JOURNAL OF THE INDIAN
INSTITUTE OF ARCHITECTS
REFEREED JOURNAL OF IIA ●
ISSN-0019-4913 OCTOBER 2021
VOLUME 86 ▲ ISSUE 10
● RS. 100

COLLABORATION

Follow us on: | jaquarlighting.com

CRESCENT/10-2021

CREATE BENCHMARKS WITH **PROFESSIONAL LIGHTING**

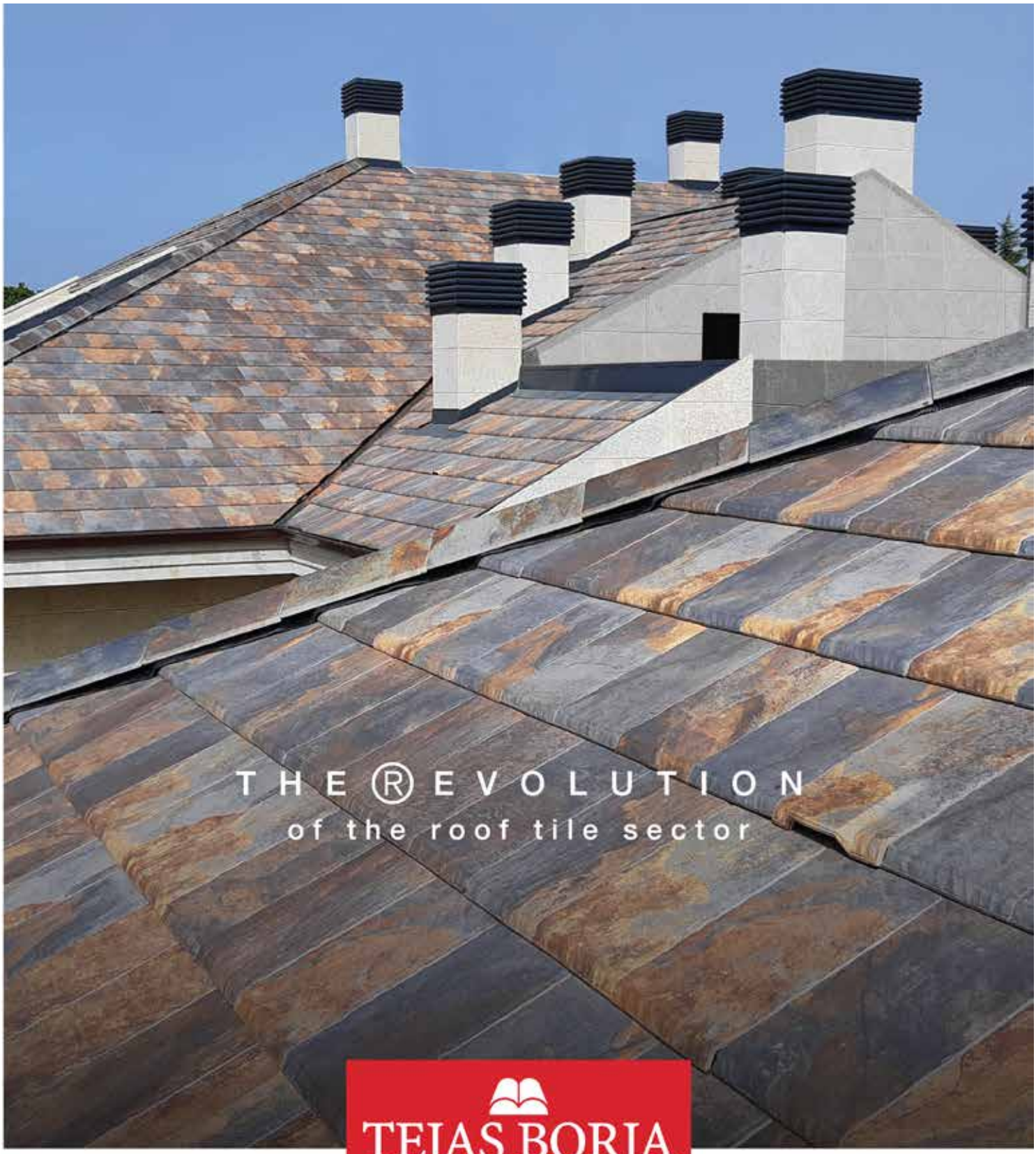
- Advanced manufacturing facility
- Global Certifications
- Unique customization option for chandeliers
- Trusted for prestigious projects
- Proactive Customer Care

For more information: Log on to **www.jaquarlighting.com**
E-mail: gaurav.bhalla@jaquar.com | Call Purchase Assistance: **1800-120-332222 (Toll Free)**

Visit any of our 21 **Orientation Centres**: Ahmedabad | Bangalore | Bhopal | Bhubaneswar | Chandigarh | Chennai | Cochin Guwahati | Hyderabad | Jaipur | Jammu | Kolkata | Lucknow | Ludhiana | Mumbai | Nagpur | New Delhi | Pune | Raipur | Siliguri | Surat

Professional Lighting: Architectural & Façade | Commercial Indoor | Commercial Outdoor | Decorative

Jaquar
BATH + LIGHT



TEJAS BORJA
Since 1899

mgcalicut

t: +91 7591 909003 I +91 8129 702239
e: imports@mggroupin.com I hello@mggroupin.com
www.mggroupin.com

No. 1 Building Material Company

CONTENTS

Prof. Jitendra Singh

Prof. Chandrashekhar

Prof. Parag Narkhede

Prof. Abir Bandyopadhyay

Prof. Vinit Mirkar

Prof. Rama Subrahmanian

Prof. Abhijit Natu

BOARD OF REVIEWERS

Printed & Published by Ar Lalichan Zacharias on behalf of The Indian Institute of Architects.

Designed by **November**
Printed by **Arihant Digiprint**
Shed No.1, Ground Floor, CTS No.15, 16, 20, 21 & 37, Italian Compound, Dindoshi Village, Ittbhatti, Goregaon East, Mumbai-400063.

Published at The Indian Institute of Architects, Prospect Chambers Annexe, 5th Floor, Dr D N Road, Fort, Mumbai-400001.

+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

Cover page designed by **November**
info@nvmbr.in
www.nvmbr.in

REDBOX DESIGN STUDIO
redbox.studio4@gmail.com
www.redboxdesignstudio.in

Printer's Email
arihantdigiprint.offset@gmail.com
krish.graph2020@gmail.com

JIIA IS REFEREED JOURNAL
ISSN-0019-4913

REGISTERED UNDER SOCIETIES REGISTRATION ACT, XXI OF 1860

JOURNAL OF THE INDIAN INSTITUTE OF ARCHITECTS
VOL 86 • ISSUE 10 • OCTOBER 2021

www.indianinstituteofarchitects.com

EDITOR'S NOTE

Good Design begins with honesty, asks tough questions, comes from collaboration and from trusting your intuition.
Freeman Thomas

Collaboration is working together in a manner to enhance each participant's contribution to the design. Great architecture is not born solely out of creative impulses, but also from sustained team work between architects, clients, interior designers, landscape architects, engineers, contractors, suppliers of building materials and many more members of the larger team.

Collaboration in architecture results in the different design disciplines working together, sharing knowledge, learning from each other and by that, designing a building informed by professional inputs and consensus. The collaboration between architects, engineers and other professionals needs to happen from the early stages of projects. Collaboration empowers the process of design development.

Collaboration is more of an attitude that needs to be inculcated in the culture of our practice. Architects need to take up the leadership role in a collaborative team environment.

The current state of architecture and design requires extensive collaboration and an investigative attitude and we continue to research and develop new technologies.
Zaha Hadid

The October issue of the Journal continues with most of its recurring columns, design features and articles.

Ar. Leena Kumar is in conversation with Ar. Hafeez Contractor in the Dialogue section.

It's heartening to receive reports from various chapters on the celebration activities of the World Architecture Day on 4th October. We are carrying these reports in the Newsletter this month.

You can do what I cannot do. I can do what you cannot do. Together we can do great things.
Mother Teresa.

Ar. Lalichan Zacharias
Editor

EDITORIAL TEAM


Ar. Lalichan Zacharias


Ar. Gita Balakrishnan


Ar. Manguesh R. Prabhugaonker


Ar. Mukul Goyal


Ar. Brijesh Saijal


Dr. Shilpa Sharma


Dr. Pratheek Sudhakaran


Ar. Tushar Sogani

PRESIDENT'S MESSAGE

Dear Members,

Greetings!

Engagement with the authorities is of utmost importance for the profession and our fraternity as it gives an opportunity to share our views and concerns as well as to understand the process and development plans of the authorities and the government. Recently I had the opportunity to have a discussion with the Member Secretary of Chennai Metropolitan Development Authority. It was interesting to note that they were eager to know the views of professionals and how they can be integrated into the development process. In fact he has called for a larger meeting with architects and officials to continue the dialogue.

It is pertinent for our Office Bearers at every Chapter and Centre level to pursue having an interaction with the decision makers to put forward what is good for development and for society, emphasizing the role of our profession.

We have facilitated the IIA CAD for our members so that they have a viable and affordable software. I appeal to all our members to subscribe for the license after a trial to understand how user-friendly and effective it is, apart from being integrated with compatibility into the AUTO DCR of various States.

After a long reprieve, a young IIA Jharkhand Chapter has hosted the YAF 2021 in all eagerness and enthusiasm to provide an ideal platform for young architects to participate. They have done it with alacrity and unbelievable zeal with an excellent program content, organization and hospitality appreciated by all. Young architects are our future and the Institute should strive in giving more opportunities to them to strengthen our membership.

Sustainability is always a buzz word. Are we consciously making efforts, by adopting suitable design and material to make a sustainable built environment, wherever it is possible? We should spread its importance and awareness of its impact on the future.

Our ancestors had the wisdom and vision for the importance of public spaces and we can see examples of this in many towns and cities across India. While some are preserved, which is good, most of the haphazard developments have ignored and neglected public spaces. It is important that we articulate this to limit the damage.

Recently when I was interacting with a young architect at Kolhapur, it was interesting to know that he has been working along with NGOs for a habitat for the tribals, experimenting with the local material and men, restoring abandoned temples, etc., more as a service - and I could see the satisfaction on his face as he related how happy he was to do such work rather than the routine buildings. We have many such youngsters who are making a change and impression on the lives of ordinary people who deserve the benefit of trained professionals.

Best wishes

Ar. C. R. Raju
President, IIA

Ar. C.R. Raju
President, IIA

Ar. Vilas Avachat
Vice-President, IIA

Ar. Jitendra Mehta,
Jr. Vice President, IIA

Ar. Gyanendra Singh Shekhawat
Hon. Treasurer, IIA

Ar. Ashutosh Kr. Agarwal
Jt. Hon. Secretary, IIA

Ar. Leena Kumar
Jt. Hon. Secretary, IIA

Ar. Satish Mane
Jt. Hon. Secretary, IIA

Ar. Divya Kush,
Immediate Past President

IIA OFFICE BEARERS

COMMENTS

JIIA
It is a matter of pride to all architects that the Journal of Indian Institute of Architects (JIIA) has improved significantly during recent times. I have no hesitation in saying that it is now at par with the best Journals in the world. The factor which substantiates this statement includes excellent design/layout, quality of paper, selection/use of high-quality images, voluminous outlook, and of course, the quality of contents arranged and published under different themes. Due to these qualities, we keep on anxiously awaiting the next issue every month and want to preserve it carefully for future reference. We wish the same quality should continue even if the present editorial team is replaced by the new one in future —my heartiest congratulations to all the editors, graphic designers, and contributors.

Ar. Sarbjit Singh Bahga
Chandigarh

For us architects, JIIA is the perfect example of a serious magazine which concentrates on the content and not on commercial aspects. JIIA has completely reinvented itself in the new editions and has a contemporary feel to it. The cover design is exceptional every time. Kudos to the Editorial Team working behind the scenes.

