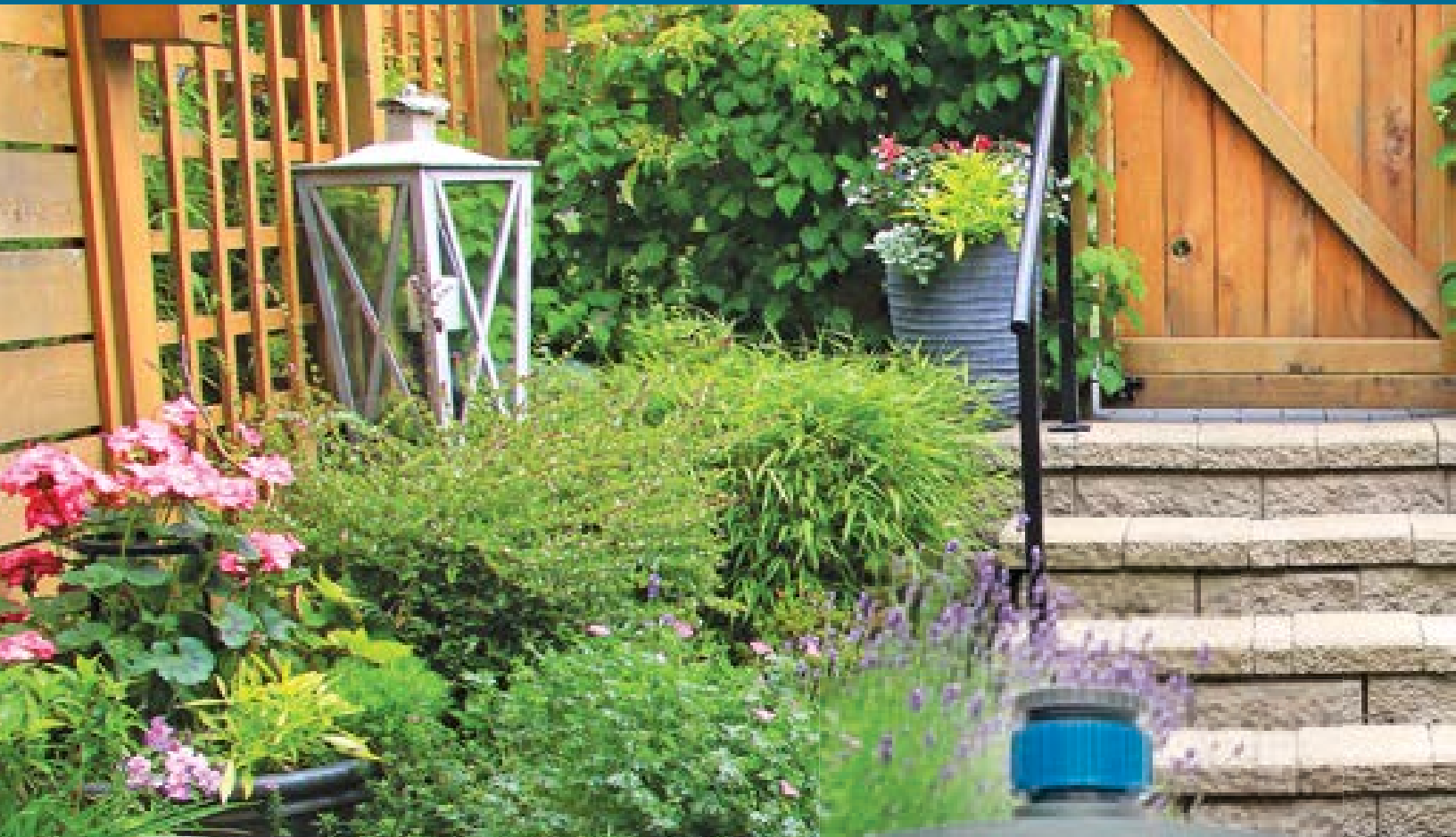
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The global pandemic of COVID-19 has forced all of us to reimagine our present and future worlds. Countries across the globe are working on various strategies to fight this unprecedented global health emergency. In India, the distinctive informal form of urbanity is one of the main challenges in this war against COVID-19. Mriganka Saxena, urban strategist and policy writer presents a comprehensive framework of the Containment plan for our Indian cities and towns to combat this situation. This informal vocabulary finds a clear focus in the newly released book of Ranjit Sabikhi, an eminent urban designer and academician. He discusses issues and potentials of this unique vocabulary while calling designers to contribute and reimagine these areas.

With a slow economy in the last few years, there is a gradual increase in the number of designers who are now practicing in public domain. Some well established landscape practices across the country are designing public parks, participating in various design competitions for development of public realm and developing new research branches in their practices. Two projects in the city of Pune reimagine safe, inclusive, ecological and aesthetically pleasing streetscapes. The issue also features an interview with Bimal Patel—the selected design consultant for the Redevelopment of Central Vista, New Delhi—who shares his views on some of the key aspects of the project along with his professional journey, views on practice and related aspects.

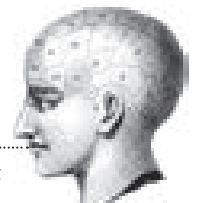
In the research section, Rabindra Vasavada, an eminent conservation architect reviews the maps of historic Indian Cities, which try to understand their changing relationship with nature. The exhibition of Miki Desai, eminent academician and architect, about vernacular architecture demonstrates the repository of rich cultural heritage of the country across many geographical regions. In his conversation with the Editors, he calls to reinvent this rich tapestry to suit contemporary functions and use. The section also includes a review of the Yamuna River Project, an exhaustive study of the river in context of the city of Delhi, mentored by University of Virginia.

Due to the global health emergency, the next two issues of the Journal [including this one – LA-61] are being produced only in digital format. We thank all our contributors and companies from Landscape Industry for their support in these challenging times.

Wishing you good times ahead.

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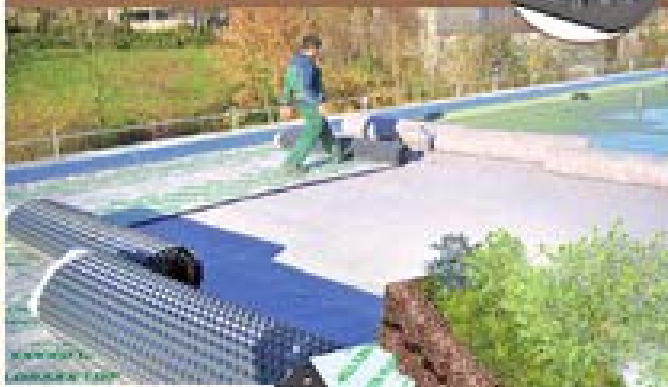
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ERRATA | ISSUE #60 | The name of the author of the article 'Showcasing Tangible and Intangible Heritage' [pages 57-59] was incorrectly published as Debashish Borah instead of **Debasish Borah**. The error is deeply regretted.

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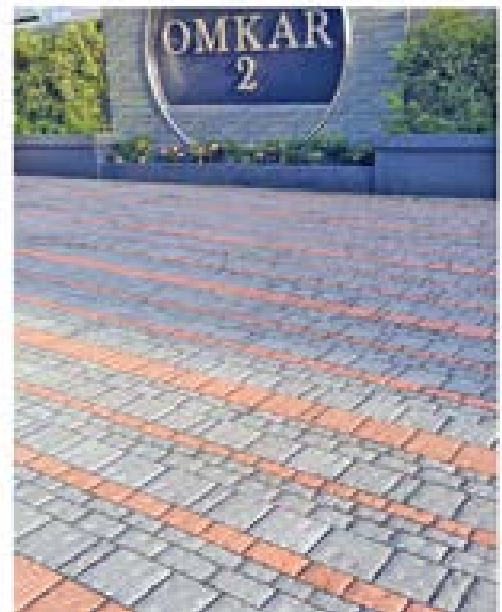


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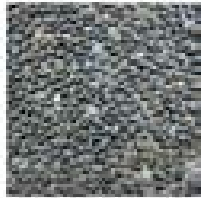
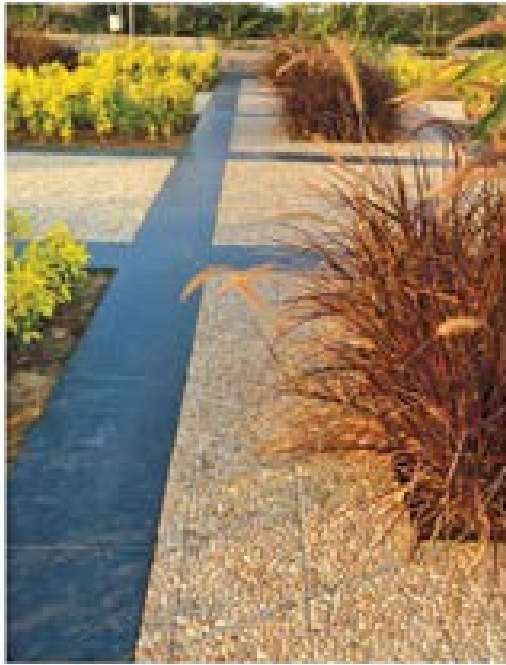
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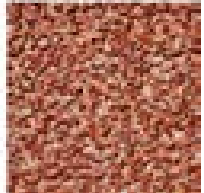
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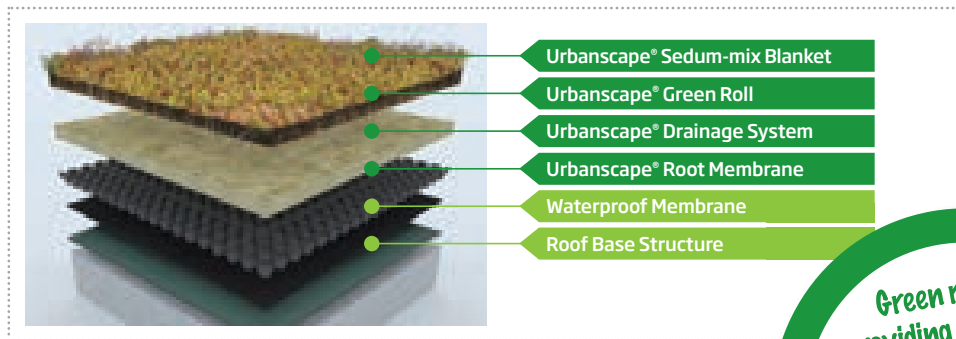
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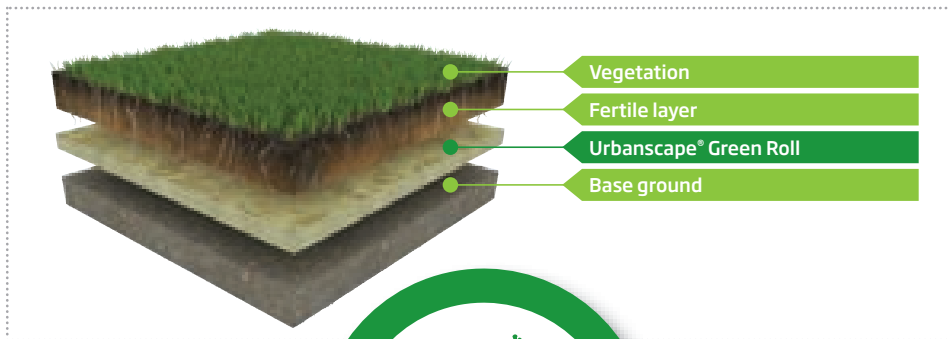
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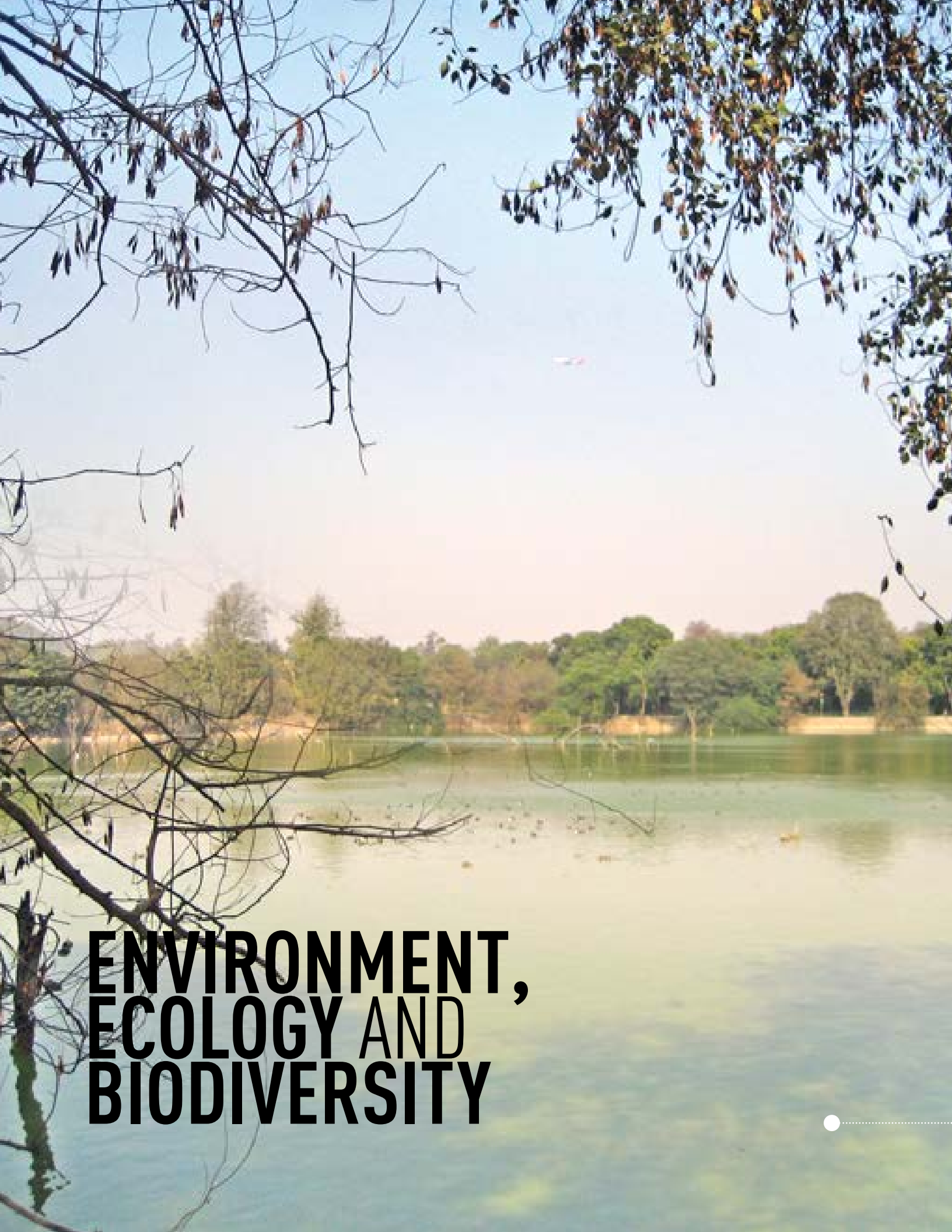


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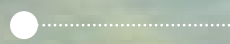
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ENVIRONMENT, ECOLOGY AND BIODIVERSITY



Madhura Khade, Landscape Architect
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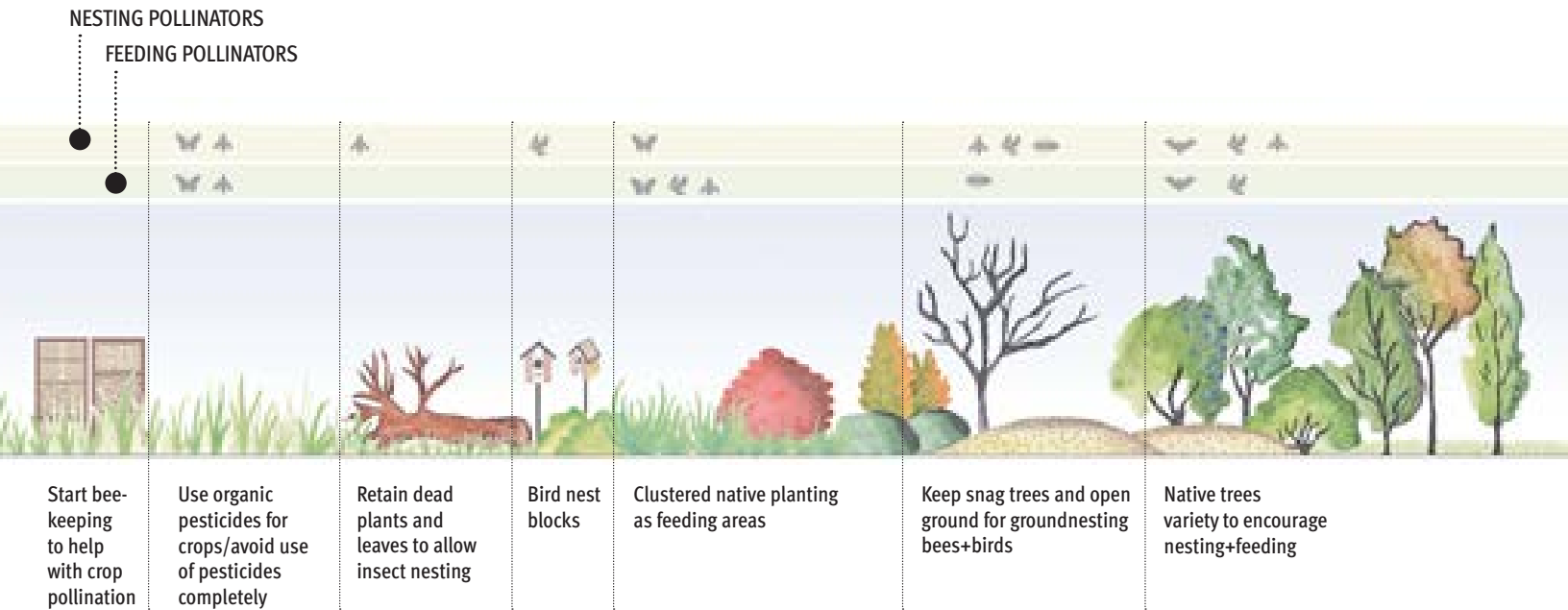
RESCUING THE URBAN POLLINATORS

Pollinators are a part of terrestrial ecosystem, responsible for carrying out pollination in angiosperms - plants that yield seeds within fruits. This process is a critical step in the plant reproductive system. This essential ecological function is what makes pollinators key providers of food and resources for most other organisms. Birds, bees, flies, beetles, moths, butterflies and bats are commonly found in urban areas of India. They support a variety of flora and fauna of a region and results contribute to agriculture, arrest soil erosion, increase carbon sequestration; to name a few advantages that we harvest as higher organisms. Even plant based raw materials, oil and fibre is indirectly because of them. In the absence of these little beings, human race and terrestrial ecosystems would cease to exist gradually.

With this dual function that supports human existence and the terrestrial ecosystem, pollinators have gained an exceptional position.

Over the last two decades, several studies have shown that pollinator numbers are declining world over. Some of the reasons include spreading of urban sprawls, pesticides, climate change, destroyed habitats, fragmented habitats, invasive plant and animal species, monoculture farming practices and natural enemies. Major effects that have come to light are expensive food production, micro nutrients loss in food, reduced plant diversity including but not limited to reduced carbon fixing capacity. In several farms across the world, farmers are hand-pollinating their plants as the local pollinator numbers are declining. This almost invisible form of ecosystem service is getting disturbed and it needs our help to save it.

To speak of silver linings, pollinators are found to be thriving in their own little way in urban areas. In cities, we have patches of flowering plants in an otherwise concrete jungle. While green spaces make a town look vibrant, it also functions as their habitat. They have become keen to join humans in living the city life provided they have food, water and shelter. Several initiatives are being taken up globally to promote and support local populations.

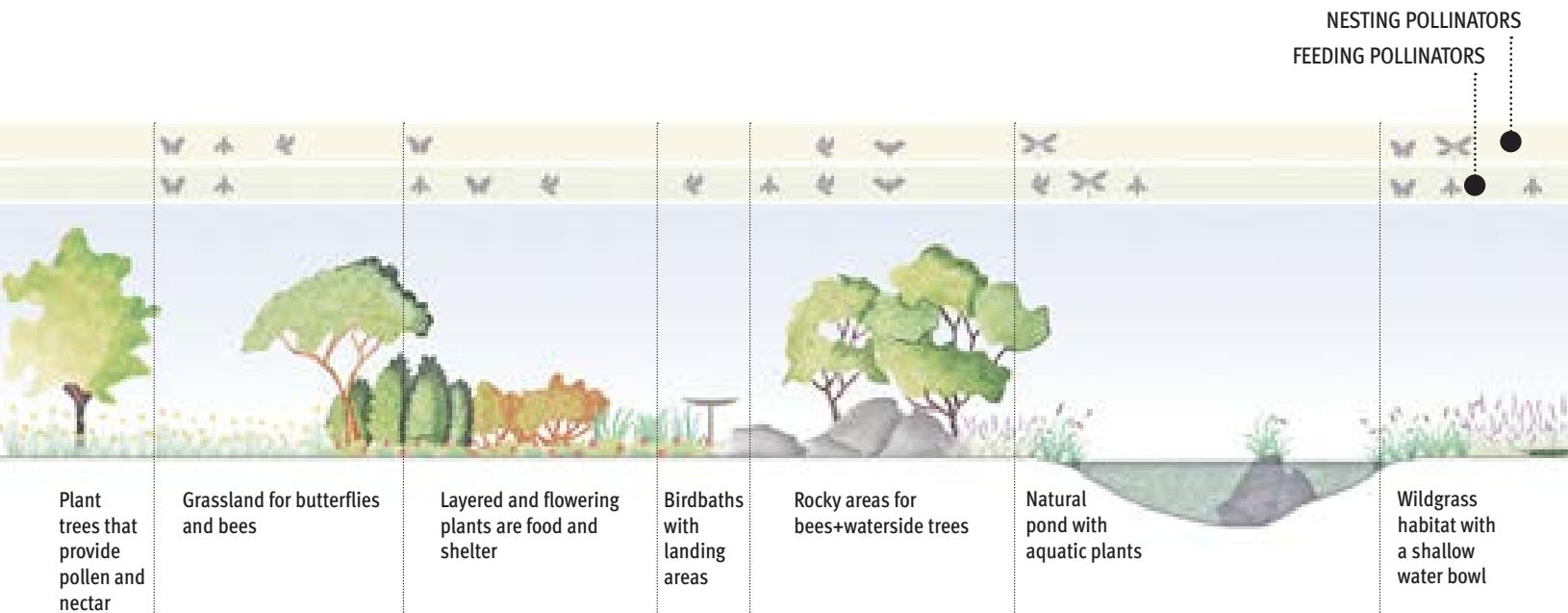


A live example is the city of Pune. The city hosts a wealth of indigenous flora and fauna as a part of biodiversity of the Western Ghats of India. Commonly sighted pollinators in Pune city are bees, butterflies, bats and birds.

1. Bees like Rock Bee, Indian Bee, Little Bees are found living in and around the city.
2. Butterfly families of Papilionidae, Pieridae, Nymphalidae, Lycaenidae are also observed.
3. Bats like the Flying Fox, Short-Nosed Fruit Bat, Schneider's Leaf-Nosed Bat and Egyptian Free-Tailed Bat are found here.
4. Birds such as Sunbirds, Sparrows, Parakeets, Crows, Bulbuls, Mynas, etc. are commonly sighted.

Most of these species are found near Saras Baug, green areas of Kothrud, Vetal Tekdi, Taljai Tekdi, Empress Garden area, S.P. Pune University, Mula-Mutha river banks, lakes of Pune and several areas of the Cantonment. A more factor in their presence could be the unique geography of Pune city. Habitat components in the above areas is presence of feeding plants, host plants, shelter areas in ground and trees, open grounds for nesting and mudding activity, protected areas from high winds, waterbodies, native plants, limited human interaction and plant diversity. They have thrived in these regions based on the availability of resources for their life cycle coupled with favorable growing conditions.

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**TYPICAL SECTIONS
THROUGH A POLLINATOR
PARK**



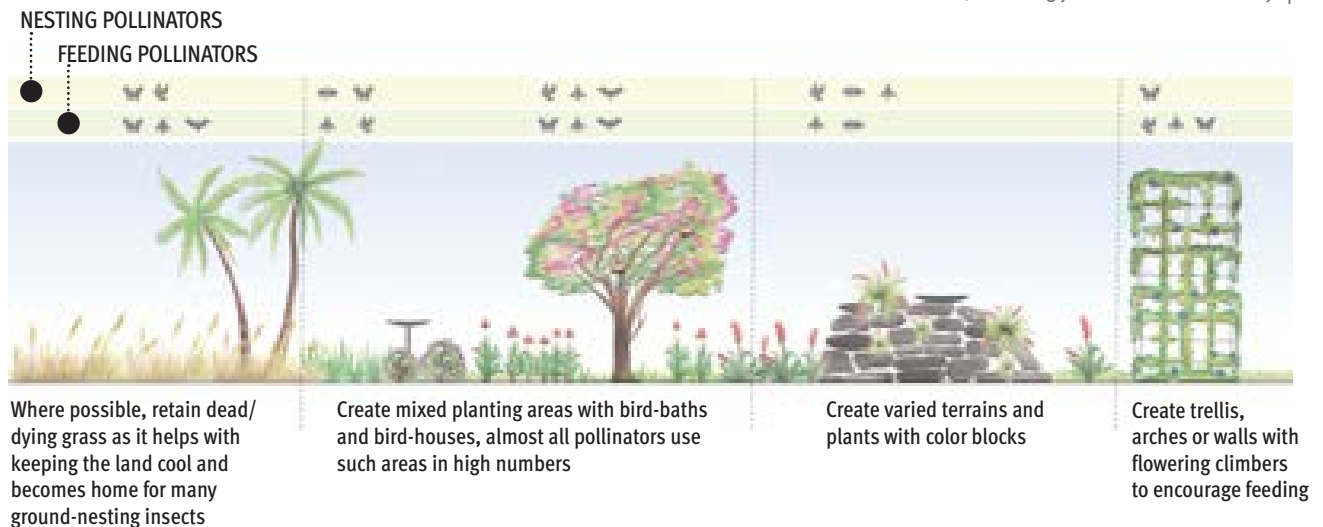
Many plants and pollinators have a mutual relationship and overtime they have co-evolved. For instance, purple Sunbirds drink nectar from flowers that are tube-shaped, small and orange or red colored with sugary nectar, like Scarlet bush. The shape of the flower relates to the shape of a Sunbird's beak. Another example is the Common Mormon butterfly. This handsome butterfly is seen visiting plants like Ixora and Lantana but lays eggs on Lemon trees or *Murraya koneigii*. When the eggs hatch, these plants become the feeding plants for caterpillars. At the same time feeding plants depend on bees/butterflies for its primary pollination. Therefore, it is vital to protect both: the plant and the pollinator.

As humans occupying the same space as our little companions, we have benefit of flowers or food from the examples above, allowing these plant-pollinators bonds to exist in our own backyard.

To take up an initiative on behalf of urban pollinators, we need to spread awareness and encourage public participation along with involvement of urban planners, landscape architects, environmentalists, zoologists, botanists and related disciplines. There are many areas of an urban landscape that lie abandoned or disused. These can be converted into habitats for them. Parts of urban landscape identified as hedges, lawn spaces, public gardens, parks, terraces, boundary walls, wastelands, railway sides have potential for conversion. We need to have an integrated design approach for urban landscape. In suburban areas, initiatives like using organic pesticides, sustainable farming practice and cultivating a variety of crop can be adopted henceforth.

COMMON POLLINATORS, PLANT SPECIES AND PREFERRED REGIONS IN PUNE

POLLINATORS	POLLINATOR SPECIES	PLANT SPECIES	PREFERRED REGIONS
 <p>BIRDS</p>	Sunbirds	<i>Erythrina variegata</i> [Indian Coral Tree]	Forests:
	Sparrows	<i>Nyctanthes arbor tristis</i> [Parijat Tree]	Mohammadwadi Forest Reserve,
	Pigeons	<i>Pentas lanceolata</i> [Star cluster]	Sinhagad Forest
	Doves	<i>Mansoa alliacea</i> [Garlic Creeper]	
	Parakeets	<i>Russelia equisetiformis</i> [Firecracker plant]	Hills:
	Cuckoos	<i>Millingtonia hortensis</i> [Indian Cork Tree]	Chaturshringi, Taljai Tekdi
	Swifts	<i>Phyllanthus emblica</i> [Amla Tree]	
	Swallows	<i>Terminalia kattapa</i> [Indian Almond]	Scrubland:
	Mynas	<i>Canna lily</i> [Canna]	Bhamburda, Malwadi
	Crows	<i>Psidium guajava</i> [Guava]	
	Bulbuls	<i>Punica granatum</i> [Pomegranate]	Waterside:
	Babblers	<i>Moringa oleifera</i> [Drumstick Tree]	Pashan Lake,
	Warblers	<i>Hamelia patens</i> [Scarlet Bush]	Mula-Mutha Banks
	Robins		
 <p>BEEES</p>	Rock Bee	<i>Ixora coccinea</i> [Jungle Geranium]	Forest:
	Indian Bee	<i>Allamanda cathartica</i> [Golden Trumpet]	Sinhagad Forest,
	Little Bee	<i>Lagerstroemia speciosa</i> [Crepe Jasmine]	Katraj Forest
	Black dwarf Bee	<i>Zinnia peruviana</i> [Zinnia]	
	Western Honey Bee	<i>Cosmos sulphureus</i> [Cosmos]	Hills:
		<i>Catharanthus roseus</i> [Vinca]	Taljai Tekdi,
		<i>Stachytarpheta mutabilis</i> [Coral Porterweed]	Vetal Tekdi
		<i>Bauhinia blakeana</i> [Kanchan]	
		<i>Jasminum auriculatum</i> [Juhi]	Other Areas:
		<i>Stachytarpheta jamaicensis</i> [Porterweed]	Bibwewadi,
	<i>Caesalpinia pulcherrima</i> [Peacock Flower]	University Area,	
		Prabhat Road,	
		Kothrud Area	
 <p>BUTTERFLIES</p>	Emigrant Butterfly	<i>Cassia fistula</i> [Golden Shower]	Forest:
	Common Mormon	<i>Murraya koenigii</i> [Kadipatta]	Sinhagad Forest
	Tailed Jay	<i>Annona squamosa</i> [Sitafal]	
	Grass Yellow	<i>Smithia sensitiva</i> [Lajalu Kavla]	Scrub + Marshland:
	Plain Tiger	<i>Asclepias curasavica</i> [Milkweed]	Mula-Mutha Banks
	Pansy	<i>Barleria</i> [Jhinti]	
	Common Castor	<i>Ricinus communis</i> [Castor]	Grassland:
	Gram Blue	<i>Lablab purpureus</i> [Tonga Bean]	Pachgao, Malwadi
	Zebra Blue	<i>Albezia lebbek</i> [Shirish Tree]	
	Common Crow	<i>Nerium oleander</i> [Kaner]	Waterside:
	Common Cerulean	<i>Saraca asoca</i> [Sita Ashok]	Peacock Bay, Pashan Lake
	Common Sailor	<i>Bombax ceiba</i> [Red Cotton tree]	
	Tawny Coster	<i>Passiflora</i> [Passion Flower]	
Common Jezebel	<i>Azadirachta indica</i> [Neem]		
 <p>BATS</p>	Flying Fox	<i>Mangifera indica</i> [Mango Tree]	Forest:
	Short-Nosed Fruit Bat	<i>Ficus religiosa</i> [Peepal]	Sinhagad Forest
	Egyptian Free-Tailed Bat	<i>Syzygium cumini</i> [Jamun Tree]	
	Indian Gygmy Bat	<i>Tamarindus indica</i> [Tamarind Tree]	Waterside:
	Wrinkle-Lipped Bat	<i>Casuarina equisetifolia</i> [Whistling Pine]	Sangam Bridge, Sarasbaug
	Schneider's Leaf-Nosed Bat	<i>Polyalthia longifolia</i> [False Ashok]	
		<i>Caryota urens</i> [Fish tail Palm]	Others:
			Old Wadas and NDA



Design strategies can consist of providing cluster planting of flowering shrubs, making it easy for them to spot color blocks during flight. Planting shrubs that flower all year around is beneficiary. Diurnal pollinators get attracted to flowers that are in shades of yellow, orange, red, pink, purple and blue, whereas, nocturnal ones are often seen on plants that have white or green flowers like Night-Blooming Jasmine. Provide waterbodies in forms of shallow ponds or birdbaths with 'landing-pads' for bees. A landing pad acts as a dry spot for a bee or butterfly to land in water. Use specific plants that are food or shelter to the species that are aimed for. Adding boulders or rough walls can achieve a mixed terrain that insects use for nesting or basking activities. Simple compound walls can be converted into an 'insect house' in a non-accessible part of the site. Plain lawns can be converted into flowering shrub beds. Leaving the dead leaves on the ground, where possible, becomes a home for some insects.

Urban landscape is evolving and if we are willing to design by amalgamation of ecosystems and human needs, it can result into resilient and sustainable designs. Being around nature yet having the advantage of a city life is a privilege we can achieve in a superior manner by increasing mutual profit with those species that co-exists with us, like the urban pollinators. Advantages include arresting soil erosion, biodiversity in cities, urban farming, nature centric mental well-being and better real estate services.

Pune has a variety of hills, plains, forests, lake side and riverside, all offering a cross section of eco-zones. In forested hilly areas of Taljai or Vetar Tekdi, measures could be taken to limit human intervention, limit artificial lighting, providing water sources and increase native planting. Near riverside, bats and birds dwell in tall trees like Mango, Peepal, Rain Tree, Tamarind and Casuarina. In the absence of shelters like caves and tall trees, many bats are observed in old *wadas* of the Pune city. We can remedy this by protecting the current sites and enhancing planting. These are suggested guidelines for enhancing their population.

After years of getting free benefits from the pollinators, we need to help them survive today as our lives are intricately connected to theirs. We need to save them to save us.



ABOVE |
**TYPICAL SECTION THROUGH
A POLLINATOR PARK**

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WETLANDS AT WORK

CONVERSATIONS WITH EXPERTS IN THE CITY BRING TO FOREFRONT NEW SET OF KNOWLEDGE

Wetlands can be defined as naturally existing aquatic ecosystems along various natural water systems of rivers, ponds, lakes, delta regions and coastal areas. The ecosystem of the wetland comprises of submerged [seasonally or permanently] natural plants which thrive with the action of water, bacteria, types of gases and nutrients. The replication of such ecosystem in constructed ways as per specific contexts, is an integral part of restoration of aquatic ecosystems, especially those which are subjected to severe pollution by sewage flows, industrial wastes and garbage dumps.

UNDERSTANDING WETLANDS

WITH INPUTS FROM **DR. C. R. BABU**

Wetlands are generally low-lying areas where the substratum is hydrated, particularly beneath the top layer. Wetlands are found in nature in all the landscapes, so called natural wetlands. Generally, a wetland should have water at least for a part of the year. Then only can it be called a wetland. If I have a low-lying area with a hydrated substratum beneath the top layer of soil, but does not have water at any time of the year, it cannot be called a wetland. Wetlands can be as deep as two meters. And at the same time, marshy areas can also be called wetlands where there are shallow waters. They have distinctive flora of aquatic plants. If I do not find water and I cannot dig the soil, by looking at the presence of this distinct flora around, I can say it is a wetland. So, they store surface drainage and with their permeable base gradually recharge the ground water.

If I construct a waterbody and say this is my natural wetland, it's not true. A natural wetland has many other characteristic features. I repeat that they occur naturally on low lying areas. Natural wetlands support characteristic flora and fauna. Some of the plant species of wetlands are common in any geographical location and some are site specific. They are not only region

WETLANDS & LAKES

According to RAMSAR convention, all waterbodies are wetlands and all wetlands are waterbodies.

Any area that has stagnant water at least for part of the year is a waterbody. Deep waterbodies are generally called lakes. A lake has water throughout the year. It never dries up until and unless you cut the supply. It has an inlet from where the water comes and an outlet. It is larger in size. Wetlands are a network of waterbodies, not just one. There might be a congregation of wetlands – water flows from one to another whereas a lake is independent with well defined embankments. Wetlands may not have an embankment. Their edges almost merge with the ground plane. Wetlands may also not undergo stratification, but lakes will. With the building up of temperature of the atmosphere, the waterbody of a lake undergoes stratification. The top layer is warmer and the bottom layer is less warm and the in between layer is more or less cooler. The heat will not penetrate into it.

specific, locality specific and site specific, but also specific to the depth of the water. If it is deep, you find one set of plants, if it is shallow; you find another set of plants. If the water is very shallow and remains only for a short period, then there is another set of plants. So, the wetland plant community varies and according to the plant community, the fauna also varies.

Another important function of wetlands, especially in urban context is that they purify water. The wetlands have plants, which have roots and the roots have microbes which act as bio-filters in the presence of oxygen to cleanse polluted water.

Natural and Constructed Wetlands

One can use both natural and constructed wetlands for treating contaminated water or sewage. They are suited only for situations where there is ample land available and water to be treated is less contaminated. In a natural wetland, the sediment goes directly into it so it needs to be de silted. For example, Kolkata wetlands are natural but many parts of these are not functional as they are silted. If there is no chance of water coming in contact with the roots and their microbes then the wetland becomes defunct. There's dead microbial mass floating on the top and entangling with the floating plants to form a mat. So in many such natural wetlands, the water flows beneath the mat and there's no impact.

The most important part of a wetland is that the water must be retained for some time for cleansing or purification and for that you need design. Designed wetland for the sake of treatment of waste water based on the principles of natural wetland is called a constructed wetland. One creates and designs it to simulate a natural wetland. One can even modify constructed wetlands as per the need.

These wetlands are used for primary, secondary and tertiary treatment of wastewater including sewage. The designing has to be done based upon the availability of the space and topography of the site. In constructed wetlands, before the water comes into it, you remove the sediment and so the sediment load is almost zero. A constructed wetland will also have physical filters to remove dead microbial biomass. Secondly, if you have oxidation ponds and prevent the sludge from moving along with the water, the constructed wetlands function for a long time and are very efficient. If you don't use oxidation pond, and allow the sewage water to pass directly through the wetland system, it will be choked in a short span of time.

In urban areas, there is hardly any space to create these wetlands. Due to these constraints, we have now also designing in situ constructed wetlands in the drains. It is being done by the Irrigation Department, Delhi Jal Board and many other departments.

CONSTRUCTED WETLANDS

Floating Wetlands

You create a bamboo mat or a thermocol sheet with sediment for growing plants. The mat floats on the surface of polluted water. The plants' roots, with their associated microbial community, treat the polluted water. However, this system, also known as floating wetlands, has its limitations as only a small part of root system is in touch with the polluted water since most of the plant roots are in the sediment. Thus, the water uptake by plants will not be that efficient as the root system is not fully grown. If I don't have any other way, I will use floating wetlands.

Hybrid System of Wetlands

If the wetland is developed where the water flows horizontally, it is called a horizontally constructed wetland. If there is a chamber with different layers of sand, gravel, pebbles and other material and the water is pumped and allowed to pass through it, then the filtered water is released from the bottom into another wetland. This is called a vertical wetland. When you combine both a vertical and horizontal wetland, it is called a hybrid system. Its effectiveness rely on the topography of the site. It is used extensively in France and parts of Europe.



Suggested Reading: **Manual on Constructed Wetland as an Alternative Technology for Sewage Management in India** [2019] by Department of Biotechnology, Ministry of Science & Technology, Government of India and Central Pollution Control Board, Ministry of Environment, Forest and Climate Change, Government of India. Downloadable PDF print version [appx. 19 MB] of the manual available at: <http://www.dbtindia.gov.in/latest-announcement/manual-constructed-wetland-alternative-technology-sewage-management-india#>

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CONSTRUCTED WETLANDS

Constructed wetland is a sequential engineering system of a set of chamber-like settling pond, bio-digester and gravel trough, enabled by various chemical and biological processes to mimic the working of a natural wetland. They perform the same function as a sewage treatment plant, however, there are no mechanical or energy requirements. Aquatic plants, algae and other microbes, rooted in the submerged layer of gravel and sand are active components of various biological processes. Installed in the intermediate space between the sewage source and the draining area, it is used to treat extremely polluted water and untreated raw sewage with high values of BOD [Biochemical Oxygen Demand], before letting it out in a lake. This is achieved by a system of a number of chemical and biological processes that take place in the engineering system.

