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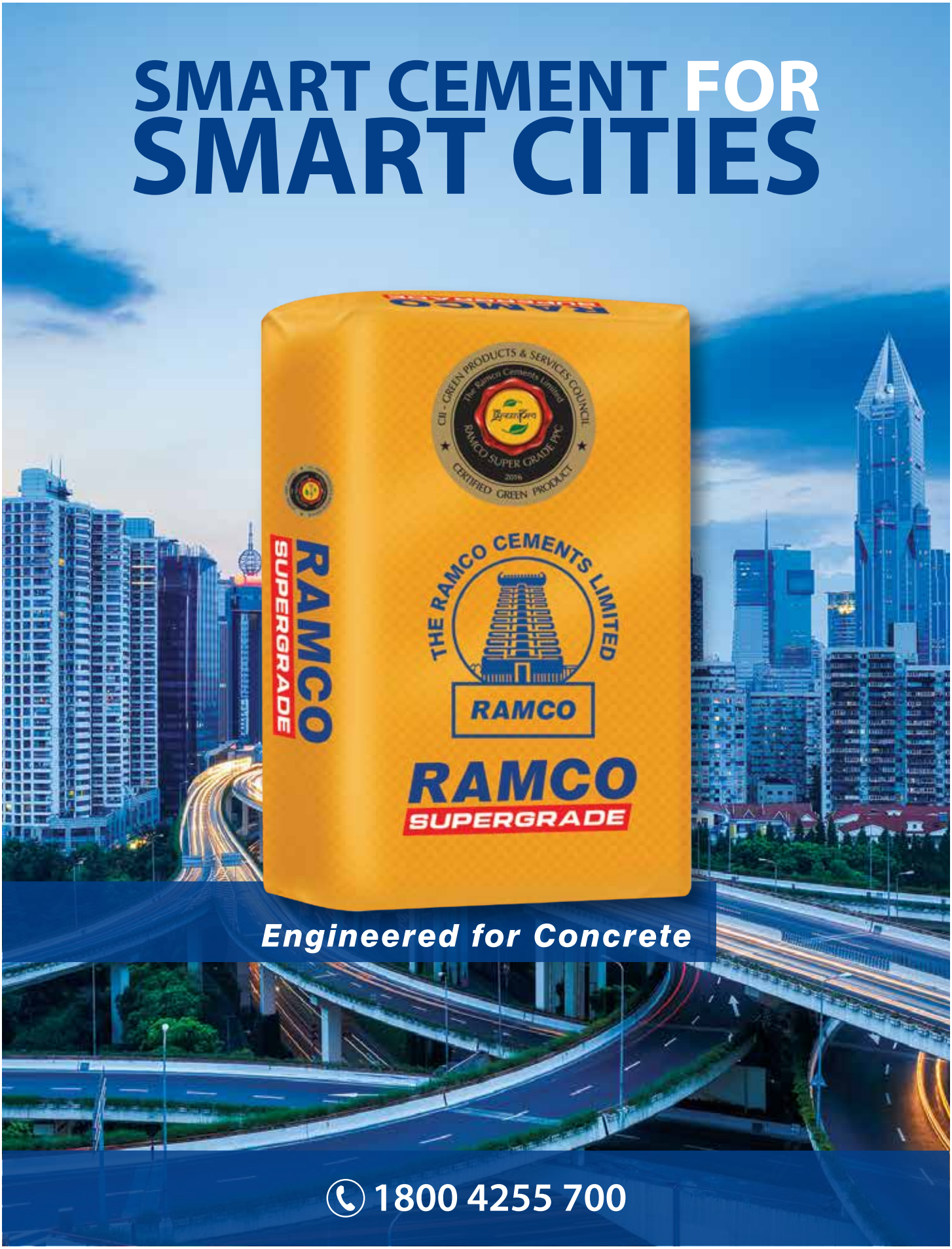

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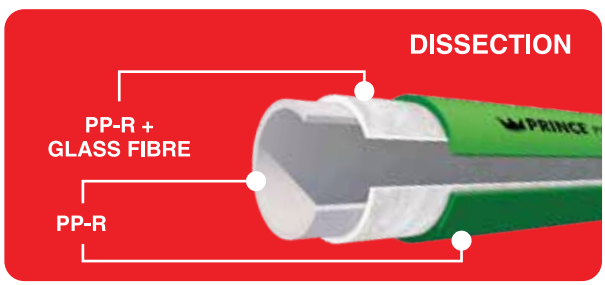

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+91 22 22046972 / 22818491 / 22884805
+91 22 22832516 (FAX)
iiapublication@gmail.com
iiaho2014@gmail.com
www.indianinstituteofarchitects.com

Editor Ar. Lalichan Zacharias
R.N.I. No.9469/57
lalichanz@gmail.com

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info@nvmbr.in
www.nvmbr.in

REDBOX DESIGN STUDIO
redbox.studio4@gmail.com
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Printer's Email
arihantdigiprint.offset@gmail.com
krish.graph2021@gmail.com

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EDITOR'S NOTE

India celebrated her 75 years of Independence this month.

The theme for the August issue is INSTITUTIONAL.

Indian architects, after British Rule, were in a state of confusion for a while, since most of them had worked under British architects. There was, perhaps, an identity crisis, a dilemma- whether to stick on with historical precedents or move forward with the times using new ideas and techniques. This was when Shri Jawaharlal Nehru invited Ar. Le Corbusier to India to design the city of Chandigarh. Chandigarh became a powerful symbol of New India and inspired architects and the public for a forward-looking Modern Architecture in the post-Independence period.

This issue tries to give an overall view of post-independence Architecture in India, through the articles by Ar. Gaurav Agarwal, Ar. Suneet Paul and Ar. Rajesh Malik.

Ar. Preethi Agarwal is in Dialogue with Ar. Naresh Narasimham.

We have Ar. Rahul Jadon and Ar. Rahul Kardam writing on 'Celebrating Institutionalism in Architecture'.

We have our regular features - Photo Essay, Pedagogue's Perspective, Travelogue, Sketches and others.

Various design features of institutional buildings are also covered in this issue.

We express our gratitude to IIA Chennai Centre for contributing Rs. 3 lakhs to JIIA.

Please contribute articles, design features, photo essays, sketches, etc. to JIIA regularly.

We appeal for your help in sourcing advertisements to be published from various building materials and product manufacturers.

Enjoy reading JIIA.

Warm Regards
Ar. Lalichan Zacharias
Editor

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PRESIDENT'S MESSAGE

Dear Members,

Greetings!

The Indian Institute of Architects as an Institution has grown over the last 107 years as a pioneering professional body with a sustained growth with over 25000 members today. It is a creditable achievement and we have to take it forward with zeal and enthusiasm.

We had the opportunity to visit our youngest Jammu & Kashmir Chapter, interact with the office bearers and the executive committee to understand and discuss their aspirations and concerns. We appreciate the efforts of the Chairman Ar. Vikas Dubey and the team in providing the vision and leadership for engaging the members and its growth. The Vastukar Samagam organized by the chapter was well attended and appreciated.

Chapter conferences bring in a lot of energy amongst its members. "Namadhu Vizha" the TN Chapter Conference hosted by IIA Chennai Centre had an eminent list of speakers and Panelists. Congratulations to Chairman Ar. Kurian George and the organizing team for their meticulous work in ensuring good participation and content which was appreciated by one and all.

With increased activities it is pertinent to set up some systems for the smooth functioning of the organization at all levels and we shall work towards that to maintain transparency and efficiency.

The IIA awards have been announced and it is an opportunity for our members to share their works of Architectural Excellence.

Along with the Young Architects Festival hosted by IIA Calicut Centre of Kerala Chapter, YAF Awards for young Architects under 40, in a different format, have been announced. Young practices /Architects can participate as many are doing innovative and excellent work. A design competition has also been announced for young Architects. Appreciate the IIA Calicut Centre and the IIA Young Architects Committee for this initiative.

The JIIA's issues, on a different area of focus every month, have received a very good response, thanks to the editorial team's sustained efforts. JIIA needs support from Chapters and Centres in sourcing advertisements.

With best wishes,

Ar. C. R. Raju
President, IIA

Ar. C.R. Raju
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COMMENTS

Dear IIA & Entire publication team,
This is acknowledge the receipt of JIIA issue from May,Jun & Jul 2022, I Must Congratulate the Editorial Team for the Issue of Jul 2022, such a wonderful topic of HEALTHCARE, in Journal/Magazine . i wish Looking ahead to forthcoming issue as well.
Hats off to the entire team

Ar. Mukesh Kumar

"The Indian Institute of Architects is a renowned institute and the Journal of the institute is not a medium to convey the idea only but it is a system to express the idea in a celebrated style. So that, every person in the architecture community can connect with it. Also, JIIA is a source of enhancing knowledge, practices and research work for the members. I applaud the immense efforts of JIIA's team to successful publication."

Ar. Divya Saini
Landscape Architect
Committee Member of Interaction with Local Bodies - IIA Northern Chapter

The JIIA has become a 'must read' journal for both professionals and academics among architects. I must say that the latest issue of JIIA, July 2022, with a focus on 'Health Care' is very well created. IIA with my good friend Ar C R Raju has done excellent service to its members. Great teamwork! I can see how the delegation of responsibilities by the IIA President is doing wonders! .!

Jai Hind.

Ar. Mahesh N

The Healthcare issue is excellent issue in many ways for professionals and students alike. Congratulations. JIIA standards are rising with every issue.

Dr. Dakshayini Patil

We welcome your comments and suggestions.

Please write to us at **jiiaeditorial@gmail.com**

THEME

INSTITUTIONAL ARCHITECTURE IN INDEPENDENT INDIA

Greetings on SWATANTRATA KA AMRUT MAHOTSAV !
Currently India is celebrating the 75th Anniversary of its Independence. India has been progressing since its Independence and is now one of the important countries developing rapidly. Building up a "New India" was a great task for the leaders and institutions play an important role in nation building. The conception of IITs, IIMs and several other educational institutes in the post-independence period triggered technological and scientific development in the country. Le Corbusier, A.P. Kanvinde, Louis Kahn, Joseph Allen Stein, B.V. Doshi, Charles Correa, Anant Raje and many more gave direction to institutional architecture in independent India. Their interpretations of a modern, democratic, secular India were manifest in the institutes they designed and have set an example for generations of architects and students of architecture in the country.

Institutes are responsible for nurturing the youth of the country and need a conducive environment for the same. Architects play a very important role in creating such an environment. Institutional architecture is shaped by the vision and mission of the institute and is reflected in its built form. In the case of private institutes and universities, the architecture tends to be directed by the values and choices of their promoters. The New Education Policy aims to make education inter-disciplinary and trans-disciplinary, and has hinted towards breaking disciplinary boundaries to allow exchange of knowledge and ideas. This will probably manifest in a more inclusive environment in which the conventional departments will be freed from their traditional boundaries and will become more porous, allowing easy access. Research, innovation, incubation and societal extension works are other responsibilities of the educational institutes. Information and communication technology (ICT) has revolutionised the teaching-learning process. This was evident during the COVID 19 period when we faced unprecedented challenges. ICT is also affecting the way architects now will look at teaching-learning processes.

Institutes apart from the remaining which are just 'knowledge centres', render an identity to the city or the region where they are located. Institutional campuses with large tracts of open spaces and landscapes hold ecological, environmental and social values. These landscapes function as important lungs for the city, locales of bio diversity and much more. Hence the design of institutional open spaces has multiple dimensions to be addressed.

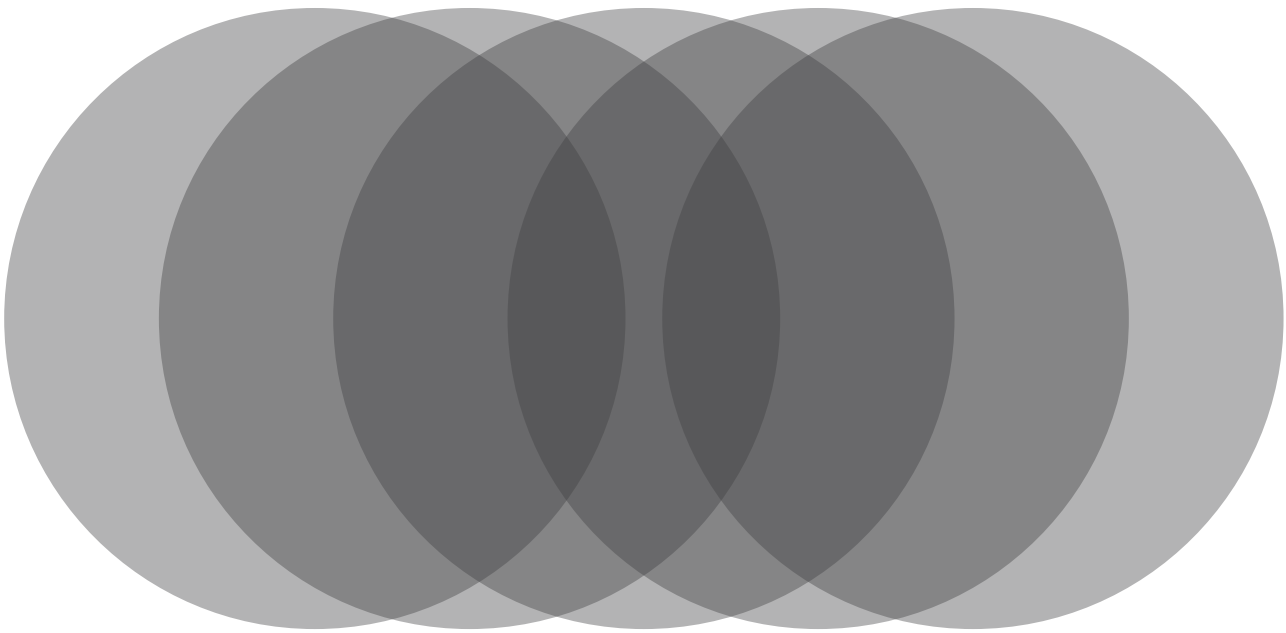
On behalf of the Board of Editors and Reviewers of the JIIA, I am very glad to present this special issue on Institutional Architecture.

Once again, wishing all the members and readers for SWATANTRATA KA AMRUT MAHOTSAV.

Dr. Abhijit Natu is the Principal In-Charge of BKPS College of Architecture, Pune and the Chairman, Board of Studies in Architecture of Savitribai Phule Pune University, Pune. He is also a Member of the Board of Reviewers of JIIA.

RESEARCH

THE IMPACT OF THE PANDEMIC ON TANGIBLE AND INTANGIBLE HERITAGE: TAKING THE CASE OF PHOOLWALON KI SAIR, MEHRAULI



Ar. Savar Suri
M. Arch. (Built Heritage)
Sushant School Of Art and Architecture
savarsuri@gmail.com

ABSTRACT

The COVID-19 pandemic has drastically impacted the arts and culture sector around the world. There is a severe research gap in studies for the knowledge of heritage with regards to the pandemic. The aim of this research paper is to understand the effect of the pandemic on intangible and built heritage, taking the case of Phoolwalon ki Sair, Mehrauli.

Phoolwalon ki Sair or the procession of the florists is a week-long festival where people of different faiths offer a floral chaadar and pankha at the Dargah of Khwaja Bakhtiar 'Kaaki' and the Yogmaya Temple in the heritage precinct of Mehrauli. Delhi. The procession takes place every year in the months of September-October. The pandemic years provided a unique opportunity to study the short and long term impact of the it on communities, livelihoods and built heritage linked with this festival. This may help perhaps propose a sustainable framework for a post pandemic world for heritage to remain relevant and help people recover a sense of continuity, dignity and empowerment.

The research for this paper was conducted in three stages, namely the literature review, primary data collection and secondary data collection. The literature review encompasses data sourced by searching with keywords related to the research topic and formulating it in terms of a scholarly interpretation. The primary data collection involved formulation data in form of visits to Mehrauli and interviews with stakeholders. The secondary data collection encompasses the literature study to further organize and create a framework for the primary data collected. The scope of this study was limited to the procession path of the festival in the precinct of Mehrauli. The limitation in this study was the enforcement of covid lockdowns, due to which data collection was affected but whenever during the two years of the pandemic i.e. 2020-2021 there were times when the world was open, research was conducted.

In conclusion, it was found that there needs to be support and aid from the government reaching the craftsmen and the artists. Social media could also be used as an effective tool to form an archive of the festival for future generations and we, as people need to create a discourse around this, come forward in these difficult times of the pandemic to create a better world.

Keywords: *Pandemic, Cultural heritage, Phoolwalon ki sair, Festivals, Traditional livelihoods, Sustainability*

1 INTRODUCTION

1.1 BACKGROUND

At the height of the global lockdown, a lot of countries had closed their World Heritage sites or monuments. It is estimated that the short and long-term economical consequences are would be massive as many of these natural and cultural sites solely base there revenue on tourism. These sites also use this revenue, in turn to carry out conservation or archaeological work. It is also said that ninety percent of these sites had closed for the public during the covid lockdowns and as many as one in eight may never reopen again (Wahba, et al., 2020).

Also, with the current scenario of covid-19, affecting the world as a global pandemic we are as a society at our most vulnerable. At such times of crisis, access to and care for the cultural heritage may help vulnerable people recover a sense of continuity, dignity and empowerment. In the near future, what will be called the new normal, the acknowledgment and safeguarding of the cultural heritage, will be a strong anchor for the world in returning to normalcy (UNESCO, 2013). Further, the cancellation various events namely as rituals, festivals, and other different types of traditional practices will have a direct impact on the communities involved with them (Wahba, et al., 2020). For instance, for Phoolwalon ki Sair, there are certain communities involved like the weavers who weave the pankha or the fan.

The culture of a people, society or community always leaves its imprints on the built heritage (UNESCO, 2013). Tangible heritage includes archaeological sites, historic cities, areas and seascapes as well as gardens and places associated with historic events. UNESCO (2013) has also stressed on the importance of intangible cultural heritage, including oral traditions, performing arts, social practices, rituals, festive event. From Eid to Diwali, India plays host to a wide variety and styles of celebrations. Further, in Delhi, we also see a mix of celebrations taking place year round by different communities. This is evident when one studies a precinct as Mehrauli, a confluence of activity also reflects the same with the Phoolwalon Ki Sair and social heritage and other local traditions associated with which can be identified with the place, linking it to the built (Vasavada & Thakur, 1991). Phoolwalon ki Sair is a phenomenon related to built heritage touchpoints and placemaking, which have been explored further in this paper.

Historians such as Rana Safvi (2020).have also argued that the built heritage of Mehrauli is "living". According to her, the built heritage of Mehrauli is best understood as a continuing process in "time" (historical time) and "place" (Mehrauli). The act of building in the past was a physical manifestation of the philosophy, ideals, and building traditions. Phoolwalon Ki Sair or what is called the procession of flower-sellers rallies their way down the flower-sellers' market street in Mehrauli. There are dances of the Kathak form, songs sung in the form of qawwalis, a myriad of lights, huge pankhas or fans that are made of mostly palm leaves and are decorated with flowers and tinsel, and circus acrobats

The flower pankhas are transported through the narrow paths in Mehrauli in a massive parade that is accompanied by fire dancers. The Lodhis constructed the Jahaz Mahal lying at the banks of the Shamsi Talab near the Bazaar street, where the cultural event is held. The Jog Maya temple is nearby, hidden behind the mausoleum of Adham Khan, and it is a significant architectural landmark (INTACH, 2012a).

1.1.1 ON MEHRAULI

Mehrauli is an important historic "urban village" of Delhi, it is also referred to as Lal Kot, which is one of the cities of Delhi. It is also synonymous to the Qutub complex which has been selected for nomination in the list of World Heritage sites (Vasavada & Thakur, 1991). Besides the complex, Mehrauli is home to a wide variety of other noteworthy buildings and clusters of

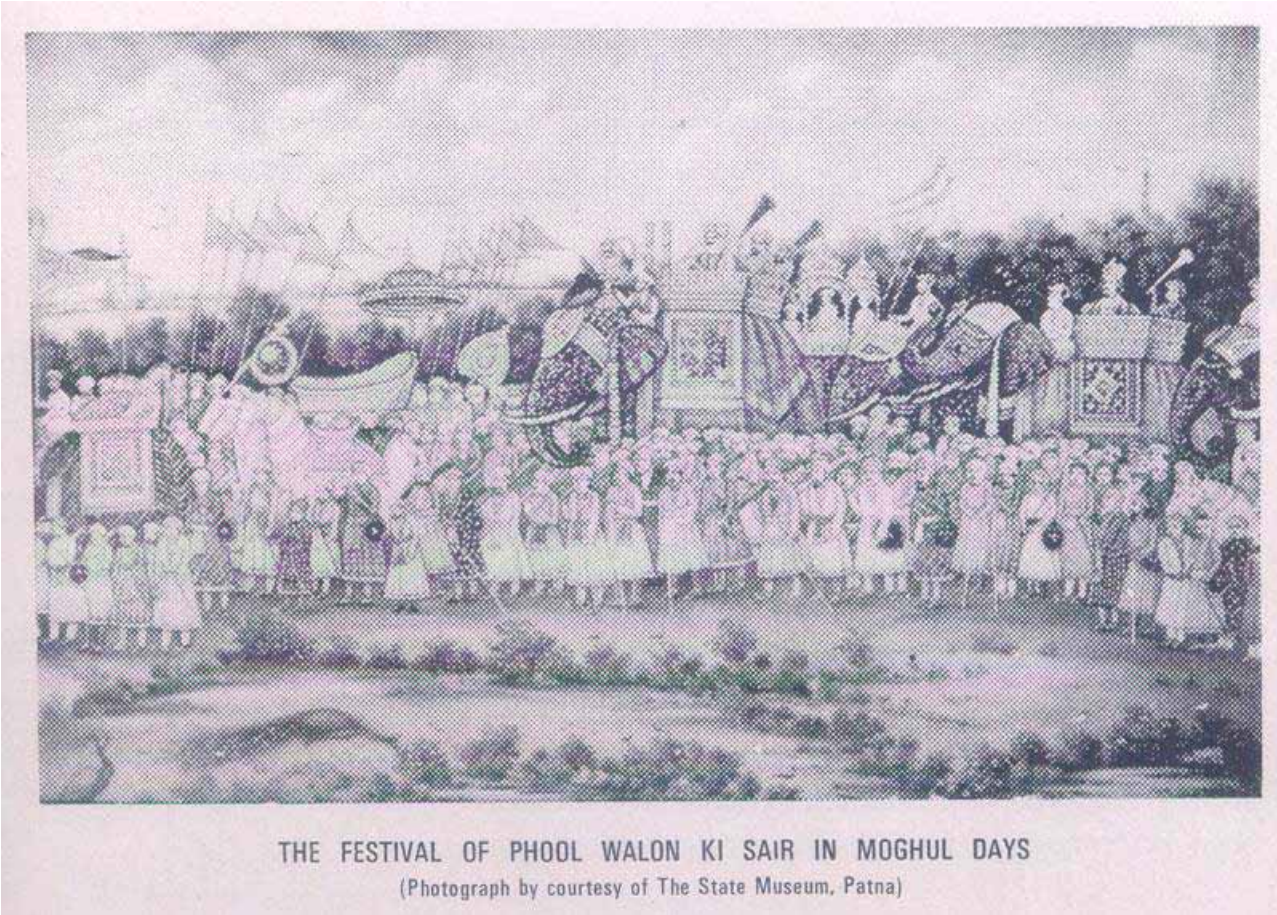


Figure 1: A Mughal miniature painting depicting the Phool Walon Ki Sair.
(Source: http://www.phoolwaalonkisair.com/gallery_old.htm)

buildings that are surrounded by breathtaking scenery. Just outside the "urban village" is where the capitals of Rai Pithora and Lalkot once stood. Mehrauli in itself has a large amount of constructed heritage, must also be taken into consideration for preservation. Mehrauli, with its Phool Walon Ki Sair or the procession of florists, an annual celebration also reflects on its important association with the intangible.

1.2 AIM, OBJECTIVES, SCOPE AND LIMITATIONS

The aim of the study is to understand the effect of the pandemic on the intangible, such as Phoolwalon Ki Sair and also the built heritage that surrounds it.

The scope of this study has been constricted to the procession path of Phoolwalon Ki Sair in the precinct of Mehrauli. The main limitation in this study being the Lockdown, due to which data collection may be limited and affected. Also, during the primary survey all pandemic related safety norms will be followed for instance social distancing and this may have an impact on the data collection.

2. LITERATURE REVIEW

The literature review encompasses data sourced by searching with keywords related to the research topic i.e. COVID-19 and Phoolwaalon Ki Sair and formulation of an data. The literature review shall be further divided into subpoints. With this, a narrative framework shall be created of how to tie logically, all the points research. This shall help in the step of analysis.

2.1 Disasters and Pandemics in the Indian Traditions

Disasters and pandemics are historically known to have a strong impact on economy, the a relation with the growth rate and economies of countries have always been observed. It is also said in Hindu Mythology that prosperity follows peace (Pattanaik, 2018). Also, that natural disasters have always acted as great disruptors of peace. For instance, during the black death plague of 1348-49 in England had caused and economic depression and festivals and celebrations were the first to be cancelled (Ahmed, 2020). It can hence be established that out of the various expressions of cultural heritage, festivals are most fragile. Further, it is important to review the interrelationships between communities, practices and get an understanding of the various dimensions that impact festivals, particularly during unprecedented scenarios such as the current global pandemic.

2.2 Resilience and Vulnerability Assessment

Gonsalves (2011) talks about understanding resilience and vulnerability as a key element of effective disaster management. In particular, a resilience and vulnerability assessment can:

1. Identify the strengths of particular areas, communities or groups, in terms of resources, skills, networks and community agencies. These strengths and capabilities may be used and further developed to minimise the negative consequences of an emergency.

2. Identify vulnerabilities of particular areas, communities or groups, so that these can be managed in terms of prevention and preparedness activities, response activities and recovery programmes. These shall be found out via primary sources i.e. visits and interviews.

2.3 Impact on Festivals in the Global Context

Rappeport & Smialek (2020) discuss that a large global recession since the Great Depression is taking place and might worsen in the years to come is a result of the quickly evolving COVID-19 pandemic catastrophe having a great effect on how societies function by disrupting working life patterns and many firms suffering (ibid.). For instance, the Hong Kong arts festival, which features over a hundred performances and events has been cancelled for 2021 (Kenya, 2020). The lives and livelihoods of those linked with the festival have been irreversibly affected and many are looking at uncertainty in terms of their economic sustenance. Also, the decision to cancel the festival is historic, happening for the first time in its forty-eight year old history that it has been cancelled and what is further fascinating that it was held in previous years despite threatening situations such as political unrest.

2.4 Sensitivity of practices and economics

In India, this could be observed in the recently concluded festival of Ganesh Chaturthi. Every year, come Ganesh Chaturthi, various businesses related to the festival get invigorated – from idol-making to flower growers and sellers but this year is different (Jayasimha, 2020). A surge in the number of COVID-19 cases in the city has meant that people planned low-key festivities, which in turn meant that the festive season was not as fruitful for these businesses (ibid.). This reflects how sensitive practices and economic activities around festivals are.

2.5 Festivals as cultural heritage

Getz & Page (2007) emphasize the fact that festivals are a reflection of society and can be characterized as "a sacred event entailing celebration, highlighted in time by specific observances" and that they occur in almost all human societies. Festivals are presented in a number of venues, including both physical and virtual spaces, and they are managed by groups from the public sector, non-profits, and the corporate sector. (Newbold & Jordan, 2016) argue that festivals can be anchored in regional or religious customs, have a cosmopolitan reach, or be diasporic (like the New Year celebrations of the Chinese). Durkheim & Swain (1915) say that festivals have long been recognized as occasions of 'collective effervescence' that lead to the development and dissemination of a strong sense of community among their participants. They are indeed a manifestation of rich living heritage (Falassi, 1987).

2.6 A case of India

The Onion (2014) argues that, in a country like ours wherein the cultural diversity is significant and unique, it also gets manifested in artefacts, behaviour, feelings, values and beliefs. It is also said that India is a country with several different fairs, with unique fairs in each region. The National Portal (2014) provides virtual access to fairs and festivals in ancient towns like Varanasi as well in Rajasthan, Gujarat, Haryana, Mizoram, Assam, Kerala, Sikkim, and Goa, to name a few. Tayeb (2003), further states that these fairs are not only a place to sell traditional products manufactured by local artisans, but are also centres of art, demonstrating local art forms and traditional methods of manufacture. The Rajasthan Tourism website also lists 43 fairs and festivals that take place throughout the state (Rajasthan Tourism, 2014). Also, taking a case of northern India, one of the very significant fairs, economically and socially, which is sponsored and managed by the state of Haryana is the "Surajkund International Crafts Mela", which takes place annually from 1st to 15th February. It showcases regional and international crafts and traditions and celebrates the unique diversity of Indian culture and traditions (Haryana Tourism, 2014). This Mela was held for the very first time in 1987 with a rural setting as indicated in the official website for the Surajkund Mela's of the Past, 2014. The vision of the Mela Authority, which is the organising committee is to preserve the arts and crafts of India and promote the skilled local artisans of India.

2.7 International Traditions

Internationally too, fairs portraying culture and traditions are held regularly. The "Westcott Street Fair", USA is held annually to celebrate the diversity and uniqueness of Westcott neighbourhood through its culture. Even though it is held only for a day visual and performing arts along with the local food are an integral part of the fair as mentioned on their official website (WSCF, 2014). Another example is "The Asian Fair" held annually on the South Florida Fairgrounds, is an annual event that started in 1992 and promotes the importance of cultural diversity in building a vibrant, prosperous and healthy community. It showcases the diversity of Asian culture and heritage as mentioned in their official website (asianfair.org). In New Zealand, "The World Food, Craft and Music Fair, held annually in the city of Palmerston North is also a fair to celebrate art, culture and lifestyle. A cuisine show called "A Taste of Culture" is also part of the fair (Eventfinda, 2014). From the above, it can be concluded that fairs are typically conducted to celebrate, spread, and instil a region's culture or, in the case of India, a subculture.

3. METHODOLOGY

The methodology is shown in Fig. 2.

The methodology for this research, started with referring to existing references in the form of books, research paper and articles. This in turn helped form the research question, which pondered on the research gap and hence the topic was selected. After that, a literature review was conducted on Phoolwalon Ki Sair and the impact of covid on heritage. Further, to establish a connection between the two, data

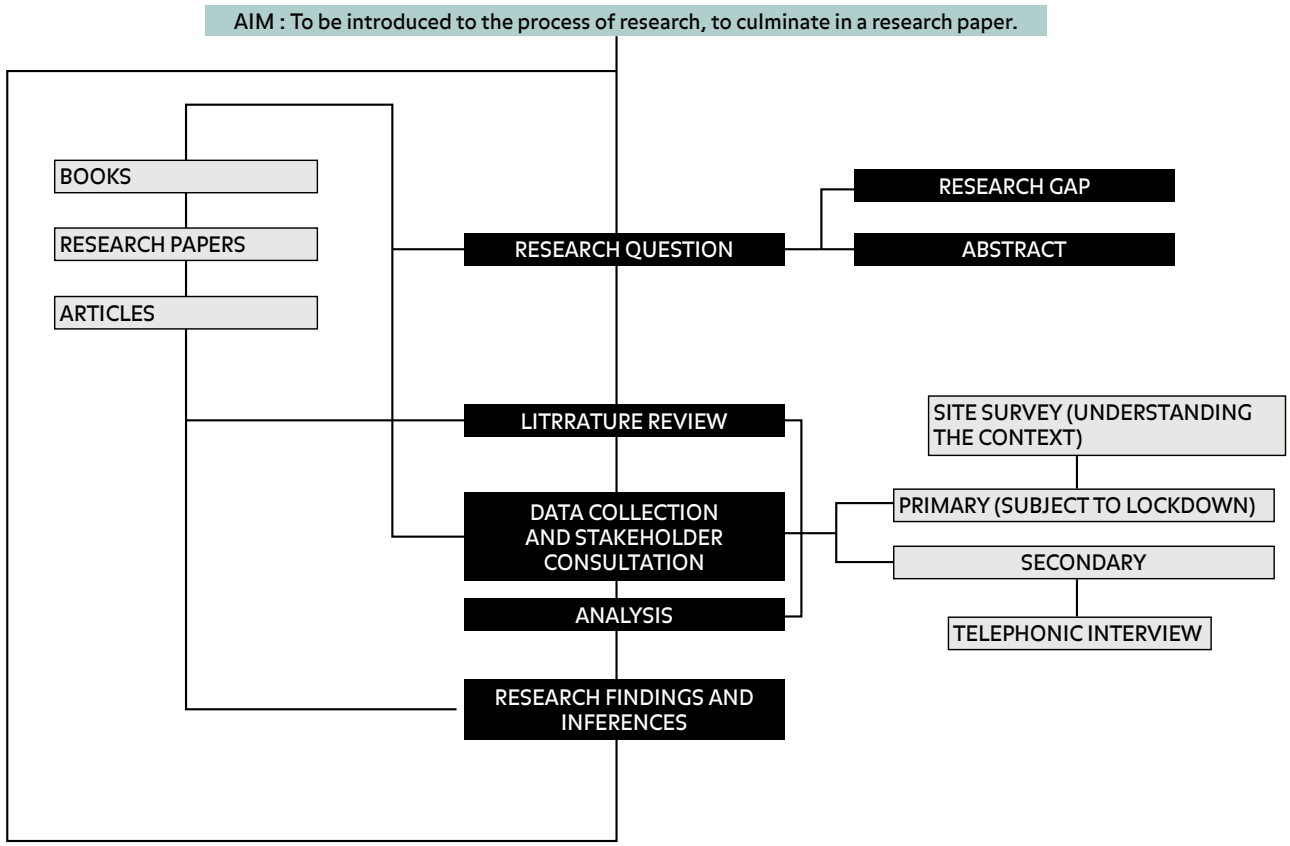


Figure 2: Methodology *(Source: Author)*

collection was done in the form of primary survey, along with stakeholder consultation focussing on first-hand information but also telephonic interviews (due to the enforcement of lockdowns). From these research findings, inferences were drawn and recommendations have been formulated.

3.1 Primary Data Collection

The primary data collection step within itself encapsulates data in form of interviews of various stakeholders as well as documentation of the procession, subject to its taking place. Interviews can also give an insight into additional question pertaining to the activities performed during procession along with photographic and video graphic evidence while visiting and being a part of the festival. COVID prevention measures such as distancing and wearing of mask have been followed.

3.2 Secondary Data Collection

The secondary data collection step involves the literature study to further organize and create a framework for the primary data collected. In addition to literature, various other media like podcasts and webinars will also be studied in detail to analyse various geographical, social, cultural aspects keeping Phoolwalon ki Sair at its core. Also, since the pandemic is a current scenario, the data would be current and up to date.

3.3 Analysis And Inferences

This step shall involve analysing the literature review and the various data forms (primary and secondary) to form inferences or recommendations.

3.4 Expected Outcomes

This research paper shall aim to fuse the two aspects, namely heritage and the pandemic and perhaps propose recommendations for a post pandemic world for heritage to remain relevant and help people recover a sense of continuity, dignity and empowerment.

4. DISCUSSION

4.1 About Phoolwalon ki Sair

Sircar (2019) establishes that the festival of Phoolwaalon ki Sair, translated to Procession of the Florists can easily be designted as one of the most prominent and oldest festive events of Delhi. Spear (2002) says that although the event began in its modern form under the Nehruvian state's auspices in the early 1960s, its historical roots may be found in 1812, when Delhi was under the reign of the penultimate Mughal king Akbar Shah II. The event became an annual festival, continuing even after Akbar II, and the celebrations were at their peak during the time of Emperor Bahadur Shah Zafar. It was stopped from being celebrated by colonial powers during the time of the Quit India Movement in 1942, but was reintroduced in 1961 as a symbol of communal harmony by then-Prime Minister Jawaharlal Nehru.

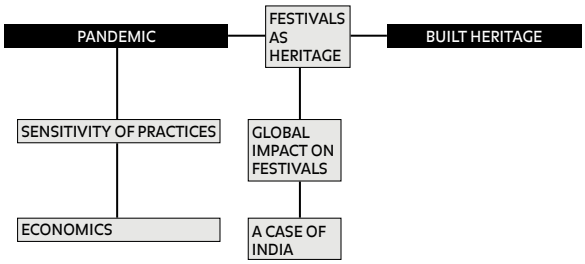


Figure 3: Conceptual framework *(Source: Author)*

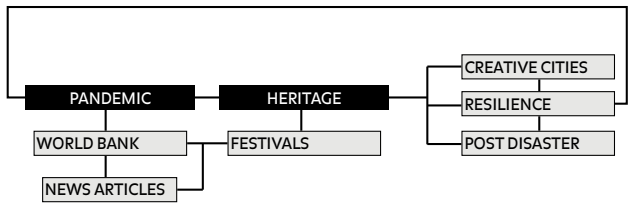


Figure 4: Theoretical Framework *(Source: Author)*

Since 1962, this festival is being hosted by an organization named Anjuman Sair-e-Gulfaroshan with Ms. Usha Kumar (2014) at its head, in collaboration with the government of Delhi where it is coordinated by the Lt. Governor and the Chief Minister. This festival is celebrated every year, taking a procession route with two important touch points of built heritage, namely the temple of Yogmaya Devi and the shrine of Bakhtiar Kaki. The precinct of Mehrauli, is one of the oldest neighborhoods of the capital. Sircar (2019) refers to the festival as seeking to promote social parity and communal harmony between people of various faiths.

4.2 Linkages with Built Heritage

Falassi (1987) also argues about the fact that festivals represent a temporality that is distinct from that of daily life, since communities do not celebrate festivals everyday but view them as specific events. Sircar (2019) observes the fact that festivals transfigure ordinary spaces into a special arena where their exceptional rites can be organized. This can also be connected to the case of the case of Phoolwalon ki Sair, which transforms the religious sites and urban spaces of Mehrauli from their everyday environment into temporary arenas for staging its myriad constituent rites. Gibson & Stewart (2009) also note that festive spaces act as "a point of convergence" where the different groups associated with the festival i.e. the organizers, volunteers, participants, sponsors amongst others can forge tangible, material and social networks among themselves.

In the case of Phoolwaalon ki Sair, this is true in the case of the Jharna, the Dargah of Qutbuddin Bakhtiyar Kaki and the Yogmaya Temple. Pankhas and chaadars of flowers are made at the Jharna and carried through Mehrauli village by Muslims and Hindus. As is the tradition, the chaadars are offered at the Dargah of Qutbuddin Bakhtiyar Kaki and the pankhas at the Yogmaya Temple. These three points i.e. Jharna, the Dargah and the temple are important linkages with the built heritage.

4.3 Conceptual Framework

The conceptual framework is seen in Fig. 3

The conceptual framework had two primary focii namely the pandemic and built heritage which were further broken down into concepts delving into festivals as heritage and the sensitivity of practices. After studying the global impact of the pandemic, the study was narrowed down to India and finally to Phoolwalon Ki Sair in Mehrauli, Delhi.

4.4 Theoretical Framework

The theoretical framework is seen in Fig. 4.

In the case of formulating the theoretical framework, research was conducted using two main keywords, pandemic and heritage. The research into the pandemic, yielded an interesting article from the world bank cited at the beginning of this paper which spoke about the disastrous effects of the pandemic on the revenue of heritage sites. This further opened a window into the enquiry for resilience and post-disaster recovery (talked about in recommendations at the end of the paper).

4.5 Historical Significance Of The Festival

Phoolwalon ki Sair, also known as Sair-e-Gul Faroshan, has now evolved into an annual three day celebration. The tradition was started by Begum Mumtaz Mahal, the wife of the Mughal Emperor Akbar Shah II. She had promised to offer a chaadar of flowers at the Dargah of Qutbuddin Bakhtiyar Kaki in Mehrauli if her son Mirza Jahangir was released from British custody. When Bakhtiyar Kaki, in 1811 finally fulfilled the vow she had taken, the entire Mughal court accompanied her from Shahjahanabad to Mehrauli.

A elegantly woven floral chaddar was presented to Khwaja Qutbuddin Bakhtiyar Kaki's shrine. An enthusiastic flower vendor then proceeded to add a big floral pankha (fan) that was draped from the dargah's ceiling. To include the Hindus in the crowd to participate in the celebrations, it was then decided to offer the pankha at the neighbouring Yogmaya Temple.

The Delhi royalty along with the locals stayed at Mehrauli for seven days, while the males flew kites and swam in the baolis in Hauz-e-Shamsi or indulged in cock fighting and wrestling, the ladies enjoyed seasonal showers in the mango orchards or sang on swings suspended from mango tree branches.

Day-wise schedule of Phoolwalon ki Sair:

- Day 1: Pankhas and chaadars of flowers are made at the Jharna and carried through Mehrauli village. The Lt. Governor of Delhi, is the chief guest and the Chadar is offered at the Dargah of Bakhtiyar Kaki and a Qawalli ceremony is held. The dargah closes at 6:30 pm so the ceremony is wrapped up before that.

• Day 2: The festival moves on to Yogmaya Mandir and a Shehnai performance is held outside. The procession is formed by the Shehnai players and the Pankha is accepted by the temple priests. This pankha is made and offered by the citizens of Delhi.

• Day 3: On this day, the Jahaz Mahal and Shamsi Talab become important touchpoints. A sound and light show is held at the Jahaz Mahal. There is sports competition held near the Shamsi Talab. After this, another Pankha ceremony is held and Pankhas from all over India are exhibited. After this, one set of these Pankha's from all over India are offered to the Yogmaya Temple.

During this time, it seems as if a festive air prevails in the streets of Mehrauli, which are decorated with flowers (see Fig. 5). Also, stalls that sell various items like bangles, toys, garments, and handicrafts are set up. One can also see Temporary halls, shamianas (a cloth canopy or awning set on poles), and tents being set up to accommodate the large number of people which come to visit the festival. The next part discusses about the important placemaking points (shown in Figure 6), which were touched upon briefly above.

4.6 Placemaking Points
Fig. 7 has to be referred to.

4.6.1 Jahaz Mahal
Jahaz Mahal, is a palace building and is located on the north-east corner of Hauz-e-Shamsi, built during the Lodi period. The structure was named Jahaz Mahal as its reflection in the water seems to reflect the image of a ship. The building was constructed to provide accommodation for pilgrims who came to Delhi on religious visits. It has a rectangular courtyard in the centre with domed rooms on all four corners. A mihrab on the palace's western wall serves as a private mosque. On the exterior, blue tiles have been used on the bands. Six square chhatris adorn the roof, which is supported by six, eight, and twelve pillars (INTACH, 2012b).