Ar. Amit Khullar
Enar Consultants, Delhi

The June 2021 issue of the magazine is worth a read. The makeover of the magazine is amazing. Wishing all the best for the forthcoming issues.
Thank you

Ar. Megha Khandekar
Vice-Chairman
IIA Belagavi Centre, Karnataka

JIIA is an excellent effort to guide the fraternity with the fast-changing norms of the practice and also updates on the advancement that architecture is witnessing and experiencing at large. JIIA also keeps us informed on architectural education that's changing and evolving for the new future of budding architects and how school students can be guided and motivated to join this profession. It gives an authentic platform and opportunity to fellow architects and students to share their works and research and enlighten readers. JIIA is indeed the face of the architecture of India.

Ar. Anurag Khandelwal
CEO Wood Style, Agra

The Journal has shown tremendous evolution; I suggest that dialogue be now initiated to discuss the new challenges faced and to keep our profession relevant in times to come.

Ar. Milind Ramani

We welcome your comments and suggestions.

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

THEME

COLLABORATE TO INNOVATE - PUSHING BOUNDARIES TOGETHER

Collaboration is at the heart of human evolution. Historian and author, Yuval Noah Harari in his book *Sapiens : A Brief History of Humankind* makes a compelling case for this statement that has resonated with many. Through collaboration, we have created wonders over the centuries. But while it has made us masters of the world, it has also made us largely dependent on networks for everything.

Helena Norberg-Hodge in *Ancient Futures*- a book later made into a film, has showcased how traditional wisdom in Ladakh was the bedrock of contented lives. The Ladakhis arrived at this bliss with the help of an elaborate system of cooperation, environmental care, and economic self-sufficiency. The actual essence of collaboration and its value as described by Hodge has been lost in the dependence that Harari refers to.

Architecture itself is a collaboration of science, art and so many other disciplines. Thus it is only fitting that we, the disciples of this learning, collaborate to push the boundaries further. In our field, collaboration can be of different kinds - within firms, between firms, collaboration within teams of different role-players in a project, collaboration between colleges, collaboration at site, temporary project-based collaborations or even collaboration within a committee like our JIIA committee and a lot more.

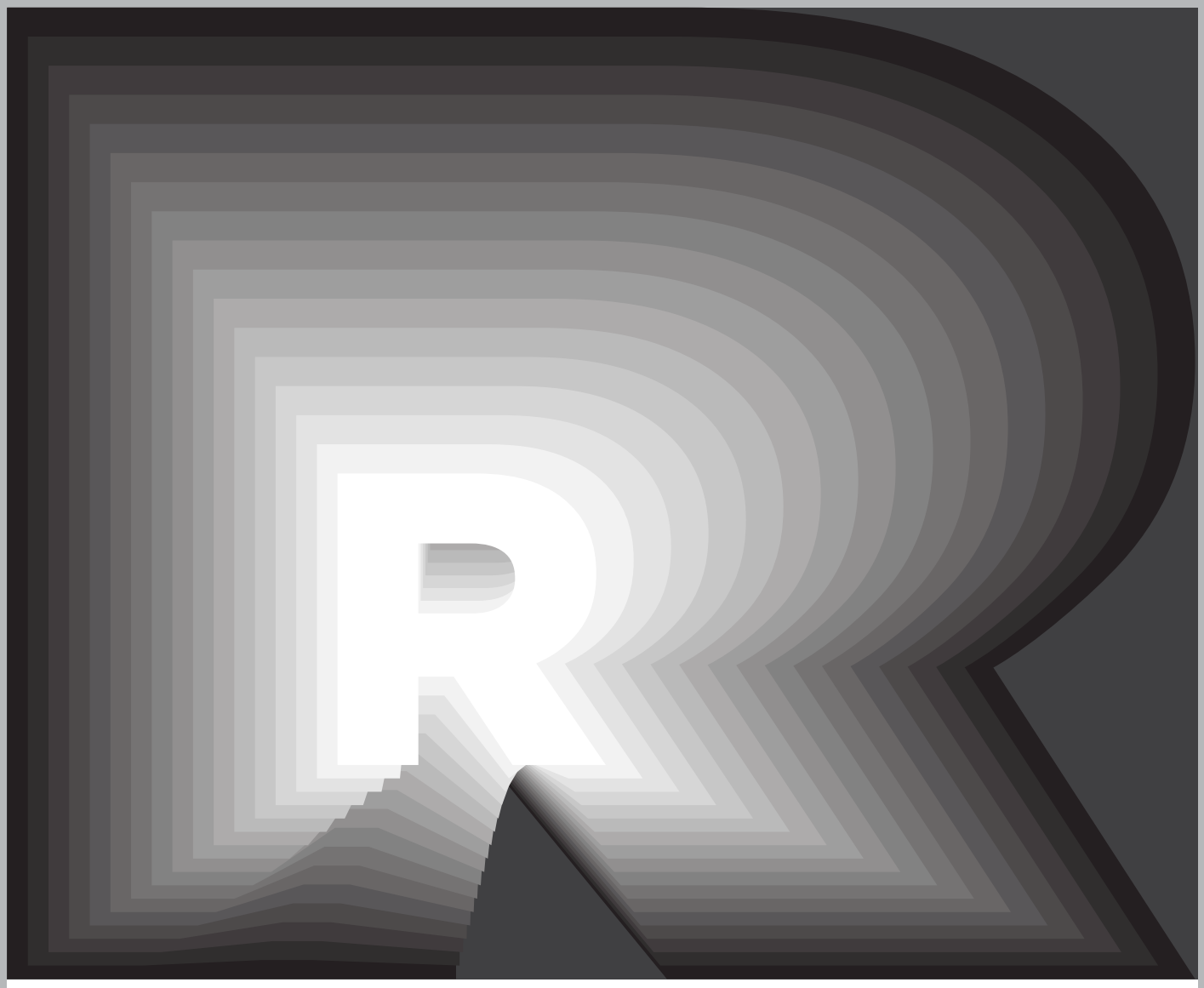
It goes without saying that the success of the endeavour depends on the way the collaboration comes together. The idea of coming together, ideating together and working together is gaining popularity as the role of the architect has become more complex. Making collaborations work is also an art and not an easy one at that.

When the architect goes all the way to engage and collaborate with the community the project is meant for, is when the soul of a sustainable project is explored. The *ModSkool Project* in New Delhi by *Social Design Collaborative,* is a prime example, where the users and the designers collaborated to create an incredible story that has mesmerized many.

In pedagogy too, there are many experiments being made to allow for better learning. There are academic institutions that hold vertical studios and regularly introduce assignments which encourage interaction with peers and mentors from other disciplines. Such engagements in student life are of immense value since they break many barriers and allow for easy associations later in life while also inculcating the culture of collaboration into their future persona. A consortium of Kutch-based NGOs - *Kutch Nav Nirman Abhiyan,* established a building and innovation cell to aid reconstruction of communities post the deadly earthquake of 2001 which later became *Hunnarshala* in 2003. In June 2021, *Hunnarshala* hosted an online course to share their school of thought with learners across India. It was a design studio with a live project hosted with the Madhya Pradesh Tourism Board. As their philosophy, the studio was based on giving credit and meaning to the knowledge and pedagogy of labour and artisanal societies. They invited anthropologists, sociologists, grassroot organisations who specialise in tribal communities and traditions as mentors with the tribal community (end-user), artisans and architects at *Hunnarshala* working intensely with the learners to create empowered and informed designs. This is a beautiful example of collaboration in pedagogy.

Architecture is a culture of collaboration. As the centuries old adage goes, 'none of us is as smart as all of us'. Discover the magic of collaboration as against competition. Let us share and learn from each other as we move from DIY (Do-It-Yourself) to DIT (Do-It-Together).

Ar. Gita Balakrishnan



RESEARCH

Rethinking Sustainability of the Built Environment in Post-Pandemic Times
Ar. Tanushree Das

●

STUDENT WORK
Interpretation Centre for Marine and Coastal Life
Saiyam Sanjay Chaturvedi, Ar. Sharad Mahajan

●

STUDENT WORK
Revitalizing Neighbourhood of Sector 22 of Chandigarh From a Child-Friendly Perspective
Ar. Sonika Sehrawat, Ar. Sohan Lal Saharan

RETHINKING SUSTAINABILITY OF THE BUILT ENVIRONMENT IN POST-PANDEMIC TIMES

Ar. Tanushree Das
Faculty, Gateway College of Architecture, Sonipat.
tanushreearch@gmail.com

ABSTRACT

The outbreak of SARS-CoV-2 or commonly known as the COVID 19 pandemic have posed big challenges in front of humankind throughout the globe. The built environment has failed miserably to fight this situation. Rapid changes took place in healthcare buildings to meet huge demand to treat COVID 19 patients. However, not many changes have been done in other habitable spaces. The buildings have been made operational only with some social distancing measures put in place. Historically speaking, many a times many cities have been changed after epidemic and pandemic. Learning from the history, it has become utmost necessity to examine the sustainability measures in the buildings. Public buildings, mass housings, institutional buildings, high rise buildings are more vulnerable in new normal situation as people are being sceptical about using common services like centralised HVAC systems, elevators, common workspaces. Natural ventilation and day lighting are also becoming important to be incorporated with artificial lighting and ventilation for more conducive building interior and occupant's wellbeing. Building automation in public buildings can prove one major step taken to respond to the post-pandemic situation and energy management. This article examines the sustainable measures which can taken to design a futuristic building environment and their usefulness in the post-pandemic new normal lifestyle.

Keywords: *building resilience, post pandemic architecture, building sustainability, human behaviour and wellbeing.*

1. INTRODUCTION

The outbreak of SARS-CoV-2 or commonly known as COVID 19 pandemic has posed many challenges in people's lives unknown earlier. The unpreparedness to fight back the effect of the pandemic is very much evident. The only solution authority could envisaged and enforced was lock down. While the World Health Organisation (WHO) declared a worldwide pandemic status on 11th March 2020, the Indian Government declared country wide lockdown on 25th March 2020 (Vahia, 2020). As many as 3 billion people went to lock down worldwide in April 2020 with 130 countries restricted the movement of people . Along with lockdown came other unforeseen situations humankind has hardly experienced before. The space which used to be utilised only for domestic purposes became operation area for office, school, college and many others (Shanbhag D., 2020, p. 2). The demand for energy shifted from commercial to domestic buildings. Internal spaces become scarce as that limited space became occupied with all the family members at the same time. Overall, the lockdown during the pandemic situation took toll on human life and health in many forms. Figure 1 depicts a scenario in early stage of lockdown in a deserted street in Lucknow in front of Vidhan Sabha where the normal life of people came to stand still like any other cities in the world.

With the commencement of 'New normal', the maintaining of safe two metre physical distancing demanded more space within the public buildings. The question arises from this is whether our buildings are resilient enough to face the challenges thrown to it by COVID 19 outbreak. As people started spending extra time in indoor environment it became utmost necessity to make building interiors more comfortable, hygienic, safe and conducive. Architecture has always played an important role in shaping human behaviour and culture and vice versa. In post COVID 19 pandemic era buildings needs to be more sustainable and resilient.