These wetlands are built with impermeable base of concrete/ pond liner/ boulder bed that does not allow any water percolation. While the shallow ponds may be lined by an impermeable layer while the deep ones may have concrete base. The section of ponds with concrete base can be designed with dividers in such a way that there is slow, but more movement and flow of water throughout the media. This is not possible in lined ponds. The design of a system of constructed wetlands evolves as per distinct site conditions, especially the nature of pollutants and their quantity. At times, this system may also need combination of processes of different nature. For example, to address high phosphate levels of pollutants which are present only in soil and water and do not circulate through aerial process, both aerobic and anaerobic zones in the main gravel trough are needed.

Limitations

The bio-digester in the system needs annual preventive cleaning of sand and sludge while the gravel bed may be cleaned once in four years. Precautions need to be taken from hydraulics point of view to ascertain that there is no backflow in the wetland. In constructed wetlands with impermeable base, there is no percolation of water. So at times, a separate system of ground water recharge is needed. There are limited species of aquatic plants for undertaking the biological processes. Due to various engineering structures and mechanical processes, the cost of construction may be high as compared to natural systems.

The many types of constructed wetlands are based on the same principle, but with different combinations and permutation of their various engineering, chemical and biological processes. Some of the common technologies used in constructed wetlands are as below.

Decentralised Wastewater Treatment Systems DEWATS

[Open source Constructed Wetland Technology]

- To convert 1 MLD of water with 250 BOD to water with 20 BOD = 4,000 to 5,000 sqmts
- Depth of the gravel bed ranges from 1 mt – 1.5 mts
- Carbon of the water is oxidized and removed as carbon dioxide
- Also used in larger setups of Sewage Treatment Plants

Phytorid

- Can convert 1 MLD with 250 BOD to 20 BOD over an area of around 2,000 sqmts
- Depth of the gravel bed ranges from 2.0 mts – 2.5 mts
- Carbon of the water is converted to methane in the absence of oxygen

Scientific Wetland with Activated Bio-digester SWAB

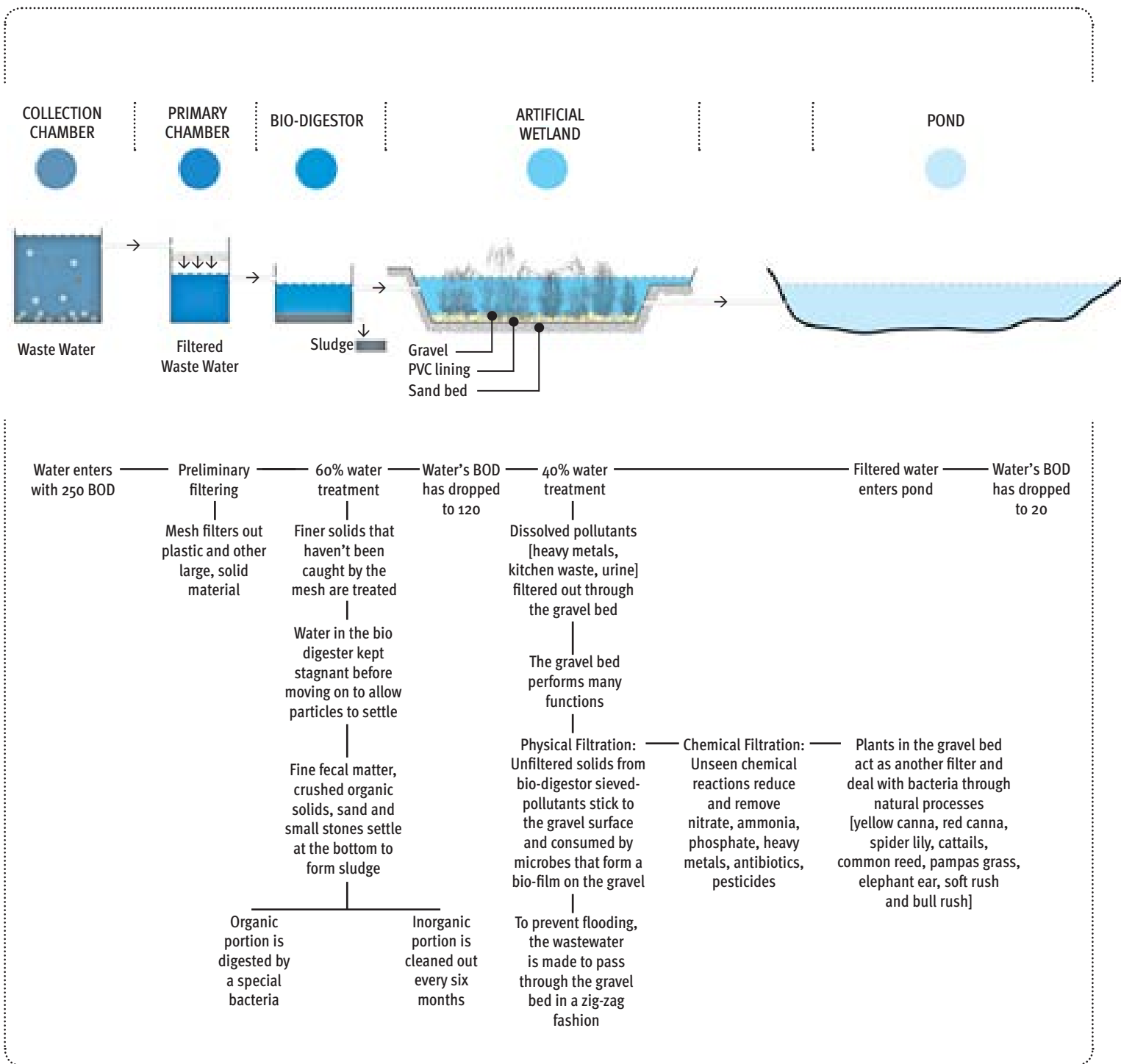
- Can convert 1 MLD with 250 BOD to water with 20 BOD over an area of 600 sqmts
- Depth of the gravel bed ranges from 2.5 mts – 3.0 mts
- Carbon of the water is converted to methane which is again oxidised to carbon dioxide with the help of biological processes

Delhi Jal Board

CONSTRUCTED WETLAND AT RAJOKRI | NEW DELHI

The revived pond at Rajokri, a peri-urban area near Delhi, is a pilot project in the series of reviving around 250 waterbodies [155 by Delhi Jal Board DJB and 95 by Department of Irrigation & Flood Control I&FC] in the city of Delhi. The sewage from the surrounding settlements [around 6 lakh litres] is treated by the system through a series of structures — primary chamber, bio-digester and a constructed wetland with pebbles and aquatic plants [including yellow canna, red canna, spider lily, cattails, common reed, pampas grass, elephant ear, soft rush and bull rush]. It gets treated by the process and the clean water is released into the nearby pond. It has a separate designated area for people to perform various water related religious activities. This part is also connected to the system for regular cleaning. Floating wetlands with aquatic plants further filter the pond water.





FACING PAGE |

CONSTRUCTED WETLAND AT RAJOKRI

TOP ROW: LEFT TO RIGHT | View of the site before the intervention.

In-situ construction of the sloped banks. Completed stepped banks of the pond also act as open-air seating.

LEFT | The revived pond after completion of works

THIS PAGE |

SCHEMATIC DIAGRAM & FLOW CHART OF THE WETLAND STP

Landscape and Environment Planning Department,
Delhi Development Authority

CONSTRUCTED WETLAND AT NEELA HAUZ | NEW DELHI

Neela Hauz Biodiversity Park, located on South Central Delhi Ridge of Aravalli range next to Sanjay Van, in Delhi, is a 3.90 hectares mini biodiversity and wetland area along Aruna Asaf Ali Road. In 2014, the wetland was covered with water hyacinth and ridge was infested with the invasive species of *Prosopis juliflora* [Vilayati Babul or Kikar of Mexican origin], which were planted in the 1920s by the British to rehabilitate the wasteland. The silted lake was encroached upon and raw sewage drained into it, causing concerned citizens to take an order from Delhi High Court to have it restored by the government and develop it as a biodiversity park.

Over a period of a year, lake was desilted, its banks landscaped, water supply was restored with the treated water from the constructed wetland, and native species of plants were reintroduced in 10 acres of the land surrounding the lake.

To improve the water quality before water enters the lake, the Constructed Wetland System [CWS] were developed. The CWS system works on the simple phenomenon of gravity and does not require any mechanical or electrical input to pump water. The flow of water in the entire system is maintained by gravity and simple channelizing systems. The water coming from the nearby sewage drain [Vasant Kunj] and a concerned STP [only 10% of which is coming in Neela Hauz] is collected first under the flyover area [Aruna Asaf Ali Marg] for there is no direct sunlight reaching the entry point. The sewage water collected is then diverted towards the constructed wetland system, while before reaching the CWS the water runs through the bed of river bed pebbles and boulders to collect the heavy sludge.

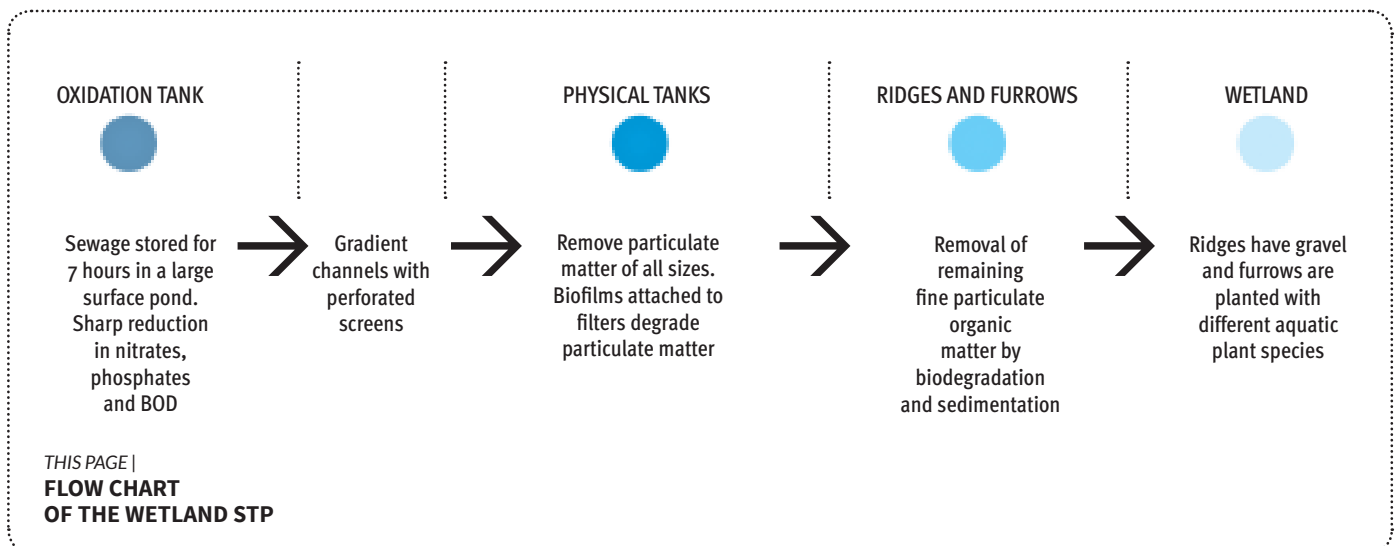
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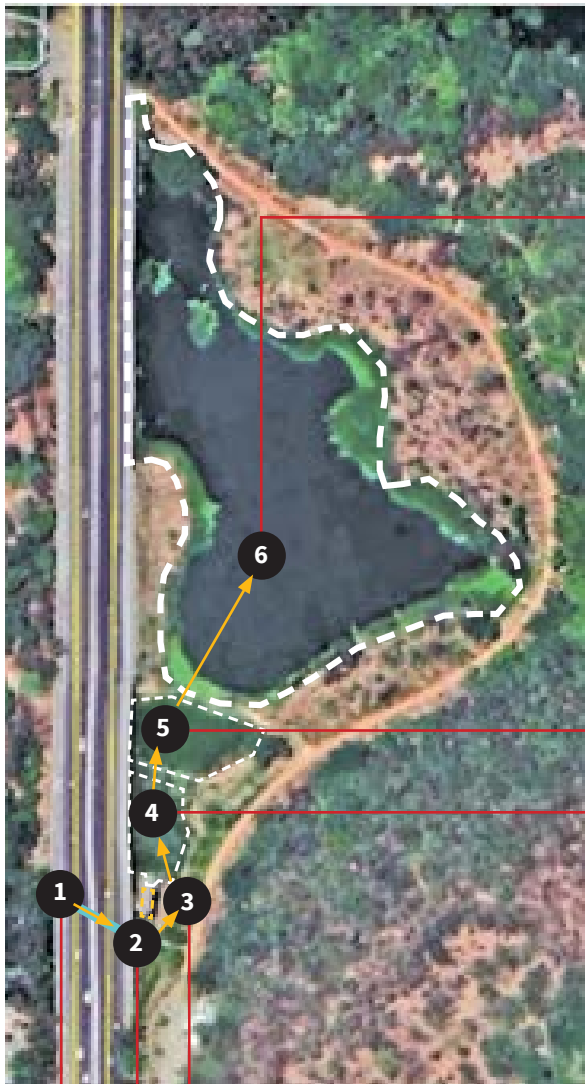
LANDSCAPE AND ENVIRONMENT
PLANNING DEPARTMENT,
DELHI DEVELOPMENT AUTHORITY

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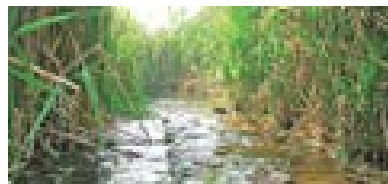




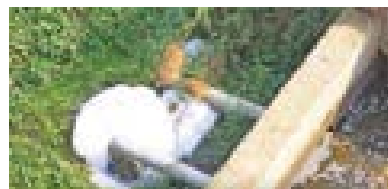
6. NEELA HAUZ LAKE
 Area: 16,000 sqmts appx
 Average Depth: 6 m appx
 96,000 cumts approx [1MLD]



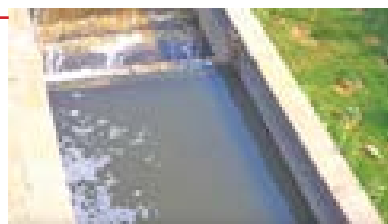
5. WETLAND 1 [CLEAN WATER]
 Area: 1,200 sqmts appx



4. RIDGES AND FURROWS
 Area: 750 sqmts appx



3. SERIES OF OXIDATION PONDS



1. COLLECTION AND SCREENING [UNDERBRIDGE]
 Area: 600 sqmts
 [Depth: 1 m appx = 600 cumts appx]
 Duration: 24-48 hrs

2. CHANNEL
 15 m x 1 m x 2 m = 30 cumts appx

Flowing through plants, the water gets further cleansed before being released into the waterbody [jheel] and thereafter into Sanjay Van. The water flows into the lake through by natural gradient. The biochemical oxygen demand [BOD] has fallen from 40 to 4, phosphate 104 to 14, total dissolved solids from 600 to 298 and dissolved oxygen improved from 0 to 3.4.

With the help of a perforated pipe network, water comes into the second wetland through pipes that have ridges and furrows with plants to help further clean the water.

Oxidation tanks/ beds with pebbles filter the heavy sludge. The tanks are shallow [3' deep] to allow sunlight to reach the bottom. There are two oxidation beds. Water coming into the first chamber cascades into the second chamber, thereby allowing further oxidation of water.

Tarun Nanda
EVOLVE Engineering

CONSTRUCTED WETLAND AT HAUZ KHAS LAKE | NEW DELHI

Amidst the urban sprawl of Delhi and Hauz Khas Village, a number of new artificial wetlands have been created through a unique partnership between the authorities [Delhi Development Authority], citizens [in collaboration with EVOLVE Engineering] and corporations [Pernod Ricard India].

Constructed wetlands, also known as reed beds, are an example of phytoremediation and rely wholly on natural processes, such as microbes, physical filtration, adsorption and the uptake of nutrients into wetland plants, to purify water. They perform the same function as a sewage treatment plant, however there are no chemical, machinery or power requirements.

Two wetlands [measuring a total of 425 sqm] were designed and built by EVOLVE Engineering in existing drains; completely transforming two garbage and sewage filled channels into thriving wetland ecosystems that not only purify water but offer the much needed habitat for wildlife particularly birds [geese, ducks, swamp ducks and various migratory birds], fishes [African cat fish] and flying foxes.

For most of the year the lake is fed by a mix of partially treated and raw sewage and the first wetland was created in the incoming drain in 2018. The wetland incorporates a meandering stream, naturally profiled banks, filter media, settlement ponds, and various types of constructed wetlands. It effectively filters out all floating solid organic matter and suspended particles and reduces the amount of pollutants reaching the lake.

A second constructed wetland, built in an existing stormwater drain in 2019, is soon to become operational and will be used to circulate and filter water from the lake. It is the first time that a public lake in Delhi, and possibly India, has a dedicated filtration plant through which water is pumped and is the only way to remove pollution that occurs locally around most waterbodies in India.

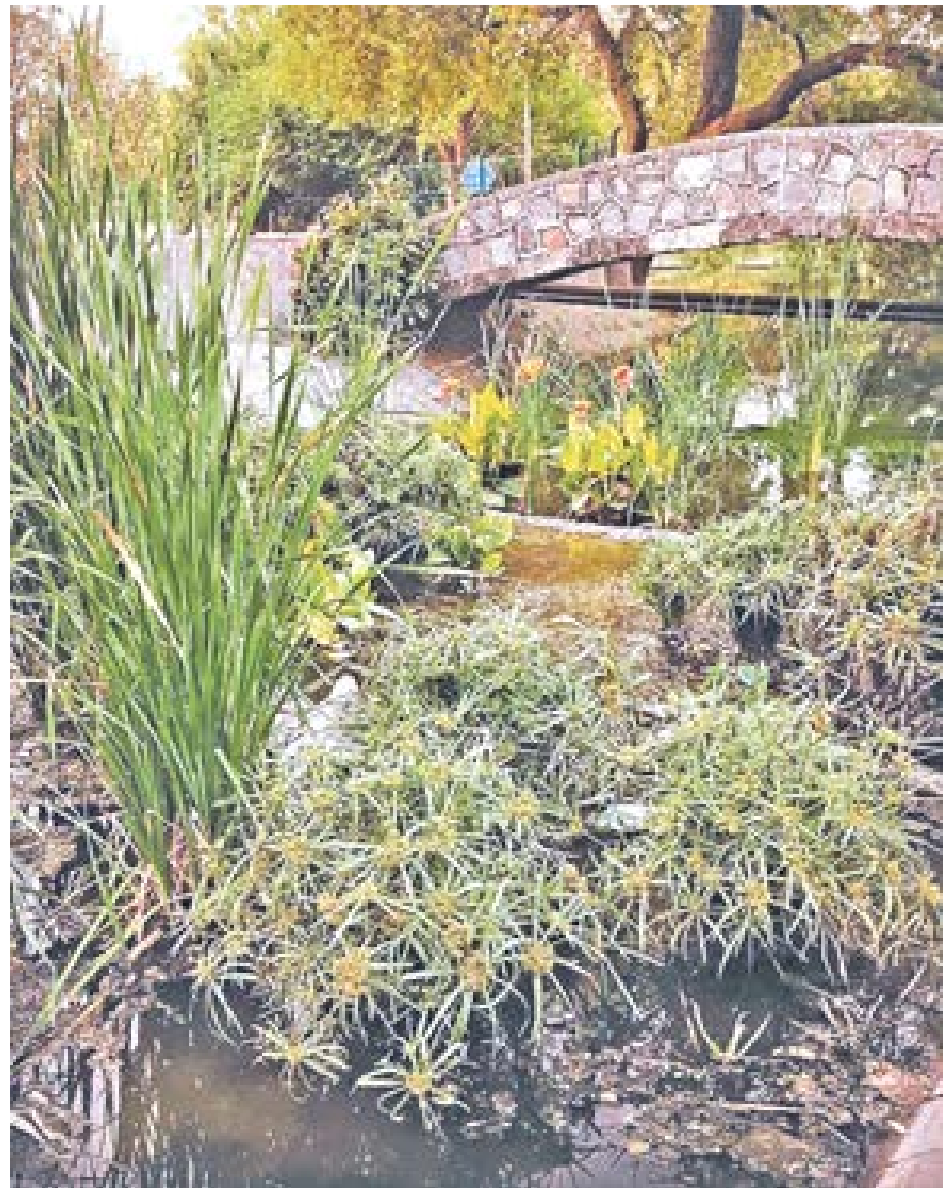
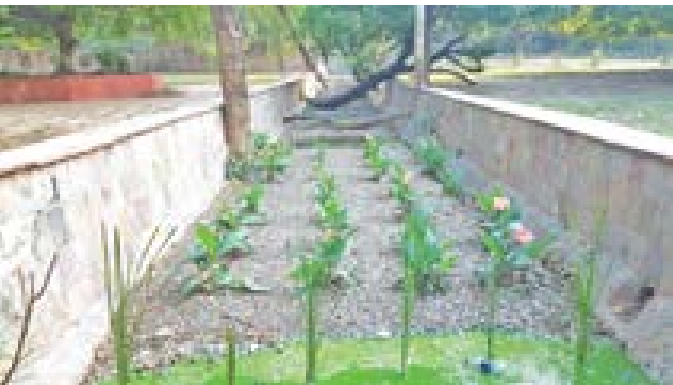
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LEFT COLUMN: TOP TO BOTTOM

The existing stormwater drain that discharged into the lake. Native aquatic plants planted in the drain to help remove pollutants from the waste water before it flows into the lake. The drain after the growth of the plants, is now used to filter and circulate water from the lake.

RIGHT: *The constructed wetland*

Both constructed wetlands have been engineered to maximise the treatment efficiency in the available existing space and employ a mixture of natural water treatment modules. There are both sub-surface and surface flow areas of wetland and areas that change their function depending on the incoming flow and lake level. Horizontal and vertical flow wetlands direct the incoming water through filter media and are planted with native wetland plants to remove pollutants such as nitrates and phosphates.





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TOP LEFT: *The present condition of Hauz Khas Lake*

BELOW INSET: *A solar aerator*

BOTTOM LEFT: *The wetland islands, thriving on manually crafted rafts, float on the surface of the lake. Their roots hang below, thus, physically filtering the water.*

Floating wetland islands have been created on floating rafts, constructed from common DIY materials and discarded plastic bottles. These float on the lake surface and the roots hang from below, physically filtering the water, providing a surface area for microbial growth and allowing the uptake of nutrients. These were adopted by individual citizens, citizen groups such as New Delhi Rising, local businesses such as I say Organic and Pathways School who paid for the materials and constructed and launched the islands into the lake themselves.

On top of purely natural forms of water treatment, floating solar aerators have been built on a bamboo platform, and pump air into the depths of the lake. Increased oxygen levels and circulation within the lake helps to remove pollutants and removes algae and odour.

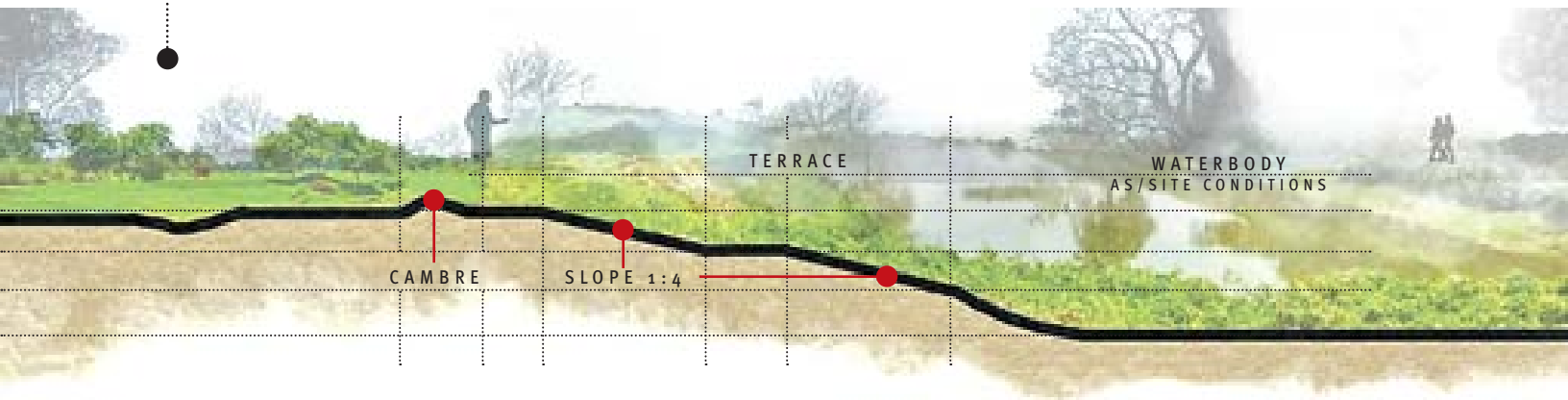
WETLAND DEVELOPED IN ASITA ON THE WESTERN BANK OF RIVER YAMUNA
 OLD RAILWAY BRIDGE TO ITO BARRAGE

BELOW | SECTION OF THE WETLAND
 The edges of the wetland have been kept as natural and no civil work is involved in the development of wetlands in the River Yamuna's floodplains

Landscape and Environment Planning Department
 Delhi Development Authority

RESTORATION AND REJUVENATION OF RIVER YAMUNA FLOODPLAINS

| NEW DELHI



CREDITS

LANDSCAPE AND ENVIRONMENT PLANNING DEPARTMENT, DELHI DEVELOPMENT AUTHORITY

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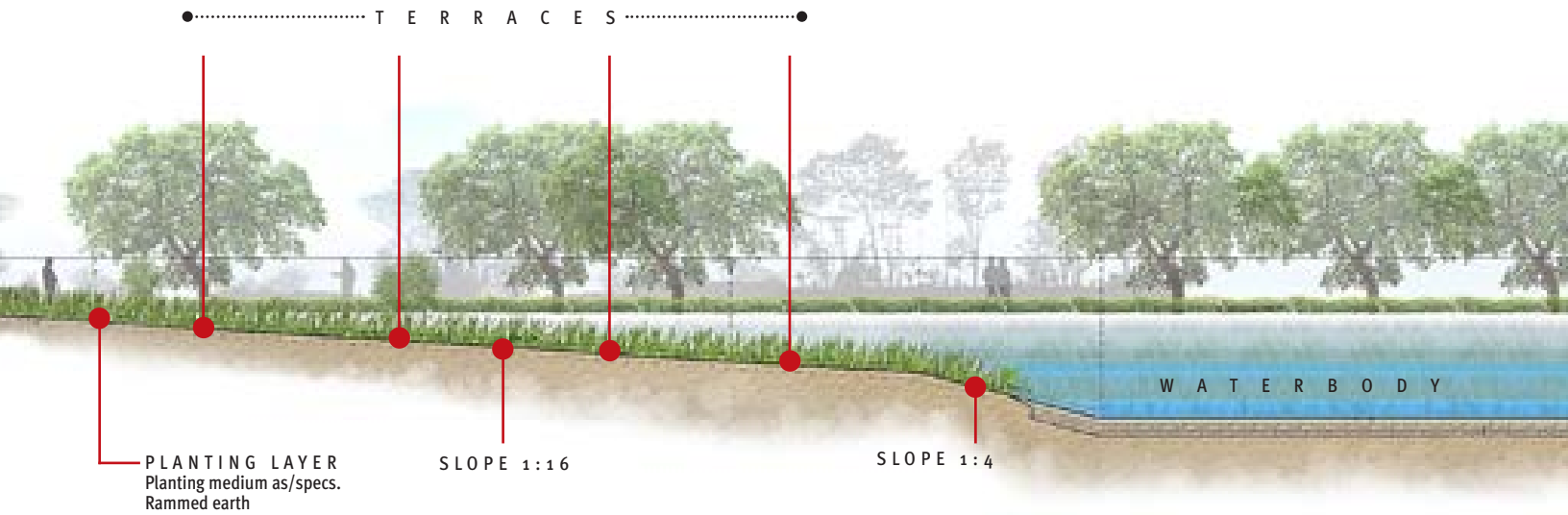
Mohammed Uzair
 Assistant Director [Landscape]

Kriti Goel
 Landscape Architect

River Yamuna has an extremely rich riparian ecosystem with vast floodplains on both its eastern and western banks with an extent of 200 metres to several kilometres. The river flows on the eastern edge of the city of Delhi, from the north to the south [covering approximately 52 kilometres] from Palla to Jaitpur.

It is notable that 70% contribution of the pollution is from the 22 kilometre urban stretch of Wazirabad to Okhla Barrage. During the annual flooding, water is released from Hathnikund Barrage [upstream of Wazirabad] in large quantities. It mixes with the water from the drains already flowing into the river forming sludge. The first 300 meters of the belt along the river in the floodplains is severely affected by the sludge deposits. Moreover, numerous barrages, bridges and other infrastructure projects have dissected it, disturbing the natural flow and hydrology of its floodplains. These interventions have led to the narrowing of the river channel and also depleting the wetlands drastically, the prime reason for flooding during the monsoons.

As per the directions of National Green Tribunal NGT for the restoration and rejuvenation of the floodplains of the river, Delhi Development Authority has prepared an Action Plan.



WETLAND PROPOSED ON THE WESTERN BANK OF RIVER YAMUNA BARAPULLAH TO DND FLYWAY

ABOVE | SECTION OF THE WETLAND

The design of the wetland is such that approximately 1-1.3 metres of water always remains in the wetland during the dry season after the annual evaporative losses, the area not under water [terraces] can be utilized at this time as a public space. During monsoons the water level raises to fill the entire wetland.

In 2015, a Comprehensive Plan for Zone 'O' was prepared, identifying and mapping potential areas for wetlands, biodiversity parks and greenways for the public at large. Varying sub-surface conditions led to an extensive study of the ground conditions. Soil and water sampling tests were conducted at various segments along the stretch. Efforts are now being made to revive the existing wetlands along with creating new ones as per site conditions. The main objectives are to increase the storm water run-off catchment area of the floodplains, so as to prevent floods and encourage flora and fauna by interspersing them with riparian forests and grasslands. The regulatory recommendations by experts have formed the basis of the planning for the restoration and rejuvenation of these fragile areas. It includes a 300 m wide green buffer area along the river with its edge planted with riparian species. A belt of 100-150 meters along the peripheral roads is proposed to be developed as greenways [a continuous trail of natural pathways and cycle tracks along with provision of spaces for passive activities] dotted with various public amenities.



**WETLAND DEVELOPED
NEAR BARAPULLAH ON
THE WESTERN BANK
BARAPULLAH DRAIN
TO DND FLYWAY**

*THIS PAGE [FIRST ROW]
Waterbody works in progress*



**WETLAND DEVELOPED
IN ASITA
OLD RAILWAY BRIDGE
TO ITO BARRAGE**

*THIS PAGE [MIDDLE ROW]
Overall view of Asita East and
its waterbody*
*FACING PAGE [BELOW] &
THIS PAGE [THIRD ROW]
Site photographed before 2017,
Pre-monsoon in 2018 and
During monsoon season in 2019*





Other measures include the restoration and deepening of the existing low lying areas as natural wetlands. The authority has developed a large capacity [44,663 cubic meters] of such wetlands between Old Railway Bridge and ITO Barrage. Rows of dense riparian grasses have been planted on the edges of the wetlands that have been segmented into terraces. The area of each of these has been calculated as per the monthly average evaporative losses. Designed to carry the maximum peak flow during the monsoons, their depth allows them to retain a fair amount of water even in the dry season. It is envisioned that, along with being significant ecological zones, these areas will also be used as public spaces by the city population in the coming years.

THIS PAGE |

OTHER WETLAND DEVELOPED IN ASITA ON THE WESTERN BANK OF RIVER YAMUNA

OLD RAILWAY BRIDGE TO ITO BARRAGE

TOP ROW | *View of the wetland: Before and Pre-monsoon photographs*

MIDDLE & BOTTOM ROWS | *Development and landscaping works: Before and After*



THIS PAGE | **PLANTATION**

Riparian vegetation used along the Western banks of River Yamuna

LIST OF TREES AND GRASSES PLANTED IN ASITA [WESTERN BANK] OLD RAILWAY BRIDGE TO ITO BARRAGE

TREES

Acacia catechu [Khair]
Acacia nilotica [Babul]
Butea monosperma [Flame of Forest]
Cassia fistula [Amaltas]
Dalbergia sissoo [Shisham]
Ficus infectoria [White Fig]
Ficus religiosa [Peepal]
Madhuca indica [Mahua]
Mallotus philippensis [Kamla]
Manilkara hexandra [Khirni]
Lagerstroemia thorelli [Crape Myrtle]
Mitrangyna parvifolia [Kadam]
Salix babylonica [Weeping Willow]

Syzygium cumini [Jamun]
Syzygium heyneanum [Kath Jamun]
Terminalia arjuna [Arjuna]
Terminalia bellerica [Baheda]

GRASSES

Cyperus scariosus [Umbrella Grass]
Cynodon dactylon [Doob]
Pennisetum setaceum [Green Pennisetum]
Pennisetum rueppeli [Red Pennisetum]
Veteveria zizanooides [Vetiver Grass]
Grewia [Serulate Leaf]
Eragrostis [Birdwood Grass]

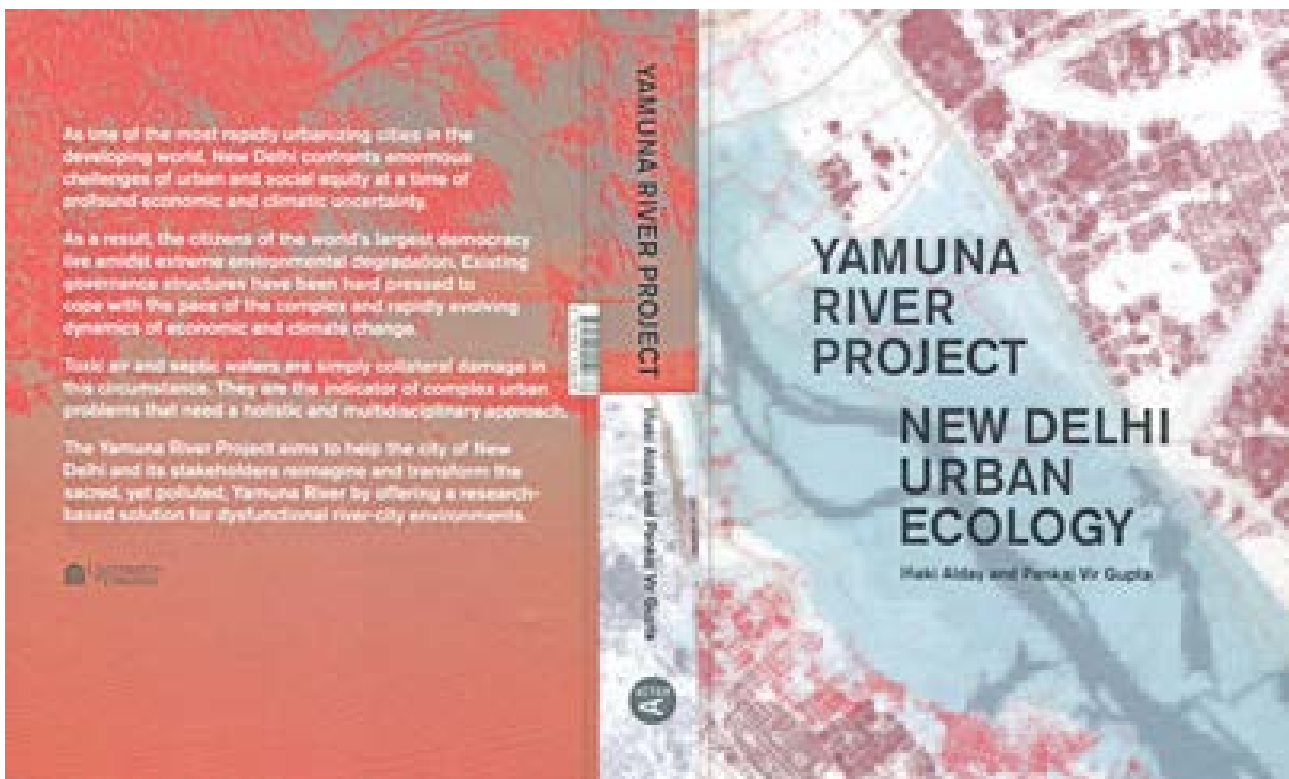
Ardisia [Shoebuttan Ardisia]
Cenchrus setigerus [Buffel Grass]
Typha angustifolias [Indian Reed Mace]
Sedges [Buttonhead Pipewort]
Phragmites karka [Tall Reed]
Saccharum spontaneum [Kans Grass]
Cenchrus ciliaris [Dhaman Grass]
Cymbopogon flexuosus [Lemon Grass]



All drawings and images courtesy of the respective contributing Authors/ Departments

Review by **Geeta Wahi Dua**, Landscape Architect
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REIMAGINING THE CITY



In collaboration with Delhi Jal Board, The University of Virginia's Yamuna River Project is an interdisciplinary research program, proposing to revitalize the ecology of the Yamuna River in New Delhi, and to create vital urban links with Yamuna, as it flows through India's capital city. The book presents the result of more than five consecutive years of focused research initiatives and designs from the University of Virginia School of Architecture and many other university collaborators towards the revitalization of New Delhi's waterbodies.

**YAMUNA RIVER PROJECT:
NEW DELHI URBAN ECOLOGY**
A Collaboration of Delhi Jal Board and
University of Virginia, USA
Authors Inaki Alday and Pankaj Vir Gupta
Published by Actar Publishers, 2018
Hardbound | 361 pages | 230 x350 x40 mm
ISBN 978-1-945150-67-8

The publication is the winner of 2018 International DAM
Deutsches Architekturmuseum Architectural Book Award

Two natural features of river Yamuna and Ridge forest have defined the environmental character of the city of Delhi since its first settlement came into being. With dropping ground water levels, polluted river, reducing forest cover due to unregulated growth and urbanisation of a fast growing Indian metropolis, the city is battling multiple battles on various fronts. A seat of power with a complicated governance structure, it has been a challenge to formulate and execute crucial policy decisions, especially related to environment to improve the situation.

In this context comes the Yamuna River Project, New Delhi Urban Ecology. As part of an ongoing research work by University of Virginia, US, an independent research university that acts as a multidisciplinary think tank in collaboration with Delhi Jal Board, local government agency responsible for upkeep and maintenance of the water supply system of the metropolis, the research, in the form of a book, explores the environmental situation of the city from multiple perspectives while attempting to formulate a vision to explore potential avenues for change and transformation.

“The project methodology questions and investigates the causes and origins of Delhi’s environmental situation from many perspectives — historic, social, technological and cultural. It proposes speculations — holistic interventions that define systematic urban strategies and generate new typologies that respond to the specificity of Delhi.”

—Inaki Alday and Pankaj Vir Gupta,
An Essential Future [Introductory Note]

The book is divided into four sections — *Delhi’s Urban History*, *Delhi Urban Layers and Delhi and its Water Bodies*, and *A Vision for Delhi*. The introductory section traces the process of evolution of various historic settlements when they shared a close relationship with the natural features of hills, forest and river. Guided by natural topography, these settlements shifted from hills of Aravalli in south to floodplains of river Yamuna on the east in a time span of several centuries. Traditional systems of water harvesting with wells, *baolis*, tanks and lakes soon gave way to canals and later under British, to modern water supply and treatment system. The research acknowledges these important milestones in the urban history of the city. In the post independence scenario, some staggering figures show the scale of population growth and expansion leading to serious environmental issues concerning natural resources, health and hygiene. For example in seven decades, urban area has increased from 66.50 sqkms [in 1911] to 2,109 sqkms [in 2011]; 17% of the population doesn’t have piped water system; there are more than 2000 illegal tankers supplying water to these areas through ground water extraction; as against around 4000 official tubewells, there are 4,65,000 illegal borewells that supply millions of litres of water; out of nine, seven districts are over exploiting ground water at an average rate of 170%; around 40% of the Delhi residents are not connected with planned sewage system; out of 83% of solid waste collected, accumulated at four landfills [with three exceeding height of more than 40mts.] and out of these, only 29% is treated.

