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Has technology empowered us to have a more informed and evolved understanding of our sites, their processes and subsequently our designs? This is not an easy question to answer. Most of us are still geared to think by hand, drawing sketches, doodling, analyzing and while imagining various future scenarios and contexts.

At the same time, technology has surely opened new ways of observing complex realities and imagining new ideas. As **Manali Nanavati** observes in her article on documenting vernacular architecture, photography, ideography and laser techniques have made the process of gathering interdisciplinary information much easier and faster. At the same time, the technical skills, at times, are so overwhelming that they block our natural ability to imagine which is nurtured by inherent traits of human mind. It is important to remember that technology is the skill to interpret our own thinking, imagination and knowledge into appropriate graphical and verbal formats. It is not the knowledge itself. **Marc Treib**, eminent academician observes that the students proficient at drawing by hand get more interesting and sophisticated results from the computer as they impose their will on the machine instead of being a slave to its default settings. In a special feature, he shares his views about the subject along with other interesting experiences.

In another article, **Frieddie Riberio**, landscape architect observes that the flexibility in hand drawing often reflects the personality of the individual drawing it. **Premola Ghose's** hand drawn sketches and illustrations of cityscapes paints a humane side of a city, with people, nature and animals, a work of a sensitive mind. **Ankon Mitra's** creations in Origami, in his views, "wander in the three worlds of Geometry, Landscape and Material and meet to create a vision of an interconnected whole." In a special feature, he shares few of his works along with the nature imagery that has inspired them.



Adyar Poonga is one of the examples of nature conservation that has amalgamated the use and expertise of science, design and art to create a public space that addresses the urban needs of a metropolitan city. It offers many lessons to address similar contexts in our cities, which are grappling with serious environmental issues.

Any calamity, natural or manmade, makes us reflect on the knowledge and learning of many of past research and studies. **Ayla Khan** reviews **The Silent Spring**, the classic book about the seminal discourse on environmental pollution, written about six decades ago, that gave rise to powerful global environmental movement around the globe. The knowledge of the book, especially in times of Pandemic is thought provoking.

LA Journal will be produced in a digital format for the next full year, in 2021, till the time the country recovers substantially from COVID-19 pandemic. As ever, we look forward to your support and wishes.

Wishing you all a healthy and positive times in the new year. Stay safe.

Handwritten signatures of the editors, likely Ankon Mitra and Ayla Khan, in black ink.

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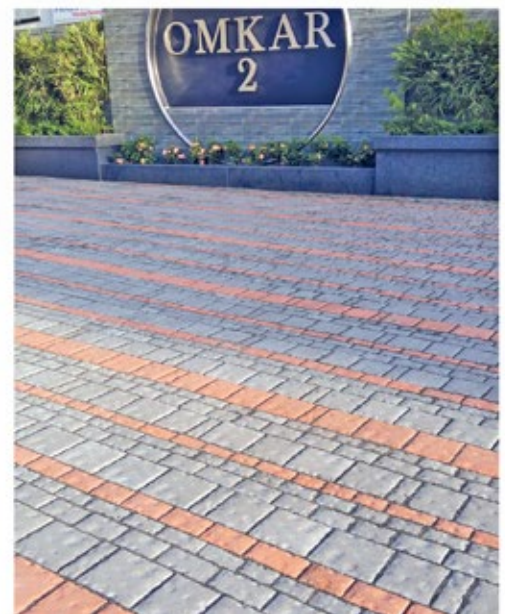


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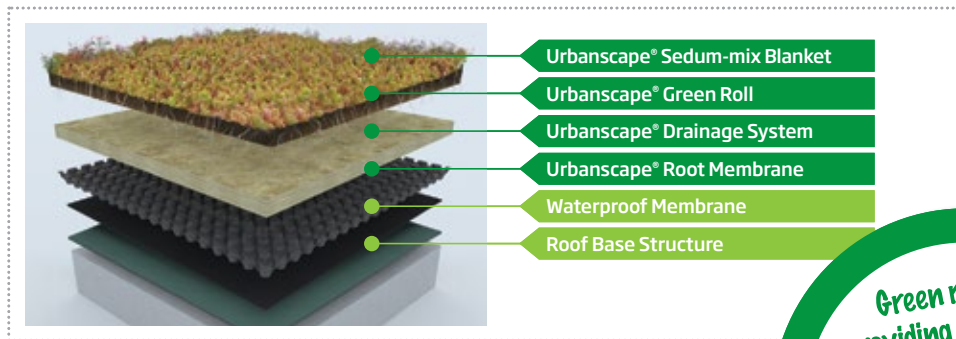


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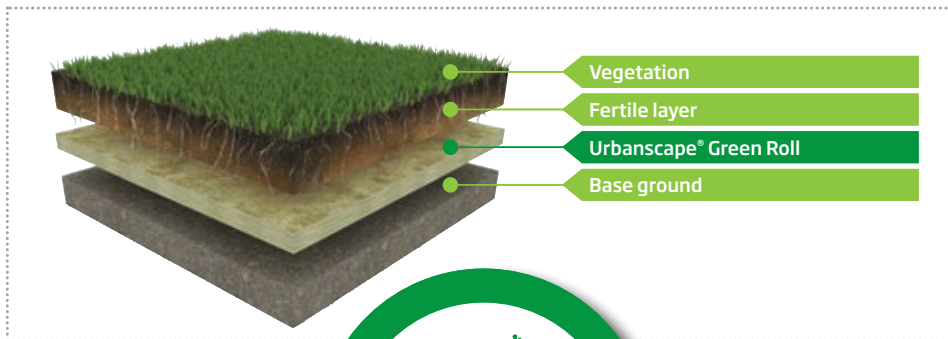
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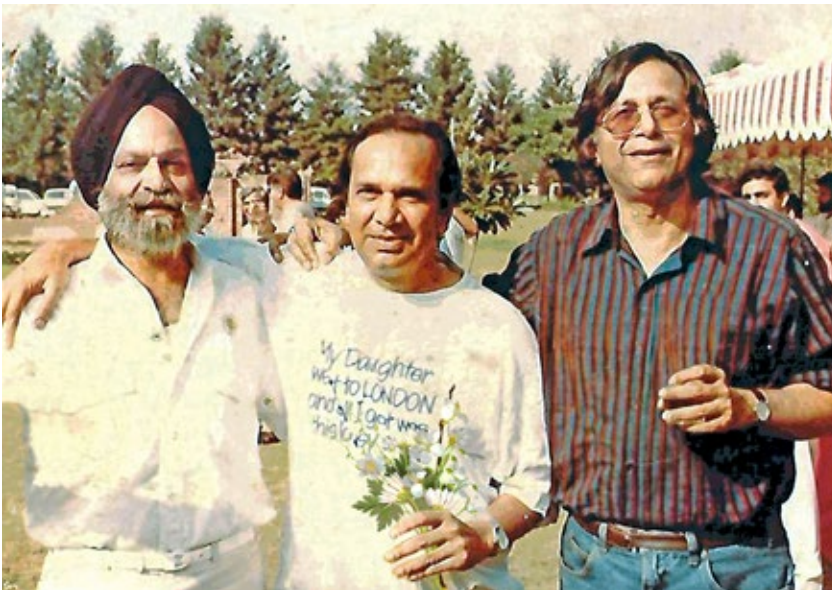
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Ram Sharma, Landscape Architect
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REMEMBERING KULDIP

[1934–2020]



Kuldip Singh's works are significant part of the modern architecture movement in the country. His buildings are often regarded as monuments of a free nation, celebrating bold forms, structural design and materials. **Ram Sharma**, his contemporary in college and practice remembers his friend and colleague.

Kuldip Singh passed away on 10th November 2020. Kuldip is gone but his memories linger on: Memories of happy times we spent together—of studying together, teaching together, living together, traveling together, participating in architectural competitions – against each other, and together; plus our collaboration on the preparation of Urban Design Proposal for NOIDA City Centre.

ABOVE [LEFT TO RIGHT]
*Kuldip Singh, Ram Sharma and
Raj Rewal on the occasion of Alumni
get together of School of Planning and
Architecture, New Delhi,
1 November 1992*
PHOTO CREDIT: *Ram Sharma*

My first encounter with Kuldip was in 1952, when I, as a student, joined the Department of Architecture at Delhi Polytechnic. He was a year senior to me: however, after the third year of studies he, for some reason, dropped a year, came back, and joined my class in the fourth year. That's when our friendship blossomed and we became close friends. After graduation in 1957, both of us moved to Chandigarh, an emerging new city that at that time was buzzing with building activities under the stewardship of Le Corbusier. Kuldip joined Architect-Town Planner, J. K. Chowdhury's office along with some other classmates of ours: whereas I worked in the government in the Chief Architect's office, headed by Pierre Jeanerette. We hired a new house and two servants, and six of us lived together: Kuldip became our 'food minister' and ensured that we were well fed. The office timings in summer were 7.30 am to 1.30 pm. As a consequence after lunch, we would indulge in a game of cards which would carry on till evenings. Kuldip and I were partners and our opponents were Ramesh Khosla and Rajinder Singh – both classmates of ours. The contest was severe; at times it would end up in a tie. Evenings were occupied with visits to markets and lake. Weekends were reserved for town site seeing and visits to Kasauli. After spending some wonderful days, most of us left for abroad. Kuldip left for England to pursue his studies in Town Planning and I departed to the USA for graduate studies in Landscape Architecture. After graduation we returned to Delhi in 1962, set up our professional practice, and started teaching at the School of Planning and Architecture [our old school]. Kuldip and Raj Rewal practiced together for some time before having their own offices.

Kuldip was an exceptional teacher. He was student-friendly and had a knack for motivating students to put in their best. For his knowledge and sagacity, he was held in high esteem by students and teachers alike.

As an architect, he designed some outstanding projects: Iconic structures such as an NDMC Civic Center and National cooperative Development Corporation office, in Delhi, which stand testimony to his creative caliber. There are many other of his projects that have been widely recognized as the architecture of great merit. The flower, fruit, and vegetable wholesale market complex in Chennai, designed by him, exhibits his ability to understand the complex functioning of



such a market and resolve its workability in a pragmatic, and rational manner, to evolve a built-form that not only secure its efficient functioning but also is aesthetically inspiring. Open areas for parking and circulation for men and materials are aptly organized to avoid any conflict between pedestrian and vehicle movement. Appropriateness of architecture, planning, and built-use controls installed by him inspired the confidence of management, shopper, shopkeepers, servicing personnel, and visitors in general. In another project in south India that he was involved with was the development of the Marine Drive project in Cochin. His proposal comprising of mixed built uses to include residential, commerce, retail and recreation made a significant enhancement to the aesthetic environment of Cochin waterfront.

An interesting urban design project he executed in Delhi is Saket District Center. Its meticulously conceived design has not only provided a sophisticated office, shopping, and entertainment space for Delhiites but has greatly benefited the urban aesthetic of the city. Its orderly organized parking and traffic circulation system, combined

Model and photographs of New Delhi's NDMC building complex designed by Kuldip Singh at 'Building the Modern', an exhibition curated by Roobina Karode and Ram Rahman at Kiran Nadar Museum of Art, September 2017

PHOTO CREDIT: Ram Rahman

with rationally zoned offices, retail, entertainment, service areas, and intelligently articulated built-form with architectural control and well-defined signboard panels has created a setting that is clean, pleasant, and attractive. Besides, there is a large aptly landscaped open space that becomes a venue for meals and music concerts. Its pleasing environment demonstrates that District Centres can be delightful complex for working, shopping, entertainment, and social and cultural pursuits instead of a site with traffic and parking chaos among a set of prosaic buildings littered with unsightly hoardings.

As a sensitive architect, he was dismayed to see serious damage being caused to the urban environment of Delhi by Metro overhead lines. He opposed it vehemently; organized seminars and workshops to bring to the attention of the authorities of vast deterioration being induced in an urban setting, and finally managed to prevail upon them to recognize the heritage value of Qutub Minar and run lines underground in its vicinity – much to the delight of environment-friendly Delhiites.

While operating in south India, Kuldip developed a liking for Thanjavur and Mysore paintings. Soon it turned into a passion that prompted him to acquaint himself with their history and cultural significance. He became an avid collector of these and also acquired a large set of crafted wooden elements like doors, brackets, columns, and furniture. On one of my visits to Cochin, I stayed in his sweet little house at Bolgatty Island, in which he had tastefully incorporated all these features including Thanjavur paintings. I also discovered that his affection has culminated into a collection of over four hundred paintings of great value. Some of these adorned his house in Delhi. A few years ago, the Kiran Nadar Museum of Art in Delhi hosted a very impressive exhibition of Kuldip's collection that culminated into a valuable book *Thanjavur's Gilded Gods*, co-authored by him. Following this, he donated his entire collection to Chhatrapati Shivaji Maharaj Vastu Sangrahalaya in Mumbai.

A man of impeccable integrity, a true altruist with affable disposition, Kuldip was loved and respected by his relatives, colleagues and friends, and everyone who came in contact with him. In his death, we have lost an innovative architect, an art connoisseur, and a noble human being.

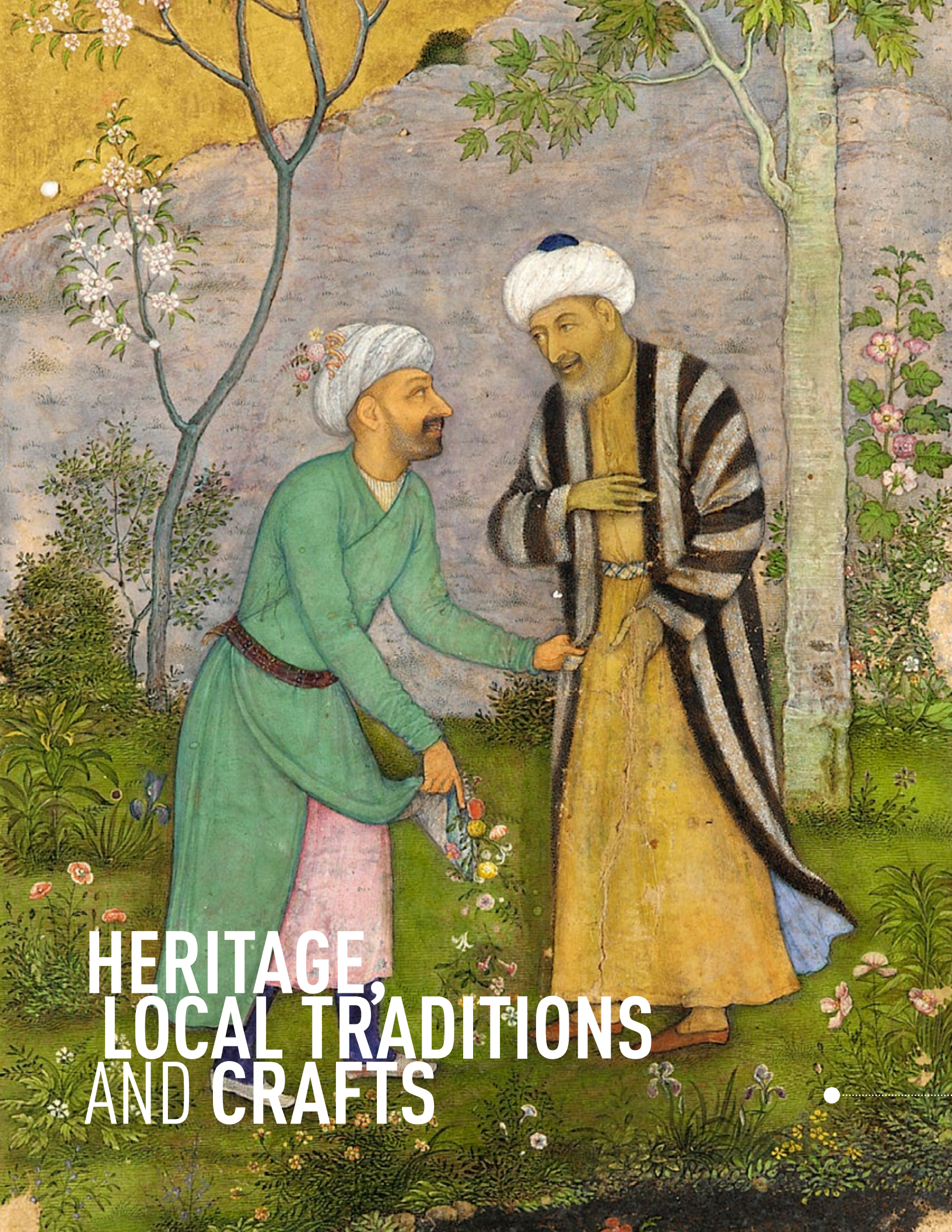
I will miss him dearly.



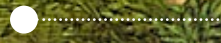
NOTE |

Earlier this year, Kuldip Singh had contributed an article on his association with Ram Sharma for the book *Ram Sharma, Landscape Architecture in India: Monograph Series* [LA, Journal of Landscape Architecture, July 2020]

– Editors



HERITAGE, LOCAL TRADITIONS AND CRAFTS



James L. Wescoat Jr., Aga Khan Professor Emeritus of Landscape Architecture
| wescoat@mit.edu

THE AESTHETICS OF PLANTINGS IN EARLY MUGHAL GARDEN PAINTINGS III: POETICS OF PLANTING



The third part of this series elaborates on understanding the poetics of planting design in early Mughal paintings, which can help interested minds appreciate the meaning of plants and gardens in poetry, and the landscape, during the Mughal period.

A wonderful 17th century Mughal painting depicts the famous Persian poet Sa'di [d. ca. 1291-92] rhetorically asking a man, why pick flowers that will quickly fade away when you can have poems that will never fade? Nearly four centuries later, the Mughal painter Govardhan subverted Sa'di's argument with an exquisite image of enduring flowers. An upright *chinar* tree and flowering shrub stand behind Sa'di. It is paired with the delicate flowering fruit tree and herbaceous plants behind his compliant friend, whose flowers spill from his skirt like so many jewels that join the living flowers lining the stream below. We the viewers gain the best from both worlds, the memorable words of the poet and the lasting images of the plants.



FACING PAGE

SA'DI IN A ROSE GARDEN

From a manuscript of the *Gulistan* [rose garden] by Sa'di.
Painting by Govardhan. ca. 1645. Freer Gallery of Art.

The previous essay in this series discussed the *historical aesthetics* of plantings in manuscripts like the *Baburnama* and *Akbarnama*, which recounted bygone people and places. Narrators of those historical accounts often inserted verses inspired by the experience of a place.

The philosopher Aristotle, who was influential in the Indo-Islamic realm, made an interesting distinction between history and poetry:

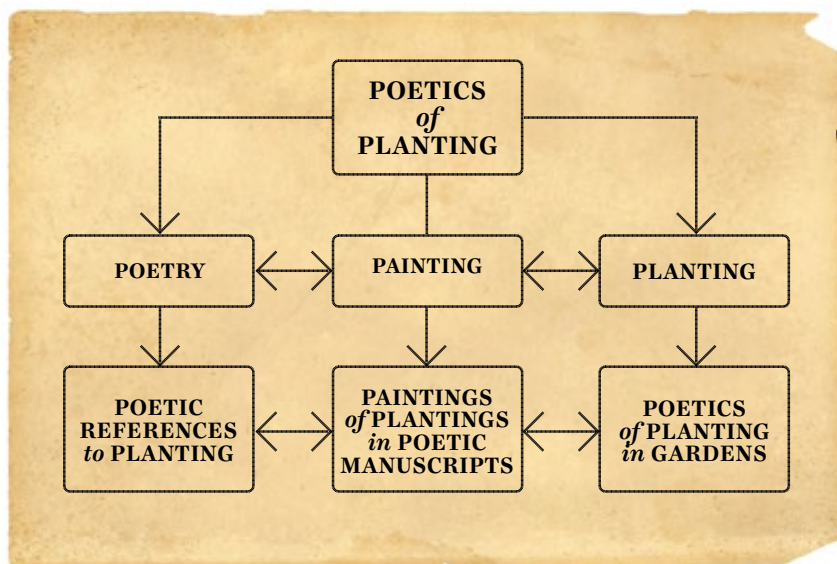
The poet and the historian differ not in that one writes in meter and the other not; for one could put the writings of Herodotus into verse and they would be history none the less, with or without meter. The difference resides in this: the one speaks of what has happened, and the other of what might be. Accordingly, poetry is more philosophical and more momentous than history. The poet speaks more of the universal, while the historian speaks of particulars. [Poetica 1451a38–1451b10].

Most cultivated persons composed poems in Mughal times, as do many today in South Asia. Poetry was practiced in courtly settings, *mushairas*, and everyday life. Prominent collections of poetry were printed as *divans*, the most famous of which were illustrated with deluxe paintings.

The combination of garden poetry and painting offers an inherently aesthetic perspective on planting design. What does it mean to speak of garden plantings as poetic or painterly? The rich relationships among Mughal poetry, painting, and plantings offer insights into these questions, and more.

Poetry, Painting, and Planting Design

There are challenges to understanding the poetics of planting design in early Mughal paintings, which are represented diagrammatically below.



RELATIONSHIPS

Diagram of the relationships between poetry, painting and planting

First, there are questions about the meaning of Persian poetic references to plants, on the left-hand side of the diagram, many of them composed centuries before the Mughal period and in highly conventional ways. Second, there are questions about the extent to which the paintings of plantings in poetic manuscripts represented either the poetry or real plantings. Third, there are questions about whether and how it makes sense to speak of planting design as poetic or painterly. The arrows in the diagram go in both directions because experience with plantings can help interpret a painting or a poem, just as the study of Mughal painting can help us appreciate historical meanings of plants and gardens in poetry.

Persian Poetry and Plantings

The poems of interest here are Persian works compiled in the Mughal period as illustrated books known as *divans* [collections], *khamshas* [quintets], and other formats. Few poems focused primarily on plants or gardens, but they often included verses with rich vegetal metaphors for stories about beauty, love, longing, courage, and so on. Some poems inspired paintings that present rich imagery of plants and plantings. Mughal poets built upon centuries of earlier Persian poetry. Patrons commissioned the compilations and in special cases the illustration of master works by Anwari, Nizami, Jami, Amir Khusraw, and scores of others who lived centuries before the Mughal period. Recent scholarship has underscored the vibrant exchange among Persian, Sanskrit, and vernacular literary works in the Mughal court [de Bruijn and Busch 2014; Kia, 2020; Truschke, 2016]; as well as among Mughal, Rajput, and Deccani painting [Aitken 2016].



Mughal authors from Babur onwards composed verses inspired by direct experience of natural beauty and historical events, which they inserted in texts read by subsequent generations, reflected for example in the painting of Babur reading a book while sitting between a pair of small trees, one of them distinguished by its foliage, the other by its flowers, with a flower-lined stony brook angling across the bottom of the page. By this point in our series, it should be clear that the balance observed in Mughal garden plantings involved organic and lyrical composition, as compared with the more formal symmetry of Mughal architecture.



Garden poetry increased during the reign of Shah Jahan in the second quarter of the 17th century, and again through the long 18th century as explored by Nicolas Roth [2019, 2020]. Wheeler Thackston [1996] warns that poetic conventions associated with plants and gardens crystallized long before the Mughal period, with the partial exception of descriptive passages in *masnavis* like that of Shah Jahan's court poet Kalim on the Jahanara Bagh in Agra. Sunil Sharma [2017] has recently explored Mughal topographic poetry, e.g., of Kashmir and its gardens, in ways that expand the scope of landscape interpretation while maintaining the point that Persian poetry had established traditions of form, rhyme, and meter that constrained as well as inspired floral metaphors.

It is thus interesting to compare Persian poetics with formal Sanskrit philosophies of the performing arts such as music, theatre, and dance. They shared a concern for formal structure and emotional experience. In the Persianate context, poetry became a featured type of *adab*, that is, of cultivated excellence in taste, manners, and artistic virtuosity [Metcalf 1984]. In light of their refinement in Mughal culture, it is interesting to ask whether one could also speak of an *adab* of planting and garden design? One step toward answering that question involves the presentation of plantings in Persian poetry and Mughal painting.

Paintings of Plantings in Poetic Manuscripts: Ut Poesis Pictura

Deluxe books of Persian poetry included paintings with illuminated borders and even small jewel-like birds flying between the lines of calligraphy. A large theoretical literature from antiquity to modern times has grown up around a phrase written by the Roman orator Horace, *Ut Pictura Poesis*, translated as, "poetry resembles painting" or "as in painting, so in poetry." In the Mughal and broader Persianate context, one can invert this analogy to suggest that painting has also resembled poetry [Lewis 2014; Porter 2000; and Zanker 2000]. Valerie Gonzalez [2016] went so far as to suggest that Persian poetry shaped the ontology or very being of painting.

The garden historian John Dixon Hunt [2000] has extended this analogy between painting and poetry to picturesque theories of gardens, which bears comparison with the chain of interpretation from Mughal poetry to painting to gardening. In a related context, Muhammad Shaheer [2016] has shown how the poetry of Kalidasa can lead to fresh ways of imagining plantings, and while he once warned that, "A landscape is not a painting," it is worth considering how plantings may be like a painting and how their arts have referenced one another. Comparisons of this sort have previously been made between Mughal painting and performing arts like music [Wade 1998].



FACING PAGE

BABUR

Babur seated in the landscape,
ca. 1605-15.