Figure 1: A deserted street in Lucknow (Source: Ar. Firoz Ansari)

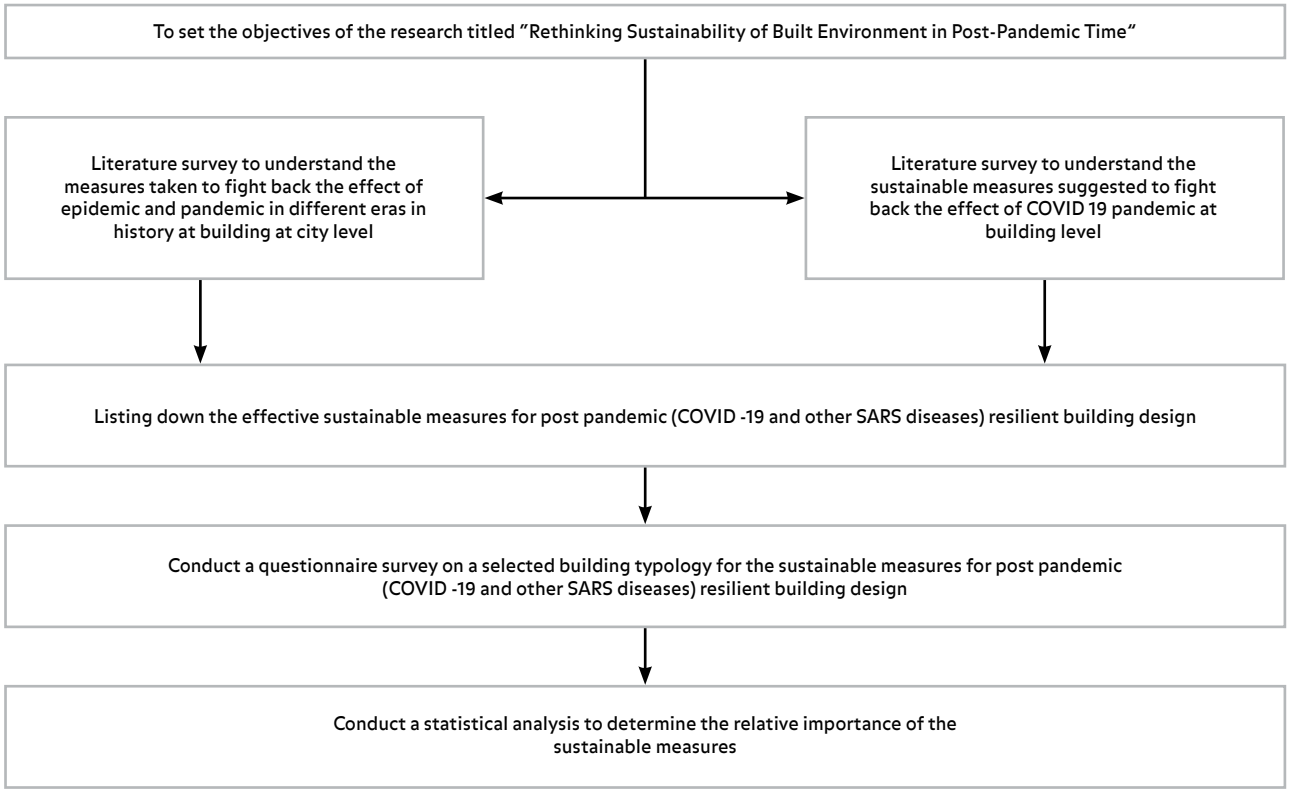


Figure 2: Methodology, *(Source: Author)*

2. OBJECTIVES OF THE STUDY

The objectives of this study are :

i) To understand different measures that have been incorporated previously in history in case of epidemic and pandemic situations at building and city scale.
ii) To survey existing literature to list down the sustainable measures which can be taken to make building more resilient in a post-pandemic situation
iii) To conduct a questionnaire survey and examination of the survey result to fix the relative importance of the sustainable measures

3. METHODOLOGY

The methodology followed to conduct the research is shown in the flowchart above.

4. HISTORICAL EVENTS OF EPIDEMIC AND PANDEMIC AND ITS EFFECT ON BUILT ENVIRONMENT

In ancient Rome, during the reign of Emperor Gaius Octavian Augustus (27 B.C.-A.D. 14), Roman army came across with many epidemic diseases like malaria, typhoid, smallpox, and dysenteries (Belfiglio, 2017, p. 1389). Along with the usage of medicine, isolation tents were set up to minimise spreading of diseases through infection. Care was taken to maintain distance in between water supply and sewerage system to keep a check on the contamination.

The world has seen three historical plague pandemics. The first one happened in the mid of the sixth century in Egypt and spread rapidly over Mediterranean basin. The second one occurred during fourteenth century in all over Europe commonly known as Black Death. The third one happened in Moscow in 1771. To fight the first plague epidemic, many actions were taken and among them the closing of common bath in the town was main to stop infection travel rapidly through human body (Bramanti B, 2016, p. 2). Later in the mediaeval time, measures like quarantine facilities and *cordon sanitaire* came into place.

After the recurring cholera outbreak in mid nineteenth century in Paris and London a need felt to redesign more liveable cities. The outbreak and spreading of the epidemic were the result of the mediaeval city planning which made no room for light and air to come inside building and due to inadequate sanitary systems . During the reign of Emperor Napoléon III vast public works got started under the leadership of Georges-Eugène Haussmann. Instead of narrow and dark lane, Paris got vast open areas, City Park, boulevards. There were construction of new sewerage systems, fountains and aqueduct (Ateek, 2020, p. 4).

5. NEED OF SUSTAINABLE BUILT ENVIRONMENT IN POST COVID 19 PANDEMIC SITUATION

The built environment has both direct and indirect effects on the physical and mental health of the occupants (Evans, 2003, p. 542). People feel emotional bond with the place the live in, be it positive or negative (Sullivan W. C., 2011, p. 108). The coming time of the post pandemic situation is uncertain. The cases of COVID 19 infection are not stable yet, either in India or globally. Considering the circumstance that it might take longer time to come to complete normalcy or there might be other similar virus outbreak in future, the buildings of the future should be adequately resilient so that it can be used with more efficiency (Larsson, 2020, p. 8). The existing buildings are required to be

Figure 3: Physical distancing in post COVID 19 building
(Source: Author)

retrofitted to the degree possible to survive this new normalcy. Figure 4 shows the norms on the physical distancing in the "New Normal" situation after COVID 19 pandemic.

It is evident from the image above that as the space standard has changed after the COVID 19 pandemic (Ahmed, 2020, p. 3), it is very likely that we would require a revised building guideline (bye laws and codes) soon.

A literature survey was done in order to understand the measures taken in the historical event epidemic and also in the modern era. The literature was grouped according the following sub-division for the ease of study:

i) The historical events of epidemic and pandemic and measures taken to fight it (2 nos.)
ii) The effect of built environment on physical and mental health of the occupants (4 nos)

Figure 4: Site plan of GCAD, Sonipat
(Source: Google Map. Accessed on 21 March 2021)

iii) The suggestive measures by the architects and building professionals to fight against the ongoing COVID 19 pandemic situation for a sustainable future (9 nos.)

The author has listed down the issues those are faced by the inhabitants of the buildings and apartments today at various levels and their probable solutions which can be implemented to make buildings more resilient in post pandemic (COVID -19 and other SARS diseases) ages.

6. SITUATION STUDY

A study has been conducted by author on "Gateway College of Architecture and Design" (GCAD), Sonipat, Haryana to check the resilience and the sustainability of the building. A questionnaire sent to students and faculty members of the college who used to stay in the building or still residing.

6.1. The uniqueness of GCAD building

The building consists of 7 floors of which one is basement. The building is primarily of institutional use which also houses girls' hostel and faculty residence. The basement, ground, 1st and 2nd floor is for institutional use, whereas the third and fourth floor dedicated to girls' hostel and the topmost floor is faculty residence.

The shape of the structure is closed type. The ground floor has an atrium which is covered at the 3rd floor level which houses different students' activities. The classes are arranged around the atrium. The class rooms are air conditioned with window A. Cs whereas the corridors and atrium are not conditioned (refer fig4). The lengthier sides of the building face North and south. This building is relatively new. This came into operation in the year 2008 and minor changes have been done since.

Table 1: **Effective sustainable measures for post-pandemic (COVID 19 and other SARS diseases) resilient building design** *(Source: Author)*

Sl. No.	Issues	Detail of Problem faced	Suggested measures
1.	Site and building level entrance	• Checking of body temperature • Disinfection of human body • Car disinfection	• Sensors can be installed to measure the body temperature along with the automated body disinfection systems • Automated car disinfection at the entry level
2.	Lack of daylight and natural ventilation (Manuel Duarte Pinheiro, 2020, p. 11)	• Lack of sunlight in building inside have adverse effect on the occupant's mental health (Chu, 2004, p. 20) • Provide more daylight and ventilation to fight diseases	• Building fenestration design to allow daylight and natural ventilation enter in building interior to create more hygienic condition. • Deep floor plate to be avoided to make most use of daylight • Building automation system can be incorporated in mix mode lighting (Natural and artificial lighting)
3.	Lack of green space	• Limited or restricted access to outdoor and park area initiated due to lock down	• Roof should be accessible • Green roof can be incorporated along with vertical gardening which creates an outdoor space for fresh air and excise • Providing balcony in residential building as extension of interior space • Providing open areas, atrium, courtyard etc. in public buildings as break out spaces
4.	Touching door knobs while opening or closing of doors (Manuel Duarte Pinheiro, 2020, p. 11)	• COVID 19 virus spreads through the touching of surfaces that makes it mandatory to disinfect those surfaces frequently	• Hands free door opening (preferable use of elbow/ foot) for residential buildings • Sensor based door opening system in public buildings
5.	Interior finishing for vertical and horizontal surfaces	• The residential life of viruses vary according to various surface materials.	• Less use of carpet and other soft materials on floor where virus may stay alive for longer duration
6.	Multiple use of same space for household and professional work (Shanbhag D., 2020, p. 2)	Due to lock down people started working from home. The problem thus created is twofold • Overcrowding of space making it practically impossible to work efficiently due to physical need of space • Increased noise level making it impossible to work or study as the case may be	• Flexible and adaptable building planning to accommodate both domestic and professional work • Adaptive use of furniture • Space saving modular furniture • Adequate space within building to avoid overcrowding • Anthropometric standards to be revisited as the social distancing measures (2 mtr social distance) to be observed in public spaces and buildings
7.	Sedentary way of working	• Due to the online mode the work became more sedentary. Long working hours, sitting in the same posture for longer duration, exposed to longer screen timing initiate different diseases in human being like eye diseases, headache, nausea, obesity.	• Ergonomically designed furniture
8.	Atmosphere inside the building (D'Alessandro, 2020, p. 66)	• Spending more time inside of the buildings requires the indoor environment to be comfortable.	• Maintaining conducive building environment through "thermal comfort" and" indoor air quality" (IAQ) (Capelli, 2020, p. 4) • Mixed mode HVAC systems with high efficiency filter instead of fully mechanical HVAC system (Manuel Duarte Pinheiro, 2020, p. 12) • Increased rate of air change • 100 per cent separation of incoming and outgoing air resulting in no mixing of air in the heat exchange systems
9.	Mechanical transportation system (lift) (Manuel Duarte Pinheiro, 2020, p. 12)	• It is hard to maintain 2meter social distancing and run lifts with full occupancy • The call buttons are the points of possible virus spreading	• Safe distance marking in lift lobby and inside • Limiting capacity of lift car • voice recognition instead of touch button
10.	Limiting the area of touches in public buildings and public toilets	• Spreading of virus through human contact	• Touch free switches • toilet fixtures to have sensors • Automatic disinfecting mechanism to be installed in all the areas required human contact for operation • use of sensors and detectors, mechanical window opening and closing systems etc.
11.	Increased demand of building resources	• Longer duration of online working requires uninterrupted supply of internet and power • Water demand increases due to frequent washing and cleaning	• Use of building information system for judicious use of resources like water and energy
12.	Infection of water with virus (Manuel Duarte Pinheiro, 2020, p. 12)	• Many urban, peri urban and rural areas are devoid of proper water distribution system which are susceptible for contamination	• "Hygienic water supply system" • routine water testing

Sl. No.	Issues	Detail of Problem faced	Suggested measures
13.	Solid waste management system (Bank, 2020, p. 15)	• Increased solid waste due to packaging of household items getting delivered at door step • Increased solid waste due to disposal of personal protection items like gloves and masks	• Segregation of waste at source, • Replacement of regular bins with smart bins, • Quick incineration
14.	Sudden high demand of building infrastructure	• Increased demand in hospital facility in the commencement of COVID 19 outbreak	• Modular and faster construction system adopted
15.	Landscaping and building surroundings (Jordi, 2020, p. 8)	• Restriction of movement of people resulted in abandoning of urban squares and parks • Need of outdoor spaces felt in immediate vicinity of buildings for "physical and mental wellbeing" without getting exposed to crowding	• Incorporation of landscaping in immediate building surroundings • Terrace and Balcony garden