4.6.2 Dargah Of Saint Qutbuddin Bakhtiyar Kaki
Bakhtiyar Kaki's Dargah is a rectangular enclosure adorned and topped by a dome. Aurangzeb embellished the dargah's western wall with coloured floral tiles (INTACH, 2012b). The Dargah Complex has several entry points and is located alongside the Palace Complex of Zafar Mahal. To its eastern entryway, known as the Hathi Gate, are a nineteenth-century mosque and a Mughal mausoleum. Many Mughal dynasty members had wished to be buried near the holy shrine of Qutbuddin Bakhtiyar Kaki (INTACH, 2012b).

The dargah is located near the Zafar Mahal (as shown in Figure 7). According to a source from the Dargah

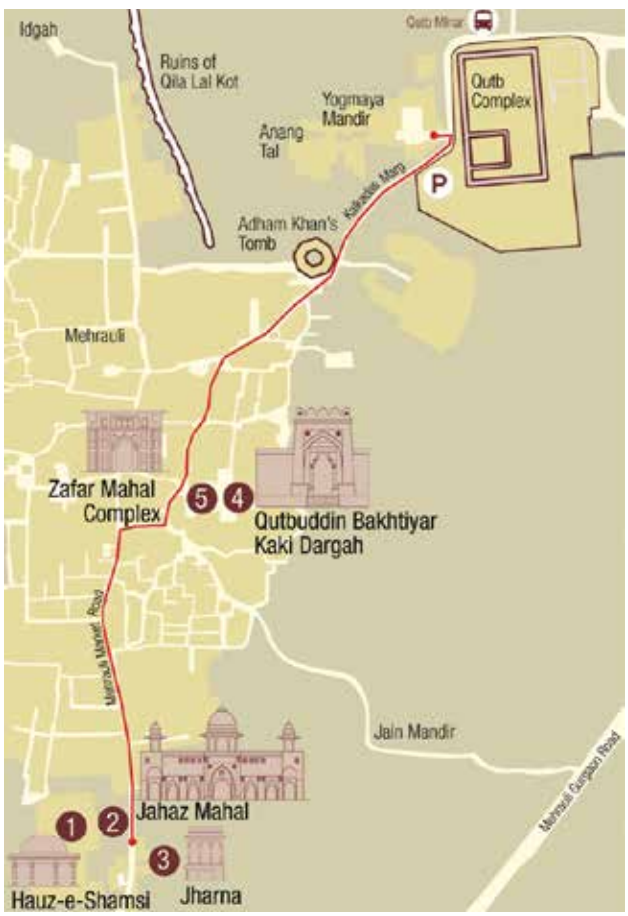


Figure 5: The procession path for Phoolwalon Ki Sair *(Source: Delhi Chapter, INTACH. (2012). Mehrauli Village. World Monuments Fund)*

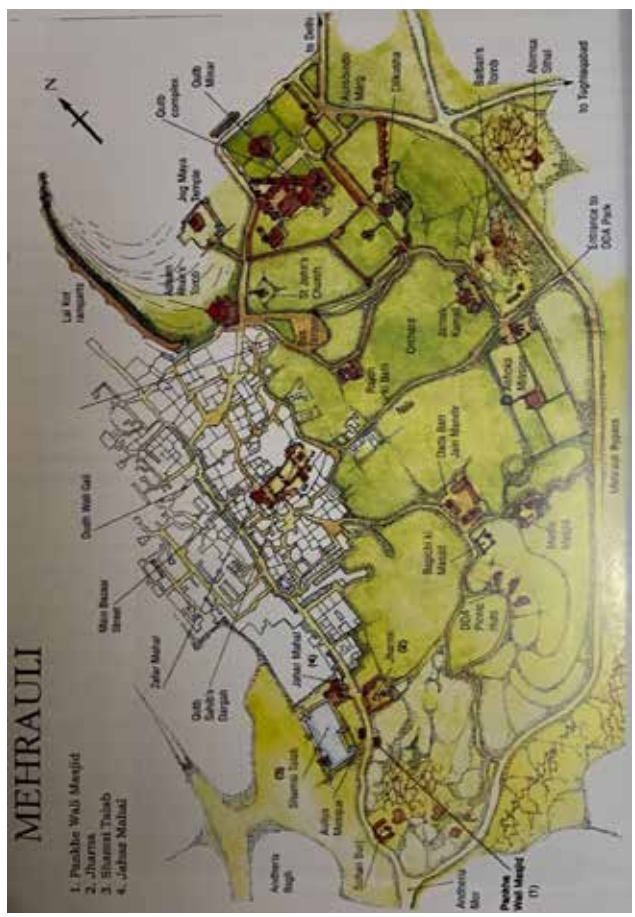


Figure 6: Map Of Mehrauli *(Source: Kumar, U. (2014) Phool Waalon Ki Sair. New Delhi: Abhinav Publications)*

Figure 7: INTACH board of the Dargah next to Zafar Mahal *(Source: Author)*

Figure 8: The state of collapse of the roofing of the Dargah. *(Source: Author)*

Figure 9: Tiling done on the Dargah by the committee- an insensitive intervention. *(Source: Author)*

management committee, it is a key placemaking point during the first and third days of the Phoolwalon Ki Sair festival. A qawwali competition is held on the first day, and a set of Pankhas is given to the Dargah on the third day. Despite the importance of the Dargah, the source laments the fact that there is no representation or help from the government for its preservation and care (see Figs. 8 & 9). The Dargah is entirely supported by the donations of tourists.

This is in contrast to the Yogmaya Temple, the Manager of which is a bonafide member of the Anjuman Sair-e-Gulfaroshan and which takes the onus of the cleaning of the Yogmaya Temple. Despite yearly visits by high ranking officials before the annual visit of the Lt. Governor of Delhi, there is no support. Due to this, the Dargah Committee has done insensitive repairs as per their budgets it seems that the historicity of the structure is at a loss. The Zafar Mahal, in contrast, which just abuts the Dargah was worked on by INTACH in 2017 while taking resources such as water and electricity from the Dargah for their work. The walls of the Zafar Mahal were restored with an admixture of lime and several indigenous ingredients like urad dal, the juice of bel and jaggery. Similar techniques could be used to repair the walls of the dargah and the baoli next to it as mentioned in the following section.

Figure 10: The pankhas from 2019 kept inside the Yogmaya Temple *(Source: Author)*

4.6.3 Qutub Sahab Ki Baoli, Dargah Of Qutubuddin Bakhtiyar Kaki

A baoli abuts the Dargah, completely hidden from view. Infact, very few people know about its existence. This structure is locally known as “Qutub Sahab Ki Baoli” and can be considered as hidden heritage. When the Delhi government released a calendar listing the city's major baolis in 2017, the Baoli was not included. Sources from the committee claim that they even wrote to the government after they forgot to mention the name of our baoli. The Baoli's structure is now dilapidated, and the water within the tank is hidden beneath layers of trash which reflect years of neglect and lack of upkeep.

Even the author and heritage activist Vikramjit Rooprai (2019).claims in his book that, While the majority of Delhi's baolis date back to the Tughlaq and Lodhi periods, this one was built just a decade before the British took over entirely. What amuses him, he says, is that despite the fact that Mehrauli was densely populated, a man was able to construct this massive structure.

The Shahjahanabad Redevelopment Corporation (SRDC) began cleaning the baoli in 2011-12 and then the work suddenly stopped. A source claims that the SRDC stated that this was only the initial or the primary phase of work, and that the secondary phase which entailed maintenance and conservation, would begin later. Almost ten years later, there has been no action on this front, other than a mention of the project on the Delhi Government's official website. In fact, the Indian National Trust for Art and Cultural Heritage (INTACH) was also interested in reviving the baoli, but no further action has been taken, despite their work on the previously mentioned Zafar Mahal in 2017.

He further states that when water was discovered in the basements of nearby buildings a few years ago, there was a petition filed to determine the source of the leak. Following an investigation, the Jal Board of Delhi discovered that water from the baoli was seeping into the surrounding areas. Water samples were also taken, and it was discovered that after adding chlorine, the water quality was comparable to that of the Jal Board. LL According to Mr Fauzan Ahmed, on the managing committee of the shrince since 2008, Meena, a Delhi Jal Board official, inspected this baoli. Meena, on the other hand, denies that he conducted any inspection. "Because we already had a water body in place, we offered the board to use its water for nearby areas to ease restoration and maintenance," Fauzan continues. However, nothing happened. (Parichha, 2020)

Mr Ahmed suggests that this can be brought back to its original use. Furthermore, the baoli also could become an effective source of fresh water for the shrine and surrounding areas, which will also help in its maintenance and upkeep (Kapoor, 2020). This could also restore the intended historic use of the Baoli, the function which it was intended to perform.

4.6.4 Yogmaya Temple

At the Yogmaya Temple, a source interviewed from the Yogmaya Mandir Welfare and Management Committee explains that the temple comes alive during the Phoolwalon Ki Sair as, on the last day of the festival one set of pankhas are sent here (Fig. 10) and another set is sent to the Dargah of Qutubuddin Bakhtiyar Kaki. The maintainence and upkeep of the temple is handled by the committee, whose members are the residents who live around the temple and every year one resident gets the chance to maintain the temple and also install a priest inside. The structures around the temple, were Brahmin Dharamshalas, out of which one still survives and the others have given way to modern plotted housing.

The association to the temple with the residents around is further strengthened as, if someone in the nearby cluster of houses passes away they decide to close the temple. Also, during the Phoolwalon Ki Sair, the onus of the decoration and cleaning of the temple lies with Anjuman Sair-e-Gulfaroshan with Ms. Usha Kumar (2014) at its head and the government of Delhi where it is coordinated by the Lt. Governor along with Delhi's Chief Minister. In addition, the head of the Yogmaya Welfare and Management Committee is also a member.

4.7 Current Scenario

4.7.1 Dwindling Down Of Participation

Popular participation in the procession is grossly missing, complain old-timers of the city of Mehrauli as well as historians (Adak, 2020). According a source who is a history enthusiast and conducts heritage walks in the area, there used to be a time when the entire Chandni Chowk and Mehrauli looked forward to winters for Phoolwalon ki Sair. He says, "I've been in Mehrauli since I was a child. The procession would begin with great fanfare. Families with children would participate. Shehnai was played by Ustad Bismillah Khan. Let alone other parts of Delhi, half of Mehrauli is unaware of it. Passes for the qawwali performances on Phoolwalon ki Sair have not sold in recent years in the quantities they used to be."

4.7.2 Threat: Lack Of Action

Sultan (2019) and Verma (2020) report that dozens of unprotected monuments at Mehrauli Archaeological Park are fading away. Other non-ASI monuments lack sufficient archival details, in contrast to those under ASI protection like Rajon ki Baoli and Jamal Kamali, which have sufficient historical records and photographs. An official stated, "These monuments have been listed as cultural heritage, but there is not much of information available on these, such as their true height and who the graves belong to."

This is echoed by Sultan (2019), who states that according to a Delhi government official, conservation efforts at a few locations have to be abandoned due to opposition from the public, authorities, and encroachment.

4.7.3 Effect Of Covid

Almost 400 artists and craftsmen are connected directly and indirectly with Phoolwalon Ki Sair. As an effect of the coronavirus pandemic, their livelihoods and future is shrouded in uncertainity. Ms. Usha Kumar (2014), the current convenor of the festival since 1962 says that this is the first time in almost fifty eight years that the festival hasn't taken place, due to the pandemic. Asif Khan Dehlvi, historian who also conducts heritage walks during the festival also reaffirms this and adds further that only once during the 1870's because of the unrest in the country at the time, the festival hadn't taken place. He also adds further that in addition to the artists and craftsmen, a lot of technicians and support staff also used to be employed which find themselves unemployed due to the pandemic. In addition to this, the flower market of Mehrauli was shifted in 2011 to Ghazipur but the flowers for Phoolwalon Ki Sair continued to arrive from Ghazipur so that entire network which was activated during this period has also been affected. Also, Dehlvi adds that numerous other support staff such as the drivers, who drove the artisans and craftsmen to the festival have also been heavily affected. The important placemaking points, discussed in the previous section are also deserted and seem in a state of disuse.

5. CONCLUSION AND RECOMMENDATIONS:

The pandemic has caused a great strain on people, including the built heritage touchpoints associated with it. There should be a push for sustainable development and practice, for the post covid world that we are about to step in, most importantly from the government. It is therefore recommended that:

- The heritage sites along the route of Phoolwalon Ki Sair, need to prepare for adequate footfalls and introduce measures such as surveillance via drones, gates and entry points working as control points to prepare for the post pandemic world. The Yog Maya temple and the Dargah of Bakhtiyar Kaki are prime examples where this needs to be carried out as they can get crowded.

- The Qutb Sahab Baoli, along with the Dargah can act as one complex and can add to the historic value of the precinct. The original use of the Dargah can be restored, which will stop it from further deterioration, respecting its built heritage.

- There has to be an attempt to study and uncover the Built Heritage of Yog Maya temple as it has been completely made into a new structure by giving it the shell of a modern building, covering the old mandapa and garbagriha inside. According to some sources interviewed, there used to be rocks and stones from the earlier Yog Maya temple structure, which are missing now.

• An attempt also needs to be made to restore the built heritage around the area of Shamsi Talab which has a lot of ruins of earlier structures and traces of the mango orchards that used to be here, according to sources interviewed. These can also be revived creating another important heritage experience.

• Built Heritage, should be treated with utmost sensitivity, even while carrying out restoration measures as well as while during temporary beautification (for instance installing lights and flowers for Phoolwalon Ki Sair).

• Virtual heritage tours can be conducted to promote the Built Heritage, using technologies like LIDAR (Light Detection and Ranging) scanning of monuments, in which and an entire building/site is scanned in three dimensions and virtual models are created of the same which can be enjoyed in the safety of people's homes via their devices.

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Ar. Savar Suri has over seven years of experience across varied residential and commercial. He has recently completed his Masters in Built Heritage (Architectural Conservation), an area of keen interest for him which he has been writing and researching upon.

DYNAMICS OF URBAN SPRAWL IN THE PERI-URBAN AREA OF PUNE, INDIA

Ar. Megha Gaikwad
Asst. Professor,
Indira College of Architecture, Pune
meghagaikwad3007@gmail.com

ABSTRACT

As contemporary cities grow, a global concern is how to manage agricultural land and resources for urban development. With social, economic, and environmental implications, this topic is of particular concern in India, where cities are rapidly expanding due to the country's already massive population growth. Pune city is a major education and IT hub, and its growth has a significant impact on the peri-urban area. This paper attempts to address the gap by studying both physical and social implications of agricultural land loss in the peri-urban area of Pune. The study employs a qualitative research design, relying on an ethnographic approach, with a mix of GIS mapping, direct observation and semi-structured interviews with peri-urban residents, and meetings with key informants. The results show that although agricultural land loss due to urban growth has been gradual in the past, it's expected to rise in the future as the populations grow. The research also looks into investigating the possibility of reorienting urban growth trajectories in an agriculture cohesive direction. The author proposes that effective land use management strategies are essential for preserving prime agricultural land.

Key words: *Urbanisation, Urban sprawl, Farmland loss, Peri-urban, Integrated*

1. INTRODUCTION

The rural–urban interfaces around the world are undergoing tremendous alterations. In the developing world, urbanization has emerged as a major driver of agricultural transformations, with conflicting results on production landscapes and livelihoods. By 2030, urbanization is expected to result in a loss of 1.8 to 2.4 percent of global cropland, with 80 percent of this loss occurring in Asia and Africa (Patil, 2018). Urbanization causes cities to sprawl over the surrounding hinterland. 'Sprawl' refers to any type of development that has an impact on open space, agricultural land and ecologically sensitive habitats. Simply put, as the population increases in an area or a city expands to accommodate growth, this expansion is considered as 'sprawl' (Khare, 2016). Land-use changes are especially noticeable in areas adjacent to shifting urban boundaries, which are variously referred to as urban fringes, peri-urban interfaces, or rural-urban interfaces (Patil, 2018).

Within Asian countries, India, which has a predominantly agrarian economy, is experiencing rapid urbanization. Combined with significant economic and industrial development, this has driven major urban expansion in India over the last few decades. According to the Census 2011, India's urbanization has accelerated faster than expected. Since Independence, for the first time, the total increase in urban population has out-paced that of the rural population. There are currently 53 million or more cities, accounting for 43% of the urban population. This has far-reaching implications for urban infrastructure and other civic amenities. Residential and commercial development is rapidly displacing agriculture and other undeveloped lands around them. The issues like urban sprawl, loss of vegetation and a decline in environmental quality can be attributed to rising population density, which concentrates more people on less land even as total land devoted to urbanization expands (Dutta, 2012).

The United Nations estimates that between 2010 and 2050, India's urban population would grow by about 500 million people. Urban land expansion due to urban population increase has put a strain on many countries' agricultural resources. Agricultural land is under threat from intensification, abandonment and extensive degradation, in addition to conversion to urban uses. From 9.36 million hectares in 1951 to 22.97 million hectares in 2001, the area of land used for non-agricultural purposes has more than doubled (Pandey, 2014). According to data from the agriculture ministry, it's evident that India's agricultural land has been shrinking. The data shows that 20 states recorded a 790,000 hectare decline in cultivable land in the four years between 2007-08 and 2010-11. Since 1995-96, the average size of a land holding has declined from 1.41 to 1.15 hectares (Koul, 2017).

Furthermore, Bhartendu Pandey's (2014) research gathers compelling evidence about the impact of urbanization on agricultural loss at the national level. According to him, through spatio-temporal patterns, farmland loss is significant in a few states. He characterized the spatio-temporal variation between states after estimating agricultural land loss for each year. The loss of farmland was concentrated in seven states, with Maharashtra suffering the greatest losses. The district level analysis shows that agricultural land conversion to urban uses is focused in some districts and states. During the period 2001-2010, the author found numerous areas that encompassed relatively tiny but fast developing cities that consumed prime agricultural fields. This includes the districts of Nagpur, Pune and Thane (Maharashtra), Lucknow and Kanpur (Uttar Pradesh), Jaipur (Rajasthan), Ludhiana (Punjab) and others. These findings suggest that agricultural land transformation is focused primarily on states with strong economic growth. Indeed, states with a higher percentage of total GDP contributed by the service sector, or the combined service and manufacturing sectors experienced greater agricultural land loss due to urbanization.

One such city in Maharashtra is Pune, which has been experiencing rapid urbanization. The factors causing urban sprawl in Pune are high rates of urbanization, low prices of land outside city limits, unplanned land development, lower taxes, availability of uncultivated land, and so on. Pune has grown incrementally with the need for housing and other services being organically met by local developers and residents. There is an urgent need to regulate the urban sprawl that has characterized Pune's growth. Nevertheless, many researchers have attempted to answer the question of urbanization and farmland loss through either the geo-informatics approach or social survey approach. The author strives for a holistic approach that includes a technical method as well as public opinion. The present study aims to investigate the physical and social implications of farmland loss due to Pune city sprawl.

2. PUNE

Pune, the second major city in Maharashtra after Mumbai, has a population of around 5 million people and is located 163 kilometres or approximately 100 miles east of Mumbai. Pune is a thriving centre for higher education and also a manufacturing powerhouse. In recent decades, the city has witnessed a high rate of urbanization, coinciding with its emergence as a regional and national hub for information technology and biotechnology, while maintaining strong ties to agriculture. (Sami, 2013). In recent times farmers in Pune have been important players in the city's real estate development industry.

National economic liberalisation policies, which started in the early 1990s, have resulted in several multinational corporations seeking a foothold in the Indian market. They found Pune to be an appealing location due to its proximity to Mumbai and a ready pool of highly skilled labor. Demand for housing and office space skyrocketed, and the city government, which had planned for urban infrastructure and development in Pune, was unable to keep up. This led to the perfect opportunity for the private sector to fill the void (Sami, 2013) (see figure 1).

To comprehend the overall urbanisation of Pune, one must first understand the catalyst for growth. Looking at the overall growth of the city from the pre-independence period to recent times many influences led to this growth. In the year 1820, Pune was the capital city with the Peshwas and wadas as dominant characters. The city was divided into 18 peths, which is termed the core city. In 1924, a new bridge across the river in front of Shaniwar Wada accelerated development across the river. When the villages of Erandwane and Bhamburda were incorporated into the city limits in the same year, the move across the river became official and planned development took place (Mundhe, 2017).

Mundhe (2017) further explains that the catastrophic flood of July 12, 1961, had a critical impact on Pune's development. The Panshet and Khadakwasla dams broke and their waters flooded the city, destroying most of the older part of the city. The flood washed away up to 75% of the houses, bridges, and green areas near the river. Many people relocated from flood-affected areas to safer wards such as Kothrud, Erandavana, and Shivajinagar, contributing to the city's physical growth. The pattern of means of transportation, such as railways and highways, had a significant influence on post-independence industrial and residential growth. Pune began to attract foreign capital in 1990. The greatest growth occurred following the IT boom and the establishment of two major IT parks, Hinjewadi and Magarpatta.

Adding to this, recently the state government approved the proposal for the merger of 23 villages within the Pune municipal limits, which took place in 2017, incorporating 11 villages. Experts, however, have questioned the need for the merger, referring to the fact that the Pune Metropolitan Regional Development

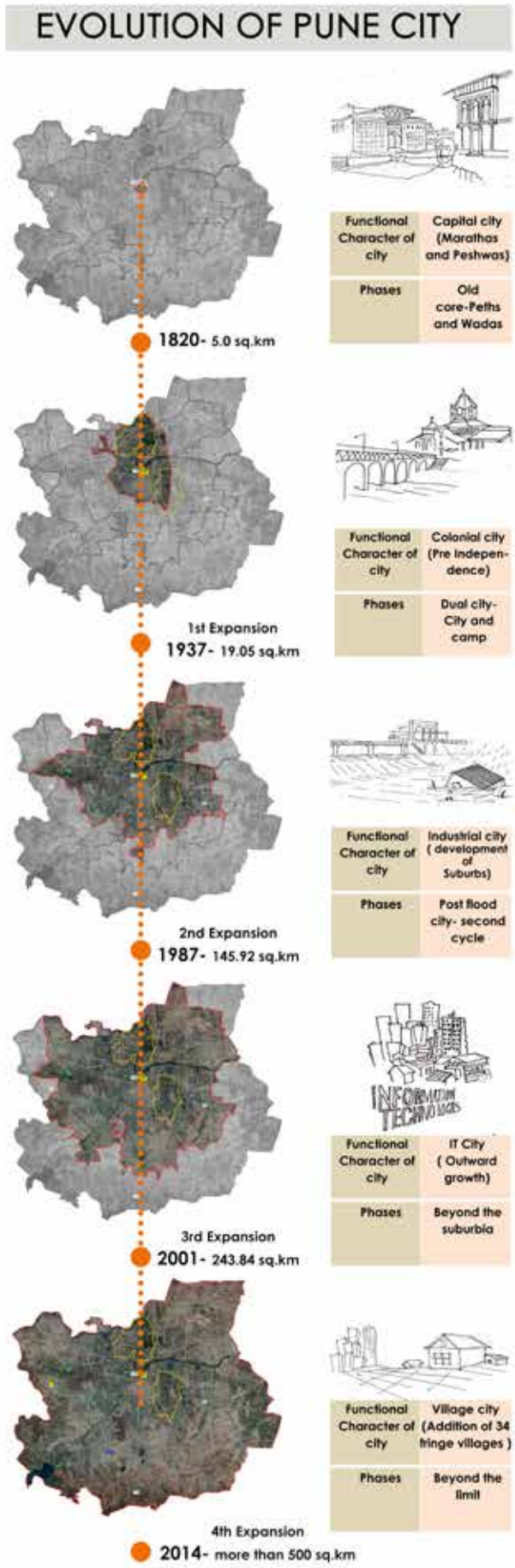

Figure 1: Evolution of Pune city *(Source: Author)*

Authority is managing the peripheral areas. The merger will only add toPune Municipal Corporation's (PMC) already-heavy burden of managing the current area and population with inadequate resources and manpower. In addition, PMC will need to find funds to develop essential amenities in the merged areas. These 23 villages are currently experiencing haphazard development. There are illegal structures everywhere, and farmlands are being encroached upon due to poor supervision and stringent regulations (TOI, 18 Dec. 2020).

The two main characteristics of a city's urbanization are urban sprawl and population growth. The population of Pune city as per provisional figures of Census India, 2011 is more than 3 million. The city's population has increased more than sixfold in the last 60 years, from 0.48 million in 1951 to 3.11 million in 2011; this is attributed to advanced economic activities. (Pune Municipal Corporation, 2012) Like many other cities, Pune is experiencing considerable growth due to migration as well as natural increases. The decade trend of population growth of Pune Municipal Corporation from 1991 to 2021 is shown in Table 1.

Pune's population in 1991 was 15.66 lakhs, and 38 villages were added to the old PMC area in 1997. In 2001, the population was 25.38 lakhs. The key contributors to population growth were natural growth, moderate migration and territorial expansion. The urban core population is likely to decline in the future, while the suburban and urban fringe populations are expected to grow faster (Pune Municipal Corporation, 2013). The graph of Pune city's demographic growth trend shows a steep decline from 50.08 percent decadal growth rate in 1991-2001 to 22.73 percent decadal growth rate in 2001-11, which may be attributed to the development of Pimpri-Chinchwad Municipal Corporation (PCMC) as an industrial centre. Pimpri-Chinchwad could be considered an emerging counter magnet to Pune city. (Pune Municipal Corporation, 2012). Through urban growth studies, it's easy to anticipate and forecast future changes or trends in development and understand the impacts of future development. This study includes demographic growth, urban sprawl, economic hubs, infrastructure, industries and proximity to resources and basic amenities (see figure 2).

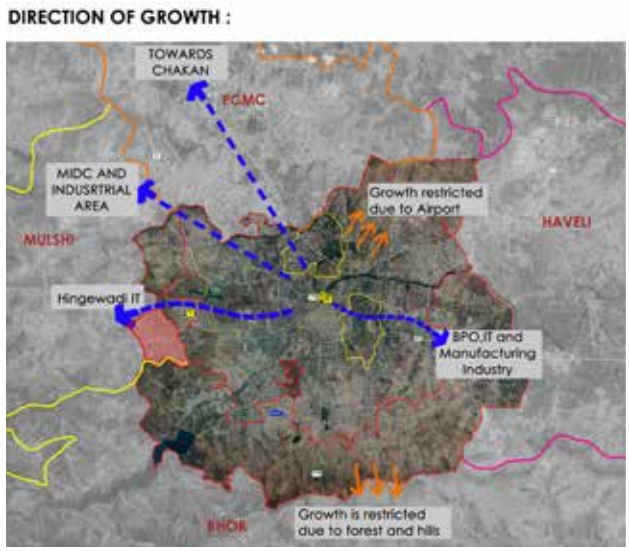

Figure 2: Growth Direction of Pune city
(Source: Pune Municipal Corporation, 2012)

Primary causes of urbanization are population eruption, migration from other places, industries, economy and proximity to resources and basic amenities. These characteristics gave different directions of growth such as the IT park and industries that have led to major growth toward the area of Hinjewadi, MIDC, Chakan and Magarpatta. The growth is restricted in the northeast owing to the airport causing height restriction and in the south due to ecological factors like forest and hilly terrain. Based on evidence an intense urban growth being visible along the northwest corridor in recent decades. Hence, Bhugaon a small village, located on a similar growth corridor is analyzed to understand the prevailing situation of farmland loss.

3. STUDY AREA

Bhugaon lies in the Mulshi taluka of the Pune district of Maharshtra. It is located west of Pune, 3 kilometres from Kothrud. The rapid growth of the city's IT industry has resulted in increased demand for homes across all parts of Pune. The majority of the IT hubs are located in areas such as Hinjewadi, Hadapsar, Aundh, Kharadi and Phursungi, and as an outcome of this growth, the demand for home seekers has rapidly increased. Because of the large IT sector in the Hinjewadi area, the outskirts have changed their appearance and adopted the growth

Table 1: **Population of Pune city**
(Source: (Pune Municipal Corporation, 2012))

Year	Population	Area under city (sq.km)	Decadal growth rate (%)
1950	488419	125.00	
1960	606777	125.00	24.23%
1970	856105	138.05	41.09%
1980	1203363	145.92	40.56%
1990	1691430	146.00	40.56%
2000	2538473	243.84	50.08%
2010	3,124,458	243.84	22.73%
2021*	43,70,721	Approx. 331	39.8%

Figure 3a: Plan and sections of study area: Bhugaon, Pune
(Source: Author on map base from Google Earth Pro 7.3.4 -version)

culture. Nearby areas such as Wakad, Bavdhan, Pashan, Sus, and Bhugaon have created a demand for real estate home seekers. Bhugaon is currently one of Pune's most appealing investment hotspots. Over the last two years, contemporary residential structures have mushroomed in the area due to its proximity to major economic hubs and city. Many high-end developers have entered the Bhugaon and introduced new gated community projects (Squareyards.com, 2017).

The village is located on the fringes of Pune within commuting distance from the heart of Pune city. A base map showing the boundary demarcated by the Bhugaon gram panchayat and other existing components (see figure 3). The images represent the research area, which includes a lake, a river, an old gaothan area, a built-up zone, farmlands, a forest area and road networks. The section of the study zone showcases the change in the skyline with high-rise buildings mushrooming in between the farmlands. Therefore, Bhugaon as a study area would be beneficial in analysing agro-ecological transformations because it is a perfect combination of lush agricultural land and new development. (see figure 4).

Figure 3b: Plan and sections of study area: Bhugaon, Pune
(Source: Author on map base from Google Earth Pro 7.3.4 -version)

Figure 4: Study area: Bhugaon, Pune
(Source: Author)

4. METHODOLOGY

The study employs a qualitative research design, relying on an ethnographic approach, with a mix of GIS mapping, direct observation and semi-structured interviews with peri-urban residents, and meetings with key informants. The primary goal of the research is to investigate the implication of urban sprawl on farmlands and develop a model for the sustainable growth of the city. Hence, the study discusses the relationship between the physical environment and the social aspect of the individuals involved. Through the physical environment, the author implies studying the ecology and built-form of Bhugaon. Under ecology, the author aims to study different land use changes, and especially agriculture cover change is mapped for around 10-year intervals. Bhugaon is witnessing major growth in the housing sector. Hence, the built-form aspect looks into the morphological transformation in the form of building use and heights. Lastly, the social aspect deals with interviews with different stakeholders involved in the process of farmland loss.

The first half of the study is based on remotely sensed data (aerial photographs and satellite images) combined with extensive field checks and surveys. The practice of GIS and remote sensing for urban studies has been valued greatly in various studies, as it is very useful for collecting data on suburban attributes with their spatial and temporal extents (Dutta, 2012). As the urban areas are dynamic and complex in nature, traditional data collection methods are incapable of coping with the numerous changes that occur over very short periods. Both aerial photography and satellite imagery are appropriate for evaluating rapid growth in urbanization. Aerial photographs can be expensive and difficult to obtain at times, making timely updates and monitoring difficult. Thus, satellite imagery is often the better option (Fazal, 2000). Satellite pictures from 2000, 2010 and 2020 are used for evaluating urban growth in terms of land-use changes.

Adding to this, the key informants were interviewed to gauge information on crucial aspects of the village profile and transition in the peri-urban area. This group of people included farmers, developers, local residents and experts. Farmers, who have played a crucial role in the loss of agricultural land were interviewed to understand the ground reality. The question included the reasons behind the selling of land, utilization of money and whether the step of selling their land more profitable. The next important stakeholder are the developers because they are the main drivers of the urbanization process. They were interviewed concerning the land value in and nearby Bhugaon, selection of the site in the peri-urban area, the land acquisition procedure, the base for compensation and the process of sanctioning and implementation of the project.

Peri-urban residents are the migrated population to the area in search of new residents. It is also important to note that common people may have different perspectives on farmland loss than farmers, politicians or developers. They would be an important source of information like people's awareness about farmland loss, farm produce, the significance of farming and social initiatives. Finally, the experts like town planners, urban planners and some activists were interviewed to understand their perspectives on the urban sprawl. Also, interventions and policies to plan systematic growth of the city were examined. This method is an effective tool that can be applied not only to monitor a region's current growth and development but also to build and apply models to meet a sustainable development objective in the future.

5. RESULTS AND DISCUSSION

5.1. Ecological Study

Agriculture is one of the contributors to the conservation and growth of ecology. But this arable land is decreasing day by day as unplanned development is encroaching on areas of Bhugaon. The rapid growth of population, unplanned urbanization, industrialization and agricultural modernization in Bhugaon has created pressure on the farm land and as well as environment. The area has been experiencing hasty alterations in land use patterns, especially the agricultural land decreasing rapidly and various environmental problems occurred (Isalm, 2013). The change in land cover and land use for the period of two decades was analysed by using satellite images at around 10-year intervals in 2000, 2010 and 2020 from the internet. After scanning the topographical map of the study region, it was georeferenced using QGIS 2.14.9 software. Addition to the software mapping was combined with extensive field checks and surveys (See figure 5).

It is evident through the mapping that Bhugaon has undergone a significant change within a span of two decades. Assets like good connectivity, proximity to the economic centres along with ample land available to fulfilling the housing demand have led to rapid urbanisation. This has triggered a major depletion in

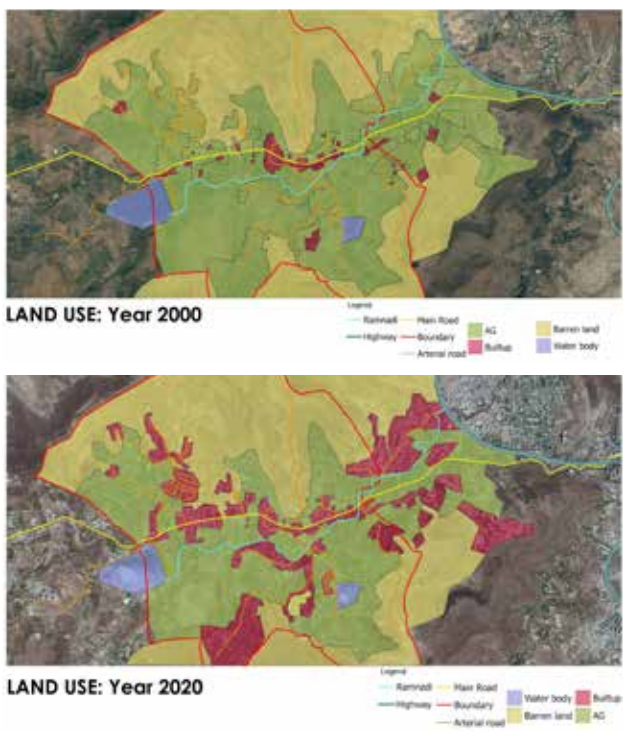

Figure 5: Land use change of Bhugaon for year 2002 and 2018
(Source: Adapted by Author through QGIS 2.14.9- version on map base from Google Earth Pro 7.3.4 -version)

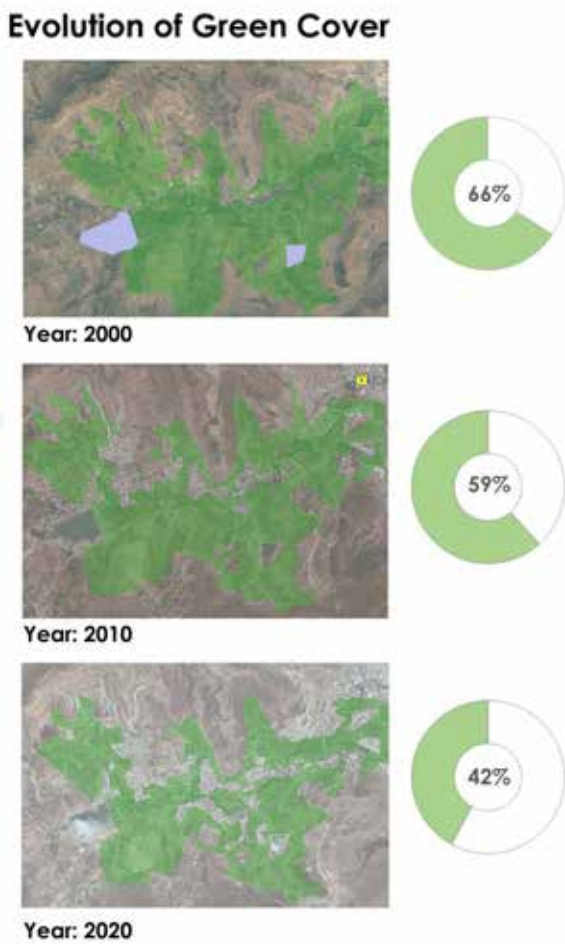

Figure 6: Agriculture land use transformation *(Source: Adapted by Author on map base from base from Google Earth Pro 7.3.4 -version)*

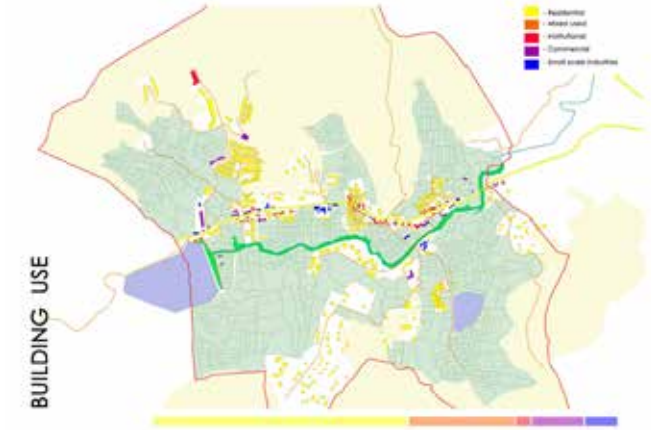

Figure 7: Building use plan for Bhugaon *(Source: Survey by Author on map base from base from Google Earth Pro 7.3.4 -version)*

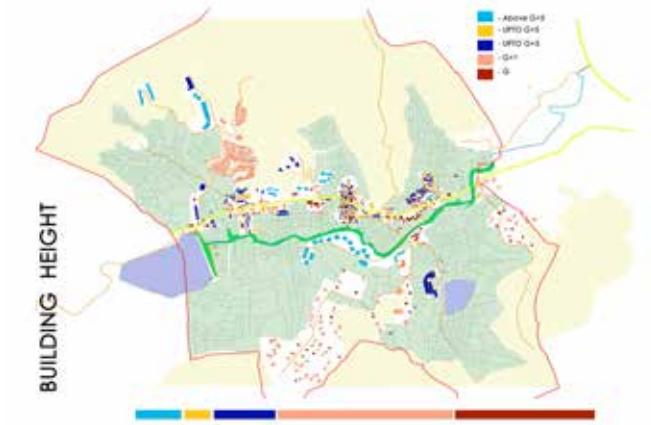

Figure 8: Building height plan for Bhugaon *(Source: Survey by Author on map base from base from Google Earth Pro 7.3.4 -version)*

agricultural land in Bhugaon. The land use between the years 2002 and 2018 have been compared (see figure 5). The changes can be mainly observed in farmland and built-up area land uses. Over a period of twenty years, there has been a steady but profound increase in the built component (See figure 6).

The main focus of the study is agricultural land loss. Figure 6 shows the agricultural land cover for over 10-year intervals from 2000 to 2020. Statistics show that in 2000, agricultural land counts for 66% of the total boundary. In 2010, a slight loss in agriculture cover is noticed, which occupy up to 59% of the study area. In the recent phase, 42% of farmland is available within the study area. It has been observed that agricultural land loss is a gradual process rather than a sudden one, which may pose a significant problem in the future. It is evident that a major agriculture loss in the recent time is due to real estate increase in the area. A lot of agriculture and fallow lands are predominantly now under high-rise housing, commercial uses, small scale industries and roads.

5.2. Morphology Study

According to the previous study, it is seen that development has caught up with arable lands on the fringes of Bhugaon village and its environs. Human activities and development are encroaching vast swathes of agricultural land on the fringes of cities at alarming rates. Many arable lands have been converted into built-up areas, with significant value added to housing production to meet the immediate housing demand (see Figure 7).

Farmlands and farmers on the rural outskirts continue to lose their farmlands to various development projects with less compensation or concerns for their livelihoods or food production. As a result of the government's failure to respond to the unplanned city growth, peri-urban farmers are left vulnerable to the adverse shock of urbanisation. The morphology of Bhugaon is rationalise through concrete evidence. In the peri-urban zone, agricultural, residential and other land uses are intermixed. These fragmented farmlands are under major pressure from real estate development. According to the village panchayat, the amenities planned are in reference to the original village population. However, every individual builder nowadays tends to get the basic amenities to their plots without any planning. The basic civic infrastructure like solid waste management, sewage disposal and water and electricity supply is not in conjunction with the existing population. This sudden burden on the infrastructure has to lead further mishaps like disposal of waste on roadsides, waterlogging in monsoons and shortage in the water and electricity supply. Hence the current study would enable in making of strategic decisions regarding infrastructure and civic amenities in line with the population growth (See figure 8).

The change in the skyline in peri-urban regions is visible through analysing the spatio-temporal patterns of three-dimensional urban forms, especially building height. The building height mapping was conducted by recording videos through the study area and then marking the heights on satellite images. Correlating the building use to building heights, one can understand that the new residential development is not a small-scale farmhouse anymore, but multi-storeyed residential buildings. It is evident from the research that the proportion of high-rise buildings is lesser compared to ground and G+1 structures, as shown in figure 8. But these lands under high-rise buildings display higher density leading to transformation which is neither completely rural nor urban. These transitional spaces are undergoing gradual but continuous changes regarding social systems, population characteristics and land use.

5.3. Social study

In the course of the loss of farmland, different actors like farmers, developers/ builders, local residents and experts/ architects are involved. In-depth interviews and meetings were conducted to better understand their viewpoint. Most of these were scheduled, while some were chance encounters. Following are the findings from the interviews with different stalk holders:

Farmers: When asked about their views on farming as a profession, they stated that it is passed down through families, but the younger generation prefers a more profitable, stable and respectable career path. They claim that the cause is the decline in agricultural output over time, the degradation of the water supply and the significant impact of climate change. In further discussions, it was noticed that the productivity of the farmland is not taken into account when determining compensation. Agriculture land is a lifelong earnings source for farmers- whereas the compensation received for the land provides no long-term financial benefit to the farmers. As the farmers are not good at finance management the money received is utilized for buying homes, cars, or other liabilities. Hence to sustain themselves, most farmers are working in small-scale industries or construction sites at low wages. Government initiatives do not help them much as they don't work in the sync with growing economy and lifestyle. When questioned about the reason for selling the land, the answer was simply 'the need of the time'. The root problem encountered by the local farmers remains that they are not given the recognition they deserve.