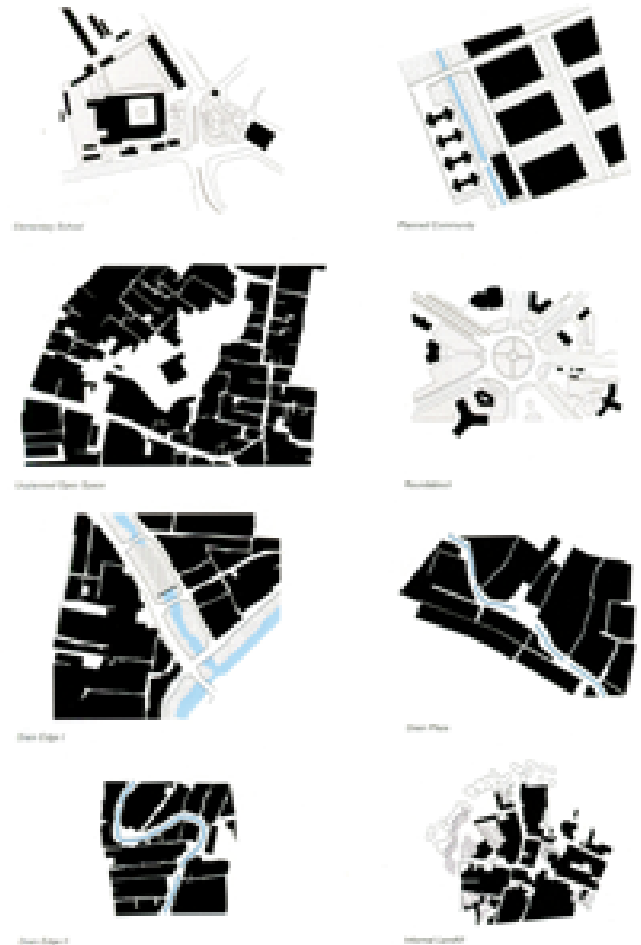
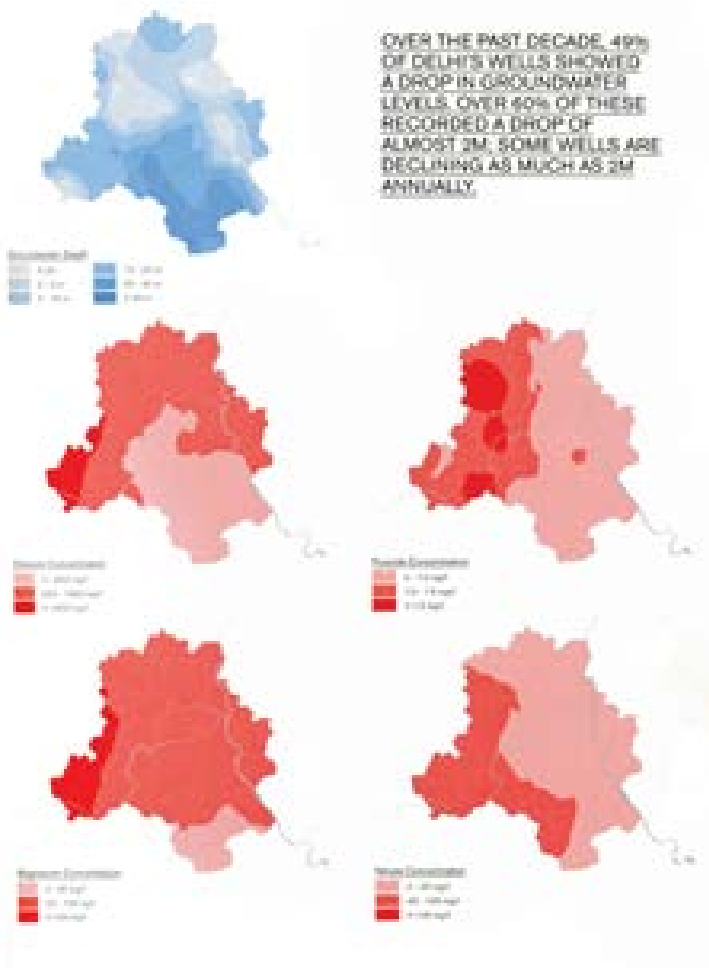
The research also holds responsible city’s various Master Plans for “their failure to provide a strategic vision which addresses Delhi’s Urban complexities, Endangered ecologies and exponential urban growth.” The observation attains a special significance in context of the current discourse in urban planning and urban design circles. In light of the crumbling infrastructure of Indian cities under various pressures, there is now a strong emphasis on the concept of localized development - a bottom up approach instead of the conventional top down. Acknowledging various forms of urban growth [unauthorized, regularized, slums etc.] other than the planned one in the city brings hope for a realistic and pragmatic discourse.

BELOW LEFT |

DELHI'S WATERS: *Ground Water Pollution*

BELOW RIGHT |

DELHI'S ECOLOGIES: *Open Space*



Multiplicity of authorities is another important issue of the country's capital which has led to sluggish urban transformation and change over the years. Interesting set of graphics show more than 15 agencies taking care of various urban aspects of the city – infrastructure [storm water management, floods, water supply, ground water, sewage, electricity, garbage disposal, communication, cooking gas], land ownership, property tax, pollution, forest, irrigation, heritage and river of the city.

The strength of the research work lies in unravelling the layers of four important infrastructure life lines of the city:

Water availability and Supply: *Ground water status [quality and quantity], other sources of water, sites of treatment plants and their working;*

Urban Drainage: *Natural and manmade drainage networks with their catchments;*

Sewage System: *Treatment plants with capacities, concerns;*

Solid Waste Management System: *Existing landfills, concerns.*

“Modern Delhi demonstrates a complete disregard for the relationship between urbanity and the natural environment which characterized the Historic city.”

BELOW LEFT |
A VISION FOR DELHI: Green Infrastructure

BELOW RIGHT |
SOCIAL HOUSING: Hybrid Housing at Hapur Bypass Bridge by Eric Barr



On-site research and documentation of various processes of supply and disposal related to these services – drinking water [from river to treatment tanks to distribution networks to pipes to house]; solid waste management [garbage from house to collection units to treatment units and disposal centres] and vegetable produce [from fields to markets to residences and commercial areas] to quote a few, managed by different agencies bring to the forefront this almost hidden knowledge about

these systems for a person who is interested to know about the real life of a city. The detailed study of these different aspects of the city tries to introduce a holistic perspective and a much nuanced awareness about the complexities of its character, not only about River Yamuna, but about city’s “ecologies”.

Can overlapping of these infrastructure networks give some clues to the trends of urban development? If yes, can these trends be interpreted as frameworks that can be studied in context of other cities? In informal settlements, do they guide development while in formal and planned development drives them? These are larger questions that researchers may want to address in times to come. A detailed study of urban open space networks, their extent, character, growth and evolution will remain a crucial subject which I hope to see in much more detail in future editions of the work.



In *A Vision for Delhi*, the infrastructure study becomes part of a design brief to envision and conceptualize possibilities to counter related issues. Imagined in carefully identified specific sites, the proposals while imbibing diverse knowledge and awareness about the crucial urban aspects conceptualize environmentally and socially relevant and sensitive places – sludge Remediation Park, water Remediation Park, sub-drain seasonal park, decentralizing waste infrastructure, landfill remediation, Biodiversity Park, social housing, hybrid infrastructure, neighbourhood amenities and heritage revitalization schemes. Promoting the idea of social prosperity as equal to ecological stewardship, the riverfront is visualized as a vibrant public spaces network, with public access and addressing ecological and cultural needs of the city and its citizens. City's historic drains are imagined as a connected green public infrastructure while the need of a holistic approach is emphasized to re imagine them. Many of the concepts, impressively rendered, show directions of new possibilities of hope and change.


Yamuna River Project, New Delhi Urban Ecology is a unique collaboration between authorities and academia. By extending a branch of collaboration, it acknowledges and respects the forgotten role played by our government authorities in managing these urban networks, while working at grass root

levels on daily basis. It brings to forefront the expertise of professionals, who are able to identify relevant concerns, interlinked networks and visualize new contexts of better environments. Their effort is backed by interdisciplinary and research enabled by a vibrant academic environment. The book serves as a role model for undertaking many such studies for exploring avenues of change, improvement and transformation of Indian cities which are at present grappling with serious environmental issues.

ABOVE |
THE YAMUNA RIVER COMMONS
*Connecting New Delhi to the Yamuna:
India Gate Biodiversity Park*
by Joseph Brookover Jr



All drawings/ graphics are from the book *Yamuna River Project: New Delhi Urban Ecology*.
Anyone interested in copies of the book may email to: pankaj@virmueller.com



Future Institute

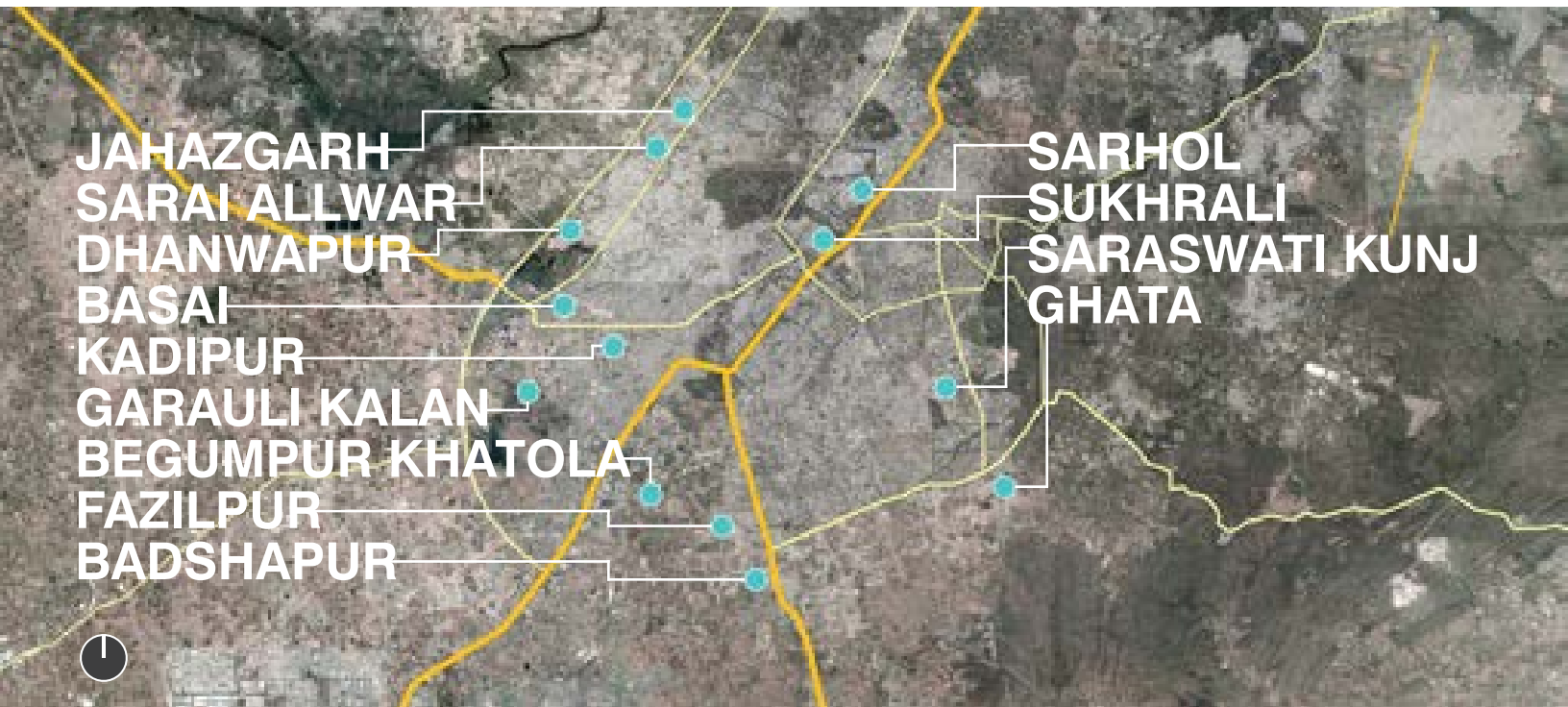
Architect-Urban Planner, and Head, Programs and Research, Future Institute
| swati.sharma@futureinstitute.in

REJUVENATION AND RESTORATION OF URBAN PONDS GURUGRAM

In 2014-2016, Future Institute, in collaboration with Municipal Corporation of Gurugram [MCG], undertook the task of identifying and establishing a framework with the appropriate solutions to preserve and manage the dying ponds of Gurugram. These networks which were once lifelines of the villages, now lie in a state of abject apathy causing far-reaching adverse impact on the environment and people of vibrant but distressed urban ecosystem. The project has two objectives: to create a broad consensus and awareness amongst the local stakeholders of the problem and issues through engagement, communication and participation and to identify the issues and measures to revive and manage the water sources through research, analysis and expert consultation.

Preserving and managing these natural networks of water and drainage can go far in restoring the balance between nature and built environment.

Out of the list of 120 ponds that fall within the jurisdiction of Municipal Corporation in Gurugram, Future Institute—in discussion with the authorities based upon availability of water, ownership status, size [above 1 acres]—identified 13 ponds that have the potential to be rejuvenated. The process of identifying them includes inspecting GIS information, aerial imagery, Development Plan, if any and primary survey and site inspection. It also includes any project proposed in the area.



Each waterbody was surveyed and analysed against qualitative and quantitative parameters. For each identified pond, detailed qualitative analysis was undertaken for water quality and quantity, including water modelling at two scales, waterbody and its immediate surroundings and its catchment area which is assumed around 15 times the size of waterbody.

Proposed Set of Interventions

CATEGORY-A

- Urban Design-led restoration solutions.
- Dredging, Desilting, Water cleaning, Pitching/Embankment, Landscaping, Building Street Furniture, Tree Plantation, Catchment level management and cleanliness, Awareness building.

CATEGORY-B

- Waste and Water treatment/management led reviving solutions [technical cum urban design-led interventions]
- Dewats, STPs, Bio-remediation/ Phytoremediation, and others coupled with design-led interventions

The initiative attempts to develop a participatory approach led working model to rejuvenate and preserve them. It also aimed at transforming these ponds as not merely catalysts of environmental sustainability but also as active urban places of renewing and building socio-cultural capital of Gurugram. The research also puts

ABOVE | LOCATION OF 13 PONDS IDENTIFIED IN GURUGRAM

- Basai Pond [Sector-9B]
- Bashahpur Pond [Sector-66]
- Begumpur Khatola Pond [Sector-74]
- Dhanwapur Pond [Sector-104]
- Fazilpur Jharsa Pond [Sector-72]
- Garali Kalan Pond [Sector-37]
- Ghata Pond [Sector-58]
- Jahazgarh Pond [Sector-106]
- Kadipur Pond [Sector-10]
- Sarai Alawardi Pond [Sector-110]
- Saraswati Kunj Pond [Sector-53]
- Sarhol Pond [Sector-37]
- Sukhrali Pond [Sector-17C]

forth a set of practical and doable set of guidelines to conserve and manage urban water ponds sustainably. It is aimed at, but not limited to reference for administrative ponds, policy makers, planners, urban designers and architects and interested citizens.

Methodology

INTRODUCTION

- To create a broad consensus and awareness amongst the local stakeholders of the problem and issues through engagement, communication and participation; and
- To identify the issues and measures to revive and manage the water sources through research, analysis and expert consultation.

ASSIMILATE

- Understanding the context [regional and local hydrology]
- Developing the database for the ponds [mapping [catchment, biodiversity, soil profiling], qualitative and quantitative characteristics of water and surroundings]

ANALYSE AND FORMULATE

- Lake modelling
- Identifying surface water availability, gaps and use in the region
- Listing potential ponds that can be revived
- Seeking feedback from community
- Exploring best practices in ponds restoration
- SWOT analysis and risk assessment

IMPLEMENT AND REVIEW

- Devising strategy for pond restoration
- Informing, communicating and mobilizing communities
- Outlining a coherent action plan
- Implementation of proposed strategies
- Engaging communities and all stakeholders
- Continuous monitoring, review and feedback
- Modify and adapt the action plan as per feedback and gaps identified

ASSESSMENT

- Assess each waterbody on a case by case basis. Each waterbody is unique with its own characteristics and set of influencing factors.
- Align the goals for the waterbody management with the waterbody's purpose. For example, if a waterbody is used for recreation or as a water source for animals then it is necessary to set stringent goals on the health and safety aspects of that waterbody.
- Consider any impacts when designing the waterbody plan. A waterbody is not an individual, isolated ecosystem but sits within a catchment and connects to and influences this much larger system.

**KEY PARAMETERS OF
EVALUATION OF WATERBODIES**

Each pond was surveyed and analyzed against qualitative and quantitative parameters outlined in the table

- Be innovative and pragmatic with management actions. Landholders/ Resident/ Users are, by and large, resource and time limited and need simple and effective solutions that are practical to implement.

FRAMEWORK OF ACTION FOR MANAGING URBAN WATERPONDS

- Geophysical and hydrological database for the region
- Identify the development potential of the land based upon natural and relief features
- Demarcate developable and non-developable land
- Determine the health of the waterbody
- For rejuvenation with high potential:
 - Determine the pressures that the development will exert upon the waterbody
 - Identify any waterbody values to be enhanced
 - Design development to protect and enhance waterbody and values
 - Discuss, document and review the design
- For rejuvenation with low potential:
 - May or may not be retained
 - Select an appropriate outcome for the waterbody
 - Design the selected outcome
 - Discuss, document and review the design

EMBRACING EFFECTIVE PUBLIC ENGAGEMENT

While establishing an efficient water management plan, it is important to consider a holistic view that addresses both land and water based environmental issues. It is also important to link the benefits of the initiative to the bigger picture of the local government's strategic objectives and goals.

Collaborative programs can deliver multiple benefits to both the residents and local government such as to:

- Build relationships and trust between local government and the community
- Improve community education, understanding and engagement with waterways and the environment
- Empower landholders and communities to implement proactive and practical solutions to conserve, protect and improve their properties
- Provide cost effective strategies that support local economic growth
- Maximize efficiency of local government resources

HYDROLOGY

**SETTLEMENTS
IN CATCHMENTS**

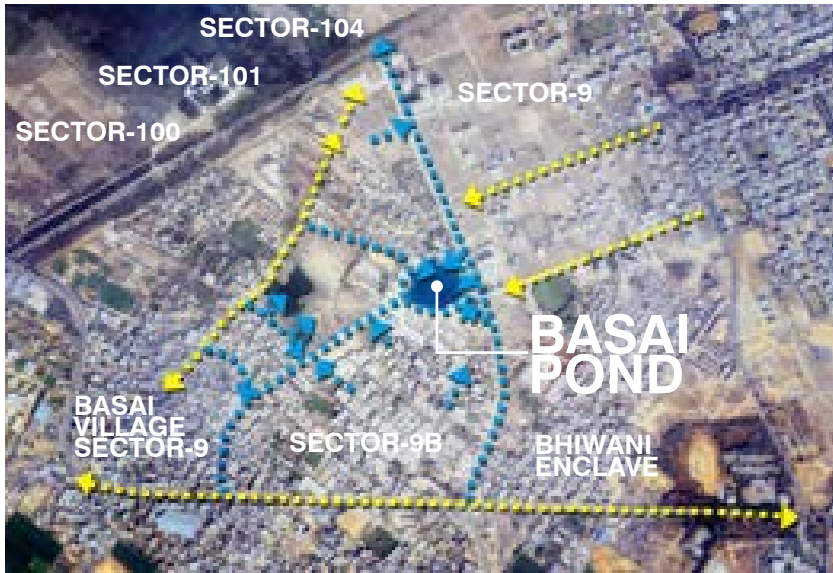
**WATER
QUALITY AND
POLLUTION**

**FUNCTIONS
AND VALUES**

**MAJOR
PROBLEMS**

**PUBLIC
AWARENESS**

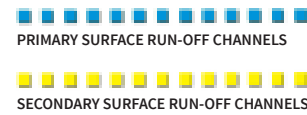
ATTRIBUTES AND OPTIONS						
Area [sqm]			Max Depth [ft]			
Embankment Condition			Pitching Work			
Sources of Water	Rainfall	Runoff	Black Water	Grey Water	Water Supply Overflow	
Outflow	Number		Description			
Inlet[s]	Number of Inlets					
Water Level Changes			Lake Dry Completely	Every Year	Occasionally	Rarely
	A	B	C	D	E	F
						OTHERS
Settlement Arrangement						
Solid Waste						
Water Supply						
Sewage						
No. of HH						
Sources of Pollution	Domestic	Industrial	Storm Water	Human activity	Cattle wading	Other
Pollution Status	Oligotrophic	Mesotrophic	Eutrophic	Toxic Pollution		
Indicators-water condition	Water color	Weed growth	Solid waste	Foul smell	Animals	Other
Biodiversity	Need a detailed survey of existing and seasonal variations [both flora & fauna]					
Water use	Drinking	Irrigation	Hydropower	Fishing	Religious use	Earlier was used for drinking and bathing
Use of biological resources						
Functions of the Lake	Reeds & grasses	Plant for food	Fish	Prawn	Singhada	None
	Groundwater Recharge	Flood Mitigation	Tourism	Biodiversity	Micro-climate	Socio-cultural
Reduction in Area	Reduction in Depth	Encroachment	Algal blooms	Aquatic weeds	Fisheries	Eutrophication
	Awareness	Restoration	Local groups	Aware about reduction in area/depth issues		



LEFT |

BASAI: CATCHMENT ANALYSIS

Most parts of the adjoining Sector 101 and 104 are the low-lying wetlands because of water overflow from Gurugram Sewage Treatment Plant. This area has water hyacinth, typha beds, flooded grassland and reed beds. In addition there are seasonally, active paddy fields, saline drenched flats. There are very few trees and rare biodiversity owing to Sultanpur National Park and Bird Sanctuary in the vicinity.



Basai village pond is one of the two ponds that comprise of Phase-I of development, the other being in Saraswati Kunj. Basai village is one of the low-lying areas in the region and was once part of the largest wetlands in Gurugram. Over the decades, the wetlands have shrunk considerably owing to massive construction and land use conversions in the region, leading to loss of diverse range of biodiversity. The place once used to be the home to exotic birds and was considered as an extension of the Sultanpur Bird Sanctuary in the vicinity. It is now a rapidly developing urban village with just one remaining waterbody that needs immediate attention.

The region has a natural slope from south-east towards north-west directions. The major catchment area for the pond comes from within the village itself – its southern region – and sometimes surface run off from the adjoining sectors. Laying of storm water drainage network in the sector is also under process that would lead to reduction in water inflow to the pond in future. The adjoining sectors and enclaves are well served with efficient drainage and sewerage system, and hence do not add to the inflow of the pond of any kind [residential/ industrial].

Local Catchment

The pond has a maximum depth of 21 feet and total area of 4.21 acres, with 2.96 acres inundated area. Run-off from the streets and rooftops of the village itself, and overflow from the streets/ roads/ sectors during monsoons also add to the local catchment. A major contributor is the water supply overflow connection that adds to substantial amount of water inflow every time the sluice valve is opened [usually once every 10 days]. Problems of water logging exist in the village as well as around the lake. Since there is no

DEMONSTRATION PROJECT
BASAI POND REJUVENATION
SECTOR-9B, GURUGRAM



overflow storm water inflow channels, water logging during monsoon is a problem though with the currently ongoing laying of drainage line, this issue would be managed. Due to adequate lack of runoff reaching the pond, the waterbody has not been overflowing for a number of years. Once runoff diversion takes place, the lake will start overflowing. Overflowing of the pond during monsoon would result of its flushing, ensuring cleaner water for domestic and irrigation uses.

Master Plan

The pond has the potential to sustain naturally in future with minimum catchment level run-off management [roof-top, paved and open space]. Since waste water is not a major contributor to pond water as of now, any change in population would not affect the water volume in the pond. Only change in built-up area will affect with run off reaching the pond. The vision for rejuvenating the pond is not to bring back the water of desired quality and quantity but to transform it into a catalyst of activating the proposed first socio-cultural hub of the region, hosting open air events, fair and festivals that bring city and its people closer to nature. The project timeline had been outlined for a two-year time frame, essentially including two monsoon seasons to observe the existing situation as well to monitor the impact of interventions.

**BELOW |
THREE ZONES OF THE AREA
TO BE REJUVENATED FOR BASAI**

Following the spatial configuration as proposed in the master plan, the area to be rejuvenated for Basai is divided into three zones [A, B and C]. The timeframe for each is: Zone A: 4 months, Zone B: 2 months, and Zone C: 6 months.

The plan is proposed to be developed in three zones:

ZONE-A [4.21 ACRES] LAND OWNERSHIP: MCG

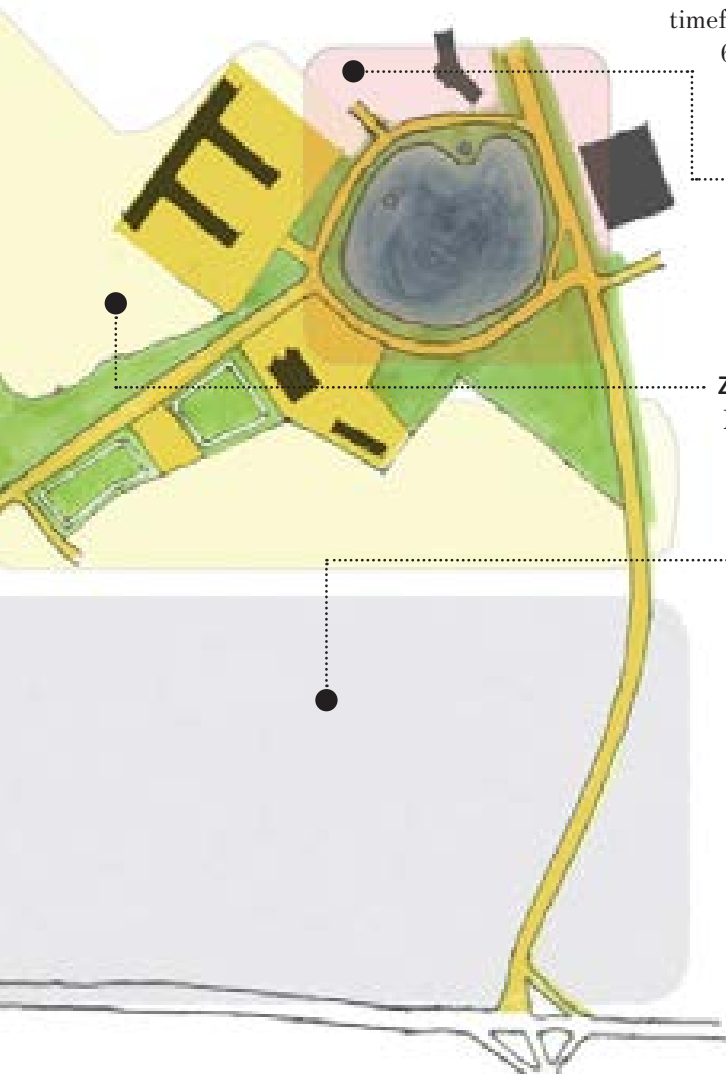
Prime activity and multi-functional area, pond and its immediate surroundings, to be developed as a rich public place offering a range of pleasing & delightful experiences connecting nature, city and its people.

ZONE-B [12.37 ACRES] | LAND OWNERSHIP: HUDA AND MCG

Neighboring areas around the pond that could be opened up as and integrated within the broader master plan as active recreational cum eco-zone [primary economic zone].

ZONE-C [1.84 ACRES] | LAND OWNERSHIP: HUDA, MCG, PRIVATE PROPERTY, AND VILLAGE LAND

Develop village street as live exhibit of art and cultural stories/narratives as a gateway street leading to active street and recreational zone. A stretch of 50 metres was selected long the northern edge of the pond and developed after collaborative working process, especially bringing the locals and government together as an effective example of participatory urban development model.





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**BASAI POND REJUVENATION
PROPOSED MASTER PLAN [ZONE-A]**

THIS PAGE [BELOW]

**VIEW OF THE PROPOSED DEVELOPMENT
[ZONE-A]**

The vision for rejuvenating the pond was not just to bring back the water of desired quality and quantity but to transform it into a catalyst of activating the socio-cultural public realm of in the region. The master plan for Basai pond and its precincts proposed to develop Basai as the first socio-cultural hub of Gurugram – a vibrant & active multi-cultural, multi-purpose public place bringing the city and its people closer to nature.



PARTNERS AND COLLABORATORS

ORGANIZATIONS

Abaxial Architects | New Delhi

Municipal Corporation Gurugram

Future Institute, New Delhi with core mentors

Ashish Bhalla, [Planner]

Aniket Bhagwat [Landscape Architect]

Sanjay Prakash [Sustainable Development Expert]

RESEARCH TEAM

Ashwin Tahiliani [Architect-Urban Designer]

Neha Verma [Research Associate]

Swati Sharma [Architect-Urban Planner], Head, Programs and Research, Future Institute

Viridian Group | New Delhi – Facilitator of the initiative’s Communication and Outreach

INDIVIDUALS

Dr. Bhat, TARU Ahmedabad Hydrologist and Urban Water Ecology Expert

Ipsita Pati, Journalist, Hindustan Times – Facts and Stories of Urban Ponds of Gurugram

Devika Narayani Prakash, Ecologist Consultant – Research and Analysis

Bal Krishan, Ward Councilor, Basai – Mobilizing people and resources for the pilot project and for his continued support throughout

People of Basai for their active engagement and participation

FACING PAGE [BOTTOM ROW]

& THIS PAGE [BOTTOM]

DEVELOPMENT [ZONE-A]

Before and After images of the executed works



A part of partial demonstration of proposed interventions for Basai Pond rejuvenation was executed [10% of total site area] on site in February 2016 and the remaining area were to be undertaken by MCG through open tendering process. Future Institute facilitated MCG with preparation of complete set of drawings and cost estimates for tendering, but the final tender could not be awarded due to technical glitches till 2016. Post 2016, GMDA [Gurugram Metropolitan Development Authority] was formed and this initiative was not executed.

Future Institute is a not-for-profit multidisciplinary applied research platform established in 2011 that enables and undertakes initiatives towards informing how India shapes its cities and transforms as it celebrates 100 years of independence in 2047. It offers a platform to create, apply and disseminate knowledge through collaboration and partnerships with like-minded organizations, institutions, professionals and individuals that actively influences urban thought and practice.



All images, drawings & graphics courtesy Future Institute

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SPURRING ECONOMIC REVIVAL THROUGH ECOLOGICAL RESTORATION

NANHU, CHINA



On 20 July 1976, the city of Tangshan in north-eastern China was hit by two earthquakes [7.6 and 7.4 magnitude], followed by a series of 12 aftershocks, all 6.0 or greater. Over 240,000 people lost their lives, and the city was devastated. This remains one of the deadliest earthquakes in recorded history.

Tangshan was one of China's oldest industrial cities, its economy based on coal mining. Most of the mines were in Nanhu, just south of the city centre. One after-effect of mining is land subsidence: when coal is removed from below ground, it leaves the overlaying layers unsupported. Gravity and the weight of these layers cause them to shift downward and occupy the void left by the removal of coal, an activity that if left unmanaged, can continue for several years. Preventive measures taken in an active mine and repairs undertaken post-mining can help keep subsidence local and under control.

When compounded by an event like an earthquake, however, the effects can be catastrophic, causing large tracts of already fragile land to drastically collapse. This was the case in Nanhu, where the earthquake left behind gaping sinkholes which grew year by year. Mining alone tends to leave behind scarred, barren and polluted land, unsuitable for agricultural or other development, and inhospitable to people and to wildlife. Add to this, the issue of geological instability: by the year 2006, 30 years after the earthquake, the "sinkholes" had reached an area of 28 sq. km [6,900 acres] and continued to grow. Most of the mines were abandoned, and Nanhu soon became a forgotten wasteland, a dumping site for sewage and waste.

Path to Recovery

After the earthquake, Tangshan repositioned itself to become the economic centre of the Bohai region in a span of thirty years. Its growing economy put pressure on the city to expand its urban boundaries, but the derelict coal mines of Nanhu just a kilometre south of the city centre, created a physical barrier to its southward expansion. Further, Tangshan was now occupied by a strong middle-class, which had higher expectations of the living environment than previous residents. It placed a premium on leisure and recreational activities, something that the city had not planned for. In 2008, in its search for a development solution, the city finally set its sights on Nanhu and established the Tangshan Nanhu Eco-City Management Committee.

The Committee realized early on that while ecological remediation was crucial, the cost could only be justified if there was a corresponding increase in the economic and social value of the land. It put together a planning team to study how to alleviate the obvious environmental concerns while generating urban growth in a manner attractive to current and prospective residents. The planning team included experts from fields such as geology, ecology, urban planning, landscape architecture, horticulture, hydrology, pollution control, and civil engineering and building construction. Significantly, landscape architects were included from the early stages of the project and played a key role in the planning and design.

Preliminary Analyses and Assessments

Preliminary studies led the team to recommend an area of 21 sq. km [5,200 acres], all urban brown field, as the site for initial remediation. This design area became the subject of comprehensive study: geological factors such as bearing capacity, seismic risk, aquifers, gradient and risk of further subsidence and ecological factors such as extent of surface water, permeability, depth of groundwater, vegetated cover and soil productivity were mapped. Base Assessment plans for ecological sensitivity and site constructability were then created. These maps would end up guiding every aspect of the redevelopment, large and small: from selecting areas of intense vs. passive development, to the materials used to build park shelters.

The design area was split into two parts by Tangxu Road: the north where the landform was stable and the south where the landform was partially unstable and at high risk for seismic activity. At the centre were large subsidence basins, which had turned into sewage lagoons. These, along with issues of surface permeability and bearing capacity, rendered the central area unsuitable for intense development. The north had the added attraction of being closer to downtown Tangshan. The north was proposed for more intense development, the centre for passive recreational use, and the south, for ecological restoration.



SITE & SURROUNDING REGION

Satellite view in November 2006 [THIS PAGE]
and in November 2009 [FACING PAGE, ABOVE]

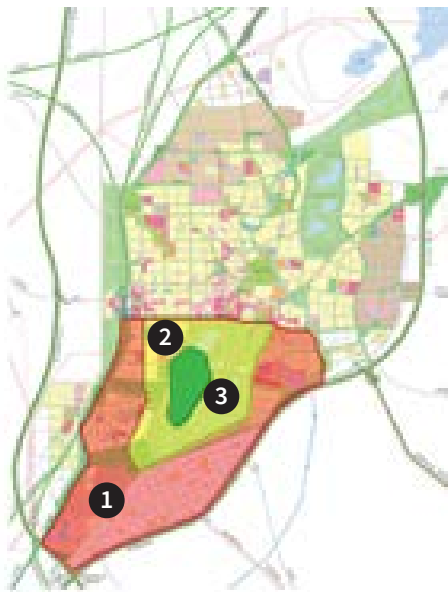
Design Approach



A team of experts from Beijing Tsinghua University Urban Planning and Design Institute [THUPDI] led by Professor Jie Hu conceptualized the theme, the “Phoenix,” symbolizing a city rising literally and figuratively from the [coal] ashes. The central subsidence basins and the area around them were conceived of as a green core with fingers radiating outward, penetrating the developed areas to the north. The green core would be the heart and public face of the Eco-city; the success of the residential and commercial development to its north would, to an extent, be dependent upon the success of this central park.

Given the inherent geological and ecological problems, it was natural that solutions to these would take precedence over any spatial and/or aesthetic design concepts. However, the landscape architects strongly believed that the park design should reflect the cultural values of the people it intended to serve. They came up with a park plan reminiscent of a traditional Chinese scroll painting. The task ahead of them was how to convert a site characterized by an unpredictable landform, significant sinkholes, a working mine and large amounts of waste, into a park replete with mountains, lakes, islands, pavilions and trees?

From Sinkhole to Park

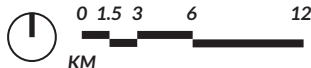


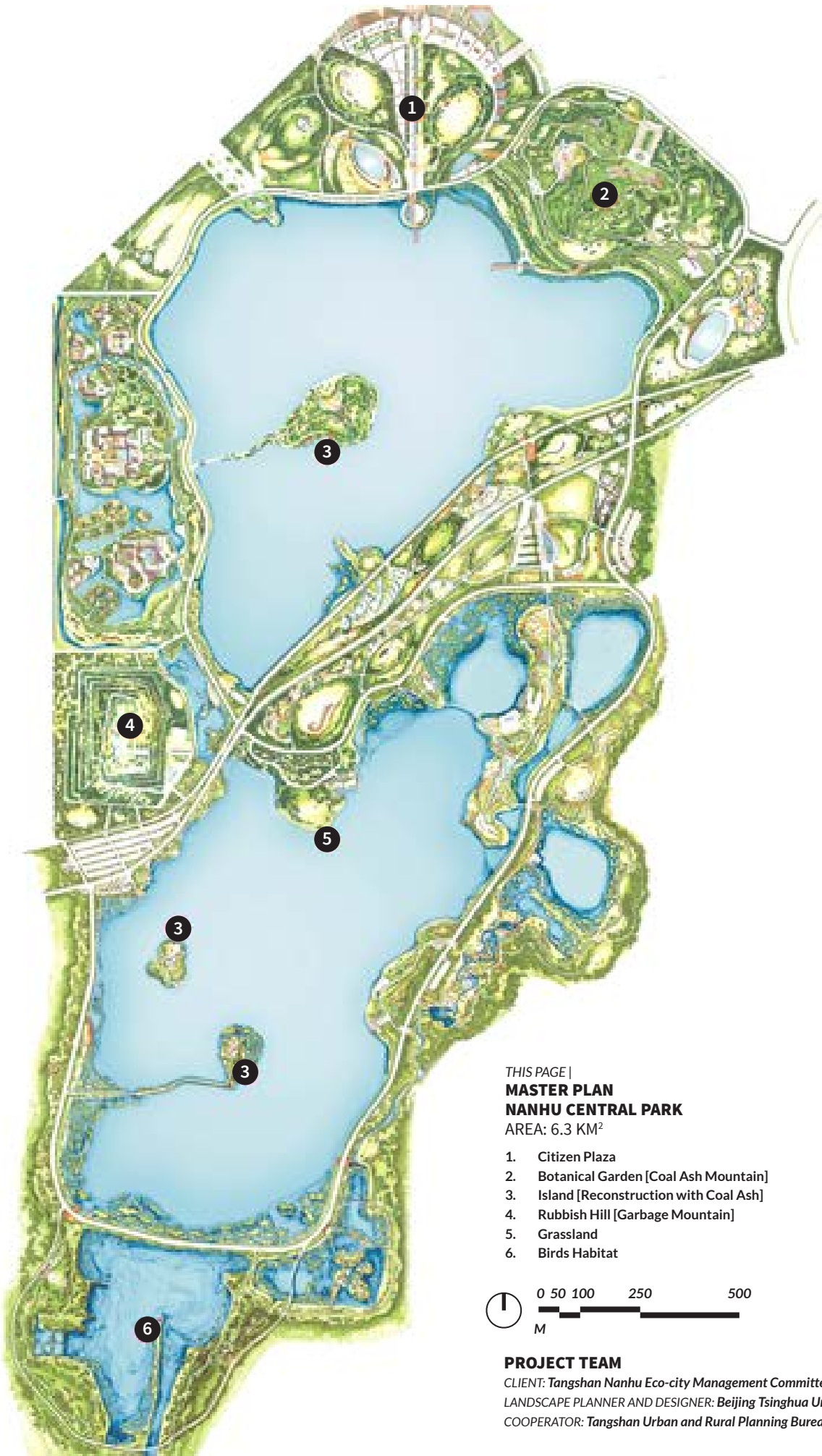
The two large subsidence basins appeared to be ideal locations for lakes, but creating lakes within an unstable landform is challenging, posing issues of both stability and flexibility. The lakes needed to have a stable base but with ductile/ flexible embankments. Low-bearing capacity subgrades were strengthened using short timber piles. Along with gabion walls, branches of dead trees were braided and bundled to create flexible embankments that could move along with the shifting earth and reduce erosion along the lake-shore. Bricks were made from coal ash, which were then used as base material to create islands within the lakes, sealed with clean soil and planted.