Table 2: **Suggestive measures for Post COVID 19 building sustainability and resilience**
(Source: Author)

Sl. No.	Criteria
1	Site and building level entrance: Sanitation process, disposal of PPE, car washing facility
2	Building fenestration design to allow daylight and natural ventilation enter in building interior to create more hygienic condition.
3	Accessible roofing for terrace gardening and access of natural ambience
4	Hands free door opening (preferable use of elbow/ foot)
5	Interior finishing for "vertical and horizontal" surfaces (easy to clean)
6	Selection of building finishing materials that reduce virus' residence time
7	Flexible and adaptable building planning to accommodate both domestic and professional work
8	Adequate space within building to avoid overcrowding
9	Maintaining conducive building environment through thermal comfort and indoor air quality (IAQ)
10	Mechanical transportation system (lift): Safe distance marking, voice recognition instead of touch button
11	Mix mode HVAC system with high efficiency filter
12	HVAC: 100 per cent separation of incoming and outgoing air
13	Use of building information system for judicious use of resources like water and energy
14	Touch free switches and toilet fixtures
15	Hygienic water supply system with routine water testing
16	"Solid waste management system": Segregation of waste at source, replacement of regular bins with smart bins, quick incineration
17	Modular and faster construction system adopted
18	Building automation system: use of sensors and detectors, mechanical window opening and closing systems etc.
19	Incorporation of landscaping in immediate building surroundings
20	Use of more green areas in building like balcony and terrace gardening

6.2. Detail of survey conducted

Twenty criteria were selected from table 1 and a questionnaire were formed. The respondents were requested to evaluate the criteria in a likert scale staring from 1 to 5, where 1 represented strongly disagree and 5 represented 'strongly agree', keeping in the view the present condition of the building whether those measures could be successfully implemented in the building to make it sustainable in post pandemic situations and becomes resilient enough to remain in function in other catastrophic situations like this.

The measures suggested to the respondents are as follows

The result received from 45 respondents (40 students and 5 faculty members). A "weighted average" taken from the responses received and the following result came out (refer Figure 5).

6.3. Discussion on the result and conclusion

From the above survey results, it is found that the weighted ratings range from 2.84 to 4.51. Incorporation of landscape in immediate building surroundings came as the most widely and easily accepted measures to fight post pandemic situation which helps public to be outside, get fresh air and fight various psychiatric diseases. The Most difficult retrofitting measures as it was revealed was making changes in vertical transportation systems. Though it is likely to incorporate building automation systems like sensors and voice recognition instead of lift call button where touching of button is required, it is not possible to maintain social distance of 2-meter norms in lift car and run the lift at its full capacity. Therefore,

Figure 5: Weighted average of post-COVID 10 sustainable building measures
(Source: Survey conducted by Author)

use of lift remains most vulnerable in post pandemic situation. Building fenestration design to allow daylight and natural ventilation, flexible and adaptive building planning to accommodate domestic and professional work simultaneously also have high score, higher than 4.0. Hygienic water supply systems with testing facility, "solid waste management systems" with segregation facilities at the source are easily adopted measures and can be incorporated very efficiently, scoring 4.11 in both the cases.

6.4. Limitation of the situation, study and future work

The above study is case specific and done with limited number of survey responses within limited time. However, this building can be shown as a prototype of contemporary institutional building which depends heavily of "mechanical ventilation and artificial lighting". Further detail study can be done on different typologies of the buildings and buildings with different forms like 'U' shaped plan, courtyard type planning etc.

The study can be further done on institutional buildings in different locations having varied climatic conditions and also on different typology to appreciate the measures which architects and designers should consider while designing new buildings which can withstand the after effect of pandemic or epidemic and comes out to be "resilient buildings". Care should be taken for the criteria scoring low as they are the areas in the structure where adaptation is problematic to incorporate like size of lift and staircases, HVAC systems, building automation systems, internal dimension of building etc.

REFERENCES

1
Larsson, N. M. (2020). Pandemics and the Built Environment 22June20. .

2
Ahmed, Z. (2020). Architecture After The Covid-19 Pandemic Re-Imagining Our World.

3
Ateek, G. (2020). Future of Sustainable Architecture: Rethinking COVID-19 a Pandemic or turning point. .

4
Bank, A. D. (2020). Liveable Cities: Post-COVID-19 New Normal.

5
Bramanti B, S. N. (2016). Plague: A Disease Which Changed the Path of Human Civilization. Adv Exp Med Biol. . *PMID: 27722858.,* 918:1-26.

6
Capelli, M. &. (2020). The environmental sustainability at the time of COVID-19 pandemic: a holistic approach through LEED® v4 BD+C rating system.

7
Chu, A. T. (2004). "The impact on mental well- being of the urban and physical environment: an assessment of the evidence. *Journal of Public Mental Health, Vol. 3 No 2,* 17-32. .

8
D'Alessandro, D. G. (2020). COVID-19 and Living space challenge. Well-being and Public Health recommendations for a healthy, safe, and sustainable housing.

9
Environment, P. a. (2020). Larsson, N., Mangone, G., Kujawski, w., Delcourt, H., Leighton, L. & Berchtold, M. Foliente, G., Larsson, G, Mohamed, I., & Hierlihy, B., Salat, S., & Fadli, F.

10
Evans, G. W. (2003). The Built Environment and Mental Health,. *Journal of Urban Health: Bulletin of the New York Academy of Medicine.*

11
Jordi, H. I. (2020). The impact of COVID-19 on public space: an early review .

12
Larsson, N. &. (2020). Pandemic and the built environment.

13
Manuel Duarte Pinheiro, N. C. (2020). COVID-19 Could Leverage a Sustainable Built Environment. *Sustainability* .

14
Shanbhag D., P. m. (2020). Impact of Covid-19 Pandemic on Future Architecture Scenario. *International Research Journal of Engineering and Technology (IRJET), Volume: 07 Issue: 06.*
Sullivan W. C., &. C. (2011). Mental Health and the Built Environment. .

15
Valentine J. B. (2017). Control of epidemics in the Roman army: 27 B.C. -A.D. 476. *International Journal of Community edicines and Public Health* .

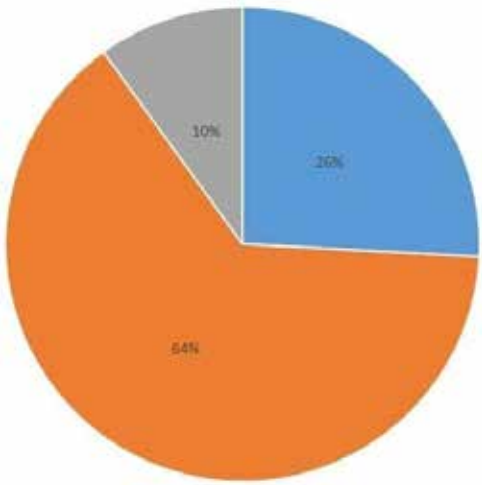
16
Vahia, V. N. (2020). COVID-19 pandemic and mental health care of older adults in India. *International psychogeriatric,* 1125–1127.

Ar. Tanushree Das is a PhD scholar from DCRUST, Murthal. She is currently faculty at the Gateway College of Architecture, Sonipat. She has ten years of professional and six years of academic experience. Her areas of interest include design quality management, sustainability, energy efficient design, architectural heritage, disaster management and tourism.

INTERPRETATION CENTRE FOR MARINE AND COASTAL LIFE

Saiyam Sanjay Chaturvedi
Final Year, B.Arch. (2019)
MIT, Aurangabad, Dr. BAMU
saiyam0108@gmail.com, ar.aakruti@gmail.com

Ar. Sharad Mahajan
Professor
Dept. of Architecture, MIT Aurangabad
mahajan.sharadk@gmail.com



Area distribution of ratio of landscaping on site
(Source: Author)

Area distribution built and unbuilt space
(Source: Author)

INTRODUCTION :

Role of Oceans and Sea-life on the World Map

The ocean is a continuous body of salt water that covers more than 70 percent of the earth's surface. It governs the world's weather and contains a kaleidoscope of life. Geographers divide the ocean into five major basins: Pacific, Atlantic, Indian, Arctic and Southern. There are smaller ocean regions seas, gulfs, and bays such as the Mediterranean Sea, Gulf of Mexico, and the Bay of Bengal. Inland bodies of saltwater such as the Caspian Sea and the Great Salt Lake are distinct from the world's oceans. The ocean is widely connected to different aspects of marine life and its ecosystems. Though oceans are described separately, they actually form a single unified body of salt water referred to as the world ocean or global ocean. The oceanic division is based on various factors like the continents, islands, etc. The five major divisions are:

- The Pacific Ocean is the largest ocean and fills the gap between Asia, Australia, North and South America and the Oceania. It meets the Atlantic Ocean.
- The Atlantic Ocean is the second largest ocean and extends between North and South America, Africa and Europe. It meets the Indian Ocean.
- The Indian Ocean extends north from the Southern Ocean to India and spreads out between Australia and Africa. It joins the Pacific Ocean near Australia.
- The Southern Ocean or sometimes called as the Antarctica ocean is spread out in the southern Antarctic polar region. It is partly covered in sea ice and the amount varies according to seasons. It is the second smallest ocean of the five.
- The Arctic Ocean is the smallest ocean and spreads out near Iceland and Greenland joining the Pacific Ocean at the Bering Strait. It is partly covered in sea ice and the amount varies according to seasons.

Coastal Ecosystem

The development of coastal belts has been in terms of geological developments. Coastal landforms and any of the relief features present along the coast, the result of a combination of processes, sediments, and the geology of the coast itself. Coastal ecosystems are areas where land and water join to create an environment with a distinct structure, diversity, and flow of energy. They include salt marshes, mangroves, wetlands, estuaries, and bays and are home to many different types of plants and animals. Coastal ecosystems are also very sensitive to changes in the environment, and there is concern that some areas are now struggling to maintain their diversity due to human activity, the introduction of non-native species, and other factors.

Marine Life: The oceans are home to millions of earth's plants and animals— from tiny single-celled organisms to the gargantuan blue whale, the planet's largest living animal. Fish, octopuses, squid, eels, dolphins, and whales swim the open waters while crabs, octopuses, starfish, oysters, and snails crawl and scoot along the ocean bottom. The world's oceans are vital to life on earth. Different areas of the ocean can be classified as different types of marine ecosystems. Marine ecosystems have distinct organisms and characteristics that result from the unique combination of physical factors that create them. They include:

- the abyssal plain (areas like deep sea coral, whale falls, and brine pools)
- polar regions such as the Antarctic and Arctic, coral reefs
- the deep sea (such as the community found in the abyssal water column)
- hydrothermal vents, kelp forests, mangroves, the open ocean, rocky shores, salt marshes and mudflats, and sandy shores.

Coastal Belts in the Indian Sub-continent:

The Indian subcontinent is located in the south central region of the Asian continent. It takes on a peninsular shape that juts out into the Indian Ocean. This subcontinent is situated on top of the Indian tectonic plate. The Indian subcontinent covers an entire area of approximately 1.7 million square miles, which represents just over 3% of all the land on earth. It is politically divided into 7 countries: India, Sri Lanka, Bangladesh, Pakistan, Nepal, Bhutan, and Maldives.

Jay Stambh, the last point of Indian territory
(Source: Author's click)

Lord Ramansthaswamy
(Source: billdesk)

The Indian Coastline:

Peninsular India is bounded by water on three sides: the Arabian Sea in the west, the Bay of Bengal in the east and the Indian Ocean in the south. The Indian coastline runs over a distance of 7500 km, out of which, 5700 km are on the mainland distributed along nine coastal states, two groups of islands and four union territories. The coastal belt comprises a wide range of ecosystems extending from sandy beaches and mangroves to coral reefs and rocky shores. India has a variety of natural coastal ecosystems. The Indian coastline can be divided into the Gujarat region, the west coast, the east coast and the Islands.