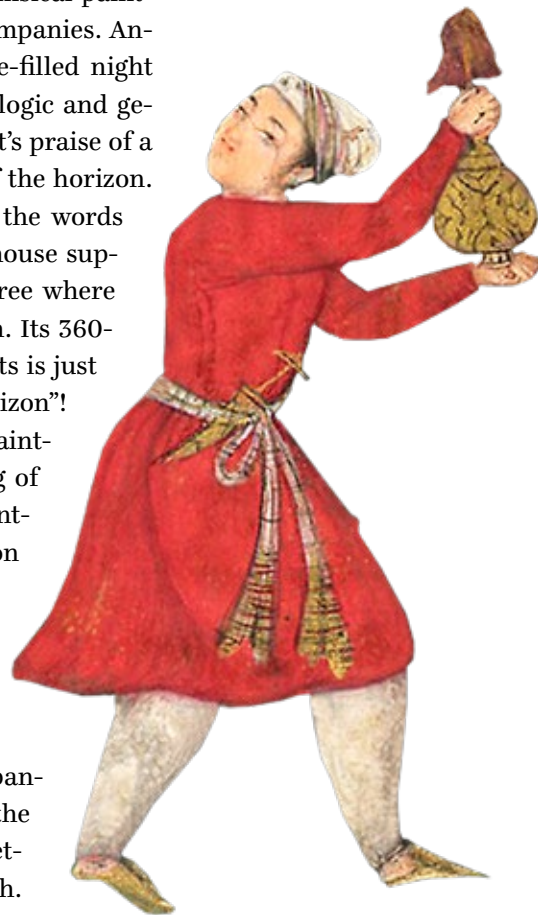
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The Diwan-i Anwari – From Treehouse to Garden

The *Diwan-i Anwari* is a collection of poems by the 12th century poet Anwari from Shiraz, Persia, who excelled in panegyric poems that took the form of *qasida* couplets [Meneghini 2006]. Praise for one’s patron was a staple of court poetry, and by extension of paintings and plantings. This physically small manuscript in the Harvard Art Museum has 354 folios with some 14 paintings, created for the second Mughal ruler Akbar during his residence in Lahore in 1588 CE [Welch and Schimmel 1983]. Scholars have marveled at its creative interplay between poems and paintings [Borglloe and Ardikani, 2019], which is masterfully emulated in a modern interpretation of the book by art historian Stuart Cary Welch and Islamic literary scholar Annemarie Schimmel [1983]. Consider two examples:

“Anwari entertains in a Summer House.” Basawan’s whimsical painting has only the slimmest connection to the poem it accompanies. Annemarie Schimmel notes that the poet described a wine-filled night time meeting with his friend in a room where books of logic and geometry were strewn about, which set the stage for the poet’s praise of a nobleman from Merv. Its window offered a slight view of the horizon. The painter, by contrast, seems only to have registered the words “summer house” when he decided to paint a simple tree house supported by the branches of a beautifully painted *chinar* tree where the poet read verses to his loyal wine-bearing companion. Its 360-degree panorama of branches, leaves, and flowering plants is just the opposite of a window with “a small slice of the horizon”! [ibid., p. 78]. Although the link between poem and the painting is limited, it has a strong bond to an earlier painting of Akbar with his father Humayun in a tree house. This painting would have evoked that magical childhood memory on every reading.

The muscular *chinar* tree is offset slightly to the left-of-center. It is balanced by the flower-lined water channel and pool with ducks, which is offset slightly to the right-of-center, and located directly beneath the treehouse companion. A banana and two cypresses flank the stairway up to the treehouse and contribute to the balanced, but not symmetrical, composition of the garden in depth as well as breadth.





دوش سمرست آندم شاق با حسرنخی سمد وفا و وفا

دیدم از باقی پرند و شین شیشه نیمه بر کن رطاب

ANVARI ENTERTAINS
Anvari Entertains in a
Summer House
[painting, verso; text, recto].
From Diwan-i Anvari,
folio 106b.
Harvard Art Museum.

“It’s the Day for the Garden” Revisited. We return to one of the most poetic Mughal garden paintings in history which we introduced in the first article in this series, as we now have the historical and poetic perspectives for interpreting it. Unlike the imaginative treehouse painting, this garden painting ascribed to Mahesh closely follows the first couplet of the poem, written on the top of the painting [ibid., p. 86]:

*It’s the day for the garden, for cheer and for joy;
It’s the day for the market, of basil and rose.*

The poem goes on to praise the poet’s patron on a happy occasion that is wonderfully spring-like. The garden lover in the top half of the painting stands directly below the first verse. He holds a small bowl perhaps to collect blossoms and is surrounded by flowering trees and shrubs, a pair of cypresses, with dark green trees beyond, and birds flying overhead.

The central pool with its delicately sprinkling fountain captures one’s attention. The garden revolves around it, following the garden lover’s gaze from right to left, followed by the bottom half of the painting with the gardener working from left to right.

The second verse on flowers and herbs hovers right above the gardener who indeed cultivates a rose and bed of herbs perhaps for the market. He too is surrounded by plants. A delicate pomegranate tree follows the curve of his back. The floral border at the bottom features a pink rose bush at its center. A banana tree on the right is balanced against the gardener and pomegranate tree on the left. In between lies a miniaturized four-by-four parterre of planting beds [kiari], irrigated by the water channels flowing from the central pool, each tiny bed supporting a plant.



THE DAY OF THE GARDEN

“It’s the Day for the Garden.”

From Diwan-i Anvari, folio 173.

© President and Fellows of Harvard College.

1960.117.173

Stepping back, we see the gardener and garden lover as a pair of figures from bottom left to top right. Their colors are inverted with the garden lover wearing a red shirt and blue undershirt, while the gardener has a blue shirt and red undershirt. The banana and forest trees make another pair, from bottom right to top left. The bright green banana in the foreground stands in contrast with the dark green trees in back. These two pairs establish the four corners of the garden scene, not in a cross-axial *chahar bagh* pattern, but rather in one that is rotated 45 degrees, just like the angle of the central pool, which causes the vision of the garden plantings to revolve around the pool, counter-clockwise, and the couplets to repeat themselves endlessly on the page and in the mind. The more general garden couplet at the bottom of the page mixes these scenes of garden work and enjoyment in the scents of earth, ambergris, and rose water. These verses were so memorable that the fourth Mughal ruler Jahangir's quoted them when visiting the Gulafshan garden along the Jumna River in Agra after a heavy monsoon rain in 1619 CE. By that time he had inherited the *Divan-i Anwari* manuscript and recalled that:



“The following lines by Anwari are appropriate to that place: ‘It is a day for enjoyment and revelry in the garden, it is a day for a market of flowers and herbs. / The earth gives off an aroma of ambergris, rose water drips from the breeze’s skirt. / From encountering the zephyr the face of the pond is as jagged as a sharpened file.’”
[Thackston, 1999, 306-7]

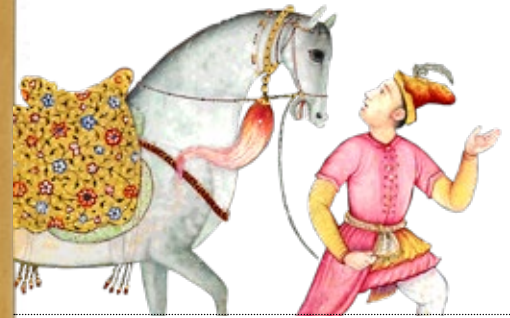
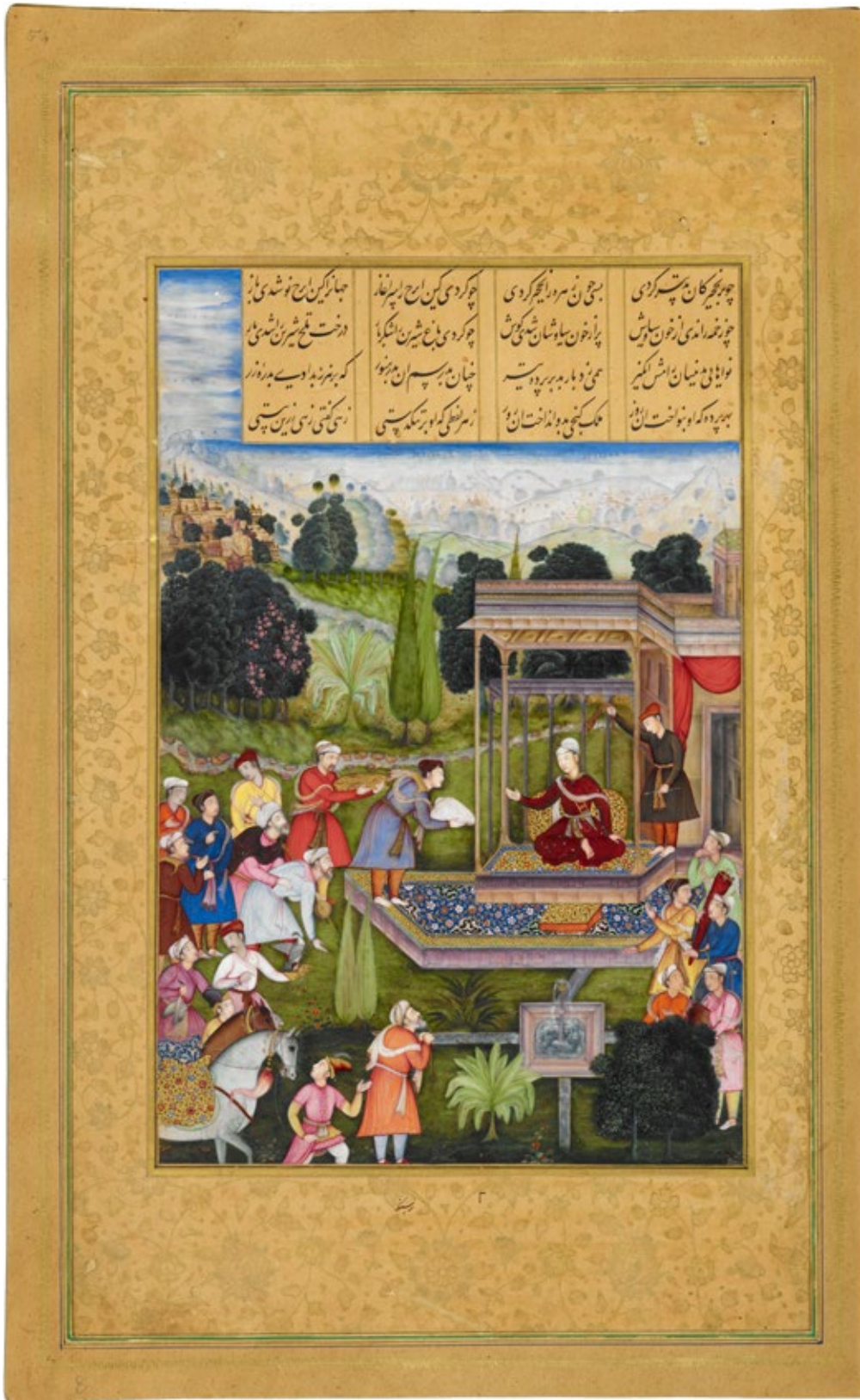
The painted plantings have a paired structure like that of the *qasida* poem. Along with that clear structure, however, the plantings have a delightful diversity of foliage, flower, and form, arranged in irregular intimate ways that emulate the poet’s playful treatment of garden metaphors [Sharma 2017].

Imagine drawing these plantings in plan and section today. In addition to altering one’s preconceptions about Mughal garden design, it suggests new possibilities for twofold garden layouts, arranged like couplets, with poetic pairings of species that would indeed make them, “the day for the garden, for cheer and for joy”!

Reflections and Looking Ahead

This essay has made the case for a *poetics* of planting design as expressed in early Mughal painting. It has shown how the twofold and fourfold qualities of the *qasida* poem and paintings can lead beyond familiar notions of the *chahar bagh*, in ways that can suggest imaginative ideas for contemporary planting design. The *Divan-i Anwari* examples studied here are only a tiny fraction of the large corpus of illustrated poetry that is available. Poetic forms like the *masnawi* and *ghazal* await similar exploration.





The next essay will build upon these traditions of poetic painting and planting in ways that extend to mystical and spiritual dimensions of planting design. It will begin with the *Khamsa of Nizami*, a quintet of poems that includes the romances of Khusrau and Shirin, Layla and Majnun, Iskander, and the *Haft Paykar* [Seven Beauties]. Mughal and Persian painters interpreted these poems with increasingly complex garden and landscape designs. This path will lead in turn to the *Hasht Bihisht* [Eight Paradises] masterpiece of the Indian poet Amir Khusraw, its interpretation by Mughal painters, and its affinities with the symbolic three-by-three *hasht bihisht* patterns of Mughal architectural and garden layout.

HOMAGE TO KHUSRAW

Barbad the minstrel paying homage to Khusraw as he bestows gifts upon him in a garden landscape. Mughal copy and illustration of the Khamsa of Nizami. British Library Or. 12208, f.54. c. 1595.

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All images provided by the Author

Acknowledgments by the Author

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Anjali Chandawarkar, Social and Cultural Researcher
| anjaligc1999@gmail.com

THE ‘NATURE’ OF ART

TRACING THE HISTORY OF MODERN PAINTINGS IN ASSAM

Exploring the relationship between depictions of nature and cultural identity, with a particular focus on the geographically and culturally diverse north-eastern region of Assam.

We often find ourselves around us – our natural surroundings seem to reflect who we are. Understanding ourselves through nature has been a common practice throughout history. Whether it be ancient cave paintings, scriptures, sculptures – wildlife and natural heritage have lent themselves to countless metaphors for human subjectivity. With this premise, this study explores the relationship between depictions of nature and cultural identity, with a particular focus on Assam.

The state of Assam forms a significant part of the north-eastern wing of India. It enjoys a diverse geography of hills, plains, and a plateau, and is situated around a perennial river – the Brahmaputra. Assam, like the rest of the Indian subcontinent, also had a tryst with colonialism and modernity. And like the rest of the Indian subcontinent, the colonial encounter fundamentally changed the way people interacted with the geopolitical state of Assam. Art – specifically paintings – from Assam has been a manifestation of its socio-religious, political, and geographical understanding. Using the depictions of natural surroundings in Assamese paintings, this research is an attempt to temporally trace the shifting relationship between Assamese painters and nature before and after the advent of modernity. It further argues that this shift has also changed the way Assam understands itself as a people.



Nature as a Setting

MANUSCRIPT PAINTINGS

Assam's manuscript paintings have captured not only religious movements but also political movements in the region since the fifteenth century.

Text accompanies human figures situated among natural surroundings and specific cultural artifacts.

SOURCE: sahapedia.org/manuscript-painting-of-assam-historical-and-contemporary-perspectives

Legend suggests that the Assamese painting traditions date back to Puranic times when a woman named Chitrlekha was renowned for her portraits. Since, there are historical references to painting traditions in Assam in the Harsha Charita in seventh century CE. Dated 1473 CE, Assam's manuscript paintings document not only religious influences in the region but also various types of governance that have existed there. Other religious art, like the Srihati Satra- sculptural representations of the Vaishnavite Bhakti movement - is evidence for the popularity of Vaishnavite beliefs in Assam. This affiliation has even withstood the colonial encounter. In Srihati Satra, natural elements like trees and animals appear smaller than the figures of the deities. Hence, while the surroundings seemed familiar, the stories of the Vaishnavite deities like Krishna and Ram functioned like the fresco paintings from medieval European churches - they spread the gospel among the masses. The manuscript paintings also referenced mythology.



THE ‘SELF’ AND THE ‘OTHER’
Srihati Satra focuses on religious figures like Krishna, symbolic of the Vaishnavite tradition prevalent in Assam. These are engraved and painted, and continue to be created even today.

SOURCE: Moushumi Kandali

These artworks forms evoke a feeling of steadiness – the artist seems to have effortless and confident control, which shows in the robust lines, a fuller arrangement of objects in space, and a vibrant array of colours. In the mid-nineteenth century, when modernity entered Assam in full force, a new taxation policy, a new education system, a new language, new transportation systems were introduced. As the landscape of Assam changed drastically, so did its art. Although the motifs, characters, and narratives remained similar, the artworks show an acknowledgement of the ‘self’ and the ‘other’ – in Srihati Satra [1920-1930], Krishna and his surrounding landscape become the ‘self’, while the sculptures portrayed Kansa in a more European setting. Thus, Assam’s art forms became a site for subversion, and often a space where artists expressed their anxieties surrounding these shifts. Representations of natural surroundings became a tool to represent what was familiar.

Nature as an Assertion of Identity

Moushumi Kandali, in her piece “Art Discourse: The Early Moderns” [2015], equates the conversation on Assam’s modern art to the Japanese cherry blossoms, calling it “a fine example of cultural transplantation, of appropriation and adaptation, which grew out of the Western roots to become a phenomenal artistic strand of hybrid manifestation in the Indian soil.” Typical of the post-colonial experience, modernity in Assam was almost

paradoxical. It struggled to situate itself within sensibilities that were attuned to magic and myths, almost esoteric depictions of ancestors and spirits, and scenes of rivers, mountains, and abundant wildlife. Kandali cites Mishing tribal poetry on the nostalgia felt for the Dihing bridge, constructed using concrete and modern technology, “as a site of expression of the modernist aspiration as well as the stark reminder of the consequence of uneven modernity, where a modern-day, common technofact like a bridge achieves almost a mystified mythical status, a piece of wonder, a thing of utmost desire!”

The earliest phase of modern art in Assam, with all its contradictions, is visible in the mid-twenties and thirties of the twentieth century. Muktanath Bordoloi, Suren Bordoloi, Jagatsing Kachari, and Pratap Barua – four artists trained in the Bengal school in Calcutta – were responsible for the genesis of this phase. While they adopted modern methods, their work was slightly distinct from the art that typically emerged from the Bengal school. Responding to the tumult caused by colonisation, mass immigration, and the arbitrary division of land and culture, their paintings found Assamese roots. These artists often limited themselves in their thematic explorations that were similar to the themes from the Bengal school; along with still-life and portraits, they preferred to depict Assam’s landscapes and rural life, governed by the lush Brahmaputra valley.



EVERYDAY LIFE

"Fishing" by Mukatanath Bordoloi shows influences from Ravi Varma's style of painting subjects, while placing the subject in a setting specific to the region of Assam.

SOURCE: Moushumi Kandali



PORTRAYING NATURE INTENSELY

In Asu Dev's "Symphony" [TOP] and "Stream" [ABOVE] there are almost hyper-realistic portrayals of nature. They use intense shades and focus heavily on the folds and flow in the landscape.

SOURCE: artofasudev.org/oil/#jp-carousel-176
indianreview.in/nonfiction/an-introduction-to-the-contemporary-paintings-in-assam/



RECONNECTING WITH NATURE

Tarun Duvara's depiction of rural life in the Brahmaputra Valley using water colours and bright shades is an attempt to reconnect with Assam's natural surroundings.

SOURCE: nezine.com/info/tarun%20duvara%20-%20the%20aesthetic%20weaver

The painters introduced tonal variation, chiaroscuro, depth and volume, and perspectives into Assamese painting traditions. Mukatanath Bordoloi's "Fishing" [1926], influenced by Ravi Varma, depicts a woman with a traditional fishing net, standing in a river. Bordoloi uses the oil medium – new to the Assamese painting tradition at the time – along with chiaroscuro techniques to paint the mundanity of everyday life for Assamese women, breaking away from the traditional religious understanding of Assamese paintings. Early modernist painters turned their attention to how Assamese people interacted through their livelihoods with their landscape.

The year 1947 marked a sense of conflict for Assam – the national identity, with its borders and boundaries, felt like a misfit. While Assamese painter Jibeswar Barua established the Government College of Arts and Crafts in Guwahati, in an attempt to consolidate

the growing body of modern art in Assam, painters like Tarun Duvara and Asu Dev attempted to forge a deeper relationship with the Assamese landscape through their paintings. Representations of nature, therefore, are vibrant and fierce – a witness to Assam's internal conflict during India's transition into a nation. Duvara's art, focusing heavily on rural life in Assam, draws heavily from the early impressionistic style of painting. Tonal gradations in the form of tinted hills, or the gleaming, red sun, or the lush green plains are reminiscent of a simpler life. Samiran Boruah, in their piece "An Introduction to the Contemporary Paintings in Assam" [2009], writes that Duvara's paintings evoke "nostalgia, compassion and a strange, tragic sensation." Asu Dev's paintings engage with Assam's landscape in a more turbulent manner. Like in "Stream" [undated] and "Symphony" [1973], Dev focused on portraying nature with great intensity.

Nature in Conflict

While political turmoil remained rife through the 1950s owing to the Immigrants [Expulsion from Assam] Act, 1950, Assam also encountered a major natural disaster – an earthquake, measuring 8.6 on the Richter scale, that hit the Tibetan plateau. Consequently, painters tried to frantically reconnect with their lost sense of space, often through reimagining their natural surroundings. Sobha Brahma developed a deeply representational style for this period. Brahma painted the female form in dark, rich colours,



often distorted or dead, as a commentary on how people treated Mother Nature. Kandali, in their piece “The Body as Cultural and Political Anatomy: The Art of Shobha Brahma” [2015], says that the female bodies in Brahma’s paintings are “provocative metaphors of violence,” and are “rendered as the text, the political anatomy, a site for artistic intervention.” Rethinking modern art, Brahma married the modernist style with an exploration of more traditional, human forms and figures. In the 1960s, Pranab Baruah used figures like Upagupta and Basavadutta and other mythological characters in conjunction with realistic portrayals of nature for symbolic value. Baruah used light colours, often creating detailed forms. Although individualistic, their paintings suggest a reconnaissance of Assam’s landscape and history, to reevaluate their identity.

RETHINKING IDENTITY & RELATIONSHIP WITH NATURE

Pranab Baruah’s mythical “Upagupta and Basavadutta” [ABOVE LEFT] in contrast to their realistic portrayals of nature [ABOVE RIGHT] show a need to rethink Assamese identity and relationship with their natural surroundings.

SOURCE: Moushumi Kandali and nagaon.gov.in/frontimpotentdata/paintings-of-nagaon-based-artists

The emergence of the Assam Movement in 1970 saw the formations of the Gauhati Artists’ Guild and the Assam Fine Arts and Crafts Society. But the paintings that emerged during this time were often plain, lacking spirit. Geometrical designs, as seen in Aminul Haque’s paintings, were a dominant style. Discernible natural elements were nearly absent, but animals were often used to convey metaphorical ideas of freedom, yearning, and peace.



ABOVE |

PROVOCATIVE METAPHORS

Sobha Brahma uses dark colours to use flesh, blood, and the human body as metaphors for landscape and scenery. In this particular painting, Brahma uses the female form for the oft-alluded Mother Nature.

SOURCE: nezine.com/info/Wm5pbHBmUOdGTjRZRW5iZ29YSEpEZz09/the-body-as-cultural-and-political-anatomy----the-art-of-shobha-brahma.htmlWm5pbHBmUOdGTjRZRW5iZ29YSEpEZz09/the-body-as-cultural-and-political-anatomy----the-art-of-shobha-brahma.html

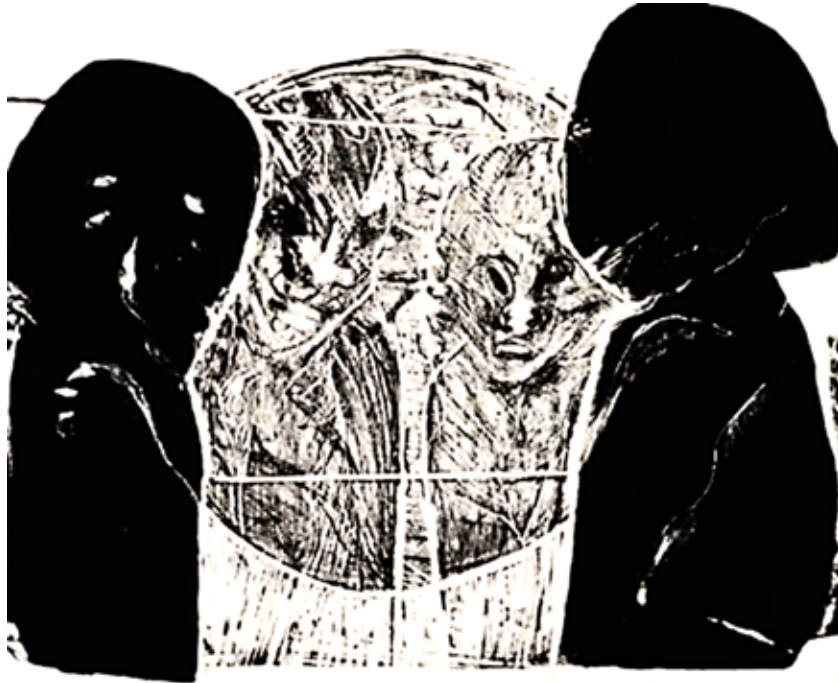
ABOVE RIGHT |

GEOMETRY

In Aminul Haque's painting, geometry helps shape the artist's understanding of their surrounding landscape. While structure becomes central to the theme, nature still finds metaphors in the form of animals and some natural elements.

SOURCE: ezine.com/info/REZFcHRlc1ZzczYzaFB-SUUIrZjRvdz09/aminul-haque:-through-spontaneous-rhythm,-colour-and-form.html

These are in stark contrast to the works of the artists who emerged in the 1980s. Dilip Tamuly's artwork, for example, sticks rigidly to monochrome and offers dark, chaotic yet meditative renderings on the human form. His figures are often grotesque and situated in morbid environments, conveying deep-seated anxieties of their cultural surroundings and socio-political state of affairs. The eighties and nineties mark the beginning of even more abstract forms of art – yet another change in the relationship between Assamese painters and nature. The lush green hills and the valley, the river, the animals, and birds turn into splashes of colour, become more metaphorical and, once again, subordinate to the human form. Artists from Assam have since found more diverse forms of expression of identity in turmoil – protest art, often seen in the form of installations supporting performance pieces have since gained popularity.



Nature has been integral to how Assamese painters have understood themselves and their homeland through various stages of history – Assam’s natural heritage has often been a site for the unfolding of several important historical events in the region of Assam. The consequences of modernity and the assertion of belief systems have found a way to impact and change Assam’s people over the last century, often showing up in their imaginations of the Assamese hinterland and its people. In the last thirty years, however, artists have moved away from naturalistic depictions and have begun taking literal inspiration from the political state of affairs, owing to their urgency. This movement seems significant, given that art reflects society. What happens to the hills, the farmlands, the river, the plains, and the valley in Assam? What does the disconnect between Assamese painters and depictions of nature suggest? Can art become predictive of how the painter, and society, by extension, may view and treat nature?



PESSIMISM?

Dilip Tamuly's work confronts a darkness and morbidity through the lack of their use of colours, and through their strangely morphed figures. One wonders if this represents some sort of pessimism with regards to the Assamese identity and the treatment of Assam's natural surroundings.