Developers/ Builders: According to developers, they don't see any problem in construction in the peri-urban region, whereas according to them they boost the economy by providing employment and houses to stay. For builders, a vast tract of agricultural lands is available for the development of gated communities. The home-seekers are also showing major interest in such projects because of their proximity to the city and affordability. But the developers tend to get the amenities and services onto their land parcel which leads to the haphazard and directionless development of the city. When asked about land prices, developers typically base the value of the land on the market price. But in the provision of farmland, the productivity of land and future yield should be considered.

Peri-urban residents: The growing urbanization has led to an increase in home-seekers investing in Bhuagon. These migrant residents living in the new residential societies are interviewed to understand their ideologies about farmlands. These peri-urban residents understand the importance of farmers, but they do not work in an approach that helps farmers. They tend to exploit farmers by buying imported products over local produce. Dumping the waste on the boundaries of the farmlands and contaminating water bodies add to the problems. If these residents who are more literate and economically stable, planned on supporting farmers by holding farmer's markets, agro-tourism and social drives for clean-ups, these would be of great support.

Experts/ Architects: According to the experts, construction in the outskirts has its repercussion since the resources, water and energy that were previously available to the locals will be now be diverted for the construction work resulting in water shortage and power failure. Construction work not only impacts the site but also damages 30-40% of the surroundings due to the building of roads, power stations, sewage plants and services. The answer to all problems is a sustainable development of the site.

Taking into account the above, the urban planners from Pune also held that the loss of farmland would create heat islands. Farmlands mitigate carbon footprints and help in reducing pollution. Increasing urbanisation will create the situation of a decreasing percentage of food producers and food consumers. The large-scale import is the consequence of the increase in food demand. Some urban planners also suggested that agricultural land use should be identified as separate land use rather than demarcated as a green zone. And a bottom-up approach should be adopted while formulating the policies for protecting agricultural land. This methodology has proven to offer a framework that may help policymakers, urban and regional planners, and researchers working in developing countries to understand the dynamics of urban growth in the peri-urban area.

6. Conclusions: Towards Alternative Approaches

With physical and social implications of farmland loss, it is imperative to examine urbanization in fast-growing agglomerations like Pune holistically. The findings of this research are based on the synthesis of remotely sensed data with the interviews of key informants. In the research area, there is now a noticeable increase in unplanned residential and commercial buildings. The pace at which the number of developers are investing in the area is faster than the way local authority is planning the expansion of utilities, services and recreational facilities. There are no specific rules and regulations that have been laid on the development of urban form. This need-based expansion is the cause of haphazard expansion.

Figure 9: Strategies for integrated urban development **(a)** Efficient connectivity **(b)** Balanced land uses **(c)** New activities
(Source: Author)

There has also been a shift in perception of framers for agricultural land, such that it has gone from being a source of livelihood to merely a commodity for income, which has led to a significant transformation. The amount of fallow land has increased as landowners' anticipation of increased land values as urban development expands. Subsequently, negative externalities in terms of traffic congestion, parking, pollution, water supply, sanitation problems, solid waste disposal and lack of open space will emerge in time. The river is now encroached upon and is used for the disposal of garbage and waste. In a broader view, they have to acknowledge the fact that this would lead to food security issues in the future. This process will continue in the absence of proper intervention and strict planning measures, and it will have an adverse effect on the quality of life of urban and peri-urban dwellers (see figure 9).

Finally, although urban expansion cannot be ceased, with proper management and planning it can be restricted and directed in a desirable and sustainable way, protecting fertile agricultural lands. However, to achieve this the author recommends three key strategies which include efficient connectivity, balanced land uses, and new activities, as seen in figure:

i) Firstly, having efficient connectivity would lead to better access to each land parcel. This would result in proper service distribution and, eventually support no haphazard development.
ii) Balanced land use signifies that rather than preserving a single belt of agricultural land they may decide based on the productivity which land should be preserved or utilized for other purposes. Land productivity mapping would help the planning authority to achieve the optimal balance development.
iii) Finally to boost the economy by preserving the agricultural land the authority may come up with efficient schemes for farmers, developers, and migrated residents. Giving incentives to developers for perceiving urban agriculture practices like hydroponic farming, vertical or terrace farming, or small kitchen gardens within plot limit.

Other proposals may include community farming, farmers markets, agro-tourism, farm-to-plate restaurants, and small-scale industries. Also promoting agriculture training and education would encourage the new generation to consider farming as a career. An inclusive model that integrates employment opportunities with a variety of residential services, promoting a less reliant and more sustainable lifestyle.

Moreover, they need to have an integrated approach where the farmlands are a distinguishing feature of the city's growth rather than a barrier. This may help in changing the trend of development. Such development would not just create change physically but also integrate the people socially. Land use planners and policymakers can use this model of urban growth to anticipate and plan for future spatial expansion to ensure growth along the lines of city development plans and enabling infrastructure. It is also necessary to strictly enforce agricultural land conversion laws, which may encourage farmers to continue farming activities. Hence, the author advocates not only policy-level intervention but also an on-the-ground physical intervention that aims to rethink urban sprawl rather than cease it. In a country where farmland is being lost at an alarming rate in the name of development, smart and inclusive planning is critical for future growth.

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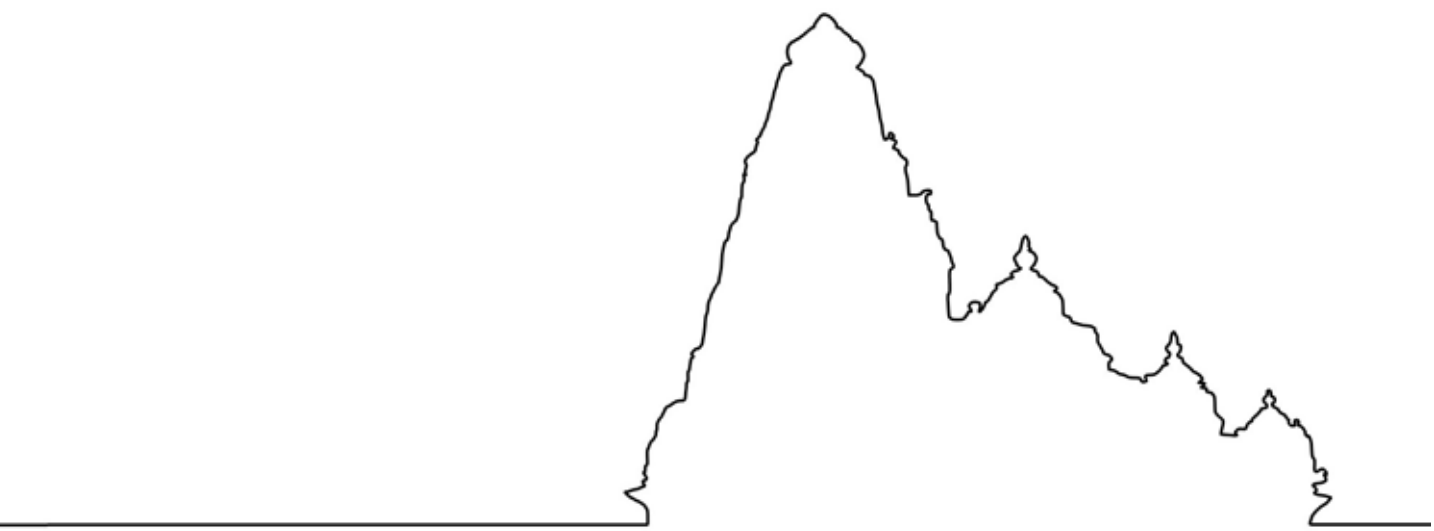
Ar. Megha Gaikwad is working as an Assistant Professor at Indira College of Architecture and Design, Pune. She received her Master's degree in Urban Design from the Kamla Raheja Institute, Mumbai. Her research focuses on delayering the urban-rural interface, gaps in urban policies, and urban place-making.

ĒKĀDAŚARUDRAPATHÁ, THE MYTHICAL AND ENCHANTING KĀŚĪ VIŚVANĀTHA DHĀMA

Ar. K. Ravi Kumar Reddy
Chief Scientist
Lifencrypt - Human Engineering,
Hyderabad, India.
cs@lifencrypt.com

Ar. Ramesh Srikonda
Professor
School of Planning and Architecture,
Vijayawada, India.
ramesh.srikonda@spav.ac.in



ABSTRACT

Though tradition has evolved with culture, both revolve through ingenuity of a cyclic feedback to a stage where the ritualistic social behaviours have transcended to grace the architectural forms and spaces to a status of psychological belongingness, where religious culture is evident while keeping cherished traditions inherent. Sacral architecture of spaces in a religious precinct reverberates the ethos of its cultural background associated with its evolution. The later built forms of Kāśī Viśvanātha Dhāma in Varanasi are seen to mature to a state where the representation of Rudra, the multiplicity of forms of Āḍi-Viśveśvara, to the internal self of the deity or Ātman, immerse the devotee to the ultimate. The path across Kāśī Viśvanātha Dhāma shall be examined with respect to appropriate architectural details and supportive facilities given to devotees, which take them through an engagement of progressive accession of spirituality. Kāśī Viśvanātha Dhāma is seen to mature to be a venerated hermitage which merges the conceptuality of Rudrabhūmi that is traceable to cosmic geometry. The calculations of the respective cosmic math and mapping to the spiritual spaces with progressive segregation sustains not only the invocation of benevolent actuality for devotees but also their psychological metamorphosis.

Keywords : *Built-buffers, Ēkādaśarudra, Kāśī, Madhyameśvara, Mahārudra, Mokṣa, Urban renewal, Vārāṇasi.*

INTRODUCTION

The *Āgama* is highly articulative about the way temples and precincts are to be designed with compliance to celestial geometry with stipulated edifices and dimensions based on evolved architectural styles during the history of reigns. This paper attempts to examine the zoning across the path of Varanasi's Ēkādaśarudrapathá in attaining the progressive sequence of *Rudrās* themselves, which preside over the linearity of the distance covering *Manikarnikā Ghāt* up to *Mahārudra* (see figure 1).

Methodology

Adapted methodologies appropriate to the scale of sacred geometry determined through *Purāna* and the critical locations of sacred precincts are taken in conjunction with spatial distribution at *Vārānasi.* The software tools and data used: source for correction of resolution, band and alfa on imageries are from Google and World Imageries. The software tools used in generating the cosmic geometry vectors and presentation themes are GRASS GIS 7.8.7 and QGIS 3.24.3 with ellipsoid WGS84 (EPSG:7030). These tools are Open Source with GNU General Public License.

Vārāṇasi, The Holiest of Holy Enshrinements

Though it is obscure from the studies of iconography, *Kāśī* or *Vārānasi* is considered to be supreme of all sacred places for Hindus all over the world (Sherring, 1868), as the cosmic centre of Hindu religion. Also called *Avimukta,* since it is not left by Śiva even at the time of doom of universe, the holy spot presided over by *Viśveśa:*

"This place of *Avimukta* is away from the middle of the Cosmic Egg *(Brahmāna)* to the extent of five *Krośas* (1 Krośa = 1.8 Miles), though it is in the centre of the Cosmic Egg. There is perpetual *Krtayuga,* here. There is great festivity here forever. There is no defect or adverse condition in the hermitage of *Viśveśvara,* caused by the rise or setting of the Planets."
Skandapurāṇa, v. 4.1.22.82, 83, 86. (Tagare, 2011).

The most featured original order *(dharmā)* tends to persist for ever in this sacred *kṣetra,* a place of antiquity and undoubtedly the birthplace of *Haiṃdava* doctrine (Havell R. B., 1905). The Skandapurāṇa (v. 6.1.276.7- 9, 11-14, 28-31, 33, 35) further states:

Figure 1: Maṇikarṇikā Ghāt
(Source: Helmolt et al (1902). The History of the World; a Survey of Man's Record)

"Formerly, the sages of praiseworthy holy rites congregated together at *Vārāṇasi.* They were eager to visit Lord *Hāṭakeśvara.* Everyone wanted to be the first to visit Lord *Hāṭakeśvara* in *Pātāla.* In the meantime, the Lord *Hāṭakeśvara* understood their intention to view him with very great devotion. He went out through a serpent-hole from *Pātāla* immediately. Lord *Śaṅkara* thus stood within their simultaneous view. *Īśāna* says that he shall stay here always in all these forms of eleven kinds assumed by him as *Rudrās.* Men shall take their holy ablution in the *Viśvāmitra* Hrada and worship these forms of *Mahārudra.* The sages built their hermitages there, and they were endowed with great conviction. *Rudrās* by propitiating those forms, they attained the greatest region of *Vārāṇasi.* Ever since they became the eleven *Rudrās* having the physical forms of Maheśwara." [Skandapurāṇa 6.1.276.7- 9, 11-14, 28-31, 33, 35] (Tagare, 2011).

The River Ganges turns north-east[1] and creates whirlpools on the diversions and invokes the auspiciousness of the location, which does not come under any influence of celestial changes but is always harmonised with Lord Śiva. Though original and primordial form of *Īśāna* resorted to *Kailāsa* and always stays there, the forms of *Ēkādaśarudra* always persist at *Kāśī* for the welfare of all the worlds. The sacred region described is between the tributaries of Ganges in south of *Asi* and the north-east of *Varaṇā.*

"Hence the behest and permission of *Viśveśvara* is the giver of a chance to stay in *Kāśī* where *Asi* and *Varaṇā* have been engaged in the work of the protection of the holy place. After getting into contact with Asi and *Varaṇā, Kāśikā* has become well-known as *Vārāṇasi* ever since. Vārāṇasi is, in this world, that merciful divine entity where all living beings can easily abandon the body, enter instantaneously the splendour of the vision of *Viśveśvara,* and take up the bodiless state of salvation, and experience the identity of *Ātman."*
Skandapurāṇa, v. 4.1.30.69-71. (Tagare, 2011).

This holy space of *Vārāṇasi* is accorded as the greatest cremation ground of the world, where ultimate salvation or *mokṣa* is attained by human beings. But for the living, it is the accomplishment of higher knowledge (jñāna) by approaching *Gyānvāpī,* the place of where *Āḍi-Viśveśvara* is always omnipresent as *Nirākāra.* The Bhagavadgītā (v. 15.4) states:

"Slashing ignorance with the weapon of *Tattvajñāna,* and by properly understanding knowledge, after that one should search for that supreme state *(satyaloka)* of the Supreme God; worshippers never return to this world, they are never reborn." [Bhagavadgita 15.4] (Srila Narayana Maharaja, 2015).

The Ganges, as holy it is, cleanses the sins of the living and creates the path of eternity to those who are cremated here in this *Rudrāvāsa.* (Kramrisch, 1992).

"*Īśāna* outreached the glorious forest of bliss *(anandakānana),* the holy spot of glory of salvation *(nirvāṇaśrī).* It is called the great cremation ground *(mahāśmaśāna),* a barren spot for all seeds (of worldly existence). It is the place that wakes up creatures lying in deep sleep (of ignorance)."
Skandapurāṇa, v. 4.1.33.6-9. (Tagare, 2011).

Maṇikarṇikā, the name obtained from the locale where earrings belonging to Goddess Satī had fallen, hence is named Maṇikarṇikā Kund (central convex point of the crescent shaped city of *Vārāṇasi).* It is also called *Prācīna Paraṃpapa Tīrtha* as cited in the Gupta inscriptions of

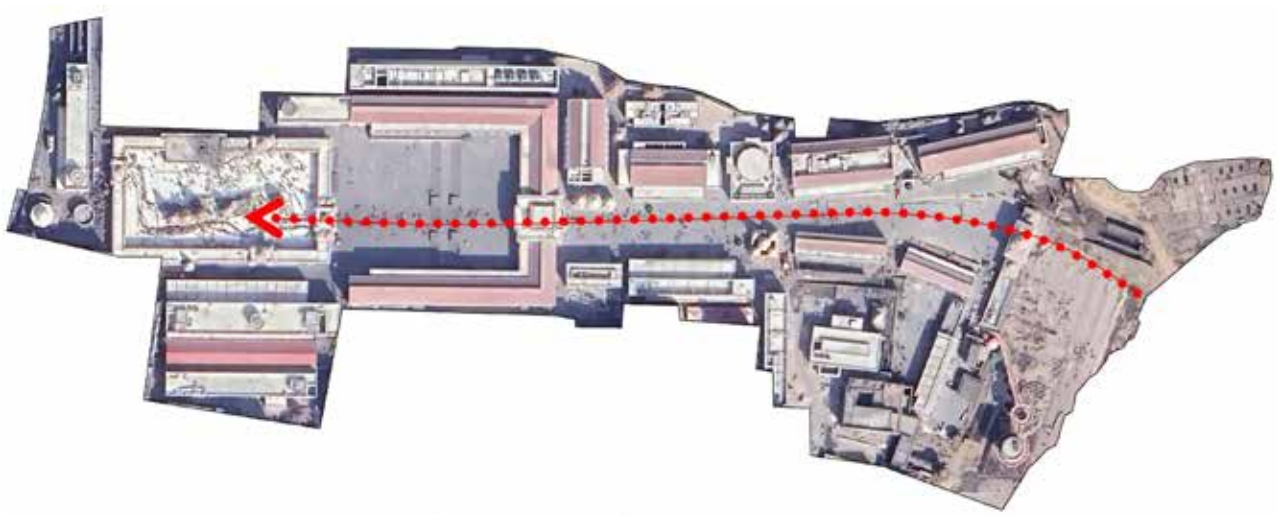


Figure 2: Plan of Ēkādaśarudrapathá, from Kapālin till Mahārudra showing the road to realisation through very structured recitations
(Source: Authors, using near-vertical Google imagery)

4th century CE. This is precisely to the east direction of an elevated abode of *Mahārudra* (Chakravarti, 2002), a spiritual circuit of *Mokṣa.*

"Wherefore is this *Maṇikarṇikā* reputed as worthy of being eulogized by the three worlds? O Master, what was there formerly when there was no celestial river here? O Lord, how did this city get the names *Vārāṇasi, Kāśī,* abode of *Rudra (Rudravāsa)?* O *Skānda,* how did this beautiful *Avimukta, Ānandakānana* later come to be reputed as a great cremation ground *(Mahāśmaśāna)?" Skandapurāṇa,* v. 4.1.26.3-5. (Tagare, 2011).

Ekādaśarudra and Affiliation to Vārāṇasi

Rudrās are the loyal companions of Maharudra, and often called as Śiva tribes. They restore various powers to this greatest place of Śiva worship:

"In front of *Alakā* is the prosperous city of *Īśāna.* Sages who are devotees of Rudra always dwell there. They are deeply engrossed in remembering Maheśwara; they are interested in the holy vows and observances pertaining to Śiva; they are always engaged in the worship of Śiva. Those who perform penances with a desire for the enjoyment of heavenly pleasures, assume the form of Rudra here, in the beautiful city of *Rudra.* Eleven *Rudrās,* the chiefs of whom are *Ajaikapāt* and *Ahirbudhnya,* are the leaders here; they have tridents in their raised hands. After reaching the city of *Vārānasi* and installing the great *Liṅga* named *Īśāneśa* that accords splendid things and auspiciousness, they too have performed penance." *Skandapurāṇa,* v. 4.1.14.1- 4, 6. (Tagare, 2011).

There are various references and names defined for these eleven *Rudrās* in multiple of *Purāṇas.* But, characteristics of *Pathā* is ritualistic in sequential to the complete submission of self to *Mahārudra,* and very aptly described only in *Śivapurāṇa* alone for spatial organisation of recital space:

"These are the eleven *Rudrās* born of *Surabhī; Kapālin, Piṅgala, Bhīma, Virūpākṣa, Vilohita, Śāstṛ, Ajapāda, Ahirbudhnya, Śambhu, Caṇḍa,* and *Bhava.* They are identical with *Maheśwara* and the cause of happiness. Those *Rudrās* favourably disposed towards their devotees took up their residence in the north-eastern city of *Īśāna.* This narrative is pure, it destroys all sins. It is conducive to wealth, fame and longevity. It yields all desires."
Śivapurāṇa, v. 7.18.26-27, 31, 34 (Shastri J. L., 2014).

The alignment of the *Rudrās* is always chronological in order, and brings forth the maturity in acquisition of knowledge about *Ātman* and consciousness of self among devotees (see Fig.3), and generates a meaning out of transition from one to another in order to accomplish completeness:

1. *Kapālin,* destroyer of evils and cleanser of minds, and giver of openness for subsequent experiencing of *Mahārudra.*
2. *Piṅgala,* influence with spotless splendour for invocation of desire through pineal gland or *Śivaśaṭi* gland in devout to *Mahārudra.*
3. *Bhīma,* endower of physical strength and also mental abilities for mindful of *Mahārudra.*
4. *Virūpākṣa,* implore consciousness with inner senses and of *Yogasamādhi.*
5. *Vilohita,* remover of all physical desires from mind in concentration towards devotion to *Mahārudra.*
6. *Śāstṛ,* bestow with the knowledge to be able to isolate best observance among observances in *Śiva-vrata.*
7. *Ajapāda,* preparation of altar for discourses and fire to light up the spirituality and seek blessing to raise the cosmic energy in the mindful.
8. *Ahirbudhnya,* remover of catastrophies, misfortunes and hurdles on the way of discourses. And enabler of required movement, change, power, and activation in view of circumstances.
9. *Śambhu,* blissful with self-creation of abilities, self-sustaining, being independent and of the ingredients of an evolved *Ātman.*
10. *Caṇḍa,* devise the energy to envision the path of *Mokṣa,* the Salvation.
11. *Bhava,* the provider of extreme strength, grandeur, aura, and blessings of divine power while attainment of yogic appreciation.

Ekādaśarudrapathá

Out of many *tīrthas* and holy *ghāts,* it is the *Maṇikarṇikā Ghāt* that stands to be the most important by virtue of its location for cremation, strongly associated to *Mahārudra* himself and where the influence of Śiva is spatially extended to the area of nine miles on all directions:

"Maṇikarṇikā, the charming *tīrtha* in *Pañcakrośī* (the holy spot extending to five *Krośas*), in the extensive earth is resorted to, those devotees go away never to return (to *Saṃsāra*)."
Skandapurāṇa, v. 4.2.34.99. (Tagare, 2011).

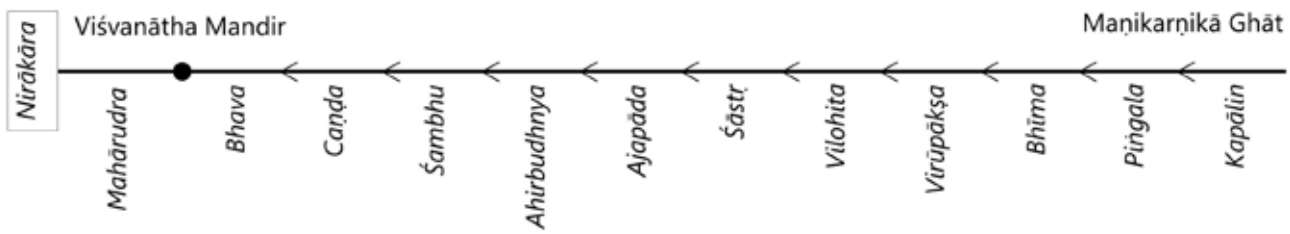


Figure 3: Order of Salvation, the path for attainment of Mokṣa.
(Source: Collated by Authors)

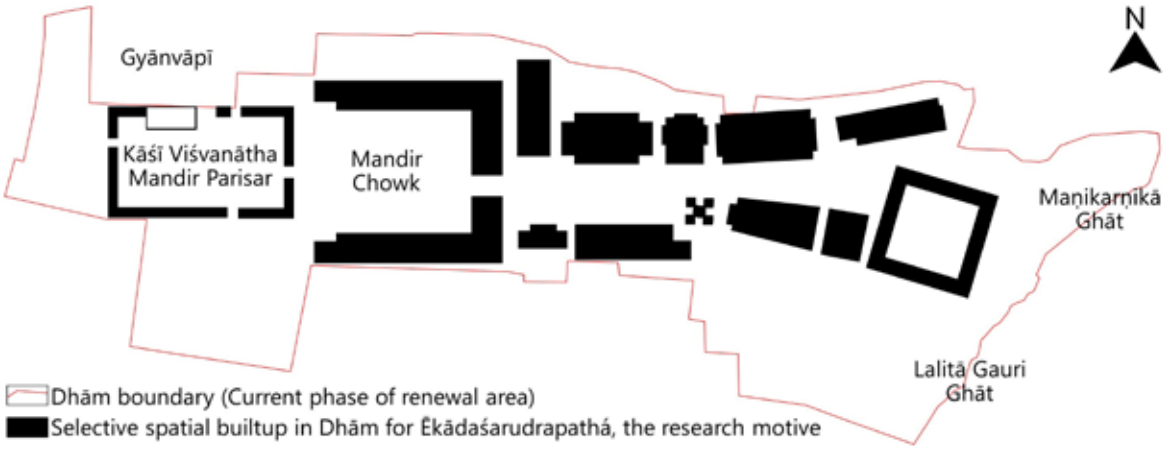


Figure 4: Area profile of Kāśī Viśvanātha Dhāma
(Source: Proposed Development of Shri Kashi Vishwanath Dham, Annex-2 Conceptual Plan)

With recent developments of creating a spatial area are for Kāśī Viśvanātha Dhāma, and the path of the religious walk across *Maṇikarṇikā Ghāt,* the *Kāśī Viśvanātha Mandir Parisar* is about 1300 feet in length (Fig.2). Since the area is mentioned in the *Purāṇas,* the treatment to the built forms and facilities manifests the various blessings of *Rudrās*[2]. The project is planned to provide regular facilities of hostels and other pilgrimage services for devotees. Ignored for centuries, this holy stretch has missed out on the ethos of *Rudrās* either by encroachment or severe abuse of holy surroundings of worship.

"*Rudra* himself comes among the devotees of *Viśvanātha,* because worshippers of *Rudra* are identical with *Rudra."*
Skandapurāṇa, v. 4.1.11.32-34. (Tagare, 2011)

The entire precinct falls under the measured radius of *Krośekera* from *Nābhikēndra* of *Madhyameśvara.* The circle thus formed covers an area of religious importance, which is also called as the *Parisar* of *Mokṣa.*

"In the middle portion of the holy spot is the deity *Madhyameśvara.* By visiting this deity one can terminate one's stay in the middle and nether worlds. By adoring *Madhyameśa* ardently men shall become lords of the earth extending to the oceans. Thereafter, one attains salvation."
Skandapurāṇa, v.4.2.17.177, 178. (Tagare, 2011).

Its importance is discussed through the scriptures on differences between areas of religious expedition and of *mokṣa. Sthalapurāṇa* describes the auspicious aspects about *Madhyameśvara* and *Liṅgā* and are found in many other *Purāṇ*as as *Svayambhū. Madhyameśvara* must have been one of the important temples as stated in various *Purans* about *Kāśī,* more importantly *Skandapurāṇa* by Vedavyāsa, in *Kūrma Purāṇa, Liṅgā Purāṇa, Pādmapurāṇa,* etc.

"There is no other *Liṅga* at *Kāśī* other than *Madhyameśvara* for the sight of which the gods come here on every festive occasion. Siva is called *Madhyameśvara* since he is stationed mainly in the centre of Kāśī for bestowing happiness on the people. *Vyāsa* who thus secured the boon from the great Lord *Madhyameśvara* composed the eighteen *Purāṇas* sportively."
Śivapurāṇa, v. 9.44.78, 80, 119 (Shastri J. L., 2014).

Nābhikēndra for *Vārāṇasi Kṣetra* is located at 25°19'15.09"N, 83°0'50.79"E, as shown in Fig. 5, and would be the origin for determining the logic in the alignment of *Rudrās* (Singh, 1993) to built-buffers (linearly variable recess) at the newly constructed structures at Kāśī Viśvanātha Dhāma. This would enable appropriate rites to deities and a gradual engagement of devotees to the spiritual self.

"*Mandākinī* is highly meritorious in the heavenly world. All the more so, O Sage in the mortal world to the north thereof is *Madhyameśa* who sleeps in the middle of the holy spot. The extent of *Muktiksetra* (*Kāśī,* the holy spot of salvation) is *Krośekera* (1.8 Miles) in every direction starting from this *Madhyameśvara,* the merit-giving *Liṅga.* To the south of *Madhyameśa* is the auspicious *Viśvedeveśvara.* By the worship of this deity, all the thirteen *Viśvedevas* can be deemed to have been worshipped."
Skandapurāṇa, v. 4.2.47.149, 151, 154. (Tagare, 2011).

Sacred Centre of the Universe

The discovery or *Madhyameśvara,* is the cause for both hermitage and pilgrimage in the spatial divinity of *Vārāṇasi* region. Madhyameśvara is considered the first Śivā of Kāśī, and the location mapped as centre of entire

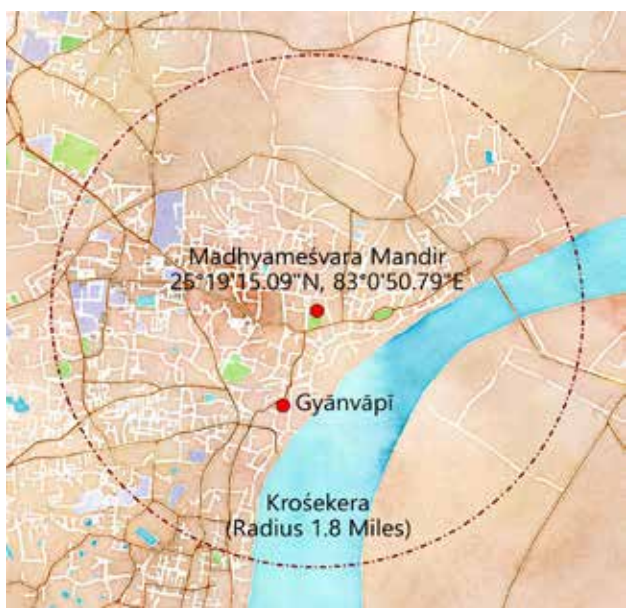


Figure 5: Circle of Mokṣa, holy spot of salvation.
(Source: Tagare G. V. (2011). The Skanda Purāṇa.)

Figure 6: Logic of eleven equidistributional lateral division from Madhyameśvara location.
(Source: Geometry computed by Authors and superimposed through near vertical ESRI World Imagery)

cosmic geometry of Vārāṇasi. The range of the hermitage is *Krośekera* (1.8 Miles) and the range for pilgrimage is *Pañcakrośī* (9 Miles). The entire Kāśī Viśvanātha Dhāma development falls under the region of deemed hermitage (see Fig.5). The area of the redevelopment program is oriented to expose the linearity between *Maṇikarṇikā Ghāt* and *Viśvanātha Mandir,* which was originally the extent of the land developed during the early popularity of the hermitage. Majority of the riverfront in the form of *ghats* was developed during 1800-1850 CE. Since *Vārāṇasi* is the oldest living city of the world, the growth of urban sprawl around those important religious activities had been very haphazard due to various socio-political changes over centuries. The theme of Kāśī Viśvanātha Dhāma has been to revive the environment of spatial activity that existed, close to the scale of its past historical glory. The character of cultural semblance is an important treatment of the surroundings from *Maṇikarṇikā Ghāt* with the bearing of 0° towards the Lord's abode in the west. The linear stretch shall be treated as resembling *Ekādaśarudra*[3] and echoes their respective visual character in architectural treatment. Eleven *Rudrās* are said to be the presiding hosts at *Vārāṇasi* for rest of the gods, hence the preparation for their deities shall be very segregated to their manifested characters:

"Devās and their manifestations- *Vāsudeva* (Lord of the universe), *Brahmā, Viṣṇu,* the adorable *Sūrya, Śivā,* the eight *Vāsus,* Lord of the *Lokapālās,* manes (bestowing souls of ancestors), the divine mothers and the eleven *Rudrās* (lords of hosts)."
Matsya Purāṇa, v. 1.52.21 (Basu B. D., 1916).

Maheśwara is Lord of the world, and the strength of Godhead never departs from *Rudra:*
"[Firm] with strong limbs, assuming many forms, fierce and tawny-coloured, he shines with brilliant golden ornaments; vigour is inseparable from Rudra, the supreme ruler and lord of this world."
Ṛgvéda Saṃhitā, v. 2.33.9. (Wilson, 2016).
Rudra bestows health and prosperity, and also the provider of human better living, based on the recital and fulfilment of sacrificial hymns:

"We ask the felicity of *Śaṃyu,* from *Rudra,* the encourager of hymns, the protector of sacrifices, possessed of medicaments that confer delight. Who is so brilliant as *Śaṃyu,* who gratifies like gold, the best of the gods, the provider of habitations."
Ṛgvéda Saṃhitā, v. 1.43.4, 5. (Wilson, 2016).

Figure 7: Pattern of culmination to Mahārudra.
(Source: Havell E. B. (1905). Benares, The Sacred City)

Sacral Geometry and Architectural Spaces

The first lateral from *Madhyameśvara* is almost vertical to *Maṇikarṇikā Kund* (see Fig.6), with a slight deviation of >1.5° and <2° of westward inclination (The reasoning of such deviation is a separate study of itself to have noticed across Indian peninsula over Hindu and Jain architectural expositions). The extreme lateral for the manifestation of *Ekādaśarudra* is the coincidence

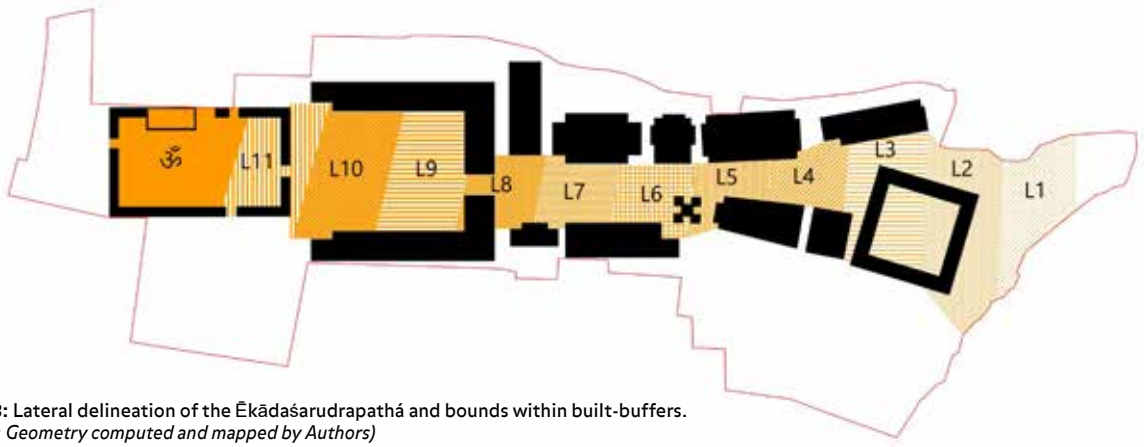


Figure 8: Lateral delineation of the Ēkādaśarudrapathá and bounds within built-buffers.
(Source: Geometry computed and mapped by Authors)

through *Gaṇgeśvar Mandir,* located on the north-eastern direction to *Viśvanātha Mandir.* The result of angular deflection between these two points is 15.6° and with ±0.5° error. The tangential between *Gaṇgeśvar Mandir* and *Maṇikarṇikā Kund* is geometrically divided into eleven equal sectors across to discover new points of intersection. It is proposed that an equated share of lateral space for each echelon of *Rudra* is assigned across the built-buffers at Kāśī Viśvanātha Dhāma, since *Rudra* is the supreme commander of Kāśī in all his forms:

"*Rudra,* king (ruler) of the sacrifice, true offeror, priest of both worlds."
Ṛgvéda Saṃhitā, v. 4.3.1. (Wilson, 2016).

A separate lateral is also visualised (Fig.7) to cover the extents of Kāśī Viśvanātha Mandir Parisar as a culmination of *Rudras* to *Mahārudra,* the Lord *Viśveśvara* himself. The architectural aesthetics for this is taken as the focal point in order to appreciate the space and its environmental organizationand how they man required levels of spirituality. Indeed, the architectural treatment with traditional forms of sentimental artifacts help build the spiritual context for devotees and associated discourses, as shown in Table 1.

"These truths, when taught, shine forth only in that high-sound one who has supreme devotion to God, and an equal degree of devotion to the spiritual coach. They shine forth in that high-souled one only."
Śvetāśvatara Upaniṣad, v. 5.23. (Swāmi Tyāgīsānanda, 1949).

The devotee traversing through these experiences of architectural spaces transforms into a state of knowledge and pure cognition. Finally, there is something invisible, omnipresent and omnipotent, transcribed by sages among Hindu theology, duly associated to *Āḍi-Viśveśvara* as the inner realisation of devotee in perception of being, and the universal appeal as psychological attention of self *(Ātman)* and belongingness. The rendition of shapeless *(nirākāra)* in *Śivapurāṇa* (v. 8.35.106) also concurs with *Nirākāra Śiva* in *Advaita Védānta* and which is nothing but the form of pure consciousness, the breathing deity inside oneself:

"That which has no specific form (Nirākāra), that which can be known through perfect knowledge."
Śivapurāṇa, v. 2.2.6.12 (Shastri J. L., 2014).

When geometry is epitomised to built-forms, irregularity in mapping the *Rudrās* is very evident and seen as asymmetrical (Fig. 8) in order to enable formation of any systematic listing of architectural features and treatment in linearity. There must be of smooth transitions from one manifestation to another based on the characteristics of *Rudrās'* primary attitudes. This has seen to arise from a higher level of thoughtfulness of designing the spatial appearance and create a seamless immersion for a phrenic psych of an internal *Śaiva,* and an experience of completeness to every devotee due to appropriate spatial elements. The secondary filtering of sectors to zones of divinity with spatial importance involves the geometrical correction within narrow and wider bounds of built-buffers where path of Ekādaśarudrapathá is envisioned as the transition, but without losing the premise of linearity among *Rudrās* (Fig.9). This rectification of vertical edges for each zone are segregated to match the mean across the sector divisions, and to minimise the deviation through selection of the lateral within the built-bound edges at respective intersections.

Essence of Divinity in Temple Towns

Traditionally, pilgrim towns across India have a pre-determined composition and hierarchy of rituals that is well-segregated across planned spaces and habitat surrounding the principal deity which is the propitiatory icon of the location (Barne, Vinayak , et al., 2012)..The geography of rituals may well be envisioned as symbolic to the entire region, *Pañcakrośī* in case of *Vārāṇasi.* Uniquely, these offerings of prayers (Hundu, 1902) are generic in the region with regard to the patron deity, but very methodical around the immediate temple streets and vistas with an eloquent sequence of space and time (see Table.1). The application of any principles of *Vāstupuruṣa* (Shukla D. N., 2019) are not very clear in the neighbourhood design of *Vārāṇasi.* The verse on complete ownership of this place is held by none other than *Viśveśvara* himself as mentioned in the *Skandapurāṇa* (v. 4.1.22.86). The host deities are *Rudrās* and neither changing celestial alignments nor other gods will have any kind of effect on the entire *Pañcakrośī* region.

Two of the prominent and living temple towns of India that have diverse organic growth associated with their protector deity in their respective locations- Udupi Krishna Math and Tirumala- which have grown to prominence by theosophical themes of *Vedānta* as *Dvaita*

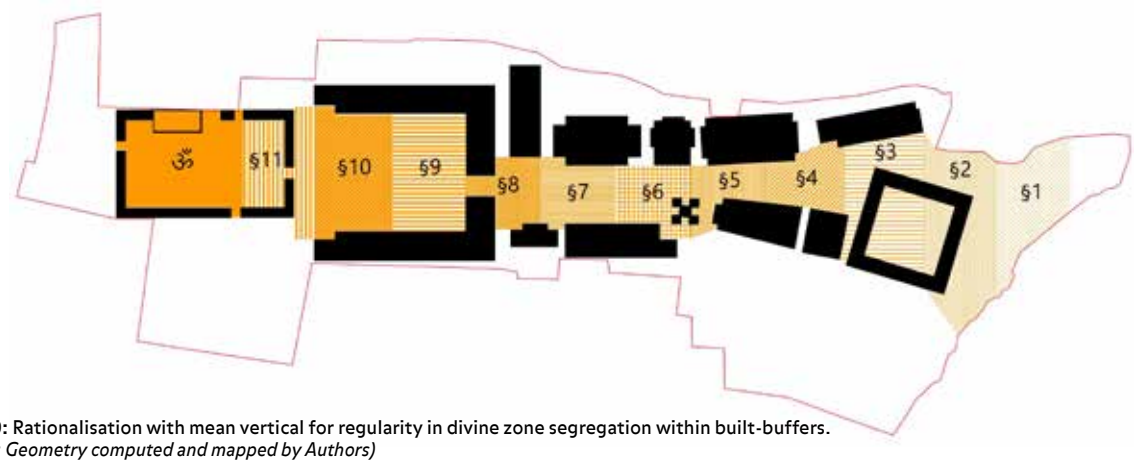


Figure 9: Rationalisation with mean vertical for regularity in divine zone segregation within built-buffers.
(Source: Geometry computed and mapped by Authors)

and *Viśiṣṭādvaita* respectively. Functional relationships of spaces are very meticulously defined based on the *Āgama Śilpa Saṣṭhrā* for conducting rituals. Daily prayers performed at Tirumala and at *Kṛṣṇā Maṭ* with synchrony to the respective formalities of faith to their immortal. Since it is mixed-landuse at Tirumala Hills, the activities across are vibrant and panoramic throughout the time. Interior glimpses at *Kṛṣṇā Maṭ* precinct are very subtle as routine to the order of the faith. But the change of using spaces with extra décor is common between these two pilgrimages during festivities of *Brahmotsava* at *Mādavīdhi* of Tirumala and *Rathotsava* at *Ratha Vīdhi* of Udupi.

Organic growth of different functional spaces for commercial and residential requirements are permitted at Tirumala precincts, where there is a lesser importance given to the spatial spread, to allow for the needs of the orthodox spiritual sects of the inner philosophy to *Viśiṣṭādvaita.* In contrast, *Kṛṣṇā Maṭ* and *Tulu Aṣṭamaṭās* of *Dvaita* are situated along the *Ratha Vīdhi* precinct. There is absolutely no possibility of any activity other than just spiritual learning within the precinct, but commercial and other residential activities buzz outside the boundary of *Kṛṣṇā Maṭ.*

These are two different themes or ideologies observed from the above spatial planning scenarios (Behari, 1925) in the assemblage which is inward at Tirumala and outward at Udupi Krishna Math, as design approaches for preparing controls on religious precincts, and sacred area development of spatial augmentation by preserved scriptures to the location deity and faith.