Indian Marine Ecosystem- Uniqueness:

The Indian coast has a large variety of sensitive ecosystems. Mainland India has a vast coastline of about 5423 km length spanning 13 maritime mainland states and union territories, with diverse coastal and marine ecosystems, supporting nationally and globally significant biodiversity. Marine-protected areas (MPAs) in India comprise national parks and wildlife sanctuaries declared in coastal wetlands, especially mangroves, coral reefs and lagoons, under the Wildlife (Protection) Act, 1972. There are a total of 26 marine protected areas distributed in Gujarat, Maharashtra, Tamilnadu, Orissa, West Bengal, Lakshadweep and Andaman and Nicobar Islands. A total of 106 important coastal and marine biodiversity areas of India have been identified based on following observation criteria are:

- Ecosystem resilience
- Ecosystem function
- Biodiversity uniqueness
- Cultural, religious and aesthetic significance
- Socio- economic potential
- Land tenure

The Andaman and Nicobar islands alone have as many as 2200 flowering species and 120 species of ferns. Out of 135 genera of land mammals in India, 85 (63%) are found in the north-east. The northeastern states have 1500 endemic plant species.

Opportunities for Development of Coastal and Marine Tourism

India has a long coastline along the mainland and numerous islands. Indian coastal areas are richly endowed with cultural heritage. They have sweeping garden beaches and roaring waves with temples, palaces, gardens, hills, wildlife sanctuaries and a variety of fairs and festivals. Coastal tourism covers beach-based tourism and recreation activities like bathing, diving, swimming, sun-bathing, and other activities for which the proximity of the sea is an advantage, such as coastal walks and wildlife watching. Marine tourism covers predominantly water-based activities like sailing and natural sports and cruising, etc.

SITE CONTEXT:

1. National Context: The Gulf of Mannar which falls in the Indo-Pacific region is considered to be one of the world's richest marine biological resources. This is considered as a hyper-fragile environment, inhabited by many types of flora and fauna. The biological richness of this coastal region includes sea algae, sea grass, coral reef, pearl banks, sacred chank bed, fin and shellfish resources, mangroves so also endemic and endangered species. Over 4200 species of flora and fauna are represented here. The coastal area covering 560 sq.km between Rameshwaram and Tuticorin, including the 21 islands and surrounding shallow waters was declared as a Marine National Park in 1986 by the Government of Tamil Nadu. The Gulf of Mannar Marine Biosphere was declared in 1989 by the Government of India, covering a 10,500 sq.km area between Rameshwaram and Kanyakumari.

2. Regional Context: Rameshwaram is a town and municipality in the Ramanathapuram district of Tamil Nadu. Together with Varanasi, it is considered to be one of the holiest places in India for Hindus, and part of the Char Dham pilgrimage. It is said the Hindu god Rama built a bridge from here across the sea to Lanka to rescue his wife Sita from her abductor Ravana. The Ramanathaswamy temple, dedicated to the Hindu god Shiva, is at the centre of the town and is closely associated with Rama. The temple and the town are considered a holy pilgrimage site for Shaivites and Vaishnavites.

Site showing site and road connections
(Source: Author's click)

Along with the mythological value of Dhanuskodi, it has a rich belt marine species also. The Coastal Marine Fisheries Research Institute of India (CMFRI) has some research points on the coastline of India covering from Gujarat to West Bengal. The district has a coastal length of 271 km along Palk Strait (130 km) and Gulf of Mannar (141 km). The Gulf of Mannar is unique as a first marine biosphere reserve not just in India, but as a part of south and south-east Asia.

3. Coastal Regulation Zone (CRZ) : Under the Environment Protection Act, 1986 of India, notification was issued in February 1991, for regulation of activities in the coastal area by the Ministry of Environment and Forests (MoEF). As per the notification, the coastal land up to 500 m from the High Tide Line (HTL) and a stage of 100 m along banks of creeks, estuaries, backwater and rivers subject to tidal fluctuations, is called the Coastal Regulation Zone (CRZ). The above notification includes only the inter-tidal zone and land part of the coastal area and does not include the ocean. The notification imposed restrictions on the setting up and expansion of industries or processing plants etc. in the said CRZ. CRZ along the country has been placed in four categories :

- CRZ-I : ecologically sensitive areas like mangroves, coral reefs, biosphere reserves etc.
- CRZ-II : built-up area of villages and towns are that are already well established
- CRZ-III : Rural and urban areas that are not substantially developed
- CRZ-IV : water areas up to the territorial waters and the tidal influenced water bodies
- A separate draft Island Protection Zone Notification has been issued for protection of the islands of Andaman & Nicobar and Lakshadweep under Environment (Protection) Act, 1986.

4. Demographic Details

- Location: Dhanuskodi, Rameshwaram, Tamil Nadu
- Municipal: Rameshwaram Municipal Corporation
- RMC area : 2.36 sq.km
- RMC population : 6000 persons (Census 2011)
- Literacy rate: 45%
- Species : sea grass (11 species), flora and fauna (3600 species), hard coral (117 species), marine turtles (5 species)

CASE STUDIES :

Comparative Analysis And Inference

Since no project of an interpretation centre for marine and coastal life has been constructed till date, so I have bifurcated the topic and looked at different case studies as per the requirements of my thesis project. All these case studies are directly related to marine and coastal life :

A) *Coastal and Marine Biodiversity Centre, Airoli, Mumbai (live case study):*
This case study was done to study the Interpretation Centre. The overall circulation between the spaces is the most important design element that should be considered while designing the centre's digital interactions and spaces: coastal zone, marine zone, audio-visual space, souvenir shop, admin, private space.

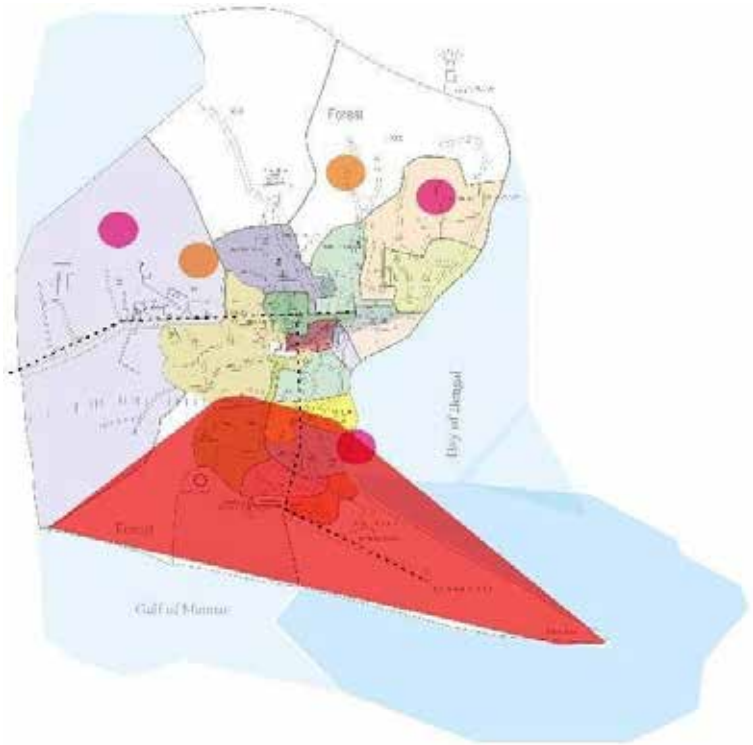
B) *CMFRI Research Centre, Mumbai and Mandapam (live case study) :*
This case study was done to study the research centre. This is the most private space of the overall zoning. Interrelation between different spaces will be the most important here, with centralized circulation and spaces: scientist cabin: head scientist and junior. scientists, computer laboratory, technical lab and scientist, admin., library, instrumental library (dust-free zone), gas lab, store, fishery environmental lab, technical staff

C.) *Karvlovac Freshwater Aquarium and River Musuem (literature case study) :*
This case study was done to study the aquarium. The centre of the aquarium building defines a square area. The aquarium and the square are intercepted by three pedestrian routes dividing the building in the following spaces : exhibition space, reading room, a café bar, office spaces, public space, aquarium, service block

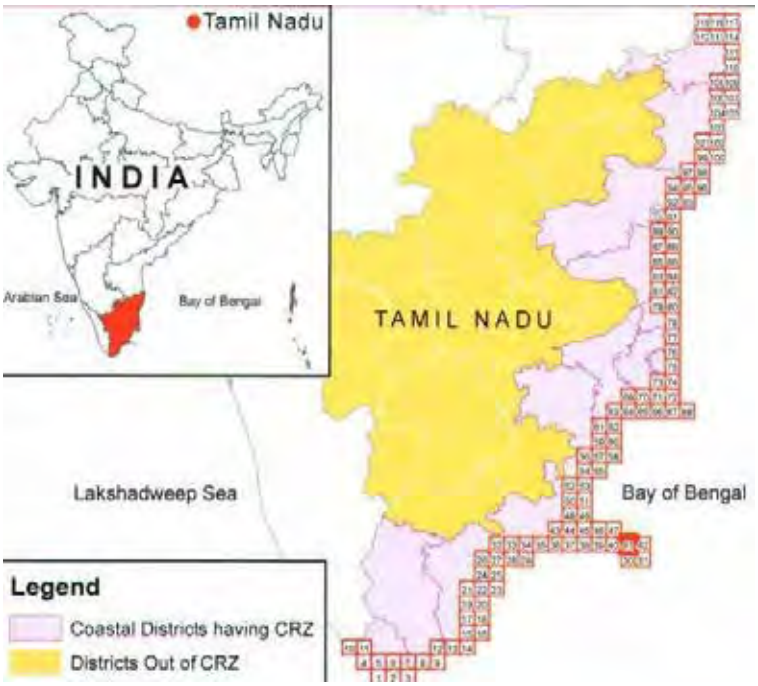
D) *Environmental Interpretation Centre (literature case study) :*
This case study was done to study the centre and services. The floating walkway is the unifying element that links all the rooms : exhibition rooms, display gallery, admin., gift shop, auditorium and OAT.

Purpose and Need of the Project

The Interpretation Centre will serve the purpose of recreation, as well as education, or a platform for education through entertainment. It aims to be a contributor and disseminator of knowledge that creates public awareness about the marine environment, which is critical to the well-being of the nation's ecology. For researchers and research institutes, it provides vast research possibilities, which is not only beneficial for them but helps to get hands-on experience and provide conservation possibilities for the species.