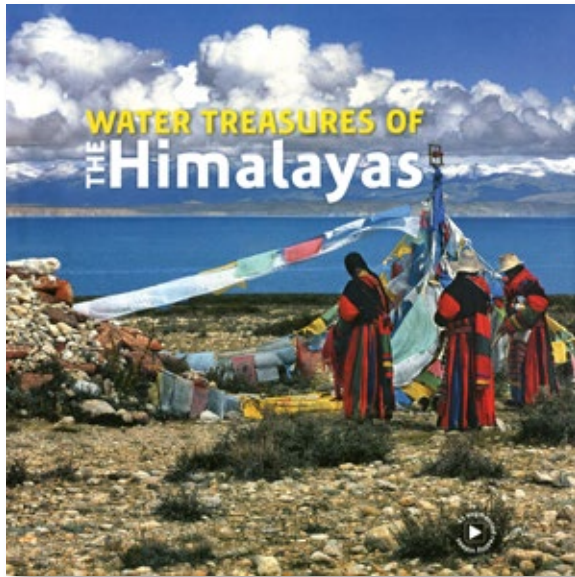
SOURCE: wordsmithpublishers.com/Stories/10.htm

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Review by Divya Chopra, Urban Designer
| divyachopra@aud.ac.in

THE MYSTICISM OF THE HIMALAYAS



WATER TREASURES OF THE HIMALAYAS
Editor Serge Verliat and Jean Phillippe
Published by Mapin Publishing Pvt. Ltd.
2017
Size 280 x 280 mm, 216 Pages
Hardcover
ISBN: 978-81-89995-89-8

The grandeur of the Himalayas can be experienced only by being in the midst of this ethereal landscape. As one traverses along this 2000 kilometer stretch interspersed with numerous rivers and water channels flowing through its undulating terrain, the sheer scale of these water towers is overwhelming. The book *The Water Treasures of Himalayas* succinctly brings together the diverse facets of this ecosystem and the complexities embedded within its relationship with water. These majestic peaks share a deeply intertwined, dynamic, and a fragile bond with its intricate water systems. Although similar sojourns have well documented the Himalayas and its significant rivers [Indus, Ganges, and Brahmaputra], this arduous journey across the Indian subcontinent weaves it all together as one beautiful tapestry. The authors, Jean Phillippe and Serge Verliat, have aesthetically encapsulated this ever-evolving landscape as they travelled along the length and breadth of the Himalayas, moving across borders, from west to east, from north to south.

With first of its kind augmented videos along with breathtaking visuals shot by Phillippe and text by Verliat, the book is a collectible for those enamored by the mysticism of the Himalayas. It is a well-curated collection of high-quality images accompanied by an anthropological account of this enduring terrain. While the cover pages reflect the collective synergy of the place, the internal layouts capture distinctive characteristics of the entire canvas, ranging from stark and barren landscapes to sparse human habitations scattered intermittently within quiet valleys to the cacophony of the foothills that are inundated with numerous settlements. With its content divided amongst three thematic sections - *Precious Water*, *Generous Water*, and *Sacred Water*, the book is graphically well composed and very readable. Each of the segments comprises a fascinating assemblage of photographs spread across the entire page with a supportive narrative encompassing ecological, political, and socio-cultural dimensions that define this landscape.

Phillippe and Verliat's striking photo-narrative starts from high altitude cold deserts where one finds the unexpected appearance of water in the form of numerous lakes with salt deposits probably from the ancient Tethys Sea. These mineral deserts with stratified colors and flowing water continuously sculpting the rocks, create an extraordinary landscape. The narrative further moves along valleys of the Indus basin that are strategically positioned along ancient trade routes and have been witness to heightened political maneuvering and border disputes in this region. One finds sporadic settlements of indigenous tribes, clustered around arable valleys with a warmer climate. These hamlets, dotted with monasteries, are gradually transforming due to better connectivity and enhanced exposure to the outside world. As one moves to lower altitudes, the experiences of the southern flank, dispersed with dense forests boasting of varied floral species, epiphytes, and medicinal herbs, are compelling. Communities located within this region share an extremely vulnerable relationship with water as they continue to adapt their lives to the arrival and departure of the monsoon along with its intensity, which can be either benevolent or devastating for their survival. They share a deep sense of association with the seasons determining their farming calendar, religious festivals, pilgrimages, and weddings. The alternating weather pattern bringing in snow and rain thus becomes the defining factor of this unique geographic and cultural terrain. The journey culminates in the low lying and irrigable lands of the Himalayan foothills, highlighting the environmental degradation of the rivers and its banks that are now overflowing with untreated sewage from adjoining densely populated urban agglomerations.

The idea of an interconnected cosmos bringing together the sky, earth, and the water reverberates strongly across the narrative where mountains are the sacred grounds and water, one of the most precious elements nurturing life form on this planet, reflects the soul of the community. Amidst myths and legends, most of the rivers flowing through the Himalayas are revered, with the Ganges being the most sacred and pious. From worshipping these rivers to taking a holy dip for purifying oneself, they have a sublime presence in all rituals connected to life and death. As these rivers become sites of festivals and sacred spots for pilgrims, the confluence of two rivers reflects a divine association. With the entire range being an ethnic mosaic of communities, the book artistically captures this syncretic landscape allowing people with diverse socio-cultural traits to be connected across borders, sharing common beliefs and values in their association with the world.





While reinforcing the geo-strategic location of the Himalayas and its water systems, the book brings forth its significant role concerning political decision making in the region from redefining state borders, territorial control of water, nurturing the plains, and launching massive irrigation and hydroelectric projects. Though the book comprises snippets of information addressing these global challenges and repercussions of these colossal projects, however a profound understanding of local place specificities would have probably engaged the reader critically with the text. With Himalayan glaciers experiencing a notable reduction in their surface area due to global warming, unaccountable water flow downstream has forced rivers to change courses. Retreating glaciers along with the rising of the Himalayas due to the shifting of the Indian plate has resulted in considerable upheavals, erosion, and accumulation in the region. Significant financial aid and strong political support have led to numerous hydroelectric projects and dams being proposed and built in the Himalayas to meet the urban needs of water and electricity.

While the potential of these water systems is still far from being exploited, these colossal projects have had devastating consequences in the form of ecological disasters and displacement of local indigenous communities, severely affecting their lives and livelihoods.



With the stakes becoming higher corresponding to a growing appetite for control amongst nations positioned in this fragile geo-political zone, most policy frameworks seem to be incognizant of the environmental and humane aspects of this ecosystem. The Himalayas are undergoing a drastic transformation as a result of natural calamities, enhanced connectivity, expanding tourism and growing aspirations amongst its youth. In this anthropocentric age, as we progressively move away from a harmonious coexistence to an exploitative relationship with our planet and its resources, *The Water Treasures of Himalayas* allows us to immerse ourselves into this reflection and recalibrate our altered existence as we step into an unforeseeable future.





ENVIRONMENT, ECOLOGY AND BIODIVERSITY

Idea Design, Kochi
| ideadesign.org

AN ECOLOGICAL MASTER PLAN FOR ADYAR POONGA CREEK & ESTUARY



COROMANDEL COAST
Year 1753

The Coromandel Coast refers to the stretch between Point Calimere, near the delta of the Kaveri River in the south, to the mouths of the Krishna River in the north along the Bay of Bengal. The coast is home to the East Deccan dry evergreen forests, which run in a narrow strip along the coast. It also has extensive mangrove forests along the low-lying coast and river deltas, and several important wetlands that provide habitat to thousands of migrating and resident birds.

The Adyar River, fed seasonally by the rains, originates from the Chembarambakkam and Sriperambatur tanks in the Chengalpattu district. It flows a distance of about 40 kilometers eastwards to join the Bay of Bengal in the southern part of Chennai City. Along its course, it is joined by the Mambalam drain, Buckingham Canal, and many sewage and stormwater drains of the city. Many significant historic buildings and institutions are also located on the banks of the Adyar.

Adyar Estuary and Creek

In the city of Chennai, it forms an estuary at its mouth extending from the sandbar to the Kotturpuram Bridge. The river takes a northward bend at the estuary into the mainland and curving gracefully, almost surrounds the Quibble Island, forming the creek. This estuary's wetland provides habitat to thousands of resident as well as migratory avian and aquatic species. The region, with the presence of Guindy National Park, Theosophical Society, and other Institutional greens, along with the estuary, forms the green lungs of the city. The location of two of the city's most popular public spaces—Marina and Elliot's Beach, on its two ends—makes it a very significant urban space.



SITE
*Google view of the site
and surroundings,
2007*

The Project

The project was initiated for the creation of an Eco-park in 58 acres to restore the ecological balance and raise public awareness on environmental issues. Later, the Government initiated an ambitious project to include and encompass the edge restoration of the Creek and Estuary as well. Finally, Ecological Master Plan was envisioned at a conceptual level for the Adyar creek and estuary [358 Acres] and a detailed ecological restoration plan and design was done for the Adyar Poonga [58 acres].

Site Context

The area along this part of the river Adyar has mixed-use with primarily residential and institutional zones. A concentrated city-level commercial development is being conceptualized and executed on Quibble Island facing Srinivasapuram. In the last decade, continual dumping of construction debris and garbage on the edges of Quibble Island and Srinivasapuram has heavily polluted the creek and estuary. Most of the roads in the area have widening proposals with new bridges, as well as the widening of the Thiru Vi Ka Bridge. Reconstruction of Srinivasapuram is another major proposal in the area. The area is ably connected by a network of busy roads—Greenways Road, R.K. Mutt Road, D.D. Road, and Santhome High Road—with Foreshore Estate Bus Terminus and Mandaveli Bus Terminus and MRTS Station in close proximity. Being an institutional zone, a considerable decrease in the volume of traffic is found during off-peak hours and holidays.



VIEWS

Views of the Adayar Poonga Estuary Creek, 2004

Ecological Restoration – Planning Concept

The first step towards ecological restoration is to define and secure the edges of the creek and estuary from the surrounding urban development activities. The best method to secure the edges is to bring public watch and ward by providing public access to these. Once the edges are protected, restoration of these edges with mudflats, mangroves, and other appropriate habitats would follow.

An Urban walkway is proposed along the edges of the creek abutting the Quibble Island, which will provide an opportunity for people to enjoy the spectacular view of the creek and estuary. On the other side of the creek, the walkway will follow the edges of Foreshore Estate Loop Road, Srinivasapuram Housing Colony as well as the beach, connecting public spaces and institutions such as ecological interpretation centres, marine aquarium, etc.

There are five outfalls entering into the Poonga area including four stormwater and one wastewater sewer. Stormwater sewers have an important regulatory function to drain off high rainfall peaks from adjacent residential zones and prevent these areas from getting logged by stagnating water. The creek and the estuary are natural stormwater retention areas, which will buffer storm rainfalls during the monsoon season and during cyclones. It was found that most of the sewers were transporting high loads of wastewater, with pollution levels much higher than CPCB Permissible limits. Therefore, the entry of wastewater into the Poonga was arrested in collaboration with CMWSSB. A ‘Pollution Watch’ was initiated to continuously monitor the flow in outfall.



SITE CONDITIONS

Part views of the existing site prior to the commencement of the project



Ecological Restoration of Adyar Poonga Design Concept

CONCEPTUAL STAGE 1

It emphasizes ecological land use principles while addressing the site as a stormwater recharge and discharge zone. The site's interaction with the estuarine ecosystem of the creek becomes an important feature, and its separation from the recharge zones through simple water balance mechanisms is devised. The concept is to establish species patches with interactive edges creating a holistic mosaic.

CONCEPTUAL STAGE 2

Earth berms along the boundaries are proposed to reduce sound and visual pollution hence creating an ecological edge. Directing the stormwater to a single point at the park and recycling it before discharging into the creek is another important aspect of the plan.

CONCEPTUAL STAGE 3

Conservation and Ecological Restoration are looked at as governing principles of the project, thus limiting the arrival and orientation zone to a small fraction of the site's area and keeping the larger area of the site less disturbed by activities. Considering the heavy traffic on Greenways Road, the plan proposed only entry and drop-off from this road and exit through T.P. Scheme Road to the R.K. Mutt Road.

CONCEPTUAL STAGE 4

This plan clearly delineates various ecological zones and appropriate methods to introduce biodiversity. The possibilities of developing a park educational facility on the land abutting R.K. Mutt road have been conceived. A design has been evolved for treating sewage from the adjoining Metro water pumping station to cater to the water needs of the park.

Ecological Restoration Design

ZONE 1 | STORMWATER RETENTION AND INFILTRATION ZONE

The periphery of this area is composed of earth berms covered with TDEF [Tropical Dry Evergreen Forests] vegetation—the native coastal forest ecosystem found along the southern Coromandel coast. It also includes a few freshwater ponds.

ZONE 2 | STORMWATER DISCHARGE ZONE

A clear passage for stormwater is proposed by rebuilding the Karpagam Bridge. It is proposed to reuse the large amount of debris dumped in this area to create hillocks [earthen berms] on either side of this zone. TDEF vegetation would cover the banks of the stormwater channel.

ZONE 3 | BRACKISH WATER WETLAND ZONE

It is connected directly to the creek and estuary. Mudflats naturally occur in this zone and it is proposed that these be planted with mangroves and their associates. There is a need to improve the water quality of the creek and estuary for any successful restoration of the area.

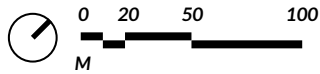
Biodiversity Restoration

Although it is not possible to restore the Poonga, Creek, and Estuary to their former pristine state, bio intervention can make it an ecologically significant and sustainable place, and also mitigate many of the issues in the larger creek and estuarine region. Eradication of *Prosopis juliflora*, implementation of a Water Management Plan, and the deepening of existing waterlogged areas to create a stormwater reservoir and the introduction of appropriate floral biodiversity are some of the steps. Tropical Dry Evergreen Forests [TDEF] are found along the Coromandel Coast from Vishakapatnam to Point Calimere, existing as a narrow belt approximately 40 km along the coast. In the Poonga Master Plan, TDEF planting is mostly concentrated around stormwater retention ponds, in the dry areas. Wetlands with marshlands, mudflats, mangroves, and associated flora and fauna are the fundamental component of a coastal landscape. These are dynamic water systems, which encounter constant interaction of freshwater and saltwater supporting a variety of species in various stages of their life cycle. Adyar Creek is one such system, which the master plan proposes to revive and restore into a healthy example of a coastal wetland. Mangroves and mangrove associates that are tolerant of inundation and salt are considered to be globally endangered and hence their introduction to the park has high conservation value. They are proposed to be planted in the eastern reaches of the park.



MASTER PLAN

- 1. Medicinal Plant Garden
- 2. Sacred Grove
- 3. Aromatic Garden
- 4. Child and Mother Care Garden
- 5. Navagraha Garden
- 6. Barn Owl Point
- 7. Chelonian Garden
- 8. Butterfly Garden



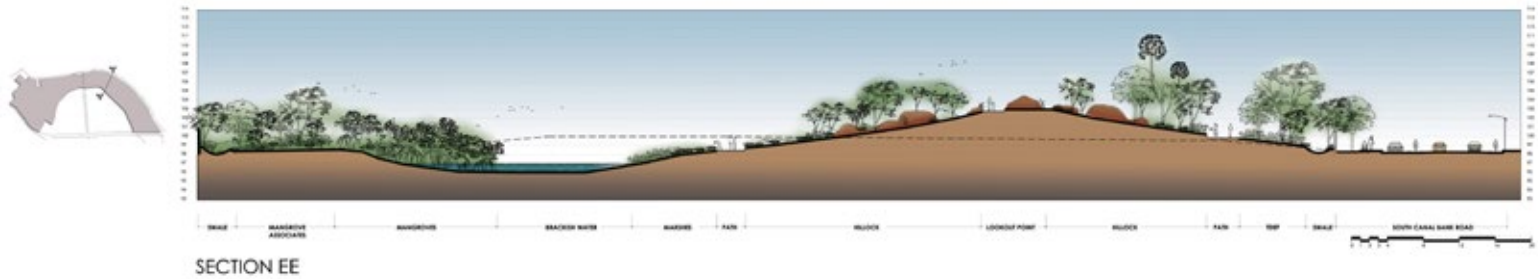
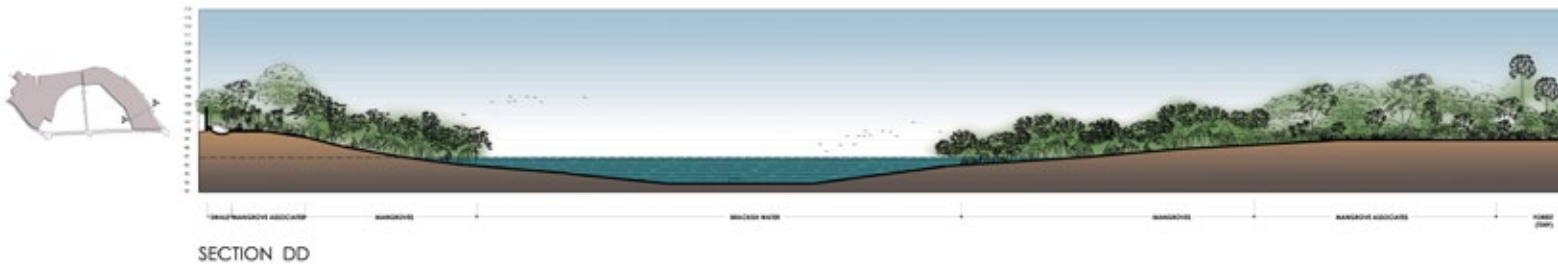
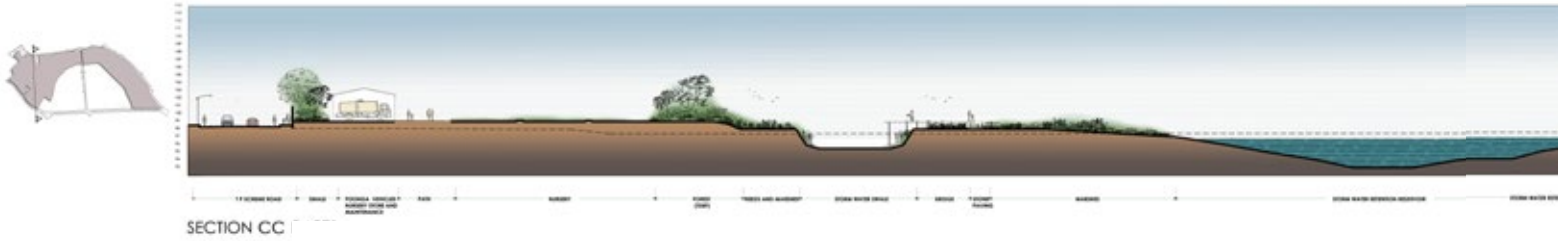
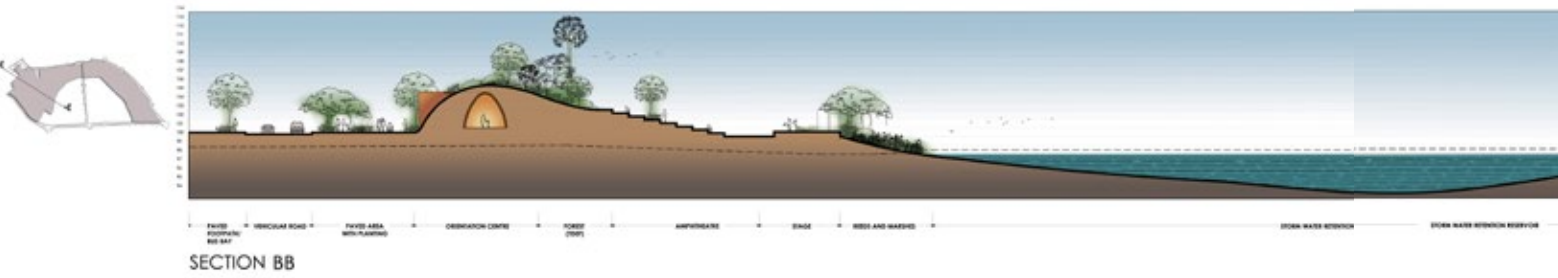
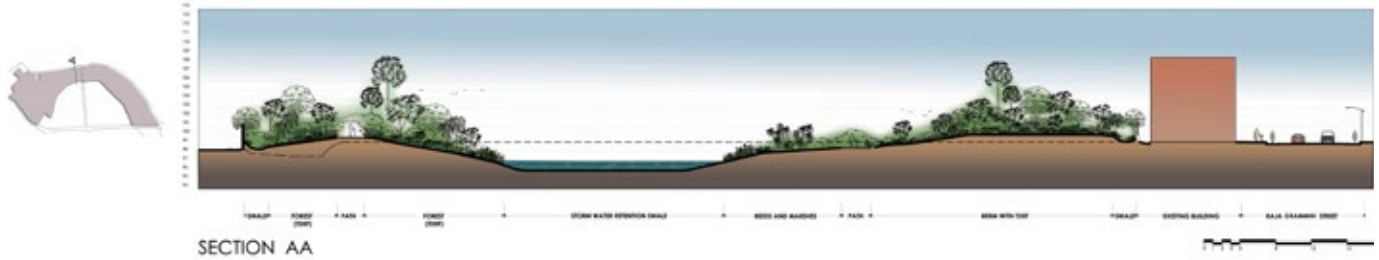
Master Plan

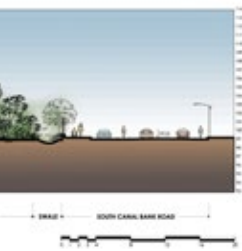
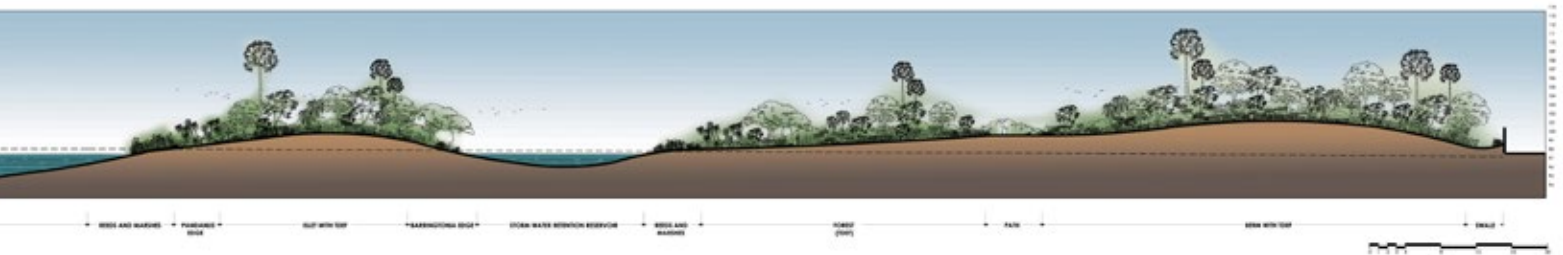
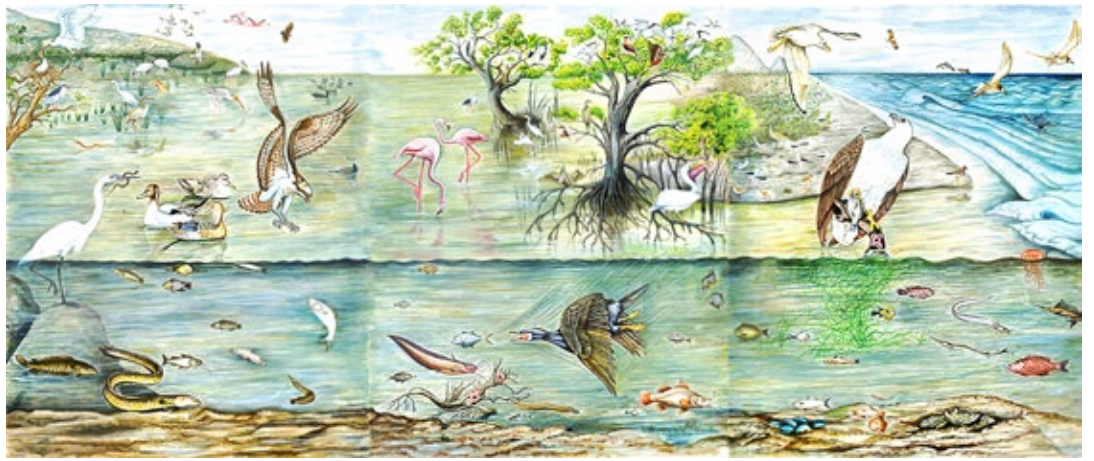
With a variety of natural areas—forest, marsh, ponds, creeks, and mangroves, the Adyar Estuary, restored with Coromandel Coast ecosystems, is proposed to be a natural hub providing interactive environmental education and research for schools, educational institutions, eco clubs, bird watchers, nature enthusiasts, and the general public. It is proposed as a place to demonstrate solutions to environmental problems, create awareness, inspire people to change, and influence decision-makers to chose the right environmental solutions for the city of Chennai.



- | | | | |
|--|-------------------------------|--|--|
| | TROPICAL DRY EVERGREEN FOREST | | STORM WATER RETENTION RESERVOIR WETLANDS |
| | HILLOCK | | STORM WATER INFLOW |
| | MANGROVES | | BRACKISH WATER WETLANDS |
| | MANGROVES ASSOCIATES | | FIELDS |
| | MEADOWS AND GRASS LANDS | | FARM AND VEGETABLE GARDEN |
| | REEDS AND MARSHESH | | NURSERY |
| | MUD FLATS | | AVENUE TREES |
| | FRESH WATER POND | | |

SECTIONS





VIEWS
 Part views of the restored
 Adayar Poonga complex

Ecological Restoration

The ecological restoration of Adyar Poonga was a long-drawn process. Tamil Nadu Government constituted Adyar Poonga Trust, which appointed TNUDF as the nodal agency for the preparation of Master Plan, Detailed Design, and Implementation. A consortium of consultants was appointed under the leadership of Joss Brooks, a well-known ecologist who has experience over several decades of doing large-scale ecological restoration projects.