The lakes were also the source of irrigation water for the site, and the team sought to maintain the required water levels in these lakes without the use of any additional potable water. A waste-water treatment plant was built on-site to treat existing and future sewage. Treated waste water from this plant flows into a series of constructed wetlands which deliver about 80,000 cubic meters of reclaimed water per day to the south lake. The north lake is recharged by a still active coal mine which provides about 20,000 cubic meters of displaced groundwater a day.

SITE LOCATION

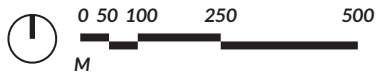
- [1] Nanhu Eco-city | 105 km²
- [2] Eco-city Core Area | 38.5 km²
- [3] Nanhu Central Park | 6.3 km²





THIS PAGE |
MASTER PLAN
NANHU CENTRAL PARK
 AREA: 6.3 KM²

1. Citizen Plaza
2. Botanical Garden [Coal Ash Mountain]
3. Island [Reconstruction with Coal Ash]
4. Rubbish Hill [Garbage Mountain]
5. Grassland
6. Birds Habitat



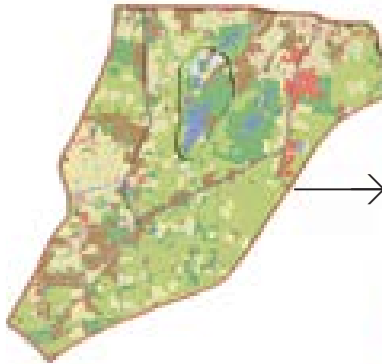
PROJECT TEAM

CLIENT: Tangshan Nanhu Eco-city Management Committee
 LANDSCAPE PLANNER AND DESIGNER: Beijing Tsinghua Urban Planning & Design Institute
 COOPERATOR: Tangshan Urban and Rural Planning Bureau

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Vegetative waste materials were weaved together to form an embankment structure for fixing soil and avoiding subsidence impact. Waste short timber piles from the park were implanted in the soft foundation, enhancing its geological bearing capability.

ECOLOGICAL BASEMENT

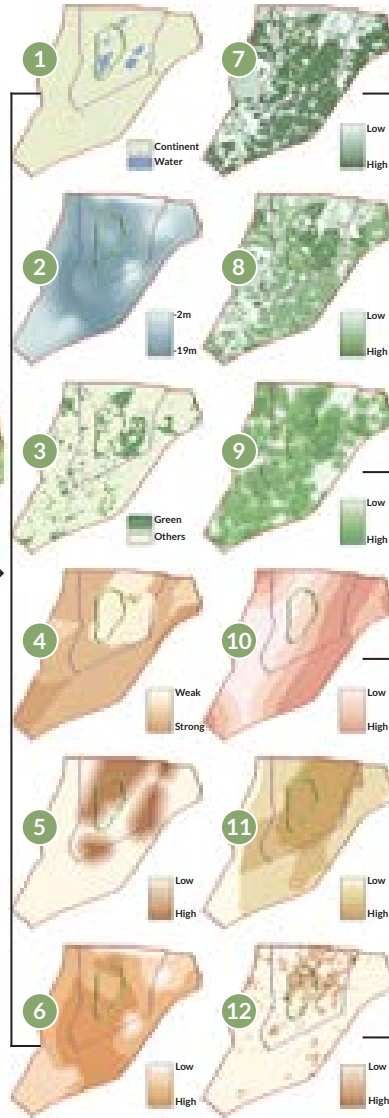
- DISTRIBUTION OF SURFACE WATER | 1
- DEPTH OF UNDERGROUND WATER | 2
- GREEN LAND DISTRIBUTION | 3
- GEOLOGICAL BEARING CAPABILITY | 4
- COAL MINING INFLUENCE | 5
- AQUIFER INDEX | 6
- SURFACE PERMEABILITY COEFFICIENT | 7
- SOIL PRODUCTIVITY | 8
- RADIATION INDEX OF GREEN LAND | 9
- HAZARD INDEX OF SEISMIC FAULT | 10 & 11
- GRADIENT INDEX | 12



EXISTED LAND USE CONDITIONS

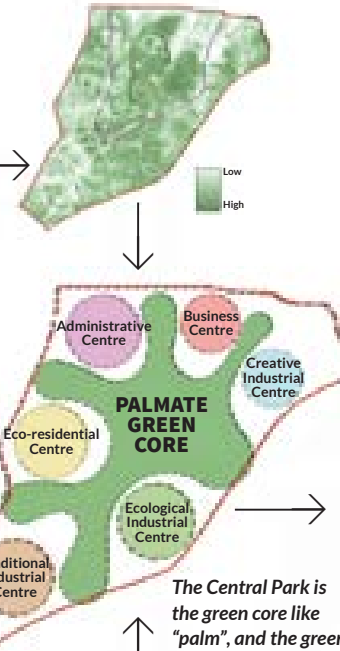
- LEGEND**
- Industry
 - Residential Zone
 - Parks
 - Water
 - Agriculture
 - Green Land
 - Rubbish Hill
 - Coal Ash
 - Nanhu Eco-city [105 km²]
 - Eco-city Core Area [38.5 km²]
 - Nanhu Central Park [6.3 km²]

FACTORS EXTRACTION



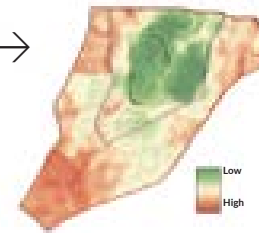
EVALUATION RESULTS & PLANNING STRUCTURE

ECO-SENSITIVITY EVALUATION

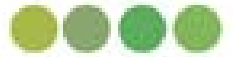


The Central Park is the green core like "palm", and the green corridors expand into the city like "fingers"

CONSTRUCTION SUITABILITY EVALUATION



ECO-CITY MASTER PLAN



DESIGN CONCEPTS

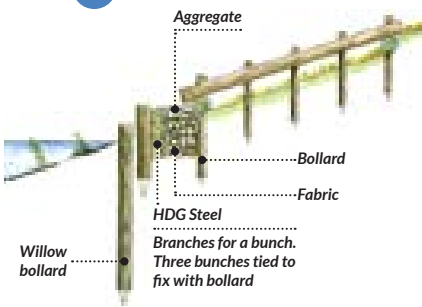
Transformation from Brownfield to Green Park. Based on existing land use and land cover status, eco-factors including ecological restoration, planting renovation and urban security were determined as a means of creating a spatial and ecological security structure for Nanhu Eco-city



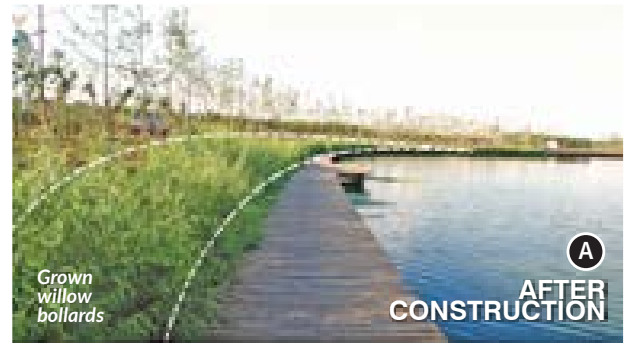
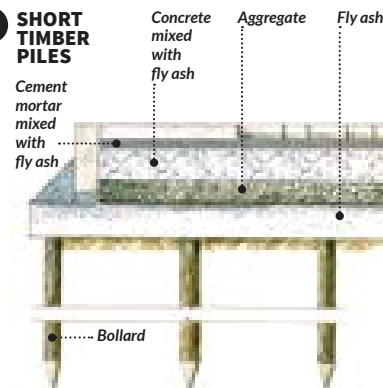
LEGEND

- Residential Area-I
- Residential Area-II
- Administrative Office
- Commercial and Financial
- Public Facilities
- Industrial Area-I
- Industrial Area-II
- Industrial Area-III
- Warehouse
- Transport
- Municipal Facilities
- Public Green Space
- Green Buffer
- Special Land-use
- Water
- Village Area

TREE BRANCHES EMBANKMENT



SHORT TIMBER PILES





The garbage “mountain” was not only unsightly but posed a public hazard. The garbage generated gas, which needed to be safely burned, without releasing it into the atmosphere. A collection and treatment system for liquid and gas waste, along with monitoring wells was installed, and management techniques for safe collection, treatment and discharge of surface water, were strictly implemented. The garbage was then centrally stacked, finished into a mountain shape, sealed and covered with planting soil. Renamed “Phoenix Terrace”, it is a central feature of the park, providing a green area of 130,000 m².

Uncontrolled accumulation of several tons of domestic and construction garbage over several years, mixed with coal ash and gangue [the commercially worthless material that surrounds, or is closely mixed with, a wanted mineral in an ore deposit, in this case, coal], had led to the formation of a garbage “mountain”, which stood over 50 metres tall [equivalent to a 16 storey building].

THIS PAGE [TOP ROW & SECOND ROW: LEFT] & FACING PAGE [TOP] | Photographs of the garbage “mountain” – As it existed, during phases of work and completed into “Phoenix Terrace”, now a central feature of the park

Coal ash is the waste that is left over after coal is burned; depending upon the source, it could contain heavy metals and toxic material. If coal ash is used as a fill, appropriate measures need to be taken to prevent it from leaching into the ground and polluting ground water resources. This site contained about 6 million cubic meters of these deposits.

THIS PAGE [SECOND ROW: RIGHT] & FACING PAGE [INSET] | Coal ash reuse: Before and after photographs of the site



Revival

Completed in 2009, the Nanhu Eco-city Central Park is now the largest urban park in north-eastern China. Designed to include a variety of habitats, including woodland, grassland and wetland, the ecological value of its restoration is significant. Studies show it to be home to 81 bird, 6 fish, 4 reptile, 3 amphibian and 2 mammal species; of which 7 are nationally protected wildlife species. 30 species of migratory birds now choose to overwinter in the park en route from Siberia to Australia and New Zealand. The Landscape Architecture Foundation estimates that trees in the park [which number over 600,000] sequester about 2,800 metric tons of carbon dioxide annually, equivalent to removing 550 passenger vehicles from the road in a year.



Equally important, is the corresponding rise in its economic and social value. From a wasteland, Nanhu has become a socially desirable place, the residential location of choice for people who wish to live in close proximity to the central business district of Tangshan. It is estimated that land prices in the region rose by 15% as a direct result of the restoration. Over 10,000 residents of the area now have access to a park within a 15-minute walking distance, with opportunities for walking, hiking and picnicking.

THIS & FACING PAGE |

While enhancing the environmental quality of the region, the completed project has also resulted in the creation of a socially and culturally-vibrant recreational public place accessible to more than 10,000 residents of the area



This transformation from brownfield to a model for environmentally conscious living came at a cost of 68 million USD, which could be justified in how it has since spurred residential, commercial and industrial development. While not a universal model, Nanhu allows us to see what is possible. The problem of land subsidence due to mining is not confined to Tangshan, or indeed to China. In China alone, previously-mined land that has subsided and is unstable, exceeds 10,350 square kilometres. USA and India follow China as the largest producers of coal. Coal production inevitably leaves behind a trail of degraded and polluted land. Nanhu offers an example of hope: how perhaps, an abandoned mine could become a catalyst of urban growth, and how ecological restoration can be the driving force behind economic and social revival.

Sources

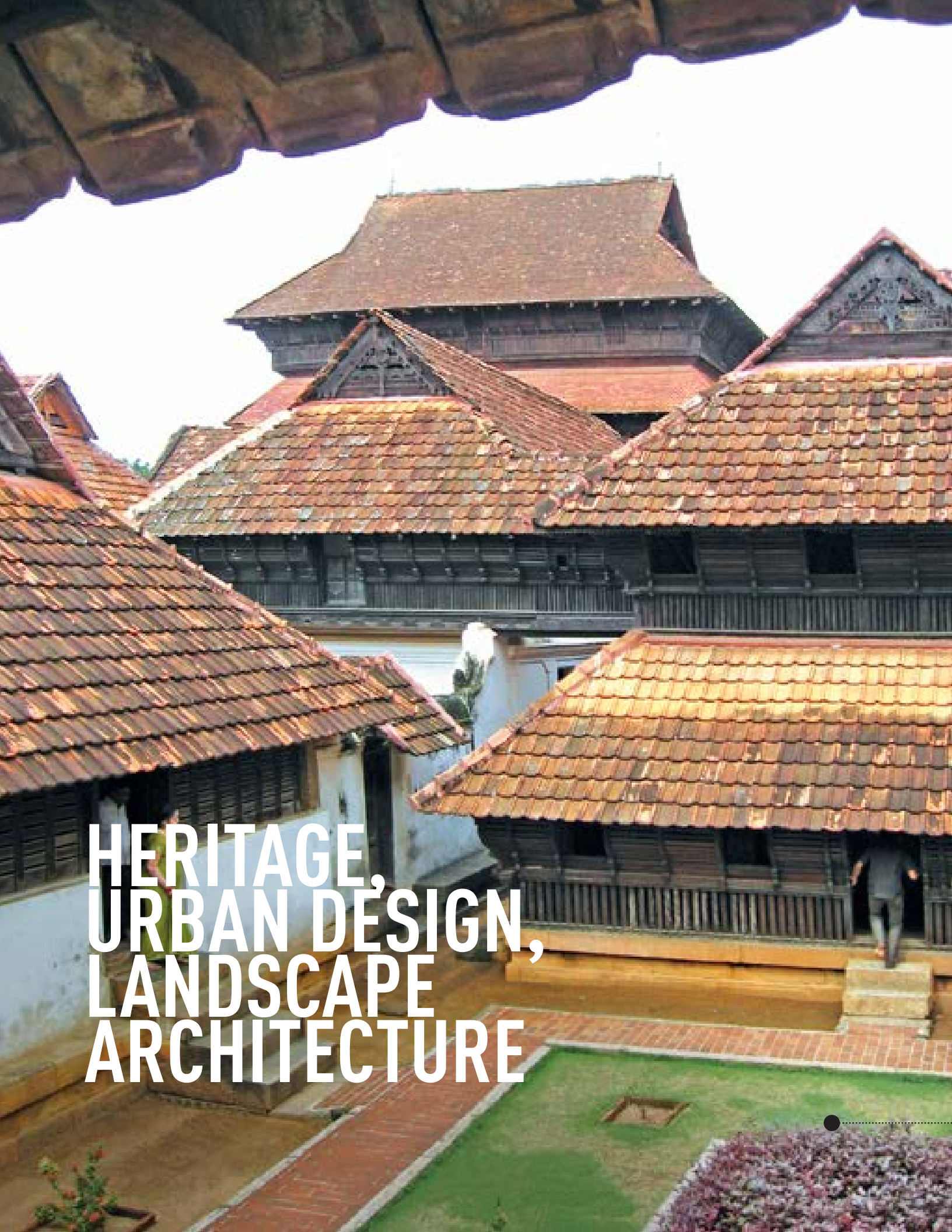
Conversations with Professor Jie Hu, Beijing Tsinghua University Urban Planning and Design Institute

China City Planning Review, Vol. 26, No. 1, 2017

Dvorak, Bruce, Ming-Han Li and Yi Luo. "Tangshan Nanhu Eco-City Central Park". Landscape Performance Series. Landscape Architecture Foundation, 2012



All drawings and images courtesy of Beijing Tsinghua Urban Planning & Design Institute



**HERITAGE,
URBAN DESIGN,
LANDSCAPE
ARCHITECTURE**



FROM MY HOUSE TO YOUR HOUSE

IN CONVERSATION WITH **MIKI DESAI**



PHOTO CREDIT: *bsd+grafiniti*

From my House to your House: A Select Journey of Indian Vernacular Architecture — exhibition conceptualised and curated by architect and academic **Miki Desai** — is an effort to re-introduce the word ‘vernacular’ in contemporary architecture discourse. An outcome of Miki's self-initiated research of over four decades, the exhibition comprises of drawings and photographic documentation of vernacular architecture across diverse geographical regions of the country including Kerala, Gujarat, Karnataka, Northern and Western India.

Objectives of the exhibition

During the past more than three decades, our work has focused on study and research of vernacular and colonial architecture and the built environment in India. The main objectives of the exhibition, *From my House to your House* [title based on Tom Wolf's book “From Bauhaus to Our House”, a critique on modernism and an unashamedly original work by Wolf], are three folds — to draw a connection between people and their own architecture and legacies that are waiting to be explored; to learn about the indigenous nature of architecture that is surviving so well in this country and to illustrate to the students and designers that modern architecture is not the only type of architecture to fall back on to build our settlements, both rural and urban. The examples showcased in the exhibition across the continent have something to do with how society sees itself and how it wants to present itself. We need to recognise and learn from the vernacular architectures of different types and from different regions. So the main point is to communicate the idea to the students and the people and hoping that somewhere along the line, they will wake up to the idea of meaningful built environments of their own. Built into the exhibition is the argument of nurturing and carefully transforming this age old legacy.

“India is a vast and a complex country with a pluralistic society composed of religious, geographic, ethnic, climatic and linguistic diversity. Its history is full of intense political, temporal and cultural experiences. It is a land of villages but with a long history of urbanisation. Today’s vernacular and traditional Indian architecture, therefore, have multiple manifestations in layered built environments. The isolated hamlets of Goa, the eloquent wooden architecture of Kerala, hill dwellings of Himachal Pradesh, stilt-raised houses of the North-East, the wadas of Maharashtra, pol houses and havelis of Gujarat, and the typological desert architecture of Rajasthan demonstrate the country’s regional diversity. Almost as a rule, every dwelling type has been a generative force behind the settlements’ morphology with built-in sustainability through a close connection between lifestyle, nature and architecture. Within this vast milieu, materiality, technique and craftsmanship bring about the region-specific modifications. Different architectural elements are forged by the carpenters and masons to fashion them. Decoration per se as well as meaningful articulation endows their regional character and personality. A dominant spatial element and the façade typify the dwelling type. Most of the aesthetic qualities, though rendered by artisans, are as a result of people’s daily actions and involvement in life. In that sense, architecture is a significant component of culture and the embodiment of an Indian spirit of life. How is this genre of architecture with its climate responsiveness, energy efficiency and sustainable processes relevant to the contemporary built environments?”

— ‘From my House to your House’: Introduction to the exhibition



Vernacular and its Relevance

India has a unique assemblage of regional vernacular vocabularies, many of which have thrived for centuries under patronage of various empires and at times nurtured by communities. They are climatically and culturally contextual examples, which are indigenous and are economical. The plan-types of the vernacular architecture are very simple, but for construction, various regions have risen to the occasion and given a distinct identity to each one of them. The crafts around building industry or building trade were luminous and they thrived very well without losing the sight of the function, beauty and societal aptness.

If you look at the types of vernacular architecture across the country it suggests that society took pride in its building environment. Today, the society doesn't seem to pride itself over the development. Things have changed with times. It may be sentimentality that makes me mourn over our lost culture. However, the question is; are we creating better living environments that are healthier, happier, equitable and robust? This question should be constantly asked by the makers of new cities and the people who live in it, as at the end of the day, a place to live must spark joy. The places to live must create a good environment that people, collectively, love to be in, the concern which is missing now.

The contemporary Indian architecture itself is searching for identity and essence. In this context, the vernacular examples are deeply inspirational, but I don't want to speculate. Today, the designer looks at vernacular as frozen moments in the lost past rather than living knowledge for future. In most places I see, old people are left behind, but are utterly happy in the places which were so close to them. We need to think about the vernacular housing stock which gets discarded, but is very much alive. With changed socio economic contexts, it needs to be replaced by something else.

In the colonial mining town of Kolar in Karnataka, there are three hundred old odd bungalows. The social structure of that society has been disrupted with the younger generation that thrived in these buildings gone away. Now there are only hundred bungalows, in good condition that, are still occupied. People live there with just basic amenities, but this "museum of bungalows" is in a very good shape. What will happen to these buildings? Can we explore possibilities of using them in present times? The romance of vernacular is not affordable today but I would think like to think that it is possible to draw the principles and concepts enshrined in these buildings to make happier environments. If we embedded those concepts in our new designs, it is possible to recycle the idea of Vernacular. And we don't have to call it Vernacular. Now is Modern. There is a database of wisdom, knowledge and concepts in Vernacular designs. Why can't we recycle those ideas and make happier environments today?



Not all that is vernacular is good and ideal. Some of these plans are very de-meaning for the women. In these houses, women are in the darkest of place in the house when they are, in fact, doing the most amount of work around the house. A woman should be able to look out from the kitchen into the garden or onto the road or whatever else the requirements may be. So, replicating these vernacular styles does not guarantee happiness. It's the lessons, the concepts, and the principles imbibed in a new idiom. There is the engineering aspect and the social aspect. And, on the other hand, there is the whole idea of aspirations. How do you match all of them? That is the real challenge. In Arabic countries, vernacular has inspired the contemporary. In our country, we don't have such examples. Such thinking hasn't begun yet.

New Development

Who says modernist architecture has succeeded? The number of displaced indigenous people across cultures under the guise of modernism and progress is very high. The size and pace of development in this century has transformed the phenomenon of urbanisation. Sometimes when you take an example of vernacular and go a little further, you may get something. There are many experiments required to give a satisfactory result. You cannot build with speed and solve the problem. Built environments in India were designed and constructed by master carpenters and guilds of craftsmen till the advent of the modern era. Slowly, as architects came in, the idea of craftsmen building a house started vanishing and now craftsmen have been replaced by labour.

The crumbling, leaking, confused and slummy living environments that have been built in the name of low-cost-housing in past quarter century are phenomenal; simply because under the paradigm of 'low-cost-housing' Why can't we have well-built houses even if it is for the poor? For that we need to have a concept. Instead of area, we should give them volumes and they should make their own spaces within it. What are the things we can do so that there is a beautiful semblance of coexistence amongst place-making, space making and aspects of nature that we can bring about? You may call it romantic, but it can be done. I'm quite keen on doing a volumetric house rather than floor space house. As soon as you call it volumetric, the whole thing starts dancing. You can cut it from anywhere and see where air comes in from. It becomes so flexible offering many opportunities.

Cooperative Housing for the Press Association, New Delhi [Press Club Enclave housing] designed by architect Ashish Ganju is a very good example. A clear segregation of pedestrian and vehicular traffic and built form organized around garden courtyards has allowed children to play and residents to walk freely, once again in the example of Ujaas and Udayan projects in Kolkata completed in 2012 by architect Sohan Neelkanth. Decisions like these, along with the idea of softer environment and materials with a little decoration make a liveable happy place.

Who says modernist architecture has succeeded? The number of displaced indigenous people across cultures under the guise of modernism and progress is very high. The size and pace of development in this century has transformed the phenomenon of urbanisation. Built environments in India were designed and constructed by master carpenters and guilds of craftsmen till the advent of the modern era. Slowly, as architects came in, the idea of craftsmen building a house started vanishing and now craftsmen have been replaced by labour.

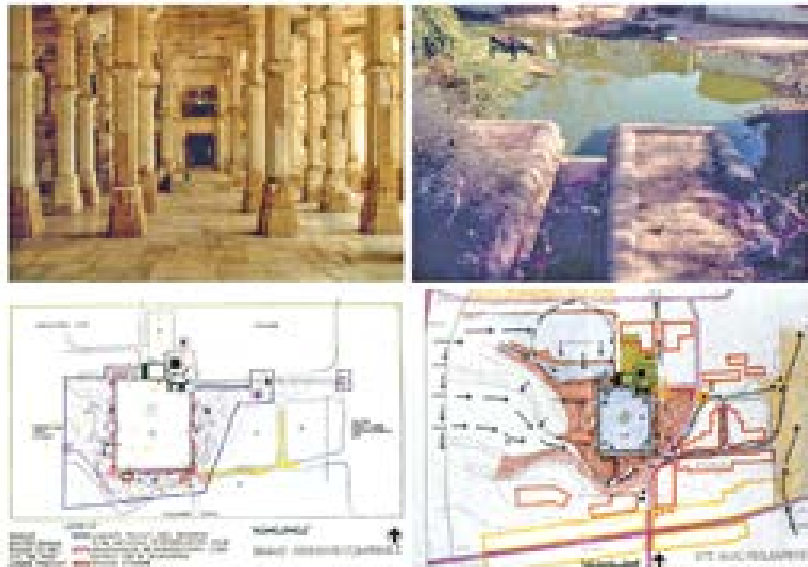
We call it cooperative housing, but where is the cooperation? There is hardly any. Make housing where all the facilities required for children, women, sweepers and servants are all met. It'll automatically be very attractive to buyers. Today, the absence of collective is felt all around us, it is our Indian hallmark. This wasn't the case earlier. We got stuck in the medieval times, when enclave mentality crept in.

In contemporary times, housing sector shows some possibilities of innovations and creative thinking. While designing Jal-Vayu Vihar of c.1985 Housing in Bangalore, architects, Kanade Brothers interacted with the user groups. Their ideas and suggestions were incorporated in the final plan, which is wonderful. Another example is of a housing colony in Ahmedabad by Kamal Mangaldas, who was the first one to do row houses in the modern context and they worked very beautifully. These and many other projects do not boast of low cost, however, they do manage to create quality living environments at no extra cost. Popular aspirations, if fulfilled, there are takers for the healthier and happier places to live in.

Redevelopment is a good idea because density and amenities are going to increase. It's a straight kind of logic. I feel that one can address this at the conceptual level. But I'd like to take it further — wall-to-wall houses and multi-family. So, what happens in wall-to-wall is it can only be one family. I'm saying in the same concept, let there be one family at the bottom and one on top. It requires completely different architecture. One of the suggestions is four storey walk-ups by Christopher Alexander. I don't think it's a bad idea. So you again play with volumes and, second, there will be an internal market of the houses if you design it well. There is more density and more families below and fewer families above. Now what happens is suppose one grew up in that house and 25-30 years later, his/her legs give up. The person can easily start negotiating with someone on the ground floor. This way, an internal exchange pattern is developed. Though a bit presumptuous, in the process the community may last longer and the neighborhood concepts may become stronger. One must be able to think out of the box.

We call it cooperative housing, but where is the cooperation? There is hardly any. Make housing where all the facilities required for children, women, sweepers and servants are all met. It'll automatically be very attractive to buyers. India is famous for no upkeep and no maintenance. We should have a maintenance office with in every housing colony, which takes care of every service. Sometimes, timely and quick repairs is all that is needed. Today, the absence of collective is felt all around us, it is our Indian hallmark. This wasn't the case earlier. We got stuck in the medieval times, when enclave mentality crept in.

Unfortunately, our development is still trapped in the system of modern rules and byelaws. In a developed city like London, in the eighties there was no central authority that legitimised or passed the building plans. The city had zonal places along with an architect's office where you go with your plans. The architect advises you regarding how it can be made better by offering many alternatives. You can further work on it and come back. You do feel advised. Government and Municipalities in our country both need to think out of the box.



WOODEN COLUMN TYPES

ABOVE: [1] A typical facade of Gujarati haveli in Vaso comprising wooden columns, brackets and floor bands. The wooden bands and the columns on the wall behind provide an earthquake-proof construction.

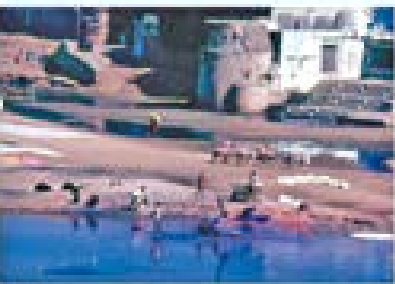
BELOW CLOCKWISE: [2-3-4] Columns traditional to the region of Karnataka. [5] Columns, brackets and beams of a primitive temple in Hassan area of Karnataka. [6] Wooden columns carved out of full tree trunks in Narsiman Temple, Ponda, Goa. [7] A circular wooden column in the Namaskar Mandap [salutation pavilion] of a temple in Kerala.

SARKHEJ ROZA COMPLEX

MAKARBA, NEAR AHMEDABAD, GUJARAT, [C.1500 CE]

ABOVE: [1] View of the lake, the king's pavilion in the foreground and the queen's pavilion in the background.

BELOW CLOCKWISE: [2] The Jami mosque within the complex. [3] The overflow outlet in the south east corner in the water tank, [4, 5] Diagrams [by the author] of the flow of water in and around the reservoir of Sarkhej complex.



ACTIVITIES ON THE SABARMATI RIVER

AHMEDABAD, GUJARAT

Seen over a period of thirty years from being a dhobhi-ghat, an activity ground, site of urban slums and a dry bed of nobody's concern, the river has been an enigmatic subject and a matter of debate over a long period.

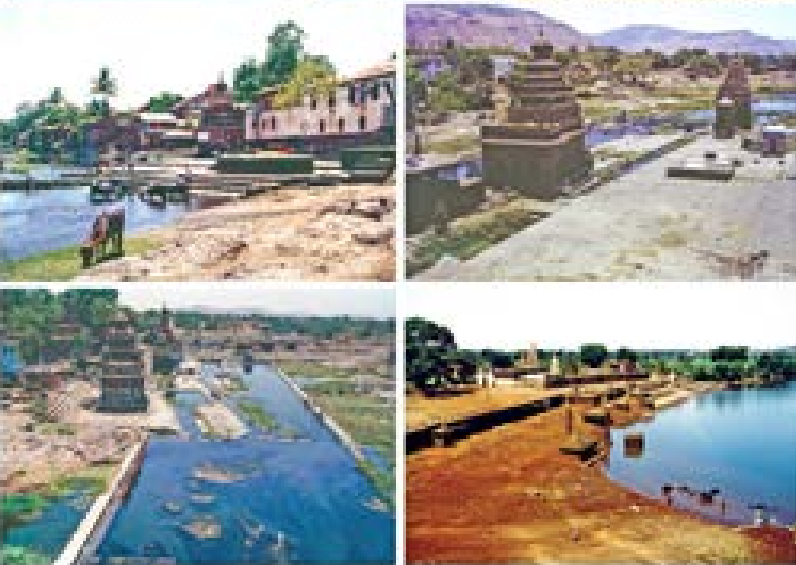


URBAN CHARACTER, FAIRS AND FESTIVALS

Fairs and festivals in an urban setting are another feature of Indian urbanity.

ABOVE: Ganesh Visarjan in Mumbai.

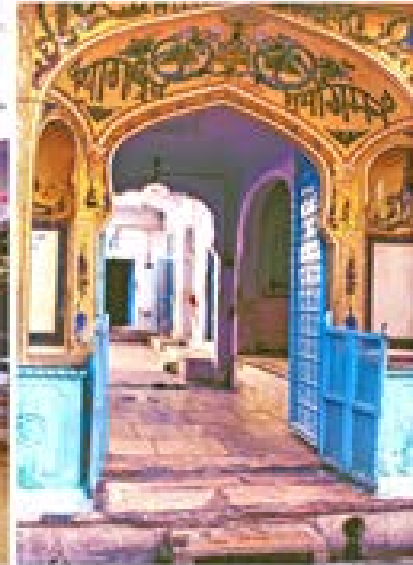
BELOW: Onam festival in Thrissur, Kerala. These are good examples of how the entire city gets taken over by the festivities.



GODAVARI RIVER GHATS

NASHIK, MAHARASHTRA

Ghat or a ground hugging retaining structure at the edge of the river is a common practice in India. This stepped plain not only stops the erosion but also offers a water related public space. Considered as one of the most holy places in the South-western India, it is a spot for twelve yearly religious gathering. Built platforms and steps narrow down and the area is closed off further down making a large basin for ritual ablution. Temples on the platform form the edge of the town and give a gateway space for the people.

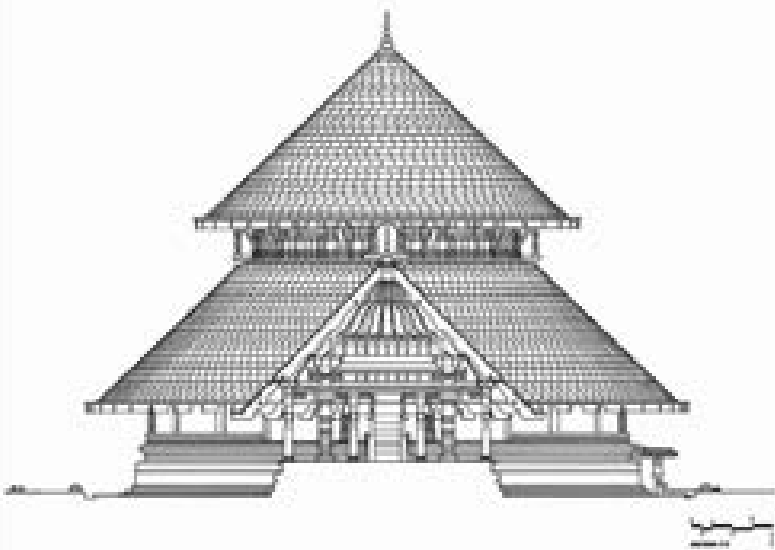
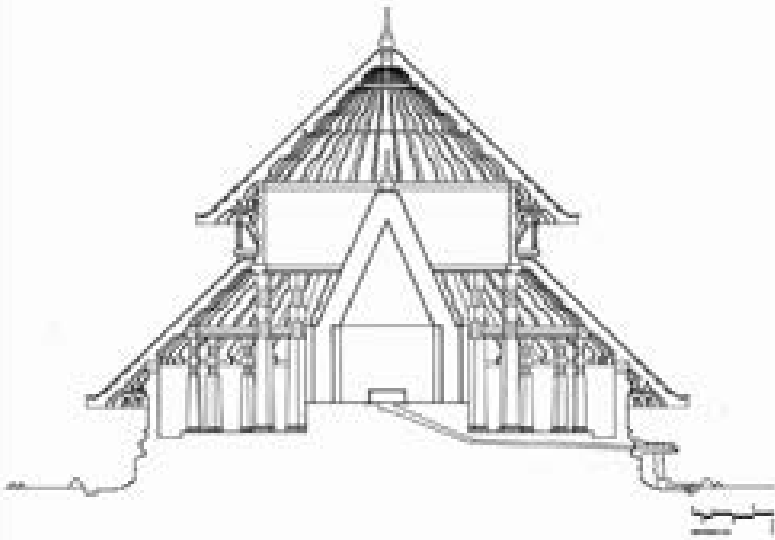


HAVELI-TYPE HOUSES OF AN AFFLUENT NEIGHBORHOOD

KUCHAMAN, RAJANSTHAN

ABOVE: [1] Auspicious and beautiful entrance has been an important element of most regional house types of India, like here. [2] An entrance similar to the other one, however, with floral and calligraphic decoration. The image shows the second layer of the house followed by a courtyard.

BELOW: [3] A simplified entrance space with a projecting balcony that together with the supporting bracket becomes a signature facade of this neighborhood. Color scheme is followed. [4] Interior courtyard with arched opening seen from an elevated gathering space.

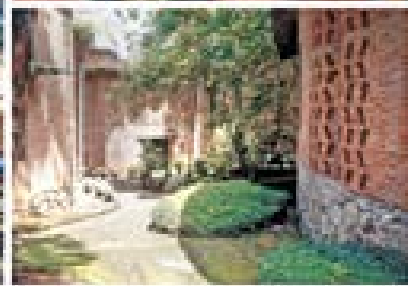
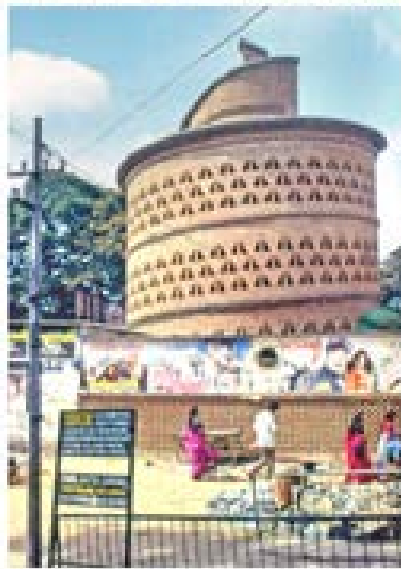


SRI DURGA DEVI TEMPLE

KUMARANALLOOR, KOTTAYAM, KERALA

ABOVE: Section through the Sri Kovil [sanctum sanctorum] with a double spired circular roof in wood.

BELOW: Section through the wooden roof of Manaskar Mandap [salutation pavilion], with the temple in the background.



LAURIE BAKER'S ARCHITECTURE

THIRUVANANTHAPURAM, KERALA

ABOVE: [1] House of Laurie Baker with traditional Kerala references.

BELOW, CLOCKWISE: [2] The drum shaped restaurant designed by Baker, with ramped floors and brick jali. [3] Laurie Baker in conversation at his house. [4] A view of Centre for Development Studies.

Research in India

To identify and bring to fore front this invaluable knowledge and legacy, to test new ideas with vernacular, interested professionals, studios, NGOs and institutes need encouragement from the government and corporates. They need patronage and funds. Where is it? In our country, there are no funds for this kind of research in disciplines related to the built environment. In spite of there being three wings of a discipline: practice, teaching and research, practitioners dominate the field of architecture while the crucial research component is relatively neglected in India. I'm not happy with either the academic scene or governmental effort in supporting research and documentation.

Indian architects don't write about Indian architecture. We need to have our own literature. We haven't invested much time and effort in it. There is a lacuna in several areas of study and it is not easy to find well-researched and documented publications or analytical studies on the Indian design sensibilities that are historical, regional or critical in nature. This limitation is acutely felt in the areas of teaching where a heavy reliance on western publications still exists, especially in courses on theory, history and technology.

I have documented around 70,000-80,000 images over a period of four decades, but there is no financial support or help for the indigenous information. That doesn't mean I am going to stop. I've done my bit with all my passion and perseverance and I'll continue doing it. A lot of theorising happens which has no substance. So, I accept the subject matters and areas of research, but I like to create my own material to address any area of research. For example, for the study of Colonial Architecture, both of us, Madhavi and myself, would refer to most of the research material that we have created ourselves. Efforts by people like you and the Landscape Journal need full support. A lot needs to be done. I am going to give all my research and documentation to some institution in the end. However, there would've been greater joy had I seen a combined initiative and zeal from institutions that be.

To identify and bring to fore front this invaluable knowledge and legacy, to test new ideas with vernacular, interested professionals, studios, NGOs and institutes need encouragement from the government and corporates. They need patronage and funds. In spite of there being three wings of a discipline: practice, teaching and research, practitioners dominate the field of architecture while the crucial research component is relatively neglected in India... That doesn't mean I am going to stop. I've done my bit with all my passion and perseverance and I'll continue doing it. I accept the subject matters and areas of research, but I like to create my own material to address any area of research.