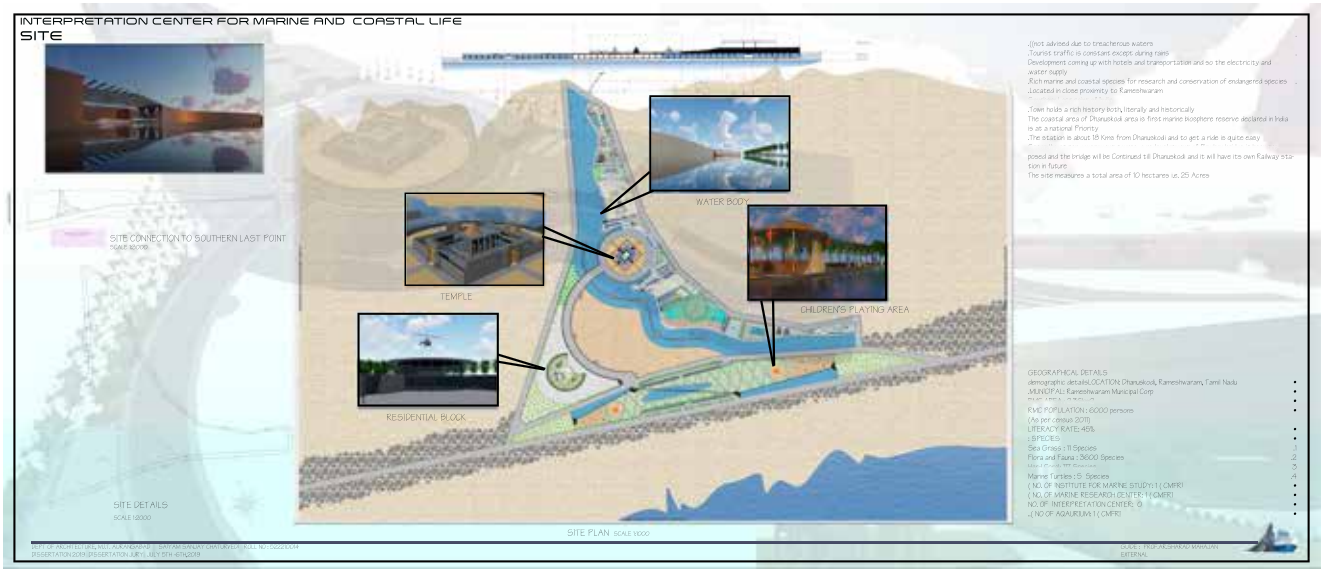
Land use map
(Source: Author)



Coastal zone management plan for Rameshwaram
(Source: CRZ Kerala website)

Objectives of the Design Project

- To support the Rameshwaram Municipal Corporation in conceptualizing the Marine Interpretation Centre for the dissemination of the information of marine resources of Tamil Nadu State.
- To show ways and means to improve the conservation and sustainable use of biological diversity along the coast, with consideration to the economic importance of the coastal zone for large segments of the population. The project's approach is people-centred, thus ensuring the acceptance of conservation by those directly affected.
- To improve the sustainable and conservation use of biological biodiversity in the pilot protected areas while taking into account the economic well-being of the local population.
- To design a space which is economical and will sustain itself.
- To give a space for research scientists for research on species with an orientation towards education and awareness.
- Taking initiatives to observe various environmental days, and organize seminars, symposiums and meetings
- Create mass awareness and educate visitors
- To develop the space over the land of Dhanushkodi will increase the tourism value.



Site Plan: (a) Main block (b) Temple block (c) Children's playground (d) Residential block
(Source: Author)

Dhanuskodi

The site selected is at Dhanushkodi which is the southernmost point of India, measuring a total area of 10 hectares i.e. 25 acres. The present station is about 18 km from Dhanuskodi. However, according to government sources, a redevelopment of Pamban bridge has been proposed and the bridge will be continued till Dhanuskodi and it will have its own railway station in future. Dhanuskodi also is a pilgrimage place worshiped by devotees, who bathe in the ocean (not advised due to treacherous waters). Tourist traffic is constant except during rains. Development coming up with hotels and transportation and so the electricity and water supply. Rich marine and coastal species for research and conservation of endangered species. It is located in proximity to Rameshwaram.

Sea Analysis: Surface wave characteristics around Dhanushkodi are studied based on the measured data in the Gulf of Mannar and in the Palk Bay. Wave spectra are mainly double-peaked in the Gulf of Mannar and single-peaked in the Palk Bay. High waves (maximum wave height up to 5.4 m) are observed in the Gulf of Mannar compared to the Palk Bay (maximum wave height is 3.6m). All these factors were considered during the development of the project as follows:

a. Plinth level of the project was taken on a more certain height as compared to the standard plinth height,
b. The drainage of the project was developed to have a natural slope as of the natural terrain of the site for the natural flow of sea and rainwater.
c. Retaining walls were planned to stop the access to water during high tide.

Drainage: No water Supply by the government.
Electricity: No electricity supply.

Design Proposal

The government of Tamil Nadu in 1986, declared the 21 islands and surrounding shallow waters covering an area of 560 sq.km as a Marine National Park for the purpose of protecting marine wildlife and its environment. This thesis is aimed at creating an Interpretation Centre for coastal and marine biodiversity at Dhanuskodi. It shall comprise a designed and planned campus, with collaboration amongst the local people, scientists, researchers and visitors. The transition among spaces is free-flowing under a single roof, creating least disturbance at the site.

Physical Manifestation

The site comprises 25 Acres. The design shall be divided into five zones. All the functions and spaces developed are necessary and required to create a holistic, creative, multi- functional environment.

From the above case studies, the derived program is divided mainly into 3 functions:

- Primary Function: interpretation centre
- Secondary Function: research centre and aquarium
- Tertiary Function: sale, library, educational orientation, residential facility.

Zoning

i. Administration and Collaborative Zone: This is centrally located in the main building block, so that the visitors can access easily. Administration shall host both the administrative offices maintaining its private offices/ spaces of the Interpretation Centre. The collaborative spaces are accessed from the central activities.
ii. Educational Zone: The Interpretation Centre shall be designed to host the curriculum for researchers and scientists globally. School and college students can explore through different collaborative spaces like a museum, audio- visual halls, auditoriums, workshop spaces, aquarium, etc. the spaces are organized to educate people of all ages towards marine and coastal life with its importance and how to protect them.

Site Plan : (b)
(Source: Author)

Site Model
(Source: Author)

iii. Research Zone: This shall comprise of seminar hall, conference room, six scientists' cabins, fishery-environment lab, computer lab, technical lab, directors cabin, research lab, dust free deposits, gas lab, instrumental lab, storage, cafeteria with kitchen, cold storage and administrative spaces, etc. with courtyards with water as design feature so as scientist can relatively work with hands on experiment.

iv. Residential Zone: The Interpretation Centre shall be equipped with accommodation for all users: scientists, researchers and for tourism as well. The residential block comprises four dormitories and thirty single-bedded rooms. A VIP guest-house is planned on the upper floor with a helipad so that the guests can easily access the residential units by achieving privacy.

v. Recreational Zone: The Interpretation Centre shall comprise courtyards as one of the main design elements with semi-covered pergolas. Water -bodies with plantations shall be planned in relation to courtyards within the building blocks. Separate cafeterias and restaurants shall be provided in every zone and maintain privacy.

Spatial Organization

- The development of concept and zoning was a hand-in-hand process, to create a connection between site, nature and built and unbuilt spaces ,set in order and hierarchy in their relationship.
- The site is divided into two main parts by the water body flowing towards the sea and then merged. One zone has the main building block and another has a residential block and open landscaped area separated by the approach road.
- The main building block is further zoned into three parts, namely: administration and collaborative centre, the research cell and the sales area. All activities have been planned according to the hierarchy of the public access to the site when it shall be functioning.
- The Interpretation Centre is a place where one can get to know and see the marine and coastal life and its stunning aspects more closely. The Centre is equipped with special features like digital screening, sound sensors, etc. to make it successful and attract visitors. It consists of an underwater aquarium which provides a unique atmosphere to the visitors. A museum of marine and coastal species is on the ground level, whereas the aquarium is below that. The aquarium articulates the relationship between nature, human biology and the design of the built environment. A maze-like pattern which forms the planned circulation of the aquarium gives a break to the continuity, which adds interest to move around with enhanced curved pathways and width of the corridor.
- The library is another major part of the Interpretation Centre, where experiments and research done by scientists and their published research papers are accessible for and reference. The deposits of marine and coastal life stored after the experiment are also on display.
- The residential block shall be nestled with the dense vegetation on the southern side of the site and shall have privacy through the green space used between every room. The residential block has internal courtyards as interaction space centrally with sittings.
- The temple also symbolizes the life cycle of every living being. It became an iconic landmark of the Interpretation Centre and can be identified as monumental.

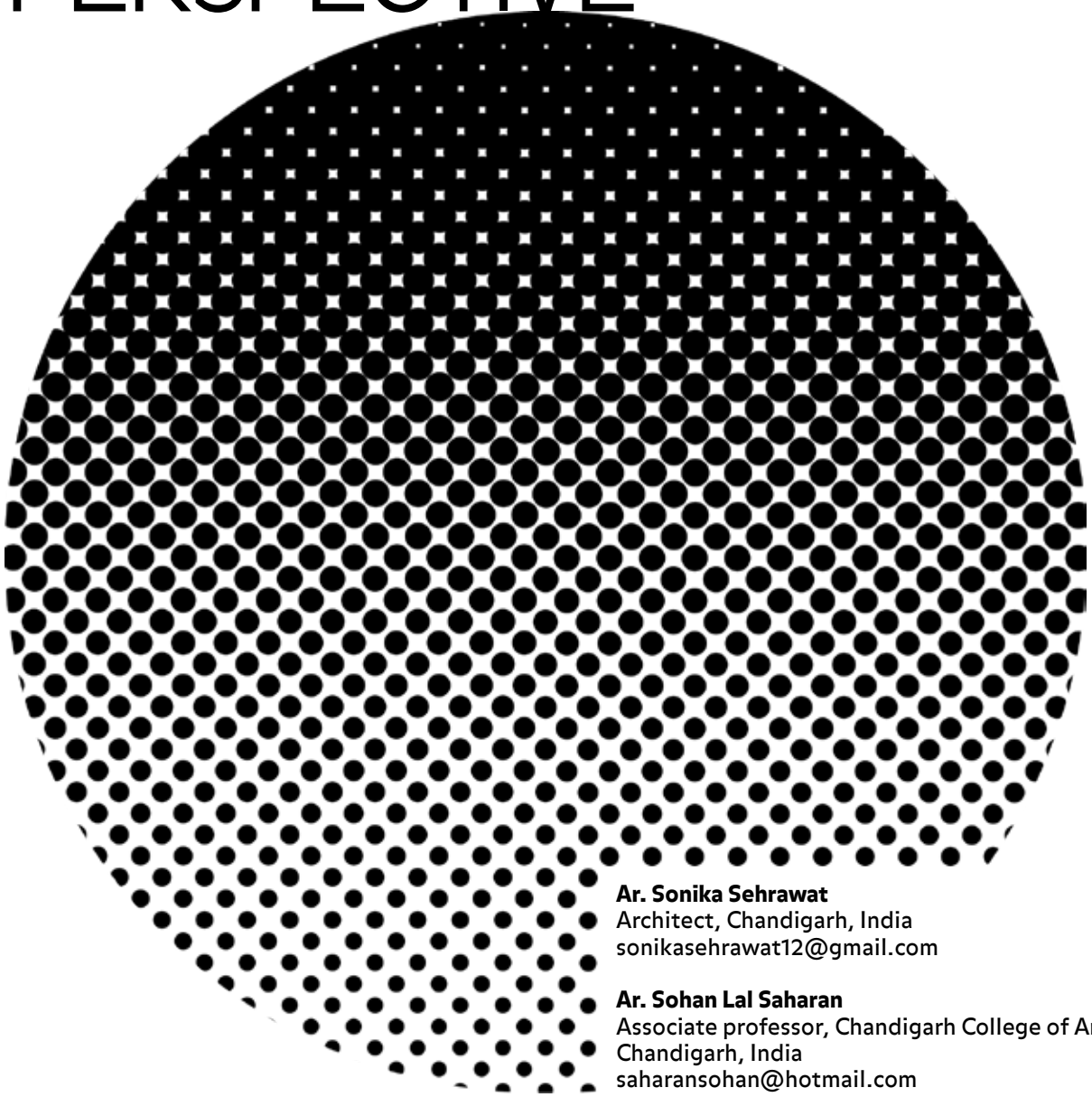
BIBLIOGRAPHY

https://www.nationalgeographic.com/environment/habitats/ocean/
http://www.thedynamicnature.com/earth/factors-influencing-coastal-landforms.html
http://www.coastalwiki.org/wiki/Marine_Biodiversity
https://www.researchgate.net/publication/321062330_Marine_Tourism_in_India_A_Journey_towards_SustainableDevelopment
https://earth.usc.edu/~slund/oceanography/topic1/topic1.html
http://vikaspedia.in/energy/environment/biodiversity-1/the-coastal-ecosystem
https://slideplayer.com/slide/12495816/
https://upsctree.com/2017/05/22/environment-coastal-marine-ecosystems-india/
https://www.un.org/Depts/los/oceans_foundation.html
http://archive.boston.com/bostonglobe/ideas/graphics/20100530_ocean
https://en.wikipedia.org/wiki/Dhanushkodi
https://ramanathapuram.nic.in/departments/agriculture/
https://issuu.com/abusafwan0/docs/abu_safwan_thesis_report
https://igbc.in/igbc/html_pdfs/abridged/IGBC%20Green%20Campus%20(Pilot%20Version%20with%20First%20Addendum%20_%20January%202017).pdf

Saiyam Sanjay Chaturvedi is a B.Arch. graduate (2019) from Dr. BAMU Aurangabad University. He is currently the Principal Architect for his firm *Studio Aakruti* and Associate Architect with a firm at Akola, Maharashtra. This Final year Thesis *Interpretation Center For Marine And Coastal Life,* guided by Prof. Sharad Mahajan, is the study of the issues of marine and coastal resources and species and their importance in the world's ecosystem. His interests include sustainable environmental designing and urban design.