The principal design team included the following people:

- Joss Brooks [Ecologist] & Eric Ramanujam [Faunistics Expert] of Pitchandikulam Forest Consultants, Auroville
- Biley Menon [Urban Designer], Chitra Biley [Landscape Architect] & Michael Little [Landscape Architect] of Idea Design, Cochin / Bangalore
- Dirk Walther [Water & Sanitation Expert] of Centre for Environmental Studies, Anna University

An ecological site analysis was conducted and a detailed assessment of edge conditions was done for the 58 acres of site area. A detailed traffic survey was conducted which was useful to locate the entry and exit points to the project site. 8 observation wells were made for continuous weekly monitoring of water quality. Flow measurements were recorded throughout the project period during normal days and during monsoons and cyclones. A detailed investigation of the waterbody was conducted to assess the nature of various types of pollution.

The concept design had to consider city-level stormwater drains, tidal variations in the brackish water ecosystem of the estuary, and managing huge amounts of debris, rubbish & organic waste. A detailed technical plan for ecological restoration was developed. The entire park was divided into a combination of freshwater and brackish water ecosystem. The plan involved solutions for total water management during storms, tides, spring tides, floods, and drought situations. Large earthen berms were proposed along the periphery of the park to bury all the debris and rubbish below them. This enables a visual and sound buffer from the surrounding urban edges. The topographic alterations ensured the careful creation of water bodies and hydrodynamics.

Apart from the preparation of the master plan, the task involved several stages of field surveys, continuing studies on soil and water conditions of the Poonga, and making several representations to the City's administrative bodies to attempt and stop the continuing flow of sewage and dumping of debris. Parallel to this, the team worked on developing a nursery at the site, which became the nerve center for planning and design, involving local citizens. The nursery also became the center for environmental education and outreach programs involving schools in the region. Soon, the school children and local citizens became campaigners of the project.





The restoration process was a mammoth effort involving developing and planting of lakhs of seedlings. Students groups and local citizens involved in the planting process. Various activities were introduced to engage the kids with the ecological restoration of the park. And what was once a dump yard for rubbish and debris and solid waste, where sewage used to flow and soil ph used to be acidic, restored itself into a beautiful piece of nature, creating full-fledged freshwater and brackish water ecosystems, developing its own forests, swamps, lakes, mudflats, and mangroves. The effort resulted in creating a picturesque ecosystem, which saw the return of over 100 species of birds and over 100 species of fish among many other amphibians, reptiles, and small mammals.

VIEWS

Part views of the restored Adayar Poonga complex

BIODIVERSITY RESTORATION

Although it is impossible to restore the Poonga, Creek and Estuary to its former pristine state, bio intervention can convert the poonga space into an ecologically significant and sustainable one, and also mitigate many of the problems in the larger creek and estuarine region. The process has to start with the phased eradication of *Prosopis juliflora*, implementation of a water management plan and the deepening of existing water-logged areas to create a stormwater reservoir and finally the introduction of appropriate floral biodiversity. As part of the restoration plan several faunal conservation and reintroduction strategies are planned. These include introduction of freshwater fish, brackish water fish restocking and creating nesting platforms for aquatic birds.

FEATURES	FLORA	FAUNA	REMARKS
<p>TROPICAL DRY EVERGREEN FOREST [TDEF]</p> <p>This forest type is found along the Coromandel coast from Vishakaptanam to Point Calimere.</p> <p>In Master Plan, TDEF planting is mostly concentrated around storm water retention pond, in the dry areas.</p>	<p><i>Aglaia elaeagnoidea</i> <i>Atlantia monophylla</i> <i>Crateva adansonii</i> <i>Capparis brevispina</i> <i>Bauhinia recemosa</i> <i>Salvadora persica</i> <i>Diospyros chloroxylon</i> <i>Benkara Malabarica</i> <i>Bauhinia recemosa</i> - fruits <i>Capparis brevispina</i> - fruit <i>Cassia fistula</i> - flower <i>Chloroxylon swietenia</i> - flowers</p>	<p>Blue-faced Malkoha Common Garden Lizard Drongo Hoopoe Shikra Sunbird Tiger Centipedes Treepie and Drongo</p>	<p>Like the plants, the animals of the TDEF too are adapted to the dissymmetric climatic regime of the Coromandel Coast. For example, their life cycles are in sync with the rainfall pattern.</p>
<p>HILLOCKS</p> <p>Within the geographic region granite hillocks occur on bedrocks of charnockite. The variation of species on these hillocks vary distinctly from the apron around their base. They are akin to the species of the Eastern Ghats.</p>	<p><i>Gyrocarpus americanus</i> <i>Sterculia foetida</i> <i>Butea monosperma</i> <i>Euphorbia antiqorum</i> - flowers</p>	<p>Brahminy skink Common Kestrel</p>	<p>Hillocks present a challenge to life forms with extreme micro-climatic conditions. Yet many species thrive here.</p>
<p>PONDS</p> <p>These are stagnant bodies of water. Along the Coromandel Coast such ponds are found near the paddy fields separated from the larger water systems. In the Zone 3 small fresh water ponds are proposed.</p>	<p><i>Eleocharis actunagula</i> <i>Elodia canadensis</i> <i>Marsilea quadrifolia</i> <i>Typha latifolia</i> <i>Vallisneria americana</i> <i>Ruellia</i> sp. <i>Pistia</i> <i>Lemna minor</i></p>	<p>Whitebreasted Kingfisher Terrapin Malabar Loach Pond Frog Egrets Black-crowned Night Heron Spotfin Barb Flying or Glass Barb</p>	<p>Life originated in water and most of the earth's life forms still live in it. In fact, water is the defining factor of all life on earth as all organisms are principally made up of water and none can live without it.</p>
<p>GRASSLANDS</p> <p>Along the Coromandel coast, grasslands are found interspersed with wetlands and tropical dry evergreen forests, forming a distinct ecotone. In the proposal, the grasslands add biodiversity to the wetlands and TDEF systems.</p>	<p><i>Aristida adscensionis</i> <i>Cymbopogon citriatus</i> <i>Cyperus rotundus</i> <i>Vetiveria zizanioides</i> <i>Atistida hystrix</i> <i>Cymbopogon citriatus</i> <i>Cynodon dactylon</i> <i>Saccharum spontaneum</i></p>	<p>Katydid Praying Mantis</p>	<p>Insects are the dominant life forms here and are preyed upon by secretive fissorial arthropods like scorpions and spiders.</p>
<p>REEDS & MARSHES</p> <p>Reeds and marshes are essential to maintain the ecological balance of the storm water retention area. They provide protective edge habitat supporting a large number of species.</p>	<p><i>Aponogeton natans</i> <i>Arystida</i> sp. <i>Scirpus grossus</i> <i>Typha angustata</i></p>		
<p>BRACKISH WATER LIFE</p>		<p>Plovers Mulletts Cormorants Mangrove Snapper</p>	<p>The waters of estuaries, too salty for normal freshwater animals and not salty enough for sea creatures have their own specially adapted inhabitants. There are innumerable species which depend on this dynamic system.</p>



INTEGRATING THE POONGA TO THE COASTAL WETLAND

Wetlands are the fundamental component of a coastal landscape. The marshlands, mudflats, mangroves and associated flora & fauna are its components. These are dynamic water systems, which encounter constant interaction of freshwater and saltwater supporting a variety of species in various stages of their life cycle. Adyar creek is one such system, which the master plan proposes to revive and restore into healthy example of a coastal wetland.

FEATURES

MANGROVES & ASSOCIATES



Mangroves and mangrove associates are considered to be globally endangered and hence their introduction to the park has high conservation value. Mangroves and mangrove associates that are tolerant to inundation and salt, are proposed to be planted in the eastern reaches of the park.

Aegiceros
Avicennia sp.
Rhizophora sp.
Thespesia populneoides
Sarcobolus carinatus
Suaeda maritima
Derris trifoliata
Salicornia sp.
Suaeda maritima



Arrival & Orientation Zone

A drop-off and entrance [from Greenways Road] allows vehicles to travel through the orientation zone that is connected by parking areas and bus-bays and to exit [onto the T.P. Scheme Road]. Considering the linear form of the park, another entry and drop-off point is from the South Canal Bank Road. Security and amenities are located at the entry and exit points.

An orientation centre informs and guides the visitors. It has bus bays and parking areas for bicycles, two-wheelers, four-wheelers, and the disabled, with winding roads to reduce the traffic speed. A walk winding through the orientation zone is designed with ecological information presented in the form of artistic paintings on locally available stone slabs, involving local artists. The walk culminates at the arrival court, which displays specimens of local geology, in the handcrafted paving and seat walls.

Interactive Education Zone

Though the park is primarily designed to merge with the proposed ecological zones, the foremost area is designed as small educational and cultural gardens. An amphitheater, with a capacity to house 250 people interspaced with trees, plants, and stone boulders is planned for environmental education programs and related activities. It is also used for staging regional art forms.

In design, it uses the slopes of the earth berm for the seating area with seats separated by grass sections, trees, and rock patches between them while the stage is a raised podium facing away from the central stormwater retention pond. Solar lighting and a controlled and distributed sound system are also part of the design. Located in a segregated place among the earth berms, is a children's garden, in which all the materials used for creating play equipment are recyclable or natural. An interactive children's learning space with various play facilities teaches them about the wonders in nature.

Ecological Livelihood Zone

An organic farm and vegetable garden in the park exhibit the food crops of the region while demonstrating examples of city farming and composting methods, and the nursery of indigenous species supplies plants for the park.



VIEWS

Part views of the restored Adayar Poonga complex with its Arrival Zone, Interactive-Education Zone, etc.

Environmental Education

A centre for excellence in environmental and sustainability education provides pathways for the local community to be actively involved in the restoration, offering certified vocational training and outreach programs through education, research, and awareness and advocacy. Long-term volunteer programs allow interested citizens and national and international visitors to participate in research, ecosystem restoration, and maintenance. Various programs are centred on the areas of Bioregional Studies, Watersheds, Land and Water, Biodiversity, Waste Recycling, Organic Agriculture, Water Ecosystem Exploration, and Energy Initiatives. The school programs are developed around a planned interface with the environment in the Poonga and an off-site program in the schools for classwork and de-briefing.



Environmental Education Outreach Program

Sustainable Schools Program to create an eco-friendly school with a smaller ecological footprint and thereby conserve our sparse resources;

Continuing Education Programs to cater to adults who wish to take up a formal study of the various study themes offered at the centre;

City Farming to recycle recyclable garbage to grow fruits and vegetables at home;

Bird watchers Study Group [Ornithology] to learn conservation values, with birds and the habitats that sustain them under topics of Principles of Conservation, Habitat Study, Preservation of Bio-diversity, and Saving Endangered Species of Birds; and,

Adyar Poonga Bus, a mobile education exhibition and interpretation unit to build the outreach program, which periodically visits schools and builds awareness on environmental themes.

EDUCATING THE YOUNG

A continuous Environmental Education Outreach Program is an integral part of the project



All drawings and images courtesy Idea Design



Review by Ayla Khan, Landscape Architect
| ayils@rediffmail.com

WHAT THE EYES DON'T SEE



SILENT SPRING
Author Rachel Carson
Published by Houghton Mifflin Harcourt, 1962
Size 140 x 210 mm, 400 Pages
Hardcover and Paperback
ISBN-10: 0-61-824906-0

Silent Spring [1962] is a milestone work that was able to bring the environmental concerns caused by the indiscriminate use of pesticides in agriculture to the world's eye. The movement thus generated was able to bring policy changes for the regulated use of these chemicals along with other environmental regulations. With the present development model based on indiscriminate use of natural resources, the lessons gained from this knowledge attains special significance.

●.....
S*ilent Spring*, is a landmark treatise of its time that addressed the raging chemical usage as insecticides, pesticides, and herbicides allowing indiscriminate use of DDT in the agricultural industry of United States. Post the release of the book, USA established the EPA [US Environmental Protection Agency] which amended laws to the use of pesticides in 1972. Eventually in the Stockholm Convention on Persistent Organic Pollutants, the use of DDT was banned for agricultural use although the chemical spraying of it in developing countries to repel mosquitoes continues.

The author of the book Rachel Carson [1907–1974], was a marine biologist and this work of hers was a testament to her also being a born ecologist. The book was beyond a publication as it was successful to voice out concerns of 'responsible citizens' who believe all living things should co-exist in harmony and the use of unsolicited human power should not be exercised over nature. The book is as relevant today since we need to understand that all we do to make our lives comfortable has implications far deeper than the immediate crisis we address.

“In nature, nothing exists alone.”



The book is engaging with its simple prose, a methodical layout of its chapters with intriguing titles. Every chapter builds its discussion around observations and analysis of field studies undertaken. Citations of great scientists and pioneering researches have been woven into the narrative with simple ease for the reader without having to flip to notes or bibliography. Hence the book has gained popularity amongst a wide range of readers from diverse disciplines.

The book draws attention to facts we are oblivious to, facts that were of concern not only six decades back but are alarming of greater concern today globally. The issue of chemical spraying that forms the main subject in the book alludes to repercussions that follow an “endless spiral”. It has been realized that as a result all living forms are impacted and not simply unwanted weeds, pests, and insects. Carson explains that primitive and traditional agricultural practices had lesser problems of pests and weeds. New practices introduced by man in the 19th century improved agricultural produce but also escalated problems forcing the failure of nature’s own built-in checks. Carson believed that man has powers to alter the environment around him but nature has its own pace to adjust to these alterations – she expresses,

“To adjust to these chemicals would require time on the scale that is nature’s; It would require not merely the years of a man’s life but the life of generations.”

The introductory chapter of the book is like an epilogue that paints the picture of a normal habitation that is eventually doomed by disaster and brings threat of disease and death. The chapters that follow describe the reasons for the disaster. The sequence of the narrative explains how deep the ecological cycle runs and proves Carson’s statement that, “every meal we eat carries its load of chlorinated hydrocarbons”. It sends a chill down our spine while she explains the chemistry behind the modern insecticides that belong to the two major groups – ‘chlorinated hydrocarbons’ and ‘organic phosphorus’ compounds. Their indiscriminate use allows the sinister act of their passage from one organism to the other through food chains. These toxic compounds get stored in the body fat cumulatively and fat deposits unlock when the body is under chronic stress and thus toxic chemicals are released too.

The book from the fourth chapter onward explains how each physical element that contributes to the creation of the landscape character of our habitats is affected by the modern synthetic chemicals used for their treatment. Firstly, water the greatest essential natural resource is abused the most. In India, city water bodies are polluted with the fallout from industries, hospitals, domestic waste, and religious practices. The chemical spray adds toxicity to these water bodies by stormwater runoff and ground percolation leading to contamination of groundwater. Water supports various forms of life and the poison is passed through the cyclic food chain, where large carnivores eat small carnivores, that survive on herbivores and these herbivores survive on aquatic plants that have absorbed fatal compounds from the water. A research conducted by the Centre for Science and Environment, New Delhi in 2004 investigated samples from bottling plants of the Coca-Cola Company and PepsiCo Inc. and found them to contain toxic chemicals like DDT beyond the permissible limits. These plants were drawing on a daily average of about 1.5 million liters of water from the ground. It is another aspect of concern that it led to the depletion of groundwater table and as a result poor yield of the crop in affected areas. It is a cause for concern, how safe are fast-moving consumer goods. The relentless devastation of natural water bodies does not end here. For commercial purposes, chemicals are directly applied to destroy indigenous fishes and organisms to be able to introduce hatchery fishes. Recently, personal care products and cleaning agents have been introduced with a new ingredient – ‘microbeads’, which are small plastic particles less than 5 mm and go undetected by the water treatment plants. Once they reach the natural water bodies they have damaging effects on aquatic life as they have the ability to absorb toxins and transfer them up the marine food chain.

“Most of us walk unseeing through the world, unaware alike of its beauties, its wonders, and the strange and sometimes terrible intensity of the lives that are being lived about us.”

The second element is soil which unlike water depends on forms of life and it is the activities of these organisms that make soil potentially support the earth’s green mantle. Carson distinctly explains every component in the soil is vital like the leaf debris is macerated, digested, and released back into the soil as decompost by minute organisms. Various activities of creatures inhabiting the soil help to aerate it, keep it well-drained, and aid the penetration of roots and nitrogen fixation. But the practice to sanitize our landscapes by using herbicides to get rid of unwanted undergrowth is disturbing this built-in machinery. Herbicides are capable of disrupting the process of nitrification by impacting the relation of soil bacteria and the plant roots. Also, the application of insecticides to productive fields allows chemical residue to remain in the soil for many years which is consequently absorbed by the crop plantation. It should be remembered that products for lawn treatment and garden plants are laced with ‘chlorinated hydrocarbons’ and they should be avoided or used sparingly or rather let a variety of plant species co-habit.

“Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts. There is something infinitely healing in the repeated refrains of nature – the assurance that dawn comes after night, and spring after winter.”

The third component affected is the earth's green mantle or vegetation, an important part of the web of life, and the three storeys as we study in ecology support life and accomplish vital tasks. Carson supports her statement through principal researches that the destruction of unwanted plant species leads to the destruction of habitat and also the availability of food for wildlife thus damaging the ecological web. As we alter the plants around us and cultivate a new landscape we may invite disaster. Carson cites the case of how American cities lined their roads with the *Ulmus americana* [American elm] for its graceful form and tolerance to urban conditions. In an effort to create uniformity in the street landscape, an over plantation drive of the same cultivar was carried out. As a result of little genetic diversity, it has led to an unhealthy monoculture which eventually produced species with a low resistance to disease.

Carson observes that in the row of innovation as 'systemic insecticides' and 'animal systemics' only the 'human systemic' is awaited that will allow us to swallow a pill and make our blood lethal to the mosquitoes. In contemporary practice pest control services have been popular, people wanting to get rid of cockroaches and lizards in their house find it convenient to use such services without knowing the fallouts. She elaborates that naïvely we are ingesting these chemicals in very small quantities that internally form deposits along with fatty tissues. In humans these chemicals can have very severe impacts on physiological processes like the suppression of the adrenal gland. They can impede reflexes carried by the nervous system and prove lethal for the liver. Hence it is imperative that we wake up to the consequences before it is too late. The ongoing COVID-19 pandemic has given us the opportunity to reflect, introspect, and realize that we can make do with less. The

lockdown enabled us to make a positive contribution to the environment by releasing fewer pollutants. It allowed homecoming to many birds and animals whose territories we have not only encroached but also defaced by developing spaces for ourselves without consideration for co-existence.

On several seams Carson lays emphasis that chemical spraying which is being paid through the tax payers money is not selective ie a single species is not gotten rid of but many other animals, birds, and insects are harmed of which some are not even able to re-establish themselves and species that are able to revive are impacted by weekend muscular co-ordination and reproductive systems. The book serves to bring awareness and provides an excellent understanding of ecology with ease as it explains the natural cyclic process of the environment or the "web of life". The book bridges a lot of scientific knowledge through a commonsensical way for easy comprehension. It also elucidates ways to manage the crisis through alternative and less invasive methods some of which could turn out to human's advantage.....*it is for him to see.*



Quotes by Rachel Carson, "Silent Spring"

A dirt path lined with trees, covered in yellow petals, with a person in the distance.

**DESIGN,
CONSERVATION
AND PLANNING**



RE-IMAGINING ROLES



PHOTO CREDIT | Deepak Chauhan

Samir Mathur set up his landscape practice, Integral Designs International Studio Pvt. Ltd. in 1994. Presently, along with managing it, Samir also works as a member of Delhi Urban Arts Commission [DUAC] and is involved in various positions to guide urban policies regarding aspects of landscape architecture and environment, both at State and National levels. In the feature, Samir reflects on his journey while sharing views about his various roles, practice and other issues.

Education

My keen interest in technical drawings in the last two years of high school led me to enroll in the B.Arch. program of at School of Planning and Architecture, New Delhi. During the course, in the first summer, I worked as part of a team that listed the monuments of Delhi with Anuradha Chaturvedi and Nalini Thakur, who were amazing guides. In my second summer, I interned with Ramu Katakam and Pradeep Sachdeva and with that internship money, I backpacked to Kashmir, Leh and Ladakh including a pre-season Amarnath yatra. In the third summer, I worked on the listing of monuments, this time in Nagaur, a small municipality in Rajasthan. By the time I was twenty-one, I had traversed the country many times and was deeply inspired by experiences of the interplay of nature and development with an awareness of architectural, cultural, landscape and historical layers of understanding of our diverse country. A year of working with Jasbir and Rosemary Sachdev pointed me in the direction of further studies in landscape architecture.

In 1991, I joined the postgraduate program in landscape architecture at Amherst, USA. The faculty included eminent names such as Julius Fabos, Nick Dines, John Mullen and Hal Moser. The program promoted a diverse lens to explore the subject - sciences relating to land-use planning and scenic values as well as art, literature and poetry in reference to the natural landscape character. I got to work on the Master Plan for a portion of Central Park, New York for the Central Park Conservancy.

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UTTORAYON TOWNSHIP

SILIGURI

2006-2009

The image of the project encapsulates the ideas of egalitarianism. The landscape aims to create a sense of a liveable, pedestrian-friendly and safe walking environment.

The circulation network becomes crucial for the conceptualisation of the entire township. Here, the pedestrian walkways were set apart carefully from the motorised roads, and the structure was planned such that a person walking out of their cluster immediately reaches one of the main pedestrian spines without crossing traffic.

ARCHITECT: Morphogenesis

Back home

Back in India in late 1993, I collaborated on professional projects with Mohammed Shaheer for the next eight years. I worked on urban landscape projects around the country. This led to a practical understanding of the complexities of professional practice dealing with diverse contexts. My interest was overwhelmingly in academia and research. Therefore, in 2000, I joined as Assistant Professor at the Department of Landscape Architecture at SPA, New Delhi. In the same year, the idea of ISOLA was thought of at a joint studio program at Pune, attended by Prabhakar B. Bhagwat, Mohammad Shaheer, Jayant Dharap, Ravi & Varsha Gavandi, Aniket Bhagwat and Prasanna Desai.

With the idea of exploring new areas, I resigned from full time teaching in 2004. In subsequent years, I have remained associated with academics at various schools and the department at SPA as an external jury member and as a visiting faculty.

Learnings

My personal learning over the past few decades has been in the five domains:

- *In Practice, through professional work at Integral Designs, some of the possibilities of addressing these challenges.*

I started professional practice in 1994. When, in 1998, I got my first large commission, of 'The Ananda' at Narendranagar, we had a team of two young architects. Over the years, many talented architects and landscape architects have joined our team and the practice has expanded. We have learned to be disciplined and are intensely focused. We have completed many projects belonging to a diverse set of typologies in national and international contexts. For us, small projects are key laboratories for carrying out design research. On urban projects, in many cases working with international consultants, there is a lot of learning in the areas of design, documentation and management skills, and we push ourselves to be better each day.

Our initial handling of any large site is through its water management networks. Functional and sustainable responses follow, but every part is held together by a spatial narrative that is informed by a unique identity. The studio draws from a deep understanding of the unsaid design brief and aspirations, international best practices, simple construction methods with deference to local materials and social requirements. There is a conscious attempt not to have an overt 'style'. We aim for freshness in our design responses, and a sense of timelessness, robust ecological underpinnings and being innovative.

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ANANDA IN THE HIMALAYAS

NARENDRANAGAR, RISHIKESH
1998–2000

The amphitheater is located in the core of the site, within a natural depression and is a unique landscape element that blends with the topography with its planting inducing a sense of tranquility. It uses natural rough materials that are contextually relevant, like dressed boulders from the site to induce a sense of balance with the natural systems. There was also a water stream that demarcates the stage from the seating area. Altogether, it forms the visual core of this complex and offers a view of the Himalayas.

ARCHITECT: Gary Galore +
Chaddha Siembeda



- *In Teaching, as a full time and later as a visiting faculty to encourage, inspire and train young minds about the range of tools that landscape architecture bestows.*

Starting as a teaching assistant in 1991, I have emulated two sets of educators as my role models. During my post-graduation at the University of Amherst, John Mullen, Nick Dines and Julius Fabos, all eminent professionals, brought erudition and intensity to their classrooms. The students learned in a culture of equality between them and the faculty. Academic growth meant understanding norms and taking them forward based upon theoretical authoritative works.

In India, there exists a robust set of programs of education that are comparable with the best in the world. During our time teaching together at SPA until 2004, Mohammed Shaheer challenged students to extend their intellectual boundaries to generate coherent planning and design thought. His relationship with students' was of a master patron.



Over a period, it became apparent that there were three teaching styles: the static repetitive, often disinterested model; the patronizing dominant, student ownership style; and the egalitarian and vision articulation style. In my view, an unbiased and equal relationship with the students, while helping them find their voices is the best way to go forward.

From 2004 to 2014, I taught Elective courses at the Department of Architecture at SPA Delhi that were based upon a teaching module I had attended at Amherst [informally called 'Hiking with Hal'], where students of the final year studied landscape ecology and design on field in different parts of the country. It was my most rewarding assignment. It initiated a larger awareness of the importance of landscape architecture to budding architects.

THE ROSEATE

NEW DELHI
2008–2013

An art-based approach that generates a sense of tranquility and a unique identity to this landscape. The scheme has been sustainably designed around the existing trees and landforms which has ensued in creating an oasis in an urban context, for a dynamic user experience.

MASTER PLANNING: Lek Bunnang
IMAGE CREDIT: Pankaj Rakesh



**THE KHYBER
MOUNTAIN RESORT & SPA**

GULMARG
2007–2013

The site is nestled in the heart of Gulmarg within a forest clearing.

The idea was to build a landscape character that would incorporate the traditional vision of Kashmir within the modern context. The technique of maximizing natural systems employed in designing this project ensures that it is sustainable in nature. The water is not held but is led down the slopes to join a river.

ARCHITECT: *Anil Sharma and Associates*

- *In Public Speaking, about landscape and engagement with social, research and specialist groups articulating a landscape environmental holistic vision.*

The lack of knowledge about landscapes in general and the public realm, in particular, is limited. I have been engaging with political decision-makers, industry groups, international funding agencies, heritage and conservation pressure groups on topics as diverse as Public Art, Urban Greenways, and Social implications of design, construction technologies, and Botanical garden best practices and even training of gardeners. Rather than enumerating problems, I aim for the listener to understand the underlying cause and effect scenarios required to create a comprehensive vision for the issue under consideration.