All panels courtesy Miki Desai | Archicrafts

FACING PAGE |

MANDU [MANDAVGADH]

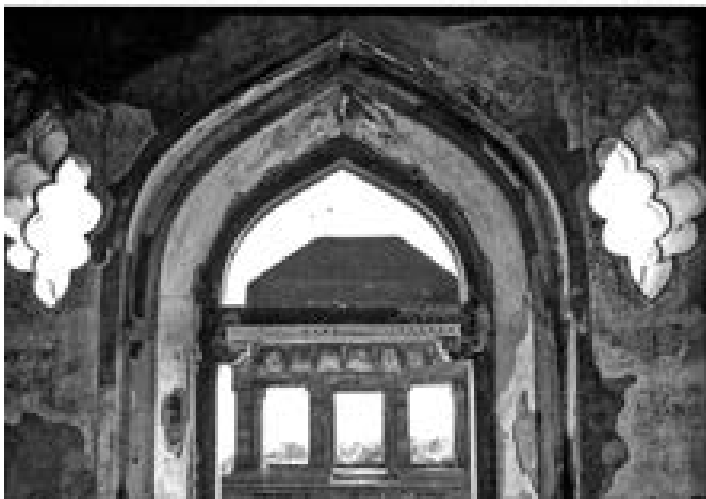
MADHYA PRADESH [C.15TH-16TH CE]

ABOVE: [1] Jahaz Mahal from southern lake side.

BELOW, CLOCKWISE: [2] Water system lake. [3] Terrace of

Jahaz Mahal. [4] Spiral waterspout, Neelkanth Mahadev

Mahal. [5] Central pavilion atop Jahaz Mahal.



Review by **Rabindra J. Vasavada**, Architect FRAS
| rajavada@hotmail.com

CITY MAPS: MAPPING NATURE AND ENVIRONMENT

Landscape Foundation India has undertaken a much needed series of publication of city maps which cover the natural landscape and the geographic setting of the cities in India and elsewhere. This is indeed a very important contribution to the existing information in cartographical information on cities which is singularly highlighted to explain the most fundamental aspect of city's foundation on which the entire urban settlement depends and gets characterised through its evolutionary history. It indicates an important parameter for observing the city in its history of ecological existence. Cities grow as the development takes place and it integrates itself into its surrounding environment, ideally in a way that it retains its balance with the natural landscape and its growth. Such mapping and documentation provides us an indicator to appreciate the attitudes to conserving the nature and city's environment with a balanced approach to protect the quality of the environment within which the city evolves. So far the LA Journal has published five maps — Delhi [2017], Pune [2018], Raleigh, USA [March 2019], Bangalore [November 2019], and Kolkata [December 2019].

Each of these maps in general contain the following information;

1. The Regional setting and its natural features.
2. Brief evolutionary History of the city, with important stages of its development.
3. Mapping the important Natural features of the city with relevant data.
4. References and important bibliography for references.
5. Acknowledgments to important contributors.

DELHI
HILLS, FORESTS
AND A RIVER

दिल्ली
प्रकृति को गोद में
बसी राजधानी

PUNE
THE CITY OF
HILLS AND RIVERS

पुणे
टेकड्यांचे व नद्यांचे शहर

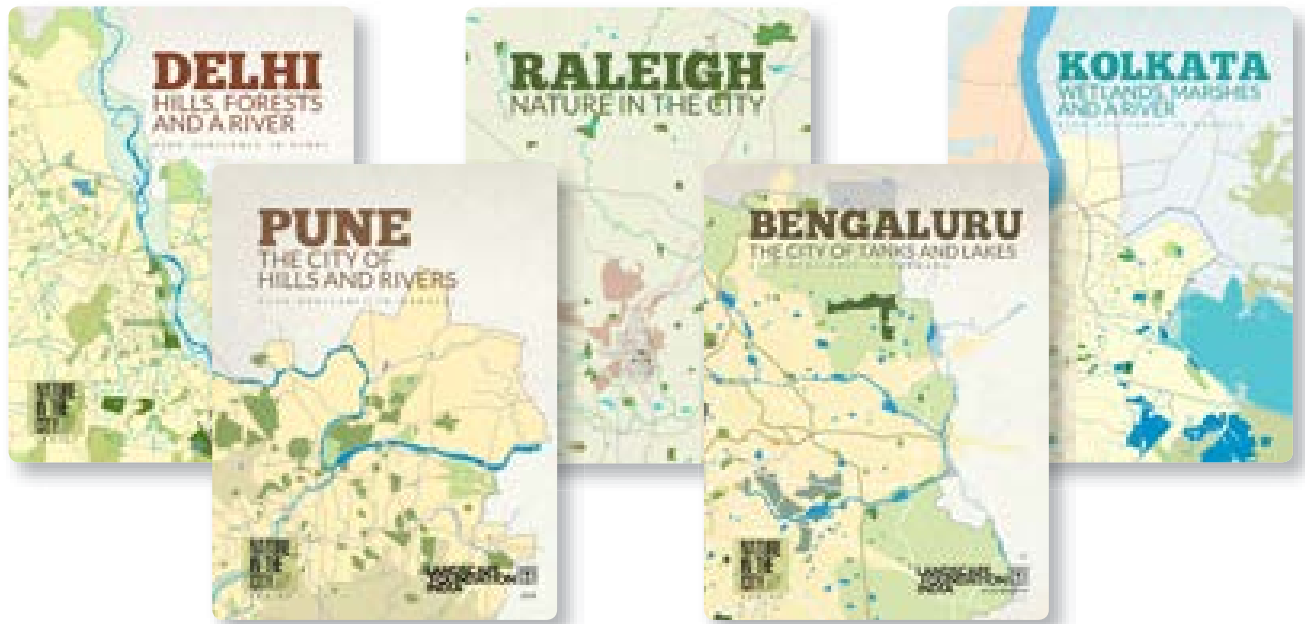
RALEIGH
NATURE IN THE CITY

BENGALURU
THE CITY OF TANKS AND LAKES

ಬೆಂಗಳೂರು
ಕೆರೆ ಮತ್ತು ಉದ್ಯಾನಗಳ ನಗರ

KOLKATA
WETLANDS MARSHES
AND A RIVER

কলকাতা
জলাভূমি, নাবাল জমি
এবং একটি নদী



ABOVE |
NATURE IN THE CITY
 Covers of the published maps

The series of maps were partly crowd-funded through Milaap and donations by individual donors and companies of the landscape & building industry.

Bengaluru map was supported by Rohini Nilekani Philanthropies and Mazumdar Shaw Philanthropy [Bengaluru]

Kolkata map was funded by Stichting Daida Foundation [Netherlands]

The intent of the entire project is very well stated and is very relevant in terms of the concerns expressed observing the way the cities are developing and the very basis of its natural landscape and setting is getting lost in the haphazard development overtaking the importance of the basis of its survival. The cities are explained in terms of its evolutionary journey juxtaposing its later growth with what it obliterates in terms of its natural features which are so basic to its foundations. The mapping of important features of developing city and its natural features and man made garden environment provides an important information to locate the surviving natural features and the added man made garden environment to integrate with the growing urban environment. The detailed inventories of such aspects/attributes of each city helps the individual to develop a fuller appreciation of the city. The Indian cities covered so far are each having very strong character, The natural features and its landscape have really cultivated the culture of people living in these cities and that is where one is able to relate the strong connection between the natural and cultural richness which develop out of the intrinsic connection between people and places where they inhabit. Delhi, Pune, Bangalore and Kolkata [my lack of familiarity with Raleigh inhibits my observation on that city] all have very strong natural and cultural profiles and their evolution reflect this in ample measures. The effort to retain the character over their period of growth is exhibited through their evolutionary processes. In this sense the maps are a very important contribution in the field of recording this important aspect of the cities.

BELOW |
RALEIGH
NATURE IN THE CITY
Map Side-1



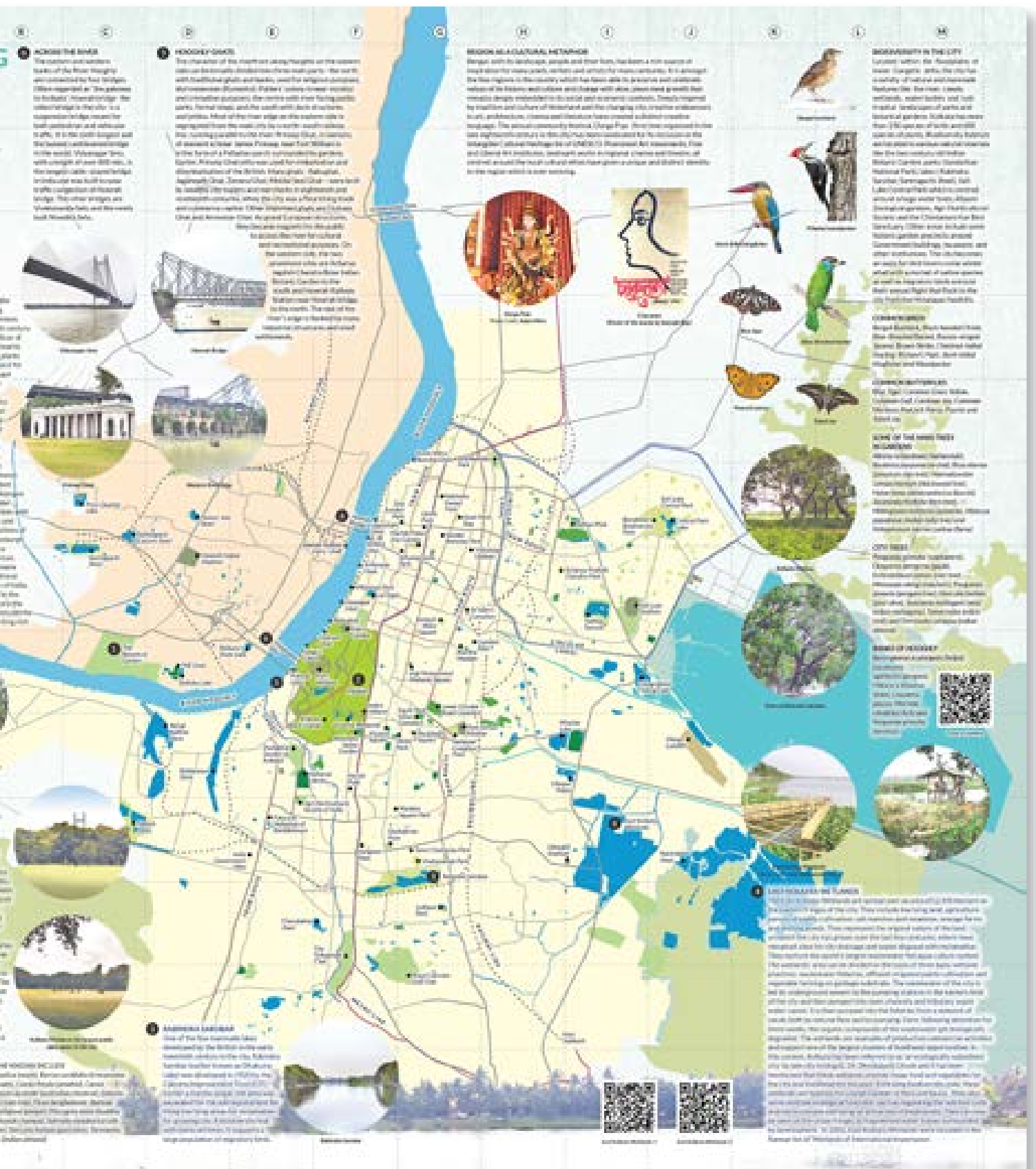
RIGHT |
KOLKATA
WETLANDS MARSHES AND A RIVER
Map Side-2



The maps could serve as an important tool in disseminating information and knowledge about cities and its origins to a wide section of users seeking such information right from students to researchers and professionals. For a much wider user facility, Landscape foundation can also propose to make this entire effort into a digital map referencing formats for ease of its availability to the interested seekers and also enable the interested tourists to superimpose such information providing a much deeper insights.

The following reference from the **UNESCO document of Recommendation on the Historic Urban Landscape 'Definitions'** [Paris, 10th November 2011] helps us relate the importance of such maps in global perspective while focussing on the conservation issues related to the cities. These are important while discussing and formulating the policies related to urban development. This series of maps can be a good ready reference for developing an information base for further work to those involved in such projects.

“8. The historic urban landscape is the urban area understood as the result of a historic layering of cultural and natural values and attributes, extending beyond the notion of “historic centre” or “ensemble” to include the broader urban context and its geographical setting.





9. This wider context includes notably the site's topography, geomorphology, hydrology and natural features, its built environment, both historic and contemporary, its infrastructures above and below ground, its open spaces and gardens, its land use patterns and spatial organization, perceptions and visual relationships, as well as all other elements of the urban structure. It also includes social and cultural practices and values, economic processes and the intangible dimensions of heritage as related to diversity and identity.

10. This definition provides the basis for a comprehensive and integrated approach for the identification, assessment, conservation and management of historic urban landscapes within an overall sustainable development framework.

11. The historic urban landscape approach is aimed at preserving the quality of the human environment, enhancing the productive and sustainable use of urban spaces, while recognizing their dynamic character, and promoting social and functional diversity. It integrates the goals of urban heritage conservation and those of social and economic development. It is rooted in a balanced and sustainable relationship between the urban and natural environment, between the needs of present and future generations and the legacy from the past.

12. The historic urban landscape approach considers cultural diversity and creativity as key assets for human, social and economic development, and provides tools to manage physical and social transformations and to ensure that contemporary interventions are harmoniously integrated with heritage in a historic setting and take into account regional contexts.

13. The historic urban landscape approach learns from the traditions and perceptions of local communities, while respecting the values of the national and international communities.”¹



1. UNESCO; Recommendations on the Historic Urban Landscape, Paris, 10th November 2011



Anuraag Chowfla, Architect & Urban Designer
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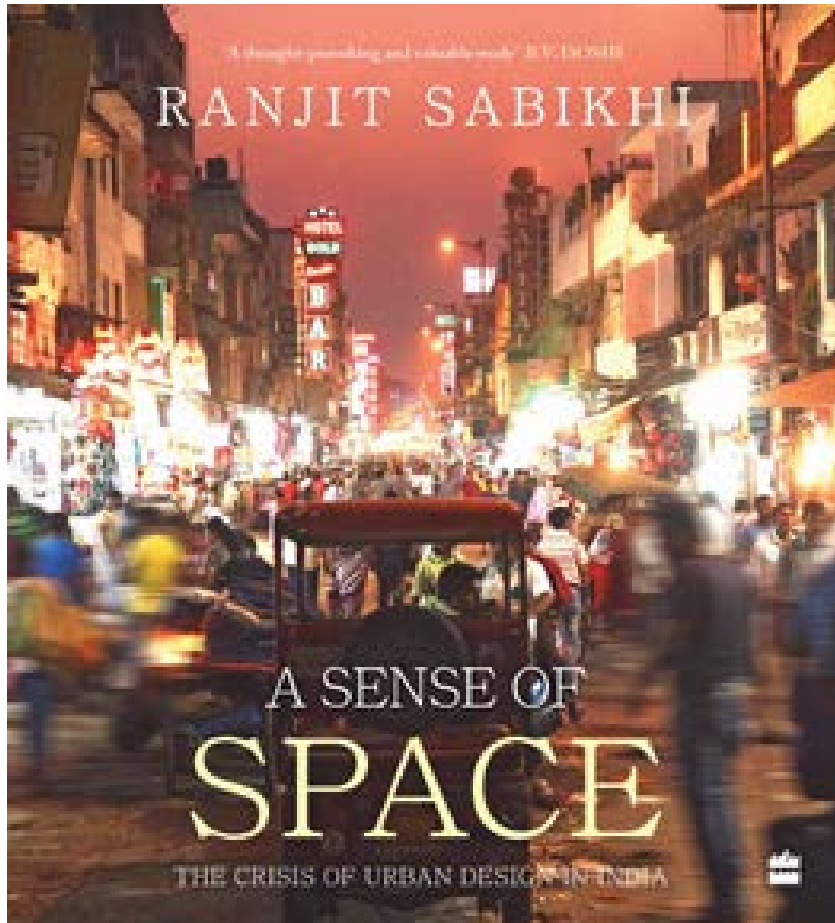
A SENSE OF SPACE

A Sense of Space: The Crisis of Urban Design in India, a recently-released book, tries to analyze significant factors in the story of Indian urbanisation, especially in context of the evolution of the capital city of Delhi in post-independence era. It calls for a planning framework of Indian cities which is more flexible offering change and diversity of use, function and scale rather than predetermined form and rigid functions.

Featured here is the introductory talk by **Anuraag Chowfla** at the book launch where the other discussants were the book's author—eminent Architect & Urban Designer **Ranjit Sabikhi** along with Lavish Bhandari, Rajiv Kathpalia and Shyam Divan.

The book, *A Sense of Space*, comes at a critical moment in the history of our cities. Our urban population will double in the next 30 years to a staggering 800 million people with over half living in urban areas. By 2030, according to a UN report, India will have 68 cities with a million-plus residents, and 7 cities with 10 million plus. Delhi metro area will be 30 million. To illustrate this, by 2050, Surat, one of our fastest growing cities will have a population equal to or more than what greater London will be then. This frenetic pace of growth has already overwhelmed us and we are confronted daily with a broken infrastructure, inadequate housing opportunities and a gasping transport system. In addition, we have seen our community and civic living spaces destroyed and transformed beyond redemption. Large parts of our built and natural heritage have been razed. This is an irreplaceable loss to who we are as a people.

However, everything about rapid urbanisation is not evil. It provides economic opportunities. It is estimated that 70% of all new jobs will be in urban areas and better health and educational opportunities will flow to the cities. We must find ways to rethink and reorganize Indian cities, to turn them into assets for all people. With political and administrative will we have an opportunity to not only protect what is valuable but also invent and build new urban public space typologies that can deal with the 21st century city.



A SENSE OF SPACE

THE CRISIS OF URBAN DESIGN IN INDIA

Author Ranjit Sabikhi

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Ranjit's book begins with fundamentals. It examines our relationship with land, water, natural landscape and explains how that relationship shaped the way our earliest settlements and towns were formed. He then goes on to place our urbanisation in the context of our built and cultural history. He stresses the importance of climate, the search for shade in the blazing Indian summer resulted in the dense and compact urban forms of the north and protection from the monsoon and the need to catch prevailing winds resulted in the dispersed settlement forms of the towns on the coast. Climate and culture also created a structure of open spaces as places for community and private living. The *chowk*, street, *gali*, *otla*, verandah, courtyard is a hierarchical network of open spaces that informed our settlement patterns and community life and this socio-physical structure became the basis of the urban form of our older settlements. Ranjit also questions the development of our post independence urbanism, as practiced by the authors of our master plans, their borrowing of unsuitable western models, the idea of plotted development with setbacks model of urbanism, the excessive reliance on single use zoning and the master plans dependence on private motorized traffic. This new model of urban growth introduced new and unsatisfactory ways of city

"Growing up in Bombay and Delhi in the 1950s, architect and urban designer Ranjit Sabikhi became interested in the question of space in India's context. As he taught at the Delhi Polytechnic Department of Architecture, which later became the School of Planning and Architecture, he realized that for the majority of the urban population, daily activities were carried out in the open courts, verandahs and terraces adjoining the minimal covered space that was their homes. The relationship of buildings to surrounding space was part of the natural process of growth of India's towns and cities, and yet did not figure in the official plans. So he started on a journey of exploration into what traditional Indian architecture was all about, and what would be the meaningful solutions for India's urban crisis. The book that is the result of over fifty years of reflections aims to inspire the new generation of architects, planners and anyone with an interest in India's cities to look at urban problems afresh and develop a new approach to urban design".

Urban design matters to everyone, to every citizen, to every bureaucrat, to every community, business or special interest group, to every young woman returning home late at night, to a bunch of young boys looking for a football ground, to a young homemaker out buying vegetables, to a festival community organizing a procession, to every shop owner looking for a corner and street frontage, to a municipal official planning new transformers or garbage dumps, to the police official planning constable beats and the mobility experts drawing bus routes. It matters to the aged couple living alone because the children have left, to the young person leaving home because their city has nothing for them. Urban design matters to the painter or photographer wanting to capture unforgettable images of third city, to the writer who looks for a place for her story, to historians of the future who will know us as they excavate what we build today.

making. Many of these issues are looked at in the later part of the book where Ranjit looks closely at post independence Delhi, its growth and its planning structures from the first Master Plan to a discussion of the new national urban policy framework of 2018.

Ranjit is generally supportive of this policy as for the first time, integrated, mixed use adaptive ideas and an importance given to urban place making is championed. He ends with a 10 point agenda, based on the NUPF principles, which he calls urban *sutras*, as a guide to plan and manage our cities. Throughout the book, the large body of professional work that he and his colleagues in his past offices have done is regularly referenced to support his analysis.

There is very little writing in India on issues that deal with contemporary urban design, and what little there is usually focuses on infrastructure, density, migration, waste, crime and other social issues. There is even less writing on the spatial systems, visual language, public place making in today's cities which are at the core of urban design. Ranjit repeatedly stresses that urban design is a three dimensional discipline, which is a critique of the two dimensional master plan process. In addition, to counteract the inflexibility of our plans we must recognize the fourth dimension, time, to make our plans responsive to changing needs.

With all this analysis, this book is a welcome addition to our limited library on contemporary Indian public space making. I must add that we do engage in extensive design discussion and analysis of urban place and space in our studios and schools, but very little of that is collated and published, and the profession does not have a regularly published scholarly journal, which isolates us from other urban designers and professionals, collaborators, govt decision makers and the public. Therefore, to partly fill this gap, books like this which is accessible and can be read by both professionals and a public that is increasingly concerned and vocal about the urban design of their city are really valuable and will help shape this discussion.

Urban design matters to everyone, to every citizen, to every bureaucrat, to every community, business or special interest group, to every young woman returning home late at night, to a bunch of young boys looking for a football ground, to a young homemaker out buying vegetables, to a festival community organizing a procession, to every shop owner looking for a corner and street frontage, to a municipal official planning new transformers or garbage dumps, to the police official planning constable beats and the mobility experts drawing bus routes. It matters to the aged couple living alone because the children have left, to the young person leaving home because their city has nothing for them. Urban design matters to the painter or photographer wanting to capture unforgettable images of third city, to the writer who looks for a place for her story, to historians of the future who will know us as they excavate what we build today.

For urban design to resolve all these hopes, ambitions and conflicts is a difficult but necessary task. We now know the inadequacies of the two dimensional master plans, we know that our neighborhoods are made of complex physical, social and economic multi-layered relationships. With empathy for the uniqueness of each space and neighborhood and with reason and logic, urban design must prepare our cities for the tsunami of change that confronts us.

As a public debate about our cities is emerges our schools of urban design recognize this and we are leaving project based academic studios behind and engaging actively with local communities in making local plans, and as Ranjit has highlighted in his book, this engagement with local communities is an essential task to make a Master Plan work. Our contemporary cities may have failed as equitable, safe, sustainable, and as loved and cherished urban neighborhoods and environments. But these cities are economic magnets. It is this success that draws in millions of new migrants. The urban and metro areas provide jobs and the hopes of an improved life to these millions. But these workers continue live in desperate conditions and the recent death of 43 in Delhi's Anaj Mandi fire shows nothing has improved. The physical degradation of many inner city work areas is appalling and health and safety issues are ignored by building owners and city authorities.

How can we shape our urban work systems and leverage the economic energy of this working population to provide improved housing, safety, sanitation. Can urban daily wage workers be organized? How can urban designers help?

Another important issue is of contemporary heritage. The drastic change in the scale and density of our cities means that the old spatial systems and hierarchies must be rethought and new typologies for urban public space will need invention. Besides the enclosed shopping mall, which in my mind is a sad thing, I don't see much that is new. What is happening is that the existing spatial systems, from *mofussil* towns to metros cities have been completely taken over by the moving or parked automobile. Streets, pavements, *chowks*, grounds have been buried under cars. The pedestrian is a hunted animal.

Can we have viable public space without a viable pedestrian experience? A few recent projects such as Ajmal Khan road in Delhi and others offer some hope, but how replicable are they?

This is as much about policy as it is about design, about civic and community caring as it is about implementation.

Have we crossed the threshold that we will not ever return to older spatial systems and the task of today's urban design is to invent entirely new public space prototypes?

How can we shape our urban work systems and leverage the economic energy of this working population to provide improved housing, safety, sanitation. Can urban daily wage workers be organized? How can urban designers help? Can we have viable public space without a viable pedestrian experience? A few recent projects such as Ajmal Khan road in Delhi and others offer some hope, but how replicable are they?

Social media is one example of a new public space. City administrations are generally uncaring about environmental and human and Civic Rights. Their agendas are driven largely by property development, FAR Index, big bang showpiece projects and the concerns of ordinary citizens, clean water, housing, affordable transport, access to municipal services, provision of community gathering and leisure space is ignored.

There is what I call a flyover syndrome, if you see a problem, throw a flyover at it and it will go away. Dharavi and Port Trust Redevelopments in Mumbai, Sarojini Nagar redensification and proposals for Yamuna riverfront in Delhi, displace people or damage natural environments in pursuit of FAR. Government says these are all necessary urban development projects essential for the city's future.

How can planning processes include a rights based approach?

These are all crucial questions.

Have we crossed the threshold that we will not ever return to older spatial systems and the task of today's urban design is to invent entirely new public space prototypes? How can planning processes include a rights based approach?



RIGHT |
DELHI'S CHANGING PROFILE
The Yamuna River meanders through the city's urban sprawl



PHOTO CREDIT: *Ranjit Sabikhi Architects*

IN CONVERSATION WITH **RANJIT SABIKHI**

Having taught at Department of Urban Design at the School of Planning and Architecture in Delhi for more than two decades, **Ranjit Sabikhi** has a design practice of more than fifty years. He has written and spoken extensively on India's urban conditions on various forums.

Sense of Space

The book is the result of a series of reflections on architecture and urban design, based on personal experiences and interaction with the cities that I have lived in. As one watched over the years, things began to change almost by default, as a variety of different uses and functions crept in. Although considered unauthorized by the planning agencies, the process of indigenous development managed to make a significant impact in many different parts of the city. This process of change, which I had in my own way begun to foresee more than fifty years ago, simulated my interest in looking for meaningful urban solutions. To me, architectural form making, however exciting, was not enough. I was more fascinated by the space between buildings and the gradual process of inevitable change over time. In my opinion, buildings need to be conceived as living organisms as part of the larger context, and be designed to accommodate change. There is a conflict between the planned process and actual developments. The decision to put these observations in book form has been influenced by the need to create greater awareness of urban issues amongst the residents of our cities.

The Informal Character of Indian Urbanity

Urbanisation as a process has been taking place all across the world. It follows the pattern that exists in India and other poor Asian countries. Western system of planning is completely different. The concentrations, areas and requirements are totally different. We have tended to follow some Western planning principles, but that's not the way. We tend to think that in cities, big shopping malls, major roads occupied by thousands of vehicles and planned colonies are important, whereas the common man lives a different life, in an informal sector — urban villages, unauthorized colonies, regularized colonies, slums and historic cities.

There are more than hundred urban villages scattered within the urban limits of the city of Delhi. There was supposedly an arbitrary village limit, defined as the 'lal dora', which separated the village area from the surrounding agricultural fields. Within the 'lal dora', buildings could be constructed depending on need. This loose form of control led to the arbitrary building of structures extending up to five or six floors without any proper setbacks. There has also been no proper provision of water, electricity and sewage services. It is therefore not unusual to see a jumble of overhead wires, sewage leaking from manholes and garbage strewn in the streets. Although this may suggest a general negative attitude, and overall lack of control, there is a lot to be said for the importance of these urban villages in the role that they play in the overall life of the city. They have provided a safety valve to the city, from the intense pressures of population growth for which no proper planning provisions have been made.

Indian cities also have a large informal commercial sector. Thriving and busy commercial areas have come up in resettlement colonies like Lajpat Nagar, Bhogal, Rajouri Garden, Karol Bagh to name a few. You have 50% of the sales off the pavements in other commercial areas. Along with near proximity to the residential zones, they are vibrant and affordable for a large population. This informal urban character needs to be recognized and organized.

One feature common to most villages is the fact that they serve as refuge for a large number of single workers living away from their families. They absorb a lot of small-scale service industries. Many of the villages retain their original form and layout with narrow pedestrian lanes and by-lanes, closely built up with courtyards, providing the only voids in the densely built fabric. A detailed inspection of eight urban villages in the central areas of Delhi in May 2018 revealed an interesting variation in character and form, depending on the concentration of different interest groups and their proximity to major institutions - garment units in Shahpur Jat, art galleries in Lado Serai, and teaching centers in Adchini and so on. These villages have been constantly changing as per the need of the people. Although they find mention in the various Master Plans, no proper development proposals have been drawn up for these areas.

Indian cities also have a large informal commercial sector. Thriving and busy commercial areas have come up in resettlement colonies like Lajpat Nagar, Bhogal, Rajouri Garden, Karol Bagh to name a few. You have 50% of the sales off the pavements in other commercial areas. Along with near proximity to the residential zones, they are vibrant and affordable for a large population. And, mind you, these vendors are charged money by the Government to obtain a license. These areas just need to be cleaned up, made accessible and put to use. There are weekly markets in most of the residential areas. These important developments were not reflected in any Master Plan, so they remained unattended and uncatered for growth and maintenance. This informal urban character needs to be recognized and organized. It is a reality which cannot be ignored.



LOCATION OF URBAN VILLAGES

Sl. No.	Name of the Village	Area (Hectares)	Population (Approx.)	Year of Establishment
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FACING PAGE |
**SPACE IN THE
 INDIAN CONTEXT**
*The Importance of
 Open Space*

THIS PAGE |
**DELHI'S SPECIFIC
 ISSUES**
 RIGHT | *Bazaars and the
 Informal Retail Sector*
 FAR RIGHT | *The Urban
 Villages of Delhi*

Rather than recognise any values that the structure of the Old City might have had, the planners sought to impose their Garden City notions even in these areas by suggesting that vacant plots as well as dilapidated structures be acquired to provide minimum community facilities like parks, schools, health centres, etc. The most important change that was made was the introduction of single use zoning — each plot with a specific use like residential and commercial plots, all with predetermined and unchangeable uses.

On the other hand, the plan completely ignored the fact that there already existed in the traditional city a strongly defined hierarchical structure based on clan groupings and the occupations of residents. Rather than recognize any values that the structure of the Old City might have had, the planners sought to impose their Garden City notions even in these areas by suggesting that vacant plots as well as dilapidated structures be acquired to provide minimum community facilities like parks, schools, health centres, etc. Gross residential density was to be restricted to the acceptable European norm of 250 persons per acre. The most important change that was made was the introduction of single use zoning — each plot with a specific use like residential and commercial plots, all with predetermined and unchangeable uses.

The Master Plan itself sought to provide a framework for development over the next twenty years by planning for a total population of 5 million [50 lakh]. So, it was to be updated every 20 years. However, in 1981 there was no Master Plan, but instead there was a Perspective Plan- an informal plan. From 1981 onwards, things began to slide down. Instead of building up a stronger team of professionals to guide the development at city level, over a period of time, the bureaucrats and engineers in organisations like CPWD systematically destroyed the whole infrastructure of planning.

“Nehru Place, located on a site of 96 acres, was one of the first district centres built in the mid-1970s as per the Delhi Master Plan 1962. The master plan for the District Centre prepared by the planning department of the DDA was developed around a number of well-defined rectangular plazas linked by elongated courts and flanked by two levels of shopping arcades on both sides, with seven floors of offices above. The site, located on a rocky hill, involved change in level of over 15 metres, resulted in a series of wide steps connecting different open courts. The central space was continuous and uninterrupted, free of vehicular traffic. A series of independent isolated fifteen/ sixteen-storey office towers were located on the outside. Approximately half of the proposed total development was created in the first phase, followed by later additions. The original plan concept was simple and direct and, despite poor maintenance, it still remains an urban space of some significance — a space that now calls for substantial improvement and upgrading.



For providing office space in the city, DDA built Connaught Place Extension [along Tolstoy Marg and Kasturba Gandhi Marg] and ITO, but the demand was for much more. Out of 15 District Centres as suggested by DMP 1961, only 7 were built until 1981. DLF, a private builder group, saw an opportunity and started buying land in the suburban areas. Soon after DLF Phase-I and DLF Phase-II came up beyond the Delhi border and subsequently, the sub city of Gurgaon emerged in a big way.

Today, DDA as a design and development agency should have become ten times what it was in 1961. Instead, it is reduced to a mere handful of people who are not professionally qualified to plan. So for all new development they tend to outsource the work to practicing architects and planners. Outsourcing does not really help because the overall control and framework must be maintained at the organization level which is not happening. Moreover, it is developing the city in a piece meal manner, and not as part of a holistic vision. Today one can conduct an aerial survey and create a three dimensional projection of every building, and digitally map every service that exists both above and below ground. But we are not doing that. There is no actual survey or documentation of the city which can serve as a base for visualizing development from the urban design or landscape design point of view. In the present scheme of things, what is stopping the unauthorised colonies from becoming regularized is the lack of survey plans and proper physical records, which authorities don't have. Local Area Plan was to be developed for every area - mapping the roads, footpaths and greens. Unfortunately this was not done, and the few Local Area Plans that were prepared are diagrammatic and contain little relevant information.

We need a completely different approach to planning. We shouldn't waste time doing something which is outdated and no longer effective.”



In coming decades, many existing urban areas will be enlarged and many new cities of a million plus population will be created. In order to be truly effective, it is important to create large-scale awareness of the urban changes taking place in our younger generation across all spheres of activity. It is they who will help chart the course of future development. Young professional architects, planners and urban designers, will need to play an important activist role in this process of change. The future depends on them.

Building a Capital

Although I am very critical of what the Delhi Development Authority DDA is today, yet I must give it credit for a lot of good work that it has done in the past. All the group housing societies that were built in Vasant Kunj, and even in areas further south, were built by the agency. These are efficiently designed and meet the need for a certain section of society which could not afford plots. It's a pity now that they have become private gated colonies. To address the commercial needs of the population, various Commercial Complexes and District Centres were constructed.

Role of Professionals

To a large extent, it is also the profession which has failed to react to all these urban issues. We have lost professional relevance in the development of our cities.

There are a large number of professionals in the country whose abilities can be harnessed to help plan and develop cities on an ongoing basis. Professionals that include urban designers, architects, landscape architects, traffic planners, sociologists and economists need to be part of teams entrusted with the task of the planning and development of urban settlements across the country. Such teams, along with implementation personnel, could become the centres of creative development in every state. Armed with the skills to use advanced artificial intelligence technology in various areas, they would be in a position to spearhead planning and urban design comparable with the best available in the developed world. We need to train our urban design professionals, on a hands-on basis, to deal with complex urban issues as cities continue to grow.

By the way, I am quite frankly surprised at the strong reaction that has built up against the redevelopment of Central Vista. It is the first time I see architects actually coming together to protest on a large scale. They should have done this many years ago and now that they have, they need to keep that up.

Agents of Change

In coming decades, many existing urban areas will be enlarged and many new cities of a million plus population will be created. These new urban settlements do not have to be replicas of Western cities, nor do they have to be like cities in China which are built over the demolished remains of existing older settlements. In order to be truly effective, it is important to create large-scale awareness of the urban changes taking place in our younger generation across all spheres of activity. It is they who will help chart the course of future development. Young professional architects, planners and urban designers, will need to play an important activist role in this process of change. The future depends on them.



All pages and images from the book 'A Sense of Space', published by Harper Collins Publishers

DEMOCRACY, PARTICIPATION AND CONSULTATION

IN CONVERSATION WITH **BIMAL PATEL**



In the last issue of the Journal [#60], 'Debriefing the Design Brief'—a critique on the international design competition process for the proposed Redevelopment of New Delhi's Central Vista—marked the start of a larger discourse about the project. Here, the selected design consultant for the project, in an extended interview shares his views on some of its key aspects. In the next issue, we plan to share various perspectives and opinions of people from different segments of the society, including professionals, about the project-related views expressed here.

—EDITORS

Bimal Patel joined his father Hasmukh Patel's architectural practice in Ahmedabad in 1984, after completing his undergraduate education in architecture at CEPT University. Then, from 1985-90 he divided his time between work in Ahmedabad – during summer and winter breaks – and graduate education at the Department of City and Regional Planning, University of California, Berkeley. He returned to India for good in 1990 and continued to work on his architectural projects and his doctoral dissertation. After completing his Doctorate in 1995 he expanded his father's practice, now called HCP Design, Planning and Management Pvt. Ltd., to also include urban design and urban planning disciplines. Over the years, he has been involved in various significant large-scale, multi-sectoral urban design and planning projects for Indian cities. Some of these are: the Sabarmati Riverfront Development Project in Ahmedabad; the Post-Earthquake Walled City Restructuring Project in Bhuj; the Mumbai Port Trust Redevelopment Project in Mumbai, and; the Kashi-Vishwanath Precinct Redevelopment Project in Varanasi. He is presently involved in the prestigious Redevelopment of the Central Vista in New Delhi. Bimal is also the President of CEPT University since 2012. He was awarded the Aga Khan Award for Architecture in 1992 and the Padma Shri in 2019 for his contributions to the fields of Architecture and Planning.

Architect, urban designer, urban planner and academic, Bimal Patel shares with his views on various aspects of his professional journey, works and his thoughts on the profession and practice in an interview with the Editors.

During your tenure with Centre for Environmental Design CED at Berkeley, you worked closely with Alan Jacobs, eminent urban design practitioner and academician and co-author of *Towards an Urban Design Manifesto* [1980] with Donald Appleyard. Tell us about your inspirations and influences.

EDUCATION AT BERKELEY

Through my five years at Berkeley, I had the good fortune of being taught by an array of wonderful teachers. Besides, my father and teachers at CEPT, they played a very important role in moulding me as a professional.

First there was Prof. Alan Jacobs, the eminent urban designer. Prof. Jacobs was not just an academic. Before becoming a professor at Berkeley, he worked in Pittsburgh, Calcutta and, for 8 years, he was Director of the San Francisco Planning Department. Besides studying with him, I was also his research assistant, and worked with him on his book *Great Streets*. Later, I also co-taught a graduate class with him. He believed that as urban designers, we must work towards real improvement of our cities. We must offer solutions to problems and not just conduct analyses and critiques. Urban Design and Urban Planning have to be ‘practices’ not ‘academic disciplines’. Without engaging in practice and testing solutions it is impossible to figure out what is possible and what is not. Prof. Jacobs was, for me, a model ‘reflective-practitioner’ and I learned a lot from him.

Then there was Prof. Peter Hall, the great historian of urban planning who was later knighted as Sir Peter Hall. He was deeply interested in the history of urban planning – particularly that of Britain. His lectures were an opportunity to learn about how the gradual evolution of planning practices and ideas helped improve cities in the West.

How has the multidisciplinary exposure to non design fields such as sociology and economics at CED shaped your thinking about cities?

I also worked a lot with Prof. Manuel Castells, first as his student and then as his teaching assistant. Prof. Castells was a brilliant leftist urban sociologist and a truly great lecturer. He lectured about the comparative political-economy of urban development and planning in the US, Europe and developing countries. I was immediately drawn to him since I was always interested in questions of social development. How do societies develop and improve? How do they become better? How do they expand their capacities? How can we improve the lives of ordinary people? But it is through Prof. Castells’ courses that I first came in touch with the concepts and ideas that are necessary for productively thinking about the questions that I was interested in.

My doctoral work was mainly with Prof. Richard Walker, who was a Marxist urban geographer – a protégé of Prof. David Harvey. Through him I became deeply interested in the Marxist theory and spent a vast amount of time reading the literature and coming under its spell. My dissertation was about how architecture is transformed once the building production is organized as commodity production – how organising building production as real estate development transforms the dynamics of architectural design. While at Berkeley, and for some time later, I was convinced of the power of the Marxist world view. But later as I grappled with finding workable solutions to real problems, I realised the shortcomings of Marxism. Marxism offers the most penetrating and insightful diagnoses of the ills of capitalist societies. However, the solutions it provides are not only not workable, they are positively harmful. I had to spend a lot of time re-educating myself after my doctoral education!

Over my five years at UC Berkeley I learned from many terrific teachers, read a vast number of books, attended many courses and got to interact with people from all over the world. But what was truly astounding was the institution itself. An academic institution with thousands of teachers, 30,000 students and 8 million books on the campus – one could study anything in the world that one wanted to. Having already got myself a professional architectural education at CEPT, Berkeley gave me the opportunity to get myself a wide ranging liberal education! So, besides my required courses in urban planning, such as statistics and planning theory, I did courses in economics, development politics, sociology, development theory and even agricultural economics. I was all over the place! My education at Berkeley equipped me with concepts and analytical tools that helped me in forming a clear understanding of the world, within which I could situate my practice as an architect and urbanist.