Prof. Sharad Mahajan is an architect and has done his Masters in Urban Design From SPA, Delhi. With more than 34 years of experience, he has been the Principal Architect for his firm *Nadkarni Mahajan and Associates.* He is also Professor at the Dept. of Architecture, MIT Aurangabad, Maharashtra.

REVITALIZING NEIGHBOURHOOD OF SECTOR 22 OF CHANDIGARH FROM A CHILD-FRIENDLY PERSPECTIVE



Ar. Sonika Sehrawat
Architect, Chandigarh, India
sonikasehrawat12@gmail.com

Ar. Sohan Lal Saharan
Associate professor, Chandigarh College of Architecture
Chandigarh, India
saharansohan@hotmail.com

ABSTRACT

Chandigarh, the city beautiful, was designed to be unfettered from traditions of its past; at present Chandigarh is the city with the highest density of vehicles in the country and is facing challenges like the degraded quality of open spaces at the neighbourhood level, car dominance in the residential area leading to encroachment of green spaces, increased traffic and pollution. As a result, the users, especially children are deprived of safe and easy access to green spaces and lack opportunities for independent play and mobility. The aim is to understand the needs and challenges of urban childhood. Sector 22, the model neighbourhood was selected for the case study and the results of the analysis are discussed. It is concluded that to maintain the beauty and spirit of one of the best experiments of urban planning and architecture of modern and independent India, its users should be prioritized during various stages of development.

Keywords: *neighbourhood planning, accessible and inclusive, independent mobility, active neighbourhood*

1. INTRODUCTION

Urban planning has its roots in the creation of spaces that children and families can use effectively. Chandigarh, planned by the French architect Le Corbusier, is known as one of the best experiments of urban planning and architecture of modern and independent India. Chandigarh, the city beautiful, was designed to be unfettered from traditions of its past. The plan incorporated Le Corbusier's principles of light, space, greenery and metaphors of human beings which were employed in the plan.

From its original idea of a city, with various hierarchies of open spaces, to a city at present, with its degraded quality of open spaces at the neighbourhood levels is facing urban issues, like car-dominant neighbourhoods, increased traffic and rapid population growth and encroachment of public spaces to accommodate vehicles in residential areas. Having two vehicles per household, Chandigarh is a city with the highest density of vehicles in the country. Because of these challenges, the users, especially children are deprived of safe and easy access to green spaces and lack opportunities for independent play and mobility that is crucial for their holistic development (Figures 1 & 2).

This dissertation aimed at understanding the needs of children in an urban neighbourhood and the elements of urban environments that result in decline of physical activity and to provide solutions to problems identified in the existing setting. Sector 22 was selected as the site for implementation of the research and design, as it was the first neighbourhood to be built in Chandigarh and this was to serve as a modal reference.

Child-friendly urban planning and design is an evolving set of ideas about shaping cities so that children are active and visible in the daily life of urban streets, parks, squares and other public spaces (Aggarwal, A., 2020). The objective of the study was to provide opportunities of easy and safe access to open spaces. It was understood that it is important to increase the walkability of neighbourhood, provide diversity of open spaces for all in order to ensure the safety of children. Traffic-calming strategies were introduced and child routes were designed. The dissertation primarily focused on promoting physical safety activity of children by creating safe - playful streets and outdoor spaces. The Study does not include existing built up spaces for revitalizing the neighbourhood.

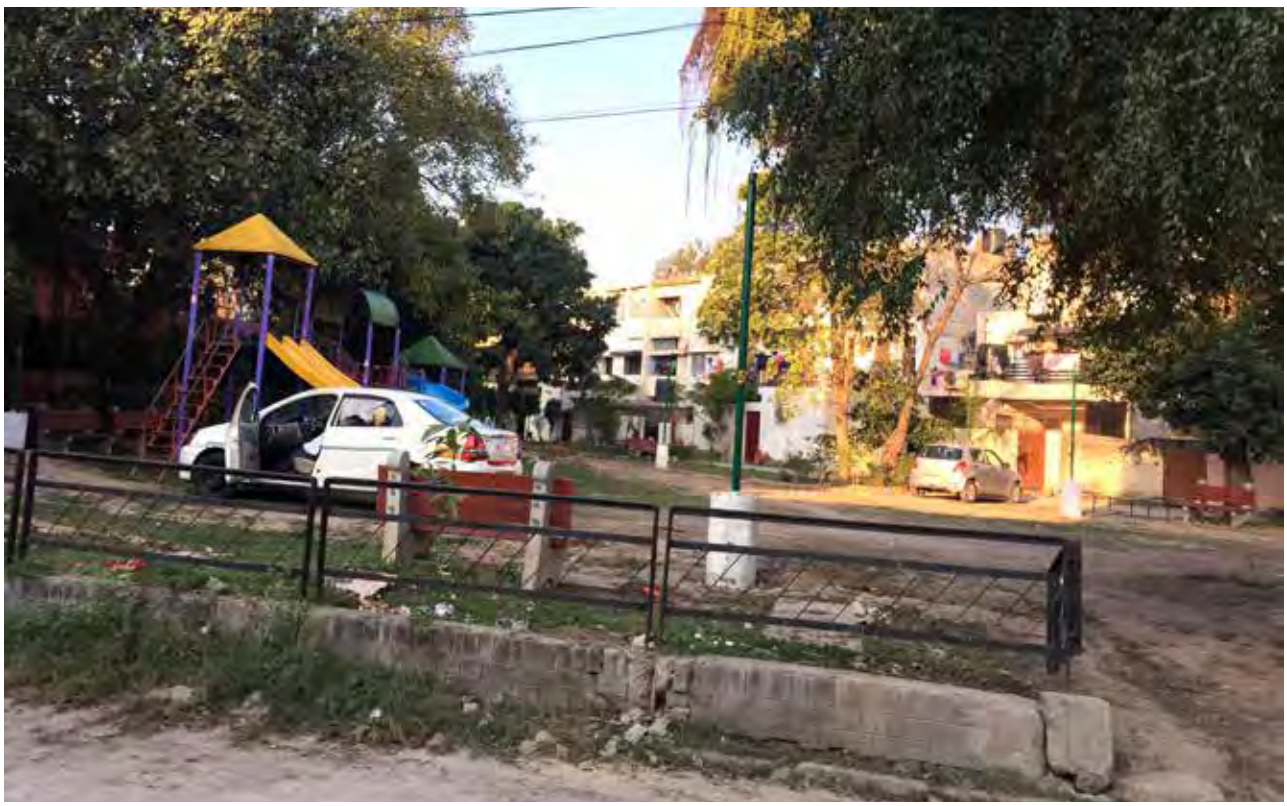


Figure 1: Open spaces occupied for car parking *(Source : Author, 2019)*

Figure 2: Open spaces occupied for car parking *(Source : Author, 2019)*

2. METHODOLOGY

(A) Theoretical study:

To understand the relationship between urban environment and a child's wellbeing, existing literature helped in establishing a generic understanding of the topic. Case studies helped in establishing a statement that urban environments designed to consider needs of children not only were helpful for them but yield benefits for other generations as well and contribute to the overall activeness of the neighbourhood. The three case studies were: (i) Kindlint, Amsterdam (ii) Neighbourhood of Vauban, Freiburg (iii) Building blocks for a child-friendly Rotterdam, Rotterdam, The Netherlands.

(B) Empirical study:

- A survey in the form of semi-structured interviews at the selected site, that is Sector 22, was conducted to understand parents' perception of children's safety in the urban realm. Parents' interviews included questions related to key parental license and parental concern while allowing children to go outdoors, etc. Children were asked about their likes and dislikes in the neighbourhood from a given set of options.

- The streets and open spaces of the site, Sector 22 were assessed on three parameters : (i) safety (ii) accessibility (iii) playful and inclusiveness.

3. RESULTS AND FINDINGS

1. From each case study, a strategy of Link- Limit-Segregate was developed with reference from the Link-Limit-Share Street approach provided in Design Guidelines by Bernard Van Leer Foundation (Table 1):

- Link - key destinations that are frequented by children and their caregivers
- Limit - traffic
- Segregate- type of traffic, dedicated pedestrian and cycle tracks

Table 1: **Link-Limit-Segregate, Learnings from case studies**
(Reference source : Design Guidelines, Building Neighborhoods to Thrive In, Bernard Van Leer Foundation, 2018)

Strategy	Link	Limit	Segregate
Area of Concern	Key destinations	Traffic	Types of traffic
Case study	Kindlint, Amsterdam	Vauban, Freiburg	Rotterdam, The Netherlands

2. From the survey it was noted that children liked parks the most in their neighbourhoods, while speeding cars and strangers were identified as the most-disliked elements. Traffic danger is the aspect that most concerns parents while allowing their children to go outdoors and traffic crossings are key areas of parental license for their children. Majority of parents agreed that they were allowed to explore their neighbourhood more than their children.

3. Open spaces and streets were analyzed and categorized (Figure 3) as shown in Table 2.

4. DISCUSSION

By 2030, 40.76 % of the country's population is expected to reside in urban areas, a large portion of which will be below the age of 18 (UN Habitat, 2016). This makes it crucial for city planners and architects to consider the needs of our youngest citizens in the planning and design of cities. Issues such as increasing traffic, lack of outdoor play space and inadequate family-friendly apartments are the ones that are often neglected in our rapidly-urbanizing environments.

This study explored existing literature on the subject and assessed the selected site on the understating developed

Figure 3: plan of sector 22, Chandigarh, showing categories of open spaces Green: Active, Yellow: Auxillary, Red: Non-active
(Source : Author, 2020)

Table 2: **Assessment of open spaces**
(Source: Site analysis by Author)

Non- active spaces	Auxiliary spacesA	ctive spaces
These areas do not have presence of residents. Such areas are also not maintained. Some of the areas are too small to host activity.	This area has undefined green areas having irregular geometry. Because of less care they are easily encroached. They are often smaller in size and poorly located.	These are sector level green spaces that are comparatively maintained and are actively being used by a mix of users.

Table 2: **Assessment of street**
(Reference Source : Made by Author on the basis of indicators provided in Design Guidelines, Building Neighborhoods to Thrive in, Bernard Van Leer Foundation, 2018)

Type of Street	ParametersA	ssessment
Safe Streets	Protective elements from traffic	No
	Crossings	Yes, but haphazard at certain areas, not legible for children
	Segregation of use	No
	Children WayFinding	No
Accessible Streets	Inclination rampsN	o level difference as such
	Shading elements	Yes
	Continuous borders	Not on V5 (internal road)
	Accessible furnitureN	o
Playful and Inclusive Streets	Playful FurnitureN	o
	Sidewalk gamesN	o
	Pop Up playing	No

from it. The literature highlights the importance of incidental play and independent mobility for the overall development of children. The case studies showed how child-friendly environments can be achieved. It is important to consider the needs of children to make neighbourhoods inclusive of all.

The case study of Kindlint, Amsterdam, highlights that play does not only occur at particular destinations alone, playgrounds, community centres, for example, but also enroute to these places. Kindlint connected key destinations of the neighbourhood and was segregated from motorized traffic. In the neighbourhood of Vauban, Freiburg, the emphasis was on making the neighbourhood car-free. This is referred as an environmentally sustainable, liveable neighbourhood with a strong emphasis on well-designed, accessible green public space. Good walking and cycling networks make it almost car-free. Rotterdam is working on becoming a sustainable city where children have room to grow. As part of a *Child-Friendly Rotterdam* initiative, the city planners developed an urban planning method called *Building Blocks for a Child-friendly Rotterdam,* which can be used to identify the strengths and weaknesses of neighbourhoods.