- *In Framing Policy, Framing Codes and guidelines such as the National Building Code that mandate superior environments for all.*

In 2015-16, I was involved in reviewing the National Building Code 2016 [NBC] for a holistic and contemporary approach to landscape. I was also involved in the framing of the Unified Building Bye-laws [UBBL] for Delhi 2016. Environmental aspects and Sustainable landscape related clauses were added to the document. I have helped framed a large number of guidelines relating to public art, street design, park design, educational institutions parking norms and housing development norms seeking to improve the urban landscape at the DUAC.

UTTORAYON TOWNSHIP

SILIGURI
2006–2009

The streetscape is done strategically to replicate the natural water flow system on site through the street network. The core site planning strategy aims to place the buildings and other usable areas within a continuous green network while conserving the natural system of swales. Located on a plateau, the site is divided into seven zones and is designed as a grid with a main central axis and different social and commercial infrastructure facilities spread across the site. This model of sustainable urban development has ensured that there is no negative impact on the larger watershed system.

ARCHITECT: *Morphogenesis*



BENNETT UNIVERSITY

GREATER NOIDA
2015 ONWARDS

A crucial aspect of campus design is creating usable yet unique spaces. The aim in terms of the feel of the place is to create a contemporary palette of materials that are aesthetic yet durable. Efficiently planned and user-friendly spaces are the norm.

ARCHITECT: RSP India

- *In Monitoring Implementation, to ensure that best practices are followed at the execution stage through checks.*

From 2013-16, as part of the Heritage Conservation Committee [HCC], I along with others formulated recommendations on Incentives for Heritage Preservation and Norms for identifying architectural, cultural and environmental assets of the city. For the past five years, as a member of the Delhi Urban Art Commission [DUAC], I am involved with the entire lifecycle of guiding conceptualisation to monitoring the implementation of public projects. This includes the review of the redevelopment of Chandni Chowk, and various proposals for the Central Vista.

Thoughts

Public Realm

Urban development in India is not on par with our aspirations. Although the Masterplans articulate the big picture of cities in regard to open space structures with the actual implementation strategies phased over a large time span. There is no documentation on the urban scale to mark the continuity of vision of open spaces across the time. No urban open space maintenance guidelines are ever framed or documented and very few rating systems are available to check the upkeep of open spaces, such as a well-documented facility maintenance index. The qualitative aspects of the planning and design of open spaces are not articulated in most statutory planning documents. The understanding of the code formation process is lacking, and the involvement of professionals is peripheral to it. The writings of Ranjit Sabhiki, Sudhir Vohra, Gautam Bhatia and Pradeep Kishen seem voices in the wilderness.

Egalitarian, democratic ideals, ecological robustness and meaningful spatial form and aesthetic are integral to the public realm. An articulation of a dynamic holistic vision for public realm landscapes is essential. The public realm can become more effective by designing streets and plazas, parks and greenways, river edges and conserving water conservation systems, heritage precincts, nature reserves and the rural landscapes. Landscape practice for the public realm needs to be holistic, subtle, nuanced and artistic. The key is to have a sense of uniqueness and identity for each expression of landscape design. I believe that landscape architects can lead by example by debunking conventional thinking.

Nature Conservation

The 'vana' or forests have played a major role in defining the cultural and social landscape of India. Over the past two hundred years, environmentalists have demonstrated against large-scale deforestation and have lobbied for nature conservation and transformative natural open spaces. I am a strong

proponent of creating a network of greenways in cities and rural areas. Green corridors along the roads and railways, urban greens and forestlands, -natural drainage systems, surrounding low lying, nearby rivers can be connected to form ecological networks. It has been demonstrated in multiple contexts around the country through our work.

Intent versus Imagery

Another issue observed in the contemporary works is the 'pretty picture' format, albeit with a gesture towards a functional and sustainable design approach, which is the order of the day. There is a big thrust on good-looking landscapes. Web-based applications adopt a shallow beauty over the depth of meanings and moods in the landscape. Sketches of eminent designers like Le Corbusier, Joseph Allen Stein, Geoffrey Bawa, Bill Bensley and Lek Bunnang are sources of learning of responses to challenges. Closer home, Mohammed Shaheer's drawings are evocative pieces of art in themselves, and capture the essence of the forms and traditions of the context. I think the time has come to reintroduce, without trivializing the original, the local styles, folk art or miniature paintings in landscape design work.

Meanings and Moods

'Human landscapes and the needs and achievements they embody were being confused with natural landscapes and their processes'

— Laurie Olin, 1988

Landscapes respond to context, culture, social backgrounds and have other symbolic and metaphorical underpinnings. Meanings in the landscape depictions are layered. There is often an underlying resonance with cultural and social thought. While most landscape design theory focuses on meaning, it seems to be rather silent on the changeable aspects of landscape, of what may be termed as moods.

MOTI JHEEL

KANPUR

2015–2016

A public park located at the heart of the city of Kanpur. lake rejuvenation along with landscape amenities around it makes it a robust public space for the city dwellers. The park is designed with an array of unique activities and spaces envisioned for all age groups and users rendering a refreshing identity to the space.



Based on writings in the field, three questions come to mind. Can landscape architecture be framed as an ‘art’, untrammled by the rigours of practicality; or should it be viewed as a by-product of the ‘ecological sciences’; or is it a mere replication of ‘nature’? Today, in the public realm, and in landscape ideologies, the character of design tends more towards a neutral flavour. It seems conventionally desirable that landscape design appear ageless and not belonging to any time. Therefore, it seems that the viable landscape graphic today is fuzzy and bereft of context.

Then how does one impart character, content, specificity? How does one fight ‘rootlessness’ of the design form? Visual outrageousness seems to be a kind of answer used by many practitioners. Of course, ideals of sustainability need to be the bedrock of any landscape thought and depiction. It is therefore contradictory to be outrageous and sustainable in one coherent thought.

Future

There exists a long continuum of a history of designed landscapes in India. The common thread is one of assimilation, of ideas, of mythology, of social structure and cultural formation coalescing together over time. New landscape ideas from within have been intertwined with those that have come from outside, and this has resulted in a unique framework for contemporary landscape development. On reflection, it does seem that the best is yet to come for us, individually and collectively. Public realm landscapes, as well as other planned projects in India, can only get better with an evolved understanding of the landscape theory, more public awareness, more academic knowledge, and a finally better understanding of a larger scale of planning thought.



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Geeta Wahi Dua, Landscape Architect
| lajournalindia@gmail.com

VIEW FROM WITHIN

MAKING A MARK

In the present age of scale and pace, unique places and landmarks are fast losing way to standard and replicable models. In the fast-moving world, the environment is becoming more repetitive and formal. An overall banal urban character is emerging, creating a kind of urban passivity in the minds. More and more designed landscapes, especially those built in the last few decades, are looking the same.

In India, landscape architecture has mostly been practiced within a strong context of the built forms. Except for few examples of public parks and cultural spaces like memorials, there has always been a dependency on built form for the landscape designers, whether it is a residence, a school, a factory, an institution, or more recent real estate works of hospitality and gated communities. This dependency gives opportunities as well as set limitations to the practice. On one hand, it offers a stage to the professional for the performance, at the same time, it becomes difficult to adopt a different design language that is distinct from that of architecture. In most cases, intending to create a sense of seamless space, the landscape design becomes an extension of built vocabulary. In the case of restoration of historic gardens and development of historic precincts, due to the strong cultural character of the site, landscape designs can bring out a sense of uniqueness. But when it comes to contemporary vocabularies, we are clueless. The signs are very much there if we look at the examples of works being executed in the last few decades [which has been the period of boom for the profession]. The outdoor spaces around buildings of many of the IT campuses, built with large metal panels, glass claddings and stone, and even many hotels, are designed with a standard template of self-conscious designs, with rigid and formal space organizations, paving materials in semblance with the colors and textures used, water features and use of exotic plants for natural aesthetics, creating a type of formal landscapes or rather “architectural landscapes”. Following these buildings, the landscapes promote the idea of brand and uniqueness, while becoming anonymous and faceless themselves.



*Garden of native plants in the Visitors Centre,
Rao Jodha Desert Rock Park, Jodhpur*
PHOTO CREDIT: Pradip Krishen

As Francis Bacon, noted philosopher observes in another context that “virtues of either may correct defects of both.” In the coming times, we may hope that both disciplines recover and evolve.

How we can carve out the distinct self of our landscapes located in such complex contexts?

Although the education system of our country offers a unique opportunity where landscape architects can practice both the disciplines of architecture and landscape architecture, there are very few practices, which are doing that. Most are practicing only landscape architecture. Of course, where complex projects are concerned, they are part of multi-disciplinary teams for their landscape expertise. It may be worth exploring if they would like to offer their design expertise for architecture works as well. It may help in creating seamless places with a strong sense of identity.

Under a variety of themes like the relationship with other art forms; Art and Culture; Philosophy and Science; Vernacular and Modern; Local and Global and the idea of Urban Forests among others, the matrix of qualitative connections and experiences in a landscape design may be manifested in a typical vocabulary. An anchoring idea or a theme gives the core framework around which the design is envisioned, a poetic act that makes any design process different from an engineering exercise.

The native flora of a region offers distinctive characters to a landscape, marking its geographical identity and ecological moorings. It nestles many life forms – bees, butterflies, birds – which creates a healthy micro-system. The use of native vegetation in landscape designs is yet to gain ground on a larger scale in Indian landscape designs. It is an important area and needs further work – availability of region-wise accessible knowledge base of native plants that have strong aesthetic and environmental value and capability to survive in urban environments, the establishment of their nurseries, and enlightening the clients and colleagues about the value of using them are few of the works.

It is important to connect with people and make them see a poetic perspective towards Nature, curated by a designer and something new beyond their familiar mundane bubble. So, Storytelling. The entire process of approaching a project may be shared as an interesting personal narrative – experiences of engaging with the site, with a client, with brief, with colleagues, with construction workers, and with industry. Showcasing it at diverse forums, especially among students and the common man will further disseminate the sense of uniqueness of the project and the expertise.

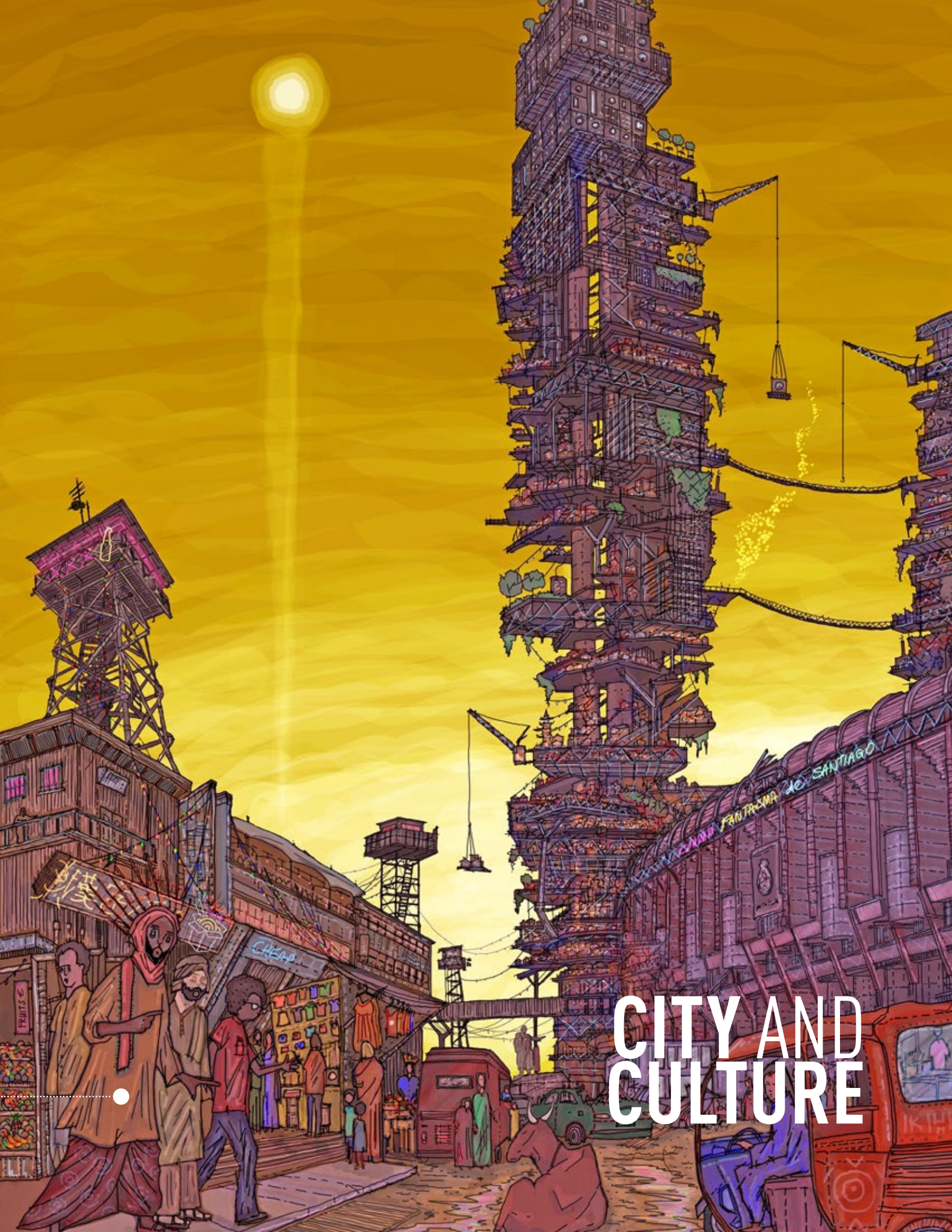
Distinctness makes every intellectual engagement rich. Such landscapes become the identity markers, not of the place, but of the time, local culture, and region. The landscape profession in India has a voluminous body of work across the country of which it should be proud of. It is in a strategic position where it is now being seen and heard by a larger population as compared to earlier times. It is the right time to ponder on some of these crucial issues to find a new direction that broadens, deepens, strengthens, and sharpens its collective gaze for the exciting future.



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EXTERIOR CITY
A dystopian vision

SKETCH CREDIT: Benjamin Connell, BDP



CITY AND CULTURE

DOING MORE WITH LESS

IN CONVERSATION WITH **MARC TREIB**



PHOTO CREDIT | Alyssa Schwann

Marc Treib is Professor of Architecture Emeritus at the University of California, Berkeley's College of Environmental Design. For four decades he taught design studios, a lecture course on Japanese gardens and architecture, and seminars on specialized topics including landscape architecture, criticism, art, and modern Scandinavian architecture. He has authored, edited, or co-authored numerous books including *Garrett Eckbo: Modern Landscapes for Living* [with Dorothee Imbert; University of California Press, 1997] and *A Guide to the Gardens of Kyoto* [with Ron Herman, Third Edition, ORO Editions, 2019] that have explored the relationship of nature and culture, in Western and Asian cultures, and the relationship of architecture to landscape.

Western versus Oriental | Attitudes towards Nature

How do you compare various the landscape cultures of the Western and Asian countries you have studied and researched? Do you see distinct approaches, for example, between the Western, related to scientific and objective way of looking at nature while the Asian, associated more with a philosophical and subjective approach?

This is a very complicated question and several books have been written on the subject, but not by me. There are no simple answers to that question, and it is probably best to avoid proposing dichotomies such as formal vs. informal; rational vs. romantic; or philosophical vs. scientific, or even West vs. East. Approaches and styles themselves are dynamic and evolve with time, at times rapidly, due to forces within the culture or from outside its borders. In addition, I have found that quite often more than one manner has existed within a culture during the same era. For example, we tend to think that the eighteenth-century landscape garden was the country's true representative type, but formal garden traditions existed in England before that time, and formal gardens have been made in the years that followed.

All gardens, West and East, require both philosophy and science: philosophy to direct its conception, science to maintain its existence. Perhaps it is in the balance between the philosophy and science that characterizes the gardens made by different cultures.

In addition, manners rarely remain “pure”; they get mixed and they form hybrids. In the United States, for example, we tend to think of the “Japanese garden” as those made with materials restricted to stone and gravel, but there have always been other landscape types more heavily planted and more physically immersive. In the twentieth century, Japanese landscape designers also melded historical traditions with aesthetic ideas and materials imported from the West. So although garden making within a country or cultural sphere may follow a series of norms, and may share a certain sensibility, there will always be variations, inventions, and aberrations that tweak tradition. All gardens, West and East, require both philosophy and science: philosophy to direct its conception, science to maintain its existence. Perhaps it is in the balance between the philosophy and science that characterizes the gardens made by different cultures.

More to the point, I think, is the relation between landscape architecture scientifically based and landscapes more focused on aesthetic and/or sensual impact. Landscape architects today tend to again concentrate on solving problems, whether ecological or social; aesthetic concerns have frequently been relegated to the status of a by product. On the other hand, a primary concern for appearance risks a frivolous use of resources, whether material or human, and a lack of substance. Given the troublesome state of the planet and the threats upon our very existence, it is understandable that we have turned to science for direction. The curricula of schools I have visited in the last decades have been consumed with solving environmental issues—as they should—but I believe, they should not do so to the exclusion of landscape design as a spatial and botanical art. Unless the landscape architect can contribute to the humane side of existence, perhaps to even add beauty [if I may use that word], we are restricted to being a form of environmental plumbers. I suspect that the engineer and the hydrologist know more about their respective fields than the landscape architect ever will, having acquired knowledge garnered through specialized study and experience. If so, what does the landscape architect contribute to the design? We do need plumbers, of course, but we also need artists and poets. The Swiss landscape architect Georges Descombes once quoted the French philosopher Vladimir Jankélévitch to explain his personal values: “One can live without philosophy, without music, without theater, without painting, without cinema, but not so well.” We might relate that thought to the making of landscapes.

But to return to your question. I have always believed that the more we know about every subject the better designers we will be, a motto I adopted for my beginning design studios. I studied, and for decades taught, only architecture—not landscape architecture—and any knowledge of landscape architecture I may today have is self-acquired. My awareness and possible understanding derives from reading, conversation, visits, and thinking—but I will readily admit that no matter my later experience, my outlook and values are to a large degree still rooted in architecture, with an interest in materials, function, form, and space. That is to say, that although I am interested in the characters and plot of the story, I am ultimately interested in the artifact, the story as a whole—in landscape, what now exists before and around me—because it is the landscape that people ultimately experience. Because I know so little about the subject, I am also very interested in plants and their use. I have wondered about the place of planting design in the profession and why so little has been said about it in recent years. A few years ago I convened a symposium on the subject, its prime instigation being my having found so little teaching about planting design in landscape architecture schools [although planting design seems to be alive and well in garden design, especially in Great Britain]. The book that has developed from the event, *The Aesthetics of Contemporary Planting Design*, will be published early next year by ORO Editions.

My own architectural education was rooted in modernism and I maintain many of the values to which I was first exposed to as an undergraduate. I still favor simplicity and reduction; I favor doing more with less, relying more on coloring perception than on what is perceived. I am interested in how we can effectively use natural phenomena like light, shadow, color, wind, and rain to effect complex experience—rather than trying to build the complexity into the form. I have learned much from Japan, in fact my interest in landscape architecture stems from my first visit there in 1971, travel that lasted some seven months. As I visited the great sites, I found that rather than looking at buildings I was more often looking through them— and in front and behind the temples and the houses were some patches of contrived nature referred to as a garden. In their reduction they looked modern to me, and both their forms and my experience of them sparked an interest that has endured for half a century. Readings about the stroll gardens of Japan led me to discover parallels with the English landscape garden, whose philosophical basis, as well as its forms, constituted a political reaction to the French formal garden, or so it is said. We learn from history, not to copy its forms, but to understand the past's address of problems, situations, issues, and materials similar to those we have today—and how they might suggest solutions for our own untoward situation or the design task at hand.

We learn from history, not to copy its forms, but to understand the past's address of problems, situations, issues, and materials similar to those we have today—and how they might suggest solutions for our own untoward situation or the design task at hand.

An excerpt from one of your articles reads,
“A potential vehicle for achieving both ethical and aesthetically engaging landscapes is the Japanese mixing of formalities—shin-gyo-so [formal, semi formal, informal]—not by simple juxtaposition, but instead by entwining and embedding one within the other. Having high morals is laudable yet insufficient; one must know a language in order to write poetry.”

Can you please elaborate on the observation?

The intermixture of orders, in Japanese termed *shin-gyo-so*, is the richest aesthetic idea I have ever encountered. The concept of mixed formalities had its origins in calligraphy and referred to the varied styles or forms of writing. *Shin* refers to the formal, the upright, the true, and described the clear, block writing used for official documents. *So*—which is written with the ideogram for grass—connotes the informal cursive hand that is more expressive, poetic, and free. *Gyo* is semi-formal, the mode in between, and is the least defined. From calligraphy the idea spread to other art forms, among them flower arrangement—*ikebana* in Japanese—which translates as something like “living flowers.” The flower artist does not present flowers as they grow in nature, but instead through an aesthetic translation. It is ironic that the presentation of flowers in *ikebana* often looks so “unnatural,” at least to the Western eye. Leaves may be cut, stems bent, and plant materials interwoven in ways they never appear in nature. The various schools of *ikebana* have their individual prescriptions, but *shin-gyo-so*, the use intermixed formalities, appears in all, although to varying degrees.

And it has been used at large scale as well. The axial arrangement of gates and prayer halls in Japanese Buddhist monasteries was planned as the *shin* zone of the complex. The temple’s numerous subtemples constituted the semi-formal elements of the planning, while other more natural areas represented the informal. Within the subtemple, the entry courtyard was usually a semi-formal zone and the dry garden behind the temple building the informal. Within its entry courtyard may be a formal path, itself might be comprised of formal, semi-formal, or formal stones or shrubs. And so on. We can see then that unlike in the West, where formal and informal zones are usually juxtaposed—like those of the great Edwardian estates in England with their formal garden set adjacent to the house—in Japan these formalities are intermixed and embedded one within the other. The net result is an aesthetic of incredible richness.

***Shin* refers to the formal, the upright, the true, and described the clear, block writing used for official documents. *So*—which is written with the ideogram for grass—connotes the informal cursive hand that is more expressive, poetic, and free. *Gyo* is semi-formal, the mode in between, and is the least defined.**



Your book, *Austere Gardens: Thoughts on Landscape, Restraint, & Attending* [ORO Editions, 2016], brings to the forefront a similar way of looking at the “garden”. It promotes an alternative: landscapes of reduction and compression and of modesty and restraint. This theme again is reflected in your other work, *The Landscapes of Georges Descombes: Doing Almost Nothing* [ORO Editions, 2018], Swiss architect, landscape architect, and founder of program of landscape architecture in Geneva. Can you please elaborate upon the theme?

For many years I have appreciated the work of Georges Descombes for its basic intelligence and its philosophy of minimal intervention. It is said—it must be admitted with some exaggeration—that the natural world is governed by its reliance on minimal resources, what has been termed “an economy of means”; this approach is shared, for example, by vernacular architecture that has been shaped over centuries to achieve greater accord with environmental forces and social mores. In his landscape projects Descombes pursues the core of the issues and thereafter uses restrained interventions to yield a maximal effects. Having been educated and having worked as an architect, however, he is committed to giving significant—and beautiful—forms to his solutions.

ABOVE LEFT |

PLAY OF LIGHT

Simple forms enriched by changes of light through the day and the seasons. Built-in attic storage. Shaker village, Pleasant Hill, Kentucky. Nineteenth century.

ABOVE RIGHT |

SHRUBS AS SHIN FORMS

Shisen-do, Kyoto, Japan, 1630s

PHOTO CREDIT: Marc Treib



CENTER |

STEPPING STONES

Shin elements overlaid in *shin* and *so* arrangement. Katsura Detached Villa, Kyoto, Japan, Seventeenth century.

RIGHT |

STONE WALK

An overall *shin* walkway comprised of *shin*, *gyo* and *so* elements. Katsura Detached Villa, Kyoto, Japan. Seventeenth century.

PHOTO CREDIT: Marc Treib

Perhaps the best example of his approach is the renaturalization of the River Aire outside Geneva, a project which has continued for well over a decade, and which continues today. The most engaging intervention in this massive project was the excavation and shaping of earthen lozenges from the bed of the river. Although they appear as a primarily aesthetic intervention—like land art—they were actually constructed to retard the velocity of water flow to allow plants to take root and to eventually stabilize the topography of the river and its bed. As planned, after several spring floods they have eroded and have almost completely disappeared. In all, Descombes's work represents my personal landscape ideal, landscape designs that rely on intelligence and study to propose solutions shaped into beautiful and well-constructed form.

FOLLOWING PAGE |

RIVER AIRE

MARCH 2014 AND MARCH 2015

Velocity reducing riverbed lozenges

SUPERPOSITIONS [Georges Descombes, ADR, and others.

Renaturalization of the River Aire, Geneva, Switzerland.

2004 and continuing]

PHOTO CREDIT: *SUPERPOSITIONS*





ABOVE LEFT |

**ARCHITECTURE AS
MERGER WITH LANDSCAPE**

Frank Lloyd Wright, *Taliesin West*,
Paradise Valley, Arizona, c.1940+

ABOVE RIGHT |

**ARCHITECTURE AS
CONTRAST WITH LANDSCAPE**

Ludwig Mies van der Rohe,
Farnsworth House, Plano, Illinois, 1951

PHOTO CREDIT: Marc Treib

Legacy of Landscape in Modernism

Another book, *Landscapes of Modern Architecture: Wright, Mies, Neutra, Aalto, Barragán* [Yale University Press, 2016] explores diverse ways in which these five prominent modern-period architects have addressed the idea of “site” in their works. Please share their distinct attitudes towards nature – aesthetical, in the realm of nature conservation and philosophical. How do you look at their contribution [each of them] in context of the present world?

While teaching architecture at Berkeley and other schools, one of my primary concerns was the relation of building to landscape, or more broadly, building to site. While as a student I thought that a complete merger with the land qualified the highest form of architecture—as in the desert works of Frank Lloyd Wright—over time I was forced to broaden my view. For one, how do you “merge” with an urban site? In time I came to accept that even a building seemingly in complete opposition to the character of the site could also be positive, even if resonating with the landscape in a different way. In *Landscapes of Modern Architecture* I interrogated the gradient of relationships of building to site—from merger to opposition—as represented by the work of Wright, Mies van der Rohe, Richard Neutra, Alvar Aalto and Luis Barragán. [There could have been other architects, of course, but these were architects whose work I have visited and appreciate.] Each provides a beneficial lesson for today’s architectural and landscape architectural practices.