PRACTICE IN THE PUBLIC REALM

My interest in the design of public spaces was formed before I went to Berkeley. It emerged from my interest in social work and development which was nurtured by a Jesuit priest in my high school, Fr. Erviti. He used to run the school's Social Service League and drew many of us into working in slums, building houses and so on. He also got us thinking, at a very early age, about India's problems and how they could be tackled. He gave us books about development theory to read and engaged us in discussions and, most importantly, he engaged us in the actual work of improving lives. He encouraged us to be reflective development-practitioners.

My interest in questions of development took a turn towards an interest in urban development when I was exposed to life in European cities. This happened when I was in my third year in architecture. During that year I interned at Prof. Frei Otto's Institute of Lightweight Structures in Germany and travelled all over Europe. I was nineteen at the time. I was amazed by how comfortable, productive and fulfilling life could be for ordinary citizens in the towns and cities of Germany, France, England, Italy, etc. This was an inspiring and highly educative experience.

I realised the importance that public spaces play in making cities liveable. I realised that the good that one can do for ordinary citizens by working as an architect on designing buildings is very limited. And this led me to an interest in urban design and planning, the practice of which, at that time, was practically non-existent in India. It is this interest that I took with me to Berkeley.

After my undergraduate education I joined my father's architectural practice. He, like many architects of the time, was not interested in working in the public realm. But even those who were, had gradually lost their voice in

Unlike your father, who practiced mainly for private clients, when you joined his practice in the 90s, you started working in the public realm, and have continued ever since. Tell us more about it.

“I realised the importance that public spaces play in making cities liveable. I realised that the good that one can do for ordinary citizens by working as an architect on designing buildings is very limited. And this led me to an interest in urban design and planning.”

public affairs, largely because they had lost touch with the political class, which, with the deepening of democracy was no longer formed from the traditional elites of the post-independence era. Even today, we professionals claim to like the concept of democracy, but when democracy does its job of putting people in power who think differently from us and have different priorities, we complain that we can't work with them. As a result, since quite a few decades now, we professionals, who should be playing our part in framing urban planning and urban design policy, do not have much of a voice in public affairs.

As I said, when I started to work in the early nineties, urban design was practically non-existent in India as a practice. And, urban planning was the preserve of the government. The private sector was not allowed a role in it. My father's practice, which I joined, was focused on architecture. But I was determined to work in the public realm on urban design and urban planning projects and soon after I completed my doctorate in 1995, I was able to work on a street design project. Very soon, the credibility that this earned me, enabled me and my colleagues, to work on highly sensitive statutory urban plans and on many other larger and more significant urban development projects.

My first urban project in 1996 was the redevelopment of a 2.5 kilometre long street in Ahmedabad — a project that I had initiated. After designing the street, I realised that the Ahmedabad Municipal Corporation, which at that time was practically defunct and bankrupt, would simply not be able to implement the project. So, supported by the Municipal Commissioner, who I directly reported to, I took over as the project's manager, and did everything that was necessary to get the project done. Though my role as a manager was voluntary and unpaid, I was responsible for everything: coordinating between various municipal departments, dealing with utility companies, managing construction, managing the press, briefing lawyers, communicating with residents and shop owners on the street, garnering the support of corporators and politicians, keeping them apprised of developments and answering their queries, dealing with project sponsors... everything. I also invited my teacher from Berkeley, Prof. Alan Jacobs to Ahmedabad to review the design and help me by sharing his knowledge and experience with the Municipal Corporation. The people who needed to really understand the importance of designed streets were the corporators. Alan gave his first presentation in Ahmedabad to Members of the Standing Committee of the Municipal Corporation and I translated it in Gujarati for them! We also held a workshop for street design for the engineers of the Municipal Corporation. It took over a year and a half to implement the project. I did little else during that period but it was an incredibly educative experience. It was also through this that I built my credibility as a professional who could work in the public realm. It paved the way to being commissioned for larger projects.

If one wants to work in the public realm and design public spaces, one has to work with the government. One cannot just sit back and lament, as many do, that government processes are impossible to deal with; that politicians and bureaucrats do not understand what good design is about; that they have poor taste; or that they lack vision. Such laments often become convenient excuses for not doing anything in the public realm. And disengagement is unlikely to lead anywhere, certainly for the profession as a whole.

The point of constructive engagement is to find areas of agreement and to slowly expand them, through respectful collaboration and mutual learning. Solely focusing on areas of disagreement and then disengaging or being an obstructionist may feel righteous but is of very limited value. My philosophy has always been that instead of focusing on the things I disagree on with my clients I try to focus on what we agree on, then I work to build trust and mutual respect, and then strive to expand the common ground through a process of mutual learning.

THE CLIENT-PROFESSIONAL RELATIONSHIP

One rarely ever meets a client who one completely agrees with on all matters. I have never met a client, in the public or private sector, who I completely agree with or who shares all my tastes. Do my clients' and my opinions have to completely match? No. Can we work together? Yes. The question is how.

When a professional architect and a client work together on a project, the relationship can be of three types. Some architects want to dominate their clients. They want their clients to be in awe of them. They want them to unquestioningly accept whatever advice they give them. Fortunately for such architects, there are clients who are willing to accept such a subservient position vis-à-vis their architects. Other architects are willing to be subservient to their clients. They are happy to set aside their own professional values and judgement and draw-up for their clients whatever they want. I do not like to be in either of these two types of relationships with my clients.

I prefer a relationship that acknowledges mutual dependence, which is based on trust and mutual respect. That is not to say that it is a relationship between equals. The project belongs to the client. For the architect to be successful he must have a sense of ownership for the project but he cannot presume to own it. As in the case of the doctor-patient relationship, whether to finally heed the advice of the professional or not is the client's prerogative. The professional cannot force the advice on the client. Regardless of this, it can be a mutually respectful relationship where both parties acknowledge their dependence on the other. In such a relation much depends on openness on both sides and the architect's skill in persuading the client. In my practice I strive to forge such relationships with my clients. Once, very early in my career, the head of an Urban Development Authority, with whom I was arguing a bit too forcefully, gently reminded me: please remember that you are the only the 'suggesting authority', I am the 'deciding authority'!

INDIAN VERSUS WESTERN

Many people believe that India, or the East, is so different from the West that the solutions to our problems have to be different from solutions that work for the West. I wouldn't deny that there are important differences that distinguish us, but, generally speaking, I do not much believe in Indian exceptionalism. Many, if not most, solutions that have worked in the West are likely to work here.

This is precisely what our national leaders must have felt when, upon becoming independent, they looked around the world for an appropriate political system for India. When framing our constitution, they adopted principles of equality and democratic functioning that are not indigenous. These principles were first articulated in Europe and America. Our national leaders decided to adopt them because they felt that people everywhere are essentially similar and a political system that has been proven to work well in the West can be made to work in India. They did

In your public projects, you have been working with Heads of States, Ministers, Bureaucrats and Councillors while on the other hand you also have private clients. How do you look at the relationship with the "client" in each case?

"I prefer a relationship that acknowledges mutual dependence, which is based on trust and mutual respect. For the architect to be successful he must have a sense of ownership for the project but he cannot presume to own it."

In your works, how do you look at the idea of "Indian identity" as a cultural context which drives design?

“When we have to design cities where millions of people have to live in close proximity, we should not hesitate in adopting suitable solutions that have worked elsewhere. Many societies have faced the same urban problems that we are facing today, and have come up with very good solutions. We should adopt those solutions. We should not insist on reinventing the wheel.”

Since many of your public works are sited in contexts where there is an active engagement of past with present, how do you look at the idea of architecture conservation and restoration – for those structures that are structurally sound and programmatically adaptable?

not claim that we are so distinct that we have to create a system of governance based on distinctively Indian or Eastern principles that are better suited to our cultural ethos or traditions.

That is not to say that our culture, our material conditions, and our problems are not markedly different from those of the West. They are. But I do not think of them as being ‘natural’ or ‘permanent’ or so deeply rooted that we have to develop all solutions anew for India. Many of the features of our society, culture, economy, polity that we think of as being special, or eastern, or Indian, can be found in other societies at a similar stage of development as ours. One only has to read the history of developed countries to see that they were not so different when they were at our stage of development. Our cities are indeed very different from Western cities. But they are also very similar to Western cities of the 19th century. As India develops, its economy, material conditions, culture and ethos will change and we will become similar to other more advanced countries.

There is much to learn from the experience of the western world and there are many solutions that can be directly adopted. And, like the framers of our constitution, we should not hesitate to adopt good solutions when we see them. Thank God we do not insist on Indian exceptionalism when it comes to science and technology – we do not insist on distinctive cars, computers, vaccines, medicines and so on. When we see something that works, we adopt it. When we have to design cities where millions of people have to live in close proximity, we should not hesitate in adopting suitable solutions that have worked elsewhere. Fortunately for us, many societies have faced the same urban problems that we are facing today, and have come up with very good solutions. We should adopt those solutions. We should not insist on reinventing the wheel.

Those who are worried that in doing so our culture and identity will be obliterated, should check if this has happened in the all developed countries that have freely borrowed suitable ideas from one another. After all these years of copying good ideas from one another, the United States, France, England, Germany, Italy, Japan, Singapore and Hong Kong remain distinctively different.

CONSERVING HERITAGE AND PROTECTING THE ENVIRONMENT

We must respect our heritage and conserve it, but we must also not allow ourselves to be held hostage to it. This is akin to the sentiment that we must respect our parents and conserve our community’s traditions, but not be held hostage to them; we must adapt to changing times and realize our needs and aspirations as independent individuals. Of course, there is no way of objectively defining what is sufficiently respectful or what we must conserve and

what we must let go. What one person considers to be sufficient may be insufficient for another. It is all a matter of judgement and balance. This is what makes issues of conservation interesting and also what leads to heated debates and consternation.

Debates and differences in opinion are likely to be more when societies are in flux, when levels of trust are low and there are no settled norms. This, I think, is the case today. During the 50s and 60s people seem to have been far more relaxed about making changes to the Central Vista and its buildings. Parliament House was expanded by building two floors of offices atop it. A whole new street, Rafi Ahmed Marg, which was not a part of Lutyens' original plan, was cut through the Vista. To do this, the water channels and landscape were severed and changed. Later, a whole line of trees was added to the Avenue. No one seems to have cried out in protest at the changes being made.

Today, people have become far more apprehensive and intolerant of change, regardless of how necessary it is. Discussions about heritage conservation are extreme and highly politicised. The design for the Central Vista Project respects all the magnificent Lutyens and Baker buildings. It also respects the structure of the street layout and the lay out of the landscape. Regardless of this, some people claim that the design is destroying the heritage. Perhaps they have not been able to examine the plans and appraise themselves of the facts.

Environmental protection is another area where a similar dynamic is at play. There is no doubt that protecting the environment is extremely important. We should not needlessly cut trees or alter natural features. However, this imperative should not completely freeze us. We can surely find a way whereby the exigencies of environmental protection can coexist with the exigencies of development.

When considering the reordering of a landscape, so far as the benefits to be gained promise to be more than the costs and so far as we are also taking compensatory steps – planting more trees – to mitigate the costs that the reordering of the landscape entails, we should not stop ourselves from making the change. Unfortunately, we seem to have forgotten how to think of making trade-offs. When it comes to discussing the environmental impact of a project, we only want to look at the cost side of the equation and refuse to engage in further discussion.

SELECTING ARCHITECTS THROUGH COMPETITIONS

When setting up a competition to select an architect, one must be very clear about whether the project that one is selecting an architect for, allows one to '*select an appropriate design*' or demands the '*selection of an appropriate architect*'.

Let us say, for example, that one has to build a commemorative iconic structure, such as India Gate or the Taj Mahal. The practical requirements that such structures have to meet are relatively simple and can easily be defined at the outset. But their

What are your views regarding the role and place of landscape in Indian cities?

“When considering the reordering of a landscape, so far as the benefits to be gained promise to be more than the costs and so far as we are also taking compensatory steps – planting more trees – to mitigate the costs that the reordering of the landscape entails, we should not stop ourselves from making the change.”

In regard to the international design competition of the Central Vista Redevelopment, design brief with no background studies, with an exclusive format inviting only a certain scale of practices, an unseen and unheard of jury and an unusual haste for the entire project – the process of conducting the competition, all has attracted much negative press and critical comments. Your views, please.

“When setting up a competition to select an architect, one must be very clear about whether the project that one is selecting an architect for, allows one to ‘select an appropriate design’ or demands the ‘selection of an appropriate architect’.”

symbolic functions are paramount and require the architect to come up with an appropriately inspiring, evocative and meaningful form. The most important part of the design process is complete when such a form has been designed. The design work that remains after this is further developing the concept to make it buildable. In such cases, holding a competition amongst architects and *selecting a design*, from amongst the various designs that the architects have come up with, is a workable strategy. The appropriateness of the architect for undertaking the subsequent work – of detailing the design and making it buildable – is of secondary consequence. If need be, another competent architect can be appointed to develop the concept and make it buildable, in consultation with the original author of the concept.

However, not all projects are like India Gate or the Taj Mahal. Many projects are very complex where a vast number of complicated and conflicting requirements have to be satisfied. With many others, at the outset, it is not even clear what requirements have to be met by the design. In yet others, an initial design has to be done simply to collect more data to understand the problem better. In all such projects, it is impossible to quickly come up with a concept design that one is sure about. The architect has to gradually and painstakingly develop the concept design through an iterative process and in deep collaboration with the client. More often than not, the initial concept design has to be abandoned and a new concept has to be developed. For such projects, it would be foolish to select an architect primarily on the basis of a quick concept developed by the architect. One has to judge the capacity of the architect to undertake the arduous task of the whole design process and to deliver on the final design. The initial concept design may give some clue about the architect’s design instincts, but the selection cannot be these clues alone. In such cases, competitions should be structured not so much to *select an appropriate design* but to *select an appropriate architect* – one who has the capacity to deliver on the final product, not just a persuasive first sketch.

One can run into serious problems when a competition for a complex project is structured to select a design instead of an appropriate architect. It seems to me that a classic case of such a mistake is the competition for the IGNCA building. Here a building had to be designed for a complex institution that had not yet come into being. For the design to be appropriate, it should have been developed through an iterative process and in deep discussion with the clients and users. But the competition was structured to select a sketch design, not an architect who was capable of delivering on the final product. The Jury selected a design produced by an American academic – Ralph Lerner – who received the award and returned to America. The Ministry engaged a local architect to develop the design. This local architect was not at liberty to depart from the initial concept even if, during the design development process, it made sense to do so. This was probably not the best way to select an architect for designing a complex institutional building.

Tackling the problems that large and complex projects, such as the Sabarmati Riverfront Development, the Mumbai Port Trust Redevelopment and the Central Vista Project pose, requires a vast and diverse array of professionals to work together in a highly cooperative manner: urban planners; architects; urban designers; landscape architects; civil, electrical and mechanical engineers; construction managers; quantity surveyors, surveyors as well as a host of other specialist designers. Such groups, required as they are to work smoothly and cooperatively together, cannot be put together every time a project has to be tackled. They will simply not be able to hold together and deliver on the goods. There has to be something more that holds all the individuals together than a commitment to work on the same project. This is why large firms, that hold a vast array of diverse and experience professionals together for long periods of time and who have experience in ensuring teamwork within themselves and with other specialised firms, exist. They are necessary to tackle large and diverse projects. Many practitioners with small architecture firms are discontent when they are barred from bidding for large and complex projects. Perhaps, on account of their lack of experience with large projects, they do not fully understand what it takes to tackle such projects. To work on large and complex projects, one either has to be a part of a large firm or gradually build one and gain experience by successively tackling larger and larger challenges.

I was fortunate in joining my father's practice and could soon assume a leadership role. It saved me many years of initial struggle. However, my father's firm was relatively small and focused on tackling architectural projects and I was interested in tackling large and complex projects in the public realm. To be able to tackle such projects, starting from the early 1990s, I slowly built a team of highly competent urban planners, architects, urban designers, project managers, engineers, surveyors, technical draftspersons, and so on – within the firm. We slowly learned how to tackle more and more complex projects. Our first project was not as large or complex as the Central Vista Project or the Mumbai Port Trust Redevelopment. It was a tiny two kilometre centre-city street redevelopment that took two years to implement!

Unfortunately, there are very few large, multi-sectoral firms in the country that can tackle large and complex urban projects. On the other side, the challenges that our cities face are immense. If we are to tackle them, we will need scores of highly competent large firms. We cannot rely only on large international firms, for many reasons, but the simplest of them is that we cannot afford their services. Therefore, I hope that our profession quickly builds real capacity to tackle the problems that India faces.

THE DESIGN PROCESS

Sometimes, in projects that are very similar to others that have earlier been built, it is possible to very precisely define the practical as well as subjective requirements that a design has to fulfil. If, for example one is designing a new McDonald's outlet,

In one of your presentations about the Redevelopment project, you stated that the loose and broad design brief gives flexibility, freedom and allows design to evolve as the project progresses. It seems intuitive that a project of such national importance would have a comprehensive space program with a certain degree of flexibility, and well thought out urban design, landscape and architectural guidelines. In this context can you elaborate further on your comment?



ABOVE |
**SABARMATI RIVERFRONT
DEVELOPMENT PROJECT**
AHMEDABAD

The project is one of the significant public spaces and urban development projects in recent times in India. The comprehensive design tries to cater to innumerable interlinked problems in the urban realm. The design approach is an example to demonstrate that building local capacities as well as building trust and consensus by engaging citizens is of utmost importance.

the client's brief is extremely precise. It states all the functional as well as branding requirements in a huge amount of detail. The brief is accompanied by a dossier of details about the site such as site measurements, infrastructure sizes and so on. The architect is supposed to come up with a design that not only meets all the requirements of the brief, but does so within very strict efficiency parameters. There is no room for—or need for—the architect to deviate from the specifications. All the requirements that the design has to fulfil are well known in advance and, more importantly, they are knowable. After all, there are, literally, thousands of well-used and well-tested McDonald's outlets in every possible type of site across the world.

Many projects are similar to McDonald's outlets, for example, hotels, standard housing, streets, etc. However, not all projects are of this type. Take for example, the new campus for IIM Ahmedabad that we were commissioned to design. Despite the fact that they were an already functioning institution with a campus, their brief was loose. They did not want to duplicate what they had. They wanted to explore new possibilities and were unclear about precisely how many students they wanted to accommodate. In fact, they saw the design process as an opportunity to rethink some aspects of their institution. This is precisely how, at CEPT, we worked with the architect when we decided to build a new library on the campus. We wanted to define what a library meant in today's world and in the specific context of CEPT. And this is precisely how families work with architects, when they want custom-designed houses for themselves. They go with a loose list of requirements and vague notions about what they want the house to look and feel like. They want to use the design process to discover what their house can be.

These latter types of projects demand an iterative design process. First a fuzzy concept is developed and then it is slowly sharpened. If, during the design process, more information about the site or the client's requirement is needed, surveys and studies are commissioned and this information is brought to bear on the design. Sometimes, the new information leads to the initial concept being abandoned – a new concept has to be developed and the process commences anew. Sometimes the initial concept turns out to be robust enough to survive the design process and sometimes, the design process may even lead to the conclusion that the project is unviable and has to be abandoned. It is the challenging job of the architect to hold the integrity of the concept in place through the disruptive process of design development and refinement.

Most projects that I have worked on are of the latter type – not repeats of already existing 'types'. They cannot be designed in the manner of a McDonald's outlet, where, in a linear progression, first all studies are completed, then, a very firm list of requirements is drawn up, after which through an arithmetic-like process a design is developed. They demand the design process to be iterative and to be a process of discovery of both, possibilities as well as requirements. The Sabarmati Riverfront Development, various institutions like IIMA and houses that I have worked on, office buildings and campuses, industrial facilities as well as the Central Vista Project, have all been open ended design problems.

In case of the Central Vista Project, the initial requirements were very broad: an expanded Parliament House, a Central Secretariat, a refurbished Central Vista Avenue and so on. More detailed requirements, for example requirements for the new Parliament House emerged slowly from dozens of meetings with various users of the building who were shown sketch designs and asked to comment on them. Altogether new requirements also emerged during the design process, for example the idea of creating a publicly accessible Biodiversity Arboretum on land carved out from the Presidential Estate. Buildings, such as the Vice President's Residence, moved around as various alternative sites were explored and abandoned. It was decided to move the National Museum to the North and South Blocks.

FACING PAGE |

[1] CENTRAL VISTA | 1940's

[Based on the original drawing by Lutyens]

'The new capital is not merely the shrine of the glory of India, but it is to be the living centre of the administration' [Herbert Baker]. After 17 years of construction, in 1931, Delhi was inaugurated as the capital of Imperial India. At the time, it was one of the largest such projects in the world, conceived and designed to reflect the spirit, progress and global importance of India. However, the Lutyens-Baker vision remained largely unfulfilled due to tumultuous world events that followed, and a changing, local, political and economic context.

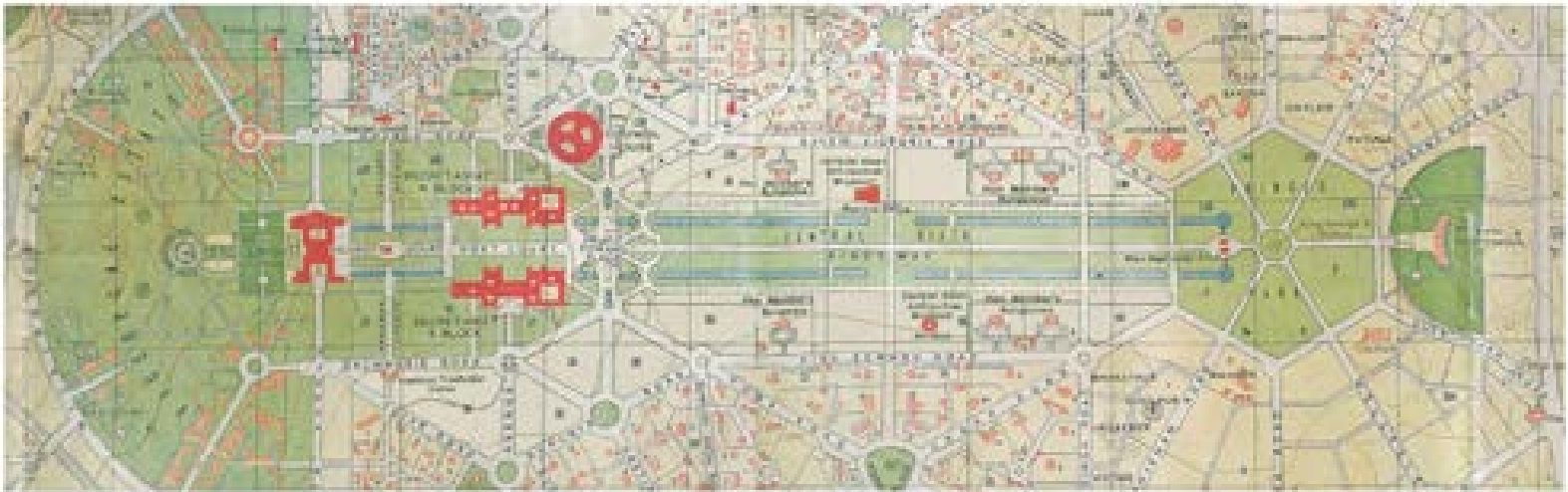
[2] CENTRAL VISTA | TODAY

The Lutyens-Baker plan was sparse, primarily defining the street network and landscape elements and was never sufficiently fleshed out in three dimension, in order to guide the development of buildings – their materiality, detail or architectural language. The development that has taken place, so far, is a response to the rapidly growing post-independence needs of the country. Its full potential to be an icon for the country has remained unrealized. The administrative strategy to carve up plots and allow largely uncoordinated development, has led to hasty construction with no attention paid to synergizing the developments or creating a unifying identity.

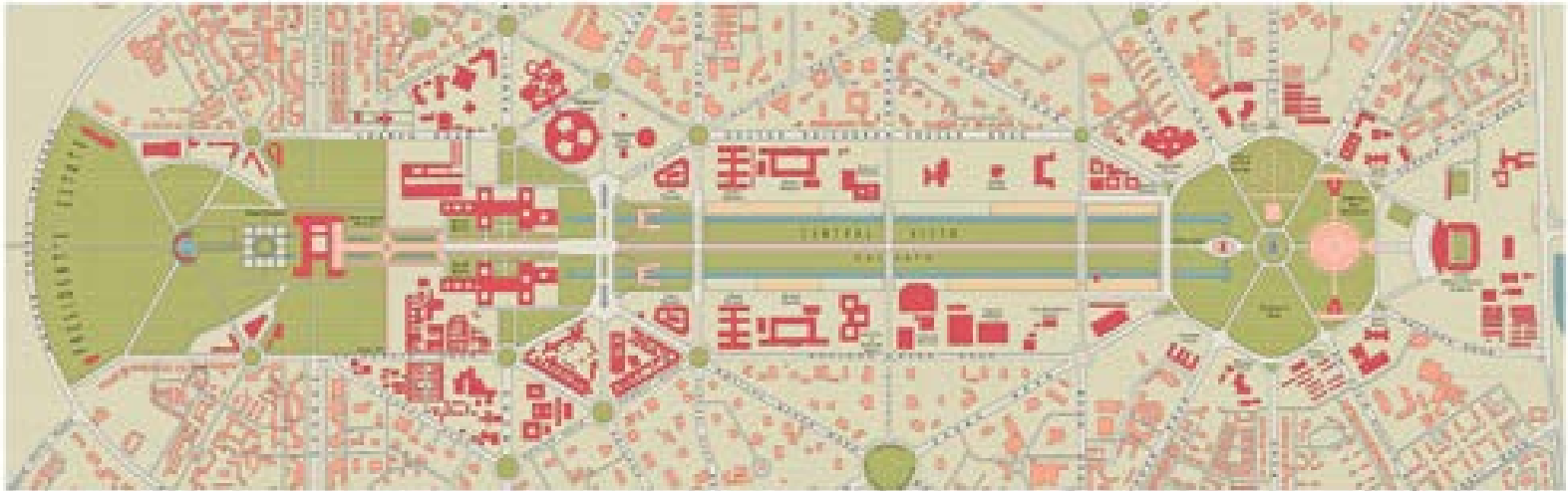
[3] CENTRAL VISTA | PROPOSED

The Master Plan is a coherent overarching vision for the Central Vista. It proposes several new building along the Rajpath, whose scale, form and quality respects and completes Lutyens and Baker's vision for the Central Vista. Focused on better land utilization, refurbishment, provision of efficient buildings, additional infrastructure and a befitting public space, it is an effort to create a new icon for a resurgent India.

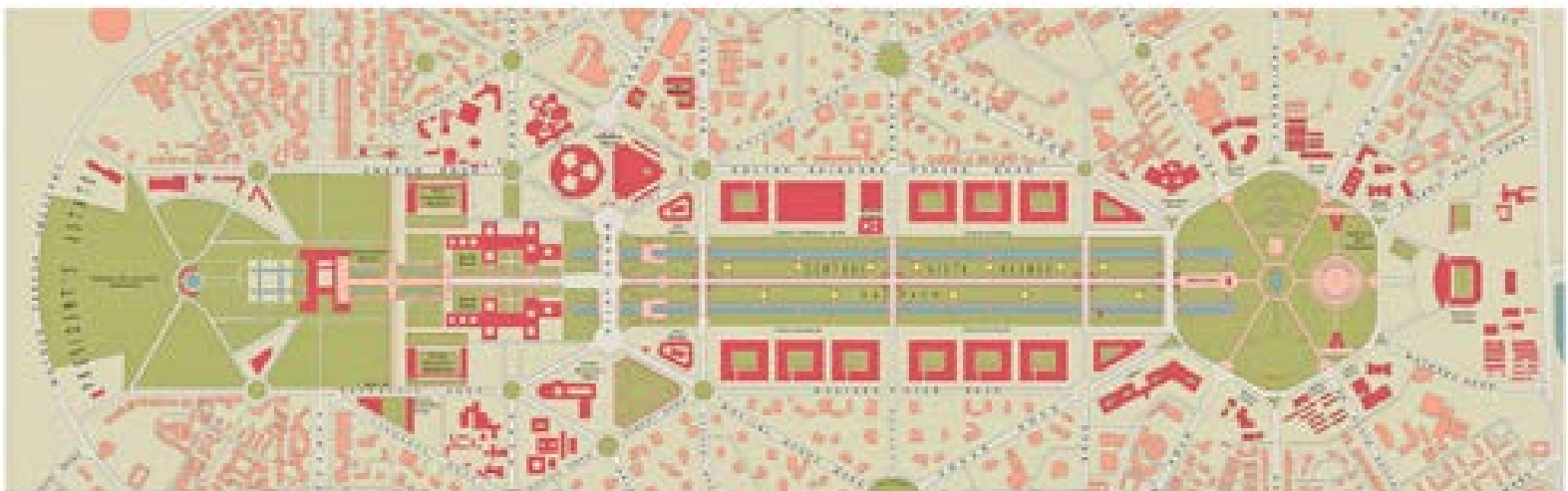
There have been many studies in the past regarding redevelopment of Lutyens' Bungalow Zone, LBZ [including Central Vista], a designation given to New Delhi capital city in the 80s. Do you propose to reference these studies while you work out details of the urban design and landscape schemes?



[1]



[2]



[3]

Several studies were commissioned to assess the impact of the proposed buildings on the existing infrastructure and site, for example, traffic studies, tree inventories and infrastructure maps. Experienced architects, particularly those who have worked on bringing a fuzzy brief and concept slowly into sharp focus, are very familiar with such open-ended, iterative designing – where the design work runs parallel to studies and surveys.

DEMOCRACY, PARTICIPATION AND CONSULTATION

Many people seem to think that, because we live in a democracy, all important issues must be popularly decided. And therefore, for example, designs for public spaces must emerge from participatory design processes, or some form of popular decision making. But what does this really mean? Can complex design/policy issues be popularly decided through participatory processes? If not, how can people be involved in decision making?

It is a fact that different people see and value things differently. Therefore, in a group of people, consensus over complex issues – particularly those that involve trade-offs – is unlikely to emerge spontaneously. This is why all societies require a system for making decisions that affect the collective. Sometimes, and on some issues, it is possible to take a popular vote. However, it is not practically possible to take all decisions through popular votes, and often, the issues to be decided upon are complex, and require deep expertise to understand and decide upon. As a consequence, some people have to be authorised to take decisions for the collective. In a democracy, these decision makers are popularly elected for pre-defined periods of time. Once elected, they are expected to apply their minds and take decisions, not to continually go back to the people. In areas where deep subject expertise is required for making sound decisions, they are expected to consult experts. In areas where popular inputs can enrich the decision making process, they are expected to undertake public consultations – not to turn over the decision making to the public. In addition to this, democracies also allow for a free press, so that public opinion can be made known to decision makers, regardless of whether they consult members of the public or not.

In India, opinions are freely expressed – either through the press, or now, through a variety of other mediums. In many areas of decision making, authorities are also required by law to undertake public consultation. While it is absolutely true that these consultative processes can be much better structured, it is also true that many people are unwilling to respect processes unless what they want is met with. Very often, these processes are also abused for purely political purposes – regardless of the merit of the issues, decisions are opposed to express opposition to the decision makers. Having worked much in the public realm and having interacted with both sides – activist professionals as well as decision makers – it is clear that there is deep mistrust and misunderstanding on both sides.

As you mention that more studies and surveys are now being carried out, in light of such new site discoveries and your own comments about design flexibility, are you open to the idea of modifying the urban plan you have set up?

“All societies require a system for making decisions that affect the collective. Sometimes, and on some issues, it is possible to take a popular vote. However, it is not practically possible to take all decisions through popular votes, and often, the issues to be decided upon are complex, and require deep expertise to understand and decide upon.”

In public projects, how do you look at the idea of public participation, especially in context of democracy like ours?

Many professionals resort to 'activism' because they are interested in using their professional knowledge to influence projects and policies in the public realm but are convinced that it is not possible for them to do so by engaging with government as professionals. The reasons for not being able to engage as professionals can be many, for example: the opportunities for engagement are very limited; it is very difficult to work on public projects and requires a stance that they are unwilling to take; the belief that government is manned by people who have no vision, or have no interest in the public good, or are unwilling to be persuaded. Whatever be the case, convinced that it is not possible for them to work in the public realm as professionals, they either become public critics and use the press to put their views across, become advocates for a cause and work through a non-governmental-organization, or become legal activists and use the Courts to influence public projects and policies. These forms of engagement are usually well-intentioned and absolutely necessary to keep governments in check. However, having abandoned the creed of the professional to find workable solutions to problems by making meaningful trade-offs, many critics, advocates and activists end up taking immoderate, partisan, strident and ideologically driven positions. This approach causes more harm than good. It only vitiates public discourse and reinforces mutual mistrust.

You mention that there is a trust deficit on both sides, State and Professionals, in their mutual relationship. Can you please elaborate on this? How do you propose to bridge the gap?

On the other side, many people in the government do not believe strongly enough that it makes good sense to constructively engage with the public. There can be many reasons for this, for example: they are deeply suspicious of the motives of immoderate critics, advocates and activists; they have never experienced open and transparent governance because they are themselves from traditional backgrounds where blind faith, obedience and firm, top-down exercise of authority are all seen as virtues; because the organizational set-up they are within has no systems for constructive public engagement. Whatever be the reason, the corrosive dynamic of immoderate criticism, advocacy and activism only reinforces non-transparency and disregard for constructive public engagement wherever it exists in government.

Perhaps the situation will only change when more professionals put in the effort to constructively engage with government as problem-solving professionals rather than as adversarial critics, advocates and activists. In the meanwhile, I try to the extent that it is possible, to bridge the gap between self-appointed advocates of the public interest and those who are duly elected and appointed to take decisions in the public interest.



All images and drawings courtesy of
HCP Design, Planning and Management Pvt. Ltd., Ahmedabad



CITY AND CULTURE

Mriganka Saxena and Puneet Khanna

Founding Partners, Habitat Tectonics [HTAU] and authors of the Implementation Framework for Containment Plan for COVID-19 for Indian Towns & Cities

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OUR CITIES CAN FIGHT COVID-19 PROACTIVELY



The largest COVID-19 lockdown of the world is in its sixth week. As of 30th April 2020, India had reported a total of over 33,000 cases. Seven of the ten cities worst affected are also amongst the ten most populated urban agglomerations and some of the largest economic hubs of the country. Although the lockdown has managed to slow down the rate of transmission, giving our cities and health services time to prepare for any impending surge in the weeks to come, it has been devastating for the nation's economy and has affected daily livelihood of millions across the country.

It is likely that these large cities, and many others that are designated as hotspots of the transmission, will continue to adhere to current restrictions even as the country initiates the process of relaxing the lockdown after 3rd May. But, for how long can this status quo be extended? It would soon be imperative that a balance be found between containment of the spread of COVID-19 and restoring economic activity within towns and cities.

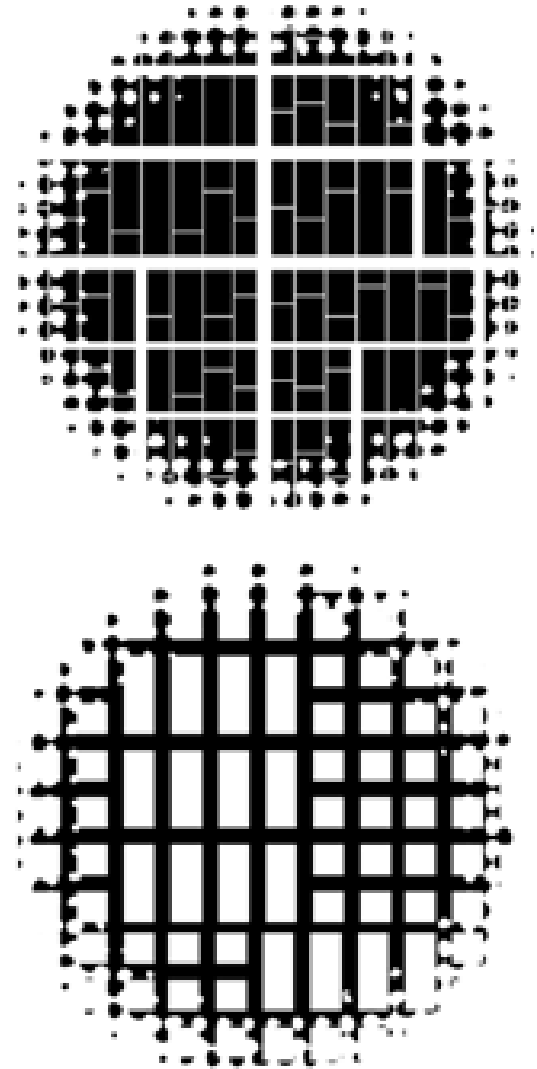
In early April, the Ministry of Health and Family Welfare [MoHFW] released the *Containment Plan for Large Outbreaks, Novel Coronavirus Disease [COVID-19]*. This Plan proposed geographic quarantine, calling for 'near absolute interruption of movement of people to and from a defined geographic area where there is a single large outbreak or multiple foci of local transmission'. However, the proposed geographic quarantine applied to large areas spread over multiple blocks of one or more districts that are contiguous. This approach is not applicable to cities. Exceptionally large areas of an agglomeration should not be quarantined. Blanket restrictions and surveillance measures should not be applied across localities that are not affected to enable efficient allocation of resources available with Municipalities and allow these unaffected parts of the city to resume economic activity.

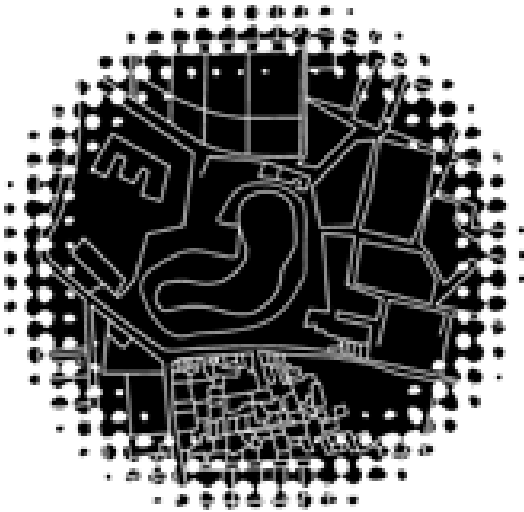
What our urban agglomerations urgently need is a more nuanced and granular approach to containment and monitoring of COVID-19. The recommendations of MoHFW's *Containment Plan* need to be extended and contextualized for implementation at the scale of easily identifiable zones within a city. The Geographical Area for containment most appropriate for urban agglomerations is the scale of a residential locality within a city Ward. These can also be easily aligned with the Municipal list of colonies used for Property Taxation purposes. Residential Areas, or RAs, are zones of 'origin' of all movement as city-dwellers typically make their daily journeys for various needs from here. These are also areas where current COVID-19 cases are being tagged i.e. cases linked to the residential address of the patient. Therefore, restrictions on movement to break the chain of spread must be adopted at the level of RAs in a city.

Simplified and clear Monitoring and Containment [M&C] Protocols for RAs can empower Municipalities to put in place responsive and pre-emptive measures to stop all localities in their cities [even those with zero or lesser number of cases] from transitioning to higher levels of spread. These Protocols must align with the goals of the Containment Plan and ensure social distancing, early detection of cases, testing of all suspect cases, isolation of cases and quarantine of contacts, risk communication to create awareness among public, and enhanced active surveillance. This will not only assist in smoother implementation but also help streamline reporting structures.

Typically, one can identify seven different RA Types within an Indian urban agglomeration based on parameters such as population density, dwelling and household size, existence of mixed-use, street widths, levels of amenity etc. These include — 1] Slums; 2] Rehabilitation Colonies, Urban Villages, Small Sized Plotted Housing, old city and other traditional villages; 3] Government Housing / Low-rise Group Housing; 4] Cooperative Group Housing Schemes, Integrated Townships; 5] Medium Sized Plotted Housing ; 6] Large-sized Plotted Housing, and 7] Villages on the city periphery.