Conclusions

The categorical arrangement in stratified arrays of *Rudras* and successive manifestation, more in attitudes of experiences to spiritual saturation to devotee, is the essence of spatial development at Kāśī Viśvanātha Dhāma. This may be achieved by calibration of either inward or outward landuse policy on tertiary activities other than those of religious importance (observed in previous section), while strictly following the spiritual requirements of location auspicious, especially when Kāśī Viśvanātha Dhāma need to play both varieties of hermitage as well as the nucleus of pilgrimage, the duality in singular of spatial habitude, where these two influences are explained as radially spatial requirements of *Krośekera* and *Pañcakrośī* respectively.

During the activity of land clearance for Kāśī Viśvanātha Dhāma, strangely, many small- to medium-sized temples were discovered to have been encroached by the dense living. Important and notable few are Ćandragupta Mahādev Mandir and Mandhatéswar Mahādev Mandir. This contrasts with the fact that the entire stretch of this religious path is meant for a higher order of significance to spiritual activity with a very strong allegiance to *Viśveśvara.* The prime concern is to revive those of traditionality associated with architectural spaces for aiding the process of carrying out rituals prescribed by the *Ekādaśarudra* (see Table 1).

The Ministry of Tourism, Government of India has promoted schemes of national mission with reference to religious towns to enhance their scope under the *Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive* (PRASHAD) 2014-2015 (Government of India, 2014-2015). Present and on-site developments at Kāśī Viśvanātha Dhāma are seen to be of lesser significance in the spirit of *Rudrās.* The augmentation of architectural spaces must be of divine patterns in devotion to facets of *Rudrās* as a progressive towards attainment of *Mokṣa* as adoration to *Āḍi-Viśveśvara.* This paper covers the methodology of zoning *(with known exception to required 2° calibration)* against spatial allocations to *Ēkādaśarudra.* Features and promotion of these spaces must be provocative to ritualistic motives while decorative by means of architectural rejuvenation from traditional and historical values, and is a scope for further research.

The project request for proposal (RFP) has very few touch-points about urban rejuvenation/ historical/ religious places Master Plan preparation (KVSADB, 2018). The minimum eligibility in specifications (Section 2.7 of RFP) is very thin about a project of such scale in urban renewal which involves critical criterion of spiritual engagements. The religious symbolism and authenticity in planning for rebuilding architectural character of this holy place is not vivid though, as RFP compliance, and shall be of upholding the manifestation of Rudrās as ancient description through Puranās and revered Itihāsa to the spirituality in spatial appeal.

Instead of conceptual urban renewal alone, the focus shall be on religious recovery, revival of culture and

heritage sanctuary with ceremonial to the original form of microcosm and etiquettes, a spatial decoding about astute observance to theism of *Rudrās.*

Namaste Stvāyate Namo Astu Parāyate, Namaste Rudra Tiṣṭhata Āsīnāyota Te Namaḥ.

Bhava Śarvau Rudra Devatā, *Atharva-Ved,* v. 11.2.15. (Ram, 2013).

End-notes

[1] Terrain deflection and flow of water to this direction is always considered favourable to a site selection/ preparation according to principles in Vāsthu.

[2] Rudras as the location deities is the manifestation of Āḍi-Viśveśvara through a pattern to Mahārudra and final culmination to Nirākāra.

Table 1: **Manifestation of Rudrās and in the sequential order from Kapālin till Nirākāra**

(Source: blog.cosmicinsights.net (Patchirajan, 2017))

Lateral Division	Mapped Sectors	Rationale of Zones	Rudra Attainment	Ēkādaśarudrapathá Hymns (According to Śivapurāṇa)
Δ1	L1	§1	Kapālin	*Om Hum Hum Satrustambhanaya Hum Hum Om Phat*
Δ2	L2	§2	Piṅgala	*Om Shrim Hrim Shrim Sarva Mangalaya Pingalaya Om Namah*
Δ3	L3	§3	Bhīma	*Om Aim Aim Mano Vanchita Siddhay Aim Aim Om*
Δ4	L4	§4	Virūpākṣa	*Om Rudraya Roganashaya Agacha Cha Ram Om Namah*
Δ5	L5	§5	Vilohita	*Om Shrim Hrim Sam Sam Hrim Shrim Shankarshanaya Om*
Δ6	L6	§6	Śāstṛ	*Om Hrim Hrim Safalyayai Siddhaye Om Namah*
Δ7	L7	§7	Ajapāda	*Om Shrim Bam Sough Balavardhanaya Baleswaraya Rudraya Phut Om*
Δ8	L8	§8	Ahirbudhnya	*Om Hram Hrim Hum Samasta Graha Dosha Vinashaya Om*
Δ9	L9	§9	Śambhu	*Om Gam Glaum Shroum Glaum Gam Om Namah*
Δ10	L10	§10	Caṇḍa	*Om Chum Chandiswaraya Tejasyaya Chum Om Phut*
Δ11	L11	§11	Bhava	*Om Bhavod Bhava Sambhavaya Ista Darshana Hētavē Om Sam Om Namaha*
Δ12	ॐ	ॐ	Mahārudra	*Om Namo Bhagavaté Rudrāya*
Omnipresent	∞	∞	Nirākāra	*Om Tatpurushāya Vidmahé Mahādévāya Dhēmahi Tannoh Rudrah Prachodayāt*

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Ar. Ravi Kumar Reddy K. has graduated from Jawaharlal Nehru Technological University and is currently associated with Lifencrypt, a start-up, as the Chief Scientist. He has worked with the IT industry for 35 years at Mindware, Wipro and IBM. He has been involved in building solutions and architecture for large enterprise systems in healthcare, banking, telecommunication, etc. He holds sixteen US patents and one Chinese patent for IBM on varied subject inventions of systems engineering. He has devised a FOAK, alternative methodology on parallel computing with radical distinction from current computing techniques in a large-scale system to their relational autonomy. He has published technical papers with IEEE and defensive publications at IP.com for future proofing of inventions. As TOGAF Enterprise Architect, defined/ solutioned the architecture for enterprise applications as well as smartcity programs.

Prof. Ramesh Srikonda has graduated from Jawaharlal Nehru Technological University and is currently Professor in Architecture at the School of Planning and Architecture, Vijayawada. With 35 years of experience in academics and industry in the profession of architecture and urban planning, he has been Chief Architect in MCD, Delhi; Regional Architect for southern states of Andhra Pradesh, Tamil Nadu, Karnataka, Kerala, Pondicherry, Andaman and Lakshadweep in CCW–DGAIR. He has received several awards and honours from international and national organizations and published 70 papers in national and international journals. Ha has guided/ reviewed Ph. D. research across institutions. He has designed the curriculum for the master degree in Sustainable Architecture on Scientific and Engineering Methods of Application at SPAV.

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MITIGATING THE ECOLOGICAL AND SOCIO-CULTURAL IMPACTS OF TRANSPORT TERMINALS ON URBAN LANDSCAPES: A CASE OF BELAPUR MULTIMODAL TRANSPORT GATEWAY, NAVI-MUMBAI

Ar. Abhishek Chakraborty
Associate Professor
Pillai HOC College of Architecture, Rasayani
Student, M. Arch. Landscape, L.S. Raheja School of Architecture,
Mumbai, India
ab.chakraborty@gmail.com

Ar. Devayani Upasani
Landscape Architect
Thesis Guide, M. Arch. Landscape, L. S. Raheja School of Architecture,
University of Mumbai,
Mumbai, India
devayanideshmukh@gmail.com

ABSTRACT

This thesis looks at the manifold impacts of transport terminals on the urban landscape. Over the past few decades, transport infrastructure projects have defined the urban landscape and continue to do so. The research investigates how transport infrastructure was dependent on natural features of the landscape in earlier days, subsequently how they became independent of the natural setting due to technological advancement, identifying stages of intervention resulting in damage to environment, and dwells into the possibility of mitigating the impact of damage at a particular site. The sustainability movement of 21st century prioritized environmental considerations in transport infrastructure projects. The thesis focuses on direct and indirect impacts of transport terminals on the urban landscape in terms of ecology, land use, pollution, heritage, economy, culture, etc. The case of Navi-Mumbai is studied as the city planning is based on the principles of Transit Oriented Development. The role of transport terminals in shaping the city and their immediate, and long term impacts on the landscape are studied, and the case of the upcoming Multimodal Transport Gateway at Belapur is taken up owing to the ecological sensitivity of the place due to presence of wetlands which could be endangered due to built development, regional connections it proposes to serve, socio-cultural context, heritage, and economic aspects. The intent of the design intervention is to mitigate the ecological and socio-cultural impacts the transport gateway would have on the wetlands of the place by leveraging the presence of a transport terminal to promote eco-tourism to inculcate a sense of stewardship among citizens and thus, conserve the ecology of the place.

Keywords: *transport infrastructure, transport terminal, ecology, multimodal gateway, transit oriented development, Navi-Mumbai.*

1. Introduction

1.1. Premise

Access to public transport is the key to economic prosperity of a society. Transportation infrastructure planning and design is a key driver of expanding urban boundaries by taking urbanization to hinterlands through mass movement of people and resources. Their planning and design deserve much attention as they are interlinked to many aspects crucial to urban life and hence cannot be viewed in isolation from the surrounding environment they impact. Integrating the transport terminal architecture with landscape can create meaningful spaces, address sustainability, and reduce marginalization of local communities. Since much of this infrastructure must be in or near major urban areas, issues involving the positive and negative externalities of transport terminal location can come to dominate public discourse at the local level (Shannon & Smets, 2010). Although transport infrastructure can negatively impact the environment, these impacts can be balanced considering their importance in development to a certain extent. However, once a region has reached a certain level of connectivity, additional transport infrastructure does not give comparable benefits but it can instead generate substantial environmental impacts (European Environment Agency, 2020).

1.2. Need for Study

Transport infrastructure comprises of linear transport corridors like highways, railway lines, and transport terminals like railway stations, bus terminals, and allied utilities like parking lots, flyovers, underpasses, etc. Traditionally, most of the research has been focused on ecological impacts of 'Linear Transport Corridors' on the landscape whereas transport terminals have gained less attention. Since, both terminals and corridors, are an integral part of the transport infrastructure, the ecological footprint of terminals need to be assessed for a holistic approach towards mitigating environmental concerns. The impacts of transport terminals are often long term, not visible immediately, and hence are difficult to establish. Thus, transport terminals cannot be viewed in isolation from the surrounding environment they impact, and the direct and indirect impacts generated by their presence need better research to come up with viable mitigation solutions.

1.3. Aims and Objectives

1.3.1. Aims

The aim of this thesis is to understand the impacts of transport terminals on the ecology, urbanization, land-use, socio-cultural, demographic, and economic aspects of a place. How transport planning strategy was the primary driving force in shaping the urban landscape of Navi-Mumbai, and present day scenario where transport projects are being planned and developed on ecologically sensitive wetlands. To question the rationale behind proposing a transport terminal in an ecologically sensitive wetland site that can help to develop a design intervention proposal to mitigate the existing and anticipated damages in future.

1.3.2. Research Questions

a. Does transport infrastructure planning and design take into consideration the natural landscape systems of a place?
b. What is the significance of transport terminals within the larger transport infrastructure and what are their immediate and long term impacts on the landscape?
c. What are the national and regional development policies specific to development of transport terminal precincts and how do they impact the urban landscape?
d. How have the transport terminals shaped the development of a planned city like Navi-Mumbai?
e. Can we have an ecologically sensitive approach towards mitigating the negative impacts which could be caused by an upcoming multimodal transport terminal in the city?

1.3.3. Objectives

a. To understand the history of dependence of transport infrastructure on natural landscape features and the subsequent reducing environmental sensitivity towards transport planning due to technological advancements.
b. To understand the significance of transport terminals, especially multimodal transport terminals in today's world.
c. To enumerate and understand the direct and indirect impacts as both positive and negative externalities of transport terminals on urban landscapes.
d. To investigate the role of transit oriented development and transport terminals in shaping the urban landscape of Navi-Mumbai city.
e. Understand the future challenges and threats posed by development of new transport terminals on the fragile landscapes of Navi-Mumbai.
f. Providing site specific design solutions to mitigate the existing and estimated damage to the natural landscape of a site where a multimodal transport gateway is proposed which includes an under construction ferry terminal and a proposed suburban railway station.

2. Methodology

2.1 Literature Review

i) History of Transportation and Landscape

In ancient times, transport infrastructure was largely dependent on natural features of the landscape. Early innovations in construction, and technological advancement during industrialisation helped overcome these natural barriers. Mechanization and standardized designs brought about disregard for natural environment, like the construction of America's interstate highways cutting across the landscape. Construction of intercontinental canals reduced dependency on availability of natural water courses but is known to negatively impact aquatic ecosystems. In 1960s, with increasing environmental awareness, transport infrastructure projects started being sensitive to the environment. Examples like the Laerdal tunnel in Norway, and Millau viaduct in France preserved the geological heritage of the landscape while eco-ducts connect fragmented patches of forests.

ii) Transport Terminals – Significance and Changing Role in Transport Infrastructure System

Cities today are complex systems, with massive numbers of interconnected citizens, businesses, transport modes, services and utilities (Hernández & Monzon, 2016). Increase in the urban population and growing significance of transport in shaping the economy has changed the mobility pattern of people. Increasing mobility but at the same time reducing congestion, pollution, and accidents are common challenges faced by cities worldwide. The challenges of promoting sustainable public transport to provide last mile connectivity, necessitates integration of various mass rapid transit modes which require multimodal transport terminals. Transport terminals are the points of convergence, divergence, interchange of people and freight traffic. They provide ease of access to a place thereby improving connectivity leading to urbanization. With rapid urbanization, existing transport modes are facing saturation which is necessitating setting up of alternate, or parallel transport modes, which lead to development of new transport terminals. Often these terminals are retrofitted in existing urban fabric and occupy undeveloped hinterlands and ecologically sensitive areas and exert urbanization pressure on natural landscapes.

iii) Impact of Transport Infrastructure on Urban Landscapes

The impacts of transport terminals on our urban landscapes are either direct where the cause and effect relationship is visible or indirect where consequences are often of higher order yet difficult to establish. As seen in figure 1, direct impacts are those caused by construction activity, like land degradation, loss of forest cover and biodiversity, changes in hydrological regime, disturbance to aquatic ecosystems, soil and water contamination. Indirect impacts are long term and have both positive and negative aspects.

The biggest impact is urbanization of hinterlands, growth of business, and economic opportunities which can put development pressure on land. Transport terminals lead to increase in real estate values, encourage high FSI development and change in land use. They facilitate migration, demographic changes, and also provide access to better social amenities. In ecologically sensitive sites like river floodplains, encroachment by airports causes floods as seen in Mumbai, Kochi, and Chennai. Higher concentration of vehicular traffic around transport terminals, especially during peak hours causes congestion and pollution. While presence of transport terminals has created development pressure and encroachment in heritage precincts, in some cases, better connectivity has also boosted tourism and economy.

iv) Transit Oriented Development Model of Navi-Mumbai

Many Indian cities are adopting transit oriented development which encourages the creation of compact, high FSI, mixed-

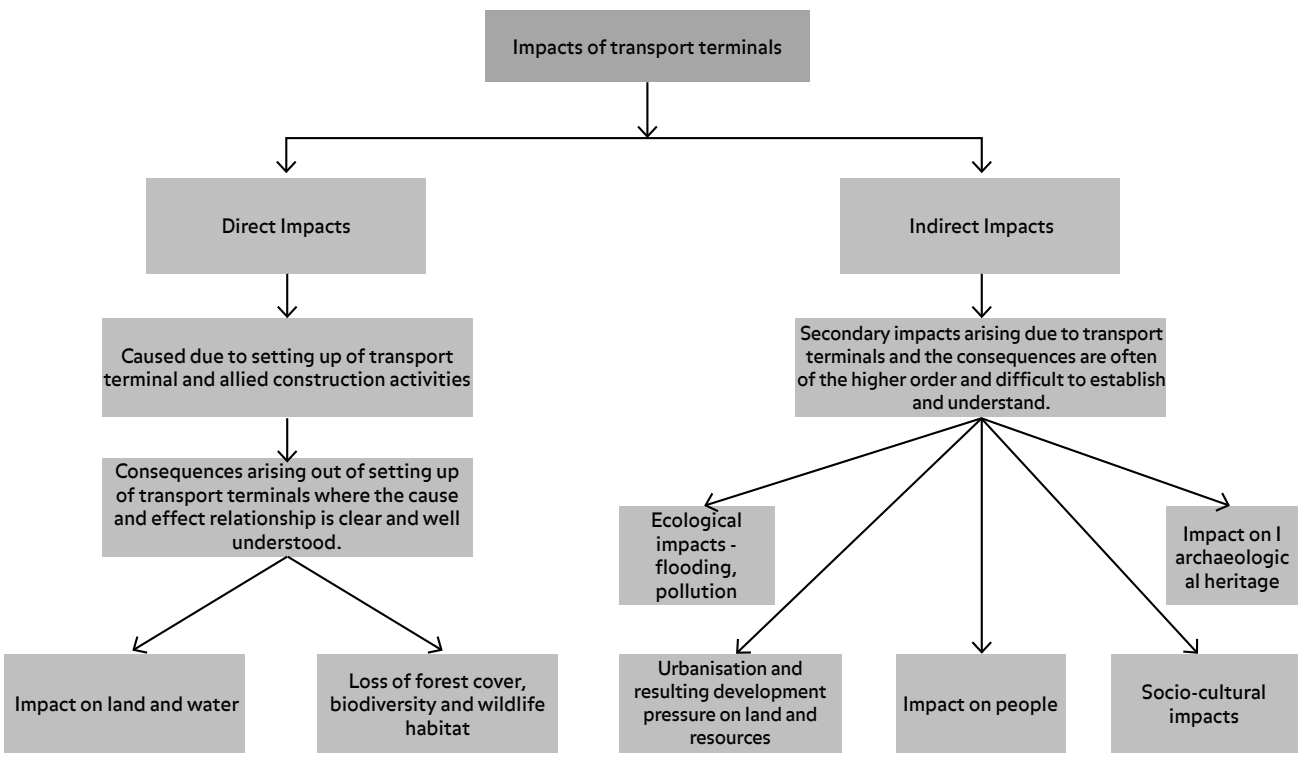


Figure 1: Flowchart explaining the direct and indirect impacts of transport terminals on landscape. *(Source: Author)*

use communities centered around high quality train systems. This policy is adopted by The National Urban Transport policy and Indian Railways Station Area Development Scheme which are changing our urban landscapes significantly. To understand the growing significance of transport terminals in shaping our urban landscapes, we can look at the case of Navi-Mumbai. The city is shaped by its transit oriented strategy for urban planning and continues to do so through its future plans. It would be interesting to understand the transit oriented development of the city, the constraints of geographical features on development, the impact on the natural landscape, people, economy, and culture. The city was planned with 14 nodes situated along a mass transit corridor, a first in India, integrating public transportation, mass transit corridor with residential, office, and commercial land-use (NIUA, 2016). Each node was provided with a multimodal transport terminal served by suburban railway. The transport terminals influenced growth of the city towards Thane creek to the west, due to the existing industrial area, and Parsik hill to the east, and the limited width of about 3kms on an average, between the creek and hill.

v) Multi-fold Impacts of Transport Terminals on Navi-Mumbai's Landscape

Originally, the region of Navi-Mumbai was characterized by low lying hills, uplands, and lowlands which consisted of salt pans and paddy fields (see figure 2). The land was shaped by the tidal effect of creek and this phenomenon was used by the locals for their livelihood and planning of settlements. Delays in land acquisition led to development of government owned lands in low lying areas. The transport terminals improved accessibility and led to growth of nodes which brought more lowlands under reclamation. The nodal growth towards the creek led to isolation of *gaothans,* reclamation of wetlands, and construction of holding ponds (as shown in figures 3 b & c). The transport terminals have also driven demography and land use changes in the city.

Navi-Mumbai has a high decadal population growth rate of 88%, and the population was 11.2 lakhs as per 2011 census which is expected to reach 18 lakhs by 2021 (Satam, 2021). This unprecedented growth is exerting pressure on the land, driving further reclamation and development of residential and commercial areas. Existing nodes are expanding, and new nodes are taking shape which has now started to put pressure on the ecologically sensitive wetlands of the city, which are the only piece of land available for urbanisation (see figures 3a & 4).

3. Site for Design Intervention

Navi-Mumbai is rapidly urbanising and looking for alternatives to ease the pressure which has led to proposal of an upcoming multimodal transport gateway at Belapur consisting of ferry and railway connection. The new transport gateway to the city is situated on the Nerul-Uran railway corridor which is expected to improve connectivity to Mumbai metropolitan region, and boost urbanisation in south Navi-Mumbai.

3.1. Site Context

At a regional scale, the site lies at the foothill of Parsik hill, as shown in figure 5. It is situated at the mouth of Panvel creek where four rivers meet. The region has moist mixed deciduous forests and scrub vegetation in hills, and wetlands along the coast. The site is located in wetland area dominated by mangroves found along Thane creek. At the nodal level, the site is situated in the intertidal zone, next to the Belapur fort hillock, and comprises of *nalas* that drain the Parsik hill. The mangrove areas and holding ponds act as flood defence mechanism by holding storm water during high tides and release the water into creek during low tides. The cultural markers around the site comprise of the *gaothans* including fishing villages of *Kolis,* the indigenous population, and the 16th century Belapur fort.

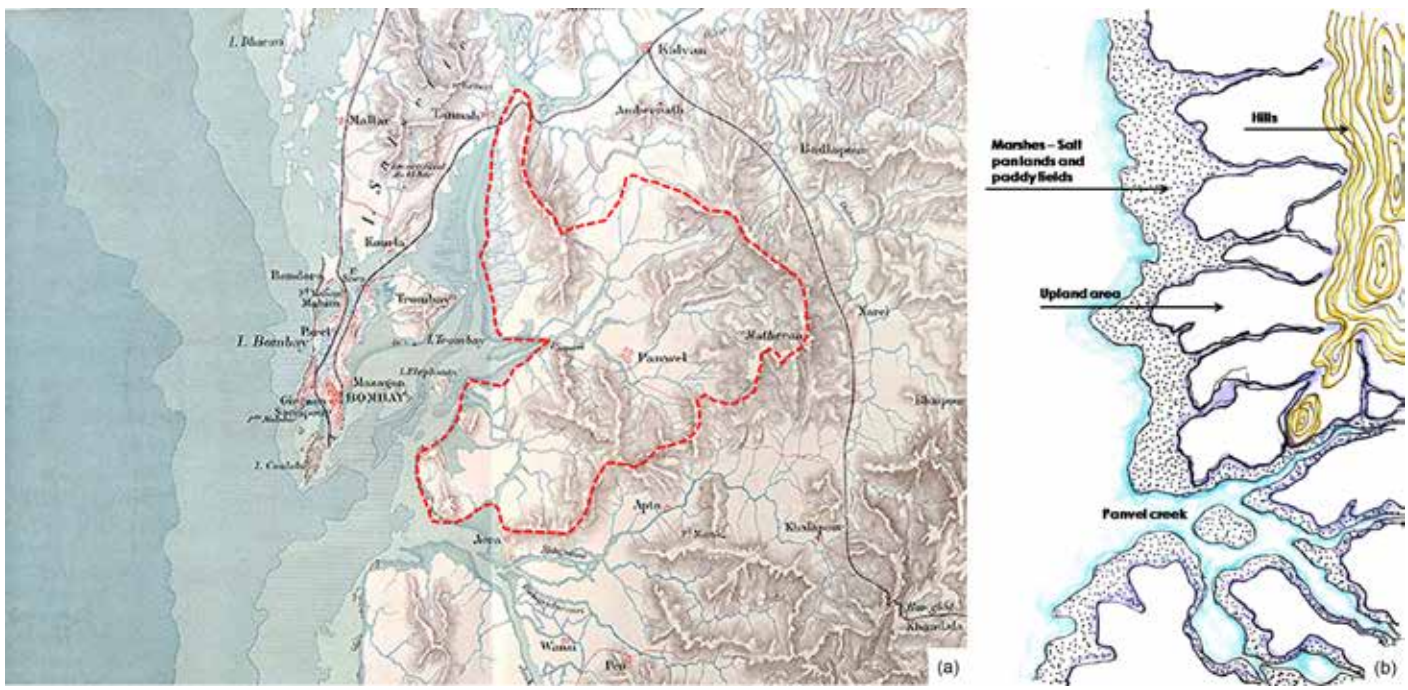


Figure 2:
(a) The region of Navi-Mumbai confined within the Parsik hills to the north, Matheran hills to the east, Dronagiri hills to the south, and Thane creek to the west *(Source: Adapted by Author from base map available at https://www.alamy.com/stock-photo-india-mumbai-c1885-antique-map-102563979.html?imageid=4CD3A4D4-EFB2-47A0-81D5-9CC9C7C65D3A&p=283958&pn=1&searchId=e3a73e29395ecc6e0e25bec2874e6141&searchtype=0. Accessed in March, 2021)*
(b) The original lay of the land with Parsik hills, uplands, and lowlands consisting of salt pan lands and paddy fields *(Source: Adapted by Author from Deshpande, 2018)*

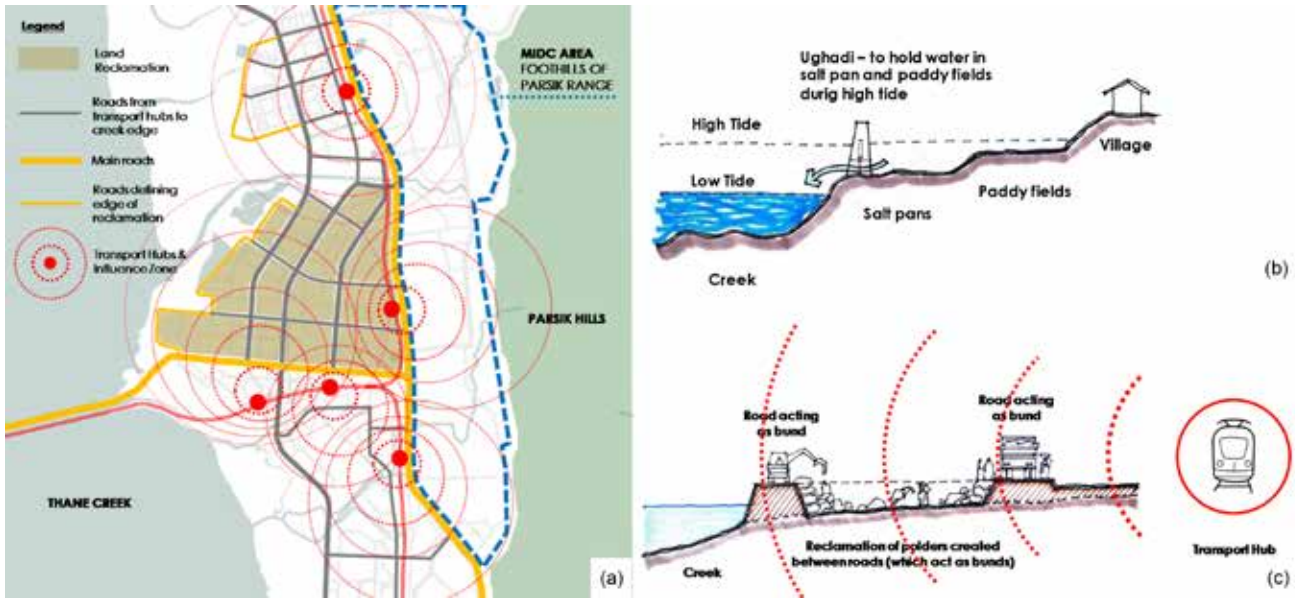


Figure 3:
(a) Expansion of nodes boosted by location of transport terminals resulting in reclamation of lowland marshy areas. **(b)** Traditional technique of using wooden floodgates called 'ughadis' to hold water during high tide to cultivate paddy. **(c)** Reclamation of lowlands by constructing bunds and filling the polders
(Source: Adapted by Author from base map adapted from snazzymaps.com and from Deshpande, 2018)

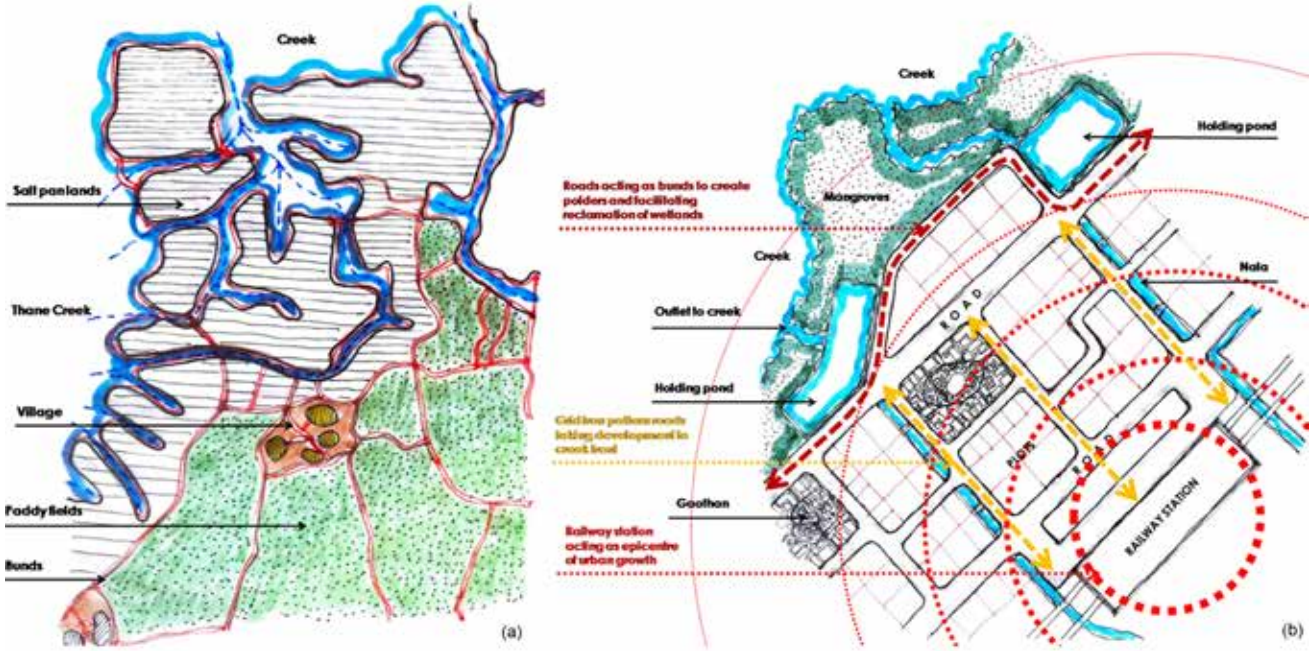
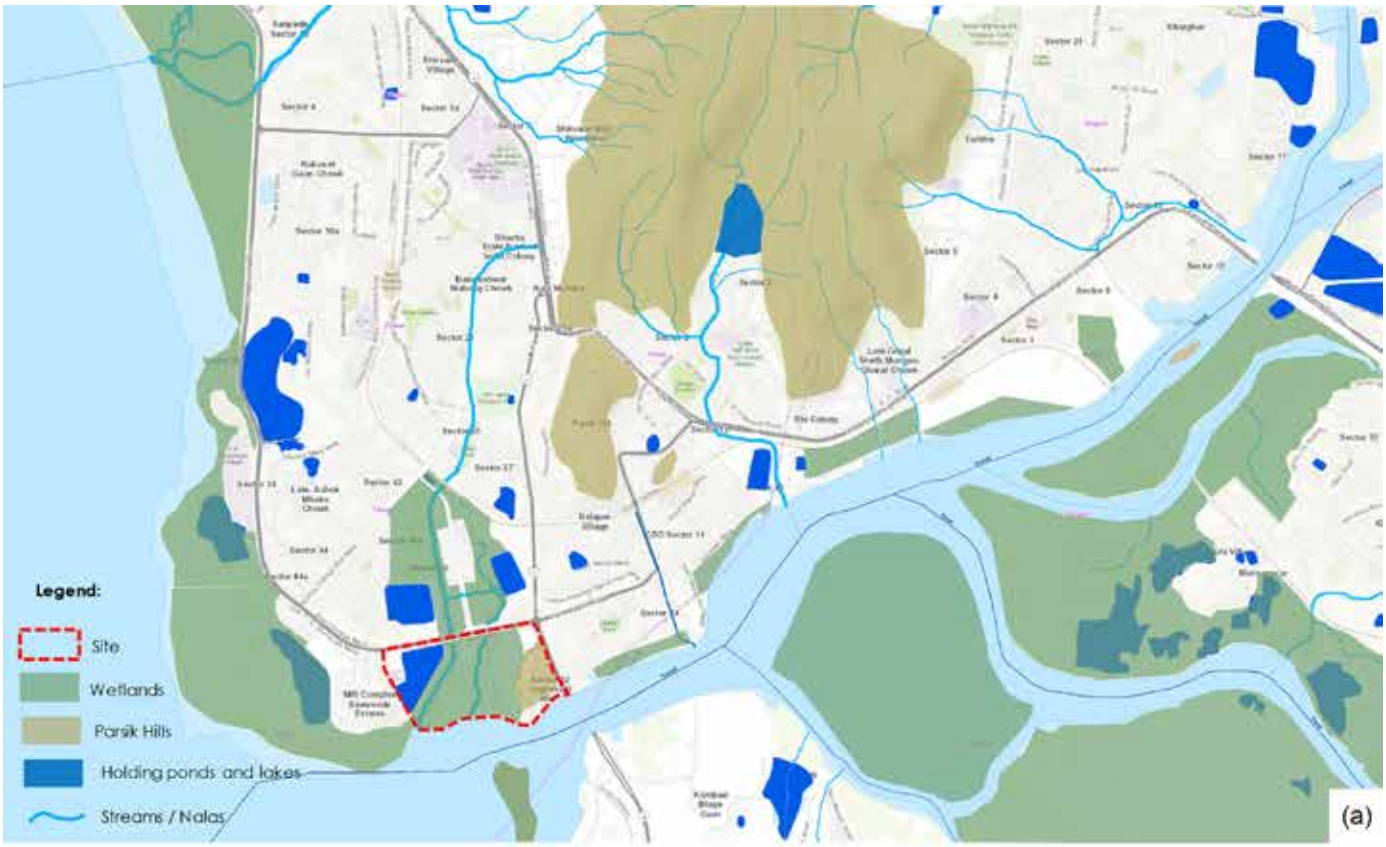


Figure 4: Transition of a typical node
(a) Before 1970s, the lowlands consisted of salt pan lands and paddy fields, and villages (gaothans) were located on uplands at higher elevation.
(b) Urbanisation of nodes with transport terminal as the nucleus and built development encroaching mangrove area
(Source: Adapted by Author from Deshpande, 2018)

3.2. Site Selection Criteria

The site in Belapur is selected based on several criteria such as importance of transport terminal as a gateway to a larger region, proposal for multiple modes of transport which can promote greater mobility for mass transit, influence on urbanisation of surrounding areas at both neighbourhood and regional level, and location in an ecologically sensitive area along with cultural heritage context. The site has an under construction passenger water transport terminal expected to be operational in 2022, and a proposed suburban railway station.

The ferry terminal is expected to boost regional connectivity between Mumbai and its surrounding region while the railway station will enhance accessibility to the nearby nodes. Thus, CIDCO has proposals for high FSI mixed use development around the transport terminal which will reclaim wetlands and threaten the eco-sensitive area. There are two existing wetlands adjoining the site, which figure in the National wetland atlas of India and are biodiversity hotspots. The site also falls under the eco-sensitive zone of the Thane Creek Flamingo Sanctuary. The biggest threat is that most of the site is susceptible to flooding and CIDCO's land use proposals will end up reclaiming wetlands. The site is dominated by mangroves, which can be classified as estuarine wetlands, and are rich in floral and faunal biodiversity with several resident and migratory birds like flamingos visiting the area. Mangroves are an important natural resource, and provide a host of ecosystem services.



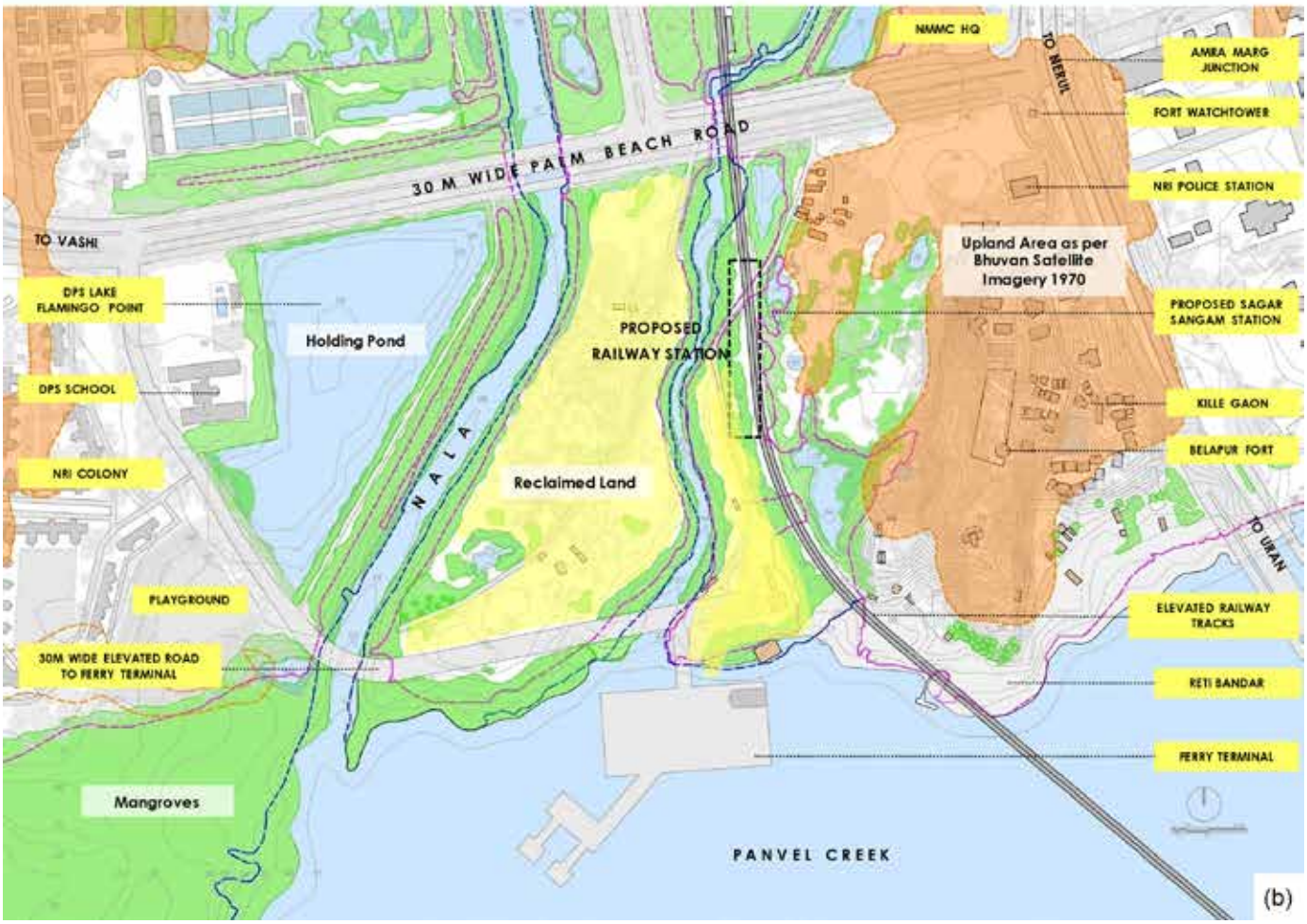


Figure 5:
(a) Location of site at the mouth of Panvel creek, at the confluence point of four rivers. *(Source: Adapted by author from Snazzy Maps)*
(b) Demarcation of original upland areas on site, existing patches of mangroves, and reclaimed areas *(Source: Generated by Author from QGIS software)*

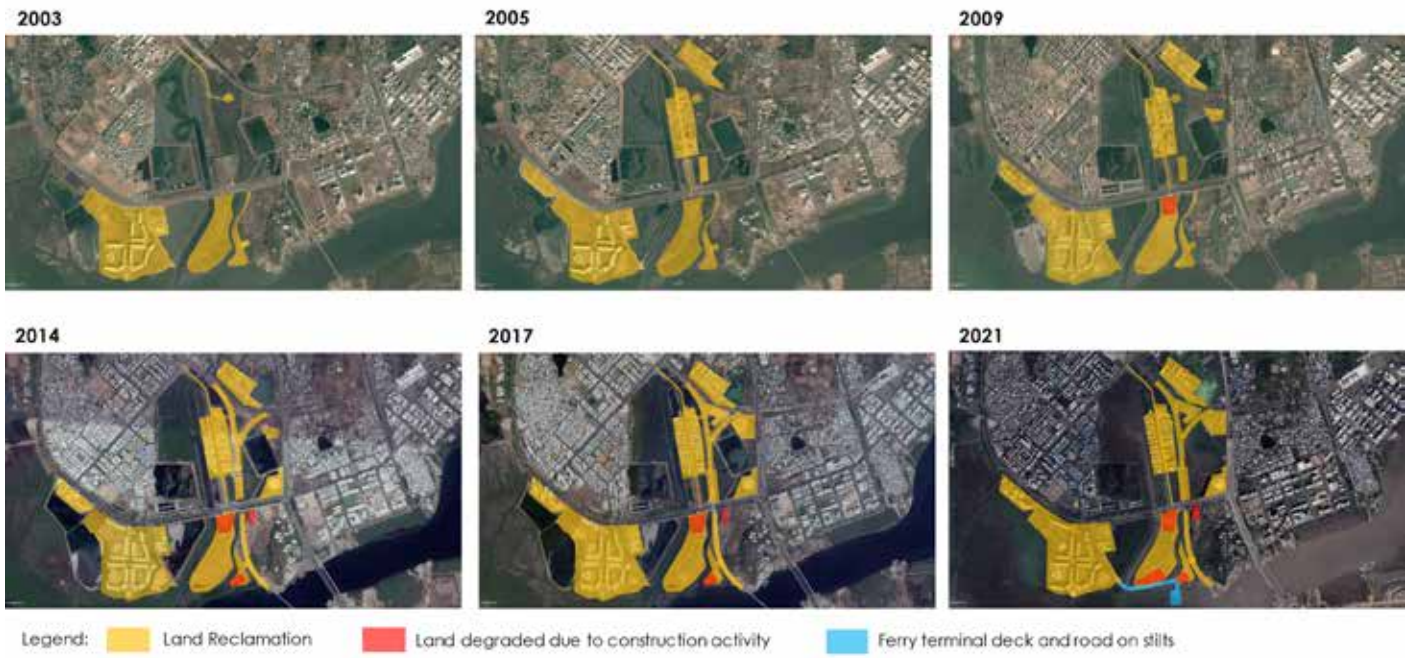


Figure 5: Expansion of reclaimed land and loss of mangroves from 2003 to 2021 *(Source: Adapted by author from Google Earth)*

Threats to the wetlands on site (figure 6) are due to government's development policies, urbanisation, and lack of awareness among people. Decision makers often have little understanding of the economic value of wetlands because wetlands are often perceived as having little or no value compared with uses that yield more visible and immediate economic benefits (Brander & Schuyt, 2010). Urban development is always equated with measurable economic value. Thus it is necessary to establish the economic value of wetlands and compare against value of development in order to establish the benefits of conserving wetlands by understanding the use and non-use values of wetlands as seen in figure 7.