For various reasons, I stopped teaching full-time at Berkeley about ten years ago. For one, today's design practice seems to be polarized between those so focused on sustainability and resilience that they have little time, or possibly little interest, in aesthetics and the substance of architecture as human experience. The second, and most published group, centers on fantasy and form making, using digital technology to create architectural images from the exterior and from an elevated eye level that often result in buildings with uninteresting interior spaces and that, at their worst, are also unfunctional. My own values center on a concern for interior and exterior spaces driven by responsive and functional plans. For buildings, the form may not exactly result from their interior spaces, but it is suggested or generated by them. For me, space remains more potent than form, whether in landscape design or in architecture. As I suggested in *Austere Gardens*, I am interested in simple forms that engender complex experience, rather than complex forms that yield only simple experience.

New Age

Your book, *Drawing/Thinking: Confronting an Electronic Age* [Routledge, 2008], gains a special significance in present times.

How has the advancement in technology changed the way we actually think, experience and conceive? Has it opened new unrealistic vistas of imagination and romanticism or we are now closer to reality? How do you look at this revolution in terms of what we have lost and what is gained?

Drawing/Thinking derived from a symposium I organized some 14 years ago and argued for the continued need to draw by hand, even in the digital age. The authors who contributed to the book shared the argument for hand drawing, but for different reasons: whether to coordinate hand, eye, and mind, or for being a more rapid and ubiquitous medium, or even for just the aesthetic quality of the lines and tones. My experience has been that students proficient at drawing by hand get more interesting and sophisticated results from the computer; they impose their will on the machine instead of being a slave to its default settings.

For some reason, there is a current belief that the more realistic—the more leaves on the trees—the better or more valid the rendering. This might be true if one attempts to depict an intended *experience*, but detail can hamper discerning *ideas* from the representation. At times there may be so much detail one can “not see the forest for the trees.” I can make a study or explanatory sketch in less than a minute, and I am not really very good at drawing.

My experience has been that students proficient at drawing by hand get more interesting and sophisticated results from the computer; they impose their will on the machine instead of being a slave to its default settings.



ABOVE LEFT AND RIGHT |

**ARCHITECTURAL
INTERVENTIONS: 2012**

PHOTO CREDIT: *SUPERPOSITIONS*

In fact, in many instances the drawing need not be aesthetically “good” to be effective; it still can tell me what I want to know, what is important, or communicate my idea to someone else. Drawing is a way of thinking, and a means by which to make the thought known to ourselves or to others. Consider as well, that in many instances, the digital rendering is a collage which draws elements from pre-existing sources, and making a rendered perspective thus requires time spent just searching for the sources. If one can draw by hand one invents, and needs no extraneous sources, only a thought or a memory and a hand.



All images courtesy of Marc Treib
 mtreib@berkeley.edu

Manalee Nanavati, Architect
| nanavati.manalee@gmail.com

DOCUMENTING VERNACULAR ARCHITECTURE

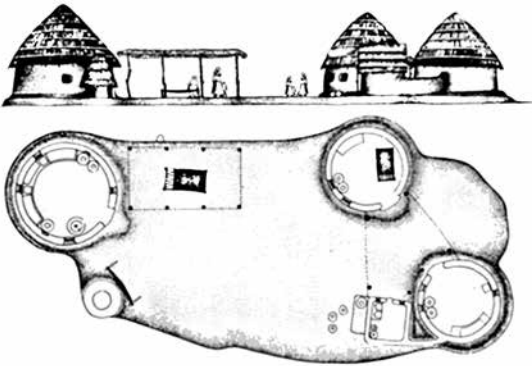
AN ANTHROPOLOGICAL APPROACH TO ARCHITECTURE

The article while discussing various aspects of the process of documenting vernacular architecture, talks about how documentation can be used as a research tool.

The process of documentation has marked an important contribution in the field of 'learning'. Recording age-old knowledge has helped not only in conserving time-tested techniques and traditions but also in developing new ones that are contextually more appropriate. This is particularly applicable in the fields of folk or vernacular traditions, including architecture.

Emerged as a collective response to cultural, social, economic and ecological conditions, vernacular architecture is conceived as a legacy of indigenous wisdom. This legacy has often proved to be a valuable reference for new design developments; more so in the present context of climate change, uncontrolled resource consumption and challenges of cultural appropriation. Therefore, the documentation of vernacular architecture is ever more critical before it gets lost with time; nonetheless, to record the ethos of this architecture, it is essential that the documentation is carried out methodically.

As an architecture generated through indigenous knowledge, vernacular architecture cannot be studied only as a product but needs to be understood as a process, too. The 'organic' forms of vernacular dwellings do not make sense unless the dynamic processes of living in them and planning as well as building them are talked about. In other words, the story of the form is equally or sometimes more important than the form itself, and hence, needs to be documented accordingly. For instance, the Bhunga of Banni region in Kutchh, Gujarat demonstrate an introvert typology formed by independent units standing at a certain distance on a common plinth. Two neighbouring units don't always face each other, and each unit is fully enclosed with minimum openings. The central open space is sizable and sunny.



ABOVE |

BHUNGA OF BANNI

The Bhunga of Banni region in Kutchh, Gujarat demonstrate an introvert typology formed by independent units standing at a certain distance on a common plinth. Two neighbouring units don't always face each other, and each unit is fully enclosed with minimum openings.

RIGHT |

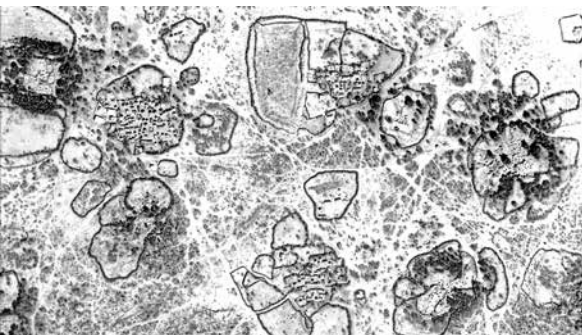
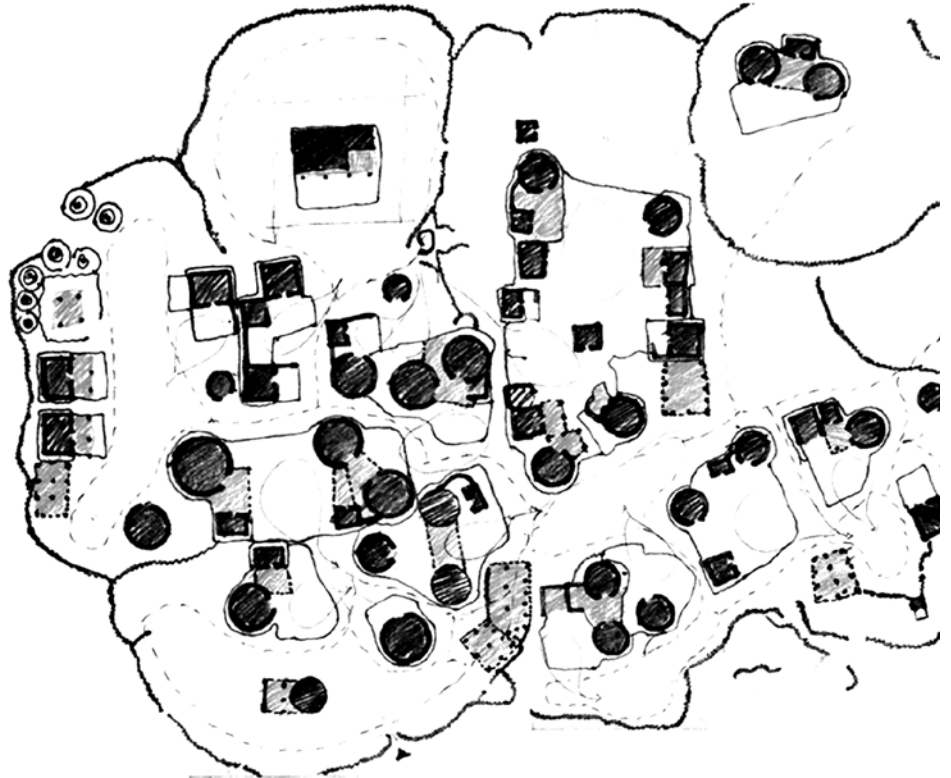
PLINTH SHAPE

The shape of the plinth, which is independent of the placement of units, is worked out considering a future extension of the family.

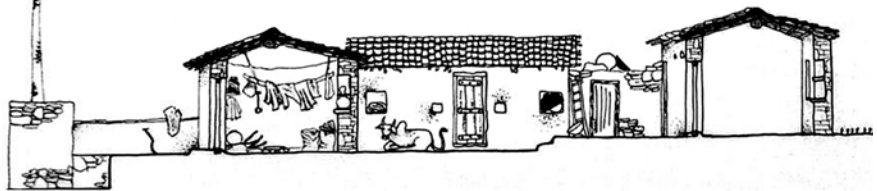
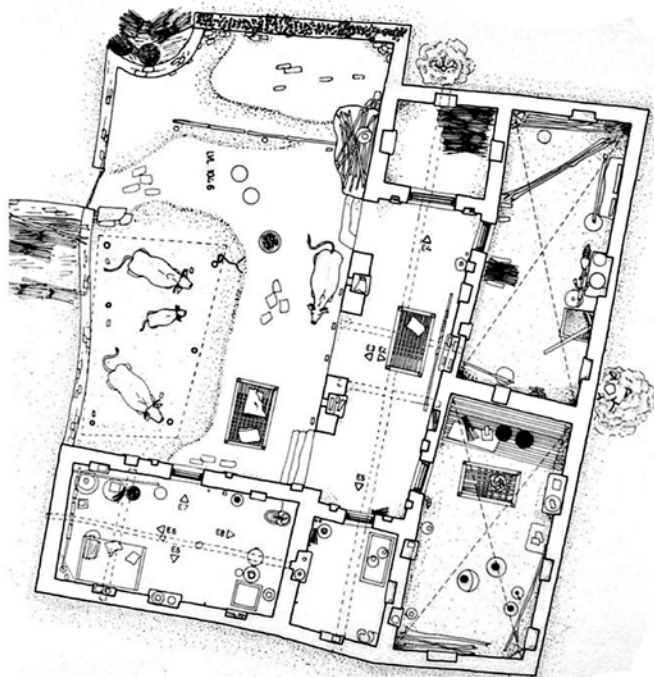
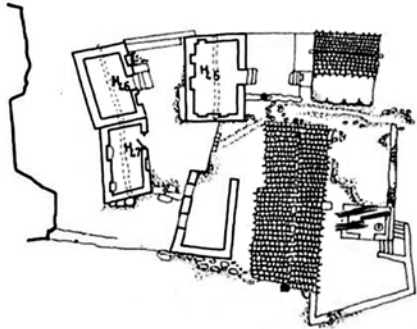
BELOW |

HAMLET

At the hamlet scale, locations of various clusters are dependent on water catchment areas that facilitate their indigenous groundwater collection system.

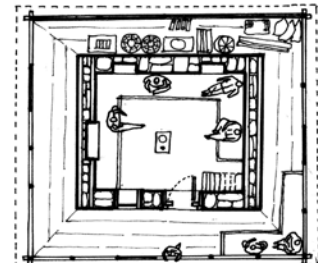
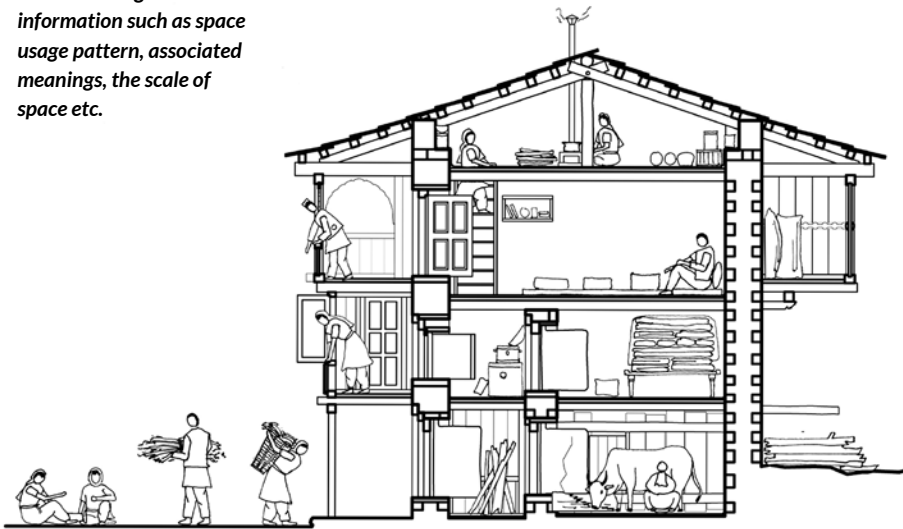


To understand these readings, one needs to understand the local living pattern and cultural behaviour, which explains how the organization pattern of a dwelling is a result of the social relationships among and within families. It also reveals how the notion of house persists in the open outside as much as it does in the built inside. The open space, in fact, is the most important part of the house where the majority activities of the family are carried out. Similarly, the distance between two units depends on the function planned in the in-between space; while, the shape of the plinth, which is independent of the placement of units, is worked out considering a future extension of the family. At the hamlet scale, locations of various clusters are dependent on water catchment areas that facilitate their indigenous groundwater collection system.

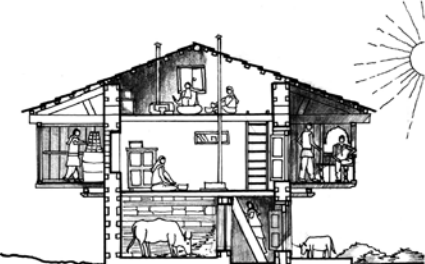


ADDING DETAILS

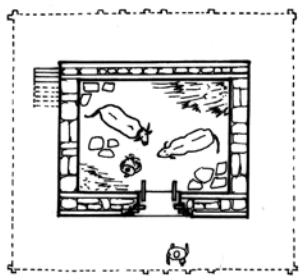
When all observed details such as activities with furniture, animals, humans, trees and other things are drawn in the plans and sections, they start revealing much more information such as space usage pattern, associated meanings, the scale of space etc.



WINTER SCENARIO



SUMMER SCENARIO

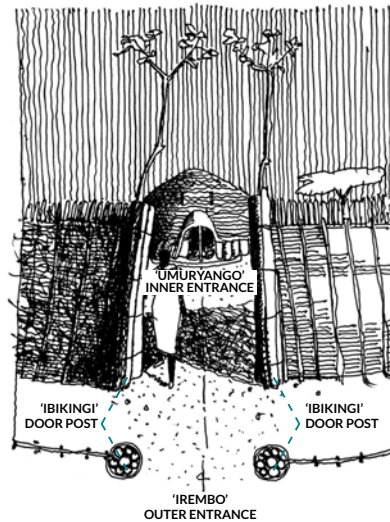


Thus, to record the ethos of this architecture, the built form needs to be documented in a manner that the indigenous patterns and solutions can be comprehended. The collective wisdom that shapes this architecture should be recorded on a simultaneous level with the architecture itself. This makes an anthropological inquiry essential in the process. Accordingly, along with the building typology, the documentation process should also span over the space usage pattern, specific cultural behaviour, associations, economic pattern, contextual settings and ecological relationships.

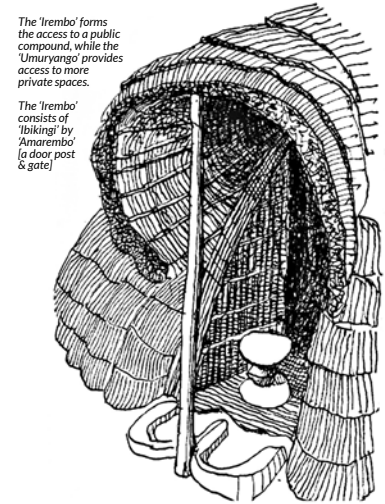
Two anthropological tools of observation [on-site] and interaction [with the locals] are considered vital for this along with the architectural tool of measured-drawing. When all observed details such as activities with furniture, animals, humans, trees and other things are drawn in the plan, it starts revealing much more information such as space usage pattern, associated meanings, the scale of space etc. Similarly, when such details are drawn in a section, the experiential quality of the space starts getting clearer. If such details, taking a step forward, are recorded for more dwellings in the settlement, a comparative reading can be made on the typical spatial planning and social-spatial relationships.

The interaction with locals, likewise, can throw light on the perception of spaces, privacy levels, gender-specific tendencies, changes made with time etc. Therefore, recording oral histories is considered equally important in the case of vernacular documentation.

Another such supplementary documenting tool that can overcome some limitations of graphical representation is nomenclature. Apparently, the intangible features of vernacular such as social or symbolic associations are not easy to map as the tangible ones. Some such intangible information can be communicated by noting the local nomenclature for specific spaces in the drawing which represents their meaning and associations.



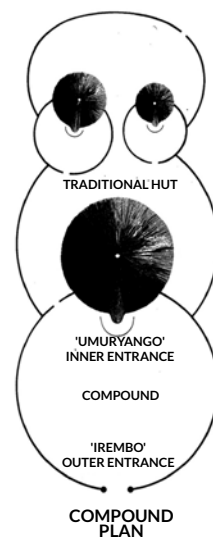
'IREMBO'
THE OUTER ENTRANCE



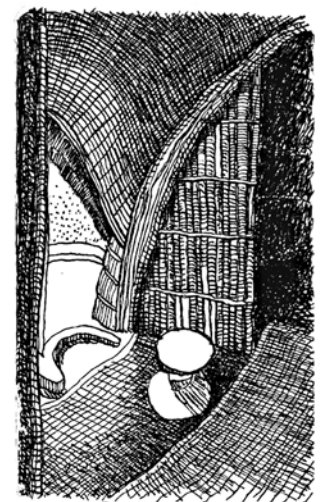
'UMURYANGO'
THE OUTER ENTRANCE

The 'irembo' forms the access to a public compound, while the 'Umuryango' provides access to more private spaces.

The 'irembo' consists of 'ibikingi' by 'Amarembo' (a door post & gate)



'IREMBO'
THE OUTER ENTRANCE

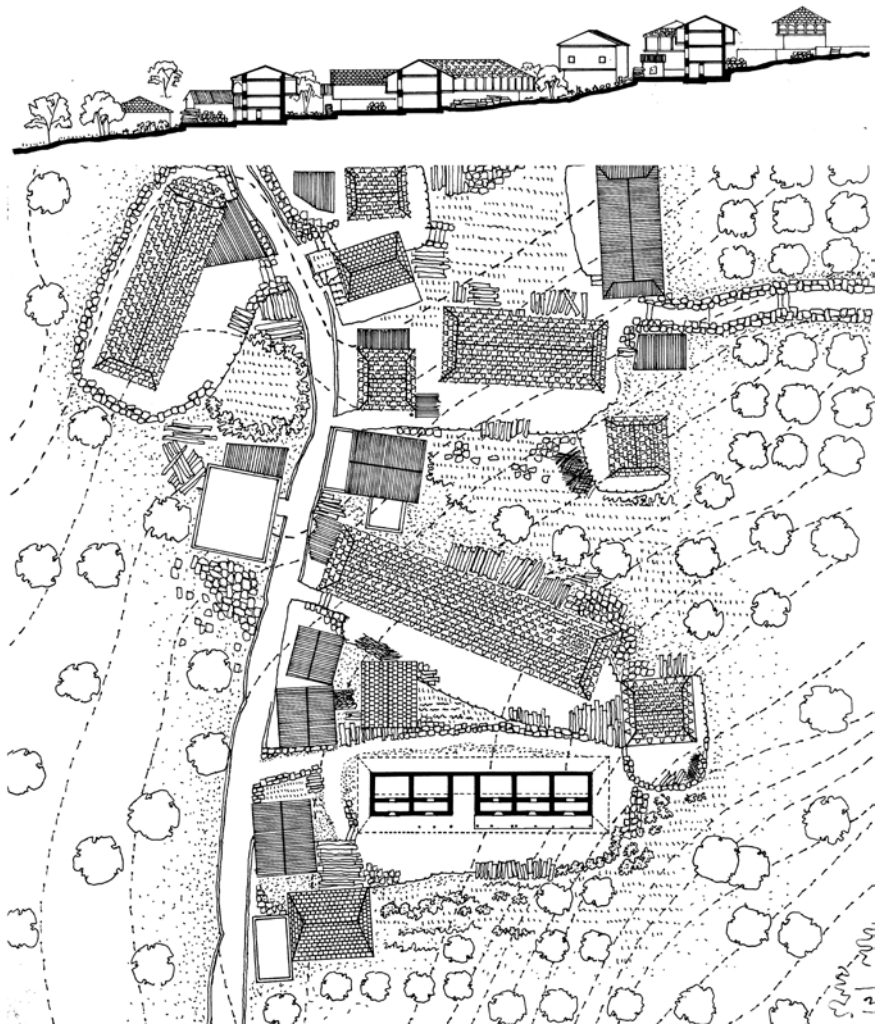


'UMURYANGO'
THE OUTER ENTRANCE

LOCAL NOMENCLATURE

Some intangible information can be communicated by noting the local nomenclature for specific spaces in the drawing which represents their meaning and associations.

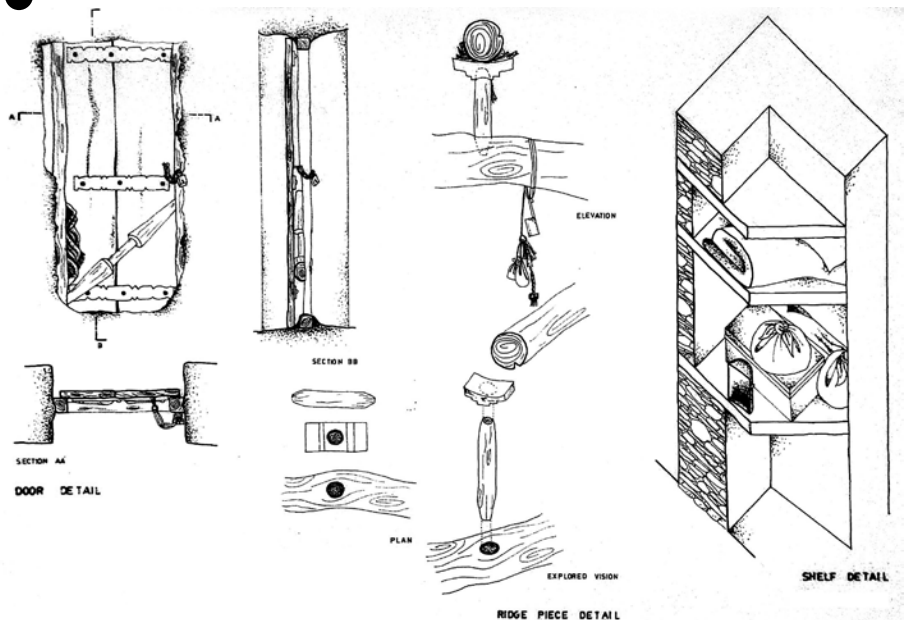
Gathering such interdisciplinary information has become faster and easier with the introduction of more advanced tools such as photography, videography and laser techniques. These tools have also allowed capturing details at various scales. The scale, in fact, is one of the most important factors in the documentation of vernacular architecture as each scale presents a different set of information. While the documentation on a larger scale demonstrates the basis for organizational principles, the small scale highlights the details of material selection, joineries, craftsmanship, economic decisions and symbolism. Hence, to gain a holistic understanding, it is important to document the built environment at all scales.



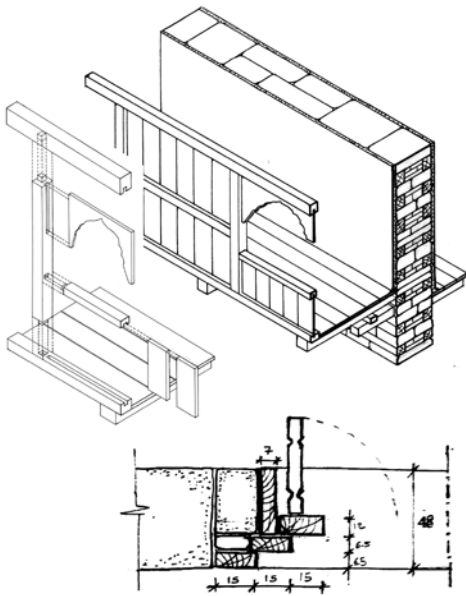
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AT ALL SCALES

While the documentation on a larger scale demonstrates the basis for organizational principles, the small scale highlights the details of material selection, joineries, craftsmanship, economic decisions and symbolism. Hence, to gain a holistic understanding, it is important to document the built environment at all scales.



Having said that, it is also important to note that the method of documentation grossly influences our interpretation and understanding. Hence, drawing selectively is also another key method of documentation that can unlock different directions of inquiry. For example, drawing specific architectural details provide a lens to examine architectural solutions, whereas, drawing light and shadow patterns provide a different lens through which specific spatial qualities are studied. Documenting in a particular way, accordingly, can convey a specific set of information about that built environment leading to newer discoveries and diverse interpretations.