M&C Protocols must vary for each RA Type in response to their specific socio-economic context and built environment. For instance, home isolation and home quarantine are just not effective in RAs such as slums or unauthorized colonies due to household sizes and existence of common bathing and toilet facilities. In RAs such as Integrated Townships and Medium and Large Scale Plotted Housing, Residents Welfare Associations [RWA] can contribute significantly towards monitoring and, therefore, protocols need to acknowledge this. In alignment with MoHFW's Containment Plan, the notion of color-coding geographical areas as Red / Yellow / Green, based on





ABOVE |

'World within a World'

GRAPHIC CREDIT: *Geeta Wahi Dua & M. Shah Alam*

the intensity of the outbreak must also be continued. However, this should be applied to a significantly smaller area i.e. at the scale of an RA. It is also critical that M&C Protocols are laid out for Yellow and Green Zones in addition to the hotspots or red zones to put in place pre-emptive measures and stop these from transitioning into higher levels of transmission. At present the MoHFW's Containment Plan does not specify protocols for these two zones.

Areas of economic activity such as industries, commercial uses, retail, etc. are the Non-Residential Areas [NRA] within a city. These are 'destinations', areas where residents commute to for various needs. As lockdown is relaxed, NRAs should be allowed to operate partially or fully within a city as per the National / State directives because movement of employees and users to the NRAs can be effectively restricted at the RA where cases originate. This approach enables cities to open economic activity within it while ensuring targeted restriction on movement at the point of origin. M&C Protocols for the premises of NRAs should be put in place by the owner or company, based on guidelines and directives issued by the National and State Governments/ Ministries.

Public Transport and Intermediate Public Transport facilities and services are the primary facilitator between the 'origin' and 'destination' i.e. Residential and Non-Residential Areas. These must also be managed and regulated by Municipalities and their Transport Departments through incremental and complete relaxation of lockdown.

Based on the opinion of experts, it would be safe to assume that we are months, if not a couple of years away from returning to 'normal'. However, it would soon become inevitable to open towns and cities across the country for socio-economic reasons. In the relaxed state of lockdown where most people would resume their regular lives to varying degrees, the key to fighting COVID-19 would be a nuanced spatial approach linked to a significantly smaller residential area for geographical quarantine, early detection through constant monitoring of all areas and preparation of simple protocols that are easy to implement and roll back. These very principles will enable us to minimize spread and overcome the pandemic area by area, city by city. Early identification of the spread and continuous monitoring and containment would give us, as a country, the confidence to resume economic activities even if cultural and social engagements are restricted for much longer. This approach, if adopted and spatialized through GIS based mapping, would also guide cities and states to learn from success stories of different types of localities, helping us to pre-empt surges and spikes and contain possible future waves of COVID-19.



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LOCALIZING FUTURES

COVID-19, the global pandemic has disrupted the country's economy in an unprecedented way. Along with other views of the world, it has shown us the massive inequality of our society, which most of the times, remains hidden in our hearts and minds. The pandemic has had an adverse impact on the world, leading to unemployment and exodus of the population from cities, which has rural roots. Since the livelihood of such a population is related to its daily earnings, with the prolonged lock down of all kind of services and activities, people are jobless and most of them are going back to their villages.

Since many decades, the thrust of various Indian governments in making the country more "urbanised" is in full swing. Migration of people from villages to these growing cities in search of livelihoods and better opportunities has now become a phenomenon. The governments, the construction and infrastructure industry, take for granted the fact that a large part of the rural population has been and will be building and managing our cities. In spite of being in existence for more than three centuries, our cities don't have a system of producing their own labour and services population. Therefore, these people from rural areas, having a basic level of education, come to cities and become skilled and semi skilled labour force for various industries and its allied branches such as construction and infrastructure, transport, hospitality, education, manufacturing, commerce, banking, healthcare, home management, sanitation and solid waste management. Belonging to low income groups, they work in small business enterprises and factories, as daily wage workers in low salaried jobs. Due to the low cost of land and rental costs, they settle mainly in large informal settlements like old historic areas, urban villages, and authorized/unauthorized/ regularized/ non-regularized rehabilitation colonies. With a basic level of infrastructure, most of these informal settlements are outside the ambit of government planning circles.



'Localizing Future':
the term first used by
Helena Norberg-Hodge
in her book 'Ancient Futures:
Learning from Ladakh', 2000



The neighborhoods of such settlements are vibrant, dynamic and lively but are densely packed, having a greater sense of community, camaraderie and safety. The residents share common backgrounds and beliefs in the idea of survival in the city. An easy adaptation of changing requirements related to urban life, a healthy mix of land uses as per the local need — residential, commercial, educational, health and agricultural, dairy farming and carpentry [in urban villages] — these settlements are quite resourceful and economically inclusive for the local needs of the residents. With literally no restriction and laws to govern their growth, they grow by additions and accretions, not by any predetermined pattern. The people living in these areas share distinct cultural attitudes that shape and give character to the environment in which they live.

On the other hand, most of the settlements suffer from major infrastructure issues in the areas of storm water drainage, sewage and garbage disposal that often cause grave health and hygiene concerns. Absence of a defined circulation system, inaccessible narrow lanes and streets in case of health and fire emergencies, lack of open public spaces, poor quality of construction in some areas are the immediate concerns that can be seen across all such colonies.

In last few decades, in government policies, there is an acknowledgment of the role of people residing in such colonies in the nation building exercise. Various urban reforms under Jawaharlal Nehru National Urban Renewal Mission JNNURM in early years of 21st century were a small step in this direction. In recent times, the process of regularization of such colonies in many States including Delhi, wherein the property rights are given to the occupants has been initiated.

“It is estimated that about 50 lakh people of Delhi reside in more than 1700 unauthorized colonies spread over about 175 square kilometres at present, located on private or public land. They are predominantly inhabited by lower income group people, who provide their services for the growth and prosperity of the national capital. It is imperative that being a part of the capital’s physical and socioeconomic system, they are provided with a clean, secure and healthy living environment.”

—PM-UDAY, Pradhan Mantri Unauthorized Colonies in India Awas Adhikar Yojna | DDA, Ministry of Housing and Urban Affairs, Government of India

This population holds healthy electoral numbers for each government during elections, but it has not found enough concern, attention and empathy in its policies. Same is the case with around 150 urban villages in the city. Much more needs to be done and that also at a larger and faster pace.

Alternative Approach

While we grapple with the understanding of various lessons that this global pandemic has imparted to us, one of the most crucial lessons, I think, is of “localizing” our perspective in every aspect of life.

I would like to adopt this analogy in regard of the neglected urban areas of the informal settlements, as mentioned above, where the economically marginalized sections of our society reside. I would say, that the inhabitants or the working class has invested quite a lot of time working tirelessly to build the cities and manage its affairs while completely being ignorant of their local living conditions in these settlements.



ABOVE | Public Sanitation project at Aya Nagar, New Delhi by GREHA is one of the examples of participatory model of development in an urban village
PHOTO CREDIT: GREHA, New Delhi



Embedded strongly in the idea of *“local”*, the proposed bottom up approach, calls to imagine and explore an alternative development model to improve these large settlements that are homes to a very important segment of the urban population. Since this urban built form has a flexible model [growth by addition and attrition, not by planning], with its distinct spatial culture, it is the most appropriate context to explore a participatory approach, where people, government and professionals engage with each other to envision improvement plans for these neighborhoods.

The working model will have clear and tangible roles for three groups - local people to suggest, recommend and assist in executing development; local spatial design professionals to interpret these ideas and create documentation for public dissemination and technical submissions and local government to fund and execute these ideas involving the local residents. This may trigger relevant, timely and urgent large scale projects regarding development and improvement in the coming times.

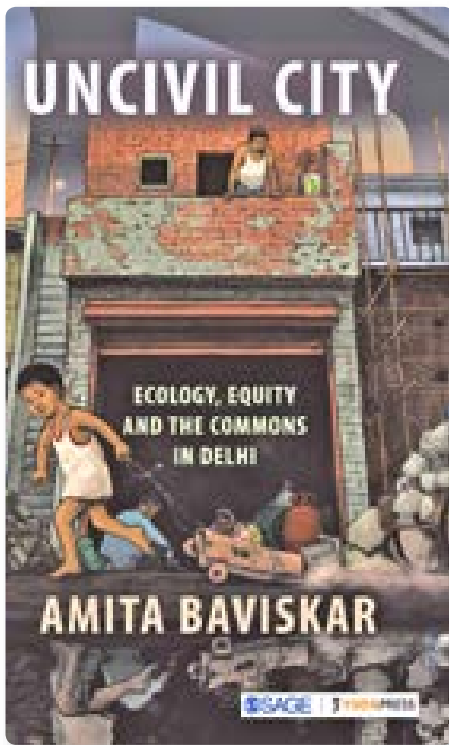
Developing, improving and renewing these living spaces in spatial, environmental and aesthetic terms, while celebrating the spirit of *“local”* — with “local”, for “local” and by “local”, will go a long way in creating self sufficient and environmentally sustainable neighborhoods in our cities. The larger vision should be to influence policies for the improvement and renewal without relocating and transforming these settlements’ intrinsic character. The institutionalization of the model in all kinds of informal settlements across the country will change the character of our cities to be more humane, culturally rich and diverse, thus imparting a sense of belonging, pride and dignity to its citizens.



Photo-graphics by grafiniti

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BOURGEOIS ENVIRONMENTALISM AND THE VULNERABILITY OF THE POOR



UNCIVIL CITY
ECOLOGY, EQUITY AND THE COMMONS IN DELHI
Author Amita Baviskar
Published by SAGE Publications Pvt. Ltd, 2020
Size 146 x 216 mm, 300 Pages
Hardcover
ISBN: 978-93-5328-940-9

The modern history of the development of the structure and open spaces of the city of Delhi has seen a number of watershed moments. There are events and times that have challenged, stretched and shaped the city. These include the urgent construction needed to house millions of Partition refugees who came to the city after Independence; the first Master Plan of 1962 and the steps taken to develop the city on its basis; the steps taken during the Emergency; the development for the 1982 Asian Games; the late 1980s DDA-builder partnerships on the city periphery. These and the inevitability of the creation of *jhuggi* clusters and 'slum' *bastis*; the closing of industrial units in the city between 1996 and 2000; the work undertaken to create a 'world-class city' for the 2010 Commonwealth Games, attempts at regulating traffic and pollution in Delhi have all been outlined by Amita Baviskar with the hitherto under-defined sub-texts of their ecological and social costs in her book *Uncivil City*.

'*Uncivil City*' is based on a series of papers written between 2002 and 2018, that have been edited and 'knitted together' in 2018 to form a coherent narrative with close connections between the environment, environmentalism and social inequality. The papers bestride a position that combines scholarship and advocacy, focusing strongly on the human cost of environmental legislations.

One of the first things that strikes one about the book is its' readability. Dr. Baviskar wears her erudition and her international reputation as a social sciences scholar lightly. Her deep affection for the city of Delhi, shines through as she introduces the book in the first chapter. She writes of experiences and memories from her days in Maurice Nagar and the Delhi University campus, a simpler time when one could still find nature as a clearly intertwined part of many areas of the city.

The three main aspects that the book examines are:

- the unequal distribution of power of citizens to define and deal with environmental issues
- the difficulty of understanding 'nature' and ecology when they exist in a complex, fragmented and often degraded state in a city like Delhi
- that ecology and justice have suffered in urban environments due to the middle-class priority of trying to impose social and spatial order

The book also looks at factors that are central to Delhi's identity, its 'republic of the street' and our treatment of the Ridge and the Yamuna river, first as 'non-place' and later as commercial resource. The preparation of Delhi Master Plans over the years have tried to plan the city's growth in a systematic and logical manner but have left significant gaps in their provisions. Where were the people to be housed who would first build and later service this 'new' Delhi?

The author targets the city's 'bourgeois environmentalists' who fail to comprehend the complex inter-relationships of life in the city, and whose initiatives have served neither ecological or social justice. The actions of these environmentalists, the judicial system and governments, though meant in the 'best interests of the public' have often led to judgements that are arbitrary and especially harsh to the poor.

The author critiques the concept of aesthetic environmentalism and its implication that anything looking messy is bad for the environment, which has often led to selective justice through indiscriminating verdicts. She documents the attempt to solve the problem of sewage polluting the Yamuna by clearing *jhuggis* housing 350,000 people; they were contributing only 0.1% of the sewage actually going in. Demolitions between 2000 and 2004 displaced 800,000 people. The closing of all industrial units, polluting and non-polluting, dealt a body-blow to Delhi's economy and the livelihoods of millions of people, just when liberalization had begun to strengthen the city's financial systems. The chronic lack of affordable housing meant that only a small fraction of families was 'resettled'. As the people who depended on the river for their livelihood were excluded, the river banks were commodified. Official encroachments had already been happening for many years, including power plants, sports facilities, depots etc. The book traces the building of the Akshardham Temple, institutional and commercial buildings and the Commonwealth Games Village. A petition against the building of the CWG village was dismissed by the court, since it was situated 'neither on a riverbed, nor a floodplain!' The years hence have shown that the seasonal rhythms and ebb and flow of the river will always have the decisive say on these issues.



PHOTO CREDIT: *bsd+grafiniti*

Over the years, it has been the poor of Delhi who suffer the most at the hands of environmental activism, even though of all city-dwellers, they have the lowest ecological footprint. Loss of livelihood, displacement of habitation and other forms of exclusion, lack of basic health and sanitation facilities have affected the fringes [both metaphorical and actual] of Delhi since the building of the city in the early 1950s onwards.

The current angst-filled discourse on the Central Vista strikes a resonance with the issue that is raised in the book, on the lack of democratic dialogue on the city. The single-point decision making for the 'revamp' of this space, without consultations with the people who use it, is symptomatic of the way we 'design' our cities and its sub-parts. The top-down planning approach has created a city that is polluted, congested, dirty, divided and swiftly moving towards unliveability. The author criticizes this approach, but does not whole-heartedly recommend the construct of unplanned, informal cities; she recognizes however, that this '*jugaad*' method of growth creates impromptu, synergetic and important inter-connections between people and systems that develop organically. These organic connections of 'cows, cars and cycle-rickshaws' are also vital in our own city, as threads that keep this chaotic, messy urban-rural conglomeration functioning in its own unique way. As the author says, "...the planned and readable city is a fiction."

Deep inequalities in our civil society have existed for decades. There is no easy solution to these issues; compromises due to political and administrative exigencies have ensured that the inequalities persist and often deepen. The author challenges this unequal and uncivil city, calling for new alliances and new ways of thinking, for connections and discourse that are civil on multiple levels, by recognizing the rights of the poorest on the facilities and spaces of the city. There are social connections that we must all establish between economic levels as citizens who want our city to be liveable, clean and inclusive. Among these connections, it is vital to also find mechanisms by which the poor and marginalized can find ways to voice their opinions and concerns. After all, in most cases of planning intervention, we are modifying places where people already live, work and play. We must find ways of helping the poorest in their quest for lives of greater dignity and fulfillment. We will not be able to achieve everything quickly, but we must make a start on this. It is important to now move beyond what the author calls 'middle-class visions of the ideal city'.

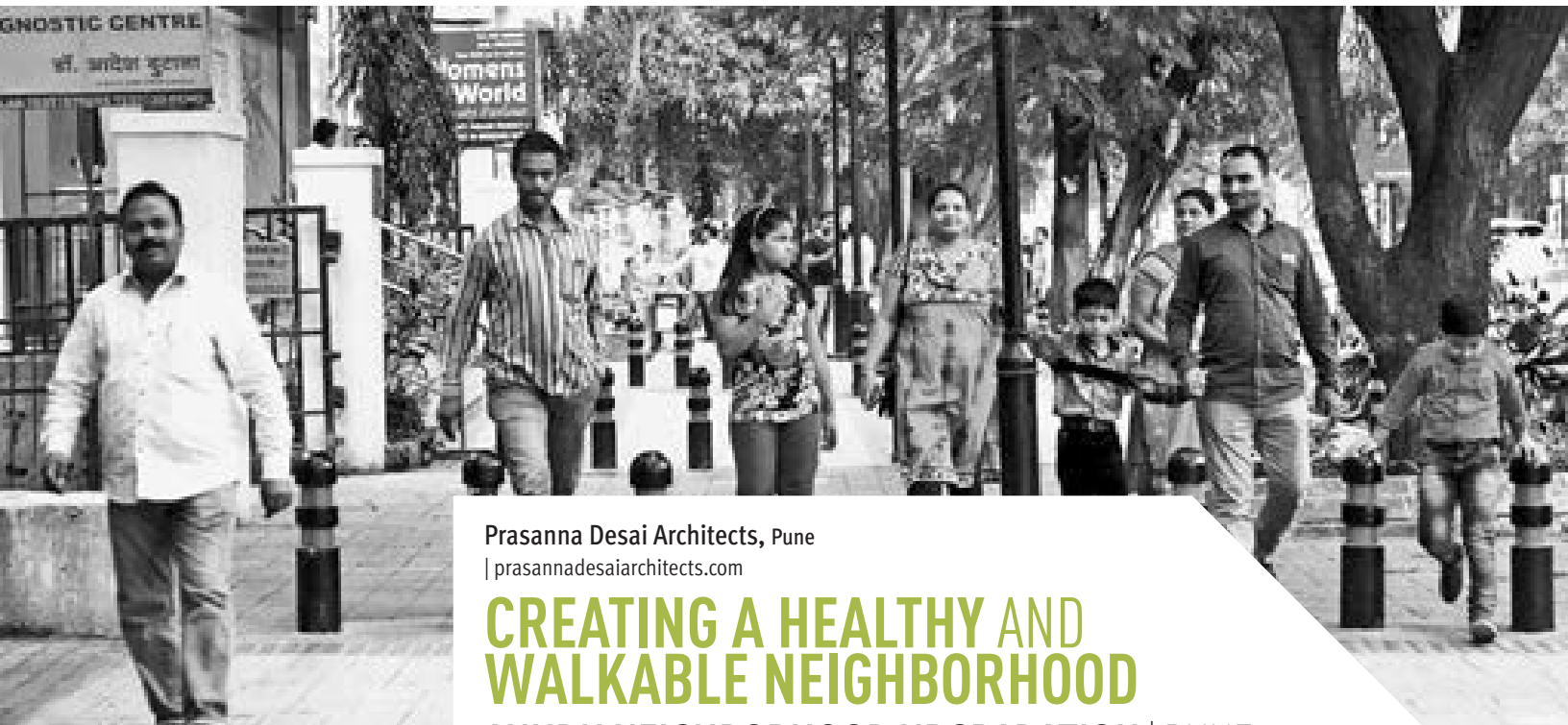
Dr. Baviskar writes from a sociologist's standpoint; her key interests are people of all economic and social levels and the effects that decisions by city-makers have on such groups and sub-groups. This is inevitable, given her background and her message is important for this very reason. There are important things in this book for all of us to think about. As planners, architects, landscape architects and urban designers, ecologists and environmental activists, we must acknowledge that our decisions have social repercussions, and in the case of the uncivil city, these are borne to an unfair degree, by the poorest and most vulnerable of its citizens.



STREETSCAPES IN PUNE

BELOW |
D. P. Road, Aundh, Pune
PHOTO CREDIT: Institute for
Transportation and Development
Policy [ITDP]

The city of **Pune** is among 100 cities selected as part of Government of India's Smart City Mission. The administration of Pune intends to improve its pedestrian and cycling environment by redesigning its arterial roads as Complete Streets. Twenty seven kilometres of streets have been identified for redesign, in the ABD [Area-Based Development] area as part of the Smart City proposal, and 100 kilometres under the city's annual budget. The first phase of these street design projects includes **Aundh's D. P. Road & ITI Road** [by Prasanna Desai Architects] and **J. M. Road** [by Oasis Designs Inc].



Prasanna Desai Architects, Pune
| prasannadesaiarchitects.com

CREATING A HEALTHY AND WALKABLE NEIGHBORHOOD

AUNDH NEIGHBORHOOD UPGRADATION | PUNE

“The depth of democracy is decided by the width of the footpath in the city.”

—Prasanna Desai

In 2016, under the Smart City Mission, Aundh was chosen as ABD [Area Based Development] for demonstration. Supported by ITDP, it was decided to create a wider network of nine streets to be implemented in phases with an aim of extending the walk ability concept and creation of a safe, shaded and socially vibrant neighborhood. Engagement with local environmental NGOs – bureaucrats and local corporators of Pune Municipal Corporation, citizens' groups, users and urban design professionals in the form of meetings, workshops and exhibitions has culminated in the streetscape work of Aundh ITI street.

D. P. Road project is the recipient of IIID-Anchor Award 2017, APR Sustainable Architecture Award 2018 [Urban Design], and Lexus Design Award 2019. ITI Road project is the recipient of IIID-Anchor Award 2015.

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STREET DESIGN: THE SIMPLE, SMART WAY

D. P. ROAD, AUNDH

Views: Before and After design intervention



A 4D strategy – Document, Design, Discuss and Demonstrate is adopted for the project while interpreting the meaning of SMART as Simple, Manageable, Affordable, Responsive and Technological. The street design is based on the principles of Universal Accessibility and Equitable distribution of road right of way where apart from Motorized Vehicle MV Lane and parking, equal priority is given to pedestrians, cyclists, hawkers and seating while saving the natural layer of existing trees and improving urban aesthetics.

Some of the main design ideas include:

- Walkability with equity and dignity, at a continuous surface to facilitate uninterrupted movement.
- Universal accessibility as per the Act, for the differently-abled to ensure their safe passage.



- Walkability with equity and dignity
- Universal Accessibility as per Disability Act 2016
- Safe Cycle-Friendly Environment
- Creating a People-Friendly Public Realm
- Neighborhood level Public Transport
- Hawkers and Vendors Policy
- Organized Parking with a Policy
- Technology in Parking Control, Wi-Fi and CCTVs



- Cycle-friendly, safe environment, by a dedicated and demarcated right of way for the cyclists.
- Hawker's and Vendor's Policy as per the Act, to restore the vibrancy and eyes of the streets.
- Public transport [shuttle service] at the neighborhood level to maintain connectivity and ease of access.
- Organized parking with a policy that initiates paid parking resulting in revenue generation.
- Creation of people-friendly and shaded public realm by conserving green cover, interactive seating with adequate street lights.
- Technology to incorporate free Wi-Fi, CCTV cameras for surveillance, sensors for parking count.



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STREET DESIGN: THE SIMPLE, SMART WAY

ITI ROAD, AUNDH

Views of the rejuvenated street and public space

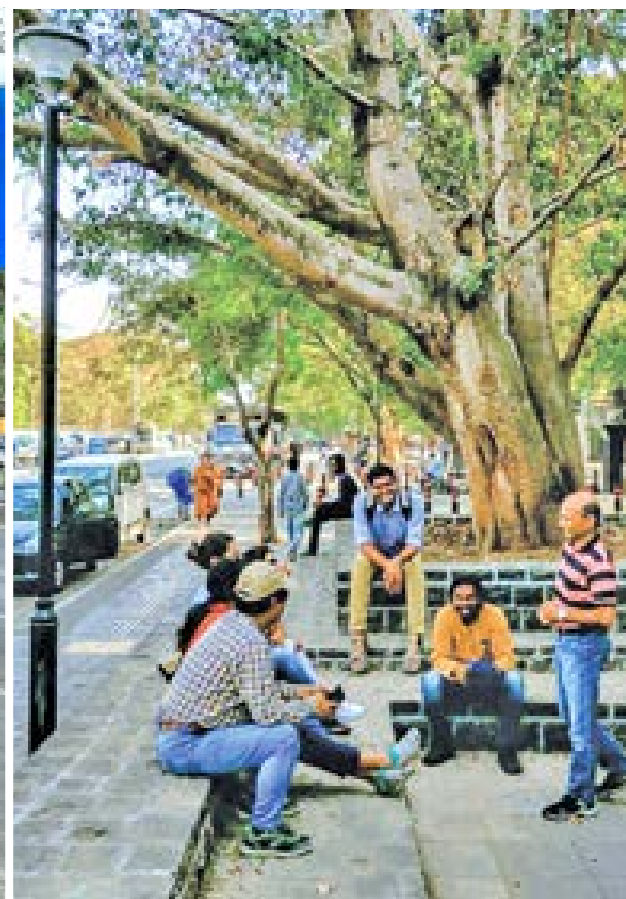


Raised pedestrian crossing with corbelled stone for speed control; chain link median with green hedge; prefabricated concrete tree gratings and bollards eliminating the risk of theft of such elements; masonry stone seating with substantial soft area for trees to breathe; turning buffer at every property entrance controlling the parking edge also creating space to accommodate signages and dustbins are some of the design elements used. The street has more than hundred trees of 23 different species, all of which have been saved and where each tree has the botanical information in English and Marathi, thus creating a possibility of a live botany class on the street. Appropriate lighting, music, sculptures and games make shopping experience as good as an “Urban Mall” under the tree canopy. Distinct entry and exit points of every property, controlling the parking and creating space to accommodate signage and dust bins are some of the key elements of design. The streets now enable people to walk with baggage, shopping trolleys throughout the neighborhood and thus, have lead to reduction of use of vehicles for short trips.



The conceptualized design policy is based on Pune Street Programme and Pune Street Design Guidelines prepared by ITDP and adopted by Pune Municipal Corporation. The designs were finalized after discussions with multiple stake holders – engineers of PMC Road Department, Police, MLA, Corporators, various NGO’s including AVM, Senior Citizens Forums, Merchant Associations and local residents BSNL, MSEB, Water Supply & Sewerage Department, Optical Fibre Companies, MNGL and PMPML.

BELOW PHOTO CREDIT |
Shreya Gadepalli [ITDP]



Relocation of feeder pillars with creation of perforated sheet casing with art works is an aesthetic feature along with sculptures created from scrap material by Pune Biennale Foundation.

The project is in its 4th Phase with another 4.5 kilometers of streets, presently in execution stage. Once completed, the project will establish complete connectivity with convenience and comfort with a community feeling and supporting the commerce too thus creating a healthy and hygienic neighborhood.



CREDITS

CLIENTS
Pune Smart City Development Corporation Ltd. [PSCDCL]
& Pune Municipal Corporation [PMC]

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NGOs
Parisar
Pedestrian First
ITDP [Institute for Transportation and Development Policy]
CEE [Centre for Environment Education]
Aundh Vikas Mandal
INTACH Local Chapter

PROJECT MANAGEMENT CONSULTANTS
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CONTRACTING TEAM
Nikhil Constructions

ARTWORKS & SCULPTURES
Pune Biennale Foundation

CITIZENS' REPRESENTATIVES
Corporator Archana Musale
Advocate Madhukar Musale

PROJECT DETAILS

LENGTH OF THE STREET
1.5 Km. [Phase-1]

COST OF THE PROJECT
Approx. 21.00 Crore
[Inclusive of shifting cost for all the utilities]

PERIOD OF EXECUTION
June 2016 to June 2018

All featured images courtesy of
Prasanna Desai Architects, Pune



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ABOUT RETAIL, TREES AND YOUNG VIBES

JANGLI MAHARAJ ROAD | PUNE

Named after Sadguru Jangali Maharaj whose *matth* lies here, J. M. Road is a prime arterial road—majorly commercial—with many high-end shops. Along with Sambhaji Park, a large public garden that abuts the road, it has many schools and colleges located in its close proximity, which imparts a young and vibrant character to it. The road is well known for its majestic Rain trees [*Samanea saman*], which cover almost the entire stretch providing shade throughout the year.

The proposal has equitably divided the linear street space into distinct zones, creating various types of multi utility zones which are contextual to the abutting land use. A wide continuous walking street on both side of the road with a cycle track on one side defines the new people friendly character of the road. New design elements for pedestrian safety and security include proper sidewalks, safe junctions, barrier free environment and segregated cycle tracks. Introduction of new functions as per the adjacent land use and NMT needs like plaza in front of park entries, vending spaces, active gathering spaces and multimodal plaza all along attempt to create a vibrant public space.

The main challenges for the development included maintaining Right of Way [ROW] by procurement of space from commercial establishment so as to allow a seamless movement from path to the shops in regard of revised ROW from 30 metres to 36 metres and conversion of perpendicular parking to parallel parking hence optimizing ROW section for incorporating other functions.



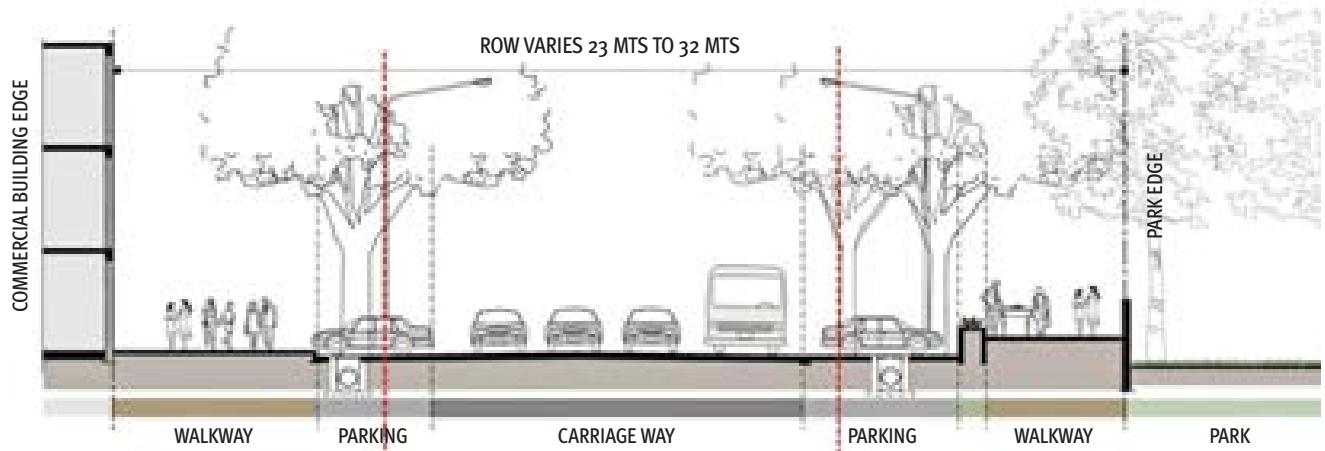
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PLACEMAKING EXPERIENCE
J. M. ROAD, PUNE

A sustainable project that promotes cycling, walking and use of public transport. The design equitably divides the street space into various linear zones, creating diverse yet integrated multi utility zones which are contextual to the abutting land use.

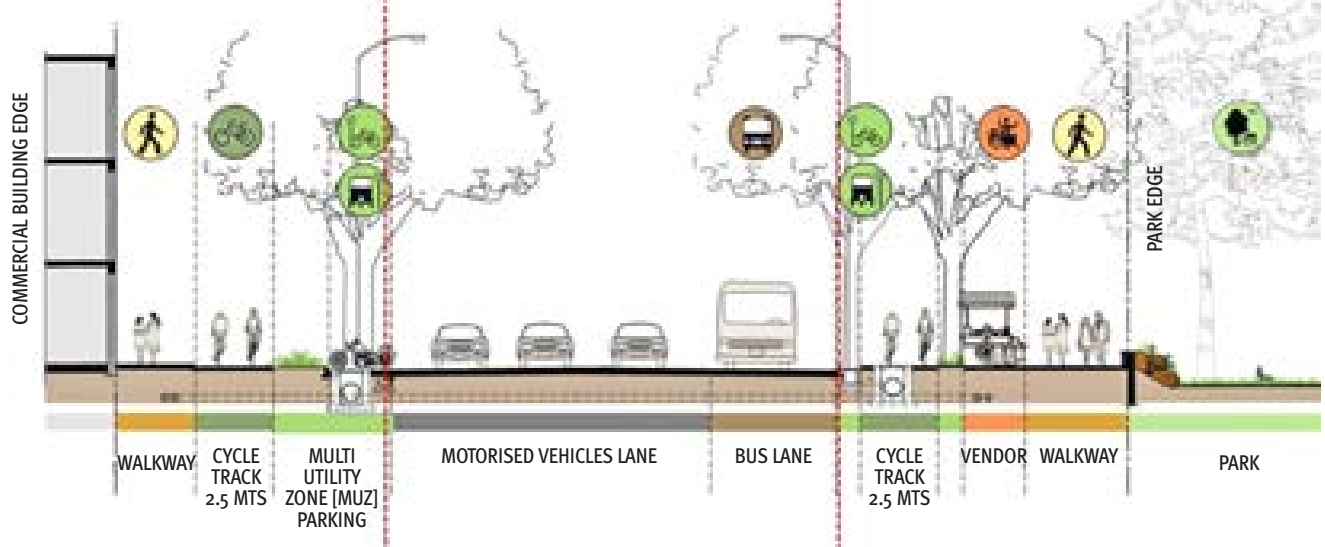
FACING PAGE [ABOVE] |
Existing and Proposed Section through the Road

FACING PAGE [BELOW] |
*LEFT: A typical existing scenario on J. M. Road before the project implementation.
RIGHT: After design intervention, with space reclaimed for pedestrians and front setback of abutting private property leased out as vending space creating lively public space.*

EXISTING SECTION



PROPOSED SECTION





A new multiutility zone near Sambhaji garden is an active space that integrates existing trees with seating areas, play zone for kids and planting. The design is inspired by the elements of park itself, finding expressions in new stepped seaters and pergolas. These elements are used all along the road to create a unified design language. All three junctions on the road are detailed in such a way so that apart for the vehicles, there were easy ingress-egress points for the pedestrians as well as the cyclists. New pedestrian plazas have been designed by reclaiming large areas near Bata Chowk and Bharve Chowk.

The new design of the street while encouraging cycling, walking and use of public transport envisions the side streets as vibrant public spaces in the life of the city. Removal or relocation of many of the existing incompatible functions and elements for the idea of creating a safe public space along the vehicular road like shifting of feeder pillars into multi utility zones and light poles while addition of others to complete NMT network are integral part of the proposal.



THIS & FACING PAGE |

PLACEMAKING OUTCOME

J. M. ROAD, PUNE

Ensuring equitable distribution of space for improving universal accessibility for all, carving out pedestrian space, and maintaining continuity & ease of movement has made J. M. Road a popular and vibrant public place. After the on ground roll out of the project, there has been a perceptible increase in the number people of all age groups and all strata of income groups using this public space of the city as a "hang out" space rather than an only "walk through" one. More cyclists have started using the cycle track and the demand for cycle stands have increased.

CREDITS

CLIENTS
Road Development,
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ITDP [Institute for Transportation and
Development Policy]
Pranjali Deshpande [Street Advocacy]
Parisar, Ranjit Gadgil [Cycling Advocacy]
Pedestrian First, Prashant Inamdar
[Pedestrian and Traffic Advocacy]

PROJECT DETAILS

LENGTH OF THE STREET
1.97 Km

COST OF THE PROJECT
Approx. 20.00 Crore
[Inclusive of shifting cost for all the utilities]

PERIOD OF EXECUTION
December 2016 to May 2018

All featured images &
drawings courtesy of
Oasis Designs Inc., New Delhi



Bijoy Ramachandran, Architect
| bijoy@hundredhands.com

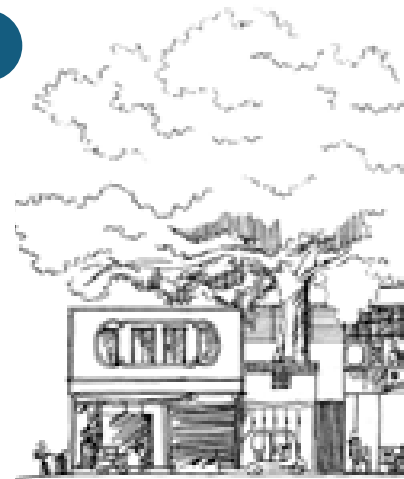
EMERGENCE OF THE EPHEMERAL

The Death of Architecture. Circa 2000, curated by **Samira Rathod & Aniket Bhagwat**, was a traveling exhibition assembled by 13 Indian design practices. ^[1] Through art works, poetry and prose, the exhibition decoded and amplified actions some which are orchestrated, others inconsiderate. Actions, that slowly tear and restructure the fabric of our cities and the architecture within and along with that impact our sense of being. The exhibition presented evidence that allowed discussions about our present, and yet at the same time was embedded with clues and signs that help effect meaningful dialogue about the future. In a sense, it consolidated the many critical discussions that forms the dough which leads to design such as those about the demise of our cities as we know them, or the meaning of inspirations from the past, or ideas of beauty, or duplicitous ways of achieving identity, or ways of understanding spatiality.^[2]

For our exhibit, we looked at
**a market street in Halasuru,
a historic precinct in Bengaluru**

This ancient street, a remnant of the Gowda period [Kempe Gowda II – 16th C.], runs from the southern tip of Ulsoor Lake on the west, past the Someshwara Temple [15th C.], to Swamy Vivekananda Road on the east. This eastern edge is now dramatically changing in character with the new overhead Metro line running along this road and large commercial buildings being developed in its wake. The Bazaar Street itself is changing but in more informal and small-scale ways.

The old fabric of buildings now serve as the backdrop for all kinds of loose architectural interventions appropriating public spaces, building frontages and residual open spaces for commercial and religious activities. These simple strategies of easily deployable, mobile, inexpensive interventions suggest the death of a certain kind of permanence and the emergence of an ephemeral city fabric – light on its feet, quick to accommodate rapidly changing needs and of a scale where small groups of people can fundamentally alter the way a place functions.



ಹಲಸೂರು ಬಜಾರ್ ರಸ್ತೆ

HALASURU BAZAAR STREET / BENGALURU

This ancient street, a remnant of the Gowda period (Kempes Gowda II - 16th C.), runs from the southern tip of Ulsoor Lake on the west, past the Sameshwara Temple (15th C.), to Swamy Vivekananda Road on the east. This eastern edge is now dramatically changing in character with the new overhead Metro line running along this road and large commercial buildings being developed in its wake. The Bazaar Street itself is changing but in more informal and small-scale ways.

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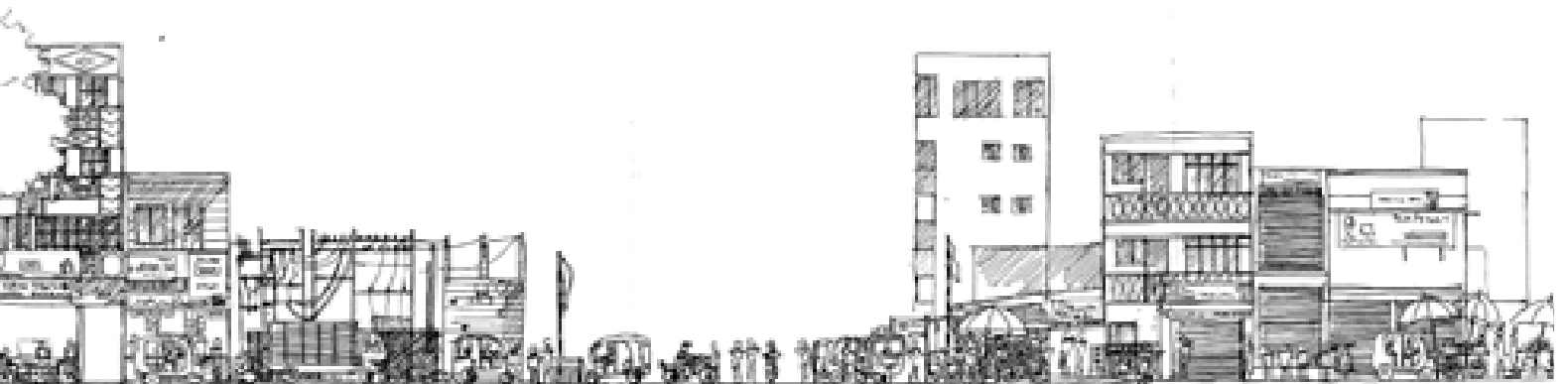
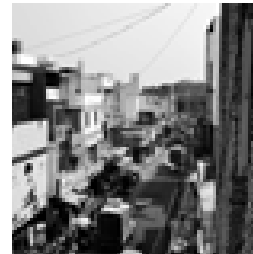
Using lessons from Halasuru and adding a bit of whimsy, our propositions suggest active frameworks that accommodate movement and habitable spaces, make connections, create new public spaces, generate power and offer shade. These are seen as informal, messy, ad-hoc additions which constantly mutate to incorporate change. Architecture as ephemera.