The total economic value model as per Ramsar reports establishes the values of global wetland services as $15,180/ha/yr (Brander & Schuyt, 2010). Instead of following CIDCO's development model of auctioning land and constructing buildings, the wetland on site can be restored and conserved to promote eco-tourism. In such case as per the value figures for various wetland services seen in figure 8. the value of wetlands could be established as Rs.11 lakhs/ha/yr and additional Rs.27 lakhs/ha/yr can be generated from eco-tourism activities. Thus, the total value of restoring and conserving mangroves, and developing an eco-tourism model in a mangrove park could be estimated to be Rs.28 lakhs/ha/yr. For comparison, we can establish the revenue generated by CIDCO by leasing the land for built development, and revenue generated by collecting property taxes by NMMC as Rs.37 lakhs/ha/yr. By comparing the two cases, we can see that although the economic value of wetlands seems to be marginally higher, their inherent value in terms of their resilience and carbon sequestration is unparalleled.

3.3. Case Studies

i) TGV Méditerranée – Axien Provence, Avignon, and Valence

Case studies of the three TGV rail stations on the Méditerranée route in France demonstrate how they are integrated with the surrounding and the landscape design continues the character of the surrounding natural setting of the agricultural land, thus, creating the image of regional landscape character to the visitor.

ii) Sanya Mangrove Park, China

The 10 hectare mangrove park is situated along Sanya River at the high tide line of ocean in Sanya, China. The mangroves on the site were depleted by urbanization and concrete embankment. The design strategy was to restore the natural mangroves on the site by creating ecotones of interlocked fingers to help induct ocean tides, avoid the fresh water flush and destructive tropical storm. The ecological restoration through native plants ensures conservation of land, and minimal human activity through an informed design intervention helps protecting from urbanisation of environmentally sensitive areas, storm surges, and ensures purification of urban storm water runoffs.

4. Design Intent and Proposal

The larger design intent is to develop the new transport gateway of the city as an eco-tourism destination by preserving the natural and cultural heritage of the place that enhances commuting experience by acting as a pause point in their journey, connects the local community to the land and acts as an open space for the city at large.

The design intent could be classified under the following strategies:

a) Leveraging the potential of the transport interchange to create a wetland park to showcase the natural ecology of the place and bring the place in public consciousness by allowing limited access to the site.
b) Restoration of mangroves on site, and enhance biodiversity.
c) Developing eco-tourism activities through the wetland park that promotes nature exploration, interactive learning, and create economic benefit for locals.
d) Connecting the transport interchange to the various activities and stakeholders around the site – fort precinct, bird watching sites, *gaonthans,* and nearby land uses.

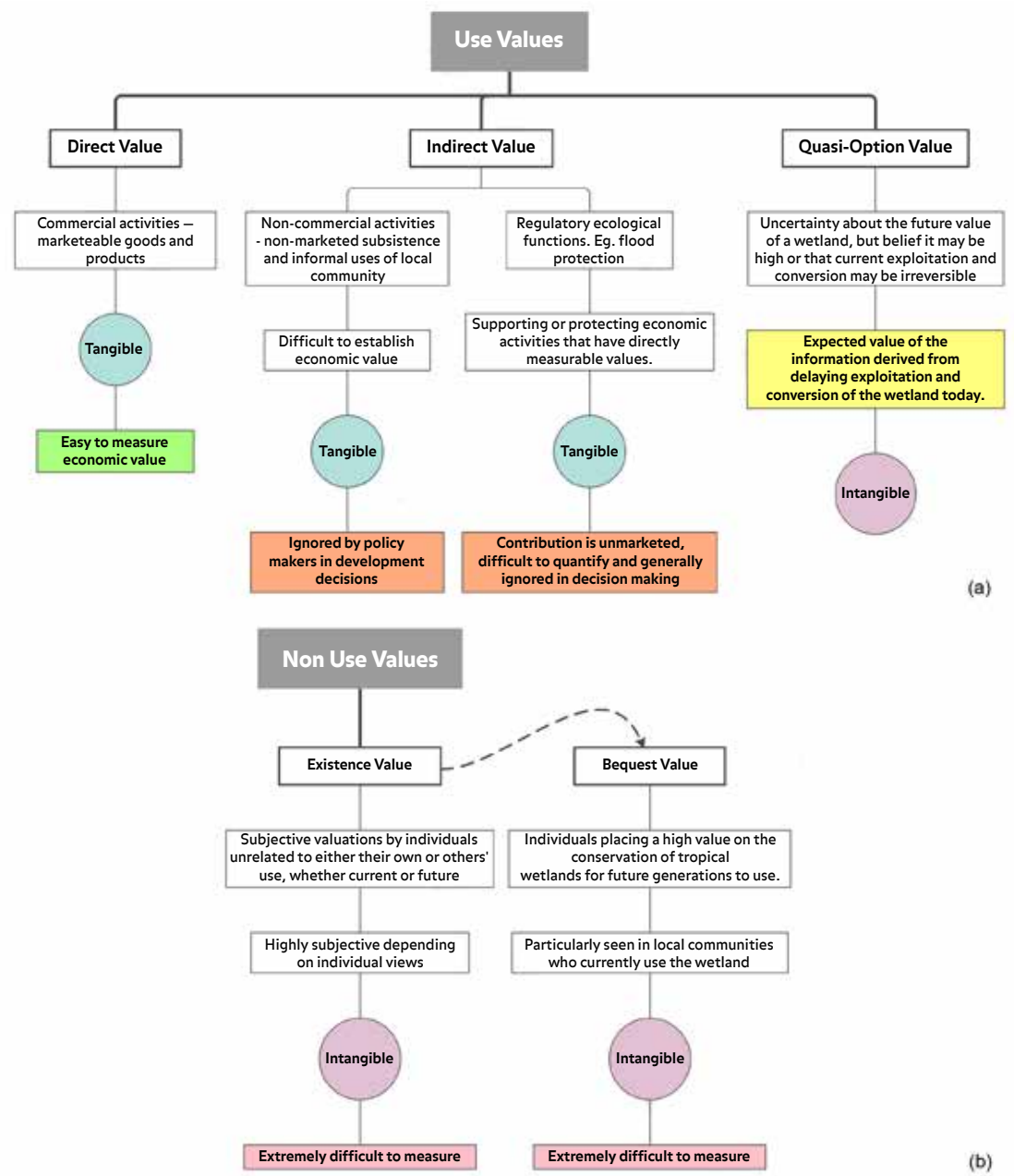


Figure 7: (a) Use values **(b)** Non-use values of wetlands *(Source: Adapted from Economic valuation of wetlands by Barbier, E. B., Acreman, M., Knowler, D., Table 2.1, p.15)*

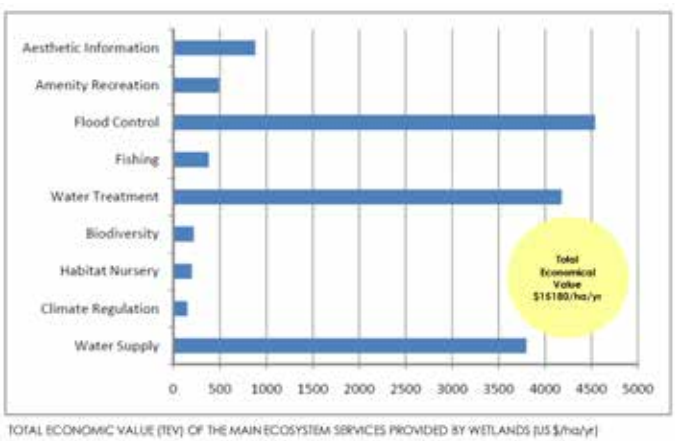


Figure 8: Total Economic Value of main ecological services provided by wetlands on site, expressed in US$/ha/yr. *(Source: Adapted from Valuing Wetlands by De Groot, R.S., Stuip, M.A.M., Finlayson, C.M. & Davidson, N. 2006, fig. 7, p.27)*

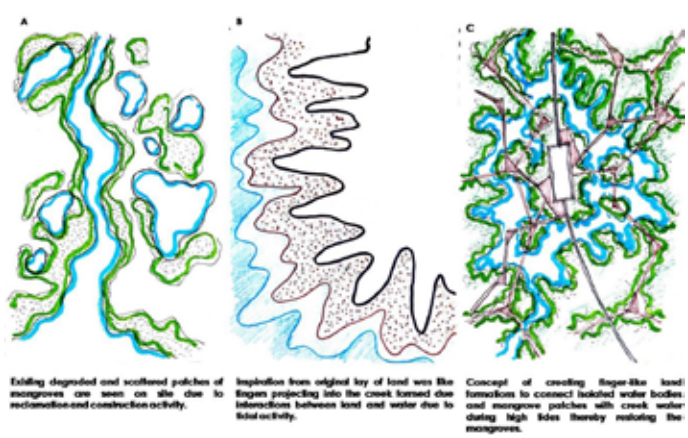


Figure 9: Design concept for the proposal
(A) Sketch of existing degraded mangrove patches on site **(B)** Sketch of inspiration for land modulation to restore mangroves **(C)** Sketch of concept showing finger-like land formations connecting isolated water bodies and mangrove patches with the creek *(Source: Author)*

Figure 10: Proposed Master Plan for the restored mangrove park with the railway station and ferry terminal *(Source: Author)*

The proposal takes clues from the earlier and existing site conditions (see figure 9), and inspiration from the original lay of the land, to create finger-like land formations connecting isolated water bodies and mangrove patches with creek. This can restore the mangroves and create a continuous natural system of wetlands that allows unhindered storm water flows and tidal ingress from the creek.

The key idea is to develop a mangrove park with the proposed railway station at the heart of the project. The railway station is proposed on stilts which can be accessed by the elevated walkways from various access points to segregate commuter footfall from the mangrove park below. From figure 10, it can be seen a transit complex is proposed at the entrance to restrict vehicular traffic, mangrove interpretation centre for nature learning, awareness, and exploration, recreational boating and café jetties, children's play beach to open up the desolate creek front to the city, heritage trails to Belapur fort, cultural trails to fishing village, and boardwalk connections from the transport terminals to each of these areas. The design proposal aims to serve as a prototype for sites across Navi-Mumbai which have or could face a similar situation.

5. Conclusion

The research demonstrates how transport terminals influence the various aspects of our urban landscapes. After looking at few examples worldwide, and within India, the case example of Navi-Mumbai helps to understand how the city planning incorporated transport network as a key component and how transport terminals facilitated urbanization and subsequent impacts on the ecologically sensitive wetlands. The design intervention site was selected based on the proposed multimodal transport terminal and its significance in boosting local as well as regional connectivity, ecological sensitivity of site, cultural and heritage context, and potential to serve as a public space. Value assessment of restoring and conserving the wetlands instead of executing CIDCO's nodal development proposal helped to develop the design intent. Certain existing users and activities along with those that could be proposed on site as per the design intent, helped develop a design program for the proposal. The design intervention outcomes demonstrate how the setting of a transport terminal can be treated in an ecologically sensitive manner by understanding the larger natural system of the place and integrating the transport terminal facilities and activities such that it helps to conserve the natural, and cultural heritage of the site and surroundings. The design intervention seeks to bring about a change in the outlook and perception of authorities, and people at large towards the landscape setting of transport terminal in an ecologically sensitive site.

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Ar. Abhishek Chakraborty is an academician and practicing architect. He completed Masters in Landscape Architecture from L.S. Raheja School of Architecture, Mumbai in 2021. He is currently Associate Professor at Pillai HOC College of Architecture, Rasayani, and is a freelance consultant for Apt Architects, Mumbai.

Ar. Devayani Upasani is a landscape architect with keen interest in both practice and academics. She is a landscape consultant with Urban Design Cell Mumbai and teaches graduate and post graduate courses in architecture. She has been associated with the Indian Society of Landscape Architects (ISOLA) for more than a decade and presently serves as the Honorary Secretary.

Acknowledgements

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DIALOGUE WITH AR. NARESH NARASIMHAN

Ar. Preethi Agrawal

Ar. Naresh Narasimhan is a practitioner and leader with over 34 years of experience in architecture and urban design. He is a best known for his association with Venkataramanan Associates - an award-winning architecture firm based out of Bengaluru, which saw a meteoric rise under his leadership.

In addition to his architectural practice, his contribution to urban development as an urbanist, activist and creative entrepreneur has been far-reaching. Naresh has received acclaim for a range of urban planning and building projects, across all typologies and scales, that are self-generated, experimental and innovative. A proud Bangalorean, Naresh has the well-being of the city at heart, and is committed to making the city the best version of itself. A visionary in his own right, he understands that creating a long-term vision for the city is a broad discipline in itself, and the path toward sensitive planning needs to be anything but traditional.

His varied interests have been a great influence on how he thinks about the city and its pluralities. As co-founder of Bangalore Agenda Task Force (BATF), co-founder of MOD Institute - an international collective of urban designers, researchers and curators and founder of Numa Bengaluru, a co-working space and business accelerator, Naresh has fuelled a variety of progressive causes in the city. He has also been associated with projects of cultural significance to the city, like the Suchitra Cinema and Cultural Academy as well as the Bangalore international Centre (BIC), both renowned as platforms to foster intellectual activity, cultural enterprise and innovation in the city.

Naresh has actively participated, in various capacities, in key projects for the city. His most recognizable pro-bono work is the Church Street remodelling, creating a role-model for other street design projects in the city. A project that has reinforced that most citizens respond to well-designed public spaces with great interest and enthusiasm - Naresh believes that good solutions play key roles in ensuring that conversations about public spaces remain constructive. He also regularly advises government agencies on infrastructure development. The most recent is the conceptualisation of the K100 Citizens Waterway Project in the Koramangala Valley. This is a first of its kind initiative by the city, focusing on regeneration and ecological sustainability.

Naresh graduated as an Architect from Manipal Institute of Technology, followed by further education at Harvard Institute for International Development. His interests range from studying the start-up ecosystem, open data and institutional development to cinema, art and popular culture. Naresh is also a prolific speaker who has been invited to lecture at several national and international events.

The mark of a man, they say, is the variety of things he has done with his life and done them well. It was a pleasure connecting with one such man, who still obviously has so much more lined up. Conversing with Ar. Naresh Narasimhan was a refreshing and learning experience. I first connected with him informally at the Rajasthan Architecture Festival 2022 and his joie de vivre was infectious. His passion as an urbanist, a change maker and an ardent believer in the impact of an architect on society, was infectious in his talk on the democracy of design. Going through his biography, looking at the length and breadth of his work, what struck most was how much he was working towards giving back to society and that felt like the right place to start. This dialogue by with Ar. Preethi Agrawal [PA] with Ar. Naresh Narasimhan [NN] is a conversation on design sensitivity and social responsibility as an architect, his philosophies, experience and his take on shared wisdom for the next generation of architects and designers.

Ar. Preethi Agrawal [PA] : Hi Naresh. It's wonderful connecting with you for this interview. In reading your various bios, one of the many ways you are described is as 'an activist'. In a larger perspective the word has a negative connotation. So, what is being called an activist mean to you, and how does it relate to you as an architect?

Ar. Naresh Narasimhan [NN] : Okay, let me find a way to explain. Full disclosure. I used to be an activist. I used activism as a positive tool to achieve strategic modifications in projects. Activism is not what I do, what I do is actually facilitation. I facilitate the flow of information so that the public can also be included in decisions involving the city. I find ways in which relevant information can be simplified and understood by many, to make the process of city-making inclusive. Data or information is a precious commodity in our time. But having data or information is one thing, to be able to wield its power is another. One of the few people I regard as a mentor and a thought leader, is Ar. Richard Saul Wurman. He is an architect who worked for Louis Kahn. He wrote a book called Making the City Observable, in which he writes, 'Public information should be made public. Making the city observable implies allowing the city to become an environment for learning.' He is arguably the father of information architecture and a pioneer in making information about our urban environment understandable.

PA: That makes sense. So would the word 'co-ordinator', someone who manages information between all stakeholders in an urban scenario, fit for what you attempt to do? Or what word would you choose to replace 'activist'?

NN: Maybe a 'curator of urban information'. Contrary to what people might believe, a lot of things that happen in Indian cities are driven by high level policy. I believe that it's important to get in at the policy level and shape the very nature of the policy. A policy can actually transform the morphology of the city itself.

PA: Hearing you say this makes me ask, as an addendum, whether you are then a grassroots warrior or a policy change maker.

NN: I'd like to think I am all of the above. It is not enough to be involved only in policy. Bringing change in policy, after it is passed, is a herculean task in India. So, it's better to get involved at all levels. But to understand whether the policy will work, one also needs to test it. This is part of the reason I think it's important to be involved across the spectrum.

PA: I guess at the end of it, if you're not able to measure what works or does not, you won't be able to move forward. Do you think our society is responsive or supportive to this experimental change you are trying to propagate? Or have you encountered some negativity towards this approach?

NN: My experience is largely limited to Bangalore. Bangalore has a large number of civic activists. There's a lot of public awareness and attention on proposed developments in the city. Still, I think we have a long way to go. In some sense, I think there's a huge awakening but people sometimes are either not aware or do not have the experience to know what impact a proposed developmental move by the government could actually entail. At the same time, extensive media coverage, especially social media is bridging the gap between this lack of awareness and high level of enthusiasm. Across the city, industry experts, including the corporate sector are actively involved, because of vested interests in the quality of life and its direct impact on the economic viability of the city. I think in general, there's a huge awakening in India that if we don't make our outdoors as good as our indoors, we're going to be in trouble.

PA: So as an architect, do you think you're better equipped to be a part of this active change?

NN: I think so. Mainly because architecture is your 'jack of all trades' and you have to be a master of more than one. An architect is no longer just one thing. An architect should have the ability to assimilate diverse points of view, and channel them towards a singular objective. It is also important to be able to work with a diverse group of people to work in the public realm. The key is to make strategic interventions in the city, which can be called 'urban acupuncture'. The hope is that these will have a collective impact to bring about holistic change, eventually. I strongly believe that architects have a significant role to play towards this goal.

PA: Was there ever any point at which Bangalore wasn't really open to the idea of being told what to do, even for its own good? And you found a way to make your point heard anyway? What can someone learn and emulate from your experience?

NN: Basically, my journey started off with an appeal to the government to rethink a large scale infrastructure project, a flyover across the city. The government called it the Steel Flyover, somebody spelled it as 'Steal', and that connotation really caught on. The experience of creating awareness of the impact of this planned project led us to explore whether we could create a unified Metropolitan Transit Authority for the city. How it currently works is, there is a lack of communication and coordination between various government departments. They work in silos. The logical solution, as an architect, is to break down the silos and open the lines of communication. Once these lines of communication are open, there's automatically better coordination, and the entire system works better. That's what architects should really do. Facilitate better working.

PA: At the cost of being slightly undiplomatic, my next question obviously is, isn't morality of things always fought with commerce? And politics?

NN: Nothing in India is a binary. One tries to slot Indian behaviour into binary patterns, with little success. There's no point, in slotting, say commerce vs politics vs morality. We are a country of various shades of grey and you have to decide your own 'lakshman-rekha', which line you will not cross. Then it becomes a negotiation.

PA: What is your stand on best practice case studies in urban design and planning? We still do a lot of best practice case studies and city managers try to adopt from one place and try to apply it to another. Do you think an immensely successful pedestrianization project like the one you've done in Bangalore is achievable in Jaipur? In my mind, there is no perfect fit and I'd like your take.

NN: The late management guru, Dr. C.K. Prahalad, once said that all best practice models fail in India. They fail because India needs the 'next practice'. If one is able to take a best practice, understand the fundamental nuances of what makes it work, translate those into application principles, it will result in success. The reality is that one can only get what they can negotiate. In the same breath, if we can negotiate the outcome, a lot of positive things can be done in the city. So many of the projects where I've had some measure of success have involved a prolonged negotiation model, where one has to find common ground with all the stakeholders involved. Every project is different and cannot be generalized.

Top - Bottom: 'Steal' Flyover Beda

Church Street

PA: That's wonderful. I would like to digress slightly. I started my career after postgraduation, as a coordinator for the City Managers Association. I trained with ICMA in Gujarat, after which I was asked to come and set up CMAR in Rajasthan. This was 2002. There were two things that I had to struggle with. One, that I was a female and the second that I was young. Do you think young age and limited experience are deterrents to wanting to be a change maker? What would you advise a young architect who thinks big and is capable?

NN: My advice would be to start early. I have been doing this for 25-30 years now. I started with mapping the city, understanding the dynamics of people and authorities, etc. There's no substitute for experience in our field, and you can't speed it up. You have to go through the high points and the low points. Mine is the first generation of architects and citizens who actually started engaging with the city. The next generation should learn from our mistakes and make new mistakes. We can teach quickly what not to do in any project, how to set it up, what the potential challenges could be. Understanding the socio-cultural issues, particularly in terms of caste, gender, etc. In public projects, all these aspects play a huge role. What you see in a public project is the proverbial tip of the iceberg; two thirds is underwater.

PA: For that matter, I don't think a well-thought through project can transcend the urban borders of a town without thorough understanding of why it worked in a particular place. Also, that wisdom comes with time and working. I'm one of those people who follow a lot of these younger architects on various forums. The biggest struggle seems to be about commercial success in the profession. What would your advice be to these people where they need to kind of find that balance of being?

NN: There are two parts to this - architecture school focuses on design, design thinking, research, and presenting our ideas through design critiques. This education creates graduates that are good at solving problems, talking about design ideas, developing schematic design, and helps students express their architectural visions. However, this is just a sliver of the skills needed for you to successfully run a design business. I have a separate talk called 'MBA for Architects'. It's called Mastering the Business of Architecture. This is a vital skill that architecture school doesn't cover. I urge you to take a business financing class or read books on how to understand, implement, and track your business's financial performance. These are not difficult skills to pick up, but definitely important. The second part, has to do with how to be strategic. I was initially doing

Church Street

public projects for free. But I was clear that this is a service, and that I need to be compensated for it, eventually. I used the first few projects to establish credibility and build relationships. It's an opportunity to meet the movers and shakers of the city on neutral grounds, it becomes more like a team effort across the table. That networking in some sense will help in the 'for profit' part of the practice. The key is to align oneself strategically, enable change and be able to work towards something one is passionate about, and enjoy it at the same time.

PA: One does collect, in form of connections, contacts, future referrals and more. And as you rightly said, the kick of having delivered a "change", I am sure is something else.

NN: I would advise the younger generation to follow the 80- 20 rule. 80% of your time dedicated towards 'for profit' projects, and 20% for non-profit projects that bring change. This can be structured as per convenience, there is no right or wrong way. Once you do that, you will see incremental change and growth.

PA: You have these variety of interests which show up on your bio and in the kind of talks that you've given. How much importance do you attach to yourself being an architect in the larger frame of things?

NN: I have a talk on 101 Things Architects do Instead of Building Buildings. I think the B.Arch. is a great undergraduate degree to have. The advantage of being an architect is that it gives the credibility to do a 100 different things. I can be a filmmaker, a photographer, a writer, a textile designer, a product designer. Nobody questions your credibility of being any of those things. I don't think there's any other degree that allows for this multiplicity. Architecture is clearly the mother of all arts and to some extent, many of the sciences. At one point, I think the Chairman of Infosys was called the Chief Architect. Even in the computer world, a chip, computer chip has an architecture. The Prime Minister, Pandit Jawaharlal Nehru was called the architect of modern India. Bring an 'architect' has got a larger connotation than just somebody who designs and builds buildings. I see architects as more than just people who create structures in society. So, I think it's a good qualification to have.

PA: This has been a delightful conversation for me. I would like to wrap it though with your thoughts on what is design sensitivity and social responsibility of an architect.

NN: I fundamentally believe in applying design thinking to analyse any social issues, because these impact social structures and forms in the city. Mainly because, design thinking as a tool, enables us to arrive at an outcome. If you look at the first four letters of design, it has 'desi' in it. If you don't look at it from an Indian sensibility, it'll just become a band aid solution. Architects need to play a very important role in a societal development. Today, the constantly changing lifestyle demands a rational yet dynamic thinking on how the today's technological advancement could be incorporated in creating the new environment and lifestyle that a millennial new young generation looks for.

PA: That's a big part of including people and place making. At the end of the day, they are the users.

NN: Yes. You have to have the ability to understand different sensibilities. Let me illustrate using a project I was involved in. We did a very nice pedestrian-oriented street in Bangalore called Church Street. A few months after completion, I happened to visit, running some errands. The street sweepers were sitting around and just chatting at 10 in the morning. I asked them, "What madam? No work today?" to which one they replied that there was nothing much for them to do. Nobody threw garbage anywhere anymore. Good urban design forces people not to throw the garbage, there's a new found sense of ownership. If you can crack the code, and find a way to make a good quality space, people will take over the maintenance. It's all about good design. It's definitely a long, hard road ahead, but I think that there's enough critical mass for the next generation to work on and design sensitive, functional public spaces. I think it's possible to do it, and the next generation is going to be the one to do it. We are all there to help from a guidance and policy perspective.

Ar. Preethi Agrawal is an architect-planner with a design practise named Aalayam Designs in Jaipur, that manages a basket of projects ranging from residential architecture and interiors to large scale institutional buildings around the country. Her practise revolves around the core belief of "God is in Details!" Her favourite project types swing between residences and institutional buildings especially schools.

With a teaching experience of 18 plus years, she is an architectural pedagogy fan who believes that a teacher should constantly upgrade and keep up with the changing generations they teach. She inherently believes in building effective teaching systems in architecture and creating effective connections between education and practise. Developing effective teaching-learning systems, designing syllabi and effective architectural studio methodologies is her passion.

She has a repertoire of papers and presentations made in various conventions and conferences and her her current research interest revolves around campus design and developing campus guidelines in the post-COViD and NEP scenario, which is a part of her PhD studies.

INTRODUCTORY NOTE

75 Years of Independence
An Architectural Perspective

Since her Independence 75 years ago, India has been through several upheavals and quests in trying to find out what her architecture should be. There have been many who have sought to tie with their roots and yet others who have broken new ground. Indian architects have more than held their own whether it is reinventing sustainability with new labels and adopted international methods to suit new functionalities.

JIIA celebrates this journey with three authors who commemorate it:

- Celebrating Aazadi Ka Amrit Mahotsav of Indian Architecture Post Independence by Ar. Gaurav Agrawal
- Institutional Architecture: Indian Context: 75 Years Evolution by Ar' Suneet Paul
- Seventy-five Years of India's Independence: An Architectural Journey by Ar. Rajesh Malik

CELEBRATING "Aazadi Ka Amrit Mahotsav" OF INDIAN ARCHITECTURE POST INDEPENDENCE

Ar. Gaurav Agrawal

India has a rich architectural legacy and history dating back from the Indus valley settlement with the two major towns Harappa and Mohenjo-Daro, to middle age sculptured architecture from north to south Indian temples, forts and palaces, to Mughal Architecture having its influence from Persia, to colonialism-Indo Saracenic architecture up till 1947. Apart from this, we have observed certain French, Dutch and Portuguese architecture in certain part of the country. And the list goes on and on.

Here on the occasion when entire nation is celebrating its 75th independence year, let us also figure it down to the post independence phase of architecture and its development that India has witnessed. But before that, we have to understand the pre-independence practice in the field to understand that how that development became a stepping stone for the future. Delhi Lutyens- a district of Delhi, named after the British architect Sir Edwin Lutyens, who was responsible for many architectural designs and constructions during the period of British rule when India was part of the British empire in the 1920's, 1930's and 1940's.

Entire area was developed when the British Raj decided to shift their capital to Delhi from Calcutta. Central administrative area of the city with one-third open green space was developed by Lutyens and his team. Impressive and magnificent structure were built like Rashtrapati Bhawan, India Gate, Parliament House, Secretariat, Connaught Place, etc. to name a few. This strong silhouette created a notable sense and notion to experience this style of architecture. Further, many structures were conceived on the similar lines. By the time India attained its freedom; entire world has accepted universal architecture and started celebrating which was apart from any particular kind of style, but in keeping with the science and modern materials that have been recognized universally and effective.

Our then Prime Minister Pt. Jawaharlal Nehru, invited French architect Le Corbusier to develop a new city Chandigarh and Corbusier led a unique urban experiment in its development. His most important role was to design the present urban form of the city commonly known as 'neighborhood units' and the hierarchical circulation pattern within and around it. This gives the city a distinctive character. And the whole concept of 'sector' came into existence. Apart from the city planning, the advent of iron concrete bring revolutionized architecture concept and also emphasized the standardized forms of superstructure, along with climatic factors and attempt to use traditional materials. A new era of modern architecture began after that.

Victoria Memorial, Kolkata

Not only this, premier institutes of unimpeded India like IIT's, IIM's, IIS was also a brainchild of our then prime minister. There was a remarkable progress in shaping up of these institutes from College of Arts building at Osmania to IIM, Ahmadabad designed and conceptualized by great master Louis I Khan (an American architect). Ar. B.V. Doshi further took this forward in design of IIM, Bangalore.

It was such a beautiful amalgamation of the varied texture and use of material from projects like this, having exposed brick construction to the naked concrete sensibly used at college of architecture by Le Corbusier, to the fantastic example of low-cost projects of Lauri Baker as seen in Centre for Development Studies. In this process of various institutes coming up, India receives its first architecture college in 1958 as Sir JJ College of Architecture as its sole identity from then Sir JJ School of Art.

While India was observing this extreme development of modernity, it also created some fear among the architects as it was difficult for them to adapt to the modern way of thinking and the ancient traditions of the nation. Disagreement arose among the people in the architectural community due to the influence of modern ideas. Western and colonial architecture styles were realized.

The tension between modern and mainstream Indian thoughts was first resolved by internationally renowned architect Charles Correa. Correa found the solution in his search for authenticity, exploring the functionality of Indian buildings rather than their decoration, a revival of earlier practices. It was he who developed social housing, 'open-air' spaces and innovation to deal with different climates. And

Parliament House, New Delhi

we started practicing 'Climatic Responsive Architecture'. The work of Correa inspired many other budding architects to design keeping the traditional ways in mind while working with modern aspects as well.

While we have seen a major shift in architecture towards modernism since independence, still the identity of Indian architecture is not pure modernism. Most of the successful Indian architects like B.V. Doshi, Achyut Kanvinde, Raj Rewal, S.N. Prasad to name a few, blended vernacular elements and climate responsive designs with modernity, giving them a rich flavor that defines the identity of Indian architecture. One can say that Indian architecture is a wonderful blend of

Secretariat Building, Chandigarh

IIM, Ahmedabad

College of Arts at Osmania University, Hyderabad

Centre for Development Studies, Thiruvananthapuram

Jawahar Kala Kendra, Jaipur

modern and traditional ideas, characterized by an original regionalism, with a more functional and rational approach to design. Integration of architecture with landscape, energy efficiency and use of locally available materials gives a strong identity to Indian modernism architecture.

India way forward in architecture: The past two decades have seen an unprecedented urban explosion across India, with more buildings constructed than in previous six decades. One would think that such growth would result in a credible architecture. Unfortunately, this has resulted in poor buildings in many cases, with most Indian developers and architects trying to follow the global sign of constructing all glass buildings that are neither relevant nor energy efficient for India. Indian cities have already begun to look like Hong Kong or Dubai with a mix of buildings types that neither suits the Indian climate nor the traditional identity of the place. For more than two decades, the government in Indian has built almost no major public buildings, convention centers, museums or libraries. Although the Indian cities have seen more urban explosion than other countries, this still is negligible in comparison to what India will experience in the next two decades.

Few Indian architects are making a concerted effort to create a logical architecture. These projects are few and need significant expansion to create an architectural vision relevant to the country and its climate in a sustainable way.

India is a huge country with many regions, each having its own characteristics. Architectural projects planned in any location needs to be designed in the context of the tradition, climate and heritage of the region or should be contemporary and incorporate traditional aspects of design associated with the region.

To conclude, it can be rightly said that India's opposition to and confrontation with modernization maybe relatively new, but it has been growing at a very high rate over the past few decades. The thing that has greatly increased in India's development scheme since independence is the population. One of the main factors that characterized the design process in the post-independence period was the population explosion. Villages and small towns have developed in urban and industrial areas. New policies and procedure has removed economic barriers and promotes globalizations and tourism. The foundation and component of these new policies is to ensure the overall development so that the country can join the elite group of developed countries. Although the neighborhood's architectural development continues, the structures having historic importance are well preserved and treasured.

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Ar. Gaurav Agrawal is a practicing architect since last 23 years. Apart from being a professional, he is also an academician from core of his heart. Presently, a director in NIMS School of Architecture and Planning, Jaipur. Serving fraternity in the capacity of Hony. Treasurer, IIA Rajasthan Chapter. Also, represents India as member ACGSA, ARCASIA. Member of various other organizations like IIID, FSAI, IPA.
ar.gaurav1975@gmail.com

ARTICLE

INSTITUTIONAL ARCHITECTURE INDIAN CONTEXT: 75 YEARS EVOLUTION

Ar. Suneet Paul

Belvedere House, Kolkata by Artist William Prinsep
(Source: Wikipedia)

National Library of India, Kolkata
(Source: Avrajyoti Mitra @Flickr)

Architecture is a social act and the material theatre of human activity.
Spiro Kostof

The evolution process in architecture is continuous, robust and ever-transforming with time. And what typology could exemplify this better than the Institutional one. A typology that has been the favorite of all rulers and governments right from day one, has always been symbolic of their strength and power. Earlier concepts revolved around utilizing a grand scale, solid materials, huge volumes of spaces, regal vistas, elaborate landscaping, art, etc. to create an architecture of character which would generate awe and possibly fear in the common man. Pre- colonially, this grandeur was witnessed in the darbar halls or structures related to governance or justice and administration within the massive palace complexes of kings. In India, it is the British who brought in the formal format of architecture as visualized by the Western world. They built their later buildings in the Indo-Saracenic style, as exemplified in the majestic structure of the Victoria Terminal, Calcutta. The then-built government institutional building blocks all along the Rajpath, New Delhi, typify the strong neo-classical British style.

And then came the phase of master architect Le Corbusier in the sixties, with the building of Chandigarh. Institutional design got a modernistic thrust. The High Court, Secretariat, Assembly Block- all talk the language of material, lines, monumental scale, a vision of bareness often hinted to be Brutalist by some. Not only India, but the world was taken in by this style whose lingering flavors are savoured even to date. The fast-track momentum of enriching the Indian architectural vocabulary from the seventies onwards, was with stalwart Indian architects like Charles Correa, Raj Rewal, B.V. Doshi, Kanvinde, C.P. Kukreja, Stein and such others. This was the phase when India was in a rush to build and wanted to eagerly move forward. Some very prominent institutions got planned in this era when these architects attempted to revive the relevance and context of traditional Indian design elements. Some of the institutional complexes such as the Jawaharlal Nehru University, Delhi, Sabarmati Ashram, Ahmedabad, India International Centre, Delhi, Institute of Indology, Ahmedabad– all established a distinct identity for Indian architecture. Side by side, architects like Laurie Baker kept the fire kindled in vernacular design developments.

Institutional architecture in India in the early 2000s, was equally influenced by global trends and with it came the recognition of Indian architects. Multinational companies package-belted their own set of aesthetics and work orientation. The scale of the projects increased multifold. Collaborations with foreign architects became more pronounced. Newer designing software, construction technology and materials led to experimental urges – and not all for the better.

And where are we poised today? I would say at an exciting crossroad. There is a generation of architects who tread cautiously and then another one which boldly wants to explore creativity in design with all the modern-day tools available. The typology of institutional architecture too is witness to a design-rejuvenation process. Reinterpreting tradition in the built form is a strong urge. Regionalism is getting a firmer grip. The aspirations of a progressive society with greater exposure to international trends, are high as in

Kolkata Town Hall, Kolkata *(Source: Sujay25/WikiCommons)*

Mysuru Town Hall *(Source: Wikipedia)*

Kirloskar Institute of Advanced Management, Pune, Architects CCBA
(Source: CCBA website)

any other fast-developing country. It is positive to observe that the dynamics of design in contemporary India are fuelled by practices who are now showing sensitivity to the current concerns of environment, global warming, climate change, energy efficient operations – and are looking for contextualised architecture solutions.

One would also observe that the scope of defining the typology 'institutional' in the present context, has gathered a wider scope. It now varies from administrative to academic institutions to libraries, research centres, medical, sports and creative art. At a global level, the architectural mood variations are indeed tremendous. Architecture providing a closer rapport with nature for the inhabitants is one strong focus that is gradually emerging after the COVID 19 strike.

The English writer, philosopher and critic, John Ruskin had stated, "Architecture is an art to dispose and decorate the buildings erected by man for a variety of needs, so that the appearance of these buildings contributed to strengthening mental health, gave force and brought joy . . . It is necessary at the outset to draw a clear distinction between architecture and construction."

And this brings us to the significant factor of aesthetics and appearances of institutional buildings which have a large conglomeration of people for work. In the twenty-first century, architecture for wellness has gathered momentum. Public spaces when treated appropriately with fresh natural cooling and light, delve into artistic forays to raise the spirits, have efficiency in functionality, radiate a tonality that relaxes the nerves and de-stress, keep abundant

This Ravi Karan Museum, Alleppey, Architects Lalichan Zacharias Atelier, Kochi
(Source: MGS Architecture)

Vallabh Bhawan Secretariat, Bhopal, Architects CPKA
(Source: Photo- CPKA website)

Infosys Software Development Building, Mysuru, Sanjay Puri Architects
(Source: Sanjay Puri Architects website

Gems School, Kochi, Architects Creative Group
(Source: Creative Group website)

communication with nature – would no doubt be very ideal for institutions that are a hub of activity and centres of high-tension work orientation. Colour, texture, light, form- they all play a key role in establishing the success of any space-volume. Our architecture no doubt needs to revive that close association with the basics to provide that fulfilling experience to the end-user. Institutional design today is no longer just architecture, but involves expertise from experts in urban planning, structures, acoustics, landscape and the allied services. The iconic end-products that we appreciate are off-springs of the corporatization of architecture with the allied services.

At one level it is heartening to see the urgency in the state and central governments to view architecture with the vision of the 'new-age India'. There appears to be a mad rush to conceive and build. However, the fascinating architecture of Rome as they say proverbially, was not built in a day. Let's not forget that, in architecture, the process pursued is as important as the end product. We really don't need to follow the path of building overnight as in Shanghai or Beijing. Our context and culture are very varied and diverse. Professionals and citizens need to have more say in the decision-making procedure. Our approach needs to be all-encompassing to reflect what architect I.M. Pei stated:

"Architecture is the very mirror of life. You only have to cast your eyes on buildings to feel the presence of the past, the spirit of a place; they are the reflection of society."

While institutional architecture at a global level may be indulging in extreme play of form and material, in India, the approach I would say is more conservative. The projects may be as large, or may be larger, but the treatment is definitely less flamboyant. Indian architecture has always been resilient and adapted seamlessly to the changing times, and in the process has always added constructiveness and productive norms and perspectives. Every country's architecture is rooted alongside her culture. Contemporary Indian architecture attempts to portray the creative aspirations of the emboldened country with sixty-five percent of the citizens being under the age of forty-five. Learning from the old and preparing for the new, seems to be the design mantra.

The pulse of architecture in India is strong and vibrant.

Ar. Suneet Paul is an author and academician and former Editor-in-Chief of Architecture+Design
paulsuneet703@gmail.com

SEVENTY-FIVE YEARS OF INDIA'S INDEPENDENCE -AN ARCHITECTURAL JOURNEY

Ar. Rajesh Malik

As we celebrate our 75th year of Independence and glance over our shoulders, with an eye on the future, it would be in the fitness of things to also look back at the journey of Indian architecture, the architecture of any era is always a reflection of its socio-political ground realities, and have a vision for the way forward.

Indian Architecture- A blotting paper?

Indian architecture being a rich tapestry of varied and often contrasting styles and expressions indeed presents a challenge for an architect to be able to define it. Perhaps the best possible explanation comes from Charles Correa who compared Indian architecture to a blotting paper which absorbs all the different influences received by it through the different ages, not very different from Indian society. Since we are celebrating 75 years of Independence from British rule, it would be appropriate to start the journey from the British Raj era.

Imperial British architecture was, in its essence, a reflection of the state's authority. We thus find in the architecture, an expression of order, discipline, domination and awe. The rich vernacular architectural traditions find their place only superficially, occurring as motifs or reliefs in an otherwise strict and regimental architectural language. This is exemplified in the forcibly pasted chhatris on the facades of the North and South blocks, or the forced domes onn the façade of the Mysore Palace.

North Block, New Delhi *(Source: www.archdaily.com)*

City Palace, Mysore *(Source: https://www.architectureplusdesign.in)*

The Chandigarh Chapter: The birth of the 'Midnight's Child'

While the British Raj era buildings reflected colonialism in letter and spirit, the first phase of the architecture of Independent India is truly represented by Chandigarh, known in professional circles as 'The Chandigarh phase'. True to Nehru's visionary statement "Let this be a new town, symbolic of freedom of India unfettered by the traditions of the past . . . an expression of the nation's faith in the future", Chandigarh heralded a new beginning in Indian architecture in every respect. While there are endlessly debatable merits and demerits as far as the design of the city goes, even the worst critics would agree that Chandigarh brought a new phase in Indian architecture by means of providing a free and unhindered expression to the creative capabilities of a team of international architects who were neither beset with pre-conceived notions of British imperialist architecture or with imitating the existing vernacular architecture. They started with a clean slate and a fresh mind and the result is quite a uniquely fresh and creative piece of design. The Chandigarh phase thus represents the new-found freedom in the nation's architectural journey, bold, unprecedented, sensitive yet catering to Indian sensibilities.

The Chandigarh era inspired an entire generation of Indian architects and set in motion a new chapter of experimentation and a new found freedom to innovate. An immense body of outstanding work followed, creating architectural landmarks which continue to be milestones and have set examples for future generations.