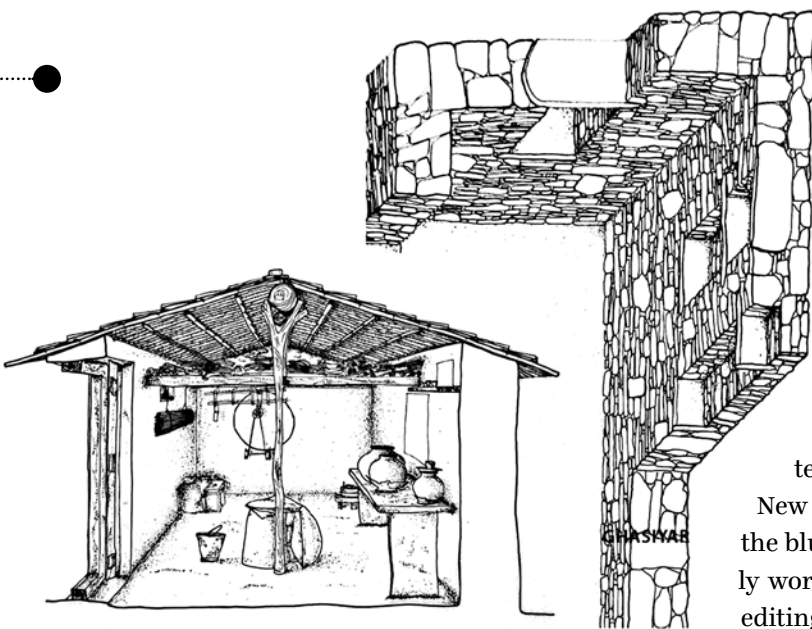


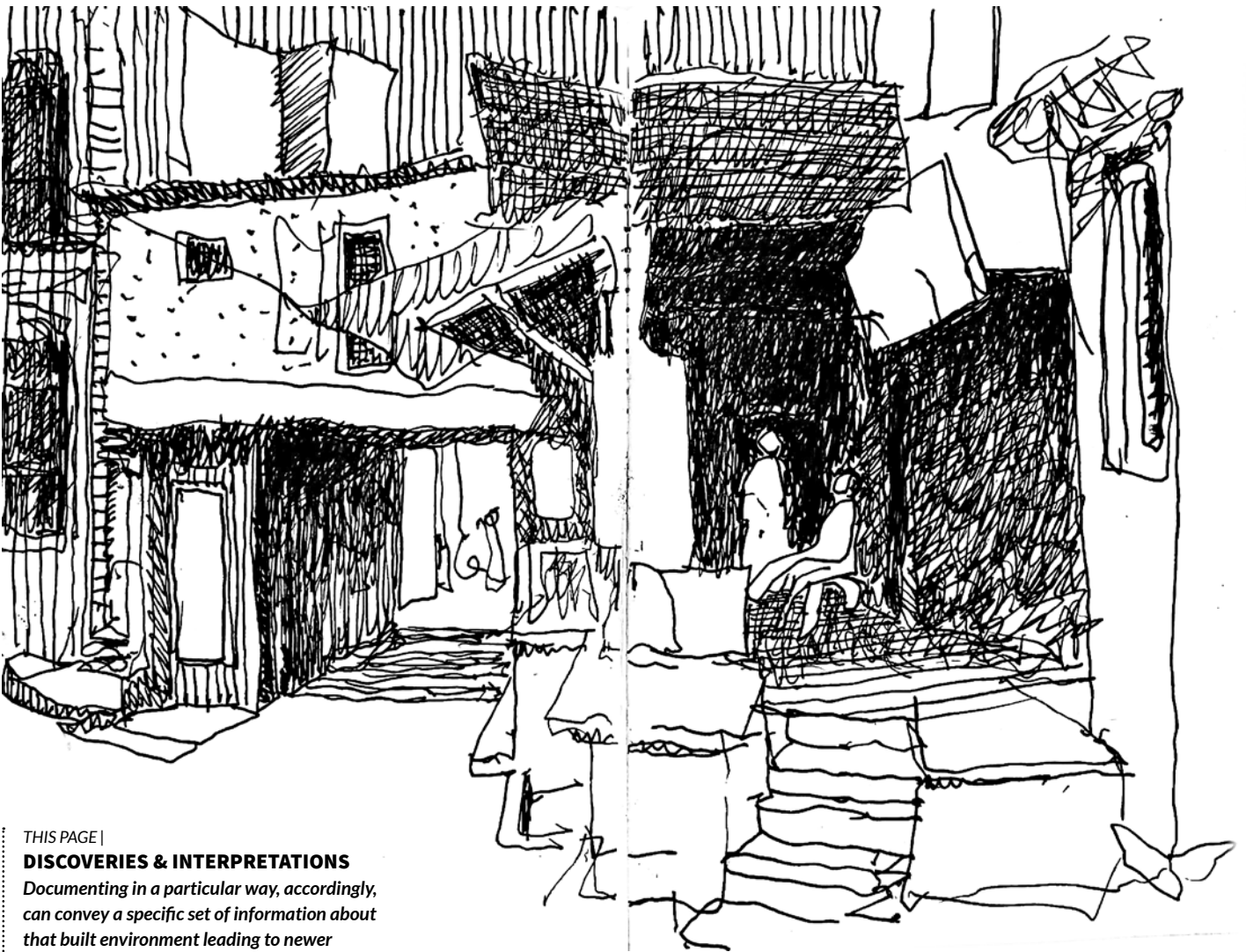
Furthermore, by documenting more than one dwellings in the settlement, similarities and differences can be noticed and a record of collective expression vs variation achieved through personalization can be created. It helps identifying a generic DNA of a typology and elucidates two major principles: how the DNA repeats to form a pattern of incremental growth, and how it incorporates changes and produces variations of a typology. In a similar manner, documentation of vernacular settlements across different geographic locations offers a possibility of carrying out a comparative analysis of cultural and climatic manifestations across borders. It can further provide a platform to study more complex phenomena such as hybridization and transformation.

The process of documentation, thus, should be conceived as more than a mere recording tool, and should be developed as a research tool. It should be employed as a device with great potential and should be planned methodically to unlock broader inquiries such as the impact of various cultures on architecture, transfer of traditions among places, impacts of forces like climate change and globalization, the transformation of architectural typologies and alike.

On the other hand, while this research tool can help in decoding the built responses to the social and natural environment, it can also help in reinterpreting them for contemporary and future designs.

New experiments and imaginations can be constructed on the blueprint of indigenous knowledge. Exercises of creatively working with the documented drawings and thoughtfully editing them can be used for design as well as regeneration.

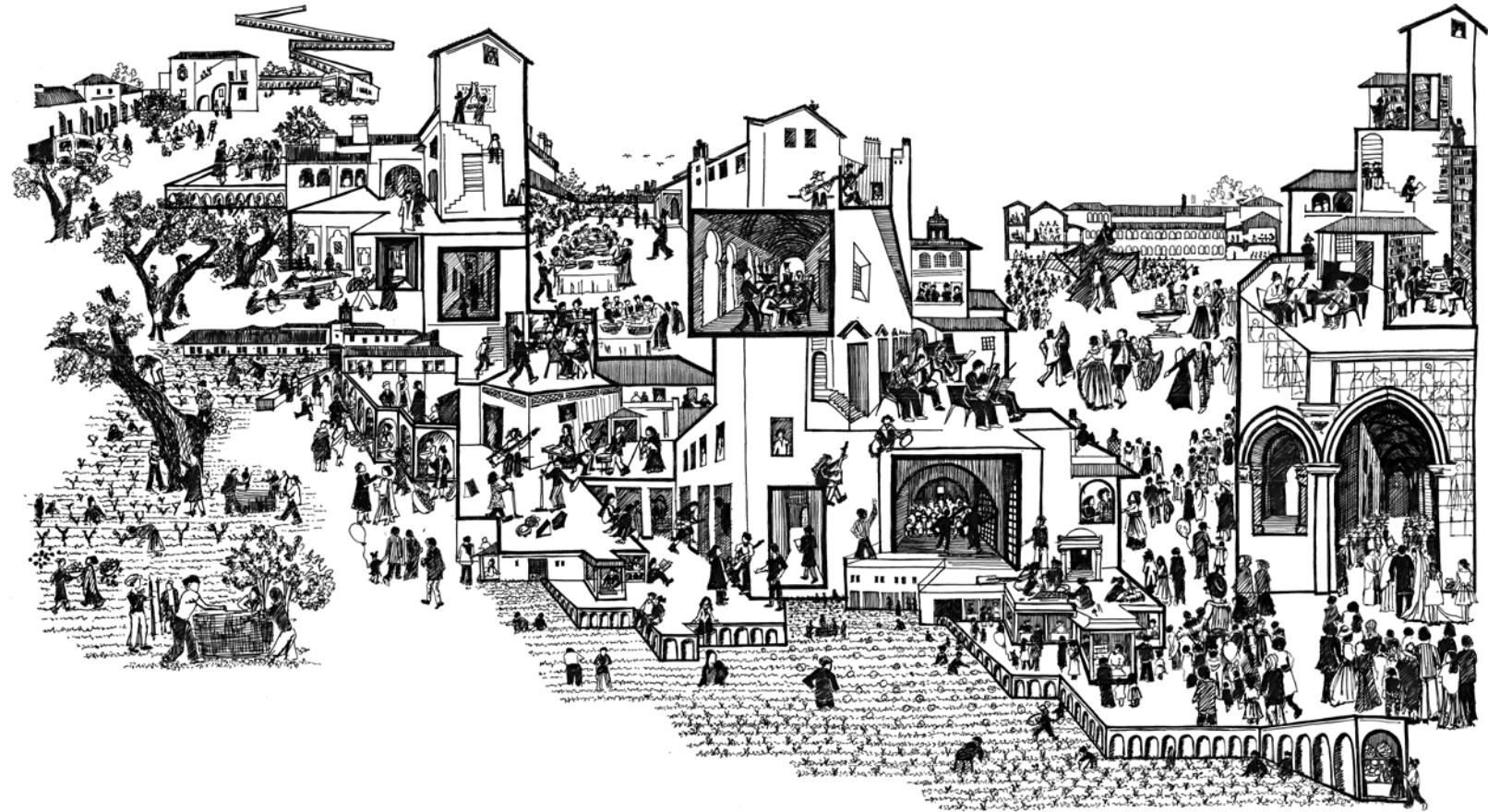




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DISCOVERIES & INTERPRETATIONS

Documenting in a particular way, accordingly, can convey a specific set of information about that built environment leading to newer discoveries and diverse interpretations



In conclusion, documentation of vernacular architecture can be principally conceived as a medium to learn about the indigenous knowledge of various places. This medium can be further developed as an analytical research tool to open up the scope for important inquiries; inquiries that can interpret the cultural embodiment of architecture at all scales and in diverse contexts. Herein, the anthropological approach to architectural documentation helps in particular to guide more sensitive and holistic interpretations. These interpretations, in turn, can lay foundations for valuable design solutions that can potentially address the ever-evolving need for culturally sensitive and context-specific solutions. In this manner, the study of vernacular architecture can be extended beyond the academic field to explore how the indigenous know-how can guide contemporary and future design developments.



SKETCHES CREDITS

Kshama Prajapati, Manalee Nanavati, Peter Rich, and Related Study Programme [RSP] drawings of Batch 2005 [UA]. RSP drawings are available at CEPT Archives.

DESIGN & REGENERATION

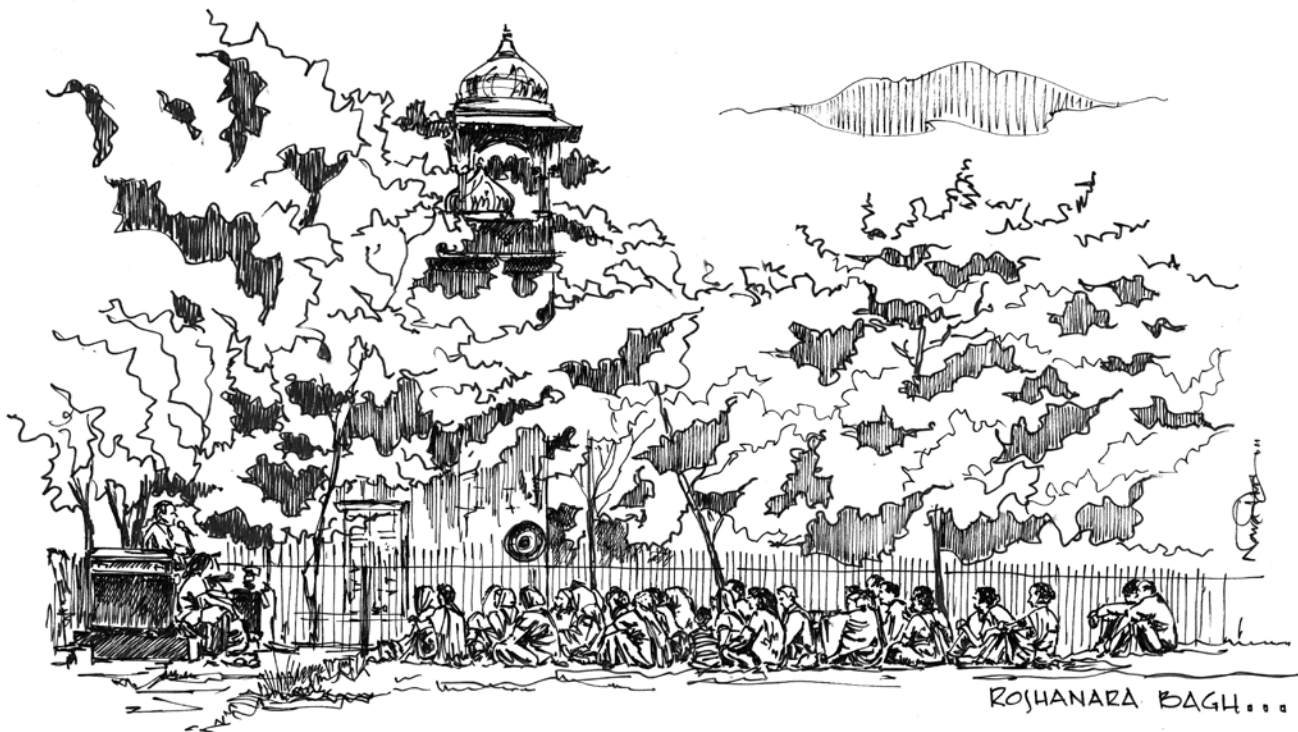
Exercises of creatively working with the documented drawings and thoughtfully editing them can be used for design as well as regeneration

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Freddie Ribeiro, Landscape Architect
| frederick.ribeiro@bdp.com

THE PENCIL AND THE MOUSE



“Drawing is the artist’s most direct and spontaneous expression, a species of writing: it reveals his true personality.”

— Edgar Degas

I probably belong to that last generation of Architects trained exclusively to conceive an idea with a pencil in hand and communicate it with pen and ink. Computer-aided design was a visible and intimidating presence on the horizon when I was a student, something to be suspicious of and yet be excited about. As we stood at the threshold of our careers, we knew we would have to embrace this entity that threatened to take over every aspect of our lives. It did. One has had to interface with a variety of ever-evolving software to forge a career in design over the last 25 years. However, I can honestly say—all these years of dexterous mouse usage later—that I am still at my articulate best with a 2B pencil in hand.

UNHINGED FAITHS

Roshanara Bagh

CREDIT: Navanil Chattopadhyay

During one of the many webinars one attended during the lockdown, I heard someone say, “If you want to know what others are thinking, read. If you want to know what you are thinking, write.” The thought resonated with me as this is how I feel about hand drawing and sketching as well. Nothing forces you to conceive and formulate ideas more effectively than a freehand drawing does. When we put pencil to paper, we start with the

kernel of an idea. To proceed, we need a follow-up idea, which pre-empts another and before we know it, a story unfolds. As children, we all draw. The artlessness of our child-like existence precludes ‘adult’ sentiments like judgment and self-evaluation. It stems from a natural and almost instinctive need to communicate an idea or thought at a time when the vocabulary is insufficient. The pencil or crayon becomes a natural extension of thoughts, feelings, fears, and wonder. You think you know, but can’t always be sure what will

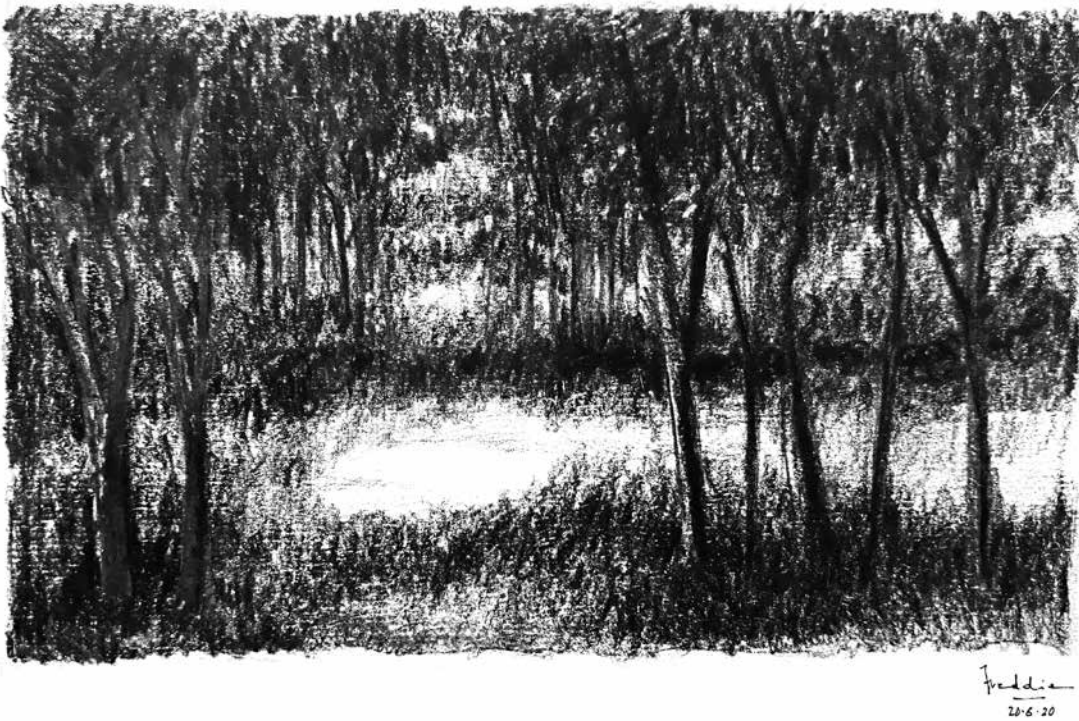
emerge next. The hand completes what the mind starts. After all, the first mode of expression by our species was not writing but drawing.

For those of us who, in adult life, persisted with the design field, this simple ability was honed into a powerful tool for developing and then communicating a concept. A hand drawing can be observational, emotive, or analytical. Each line drawn on paper is trying to convey a message to the viewer as seen through the eyes of the artist. The artist relies on emotion, lived experience, or a primal instinct to represent the message. It is safe to say that no design software can encapsulate that. It can do other things though. A digital drawing can test the insight a hand drawing strives to accomplish. The digital drawing will provide accuracy and precision if required, but not creativity. It allows you to redraw, replicate, and experiment till the desired effect is achieved. Still, it will only show you the ‘here and now’, not what might be.

LIGHT

Charcoal on paper

CREDIT: *Freddie Ribeiro*





WHITE ROSE PARLIAMENT

Formal Sports Garden

CREDIT: *Elliot Bishop, BDP*

The Renaissance maverick Michelangelo once said, “An artist must have his measuring tools not in the hand, but in the eye”. This was driven home to me as a student when I was struggling with scale. Frustrated by my attempts, Prof. Mohammad Shaheer, grabbed my pencil and proceeded to draw out a landscape layout. What amazed me was that every line, building, pathway, and the tree was drawn to the appropriate scale for that sheet of paper—without the use of any measuring tool. That was a demonstration of a skill perfected over time, and a valuable lesson. For any drawing, the composition, scale, and perspective are composed by the eye, before the hand fleshes it out. Kinesthetic or tactile learning for children involves the understanding of space and boundaries in all its dimensions and our place in it. Similarly, an artist has to capture the volume of space in the mind’s eye before committing it to the chosen canvas. There are a million ways to do so and that is what makes your drawing an extension of your personality. When a computer does it for you, you have traded in your freedom for subservience to technology. There are only so many ways computer-aided drawing can be different, for the computer is only as good as the set of instructions it receives.

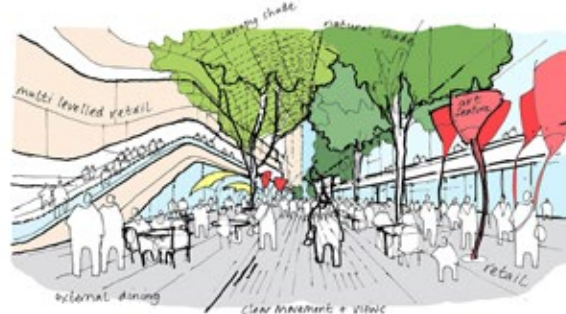
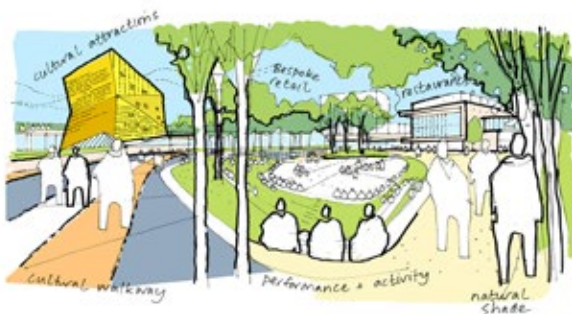
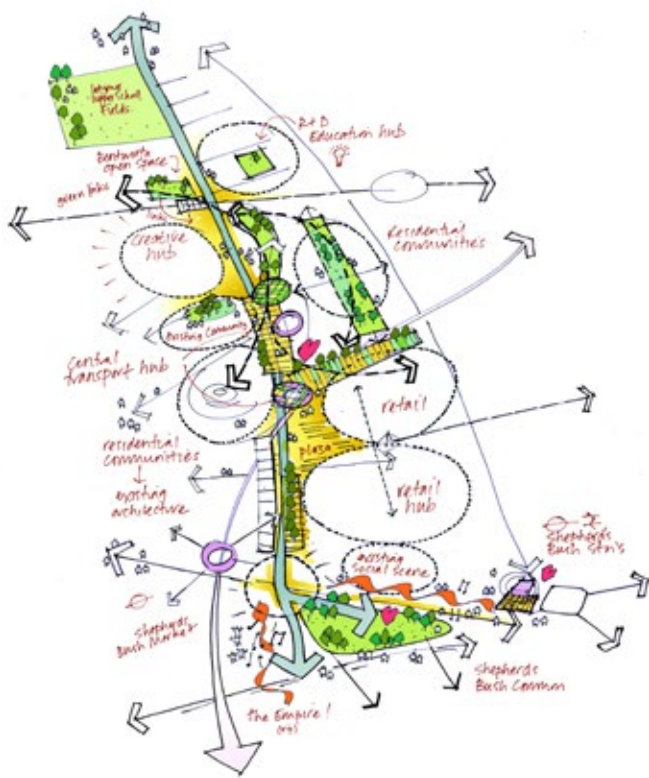


THAMESMEAD

A Mythical Scene

CREDIT: *Hyunwoo Chung, BDP*

The flexibility in hand drawing also allows for differences in medium, material, style, convention, and therefore your personality to be expressed. Having recognized the power of the expressive drawing and its impact on the layman client, BDP recently instituted an annual drawing competition across studios globally. The objective is to celebrate and encourage the importance of visual communication to tell a compelling story. Last year, the sheer variety of ways in which ideas manifested themselves for the beholder's eye was astonishing. The tapestry produced sweeps across the spectrum of storytelling from fantasy and visionary to reality—all rooted in live projects.



In today's day and age, budget, and time constraints understandably cannot always wait for the creator's inspiration to manifest itself. What works well, I grudgingly admit, is a hybrid approach of the imaginative pencil gradually giving way to the speed and efficiency of the mouse. Since my days as a student, technology has progressed beyond the mouse. The stylus and touch screen technology strive to generate an experience as close to the paintbrush as possible. Brush activity has long been considered contemplative, fulfilling, and even honorable, while the use of technology can be temporal and fleeting. It is up to us to learn to use it to our advantage. Ultimately, the proof of the pudding lies in the experience of the beholder and the ability to provoke an emotion.

..... **[NON] WHITE CITY**
 A Vision
 CREDIT: Martin Savage



ABOVE |
OAB-BDP SITE OFFICE
CREDIT: *Luis Gomez-Lanza*

ABOVE RIGHT |
WREN HOTEL, DUBLIN
CREDIT: *Barry McKenna*



Henri Cartier-Bresson, the celebrated photographer, and chronicler of the twentieth century suggested that while photography is an immediate reaction, drawing is a ponderous meditative rendition. To this, I would like to add that the digital depiction is but a hurried impression of a part of the narrative. It has its uses. But not for the ages.



Except for the Author's charcoal sketch [page 88], all other drawings are entries of the annual GGB Drawing Awards Competition, 2019 at BDP. The competition is named after Sir George Grenfell-Baines who was the Founder of BDP.

IN

WONDERLAND!

Aruna Ghose, Author and Writer
| aruna.mrinalini@gmail.com





Premola Ghose was a historian and an artist. Her hand-drawn sketches exude with exuberance and curiosity of a sensitive soul for the colours and hues of a historic city and its inhabitants - nature, people, animals, monuments and buildings, with whom she was immensely attached. Aruna Ghose remembers her while sharing few of the artworks that were displayed in an public exhibition organized in her memory earlier this year.



A parrot flies over a dome, a giraffe peers from behind a tree, a tiger sprawls over a railing, a leopard stretches languorously, a bear and rabbit crouch behind bushes, a peacock dances on a rooftop—meet the quirky ‘Gang’ of animals who inhabit Premola’s wonderland. They can be seen cavorting in the jungles of Ranthambhor and the beaches of Goa, or wandering through the streets and monuments of Delhi, the monasteries of Ladakh, the palaces of Rajasthan.



Premola first wrote about and drew the Gang in the mid- to late 1990s in a series of short stories for Parenting Magazine. In the beginning, Ranthambhor was the setting for their adventures, because in those days she spent many happy holidays at Sawai Madhopur and the Park with a close friend and her children. But as Premola’s horizons widened and interests grew, she released the Gang from the confines of the jungle and into the bustling streets of Delhi and other cities and countries. A passion for history, for the civilizations of the past, for literature, poetry, art and music sparked off the desire to travel, to visit the places she had read and dreamt about. The storehouse of memories and experiences accumulated in the course of her wanderings resulted in the creation of a magical world in which the Gang explore and encounter different milieus and cultures.