[1]
PARTICIPATING ARCHITECTS INCLUDED

Bijoy Ramachandran,
Girish Doshi,
Megahl & Vijay Arya,
Pramod Balakrishnan,
Prasad Shetty,
Rajeev Kathpalia,
Riyaz Tayyibji,
Rupali Gupte,
Shabbir Unwala,
Suparna Bhalla,
Vikas Dilawari
and Zameer Basrai

[2]
From the curatorial note





Lakshmi Anma
Flower Vendor

Lakshmi Anma is a flower vendor. She has been coming to Halsara once a week (Thursday) for 25 years and works between 5 am and 9:30 pm. She lives in Chikka Thirugathi (therefore she only comes once a week). She has no constant clients (but makes about Rs. 1000 a day). She buys the flowers from City Market, and brings them in bags. She moves three times during the course of the day, as per the movement of the sun. Between 5 am and 12 pm, she sits in front of Mahaveer Sweets and Chai (until it opens). Between 12 pm and 4 pm, she moves to the right of the shop. 4 pm onwards, she sits across the street next to the fruit vendors.

She borrows crates from the fruit vendors sitting across from her to display her flowers. The crates are made of light wood.



Khaja
Flower Vendor

Khaja runs a flower delivery business on his cycle. He has been coming to Halsara everyday for 12 years, between 6:30 am and 11:30 am. He lives in Shivaj Nagar. He buys the flowers a day earlier, in the afternoon from B. Madai, and his wife strings them for him. He has 35-40 regular shops that he drops the flowers to everyday. Most of the flowers get sold every day, the remaining he goes to the temple. He takes his empty basket home on his cycle every evening.

He attaches the large flat cane basket to a 'hook' on the rear of his cycle, and allows it to rest on the seat behind.



3. Temple Node



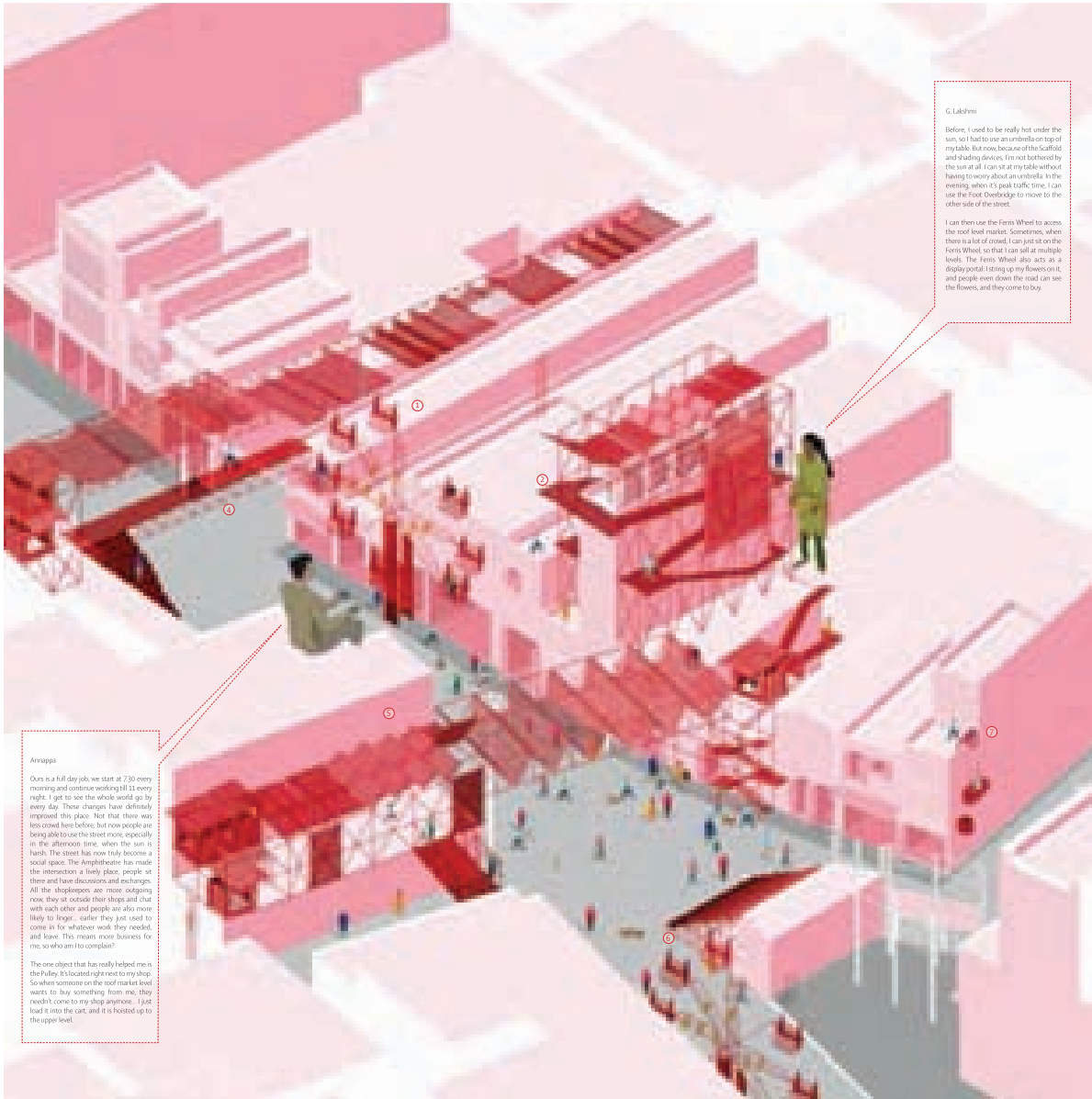
Tina and Rahul
Ice-cream Vendors

Tina and Rahul are ice cream vendors, originally hailing from Rajasthan. They came to Bangalore for their children's education. They have been selling out of Halsara market for 15 years, and live nearby in Juvana, Halsara. They start work at 12 pm and go on till 9:30 pm. Rahul pushes the ice-cream cart from home in the morning and back again in the evening.

Their ice-cream cart is made from stainless steel, with a laminate counter top.







G. Lakshmi

Before, I used to be really hot under the sun, so I had to use an umbrella on top of my table. But now because of the Scaffold and shading devices, I'm not bothered by the sun at all. I can sit at my table without having to worry about an umbrella. In the evening, when it's peak traffic time, I can use the Foot Overbridge to move to the other side of the street.

I can then use the Ferris Wheel to access the roof level market. Sometimes, when there is a lot of crowd, I can just sit on the Ferris Wheel, so that I can sit at multiple levels. The Ferris Wheel also acts as a display portal, listing up my flowers on it, and people even down the road can see the flowers, and they come to buy.

Annexes

Ours is a full day job, we start at 7:30 every morning and continue working till 11 every night. I got to see the whole world go by every day. These changes have definitely improved this place. Not that there was locoword here before, but now people are being able to use the street more, especially in the afternoon time, when the sun is harsh. The street has now truly become a social space. The Amphitheatre has made the intersection a lively place; people sit there and have discussions and exchanges. All the shopkeepers are more outgoing now, they sit outside their shops and chat with each other and people are also more likely to linger, earlier they just used to come in for whatever work they needed, and leave. This means more business for me, so who am I to complain?

The one object that has really helped me is the Pulley. It's located right next to my shop. So when someone on the roof market level wants to buy something from me, they might come to my shop anytime. I just load it into the cart, and it is hoisted up to the upper level.



1. The Ferris Wheel

Taking from the cart vendor, the idea of mobility, these Ferris Wheels bring about vertical mobility, rather than just at the street level, thus activating the public terrace spaces, and providing a second level for the informal sector to function from.



2. The Ramp

The ramp, held up by the scaffolding framework, also allows for transportation to the multi-functional covered space on the terrace above. The surface area provided by the scaffold can also be used for advertising.



3. The Shelter

Using the spanning members from the car-rickshaw, the shelter provides refuge to the homeless. They have sliding folding shutters that allow for magnification of space. Because they are designed as temporary structures, they are easy to assemble and disband. They can be placed as solitary structures when space is limited, or in a cluster.

4. The Vegetable Market Street Bridge

Using the concept of the tarpaulin that the vendors rig over their stations, a shading device based on scaffolding bars is proposed for the vegetable market. An extension of this shading device is a steel truss bridge that spans over the main street that allows people to cross to the other side.

5. Roof Terraces

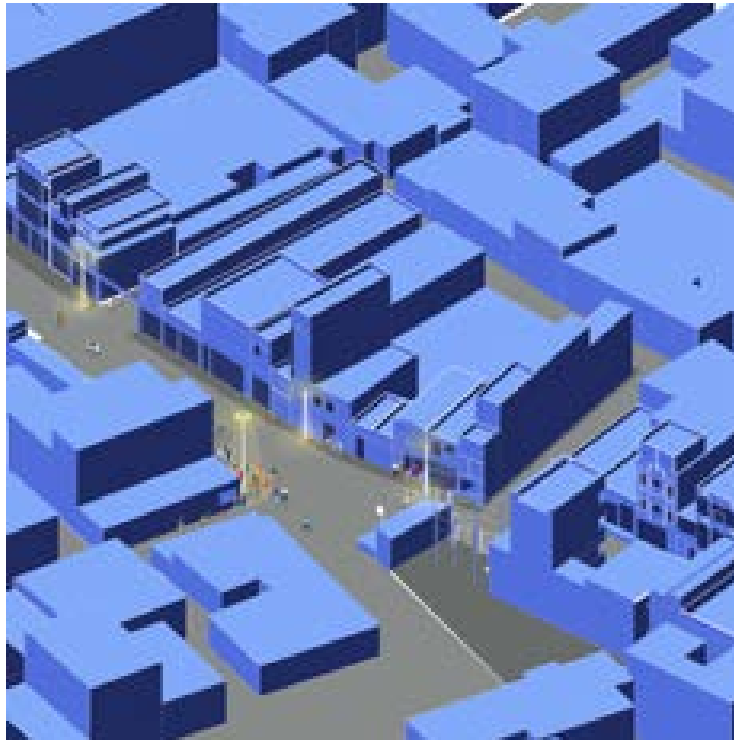
The usable open areas at the roof level have been framed using the scaffolding structure and shaded using the canvas material, solar panels or tin sheeting overhead. These spaces can then be used for social interaction, or to add another level of retail space. These are accessed either through the bridges spanning across the street, or the ramps and staircases adjoining to them.

6. The Amphitheatre

The being the widest part of the Bazaar Street, and perhaps the most significant Node, this is the ideal setting for the Amphitheatre, which offers a space for debate and discussion. It is constructed from wooden planks and crates, easily available on site from the vendors' carts. It is supported against the transformer, which is otherwise a dead wall.

7. The Pulley

The Pulley accomplishes the objective of vertical mobility, allowing people and objects to be transported to the upper levels.



Chai Node: 5 am

The Tea Stall attracts quite a crowd, even at four o'clock in the morning. Quite a few patrons line up for a cup of tea, and some sit and enjoy it under the nearby sky awning. Some people prefer reading their freshly delivered daily morning newspapers by the street light. There are also the usual sights of sleeping beggars and street dogs.



Ashraf
 All these interventions on the Bazaar Street have given me a chance to expand. Earlier, I was only working out of one shed, I now have a large storage area. The shading device between the metro line and the built fabric allow for shade in front of my shop. The shower pods are very helpful, when it is very hot or when work is very strenuous, and I don't have time to go home. I can just have a bath in the shower pods directly behind the Bazaar Street. Visibility was always great at the shop, so I couldn't believe with the existing setup.

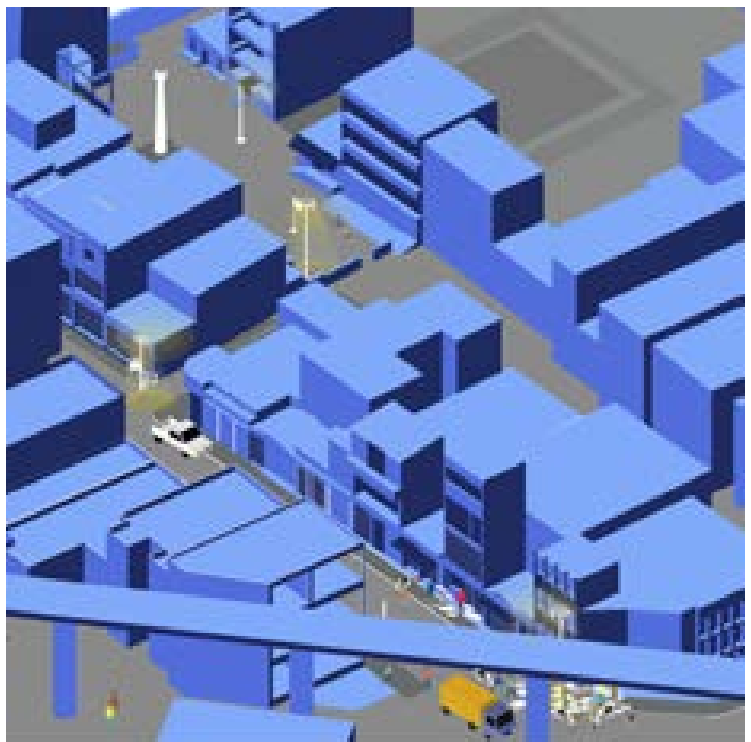
Mark, tailor
 The shade provided means that I'm not only restricted to sitting under trees. I can sit up anywhere and at the end of the day when I'm done, I can put my sewing machine in the free storage, and go home happy knowing that it will be safe. The Amphitheatre is a very lively space, where people come and perform sometimes. I really enjoy sitting there. I have my lunch there every day.

Using lessons from Halasuru, and adding a bit of whimsy, our propositions suggest active frameworks that accommodate movement and habitable spaces, make connections, create new public spaces, generate power and offer shade. These are seen as informal, messy, ad-hoc additions which constantly mutate to incorporate change. These interventions form a shared urbanism, if you will, made up of places of prospect and refuge, retreat and engagement. The proposals will hopefully inspire an imagination of Architecture as ephemera – communal and transient.

TEAM
 Surabhi Banerjee [lead],
 Harriet Walton,
 Devanshu Bhardwaj,
 S. Sreekanth,
 Vinodhini E.,
 Bhavesh Wadhvani,
 Arathy Nair,
 Ashwin Nambiar,
 Ishaan Keskar,
 Nidhi Shivraj Patil,
 Ruchi Vikani,
 Shruti Tilva,
 Tanay Bothara,
 Vishali Sekar,
 Vrinda Kanvinde,
 Yash Intwala,
 Sunitha Kondur &
 Bijoy Ramachandran



- 1. The Scaffold**
 Magnifying the seemingly omnipresent tarpaulin sheets, that are spanned across to provide shade, bring both the idea of the scaffolding (in a framework of scaffolding, long sheets, such as tarps will be spanned in order to provide shade to the street below. This quickly and easily deployable technique will provide relief from the hot summer sun at an urban level. Here the shading device is deployed in the lane connecting two major streets, namely the Bazaar Street itself, and the axis between the Sreevaraha Temple and the Batta.
- 2. The Bridge**
 The Bridge provides connectivity across both sides of the street. It is accessed through a series of ramps-up.
- 3. The Shower**
 The shower pods plug-in on the various visible and private terrace levels. Using inverted umbrellas, they collect and use rainwater. The body, made out of cast tyres is compact, yet internally spacious. Their placement on the scaffolding structure makes them private, shielding them from the view of the street below. They are accessed through an attached staircase.
- 4. Roof Terraces**
 The usable open areas at the roof level have been framed using the scaffolding structure and sheathed using the solar panels and on shading overhead, thus adding the benefits of energy generation. These spaces can then be used for social interaction, or to add another level of retail space. These are accessed either through the bridges spanning across the street, or the staircases adjoining to them.
- 5. The Shelter**
 Using the spanning members from the ice-cream truck, the shelters provide refuge to the homeless. They have sliding folding shutters that allow for magnification of space. Because they are designed as temporary structures, they are easy to assemble and disband. They can be placed as solitary structures, or where space is limited.
- 6. The Amphitheatre**
 The Amphitheatre offers a space for debate and discussion. It is constructed from wooden planks and crates, easily available on site from the vendors' carts. The roof suspensions again the scaffold, topped with solar panels, and storage units.
- 7. Metro Corridor Bazaar**
 Adding another level of retail is the Metro Corridor Bazaar, suspended from the underside of the Metro line. It is accessible from the street below by means of spiral staircases wrapping around the metro pillar, and connected to the main Bazaar Street by means of a bridge.



All panels courtesy of the Author

St+art India Foundation
| <https://st-artindia.org>

Art for All

SEEING
THE UNSEEN



“P

ublic art’ — although the term is fairly modern, the art itself can be spotted across the various pages of Indian history. Being a vibrant, enthusiastic and expressive

lot, public representations of art have been an essential component of our collective memory as a people and have manifested in various forms across the many elements of the public sphere—walls, streets, chowks, transit stations, etc. An important aspect of public art—street art— finds its way into our culture and is a representation as well as influencer of the space it is present in.

St+art has been an active propagator of the same and its various endeavours have ever since gained wide appreciation and resonance within our society. It has unleashed an appetite for the arts that is not to be sated anytime soon and is revolutionising the literal face of the city, one wall at a time.

THIS SPREAD |

SASSOON DOCK ART PROJECT
PLASTIC OCEAN BY TAN ZI XI

The installation, previously featured in the Singapore Art Museum and recreated at Sassooson Dock Art Project, creates an ocean out of locally collected plastic representing how we are slowly, yet surely, choking our waters. PHOTO CREDIT: St+art India Team, 2017

Started in 2014, the not-for-profit organisation aims at reimagining public spaces through art, while providing a platform for artists to express themselves. St+art encourages people to explore their cities in a unique manner by creating alternative cultural spaces – both temporary and permanent. It works with a plethora of Indian and international artists for different projects to create a collage of contextually varying art forms and styles that complement one another as well as the site. This network of artists gains global exposure and recognition in addition to a platform where they can depict their interpretations of various concepts and engage with the masses.

St+art has also been part of an unprecedented engagement with the government through commissioned projects across various cities to create public spaces far removed from the ordinary.

LODHI ART DISTRICT

'TRANS LIVES MATTER' BY ARAVANI ART PROJECT

The Bangalore-based art collective Aravani Art Project gave an ode to trans-people who have contributed towards the upliftment of their community. With a vivid usage of colors, the collective painted portraits of diverse people using a participatory process. Eight transwomen and several volunteers painted the mural together to acknowledge and highlight resilient identities.

PHOTO CREDIT: Pranav Gohil, 2019



Art Districts

The art districts explore the model of an open air gallery by reimagining neighborhoods with Urban Contemporary Art. Each unique in their own way, they reinvigorate areas that contribute to the city's urban fabric, owing to their characteristic features embedded within architecture, communities and histories.

This unique integration further aims to build values of community pride and maintenance of civic spaces, while making the public engage with their city in a creative way. Up to date, St+art has conceived 4 art districts in the cities of New Delhi, Hyderabad, Mumbai and Goa, each presenting the contemporary face of India.

Lodhi Art District [New Delhi]

In a city like Delhi which has very few gathering spots, St+art found Lodhi Colony - a government housing estate built in the late 1940s, to be the perfect place to transform a public space. Its unique characteristics of being non-gated and having large sidewalks, a modular fabric, an absence of traffic and an abundance of greenery along with large walls inspired St+art to take on the mission of creating India's first art district.

Since 2015, with the support of the local community, and civic and cultural bodies, over 50 artists have reimagined Lodhi's facades creating murals which bring the viewer into a contemporary Urban Art museum. This ongoing project provided the city with a new, contemporary area of interest for locals and tourists alike. At the same time, it introduced a creative way to engage with public spaces differently and contributed to inculcating values of community pride and maintenance of civic spaces amongst residents of Lodhi.



MAQTA ART DISTRICT
'THE GREEN GULLY' BY HOOZINC

Native to Hyderabad, artist Hoozinc adopted a sketch-like approach for his work in the Green Gully. Adorning house walls with ordinary elements like flower pots hanging outside balconies, ornate railings, lamp posts and even a post box, he tried to blur the lines between physical-real and painted-real. House-owners contributed to Hoozinc's work by helping him with feedback and requests to make additions of their liking.

PHOTO CREDIT: Pranav Gohil, 2017



Maqta Art District [Hyderabad]

M.S. Maqta stands in the proximity of the Hussain Sagar Lake and People's Plaza, key locations for the city of Hyderabad and its citizenship. Since 2016, St+art along with Krishnakriti Foundation have been working to connect this enclosed neighborhood to its popular surroundings, in an effort to create an integration between communities through street art while enriching the offer of the area for people who frequent it for leisure with this cultural art project.

Over the years, the invited artists created a unique identity for Maqta by color coding – to then paint on it - its labyrinth like landscape. In neighborhood where streets had no names, this approach created a geographical and emotional navigation for the community, consequently energising the environment for safe and shared interactions. Maqta was officially inaugurated as India's second art district by Honourable Minister K. T. Rama Rao on 17th December 2017.

RIGHT & FACING PAGE [BELOW] |

MAHIM [E] ART DISTRICT
MURAL BY AVINASH

Artist Avinash painted a mural depicting a child rising above the circumstances that surround him in Dharavi. The child is shown emerging above the chaos and difficulties he is surrounded by to make a mark for himself in the world. Through the mural, Avinash wanted to draw attention to the children of Dharavi, who are moving the world forward with ambition and fame despite coming from humble beginnings.

PHOTO CREDIT: St+art India Team, 2017

MAHIM [E] ART DISTRICT

'GODS OF DHARAVI' BY GUIDO VAN HELTEN

Through his work, Sydney-based artist Guido Van Helten likes to build on the context of the spaces he works within. Having met Aku from the Slumdogs crew – a collective empowering children in the region by teaching them elements of hip-hop, during the Sassoon Docks Art Project, Helten spent some time in Dharavi making photographs and understanding the space more. Aku and his friends helped him gain him a first-hand sense of the vibrant street culture of Dharavi. The artist decided he wanted to paint two boys—Bboy Pro kid and Bboy Abhishek—framed mid-action doing what they do best – dance in his mural. His photorealistic piece adorns two buildings on Jasmine Mill Road in the Mahim [E] Matunga Labour Camp. PHOTO CREDIT: Akash Shukla, 2017



Mahim [E] Art District [Mumbai]

Mahim [E], and Dharavi, are slum clusters initially inhabited by the Kolis, with Dharavi being regarded as the largest slum of Asia at a time. It is also known as 'The Heart of Mumbai', with its unique small-size factory system which produces an immense quantity of goods, along with a flourishing recycling industry. Over the past decade, It has also become a centre of sub-cultural activities with Hip hop and Dance crews emerging from its lanes. It is a multi-religious, multi-ethnic and multi-lingual neighborhood, yet most Mumbaikers would not venture into the area because of the negative connotations that come with the tag of being a slum. There was a prejudice to the area, which is what St+art aimed to break. As a homage to the strength and diversity of the everyday man, St+art invited 16 artists specialised in portraiture to celebrate the common man, creating Mumbai's first public art district – Mahim [E] Art District and world's first "Public Art Gallery of the Everyman".

Experiential Exhibitions

St+art has worked tirelessly towards its vision of making art accessible to everyone through a diverse range of cultural proposals. In this consistent exploration, the foundation has curated Urban Contemporary Art exhibitions by re-purposing civic spaces that hold cultural significance for urban cities. With site specific installations, murals and community driven projects, these exhibitions highlight the characteristic identity of the spaces they inhabit, bringing powerful narratives, histories and identities to the forefront. Unlocking enclosed areas to the public, these exhibitions go on to become temporary cultural hubs that host a range of interdisciplinary programs — bringing together diverse communities under one roof and creating art for all.

#WIP: A STREET ART SHOW [2016]
'THERE IS NOWHERE TO GO BUT EVERYWHERE' BY ECB HENDRIK

Feeling that the area lacked a human touch, German artist ECB Hendrik decided to paint the portrait of a worker of ICD on this 120 ft silo. It is an ode to the unknown and unseen struggle of the rag pickers and truckers of the area.
PHOTO CREDIT: St+art India Team, 2016



#WIP: A Street Art Show [2016]

St+art Delhi 2016 strove to highlight the importance of community building through art to offer a fresh perspective on redesigning urban spaces. Lodhi Colony and Inland Container Depot were reutilised as open creative labs for over 25 Urban Contemporary Artists.

Designed as an experiential exhibition, the '#WIP: The Street Art Show' was hosted in the unconventional space of Inland Container Depot [ICD-TKD] - Asia's largest dry port. 31,200 square feet of ICD was transformed into a walk-through exhibition by using 100 shipping containers. It acted as an art hub where artists created site specific artworks, under the public's eye for over two months. Through #WIP, citizens from different sectors of the society were offered with alternate art experiences to engage them in communal and creative discourse.



SASSOON DOCK ART PROJECT [2017]

'THE IDEA OF SMELL' BY HANIF KURESHI

Upon entering the location, the visitor first came face-to-face with designer and visual artist Hanif Kureshi's 'The Idea of Smell'. For the installation, locally-sourced nylon fishnets were suspended from the ceiling and were then woven with words and phrases such as 'train', 'mom's cooking', 'blanket on a cold winter's night' and 'engine oil' amidst others. Paying homage to

the numerous sights, smells and histories that got invoked on one's visit to Sassoon, Kureshi's piece attempted to immerse its spectators in a trail of emotions that surfaces on the mention of a certain smell. Through his work, he also hoped to achieve a larger understanding of the intersection of language with thought. PHOTO CREDIT: St+art India Team, 2017



LEFT & FACING PAGE [BELOW]

#WIP: A STREET ART SHOW [2016]

'SEE THROUGH, SEE BEYOND' BY NEVERCREW

An astronaut is an explorer who can view and perceive everything from a distance. Made by the Swiss duo

Nevercrew, this piece was in connection to a mural they made in the Lodhi Art

District. The astronaut generates an emphatic effect as the viewer sees the whole space through the mirror in the helmet, while also looking for himself in the astronaut.

PHOTO CREDIT: Akshat Nauriyal

Sassoon Dock Art Project [2017]

The aim of St+art Mumbai 2017 was to connect the areas of modern Mumbai which seem so distant from one another, yet share the same origin, and bring to light a few of the most important parts of Mumbai. Nested at the tip of Colaba, the 142 year old space of Sassoon Dock was transformed into an Urban Contemporary Art exhibition that remapped the DNA of the city of Mumbai.

In the format of a residency program, 30 Indian and International artists created site-specific installation, murals, audio-visual experiences, screenings, talks and curated tours in one of its abandoned warehouses, bringing to life Sassoon Dock Art Project. This exhibition became a temporary hub within the city of Mumbai for a period of two months, attracting around 40,000 visitors from fisherfolk communities to residents of the city, bringing forth another celebration of inclusivity and diversity.

Art Stations

The format of 'Art Station' embeds art within spaces of everyday transit such as metro, bus and railway stations. This aims to energise the usual sterile architectural landscape of these stations by creating an artistic identity for them, thus humanising the everyday transitory experience for the citizenship. Since these spaces observe visitors from all walks of life, they act as ideal incubators for creating a democratic art experience. Up to date, St+art has worked on this project in 6 cities — Bangalore, Delhi, Mumbai, Chandigarh, Chennai and Coimbatore.

ART STATION CHANDIGARH 2018

BY LEK & SOWAT AND HANIF KURESHI

In February 2018, visual artist and designer Hanif Kureshi and French artists Lek & Sowat took to the Sector-17 bus stand in the city of Chandigarh to collaborate on a first of its kind large-scale public intervention for the city. Consisting of three parts, the artwork – a mural, entailed the painting of the word 'Bonjour' [French for 'greetings'] on the floor of the bus stand, augmented through the addition of abstract and definite strokes. While 'Bonjour' was painted using typography, in a font created by Kureshi, the mural was lifted by the addition of abstract freehand scribbles by Sowat and defined strokes by Lek.

PHOTO CREDIT: Pranav Gohil, 2018



Installations

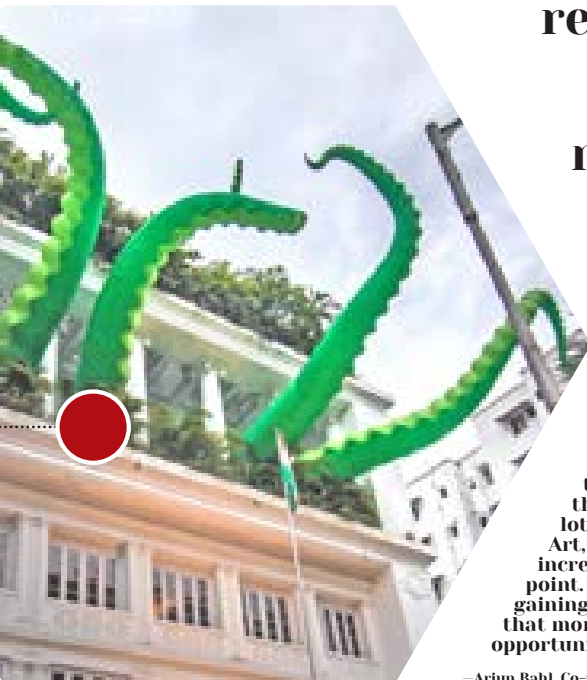
While working in significant areas of urban cities, St+art also curates urban art installations for community and civic discourse. These installation go on to reinforcing the relevance of these areas with the growing urban fabric of our cities, bringing their modern identity to the forefront. While their site specific approach offers a new way of experiencing creativity through Urban Contemporary Art. With a promise of intimate interaction that is either playful or through-provoking, these installations enable an inclusive outreach by creating dialogue across different sectors of the society and creating art for all.

RIGHT & FACING PAGE [BELOW] |

INSTALLATION BY FILTHY LUKER [UK]

JINDAL MANSION, PEDDER ROAD, MUMBAI
Luker's world-famous larger-than-life inflatables came to life on one bustling street of Mumbai as part of St+art's second ever street art festival - St+art Mumbai 2014. Part of his 'Octo' series, the piece was designed as a massive 3D inflatable installation. It was emphasized that the piece be interactive and open to multiple interpretations. Depending on adjustments to harnessing points and strings, the installation was also designed to adapt itself to its present conditions. PHOTO CREDIT: St+art India Team, 2014

Art shouldn't be reserved exclusively for museums, but woven into the unbiased local contexts of the city, its public spaces and streets. Thus, St+art has fashioned its art as the backdrop of everyday societal affairs in adopting the many walls of the city as its canvas. It has extended the influence and appreciation of art beyond the conditioned clique and encouraged the masses to share in some of its wonder. Today, street art has become an important tool for the youth to have their voice heard and shared both verbally and virtually across various social media platforms, thus enabling them to reach a wider audience. It unflinchingly shoulders the responsibility of increasing awareness through its symbolic murals, and also brings morsels of new cultures to the already thriving, metaphorical table. In being integrated into its very canvas – be it a wall, a building or a street, this art form is a redeemer and reclamer of the space which it adopts as part of its own identity. Touching both spectrums in order to create art that is socially relevant and contextually rooted while also being aesthetically appealing, St+art has succeeded in making art more democratic in every implication of the term– of the people, by the people, for the people.



“In the future, I definitely see more young people taking up art as a serious vocation. Additionally, inhabiting urban environments, where more high-rises are being built possibly than ever before, I think all of us feel the need for more shared spaces and spaces that allow communities to get together. Art and culture play a crucial role in the making of truly ‘smart cities’, and it is under this purview – of ‘smart cities’, I feel there’s a lot of fresh potential for more work to be done. Art, and more importantly art that is inclusive, has increasingly become an important cultural talking point. Given that inclusive art is slowly, but steadily, gaining mainstream attention leads me to believe that more street artists will have a wide variety of opportunities to create meaningful work in the future.”

—Arjun Bahl, Co-founder and Festival Director, St+art India Foundation

St+art India Foundation is the brainchild of five co-founders, all belonging to diverse backgrounds: Arjun Bahl [Director], Akshat Nauriyal [Content Director], Giulia Ambrogio [Curator], Hanif Kureshi [Artistic Director] and Thanish Thomas [Project Director].

Content and images provided by St+art India. Individual photographers have been credited with the images.





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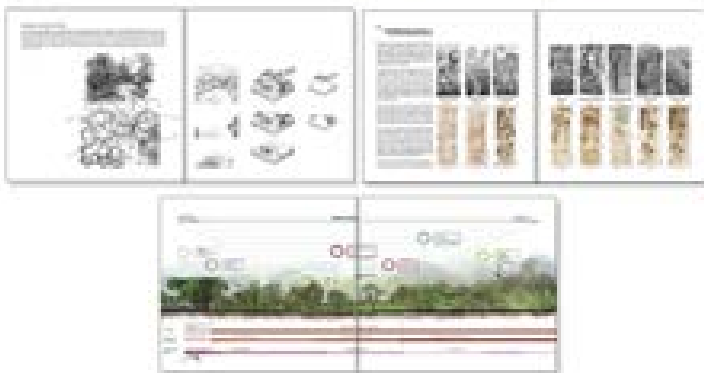
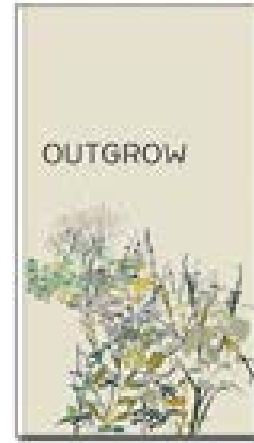
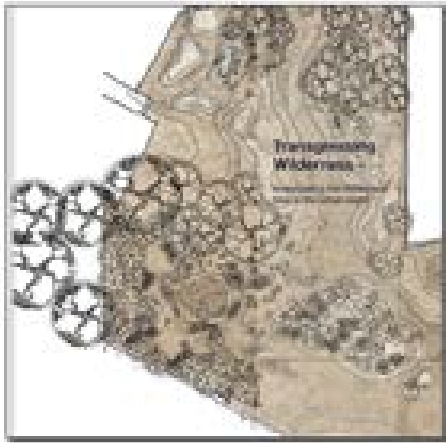


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A result of a year of rigorous research facilitated by the LEAF Fellowship, Outgrow & Transgressing Wilderness are now available for pre-order.



Transgressing Wilderness Rushika Khanna

Outgrow Dhara Mittal, Nishant Mittal, Parita Jani

Does wilderness occur in demarcated areas, or can it occur in smaller, seemingly neglected parcels of land? Through her research it is these questions that the author attempts to answer. The document focuses on deciphering wilderness that occurs within our urban realm, extracting meanings from its context, positioning, and inherent characteristics. Where other literature on wilderness focuses on ideas of plant material and biodiversity, this document functions as a tool by which to document, assess, and represent wilderness outside its visual language, focusing on the sensorial experience such spaces are able to provide.

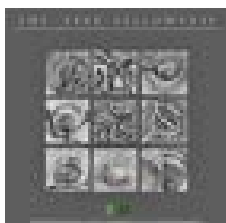
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Stemming from Matrix Planting, Outgrow follows the process of honouring two essential relationships - that of plants to a place, and plants to other plants. The research captures the process of adapting Matrix Planting in the Indian Context in its entirety. The outcome document, then, is intended as a tool for practitioners and students of Landscape Design to start a conversation on spontaneous planting; a tool to be used to discuss an alternative approach to planting design.

200 pages - Including plant cards, photographs, and illustrations.
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Cost - LEAF is a not-for-profit research organization. The documents will be available at the cost of printing and handling.

Release Date - June 2020



About the Fellowship

In 2018, Landscape Environment Advancement Foundation instated the LEAF Fellowship - a grant that facilitates research in areas of Plant Material, Ethno-Botany, Vedic Literature, Sustainability, Landscape Design, History, Archaeology, and Anthropology. It is an endeavour that facilitates peer-reviewed research, that has the potential to be applicable and adaptable outside the immediate context and circumstances within which the research is undertaken.

About LEAF

Established as an extension of M/s Prabhakar B. Bhagwat in 2007, LEAF is one of the very few research organisations in the country that undertakes research in areas pertaining to Plant Material, Sustainability, and Landscape Design. Over time, it has expanded its scope of work, and with that the areas of research it addresses, maintaining an unwavering belief that research and data play an indispensable role in how we construct conversations and inform ourselves.

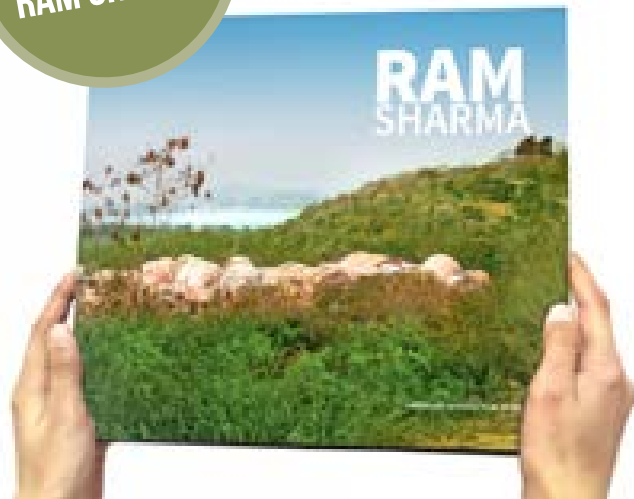
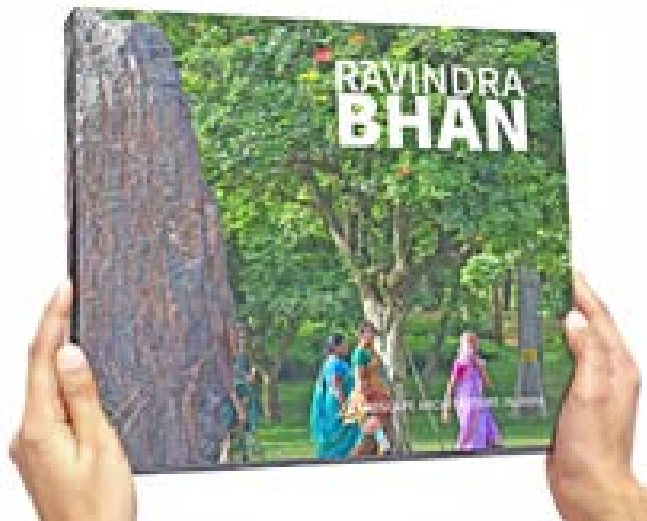
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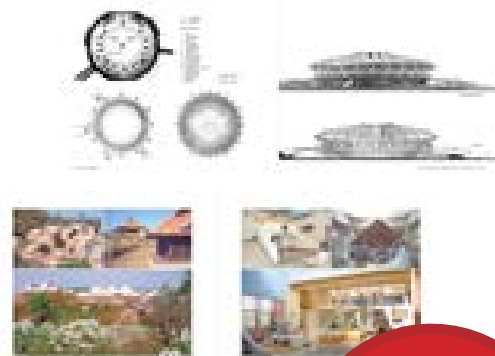

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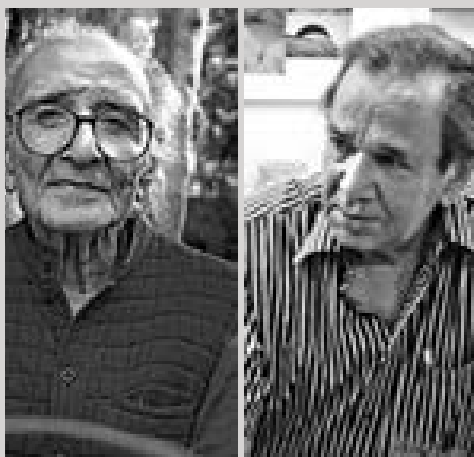
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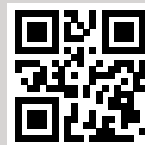
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