High Court, Chandigarh *(Source: http://mcchandigarh.gov.in)*

Assembly building, Chandigarh *(Source: http://mcchandigarh.gov.in)*

The Sixties and Seventies: The baby learns to crawl

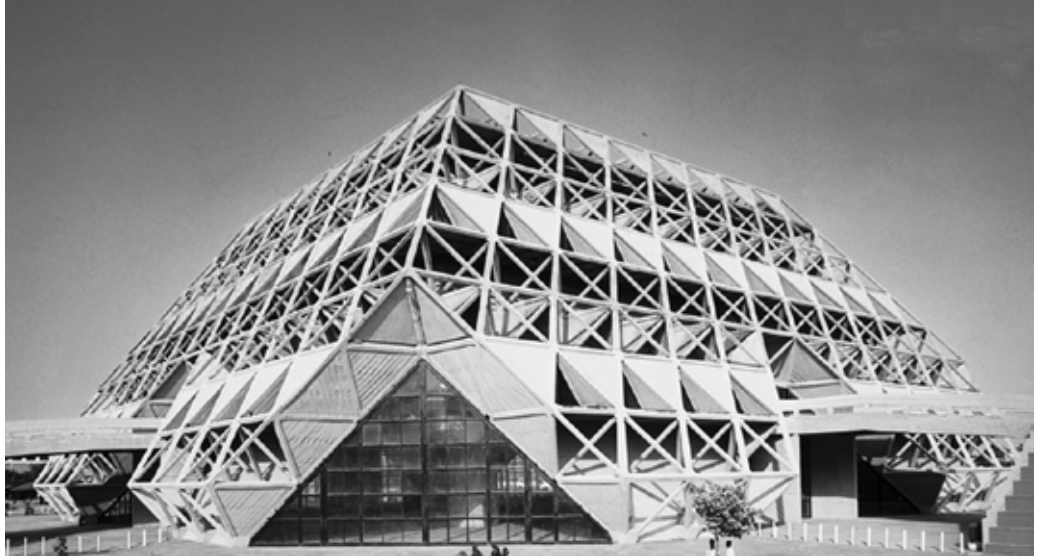
The sixties and seventies saw a proliferation of significant work by Indian architects, partly influenced by happenings on the international scene, yet mindful of the ground realities of a nation struggling to stand up on its feet. While the country was trying to re-establish its lost identity, so was its architecture. Architects struggled to debate and resolve what should be the characteristics of the new 'Indian' architecture- a break from the imperialistic style, Indian in spirit, without replication of western models. However, the architectural output was restrained in its full expression, and lacked complete vigour and force.

I.I.T, Kanpur *(Source: https://www.iitk.ac.in/)*

W.H.O Office building, New Delhi *(Source: https://www.re-thinkingthefuture.com)*

The Eighties: The growth of the consciousness

This momentum was taken forward in the eighties, and received a massive boost from the Asian Games. The Games opened up tremendous opportunities for Indian architects to showcase their talents, and some remarkable works were produced. Since the Asiad was an opportunity for India to present itself at the global level, the first such international event that the country was hosting, it was required of the profession that the architectural designs being created for the event would reflect ingenuity, both in terms of the design approach as well as in respect of structural innovations. To be fair, the profession and the professionals rose to the occasion. Outstanding and evergreen buildings such as the Asian Games Village, Nehru Stadium, IIM Bangalore and the Hall of Nations were created during this period.



Hall of Nations, New Delhi *(Source: https://architectuul.com)*

Asiad village, New Delhi *(Source: https://architectuul.com)*

I.I.M, Bangalore *(Source: https://www.iimb.ac.in/)*

Indian Architecture had indeed come of age. The baby had grown into an adult. Many of the buildings created during this time period were contemporary in their outlook with an Indian ethos and rightfully found their place on the international stage, without replicating any international style. However, like all phases, this phase also had a shelf life and needed to give way to the next order.

The era of liberalisation and globalization: An unchartered path

The next phase of Architectural journey reflects the era of liberalisation in India. Liberalisation brought in its wake a lesser involvement of the state in managing the much-needed development projects because of the primary reason that it just did not have enough money to undertake it, while the demand from an ever-expanding middle class was high. Soon the construction arena saw the grand entry of the latest, though not new, player in the Game of Thrones- the developer.

While developers had been contributing to the profession earlier, this was the first time in the history of the profession that they started playing a decisive role in impacting the architectural and allied professions. Overnight the consideration of commercial gains bypassed every other aspect, including the quality of design.

Just as a civilization reaches a pinnacle, it also must decline. says the great scripture Mahabharata. The downslide of the profession had indeed started.

The primary objective of the developer was getting a profitable ROI (most of us learnt of this term for the first time- it had not been taught in the school nor had it found its place in architectural offices). Return on investment was the latest mantra, the deadliest arrow in the quiver of the politician-developer-financier-promoter collaboration. Maximising the Floor Area Ratio therefore became the most sought-after objective of the project. In the front seat driving by maximum Built up area and minimum setbacks, the standard of designs took a back seat, contrary to the idealistically high professional standards set up by the predecessors.

Long hours of late evening discussions over hot cups of tea, coffee and cigarettes spent on trying to evolve a concept got silently replaced with discussions on finding the best possible solutions for utilizing the complete FAR. As an additional bonus, designers were told, getting the benefits of the exemptions on FAR given by the local authority, would be a testament to the professional competence of the architect. Speed of delivery assumed more importance than the quality of contents, since it was related to the returns. Architects started becoming used to frequent requests from clients for quick churning out of designs, even quicker working out of the elevations. A new terminology 'marketing drawings' made its place in the hallowed portals of the profession.

As a mark of respect for the site, some of the noted architects ranging from Frank Lloyd Wright in the U S to Geoffrey Bawa in Sri Lanka, had preached and practiced the ideal of 'site, structure, unity', and come up with outstanding masterpieces which grew from and merged into the site, blurring the distinction between the site and the structure. Young impressionable minds had grown up imbibing the concept into their mind, body and spirit.

Here was the latest menu card which no longer had this item in its list; the dictum was clear- 'Design fast and build with impunity, Damn the bye-laws, if need be.' To be fair, though, not all projects fell into this category. Government projects and institutional projects were an exception and some good quality work was produced. Like the luminous light-house in the dark and wild sea, they held the fort and continued to guide.

Savitri Bhawan, Auroville *(Source: https://savitribhavan.org/)*

Karunashraya, Bangalore *(Source-https://mindspacearchitects.com/)*

Arguments to convince the clients to strike a balance between good design and full utilization of FAR seldom yielded the desired results. The invincible argument from the client was that he had purchased the land at an exorbitant price, and further needed to invest in the heavy construction cost of the project, therefore he must get the best possible return in the shortest possible time. Achieving the maximum FAR was perceived as being equivalent to good return for money, while achieving a good design was not. The message to the professional was clear-adapt yourself to the new reality, else be out of the race. There were exceptions of course, and some of us did manage to convince the clients to walk the middle path.

Globalization: An unfamiliar journey to go 'International'

Economic globalisation and the success tasted by the developers in the commercial and residential sector made them even more ambitious. They now wanted the designs to look 'international', although the interpretation of the word was not clear to anyone. Besides, the final buyer of the project also wanted to have an 'international' look and feel to the end product. As an immediate aftermath of this misconceived 'internationalism', an increasing group of developers and corporates in the industry started laying undue emphasis on the importance of eye-catching, trendy and 'international' facades, with short shrift given to the planning aspects. Architectural studios started churning out these 'trendy and modern' elevations before completing the planning process, as per the diktat of the clients. The style of the elevation must reflect the corporate identity of the client, the architect was informed.

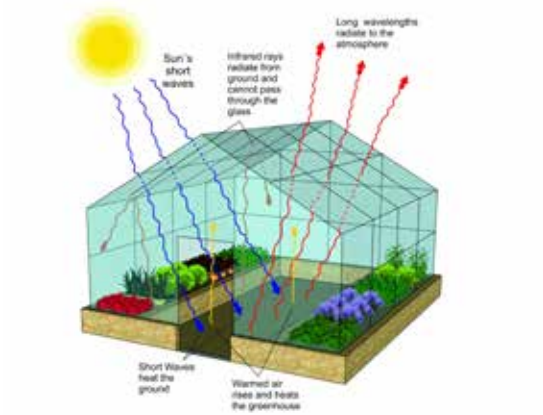
The often-heard sentence in the architectural studio "Let us make this elevation a little more modern" now changed to "Elevations need to be more sexy", perhaps aptly reflecting the just discovered freedom of expression by a youthful new generation!

I.T. Building, Gurugram *(Source:www.archdaily.com)*

IBC knowledge park, Bangalore *(Source:www.archdaily.com)*

Quintessential to the so-called 'jazzy' façade was the use of glass, not only by the developers and corporates but also, surprisingly, in the government. projects, as the government did not want to be seen as being left behind in the rat race. Soon, owners of private residences also started demanding the use of glass in their otherwise beautiful facades, saying *'We want our home to appear modern and in keeping with the times'*, howsoever absurd those times may be. *The most unfortunate part of this development was the extensive use of glass, a material*

primarily suited for cold climates and totally inappropriate for our climate. As a material, glass has the unique property of trapping heat, called the greenhouse effect and is therefore ideal for situations where the indoors have to be kept warmer than outdoors.

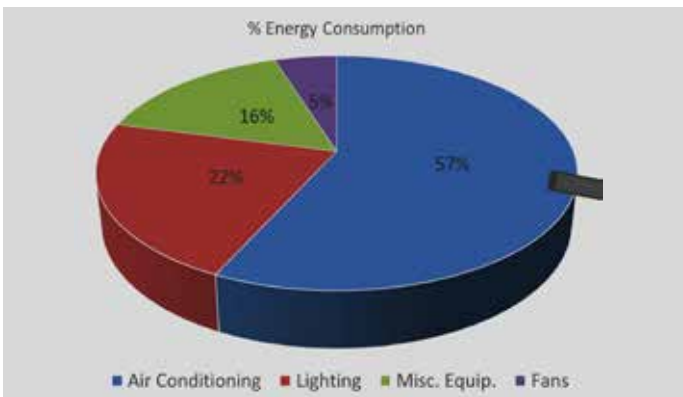


Greenhouse effect *(Source- https://www.backyardgardenlover.com/)*

A fallout of this rat race was that the country now has a large number of glass manufacturers, one of the biggest consumer bases for the consumption of glass, Glass façade consultants, and a mind-boggling range of Glasses, ranging from every conceivable colour to every conceivable type.

The beginning of the' Green' movement: the journey inwards

Every story must end for the new one to begin, and the same happened with this saga of superficiality and, if one may say, vulgar stupidity. The world woke up one day to realise that something was terribly wrong with our environment, that global warming had reached alarming proportions, sea levels had begun to rise abnormally, weather phenomena had become absurd and GHG and CO_2 emissions were uncontrollable. As the world turned the searchlight inwards and started to introspect, we realised that we were riding the downswing ride of a rollercoaster whose upswing path was uncertain. Concerted global research confirmed that the biggest contributor to the alarming increase in GHG and CO_2 emissions was the construction industry, directly related to the architectural profession. In other words, the maximum damage to the environment was being caused by unhealthy construction practices. Further research established that the biggest culprit responsible for the increase in GHG and CO_2 emissions was our very dear air-conditioning. It is a well-established fact that the greatest demand for air-conditioning comes from the construction sector.



Energy consumption in commercial buildings: GRIHA *(Source- https://www.grihaindia.org/)*

Where does this leave our dear glass? Glass was being extensively used in the country and was one of the most sought-after materials in the wholesale *mandi* of construction materials. On account of its inherent property of retaining the heat energy from the sun and transmitting it indoors, the extensive use of glass resulted in the buildings becoming hotter by the end of the day, contrary to the requirement of cooling the indoors during our long summer season. To offset the same, there was no choice but to deploy air-conditioning at a huge cost of electricity. *A classic instance of creating a problem and then trying to solve it, creating a bigger problem in the process! Thus, heavily air-conditioned, glass-clad 'modern' buildings contributed generously to CO_2 and GHG emissions, besides consuming large amounts of electricity which was in limited supply, and turned out to be extremely expensive.* The jazzy, modern, sexy, international glass façade of the global era came with an expensive price tag: degradation of the environment and a hard hit on the pocket.

The world in general and the building professionals in particular realised the need to go back to the basics, conserve energy, minimise the necessity for air-conditioning, reduce electricity consumption and re-visit our environment-friendly vernacular building practices.

The 'Green' movement was born- perhaps reborn would be a better word to use. All that was needed was to revisit the fundamentals and adapt the same to our modern requirements. Like islands in the vast ocean, there did exist a few exemplary works towards energy efficiency by some architects. However, these were far and few and did not have a prominent place in the public domain. Many of these effectively used the vernacular as the source spring to serve as the guide.

Sometimes the answers lie closer home than expected. Indian vernacular architecture is a fine example of building in harmony with nature and not at war with it. Excellent instances of the same exist in all our climatic regions which not only exhibit an intrinsic understanding of energy efficiency and conserving the health of the environment, but also teach us about using appropriate materials, which exist in abundance in the building's region, and do not need to be' imported'.

Soon, however, the new green movement was taken over by organisations claiming to have expertise in obtaining platinum, gold or silver ratings for energy-efficient buildings. These organisations promised owners and consultants upcoming and existing projects that they could assist them with getting the desired ratings by virtue of their experience in managing rating systems, irrespective of whether these buildings had actually followed the desirable fundamental principles or not.

There has been a mushrooming of these rating agencies working towards achieving the desired points in the last decade or so. Overnight, building owners, architects, engineers, government agencies and developers started clamouring for the desired green ratings for their buildings so as to be 'perceived' as being environment-friendly. Never mind if the design has been worked out in contradiction to the ideal building orientation, or if the window openings caused excessive heat gain in summers or whether air-conditioning has been deployed to overcome the design

shortcomings. *Cases abound now of buildings getting a very good star rating for using efficient air-conditioning chillers and saving water but overlooking the fact that the need for air-conditioning itself could have been drastically reduced had some of the basics been followed during the design process!!* This is the new fashion, not very different in appearance from the previous architectural styles. In this fashionable era, a building is supposed to be environment-friendly as long as it gets a decent green rating. The result is for all of us to see. Some of the most outlandishly expensive buildings using highly energy efficient materials and technologies are certified 'green'.

Infosys, Bangalore *(Source: https://www.infosys.com/)*

D.L.F, Gurugram *(Source: https://www.dlf.in/)*

These pieces of modern architecture could be just anywhere in the world. This is amusing, given the fact that we have a rich legacy of a unique architectural character for each of our distinct climatic regions. Every component of this green movement has taken a green hue- right from the electricity-guzzling air-conditioning to the bluish green to greenish blue double glazing on the western building face to fresh green; concrete to the highly energy-intensive granite. *Perhaps the only shade of green missing in the movement is the green of envy, as no one seems to be envious of these art pieces, given the fact that it has become quite easy for nearly every building to get a star rating!* The number of buildings that have acquired platinum, gold and silver green ratings in the last ten years would substantiate the point. Most states have started integrating energy codes into their local codes. Lately, there has been a spurt of training programmes for building professionals in designing energy efficient buildings by organisations such as TERI, IGBC and USGBC. The ground reality, however, does not reflect the tangible results of all these efforts, as borne by the following facts:

- Data collected over the last ten years indicates an insignificant reduction in CO_2 and GHG emissions from the construction industry, in spite of a large number of buildings by private players and govt. being declared as green buildings.
- The air-conditioning and electricity load on account of the commercial buildings has shown little sign of reduction in the same time period.

Going back to the basics: Looking back to look ahead

Out of this internal churning process, a new consciousness appears to be emerging on the horizon. Professionals have begun to re-examine the effectiveness of the green assessment systems. There is a body of architects who are conscious of all the aspects of the picture and would like to genuinely contribute towards energy efficiency. There have been some genuine efforts at sustainability in the midst of this rat race. The results of these initiatives are distantly visible. Significant beginnings by the government, such as the 'One Sun One World' initiative have enormous potential in respect of tapping the less-explored world of solar energy, which we have in abundance.

Like solar radiation, newer sources of energy like wind, which are not utilised to their fullest potential are being explored as substitutes to electricity and air conditioning. India has an abundant supply of wind energy of the required quality. Sufficient theoretical research has been undertaken on the ways and means of utilising it in building designs. However, the research has not been taken to the ground. There are isolated evidences of its proven effectiveness as a substitute to conventional energy systems, such as the bold attempts in Torrent Research Labs, Ahmedabad and Vikas Community, Auroville.

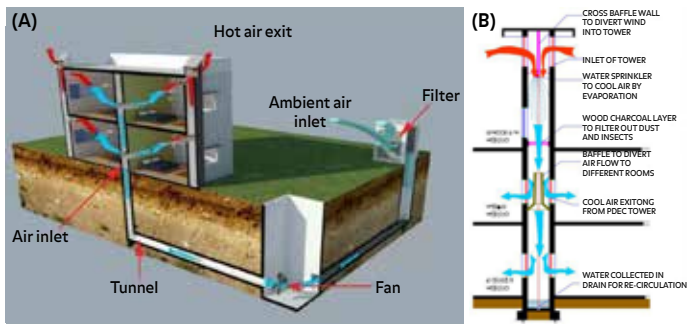
T.E.R.I RETREAT, Gurugram *(Source: https://www.teriin.org/)*

Torrent Research Laboratories, Ahmedabad *(Source: https://www.torrentpharma.com/)*

Solar Kitchen, Auroville *(Source: https://auroville.org/)*

Vikas community, Auroville *(Source: https://auroville.org/)*

Another such source of energy is Mother Earth. Earth has been used as a heat sink in traditional dwellings in Asia and the Middle East in the vernacular Architecture of the region. It possesses the rare quality of maintaining a constant temperature about four meters below the surface of the ground, even when the external temperatures soar. Successful examples of buildings cutting down on summer and winter Air conditioning on account of this exist in the country and the number of such experimental projects is on the rise. A very successful experiment is the T.E.R.I RETREAT building, Gurugram. Passive Downdraught Evaporative Cooling (P.D.E.C), another proven vernacular technology, is another possible energy efficient substitute to conventional Air conditioning.



(A): Principle behind Earth Air Tunnel System
(Source: https://www.beepindia.org/)
(B): Passive Downdraught Evaporative Cooling
(Source: https://www.researchgate.net/

In the 75th year of India's freedom, one wishes for the emergence of a renaissance movement in Indian architecture, one that is free of 'fashions' and '-isms', free from the rat-race to obtain building ratings, devoid of the tendency to blindly follow architectural styles and materials without adaptation. A young generation of architects who are conscious of the need to protect natural resources and ready to revisit and re-learn from our rich building traditions, not for the purpose of getting labels and points, but for genuinely salvaging the environment, is emerging on the professional scene. It is hoped that this new race would be ready to adapt the available passive energy efficiency techniques, relying less on active energy efficiency techniques notably air-conditioning. Let us pray that a higher consciousness brings about the much-desired revolution in Indian architecture, in letter and in spirit, in tandem with the new resurgent India, a second freedom struggle. Hopefully, this change on the architectural stage will reflect the new Indian nation--assertive, strong, independent, proud of its architectural heritage and leading the world in genuine sustainability.

As we celebrate the 75th year of India's independence along with the completion of 150 years of Sri Aurobindo's birth, it is worthwhile to remember his words:
It is to India that is reserved the highest and the most splendid destiny, most essential to the future of the human race.
Let us look forward to this momentous journey towards India's highest destiny and the synonymous journey of Indian Architecture towards its' glorious destination.

Ar. Rajesh Malik has thirty-three years of professional experience in the industry as well as academics. He has a passion for research and sustainable and energy efficient design. He has published papers in reputed national and international journals. Presently in private practice, he has managed a diverse range of projects ranging from IT campuses to residential and hotel projects.
rmalik65@yahoo.com

VIT

Ar. Sanjay Mohe, Ar. Chelliah, Ar. Sivaraman, Mr. Mahesh

Fact File

Client	▶ VIT , vellore
Architect	▶ Mindspace architects, Bangalore Ar. Mohe, Ar. Chelliah, Ar. Sivaraman, Mr. Mahesh
Structural	▶ Rays consulting engineers , Bangalore Mr. Ramkumar
Electrica	▶ Madras electrical consultant , chennai
HVAC	▶ ATE air treatment engg. Pvt. Ltd, Chennai
Plumbing	▶ Prism consultancy , Bangalore
PMC	▶ Cheralathan associate , chennai
Civil Contractor	▶ Discoy, Bangalore

VIT is a campus designed as a place to inspire, to think big and encourage creativity. The approach began with questioning if whether creativity can be taught?

Based on this, the whole programme of the architectural school was broken down into five aspects, each of which explores the idea of a creative space in varied scales and approaches.

The lecture halls

The first aspect in question is the lecture spaces. These along with the studios are spaces of interaction.

The lecture halls are partially buried and surrounded with earth berms. These berms have multiple advantages. They not only help in heat insulation which in turn brings down the usage of air conditioning but also scale down the building from an aesthetic perspective and also seamlessly connect the studios and the ground level.

Catering to the latest teaching methods, these lecture rooms are focused on audio visual presentation. Hence the amount of light entering these spaces is controlled.

Finally, the lecture halls are placed at the lowermost level which facilitates easy entry and exit.

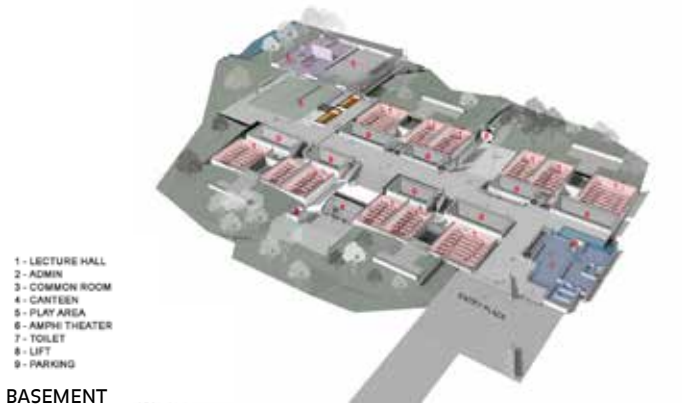
The Studios

The second aspect of the design approach is the studios. The studios are envisioned to be highly collaborative spaces. They are designed to be flexible and multifunctional.

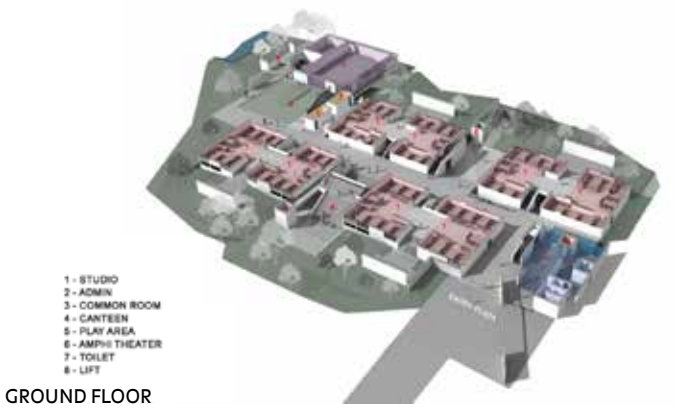
The central spine is flanked on either by studio clusters. These clusters consist of lower courtyard studios, adjacent to the corridor and the mezzanine part of the studio overlooking the lower part of the studio through a double height space. The spill-over spaces from the classrooms are layered with green walls. These clusters are interconnected with mezzanine floors creating dynamic and active spaces.

Within the studio, each student has a personalized space which creates a sense of homecoming. The low height parapets, flanking the studios and corridors, create a sense of privacy when a person is sitting and working. At the same time when a person is standing, it creates a sense of visual connectivity across the studios.

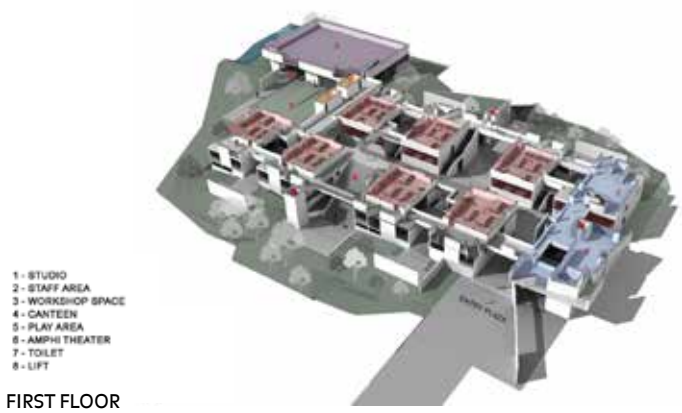
The studio also encompasses a small courtyard which acts as a breakout and an interactive space for the students. These courtyards are placed in such a way that, they create a series of interconnected spaces across studios and the campus which enhances the interaction between seniors and juniors.



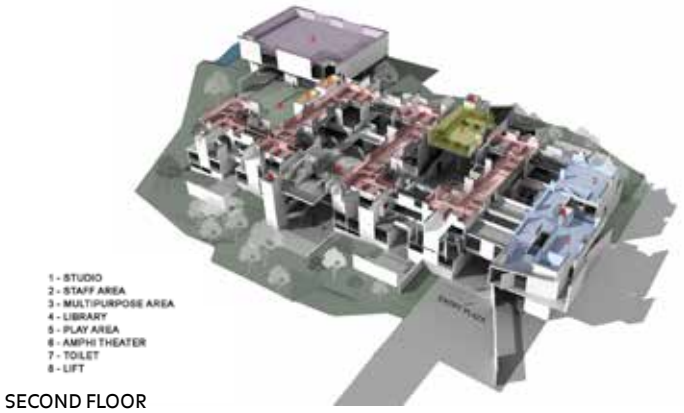
BASEMENT



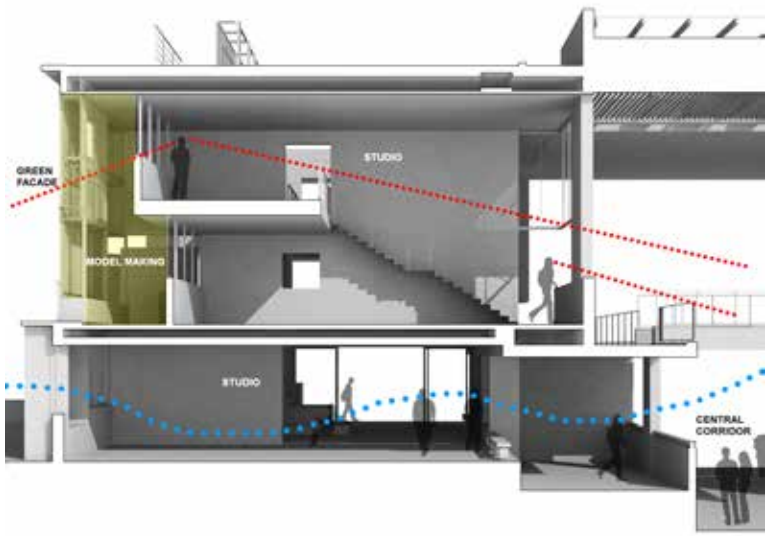
GROUND FLOOR



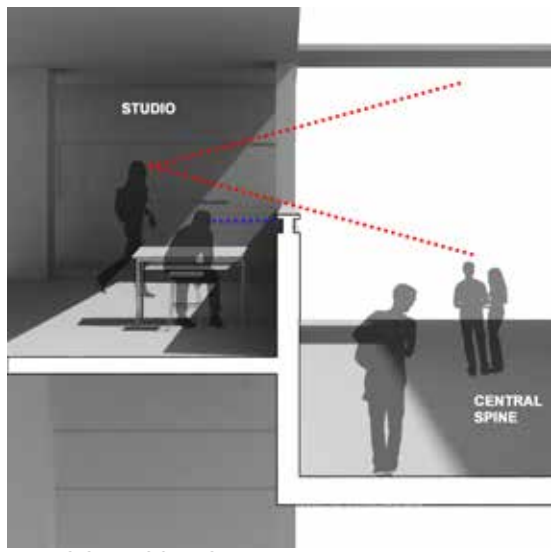
FIRST FLOOR



SECOND FLOOR



TYPICAL SECTION THROUGH STUDIOS



STUDIO OVERLOOKING CENTRAL SPINE

Learning by Doing

The intent was to create spaces that encourage model making, understand materials and other hands-on activities. The model-making spill-out areas adjacent to the first floor studios, for instance, allows for learning by doing.

Focal points across the school which aim at exhibiting the students work such as models, observations, studies and occasional installations are considered at the end of major axes. These installations depict the temporal yet consistent nature of learning. The location of these focal points at regular intervals creates a sense of motivation and inspiration for students and parents alike.

Learning by Observing

Observing and listening forms a major part of the learning process. In order to maximize this, certain deliberate attempts are made here to create an interactive environment.

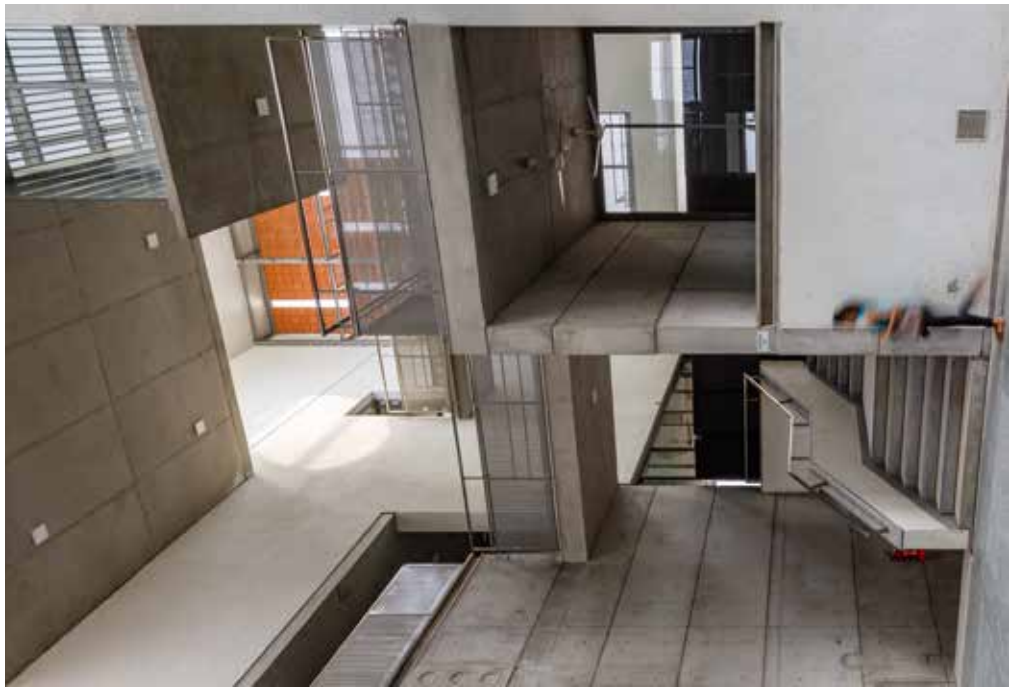
The central spine plays a major role in this aspect. It acts as a multifunctional space which doubles up as spaces for events, exhibitions, juries, group discussions and seminars to name a few.

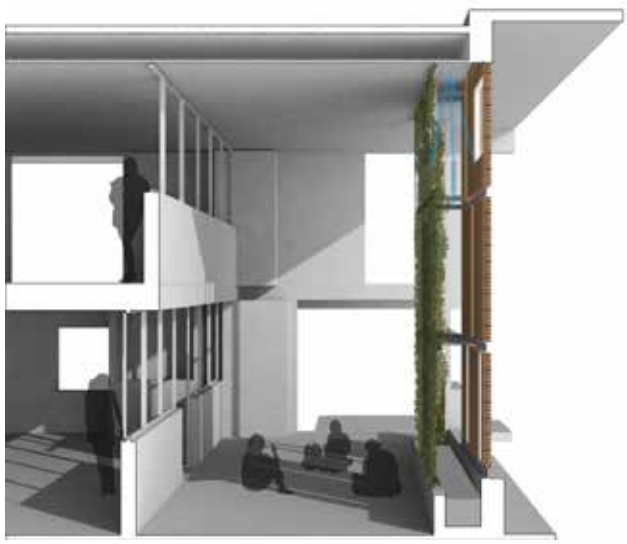
The studios adjacent to the corridors are also visually connected to the spine because of these low walls and courtyards.

Along the spine, there are certain Amphitheaters and wider spaces created for impromptu discussions and juries. These spaces provide the connectivity and the necessary seclusion for meaningful dialogues.

The central spine is also intended to have pivoted display panels across the campus, which can create additional enclosures to conduct juries and display the student work.

The proposed pivoted panels across the central spine add to the vibrancy of central spine with the students works displayed on them. These also create additional enclosures to conduct juries.





Informal Learning

Discussions in studio are important, but the discussions that happen in the other spaces, informally and by chance are even more interesting. Spaces like the canteens, sports areas, corridors and amphitheater are where you meet your peers, seniors, faculty are where discussions start. So the design tries to integrate these kinds of nooks and corners which can spark these informal discussions.

In addition to these five aspects, the design responds to the context, climate and culture in a varied manner. The orientation of the building is in mostly facing the north and south, thus minimizing the harsh sunlight and bring in glare free natural light. The abundance of landscape, positioning of the water-body and the wind tunnels aids in keeping the temperature in the building under control. In addition to these, radiant cooling methods and green screens aids in reducing the temperature.

Radiant cooling system is adopted to ease the temperature in the studios. The waterbody at the west end of the central spine along with the wind tunnels provides passive cooling throughout the entire building.

All the first floor studios have a double height spill-out area with a green layered screen. The inner layer being a wire mesh which allows creepers to grow and the outer layer consisting of the porotherm blocks. Both of these layers cut down the direct sunlight. There is also a misting spray between these two layers which cools down the warm breeze. These features create a cool and ambient microclimate inside the school. Aesthetically the school maintains a neutral material palette, varying volumes, play of light and shade and a dynamic environment. The built spaces seamlessly reflect and complement the functionality of the spaces seamlessly.

Ar. Chelliah, Ar. Sanjay Mohe, & Mr. Ramkumar

Ar. Sanjay Mohe Graduated from Sir JJ college of Architecture founding partner of 16 year old firm "Mindspace " in Bengaluru, Ar SanjayMohe has held many positions of repute prior to that which includes a working association of 21years with Bengaluru's Chandraverkar and Thacker Associates, short stint with Ar Charles Correa in Mumbai and his work stint in Saudi Arabia. His work spans a spectrum of projects - Research Laboratories, Knowledge Parks, Campus Designs, Beach Resorts, Libraries, Corporate Offices, Hospice and Residences. Some of the awards won include- JK Cement The Great Master award 2019, The Golden Architect Award by A+D & Spectrum Foundation Architecture Award (2009), India; J K Cements Architect of the Year Award - 1991 /1999 /2001 /2004 /2007 /2008/2013; The Award of the Journal of the Indian Institute of Architects – 2002; ar+d International Annual Award of Architectural Review (1999), London and d'line, for JRD Digital Library Bangalore; Gold Medal from ARCASIA (the Asian Forum for Institutes of Architecture-1998).
mohe@mindspacearchitects.com

RANE VIDYALAYA

Shanmugam Associates

Fact File

Project	▶ Rane Vidyalaya / Shanmugam Associates
Architects	▶ Shanmugam Associates
Project location	▶ Trichy, India
Area	▶ 90000 sqft
Year	▶ 2021
Principal designers	▶ Shanmugam A, Raja Krishnan D, Santhosh Shanmugam,
Project Lead	▶ Balasubramaniam
Design Team	▶ Srinivasan, Satish Kumar, Mohammed Ismail, Rukmani Thangam, Praveen Kumar
Photo Credits	▶ Shamanth Patil, Rays & Greys Studio, Bangalore
Structural Design	▶ Ramkumar, Rays Consultants
Engineering	▶ Hitec Construction, Trichy
PHE Consultants	▶ D&D Consultants

Bird eye view of Rane Vidyalaya from the East

Rane Vidyalaya CBSE school is an educational campus for K12 and a CSR initiative by Rane Foundation India Pvt. Ltd, a leading industrial conglomerate. Theerampalayam, the rural region where the school is located, has no proper educational institutions that offer quality learning. The closest city, Tiruchirapalli which is a Tier-II city in the state of Tamil Nadu, India, is 20 kms away. Neighborhood districts are a mix of small rural villages whose occupation is agriculture and unskilled labor. The project was envisioned as a whole but executed in two phases. Phase 1 was completed in 2018. Considering the good response received from the local community, the Phase- 2 development of Rane Vidyalaya commenced in 2020 and got completed in 2021. Phase -1 caters to primarily the kindergarten and Phase- 2 caters to the middle and higher classes. The intent was to create an infrastructure that would have a positive social impact on the local community and also showcase the core values of Rane.

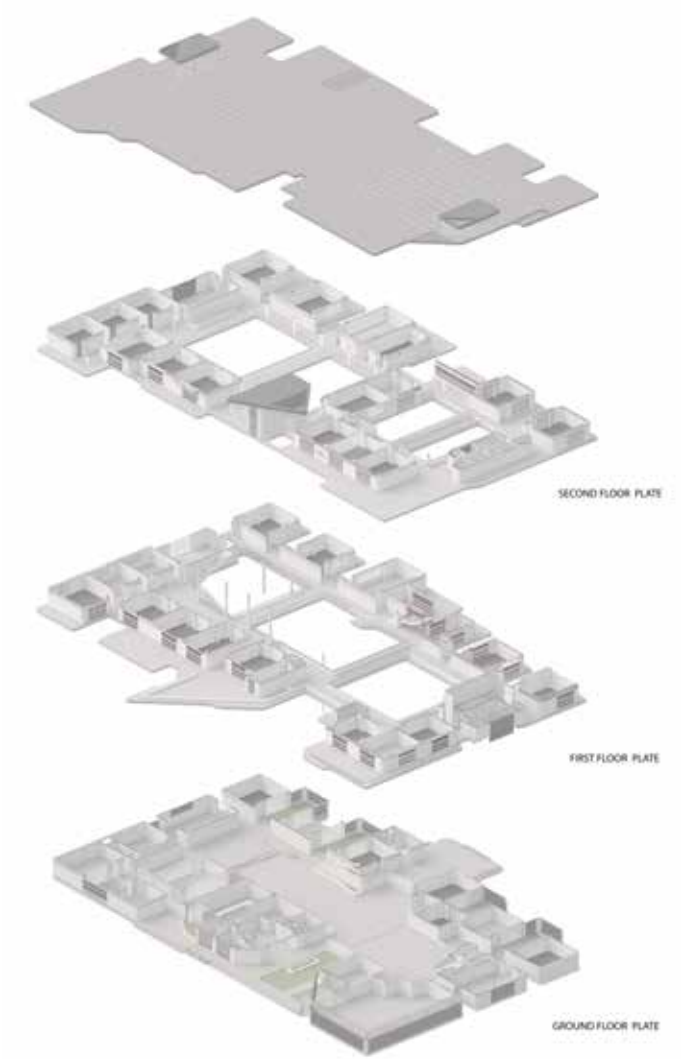
Construction techniques from regional context, structured pedagogy of the Indian educational system and construction cost of $20 / Sq.Ft formed the underlying basis for the design development. Inspiration came in from the 6th century built Thiruvellarai temple's walls and the layered cross sections of 50 year old houses in the region. Construction methodology that was followed consistently in these walls was layering starting from huge random rubble and stone at bottom, to finer solid brick work, mud and slate on top. Alternating wall layers of red wire cut bricks from local kiln and grey fly ash bricks recycled from industrial cement waste were used.

The kindergarten classrooms are designed to have individual garden's that encourage seamless outdoor and indoor integration of space. With every increase in grade, classes become more functional to induce structured learning. The overall design approach was to avoid sharp edges in walls, columns, slab edges and in every detail possible to ensure safety.

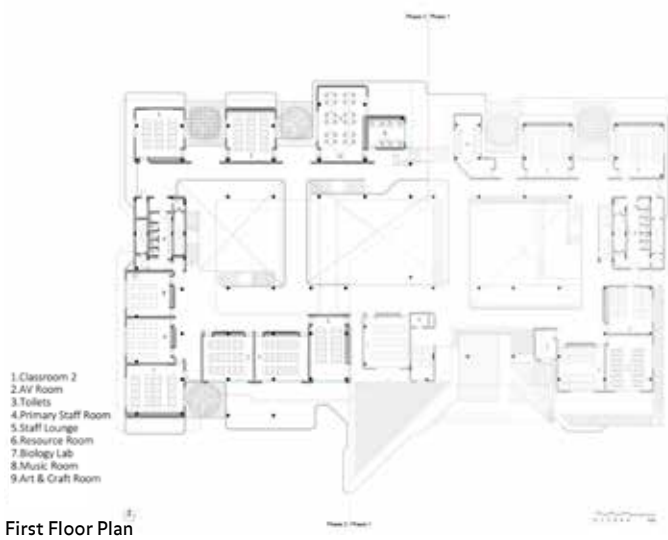
Located in the tropical belt of interior Tamil Nadu, the intent was to have the space ventilated naturally with sufficient lighting. All walls are stopped at lintel height and have openable windows above, to allow hot air to dissipate and increase cross ventilation. Terracotta jalli has been used as secondary shading devices. Major openings along the predominant SE & NW wind direction and minor wind tunnels in east-west direction between classrooms are created to have a comfortable micro-climate.

The requirements of the higher classes comprising STEM laboratories, computer labs, classrooms, supporting amenities and toilets; apart from additional kindergarten classrooms have been accommodated in Phase 2. At Shanmugam Associates, horizontal expansion for all institutions is usually recommended as it eases operation and construction challenges. COVID-19 came in as a blessing in disguise because the school was closed for daily operations, therefore enabling a smooth construction process. In 2021, the complete construction of Phase -2 comprising 45,000 sqft of built space was completed and efficiently integrated into one whole school campus of about 90,000 sqft.