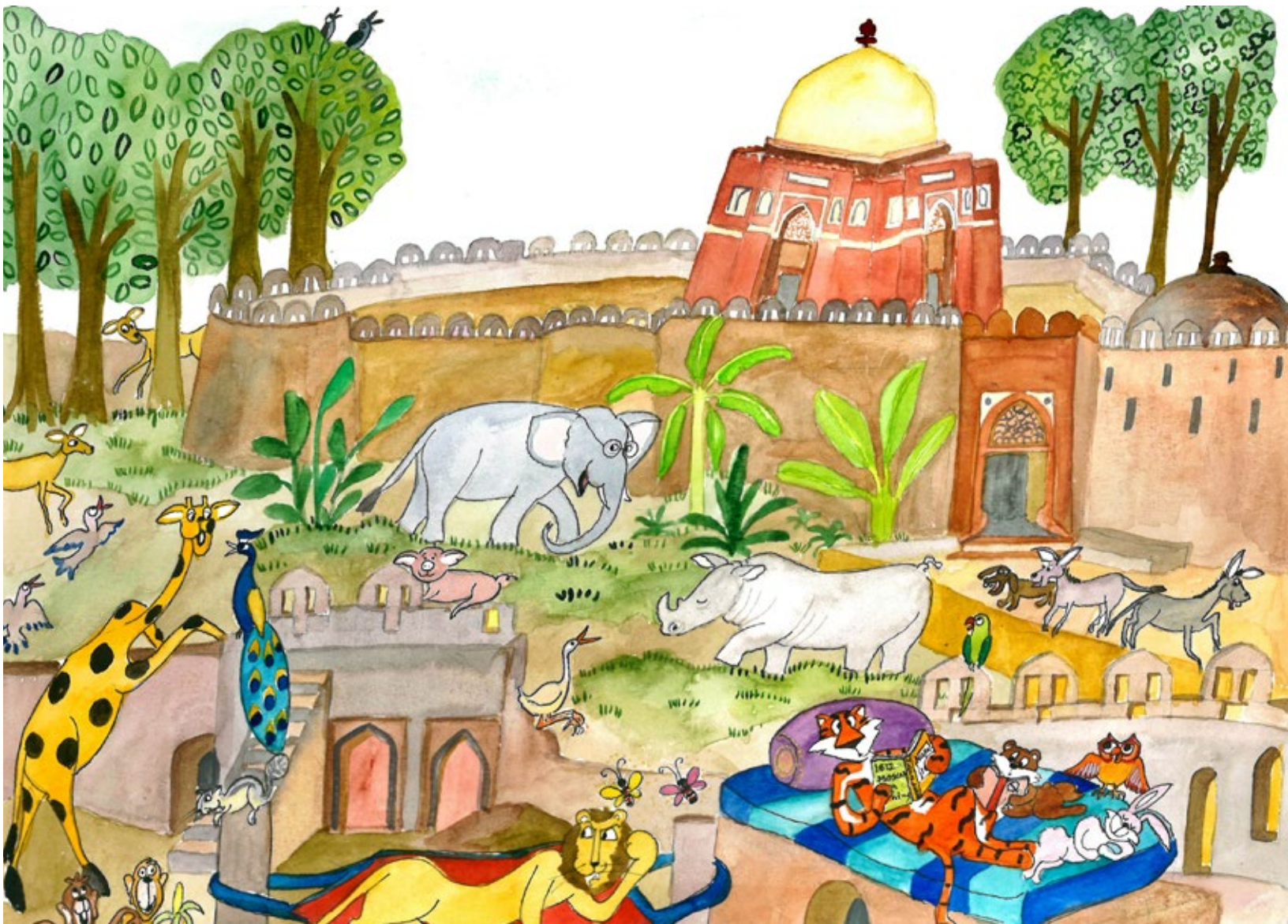
RAJPATH
A picturesque view of Rajpath





TUGHLAKABAD
A day out at Tughlakabad

IIC
Visiting the
India International
Centre, New Delhi



Her illustrations may seem child-like and a bit naïve, at the same time their playfulness is an indication of the artist's irreverent sense of humour and her feel for the absurd. The animals and birds in Premola's paintings seem to reflect Premola's own joy in discovery and exploration, as they hover over and romp around the monuments and forgotten fortresses of earlier Delhis, colonial vistas, or even the august premises of the India International Centre. And they are often seen doing unusual things, because she had a way of getting them to do things they wouldn't usually do, simply by sitting very still with her sketchbook yet reaching out to them in ways that they seemed to sense. The notoriously shy marmots in the highest reaches of Ladakh, for example, would creep up to her to take a biscuit from her hand, or a Bactrian magpie fly down to examine a sugar cube next to her coffee cup. In her, they perhaps recognized a kindred spirit: observant, curious, gloriously unfettered.



She was constantly experimenting, taking inspiration from the foliage seen in miniature paintings, episodes from Alice in Wonderland, using the patterns and motifs from Islamic tile work and sculptural friezes as ornamental borders or as exotic elements to elevate the composition. But at the core of them all was the Gang, adding a touch of mischief and drollness to the subject or situation. And as Ira Pande has written:

“Like the well-beloved characters of a latter-day Panchatantra, Premola’s menagerie is composed of Puck-like creatures that say, ‘what fools these mortals be!’ as they peer into the human world.”



Premola Ghose [1953-2019] worked at the International Centre, New Delhi for more than forty years. She studied history at Miranda House, University of Delhi, a subject that always fascinated her. A self-taught artist and illustrator, she exhibited her works at several venues, including the Hungarian Cultural Centre, as well as authored a number of books since her first publication, ‘Gang Tales from Ranthambhor’ in 1998.

Acknowledgments

Lalsawmliani Tochwawng [Teteii], Chief, Programme Division, Anil Gupta and the staff of the Programme Division, India International Centre; Omita Goyal, Chief Editor, India International Centre; Ira Pande; Nandini Mehta; and Kamala Menon.



AT THE MARKET PLACE



THE TEA PARTY

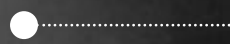
The Mad Hatter has his tea party outside Rashtrapati Bhavan





2019
“纸尚视界”纸艺术
FEASTS ON PAPER International
Paper Art
Biennale, Shanghai,
Character within Paper

SEEING THE UNSEEN



Ankon Mitra, Architect & Artist
| ankon.mitra@hexagramm.in

ART AS A LANDSCAPE OF FOLDS



THE SIGHTS AND SOUNDS OF THE COSMOS - OPUS-II

Fengxian Museum, Shanghai Paper Art Biennale, 2019
[PREVIOUS PAGE] inspired from Conch Shells - Sea snail
[Trophon geversianus] [THIS PAGE]

Ankon Mitra, an architect and artist did his post-graduation in Adaptive Architecture and Computation from University College, London. To him, the ancient art of Origami is a cutting edge tool/technique that is being deployed by robotic engineers, space scientists, biotech researchers, mathematicians, computation experts, botanists, architects and artists to create solutions for the real world in the 21st Century. With 'Oritecture', Mitra shares a unique vision of a universe forming and dissolving from acts of folding. His work has been exhibited in India, Italy, France, UK, USA, Japan and most recently at the Shanghai International Paper Art Biennale in 2019. In the special feature, Ankon shares his various inspirations in nature and selected artworks.

Hearing the Folded Songs of Gaia

I am deeply passionate about exploring folds in the natural world. I study the science of energy flowing through space, and I have come to the realization that all forms of energy [sound, light, heat, gravitation] travel by folding through space. Matter is in fact Energy made visible and therefore this aspect of folding permeates into all things that we see around us. Empty space is itself crumpled [like a piece of paper with infinite folds in it], and life forms in this space begin with folds within the DNA strands. You and I are made from folding, work through folding and are surrounded by folding. I use the technique of Origami to express this fantastic truth about the cosmos - and the simplicity and immediacy of paper folding helps me to easily lay bare the interconnected web of this profound knowledge in a visual language which even a child can understand.

Nature is the best guru, its forests, lakes, hills and deserts are the best kind of gurukul that there is. I do not have a Master's degree in Landscape but a childhood love of the natural world and a yearning to work with plants, soils and rocks made me gravitate towards a Landscape practice. Making the connections is always wonderful. Let's look at three examples we have all seen, but never wondered about.

Leaves, Mushrooms and Ladybugs

In 2008, at the Kew Gardens in Richmond, London, I saw new budding leaves on a Sycamore Maple tree and asked myself - "Why are there folds in these leaves?" A gardener illuminated me, like a vision of a God who had cast a light suddenly into a dark cave. He pointed out to me that in cold climates such as in the U.K, leaves do not grow much, they are fully grown to almost 80% of their final surface area right at the beginning itself. That surface is then folded and packed into buds, awaiting spring time. When the earth warms up, the roots start pumping sap into the stem and the branches and the leaf unfurl through hydraulic action as the veins get filled with sap [the veins are of course along the folds or vice versa]. I photographed leaves at various stages of opening on the tree.



TOP LEFT AND RIGHT |
Sycamore Maple [Acer pseudoplatanus]
 leaf buds and sequence of unfolding leaves;
 To those more interested in the science and
 geometry of leaf-folding, I suggest
 the ground-breaking essay by
 Kobayashi, Kresling and Vincent, titled
 "The Geometry of Unfolding Tree Leaves"

BOTTOM LEFT AND RIGHT |
Schizophyllum commune and *Pleated Inkcap
 Mushroom [Parasola plicatilis]* -
 Origami that gives strength to the thin
 membrane to be a successful cantilever
 and achieve significant heights as well as
 cantilever spans



Z-shaped spring-fold mechanism in Ladybird wings [just like in umbrella armatures], and how the wings are unfurled from below the spotted red/ black covers during flight

Now if you think of an equivalent tree in size and density of foliage in the Indian context, say the Jackfruit [*kathal*], you will find it too has large leaves like the ABC, the leaves start out really small, do not emerge from buds, and grow slowly to their final large size without resorting to any sort of unfolding acrobatics. I wondered why? And at this stage you must be thinking - what does all this have to do with unbuilt architecture?

There is a lot of ambient heat through ample sunlight in most parts of India. Plants use this surplus to grow leaves and gain leaf size. Conversely, in the U.K, the amount of sunlight is not so ample, the winters are long, the trees use folding a mechanism to save energy. Now, I am no scientist, but if somebody would test my hypothesis through rigorous scientific experiments and observations, they would come to the same conclusion - trees in the U.K use folding of leaves as a strategy to limit use of available energy and to conserve it.

Closer to home, in Nepal [also Uttarakhand], we find the diaphanous mushroom - the *Parasola plicatilis*. From radius of canopy to the thickness of the parasol, it is one of the finest and thinnest effective uses of folds [see the pleats] to design a cantilever system.

Now let's look at an example from the insect kingdom. The common ladybug has wings hidden under its red shell and can deploy them by unfolding a Z-shaped mechanism. When walking or not in need for flight, it protects the gossamer thin wings by packing them into one-third their regular size.

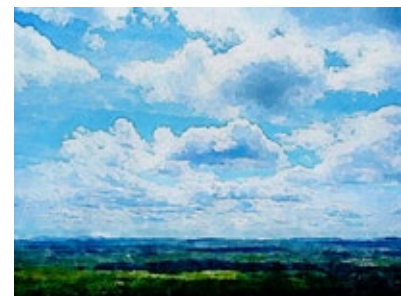
To summarise how the natural world makes a virtue out of systems of folding:

- [a] Achieve deployability, create flexible systems which are adaptable to changes
- [b] Save energy and optimize use of available resources
- [c] Convert weak materials to strong using 3D geometric principles, thereby making them viable
- [d] Do more with less – one solution serves more than one objective, preferably multiple objectives



Folds in Nature = Origami in Art

A deep and continuing interaction with the shaping of landscapes [and the folds in them - at all scales] has played an incisive role in the shaping of my art practice. The artistic expressions that evolve from it are deeply representational, yet completely abstract. In Origami, the three worlds of Geometry, Landscape and Material meet to create a vision of an interconnected whole.



'CIRRUS-CUMULUS'

[TOP] Installation at the India Design ID 2020, New Delhi

[ABOVE] Billowing Cumulus clouds. The condensation of water into vapours creates hundreds of different layers and folding systems determined by temperatures, densities and viscous flows.

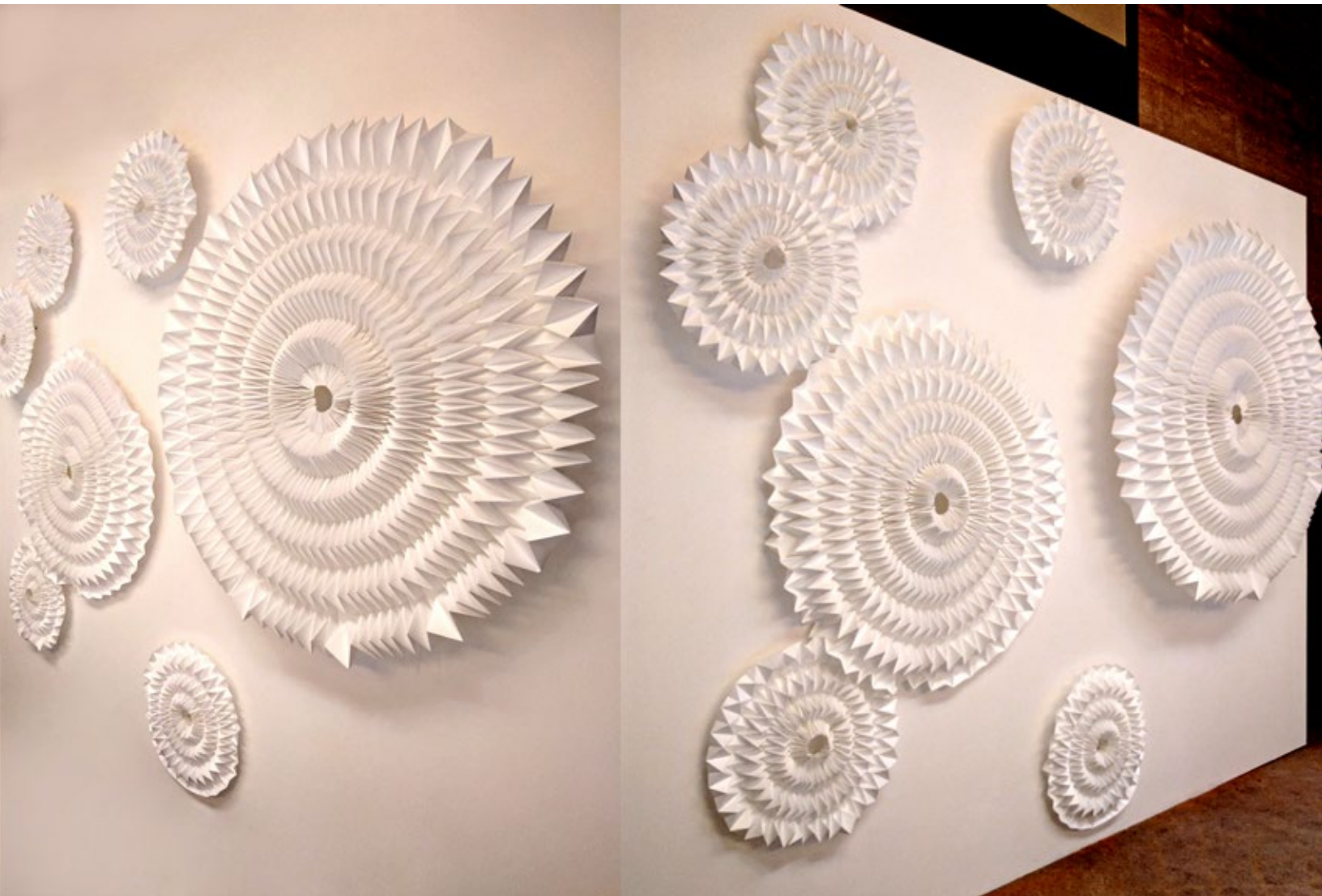


RIVER IN THE SKY

[TOP] Permanent Installation at the Metcalfe Hall, Kolkata, 2019

[ABOVE] A river “folds” through a terrain, following the slope of the land, hardness of the soil and the least path of resistance; The folding of the river is an act of saving energy, of minimizing obstructions, of creating flow.

The connections and linkages of my work with folds in nature go well beyond the immediate similarities. The idea with these installations is to pause and think - we are not separate from the world around us. It is not us and it. When we understand that all things flow from the one and go back to it, and we are within this magnificent machine of infinite folds and linkages, then we can begin to take actions which will be in harmony with this ecosystem.



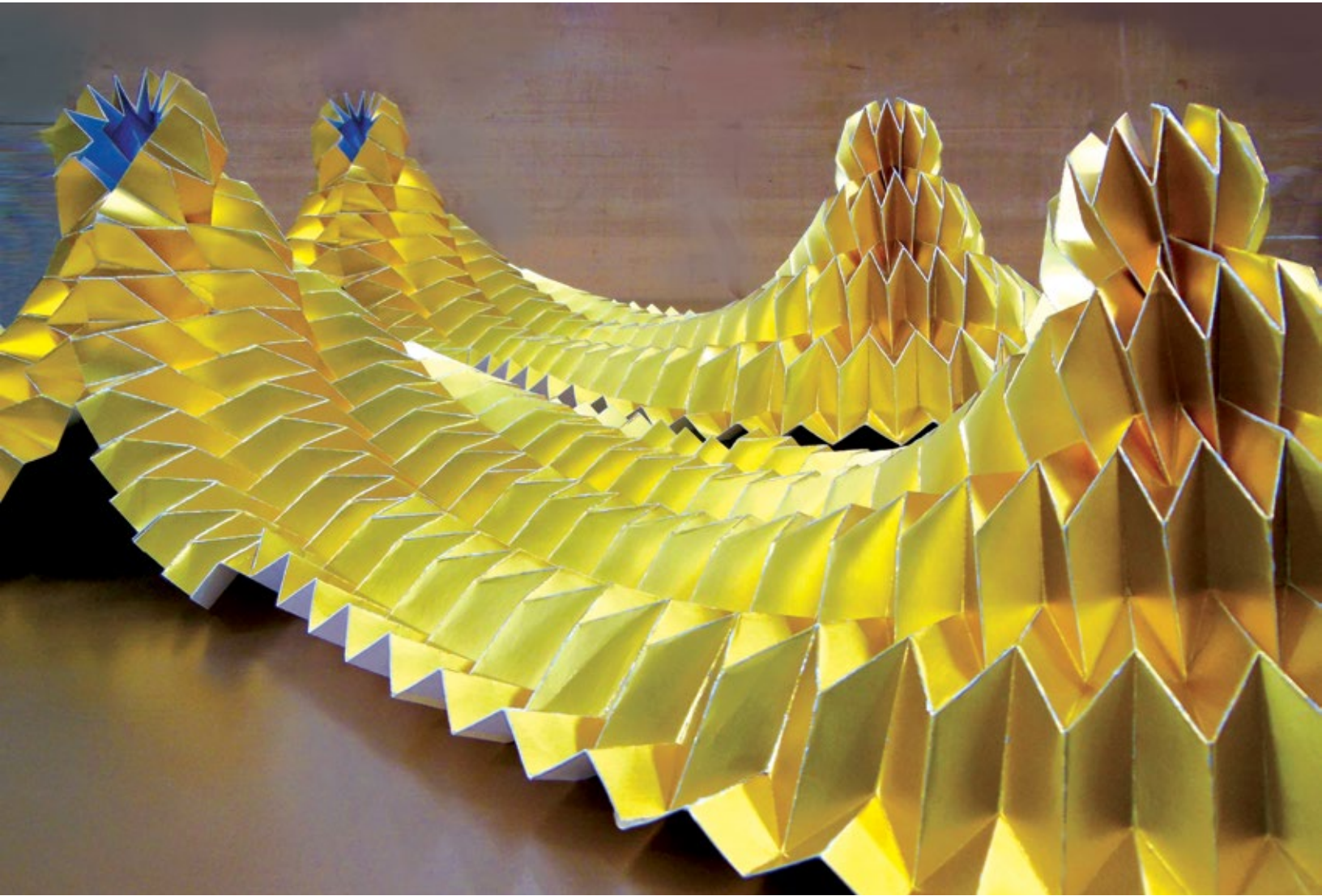
My work relies heavily on the mathematical and structural basis of form-making. Human beings often enter into conflict over issues of culture, religion and language. The language of Mathematics is universal and it is not only the best way to listen and learn from the cosmos, but also the best language to interact with it. It is universal and all human cultures can understand it, whatever be their language.



SOLAR PLEXUS

[TOP] Toyota Lexus Event at the JW Marriott, Aerocity, New Delhi, 2017

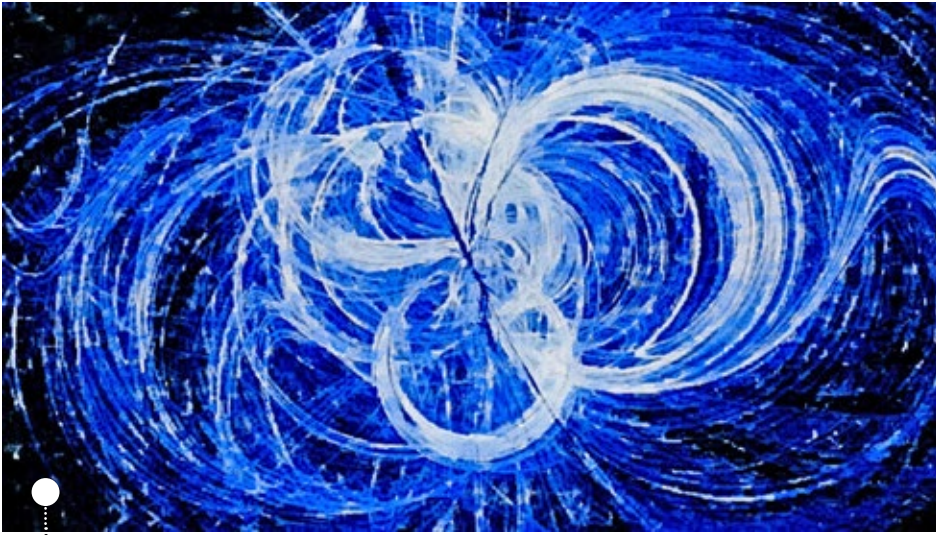
[ABOVE] Giant Water Lily Pads [Victoria cruziana], Piquete Cue Lake, Asuncion, Paraguay



DUNE DANCE

[TOP] At 'The Folded Garden' Solo Show, Visual Arts Gallery, India Habitat Centre [IHC], New Delhi, 2014

[LEFT] Barchan and Parabolic Sand-dunes are formed when sand is sculpted into curved folds by the action of winds; the speed of winds, the weight of the sand particles, the orientation-direction of winds all play important roles in how nature shapes these beautiful forms.



LEFT [ABOVE & BELOW] | *Antimatter Signatures at the CERN Large Hadron Collider, Europe – subatomic particles often move in ways which are similar to movements at cosmic scales - this correspondence between the super small and the super gigantic, is one of the magical clues as to the interconnected nature of all energies and forces in the Universe; Einstein has said that Space-Time itself folds as a result of gravitational waves, so we know that folding is not merely a visual or physical act but is intrinsically integrated to the logic of energy exchange and force-distributions within systems of different scales.*

THE PARTING OF GALAXIES
Backdrop at the theatrical performance, 'Animals Out of Paper', Visual Arts Gallery, IHC, New Delhi, 2018



The millions of colours in the visual spectrum imbue some of the projects with polychromatic expressions, ranging from building scale to A4 size.
 LEFT TO RIGHT | "Polychrome Grid Series [Opus-I]", Singapore Affordable Art Fair, 2018; "Hiranyagarbha – The Golden Egg", and "The Grid Garden", both from, The Folded Garden, Solo Show, Visual Arts Gallery, IHC, New Delhi, 2014

I close this photo-essay with three maxims and visuals of four works in rainbow colours. These words and nature's colours inspire me every moment, as I go about seeking to unite my atoms with those of the cosmos through my meditation of folds and *karma* of folding.

Reading+Reference

Geometry Aims at the Eternal
 Plato

The Universe is Mathematics
 Max Tegmark, MIT Cosmologist

The Universe is a Living Organism
 G. de Purucker



*'The Icon Unfurled',
For RAW Collaborative,
Mill Owner's Association Building,
Ahmedabad, 2019*

All images courtesy the Author

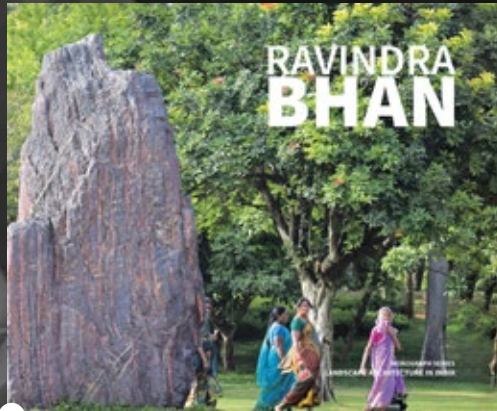




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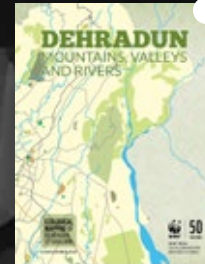
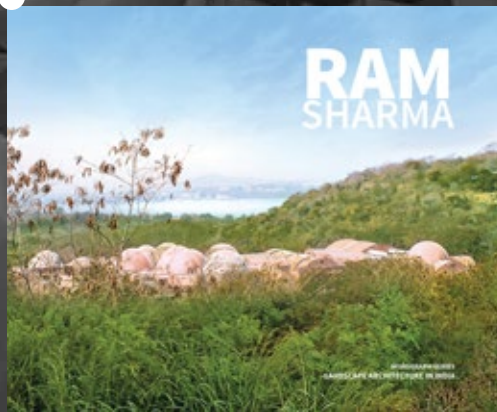


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FOCUSING AHEAD 2021
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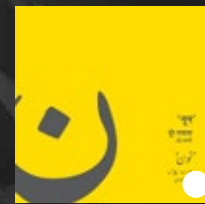


NATURE MAP
november

MONOGRAPHS
july



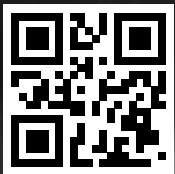
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