Aerial View of
Rane Vidyalaya

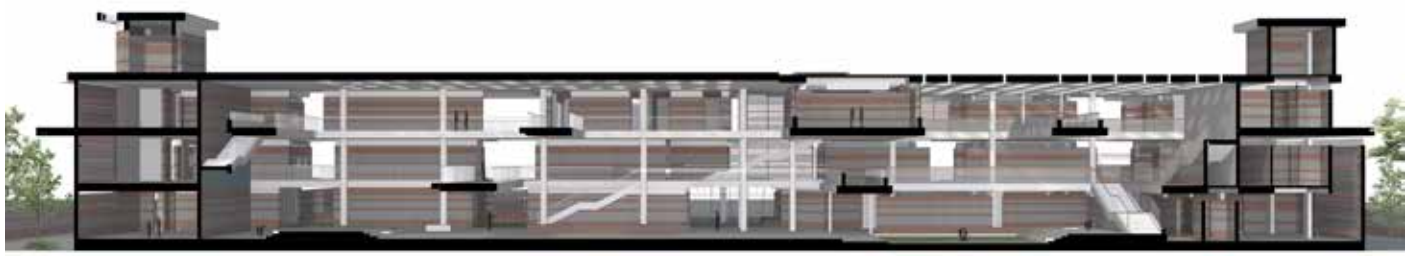


AXONOMETRIC

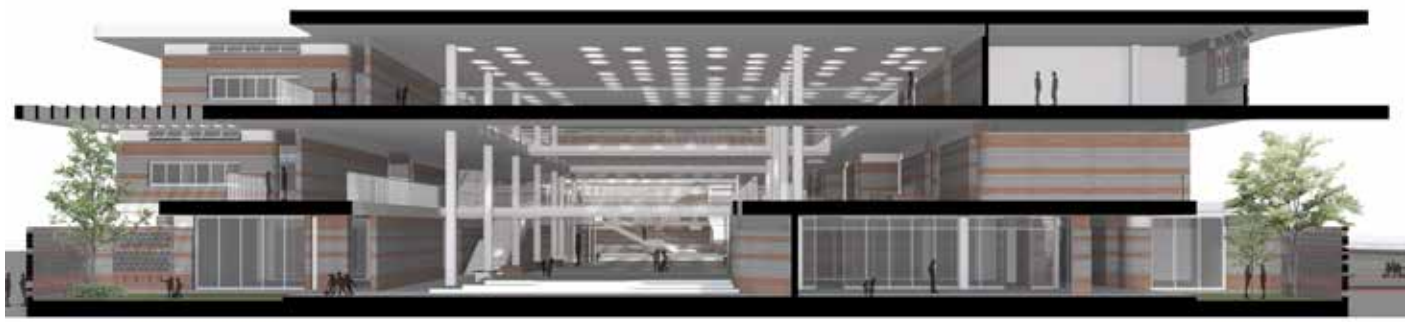


First Floor Plan

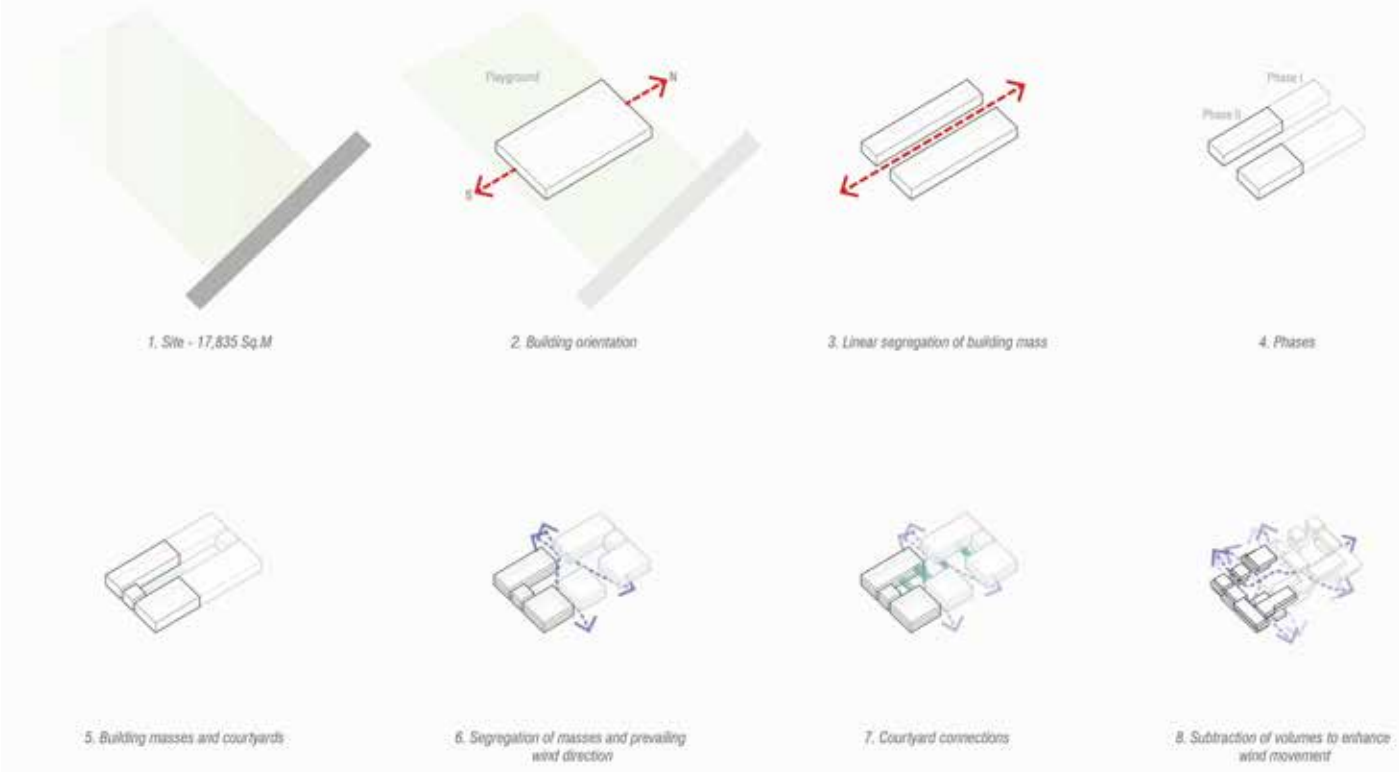
Ground Floor Plan



LONGER SECTION



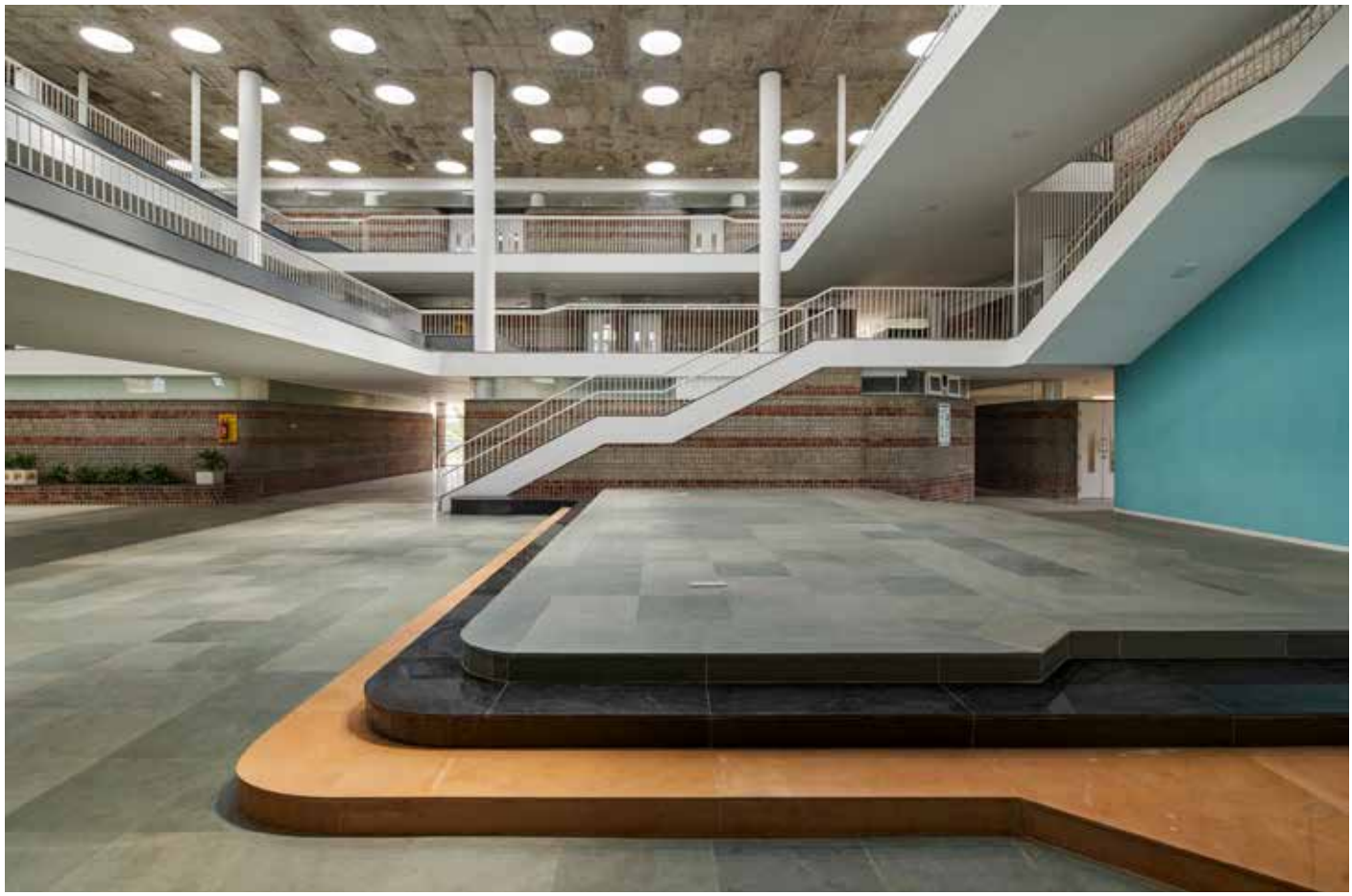
SHORTER SECTION



Design Development

Circular glass openings in the ceiling bring in natural light into the courtyard

Deep overhangs have been intentionally planned for to give shade below



Podium in the central courtyard with natural light seeping in from the ceiling

Structural system has been integrated in such a way that no columns are visible in the facade

View of the western façade combining both the Phases

Sharp edges were completely avoided considering the safety of the children

The central courtyard of about 11,000 sqft was envisioned for the entire campus and it takes shape now as one integrated gathering space. The covered courtyard which is the heart of the plan runs almost through the entire length of the building enabling best use by all the classes. Staff rooms are located at the central spine of the courtyard on the second floor to have good visibility of the campus.

The design language of Phase -2 follows the same as that of Phase 1, in order to give a holistic building. Lots of openings were created to bring in wind and reduce heat; every classroom has at least two-sided ventilation; ceiling punctures were done in the central courtyard to bring in natural light and all corridors are connected. Building overhangs were extended where there was scope, in order to further reduce the heat generated on vertical surfaces. Since the same local team was deployed the construction was much easier to execute.

All these architectural features, incorporating use of red solid bricks, baked earth tiles, terracotta jalli and grey fly ash bricks, help address the micro climate, create interesting light & shade experiences through roof perforations, provide safe green courtyards and sufficient ventilation. At the same time they also speak the design language of the local region, source material from the surrounding area, create a fun educational environment and give a wholesome cost effective solution.

Shanmugam Associates (SA) is a 40-year-old architecture and design firm having offices in Trichy and Chennai, India. At SA, the architecture is simple, rational, powerful, experimental and pragmatic. The essence is to deliver minimal and timeless solutions taking into consideration nature's sensitivity, economic barriers and client's requirement.
designerarchitectsindia@yahoo.com

NODE URBAN LAB

Celebrating Institutionalism in Architecture through Community and Context

Ar. Rahul Jadon & Ar. Rahul Kardam

Common Facilitation Center, Agra

"Architecture is an art when one consciously or unconsciously creates aesthetic emotion in the atmosphere and when this environment produces well-being."
-Luis Barragán

Architecture is the ultimate outcome of inter-weaving of the various threads or layers of a project to bring about design and innovation that connects the community with the culture and practices. It has always been about finding the storyline. As a young practice, there is always the intention of perceiving our solutions that celebrates the relationship between the user, built mass, and its context. For us, context is not merely the tangible surroundings but includes everything from practices, built forms, and people to intangible aspects such as beliefs, and intent that precedes, follows, or surrounds the design. Node Urban Lab has started its journey with a vision to make the earth a symposium of creativity, innovation, and design through institutions of various typologies such as community centers, public spaces and formal infrastructure that manifests teaching and learning processes through context, community, and craft.

Context is constant

Architecture not only confines-built spaces but has its roots deep down in Culture, Art, and Craft associated with the place. There are no boundaries that dictate learning. We believe that it is the environment that inspires, the curiosity to gain as much information and the ability to acquire and implement learned ethics into our lives. True learning comes from experiences and transforms into wisdom that justifies our actions. Community in itself becomes the most living, growing, and evolving institution in itself, providing a guiding light for us to learn the context.

Today, we are working to get better every day by adapting the latest technologies still preserving the value and essence of ancient traditional culture. Sometimes architectural elements barely represent the design but the building narrates a story that defines the art process and culture of that place.

Introduction to craft-sensitive spaces & Common Facilitation Center, Agra

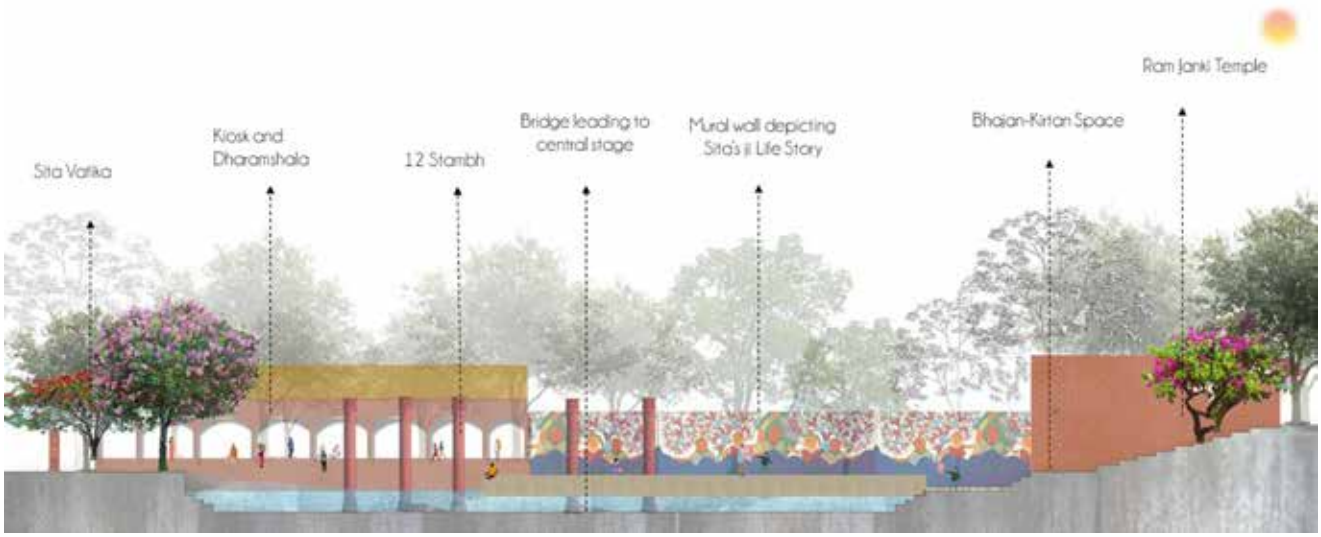
Context, Community, Craft and Space

Establishing several Common Facilitation Centers in various districts of Uttar Pradesh with the purpose to give each building their unique identity still keeps all of them in common harmony concerning their intention of purpose. We intended to explore the role and relationship of Community, Craft, and Space in this project by creating emphasis on internal spaces that facilitate the learning and innovation in craftwork amongst artisans. Here material vocabulary played a significant role in balancing tranquility among all the CFCs. Exposed brickwork and brick jaali are not only design elements but create similar environments that connect humans with the built space and support the action of craft-sensitive spaces.

The design intends to bring people together under one roof, encourage community learning and further promote human development in all dimensions. For providing artisans a platform to learn, practice, and showcase their art as a final product, the project aims to provide an amalgamation of a social, economic, and communal training facility. It further aims to contribute employment to youth & artisans, preserve and development of local crafts/skills, promotion of the Art as well as to build up a mutual rapport, and also develop the much-needed cooperative attitude towards the industry. Along with providing communal learning and working centers, restoration of artisan's houses and individual workplaces was also carried out under the scope of the project.

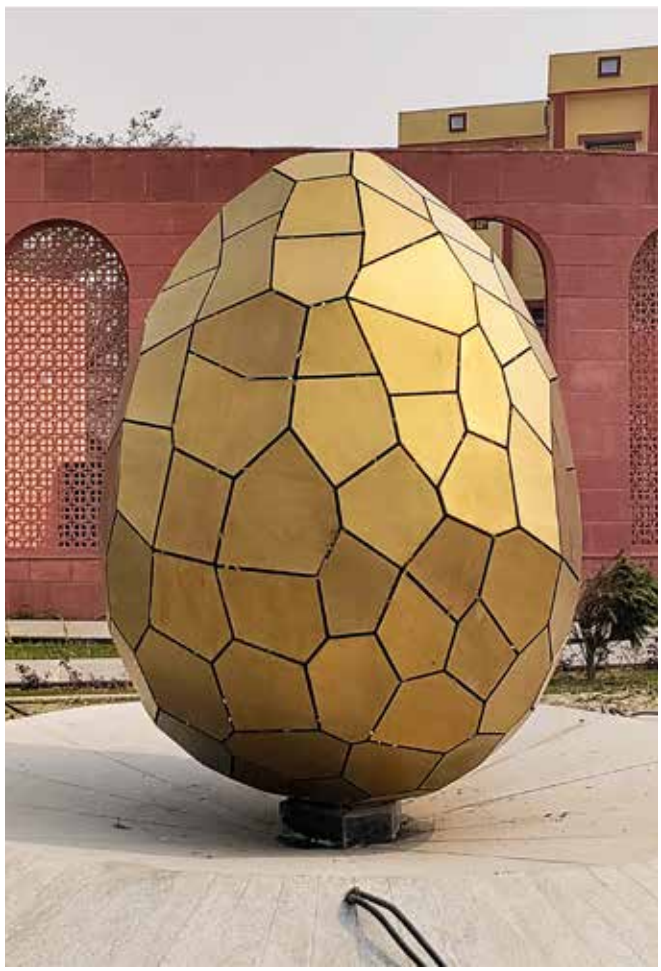
Context, Community, Craft and Identity

In the series of Craft Village Tourism, spaces speak for themselves, the art that they possess for decades, the highly skilled artisans who carry forward the legacy, and their craft process. Craft Village Tourism at Agra and Mahewa were primary examples of how intended to establish community-led architecture wherein every element in the design reflected their identity and the hard work they have put in to preserve it. As a general practice to inculcate community participation we promoted the artisans to carry out various ornamentation work on site by allowing the artisans to take a front seat in driving the design process. The influence of this ideology is majorly evident as surface and material narratives in the façade development, while form narratives are seen in interventions such as nodes and kiosks.



Design strategies for kunds & Developing Kunds as community institutions for spiritual pilgrimage centers

Queen huh memorial park



Contemporary and traditional interpretation of the storyline is reflected through various design elements

Context, Community, Craft and Soul

Mythological significance and activities are understood to create and transform the spaces that we live in, defining social institutions. Kunds act as community-level interactive and breakout zones. Context and surroundings play an important role in defining the activities around the Kund. The spaces along with the built mass depict the story of these institutions. Kunds act as a spiritual Centre, with an enhanced contextual relationship with the existing temple. Our design of amenities such as kiosks, toilets, and Dharamshala are proposed to support the pilgrimage, thus preserving and enhancing the spiritual learning process. The spaces we designed respond to temple activities. Flexible landscapes were proposed that can be used as community gathering spaces and can transform into spaces for vendors during fairs. The major aim of this design process was to encourage cultural organizations and communities to collaborate, share resources, group together and explore innovative forms of partnerships. The cultural administrations of the cities can facilitate this process by acting as brokers to make local cultural organizations and different audience groups meet and discuss how to work together.

Context, Community, Craft and Region

History miraculously impacts human life. Beliefs evolve from the deep-rooted mythological significance of people and places. Queen Huh Memorial Park is one such project that celebrates the potential of mythological beliefs to become reality. Humans have mighty faith in their intuition, practicing meditation can attach them to their inner self. While acknowledging the aspects of history, a meditation center, an amphitheater, and a complex supporting the storyline were designed to shed light on history as well as aspects of human development through beliefs and divination.

We, at Node Urban Lab, are an interdisciplinary team of Architects, Designers, and Urban Experts who collaborate in the way or manner in which things come together and a connection is made. We expand the boundaries and design spaces, create habitats, weave public spaces, and crave heritage.

We believe in converting constraints to opportunities and envisage flexible solutions that anticipate future change. We establish the vision, identify the means, and develop a framework for action to generate long-term economic, social, and environmental value for clients and communities. We are an enthusiastic young team that tries to incorporate art, craft, and technology blending with the nature of the project and opportunities. We embrace new technologies, build new designs, and craft with a focus on computational design and its flaw-less fabrication.

Semi-outdoor spaces with a portal to the King's Memorial to establish connections between various pause points and icons

Ar. Rahul Jadon is an architect and urban planner who loves to take up challenging projects of every scale and undertake a design approach to find meaningful solutions that matter. He is passionate about community upliftment which encourages him to expand the horizons for a better ecosystem.

Ar. Rahul Kardam is an architect and co-founder of the firm. His design inclination towards parametric and computational design brings an edge to the ideologies of the practice.

ARTICLE

'BUILDING' A NARRATIVE: THE ACT OF ARCHITECTURAL STORYTELLING

Ar. Gayatri Jagtap

Humans cannot survive without food, water and clothing. But an essential that seems to have missed this survival kit is 'stories.' Storytelling - a priceless souvenir, has been an inherent part of our civilization since the dawn of time. Our perception of ourselves and the world around us is structured around stories and this influence of narratives extends into architecture as well. Be it a means of creating empathetic links between the architectural subject and audiences, or a medium which plugs temporal gaps, bridges the geographical differences and merges the cultural layers within the built environment or embracing the micro-narratives of multiple stories, it is the narrative that holds multiple bits of a building together. Architecture, both as a process as well as a product is a brilliant storyteller.

Whether the candour of a rock-cut cave adorned with sophistication and the intricacy of details brought with such grace almost disguising the hefty, colossal character of stone, or the awe-striking, other-worldliness of the Gothic cathedrals with their flying buttresses and soaring vaults, or the revolutionary Bauhaus school building, or be it the display of grandeur of a powerful client with the strength of a facade like the Palazzo Farnese for the Medici's – each seeks to communicate a narrative, a tale greater than the function it accommodates, an experience almost like a well written novel.

The exploration of narrative beneath a piece of architecture is intriguing, both to the designer- who plants a story and to the observers – who interpret and unfold the same story

The act of story telling, perception and interpretation
(Source : Confabulations - Storytelling in Architecture By Paul Emmons, Marcia F. Feuerstein, Carolina Dayer)

in their own ways, devising new meanings while leaving with a multitude of perceptions and varied emotions. Embracing a story and portraying it through a built mass develops a connection and a sense of attachment with the audience that engages and provokes them. Thus, when a tale is breathed into that built mass, it transcends from a mere built entity into 'architecture.' It is thus brought to life when a relationship is established with the user, its audience. And the aptitude for the observer to unfold something and learn beyond the obvious involves and engages them so that they remain rather than pass it by.

Architecture is too magnificent to hide. Even the ugly looking buildings reveal something of the culture that made them, the faults are there for all to see. Yet architecture is also a powerful instrument, a potent medium for democratic, religious or political power. From a humble house that holds a home within its four walls to the tallest tower, designers want their buildings to stand on tiptoes, to reach that bit higher than a response to utility and not just envelope a function. Desire is part of architecture's language. From the Incas of pre – Columbian America to the indigenous Ainu of Japan, from New York to New Delhi, from Dublin to Dubai, every culture looks at architecture for eternal messages, and as an articulate documentation of civilizations itself. Narratives defend architecture against the 'trend mania' in the age of invention and the idea of utopia. A narrative at times gives a dangerously implicit lens to see the world through. And to understand the dynamics of architecture you need to fully surround yourself by its complex and often bewildering phenomena.

In the early decades of the 20th century, people were thrown into such turmoil that modernist clean lines represented a way of the embroiled hell they were living through. With the pluralism and postmodern reflection that emerged in the closing decades of the last century and with the pull of embracing history, inevitably the way we build would be a reflection of the many voices of a diverse society. Within this messy, complicated, multi-layered but ultimately exhilarating everyday world, the significance of narrative in architecture should be widened for the designing and appraisal of buildings. It's the narrative in architecture that incorporates human nature into its method.

Storytelling is a complex method of design based on the concept of an interactive and psycho-physical participation in which spaces could be constantly reinvented, as in the cinema tradition. It could be interpreted in architecture as a system to arrange and to compose the space, starting from a series of sequences with communicative purposes and totally influenced by the variability of the concept of time. There lies a power in these stories to structure experiences unfolding in space and time.

Every object that is designed, whether conceptualized by an architect, or conceived by an artist, or a designer, or a product, encompasses a story within. Just as the proverb goes, you can't judge a book by its cover; the essence of that book is in its contents, is in the story within. And this analogy would aptly fit the astounding discipline of place making that architecture is. I'd attest to this by quoting Charles Correa:

Certainly architecture is concerned with much more than just its physical attributes. It is a many-layered thing. Beneath and beyond the strata of function and structure, materials and texture, lie the deepest and most compulsive layers of all.

If you look at architectural history, narratives peek into it and you see its evolution, not only in its physical role but also its psychological role in the cities we live in today. I reckon, narratives and phenomenology together bring architecture close to human nature and bring architecture to life. They foster the synthesis of human senses and perception while elevating a built environment. Manipulating the space, the materiality, and the light and the shadows to weave together a memorable experience, a story for the human senses to pick up and cast an impact on.

Architecture is often tied together with this bare statement, 'form follows function'. However, to challenge this, architects like Bernard Tschumi, Ole Scheeren propose a totally contrasting approach: 'form follows fiction'. A sensitive design is expected to be much more than a mere alliance of form and function. And this is when 'narrative' comes into the picture. To transform a built piece into interactive architecture, a narrative would be the highlight. Form follows fiction brings to the imagination a whole new world of design possibilities, and by shedding the doctrines of times past, finding new solutions for the built environment.

Representation of design is, in a sense, storytelling. It resides beyond the vague depth of reality and fiction. This mood, the subjunctive 'as if', utilizes a suspension of disbelief and by this suspension inveigles, enmeshes, embodies the reader in the tale. Architects actively construct stories while drawing; and the ways these stories are constructed are inseparable from the way a project is designed and is brought to life. Architecture, as world building, is crafting of a fiction in order to project a future reality.

To allow a building to come alive, cast an impact, involve the human senses, merge into the surrounding to tell tales, a narrative provokes us to think of the inanimate built mass and architecture as a space for stories and life – not only the stories of the people that reside there, or of the people and the time that the building once belonged to, but also what a particular architectural style speaks in a certain context. Narrative is so pervasive and promising as a mediating strategy precisely because it allows us to bridge gaps. As narrative is a construct, it is open to creativity and is subjective as well. Thus, making architecture devoid of any possibility of objectification.

How different could the experience be and how vividly can the narrative have beheld if the context was swapped with an entirely different one? How does the architectural language complement the context upon which a building is set? How well does it speak of its time? Or is it bejeweled with the gem of timelessness? Upon allowing ourselves to engage with the built environment and by being a part of it, the narrative starts unveiling all the answers.

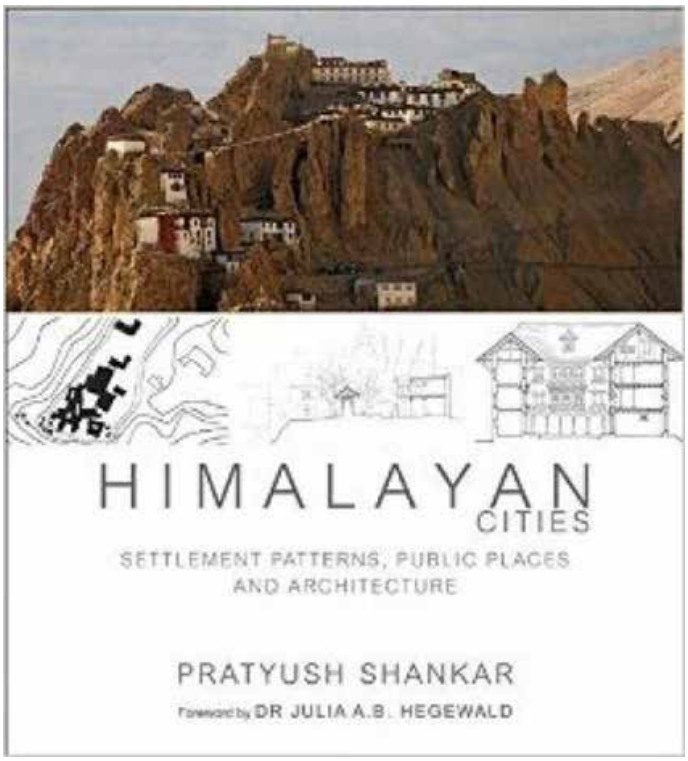
However, the relevance of narrative in architecture lands in a paradox during a period of economic challenge. I reckon, it definitely is relevant; it only needs to address and harmonize with the strengths and opportunities that are exposed to us. New building opportunities often promote recycling, reusing and renovating. This can give way to the stories limiting to an existing context. Perhaps, the narrative develops from a prior context and then is improvised to enter into a new one. It could also be a new story within an expressive facade, an artistic architectural envelope around the existing might of the old, advocating the relationship and the union of the past and the present. Eventually, whether a building fades into the backdrop or presents itself boldly, it is the narrative, the story and the experience within these buildings that will always continue to intrigue the audience and root these buildings into the places they belong. It assists the building to adapt to the surroundings and hold itself comfortably into a context. It only requires the viewer to pause and let the artistry and the potential of the architectural language inspire and enhance life altogether.

Ar. Gayatri Jagtap, an architect, artist and academic is currently based out of Pune. She holds a Masters degree in Architecture Design from the University of Nottingham, UK. As an artist she has presented her work in several shows across London, Venice and Dubai. Using abstract design and new media practices, Gayatri creates curious and quirky compositions, heavily influenced by architectural surfaces and landscapes.
gayatrijagtap1@gmail.com

HIMALAYAN CITIES

SETTLEMENT PATTERNS, PUBLIC PLACES AND ARCHITECTURE

Author: **Ar. Pratyush Shankar**
Reviewed by: **Dr. Dakshayini R. Patil and Dr. Mamatha P. Raj**



"Himalayan Cities: Settlement Patterns, Public Places and Architecture"

Fact File

Book Title: Himalayan Cities: Settlement Patterns, Public Places and Architecture
Author: Ar. Pratyush Shankar
Publisher: Niyogi Books, New Delhi, India
Year of Publication: October 2014
Hardcover, 216 pages
ISBN-10: 9383098163
ISBN-13: 978-9383098163

This book, as a seminal monograph by author Ar. Pratyush Shankar, presents an engaging and interesting depiction of the Himalayan settlements with magnificent visuals transporting the reader to the great Himalayan landscapes. The foreword by Julia A.B. Hegewald lays out the unique crux of Pratyush's research that has treaded unexplored territory of Himalayan man-made physical realms at three scales of: architecture, public space and urbanism. She applauds Pratyush for probing a critical dialogue to aid architects towards responsible designing and planning in the sensitive and fragile Himalayan ecosystems in contemporary times.

The book comprises four chapters supported with an introduction, endnotes and references and makes for an interesting read, provoking critical thoughts which address human interventions in the Himalayan sub-continent. Writings on critical subjects as this is valuable literature possible owing to the author's interest to explore such enchanting yet difficult territories. In the Introduction section, Pratyush gives a glimpse of the conception of this book emerging from his research interests and fieldworks he has conducted in the Himalayan regions across India and Nepal. His objective is not a descriptive affair but one that constructs arguments to determine the general issues surfacing in the design of built realms in conjunction with the glorious cultural landscapes of the Himalayas.

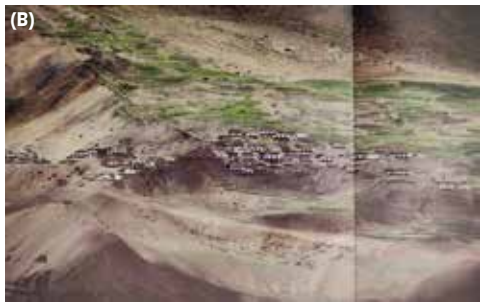
Chapter 1: The Himalayas: Landscape of the Mind

'Himalayas' meaning 'The abode of snow' are the largest mountain ranges in the region which guard Bharat at its northern frontiers. Description of the image of the Himalayan landscape is followed by a discussion of the issues related to nature, landscape and its relationship with material cultures such as city-forms and public places with theoretical substantiations. The natural landscape and cultural landscape- both are interdependent and never isolated, as understood normally in theories of 'environmental determinism'. The ephemeral Himalayan landscape is embedded with layers of history of natural and human interaction.

Himalayas are with the backdrop for strong Hindu religious origins that include Mount Kailash, considered the pivot for the three worlds, Mount Meru, the birth of the sacred River Ganga, distributed fragments such as the sacred hill, Govardhan and Mount Girnar - and hence holds a special position in the memory of people of the Indian subcontinent. Yet another imagery is the glamorous, magical and picturesque depiction under liberal visual arts in posters or children's books. The author highlights the Himalayan painting tradition of Nepal, Tibet and Kangra, Ladakh-Spiti to Lhasa and Bhutan evolved over centuries, continuing to render the strong cultural landscape of rituals. He questions the co-relational man-made constructs between nature and spatial patterns, divinity, cosmological balance, symbol of purity, duality with modernism, repository of truth and knowledge, while constantly evolving its form.

Chapter 2: Cities of the Himalayas: Patterns and Settings

This chapter explores patterns at the level of settlements in the historic centres of the Himalayas. Theories of Kostof, Mumford, Boyer and Eisenman that define cities in various perspectives are discussed, setting the tone to understand Himalayan cities considering geography, historicity and heritage, urbanization trends and landscapes. A typical identification is that settlements are mostly located in valleys that are fertile with water for the agricultural land, grazing pastures and forest cover around them, at altitudes of at 3000 to 2000 metres. Then appear non-irrigated fields for wheat and millet at 1700 m and paddy fields closest to riverbeds. 'Trade cities' along silk routes between central Asia and Kashmir- Ladakh and other such are testimony to the idea that surplus could never be concentrated at one point but had to be gathered at many locations amongst the smaller villages. 'Market towns' or mandi towns have specific characteristics such as a large open ground in the city centre flanked by buildings.



(A): Settlement pattern of Leh, Ladakh (as seen on p.21 of the book)
(B): Landscape of valleys and settlements in Ladakh (as seen on p.36 and 37 of the book)
(C): Patan Durbar Square cross section (as seen on p.88 and 89 of the book)

Further, 'symbolic cities' such as Chamba, Mandi and Kathmandu became iconic owing to their strong expressions of culture and architecture. 'Fortress cities' such as the monasteries of Ladakh, Spiti and Lahaul bear an overarching influence on religious and political economy. With the monastery as an institution, Buddhism became influential and evolved across the Indian sub-continent, restrained in its architecture and secluded from the city's hustle-bustle, had silent spaces organized around courtyards with fortress-like walls and narrow passageways.

Chapter 3: Appropriating Landscape: New Typologies
This chapter looks at the key ideas and practices in the past where the landscape was transformed to create new spaces of enduring value. The author illustrates instances where the local conditions itself led to creation of new forms of spaces in the cities, be it renewed typology of houses and temples or open space definitions. Symbolism becomes an important aspect of spaces that require application of knowledge and innovation of new methods, response to cultural needs of ethnicity, population densities and economy. The case of Durbar Square as a vibrant and functional public place even today makes it a worthy study. A series of sketches in plan, elevations and sections of the various temples in Chamba, Himachal Pradesh is depicted with amazing clarity on the spatial organizations. The complex organizations and evolution of the urban housing typology is explained with respect to socio-cultural and material realities.

Chapter 4: Following Landscapes: Spaces of Reverence
The last chapter covers an extended range of attitudes where natural landscapes have been revered and followed to create everyday spaces demonstrated with examples at various scales. A unique feature of Himalayan cities is that one-time acts of modifying nature to create something new was rarely adopted. There has always been a holistic approach to nature and human settlements. For example, a city has spaces of everyday living like the small shrines, ghats along rivers, water fountains, temples etc., instead of one strong centre in the city. Typical characteristics such as pedestrian trails are often parallel to water systems negotiating the contours, linearity of housing development along a road while backs of houses as private yards or farms. Public spaces had their own characteristics such as the peepal tree and a shrine which became religious markers, and added a place for socializing. The city and its outside become connected in some way such as the procession after baisakh beginning at one end of the city and ending at the other end reinforcing the territory and passing through a road that connects with the outside. Hence, a synchrony extends from the city to its periphery and beyond.

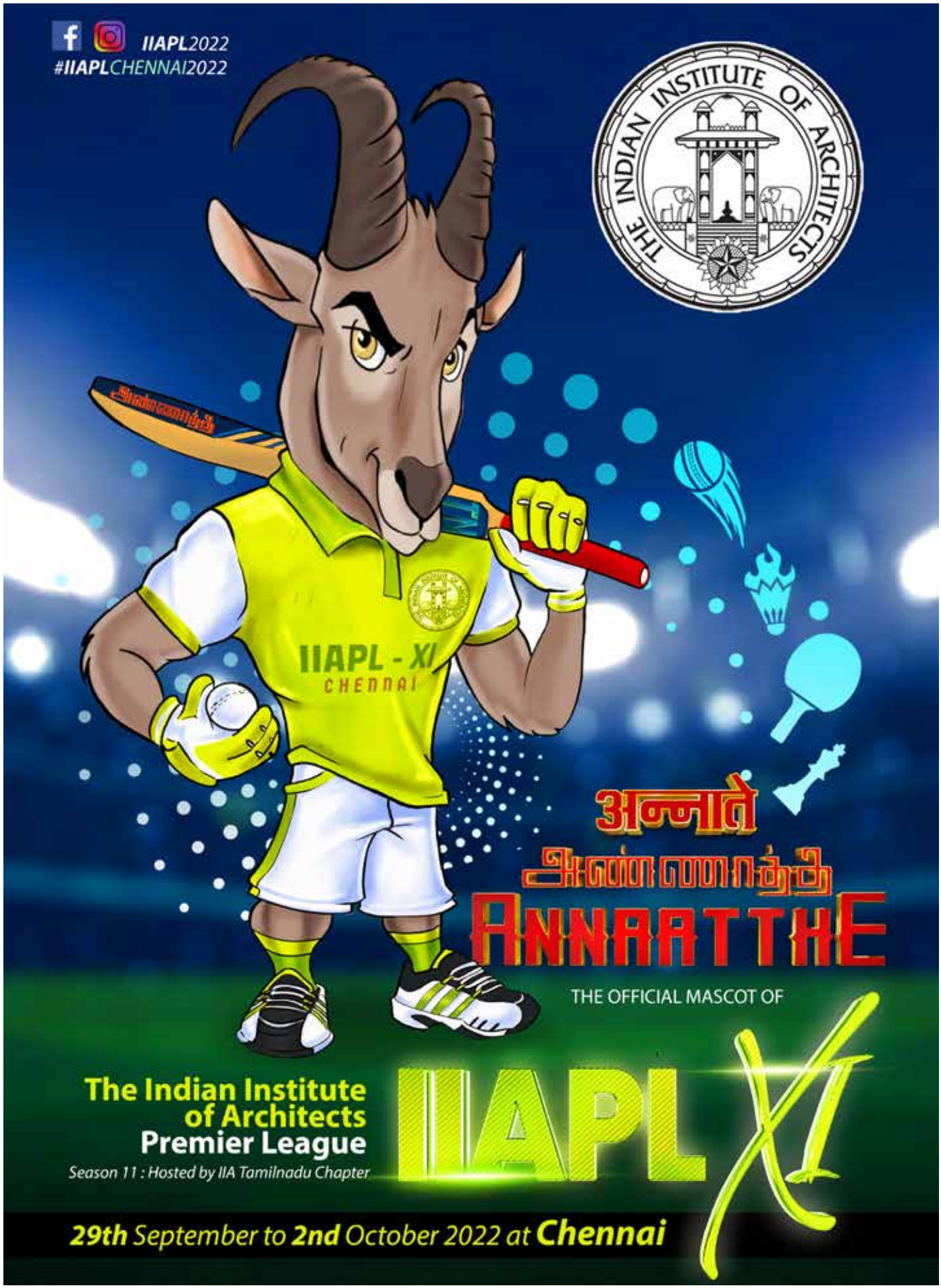
Conclusion
The book takes the readers through the amazing Himalayas which indicate landscape as a strong determinant in the evolution of the material culture of a place. The cities represent human will and ingenuity in an inhospitable terrain. The author delicately defines the archetypical spatial patterns for rituals and Himalayan architectural examples such as courtyards which try to give respite from the harsh conditions of the landscape and while boosting psychological well-being as well. The valley systems determining the spatial responses and people aspirations bring out the issues of such contexts and effective resolutions with local knowledge systems. However, certain contemporary modifications tend to induce alien systems that lead to conflicts. Hence, a logical approach to newer landscape typologies becomes essential.

Impressive visuals of the Himalayan landscape along with detailed sketches and drawings give a clear imagery of the hilly regions supporting the narratives and discussions. Each chapter ends with a discussion that summarizes the key ideas that emerge from the text, while intending to trigger contemplations from academic perspectives. The book is a highly-recommended read and is valuable for students and researchers with an interest specifically in architecture and planning in Himalayan cities, while in general towards a culturally-rooted study in such rich yet fragile ecosystems.

Author
Ar. Pratyush Shankar is involved in both, practice and academics. He is currently the Provost of Navrachana University and Dean of SEDA, Navrachana University, Vadodara and a Guest Professor at the Mundus Urbano Program at the Architecture Faculty, TU Darmstadt, Germany. He was awarded the Alexander Von Humboldt Fellowship in 2015. He has taught at Faculty of Architecture at CEPT University for more than two decades. He was Director of the UG Office. He has been awarded the Ford Asia Fellowship in 2008 and the JK Cement Architect of the Year Award (2013) for residential design. He was recently appointed member of the expert committee of Niti Aayog on 'Hill Architecture and Planning'.
pratyushs@nuv.ac.in

Book Reviewer
Dr. Dakshayini R. Patil is an architect and urban designer. She is currently Professor at BMSCA Bangalore with over 22 years of professional experience in academia, research and the profession in India and the USA. Her PhD under VTU, Belagavi (2019) in India addressed 'Walkable Mobility in Neighbourhoods for Elderly Citizens'. She has 25 publications in reputed journals and conferences at national and international levels.
dsjoshi08@gmail.com

Book Reviewer
Dr. Mamatha P. Raj is the Founder-Director of BMS College of Architecture, Bangalore. She has over 32 years experience in academics, research and the profession. She has over 90 publications in reputed national, international journals and conferences and institutional releases. She is on the Editorial Board of prominent journals and is guiding doctoral scholars under VTU Belagavi.
director.bmsarch@gmail.com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Re-imagining the Comtrust Precinct

Architecture Design Competition

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ENTRIES CLOSING SOON

LOOMING PASTS

Ar. Prasoong Das

The catalogue containing the unique weaving patterns used in the products lies scattered on the floor.

The room in which the coloured threads are stored to be used while weaving.

The long verandah of the main building facing the Manachira is paved with clay tiles were from the Comtrust Tile factory of Puthiyara.

The large godown in first floor of the main building used for packing and labelling for the finished products. These large racks still have the finished products untouched, as left 20 years ago. Single piece logs are used as columns.

The block with the view to the Mananchira above the porch of the main building

The distant view of the Main building as seen from across the Manachira

The weaving looms of the factory is in the hall that has a beautiful north lighting system. The looms have been ruined over the years. The columns are made of wood and joined using metal bolts.

The ruins of the building that houses the looms.

The semi open space that connects the main building to the space which has the weaving looms

Adding to the dilapidating condition of the wooden roof supports, the recent incidents of heavy rains have caused the roofs to cave in. The charkas can be seen in a room near the looms.

Condition of the south wall of the main building.

The floors of the first floor are paved in wood; ceiling was recently added under the tile roofs.

The Comtrust Weaving Factory, Kozhikode was established in 1844. Since the factory was closed in 2009, the complex was unused and the buildings were dilapidating. As part of the Reweave Kozhikode National Architecture Design Competition, organised alongside IIA Young Architects Festival: Crossroads 2022, the site was chosen for intervention. Below are some photographs of the present condition (as on August 2022) put together by the organisers of Reweave Kozhikode including Brijesh Shaijal, Syam Sreesylam, Ashwin Suresh, Shahim Abdurahiman, Prasoon G Das, and Aiswarya Vijay.
prasoongdas@gmail.com

SKETCHES

Ar. Sunil Satyanarayan Ladha

Sketching for me is recording and capturing observations and thoughts, and this process of recording my observations jazzed my journey of capturing my surroundings.

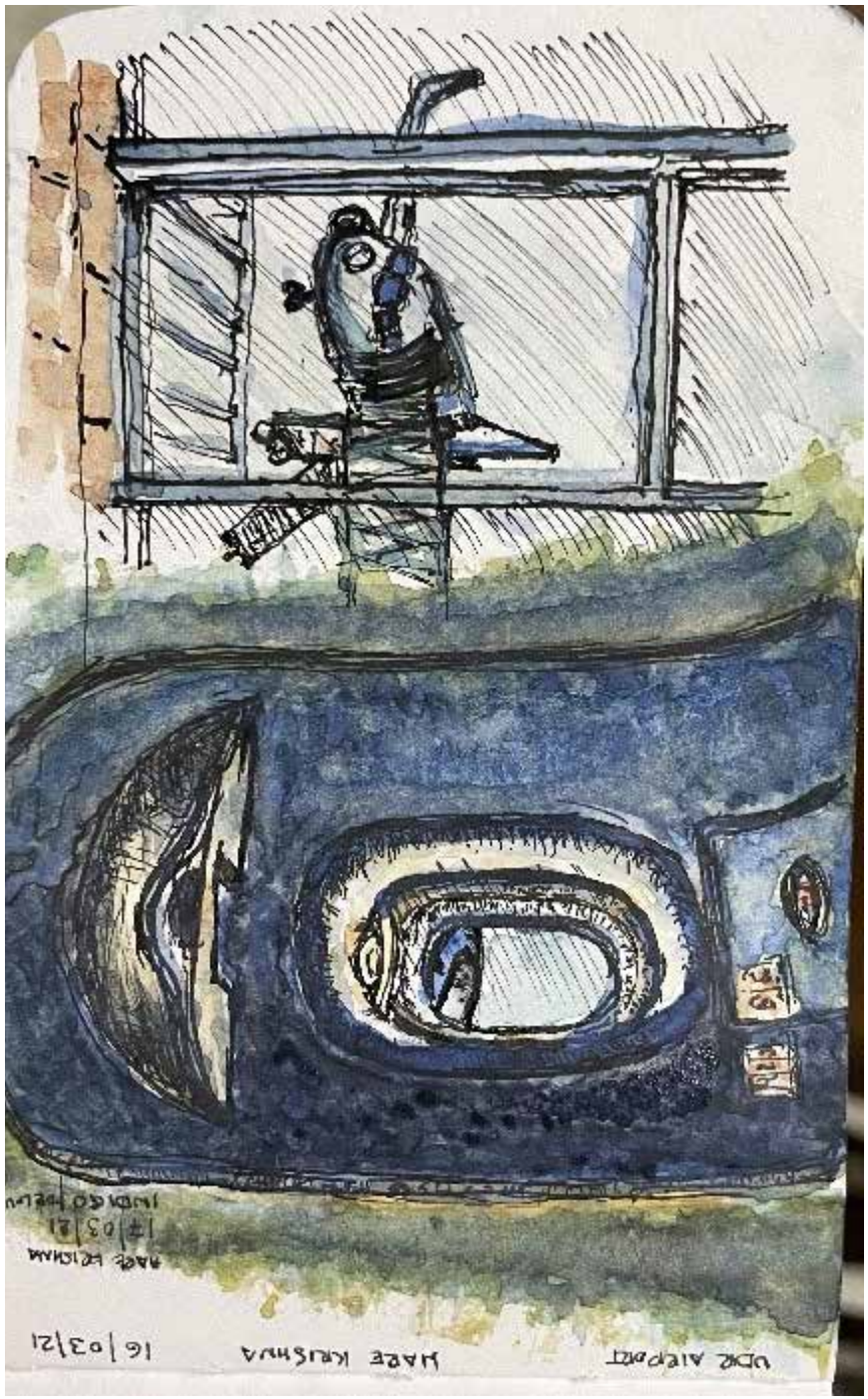
It was a sunny day in 2019, that I thought of freezing time and moments I decided to sketch and since then "a sketch a day, makes my way" to happiness Sketching gives me a brief halt before the leap.

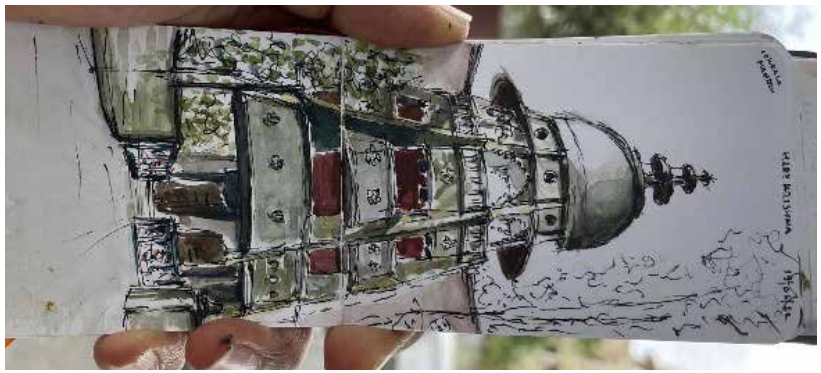
While I fill in colors, it brings in feeling of creating life and its experiences... a pause, a welcome pause.

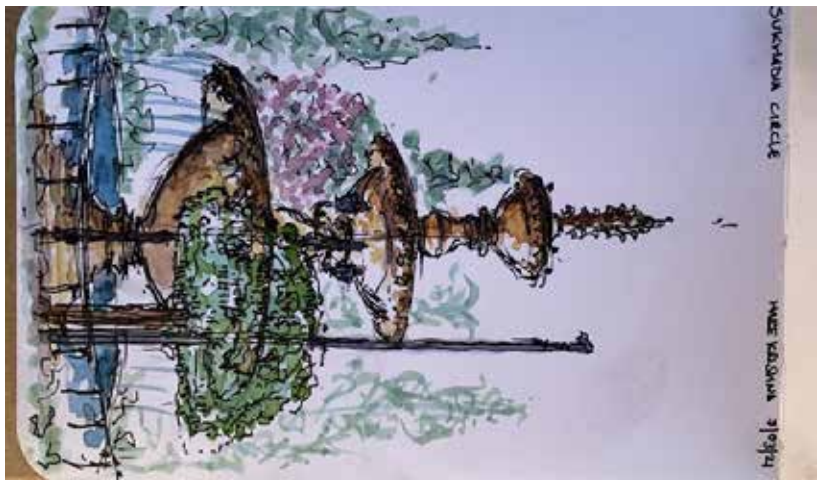
My aim is to inspire people to lift the pen pencil and draw it out. It may be an emotion or a moment or architecture and so on... just go for it.

I feel its my life documented... every sketch unfolds a story of that moment which passed by in a flash!!!

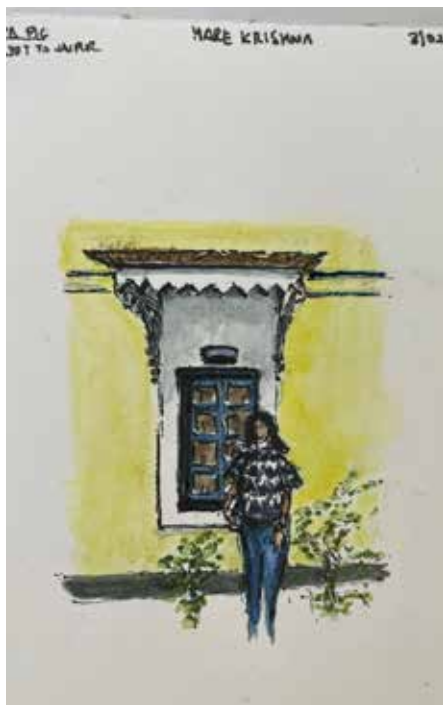
Ar. Sunil Satyanarayan Ladha
I am Sunil S Ladha, an architect by passion and qualification, an alumni of university of Mumbai practicing since 1997, curious learner with a touch of humor integrated sensitivity and fondness for writing, singing and sketching.
sunilsladha@gmail.com








HARE KRISHNA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HARE KRISHNA


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JIM CORBETT


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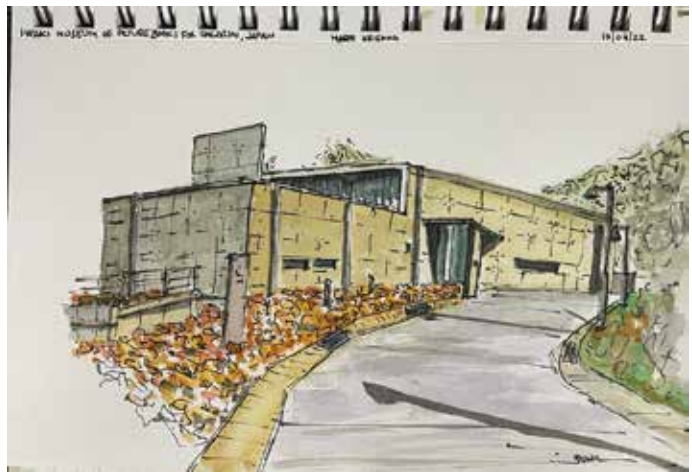
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12/06/22

REVAMPING HUMANITIES EDUCATION IN ARCHITECTURE
INSTILLING A SENSE OF PURPOSE.

Prof. Kaustubh Das

ABSTRACT:
The need for revamping architectural education is perhaps a universally accepted fact. While incorporation of new technological courses in curriculum suffices for upgrading technical skills, teaching of humanities requires a more inventive approach. Taught as discrete entities rarely integrated in studio, students often fail to see the relevance of these subjects. This is resulting in architects who are at best well equipped in technological applications but largely oblivious to socio-cultural concerns. The effect of a misguided enthusiasm for technology and neglect of socio-cultural concerns is well exemplified by the failure of the Modern Movement. The problem is intensified further at the scale of Urbanism where one has to address the needs of a collective society. Concerned with habitation successful architecture is one that is not only technically sound but satisfies the social aspirations as well. Thus knowledge of these socio-cultural aspects is essential not only for intellectual development but also for professional growth. Attempting to devise effective teaching/learning techniques for humanities in the curriculum, the paper aims to facilitate the student understanding by integrating the learning into studio projects to realize potential applications.

While Architectural sciences which imply direct application, can be easily incorporated in projects; humanities which call for assimilation, require a very inventive approach to be made relevant in application. Thus the paper would like to inquire into innovative methods in which knowledge of humanities subjects can be imparted in Architectural education. Therefore the paper would outline ways in which the seemingly inapplicable humanities course can be dovetailed into the studio exercises to demonstrate their relevance in the discipline especially design the corner stone of architectural education. By attempting to impart a balanced education with adequate knowledge of social concerns and technological skills, the paper aims to create sensitive professionals responsible for a sustainable future for mankind.

Keywords: *Architectural education, Integration of Theory and Studio, Relevance of theory, New trends in architectural education*

Background:
There have been incredible changes in human history over the past 50 years, starting in 1958. With telecom and information technology advancements speeding up the rate of change and obsolescence, "There were only two lifespans between the invention of the bicycle and that of space travel," Richard Rogers stated in a Reith speech, "but less than half a lifespan between the invention of the first electronic computer and the establishment of the information superhighway." Concerned with the fundamental human need for habitation; Architecture will undoubtedly be impacted by these developments. Since Architecture became a part of formal university program ; Schools responsible in creating future architects have traditionally responded in the following way to this problem:

- Augmenting the new technological subjects
- Adoption of Information Technology

The Modern Period influenced heavily by Corbuserian Ideals largely believed technology as a panacea to all social issues –technology being universal the architectural vocabulary was logically thought to be so till we realized the fallacy in the 1970s onwards (Jencks et al) . Sadly despite the well-known importance of socio-cultural issues, compared to the efforts in updating technical skills, not much has been done to promote the teaching of the humanities. Due to this, even today architects graduate being largely oblivious to cultural ambitions and identity, which, ironically are observed to intensify with globalisation.

Significance of the Humanities --- Promoting Humanism
Although adding new technological knowledge to the curriculum is undoubtedly important and may have been successful in producing technologically competent professionals, architecture cannot be solely preoccupied with technology. In order to succeed, and excel it is imperative to address socio-cultural aspirations.

Although subtle Humanities subjects have a powerful role in the training of an architect by way of:

Promoting Lateral Thinking –indispensable in the training of any creative individual Increase sensitivity to context – a fact realized even in Global Business .

Derivation of appropriate clues –very helpful esp. in the scale of Urbanism where the needs of a collective society has to be addressed.

While Architectural sciences which imply direct application, can be easily incorporated in projects; humanities which call for assimilation, calls for very inventive approaches to be made relevant to young minds. Hence the majority of humanities courses, which focus on history and theory, must be taught significantly differently to students studying architecture. The foundation of an architectural degree is design, and all other courses, whether technological or humanities-based, are intended to feed into design in order to improve the design methodology. While theory strengthens the logic, the history of architecture can offer a special database of designs to draw from, whether they are ancient or current.

By incorporating pertinent case studies from throughout history, the integration of History and Theory of Architecture with Design Studio will not only force a more analytical approach to the material but will also help the student enhance designs. Since the student will learn to use historical instances, this will help speed up his learning and lessen his burden.

The Fan vaulting Oxford Chapel , Scissors arches(Wells Cathedral) are e.g.. of structure as Architecture in the medieval period.

The Twentieth century eg.of Renault Car distribution Centre Swindon (Foster) and Palazzetto dello sport by Nervi follow the same principle although millennia apart. Thus a deep understanding of the principles behind historical examples can provide design ideas for contemporary application

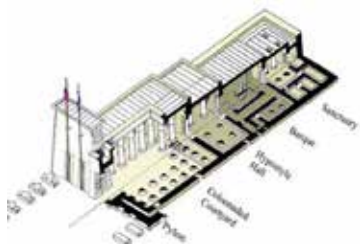
To analyse and comprehend the logic behind problem-solving, students need to be taught relevant material, such as how to explore similar themes throughout time and cultures, rather than only observing stylistic differences. Although they were created thousands of years apart, Gothic architecture and hi-tech architecture both use "Structure as Design Expression" in their projects. Thus, it's crucial that students develop an understanding of this connection and stop viewing Gothic architecture as merely a stylistic composition of lancet arches, spires, flying buttresses, and tracery windows. Instead, they should see it as a radically rational approach that uses structure as decoration, which is also the driving force behind Hi-tech architecture.

Therefore Design being the corner stone of Architectural education, all subjects including humanities should ideally be integrated with studio.

Integrating with Design --- An Approach

A typical semester may run like this :

The studio projects --- one of large span spaces like museum/ Art gallery History syllabus of that semester --- of similar structures eg. Rome Byzantium and Islamic which will provide e.g.. of wide span structures. Egyptian temples and Hindu temples ---to provide a fascinating e.g.. of progression of space.



A Typical Hindu temple and an Egyptian Temple –far apart in time and location but demonstrate similar application in progression of Space.

The Hagia Sofia Istanbul and Duomo Florence . Both Show ingenious approaches to creating wide span structures and offer insightful lessons

Construction/structures wide span structures like arches vaults domes.

This will not only give the student a comprehensive knowledge; but History will be seen as playing a vital role by providing case studies across time and space , Construction will give scientific rationale. Theory will explain aesthetic rationale. Thus Design will become a canvas to test ones ideas. Students benefit apart, it will also aid the faculty in grading students as their design will reflect their understanding of all subjects.

Conclusion

To individuals against this approach it may seem like spoon feeding but this is an effective way to ensure delivery of humanities by Integrating with design Studio. While a few exceptionally talented and motivated students mostly in elite schools may not depend on curricula to learn from humanities —for the rest an overwhelming majority Humanities subjects are to be studied for clearing exams – then forgotten thereby losing out on the valuable learning. The significance of understanding socio-cultural issues are well realized even by Global executives. Thus even if one sees architecture as a mere profession, skills learnt from humanities are of utmost importance.

The approach discussed attempts to take a novel approach in teaching humanities by integrating hitherto discrete subjects into Design studio. While it is may not be absolutely infallible, it can claim to engage an active dialogue between other theory subjects with design. This integration of other subjects with design provides the ideal of a wholesome and education.

In academics for 15 years **Ar Kaustubh Das** has taught in various institutes including a year in Libya employed by the Ministry of Education. He has also presented at various symposia the world over like Forum UNESCO. This paper is based on a presentation made for the Oxford Conference 2008.
kdas1975@yahoo.com

CENTRAL REGION CONVENTION, MADHYA '22

Ar. C.R. Raju inaugurating the Exhibition.

The two day extravaganza which witnessed the presence of over 700 architects from not only the participating states but pan India, was started by the inauguration of the material exhibition of the trade and technology partners of the event. Ar. C.R. Raju, President, IIA along with other dignitaries visited the showcase. It was followed by the National Council Meeting and All Chapter Chairmen Meeting chaired by Ar. C.R. Raju, President, IIA.

The grand Inaugural Session with the dais showering welcome and warm wishes on behalf of the Institute of Architects to one and all, where stage was decorated with dignitaries including the Chief Guest Ar. C. R. Raju - President, IIA, Mr. Gurmeet Singh Arora - Chairman, Indian Green Building Council (IGBC), Guest of honour Ar. Achal Choudhary - President, IPS Academy, Dr. Shubhashish Banerjee - Chairman ,Institute of Town Planners India (ITPI), Madhya Pradesh Regional Chapter, Ar. Vilas Vasant Avachat - Vice President, IIA, Ar. Jitendra Mehta - Jr. Vice President, IIA, Convener, Madhya 2022, Ar. Ashutosh Kumar Agarwal, Ar. Leena Kumar, Ar. Satish Mane - Jt, Honorary Secretary, IIA.
Ar. Jitendra Mehta – Chairman M.P. Chapter, felicitated the guests including Ar. Anand Jayaram Tatu - Chairman, IIA Gujarat Chapter, Ar. Tushar Sogani - Chairman, IIA

Stall Visit

Rajasthan Chapter, Ar. Rajkumar Prajapati - Chairman, IIA Chhattisgarh Chapter and Ar. Amogh Gupta - Immediate Past Chairman, IIA MP Chapter.

The Lighting of the lamp was followed by an auspicious Shankanad to mark the official inauguration of 'Madhya' with welcome address by Ar. Jitendra Mehta, Jr. Vice

Dignitaries at the Dice


Ar. Tushar Sogani


Ar. Rajkumar Prajapati

President, IIA & Convener -Madhya. Dr. Shubhashish Banerjee, Mr. Gurmeet Singh Arora and Ar. C.R. Raju also addressed the gathering of architects. Ar. Achal Choudhary, whose contribution to the fraternity is beyond measures was conferred with Life Time Achievement Award. He spoke about the sense of duty in the profession which touched every heart.

This was followed by the unveiling of 'Manual of Architecture Practice by COA' and unveiling of 'Dharohar' magazine. The magazine was especially curated for the event, edited by Ar. Sanjeev Bumb, and supported by Ar. Nitin Ghule, Ar. Darpan Bhalerao, Ar. Amber Vyas, Ar. Amit Sontakke and Ar. Siddharth Joshi.

Ar. Deepesh Mehrotra started Madhya's First Technical Session based on Vernacular Architecture with a very involving on-line session by International speaker, New York based architect, Ar. Diana Kellogg. The session covered the design of award winning Rajkumari Ratnavati Girls School, located at Salkha, Rajasthan. Ar. Gunjan Badjatya conducted the session, with Keynote speaker Ar. Jaigopal Rao, whose life is entirely engaged in sustainable development. He gave an elaborate presentation on regional influences on built up design. This was followed by presentations by Ar. Twinkle Nathani, Ar. Mayank Wadhwa from Chhattisgarh and Ar. Hakimuddin Bharmal from Gujarat and Ar. Anu Mridul from Rajasthan.

The Narration Competition, moderated by Dr. Manita Saxena witnessed involving performances by Ar. Gaurav Agarwal, Ar. Sunil Laddha from Rajasthan and Ar. Manoj Kushwah from MP. Ar. Snehal Sontakke & Ar. Arush Shrivastava invited Ms. Meenal Chakradeo and Ms. Ketki Chakradeo, both Internationally acclaimed and U.S. based Kathak artists. The crowd was left mesmerized by their breathtaking dance performance. The Friendship Night Competition saw the performances by Rajasthan, Chhattisgarh, MP & Gujarat. Ar. Ambika Bhargava, Ar. Anand Maroo showcased the prestigious Indira Jain Award (IJA) and the honours were conducted by dignitaries, Ar. C.R. Raju, Mr. Gurmeet Singh Arora, Dr. Shubhashish Banerjee, Ar. Jitendra Mehta & Ms. Meenal Chakradeo.


Lamp Lighting Ceremony


Indira Jain Award

Thereafter the house went live almost till the morning with a thumping performance on Bollywood Remix by internationally acclaimed DVJ – Vicky.

On day two, the technical session on Heritage & Conservation, moderated by Dr. Vinay Shrivastava with expert lecture by Dr. Sumesh Modi, regional experts Ar. Sachin Vyas, Gujarat, Ar. Kavita Jain, Rajasthan and Ar. Nitin Shrimali, M.P. followed by keynote speaker Ar. Sangeeta Bais, who is an authority in the field of Conservation architecture especially with her experience and extensive research on traditional Lime plaster techniques.

Live Sketching was conducted magnificently by Ar. Dipti J Vyas. Ar. Dhaivat Panchal, Gujarat, Ar. Sunil Laddha, Rajasthan, Ar. Sameer Ghorpade, Chhattisgarh and Ar. Nitin Ghule, MP. showcased their sketching skills live to the audience. Ar. Shruti Patidar gloriously conducted the third technical session on Contemporary Architecture. It was star studded event with the presentations from regional Speakers, Ar. R.K Patel, Chhattisgarh, Ar. Ujwal Parekh, Gujarat, Ar. Tushar Sogani, Rajasthan and Ar. Akshay Selukar MP. The Keynote speaker Ar. Biju Kuriakose took the session from architectural detailing to the urban level with an outstanding presentation of his works.

Ar. Sangeeta Bais

Ar. Biju Kuriakose

Neelkanth Burkhawala & Ujjwal Parikh, Team Gujarat, Mukul Goyal & Ankur Dadheech, Team Rajasthan, Sameer Ghorpade & Ridul Sharma, Team Chhattisgarh and Puneet Pandey & Manita Saxena, Team MP answered the tough questions swung by the Quiz Master Duo of Ar. Atit Jain & Ar. Shubranshu Upadhyay during the Architectural Quiz Show.

wwThe fourth technical session on Socially Responsible Architecture was moderated by Ar. Sumanyu Vasudeva. The presentation of the keynote speaker Ar. Alan Abraham was complimented by regional speakers, Ar. Rishabh Jain, Ar. Vishal Shah, Ar. Sunil Laddha & Ar. Nilesh Suman. Panel Discussion on Social Responsibility Initiatives was attended by Ar. C.R. Raju, Mr. Rohit Gada, Mr. Rajat Katiyal, Mr. Bhupesh Vyas, Mr. Mehra, Mr. Hajela and Ar. Jitendra Mehta. The Poetry Competition managed by Ar. Snehal Sontakke & Ar. Sachin Paliwal witnessed the echo of words of Ar. Deepak Sahajwani & Ar. Hakimuddin Bharmal, Gujarat, Ar. Gaurav Agarwal, Rajasthan and Ar. Kamini Badnore from MP.

Ar. B.R Mohan and Ar. Moen Haris from IIA Karnataka Chapter introduced the IIA App to the attendees of the event. This was followed by the IIA MP Chapter signing a MOU with OSAAT. Mrs. & Mr. Vadiraja Bhatt, Mr. Narsimha Jois Bhardwaj and Ar. Jitendra Mehta signed the MOU for the development of schools in rural areas.

The eminent Jury members of the Madhya Trophy adjudged Rajasthan Chapter as the winner to host the next edition of the Central Region Convention – "MADHYA". After the vote of thanks given by Ar. Sanjeev Bumb, the stage was taken over by the architect's band VOID. The electrifying performances by Ar. Nitin Ghule, Ar. Brijesh Sharma, Ar. Ajay Sharma, Ar. Darpan Bhalerao and Ar. Atit Jain enthralled the audience.

The organizing team thanks everyone for the attendance. For Times to remember……

Poetry Recitation

Team Madhya

NEWSLETTER AUGUST

GENERAL NEWS

IIA NATIONAL AWARDS

IIA National Awards for Excellence in Architecture 2021 : Extension of Submission Date

Greetings from the Indian Institute of the Architects !!

We are pleased to announce the Submission date of the entries for IIA Awards has been extended to **20th September 2022.**

Details for submissions are available on the website https://awards.indianinstituteofarchitects.com/.

Expression of Gratitude to IIA Chennai

Ar Kurian George, Chairman Chennai Centre informed that they will be donating Rs 3,00,000/- towards JIIA , from the proceedings of their Chapter Convention, Tamil Nadu Chapter. Team JIIA expresses its sincere Gratitude and Appreciation to Chairman and Members of Chennai Centre for this timely help.

Team JIIA

VARAHAMIHIR AWARD

We are proud to announce that Dr. R. Chandrashekhar has received the The Great Planner Award by the Academy of Hospital Administration. It was presented to him by Dr. Vinod K. Paul, Member, NITI Aayog; Dr. Yashpal Shama, President, AHA; Dr. J.N. Srivastava, Chief, NHSRC and Dr. Saini, President, DMA.

Dr R. Chandrashekhar is the Chairman, IGBC Green Healthcare Facilities & Consultant, World Bank and Former Chief Architect, Ministry of Health, Govt of India. He is the first PhD in the field of Medical Architecture in India and holds over 38 years of experience in healthcare planning and designing of various hospitals, medical colleges, healthcare infrastructure, speciality and multi-speciality hospitals, project management and advising the Ministry of Health, Govt. of India in technical and policy issues.

He was a member of the Technical Committee of the Pradhan Mantri Swasthya Suraksha Yojna (PMSSY) and has taken part in setting up six AIIMS-like institutions in the country, along with the upgradation of 26 existing medical colleges to the same level in Phase I and II and the up-gradation in Phase III of 39 medical colleges. He has helped set up National and Regional Institute of Paramedics (NIPS & RIPS) in various states of India. He has also been instrumental for setting up state of art blood banks in four metros, and the redevelopment of LHMC & Associate hospitals and the Safdarjung Hospital in New Delhi & JIPMER Puduccheri.

'NAMATHUVIZHA- Tamil Nadu Chapter Convention. Curated by IIA Chennai Centre'

NAMATHUVIZHA

Namadhu Vizha which literally translates to 'Our Festival' was a two-day convention of the IIA Tamil Nadu Chapter, curated and hosted by IIA Chennai Centre on 19 – 20 August 2022. This Architecture Festival was themed around the idea of Together Towards Tomorrow. The convention concerned itself with architects, architecture and the larger context that architecture situates itself in, with the purpose of deliberations on our paths to our tomorrows, as a reflection the ethos of our time, and where differences are celebrated over commonalities.

The line-up of speakers on day one included Ar. Nils Fischer from Zaha Hadid Architects, Ar. Kapil Gupta from Serie, Ar. Chitra Vishwanath from Biome, Ar. Mahesh Waghdhare from Studio POD, Ar. Manushi Jain of Sponge Collaborative, Ar. Pavitra Sriram from Design Co Lab, Ar. Thein Sowrirajan from Non-Urbanism and Ar. Biju Kuriakose.

Day two started with a panel discussion on The Spirit of Chennai: Its Innate Madras-ness that attempted to understand some aspects of the city of the event. Moderated by Ar. Kavitha Selvaraj and Ar. Kurian George Vattakunnel, the panel comprised Ar. Sujatha Shankar and Ar. Nalini Thakur. This panel discussion was followed with a talk by Prof K.T. Ravindran who highlighted several aspects of cities that need to be addressed immediately. Ar. Thomas Schroepfer addressed some significant aspects of high-density environments. This was followed by a panel discussion addressing several concerns for the future of human settlements, Decoding the Cities of Tomorrow. On the panel were Thiru Anshul Mishra, IAS - Member Secretary Chennai Metropolitan Development Authority, Prof K.T. Ravindran, Ar. Kapil Gupta, Ar. C.R. Raju, Ar. Thomas Schroepfer and Ar. Nils Fischer. The discussion was moderated by Ar. C.N. Raghavendran and Ar. Kurian George Vattakunnel.

Ar. Habeeb Khan, President, Council of Architecture and Ar. Sapna, Vice-President, Council of Architecture along with Ar. J. Manoharan and Ar. Vaithiyanathan released the newly-published Manual of Architectural Practice 2022 in Tamil Nadu and presented copies to Thiru Anshul Mishra, IAS - MS CMDA, Ar. C.R. Raju, President IIA, Ar. Loganathan, Chairman, IIA Tamil Nadu Chapter and Ar. Kurian George Vattakunnel, Chairman, IIA Chennai Centre.

The event was convened by Ar. Kurian George Vattakunnel and owed its success to Ar. Antony S.L. Morais. Hon. Secretary, IIA Chennai Centre and Secretary, Namadhu Vizha, Ar. Raghav Rajagopalan, Hon Treasurer, IIA Chennai Centre and Treasurer, Namadhu Vizha and Ar. Prashant C. Raju, EC member and Coordinator Namadhu Vizha. The convention also owes its success to the support and active participation from the patron of the event Ar. C.R. Raju and members of the steering committee including Ar. C.N. Raghavendran, Ar. Cheralathan and Ar. Murali Murugan among others. Also responsible are the IIA members who came together and put in dedicated effort in organising even the finest detail. This was evident through the notes of satisfaction received from event partners, delegates, speakers, special invitees and members of various organising committees. The success is also owed to the partnering construction product manufacturers and delegates who participated in this event.

IIA Chennai Centre has already started working on achieving many more milestones. Fellow and Associate members of IIA are welcome to reach out and actively participate in the activities.

Over the last one month, IIA Chennai Centre has seen a huge increase in applications for IIA membership. More information on IIA Chennai Centre and access to the latest issues of its publication is available on its website : https://www.iiachennai.com/.

IIA-Karnataka Chapter

IIA-KC's Mysuru Center's Event : Presentation by Ar. Avinash Ankalge

Ar. Avinash Ankalge is an ardent traveler and has ventured into remote places to document the unusual built forms. He shared his learnings and the impact of the experience on his architectural design expressions. Ar. Mueen Harris took us through the recently launched IIA app. The event was graced by the chairman of the Karnataka chapter Ar. B.R Mohan and Ar. Shyam Sundar KC, EC member.

Audience during the event organized by IIA-KC's Mysuru Center on 1st July 2022

IIA-KC's Hubbali Dharwad Center's Event in association with VOX

IIA-KC's Hubbali Dharwad Center in association with VOX conducted an Event at Hotel Naveen in Hubbali on 9th July, 2022. During the event, Senior Architect Gururaj Joshi was felicitated with the Lifetime Achievement Award for his contribution to IIA and architectural education.

Ar. Mueen Haris, Executive Committee Member of IIA KC, introduced the IIA App to IIA Hubli Dharwad Members. Ar. Shyam Sundar KC, Executive Committee Member of

IIA KC gave a presentation of his works of his company 4Dimensions, Bangalore. This was followed by Technical Presentation by VOX, represented by President Sales Mr. Vaidyanathan, VOX India.

20 new Members were inducted to IIA HD by IIA KC Chairman Ar. B.R Mohan. The event was attended by 135 Architects of Hubbali Dharwad Center and 10 Architects of IIA Belgaum Centre.

Ar. Mueen Haris, EC Member of IIA-KC, introduced the IIA App to IIA Hubli Dharwad Members during the event organized by IIA-KC's Hubbali Dharwad Center on 9th July 2022

IIA-KC's Belgaum Center's Event – "Engage" Talk on : Spaces

IIA-KC's Belgaum Center organized an event – Engage which was a talk on Spaces with Ar. Swapnil Valvatkar on 22nd July 2022 in Belgaum.

Ar. Swapnil Valvatkar is one of the three key apostles who formed Collage Architecture Studio in the year 2008. He graduated from Goa College of Architecture in 2001 and worked at Chandravarkar & Thacker Architects and later at Mindspace Architects.

The event was sponsored by Amulya Mica and Sai Plywoods and well attended by IIA KC members and architects.

Poster of "Engage" with Ar. Swapnil Valvatkar by IIA-KC's Belgaum Center on 22nd July 2022

IIA-KC's App inducted as National App at 'Madhya' CRC Event

IIA-KC App was inducted and presented as the national app by IIA-KC Chairman Ar. B.R Mohan and Ar. Mueen Haris, Executive Committee Member of IIA-KC and the architect behind this app at 'Madhya' CRC event in Indore on 23 July 2022. The app has been well received. Ar. B.R Mohan and Ar. Mueen Haris were honored at the event for their contribution to the IIA app.

Ar. Mueen Haris, EC Member of IIA-KC and the architect behind the IIA app presenting at 'Madhya' CRC event in Indore on 23 July 2022

IIA-KC's Mysuru Center's Event – Presentation of works by Ar. Swapnil Valvatkar

IIA-KC's Mysuru Center organized an event – Presentation of Works by An Evening with Ar. Swapnil Valvatkar on 29th July 2022 in Mysuru. Ar. Swapnil Valvatkar is the Principal Architect of Collage Architecture Studio and attempts to develop an architectural language that responds to the diversity of the field with simplicity by creating spaces that could converse with its surroundings and the users. The event was sponsored by Pro FX and well attended by IIA KC members and architects.

Team IIA-KC Mysuru Center along with Ar. Swapnil Valvatkar, who made a 'Presentation of Works' on 29th July 2022 in Mysuru.

IIA-Maharashtra Chapter

Lonavala Centre:

This is probably one of the youngest Centres of Maharashtra. They have been enthusiastically conducting their activities with full support from the members. They have regularly conducted EC meetings and planned their subsequent programmes.

They organised this special Independence Day – Azaadi ka Amrit Mahotsav, with great interest. Flag hoisting and distribution of lapel pins was done. This was followed by a presentation by Ar. Anagha Kotkar. "Maharashtra chi Shodh Yatra" a book, was also distributed to the members who attended the celebration.

The Chairman, Ar. Vishwas Kotkar and Vice-Chairperson, Ar. Gyatri Khatau, were felicitated – Ar Kotkar for receiving the First Certificate of Merit for IIA Lonavala as Center Chairman in NATCON, the National convention of IIA at Hyderabad within a year of installation with active participation in various events/meetings hosted by IIA at various locations. Ar Gayatri Khatau was felicitated for being the 1st member getting nominated as a Jury member in "Madhya", Central Region Convention at Indore, hosted by IIA Madhya Pradesh Chapter. This event concluded with the National Anthem.

Apart from this special celebration, Lonavala Centre boasts of another perhaps, a unique combination – an architect, who also is an expert in Rifle Shooting! Ar. Ajay Marathe, is a Co-opted member of Lonavala Centre. He is probably the only Architect and an affiliated member of

Maharashtra Rifle Association as well as National Rifle Association.

He has participated & qualified at **State level for the event: FREE RIFLE PRONE MEN EVENT in the 23rd Capt. Ezekiel Memorial MAHARASTRA STATE SHOOTING championship (Novice).**

Ar. Ajay Marathe has been trained and coached under the **Pride of India's Olympic Gold medal winner, Anjali Bhagwat Madam.**

IIA-Punjab Chapter

IIA Pledges for a "GREENER PUNJAB"
Date: AUGUST 12, 2021

Place: Block 60 workshop, LPU, campus
Lovely School of Architecture and Design, Lovely Professional University in association with Hariawal Punjab, Indian Institute of Architects, Jalandhar, Indian Institute of Kapurthala Hoshiarpur and Indian Institute of Architects Punjab Chapter planted 500 saplings in Lovely Professional University Campus on 12th August 2022 thereby initiating celebrations for the forthcoming 75th Independence Day of India that is 15th August 2022. Pledging to make surroundings, green and clean, students, officials and all attendees vowed to make "GREENER PUNJAB".

PIPING | PRE WALL | DRAINAGE

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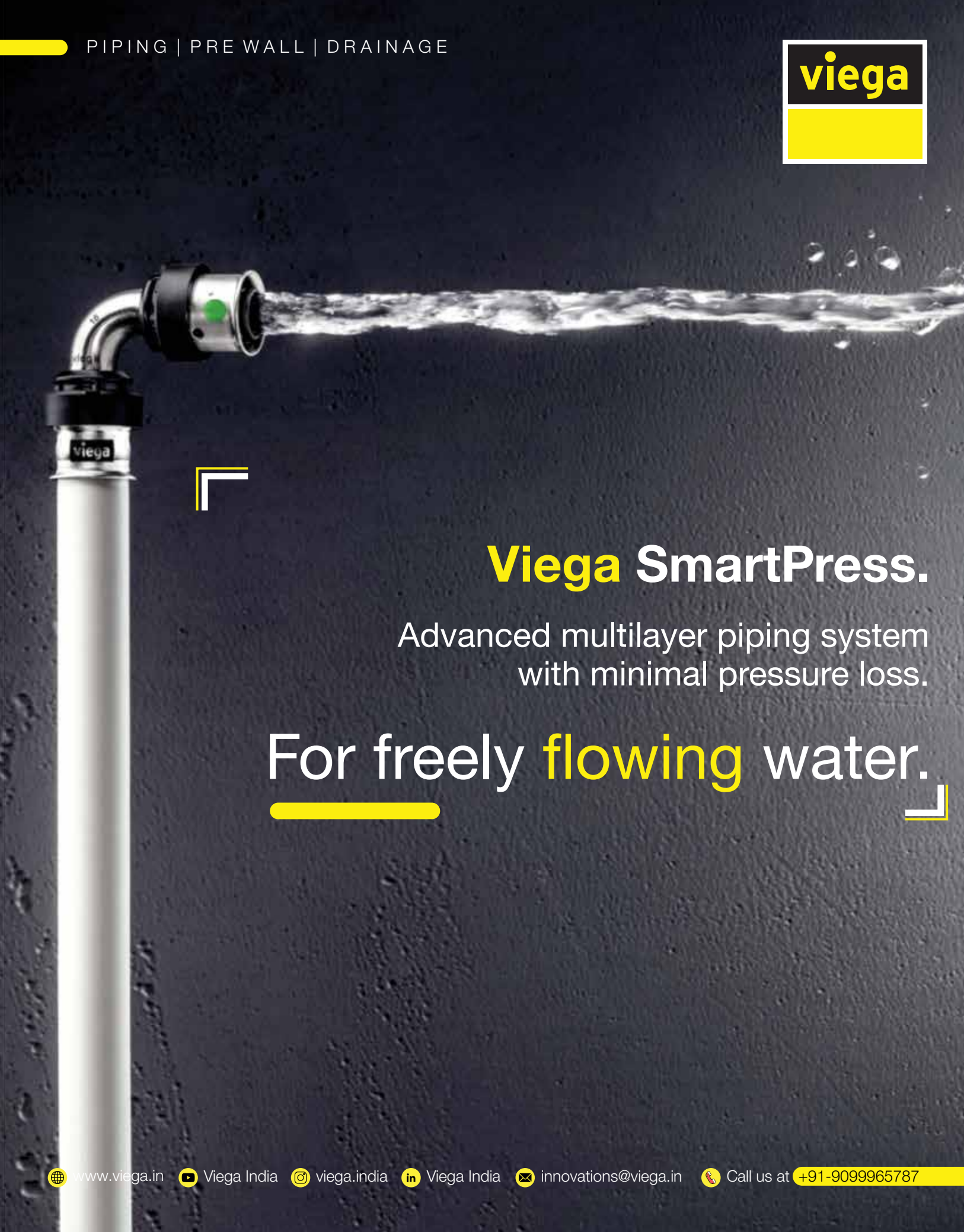

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Great Master's/Chairman's Award

Once in 3 years (Next due in 33rd JK AYA)

Green Architecture Award (Environment Conscious Design)

Eligible Countries: India, Bangladesh, Bhutan, Kenya, Maldives, Mauritius, Nepal, Seychelles, Sri Lanka, Tanzania & Uganda

Indian Architecture Awards (IAA)

Eligibility: Any Indian Architect

Indian State Architcture Awards (ISAA)

Eligible Status/UT: State by Rotation

Foreign Countries' Architecture Awards (FCAA)

Eligible Countries : Bangladesh, Bhutan, Kenya, Maldives, Mauritius, Nepal, Seychelles, Sri Lanka, Tanzania & Uganda

Architecture Student of The Year Award

Eligibility: Final Year Undergraduate students of Indian Colleges

RPS-06/2022

33rd JK AYA shall open for participation for sending entries From 1st January, 2023.

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For Award Information :-

Please Contact Award Secretariat :

RANA PRATAP SINGH
(Administrator JK AYA)

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