To understand contextual issues, Sector 22 was assessed on parameters of child-friendliness (Table 3). Even though open spaces were available, their purpose was not served. Limited spaces were active and were maintained. Interestingly, more than 90 % of parents agreed that they were allowed to explore neighbourhoods on their own, more than they allowed their children to do the same. Traffic was a major contributor to this parental perception.

5. CONCLUSION AND RECOMMENDATIONS

This study understands that it is people that should be prioritized during various stages of developments and not the vehicles. In order to achieve healthy, inclusive, accessible neighbourhoods and spaces, public transportation needs to be improved with last-mile connectivity.

A Good City is one in which children can grow and develop to the extent of their powers; where they can build their confidence and become actively engaged in the world; yet be autonomous and capable of managing their own affairs."

Kevin Lynch, Growing Up in Cities, 1977

Acknowledgment

This study was conducted as part of the M.Arch. dissertation (2018-2020) at Chandigarh College of Architecture (CCA), Chandigarh. I wish to acknowledge the support extended to me by the faculty members of CCA. I thank Prof. Sohan Lal Saharan for his valuable inputs during this study and helping me stick with the subject.

REFERENCES

1
Aanchal, Aggrwal (2020). *Reclaiming Children's Space, Child friendliness: A Way Forward to Building Resilience.* Retrieved December 2, 2020 from https://issuu.com/aanchalagrawal/docs/a_agrawal_ab947_thesis.

2
Krishnamurthy, Sukanya; Steenhuis, Chris; Reijnders, Daniek; Stav, Tamy. (2018). *Building Neighbourhoods To Thrive In : Design Guidelines.* The Netherlands: Bernard van Leer Foundation. Retrieved July 7, 2019, from https://bernardvanleer.org/app/uploads/2018/05/Child-friendly-urban-design.pdf.

3
Lynch, Kevin. (1977). *Growing Up in Cities.* MIT Press.

4
PTI (3 Oct. 2017) Indian children have less opportunity to play outdoors than their parents had. *Hindustantimes.com.* New Delhi. Retrieved from : https://www.hindustantimes.com/fitness/indian-children-have-less-opportunity-to-playoutdoorsthan-their-parents-had/story-eLv8vYtoPjBUBboh29hOHP.html.

5
Urban 95 (2018). *Building Neighbourhoods To Thrive In : Design Guidelines.* The Netherlands : Bernard van Leer Foundation. Retrieved from https://smartnet.niua.org/sites/default/files/resources/cfn_-_design_guidelines.pdf.

6
UN Habitat (2016). *Urbanization and Development: Emerging Futures,* World Cities Report. Nairobi, Kenya. Retrieved August 6, 2019 from https://unhabitat.org/sites/default/files/download-manager-files/WCR-2016-WEB.pdf.

7
Wright, Hannah; Williams, Samuel; Hargrave, Josef; zu Dohna, Felicitas. (2017). *Cities Alive : Designing for Urban Childhoods.* Retrieved July 7, 2019 from https://www.arup.com/-/media/arup/files/publications/c/cities_alivedesigning_for_urban_childhoods.pdf.

Ar. Sonika Sehrawat is an architect with an interest in sustainable urbanism, accessible and walkable neighborhood planning. Her post-graduation thesis project at Chandigarh College of Architecture aimed to create a child-friendly, walkable, and socially active neighborhood. She also volunteers at Placemaking, a global platform committed to creating healthy and inclusive communities.

Ar. Sohanlal Saharan is Associate Professor at Chandigarh College of Architecture. He has more than thirty years of industry and academic experience.

CALL FOR ARTICLES PROJECTS & PAPERS

Journal of the Indian Institute of Architects invites original and unpublished contributions from members (academicians, practitioners and students) under the three categories given below.

In order to be accepted for publication, all material sent in these categories should be sent in the following components:

❶ MS Word document file with text only. Please do not format it in anyway. The numbered captions for all the images will also be in this document.

❷ Folder with all images (minimum 300 dpi), numbered according to the captions given in your text file

❸ Photograph of the author/s (minimum 300 dpi)

❹ Author biodata – Maximum 50 words.

❺ PDF (optional)– showing the intended layout. This pdf should include text and all images, with numbered captions.

Category 1

Essays, interviews, articles (1500- 2500 words) and book reviews (600 and 750 words) in the areas of architecture, planning, urbanism, pedagogy, heritage, technology, ecology, theory and criticism, visual design, practice or any other relevant subject pertaining to the built environment. (Details of the format will be available on the JIIA website given below).

• For a design project, please include the "Fact File" with the following details : Project Name, Location, Plot area, Total built up, Structural consultants, Project completion. Also please give the photo captions and credits. Please ensure that the image is referred to within the text. For eg, "As seen in Figure 1…". This is essential for the layout.

• For design projects, plans and sections of the project are desirable along with the photographs.

• Further, it is important that along with the manuscript, we receive an undertaking from you that the stated architect/ architectural firm is the author of the architectural projects mentioned in the article, and that IIA and JIIA is in no way responsible for any matter or dispute arising out of the publication of the same.

Category 2

Summaries of dissertations (2000-3000 words)at the level of B.Arch. & M.Arch., and theses at the Ph.D. level. The Guide for that work will be mentioned as the Co-author. (Format will be available on the JIIA website given below)

Category 3

Research papers (2000-5000 words) in the prescribed format. The research may be based on their ongoing or completed research. (Format will be available on the JIIA website given below). All contributions in this category will be peer-reviewed before being accepted for publication by conducted by academic experts of repute.

Category 4

Contributions from Chapter Correspondents

(a) *Chapter News:* This includes various interesting activities from the Centres of your Chapters (maxm. 500 words for the news from the *entire* Chapter). All material sent should be sent in the following two components :

❶ MS Word document file with text only. Please do not format it in anyway. No pdfs will be accepted. The numbered captions for all the images will also be in this document. This should NOT contain any images.

❷ Folder with all images (minimum 300 dpi), numbered according to the captions given in your text file.

(b)*Projects:* Identify outstanding architectural projects of members and send them to JIIA Team to consider for publication. (Please follow the design project requirements as given in Category 1)

© *Obituaries :* Obituaries of IIA members should consist of the photograph of the departed soul, the dates of birth and death and a short 50-word note.

Note

❶ Please email all papers and articles through the Chapter / Centre or directly to jiiaeditorial@gmail.com.

❷ Format is available on the JIIA website :

https://indianinstituteofarchitects.com/wp-content/uploads/2021/06/Doc_for_Call_for_articles__projects_and_papers__10.6.2021_.pdf

DIALOGUE
AR. HAFEEZ CONTRACTOR
The Architect who changed the Skyline of Mumbai

Ar. Leena Kumar

Ar. Hafeez Contractor is a graduate from the Academy of Architecture, Mumbai, and a post-graduate from the Columbia University, New York. An architect who started his firm in 1982 with 3 people, now has an establishment with over 550 employees. He is the winner of over 75 national and international awards for excellence in architecture and has twice been included in India Today's list of Most Powerful Indians. He is the recipient of the Padma Bhushan in 2016, the third highest civilian award in India. His dream is to provide a house for every Indian. We present Ar. Hafeez Contractor (HC), the architect who changed the skyline of Mumbai, in conversation with Ar. Leena Kumar (LK).

Bharti Airtel, Udyog Vihar, Gurgaon, Haryana

Ar. Leena Kumar (LK): You have been in practice for many years now, and are one of the largest practices in the country, touching many lives. What would you consider some of your biggest contributions to architecture?

Ar. Hafeez Contractor (HC): I gave architecture a new look, a new form, along with its functionality. When I entered the industry of architecture, I observed that 90 % of the housing in the western region, with the construction of RCC with brick and plaster walls, was unable to withstand the incessant monsoons, and therefore always remained damp and leaking. I set out to correct this by shielding the exterior wall with a screen wall in front. This simple solution, not thought of nor implemented till then, gave to its occupants a healthier building and thereby a healthier life. Subsequently, many buildings started implementing the idea that germinated from my designs, in mass housing. It was simple out-of-the-box thinking at that time.

Secondly, I introduced the scheme of slum redevelopment. Working round the clock for a month, I did a study of all the slums of Mumbai. I then recommenced the concept of slum redevelopment to the government with an additional incentive that for every one square foot of area built to rehabilitate slum dwellers, the builder gets an equal additional area of one square foot to build and sell. The proposal became a workable proposition to all the stake holders- the slum dwellers, the builder, the government. And the concept was concluded and replicated several times thereafter. I did receive criticism from some quarters for my proposal, but the success of the design is evident in the actions of the habitants who were extremely happy with what they received and welcomed us with an aarti at their bhoomi pooja. I consider this one of my most satisfying achievements. I changed so many people's lives. And the idea of slum redevelopment caught on.

Thirdly, I impressed on the need for high-rises in India with a higher FSI. I calculated the land area of Mumbai city, the number of people living in the city as per the latest population census, and arrived at a FSI of 8 to accommodate all its citizens at an area of 500 sft for a family of five. It is our responsibility to provide hygienic shelter for every citizen, and this cannot happen without a higher FSI.

I remember my early practice in the 1980s, when the building bye-laws were more about ground coverage with G + 3 storey buildings. I pioneered the shift in thinking, to considering a higher FSI, thereby providing more open land for its occupants to use for recreational activities. And with that conviction, the design of Gurgaon came to being. I was instrumental in the policy shift to permit high rise constructions in Gurgaon under the Bhajan Lal government.

BITS Pilani

Hiranandani Township, Powai

DLF Magnolias, Gurgaon

Fourthly, I changed the regime of architecture in the country. I brought in a new aesthetic, a new form, a new functionality, and entered the real battle field of residential accommodation I entered a space that architects were afraid to enter- the zone of the developer. My early buildings with developers changed the concept of housing all over India. In 1982-1983, India Today proclaimed a sudden change in the housing industry. The iconic Hiranandani Gardens, a residential township in Powai, redefined the standards of living. I raised the bar and led the way, and Indian housing changed.

The big dons of architecture kept away from developers, whose projects comprised almost 90 % of the housing for the nation. That is the real space of architecture where you can make a difference. The big names do institutions, housing with terraces, (or no housing at all), townships for institutions. The rest, that forms the majority, is left out.

These are some of my biggest contributions to the architecture of India that changed the dynamics of the Industry itself.

LK: Do you think architecture as a profession has the power to change the behaviour of people?

HC: Indeed, it does. My slum redevelopment projects are a testimony to that. Before they were given pucca houses through the redevelopment project, the slum-dwellers were living in make-shift accommodation that had no sanitary facilities. Attending to the call of nature in the nights was a difficult proposition.

Open spaces, landscaped spaces facilitated by larger FSIs gave large areas for public interaction and play.

I believe that land and its proper and effective usage is a very important aspect of sustainability that is overlooked and never measured. Once fertile land is destroyed by the urban sprawl, it cannot be regenerated. This, the efficient use of land, can be a very major contribution of architecture and its related fields towards sustainability.

Having said this, Indians do not appreciate good architecture. Our news reports fashion, glamour, and clothes with great zest. But good architecture, sanctions or proposals of upcoming projects, hardly make the news and are rarely discussed. As a people, we don't appreciate buildings as yet, except those from the past.

LK: Do you think the pandemic will have an effect on the architecture for our people? Are clients/ builders seeking some change?

HC: Change will happen only through governmental and municipal directives. It must be administratively-driven, policy-driven. Without that, the change will be miniscule, if at all.

LK : How would you visualise our cities of tomorrow?

HC : Oh, wonderful! Tomorrow's cities should be dense and high-rise and built on non-agricultural land. India has a

Imperial 1 & 2, Mumbai

ONGC Green Building, Dehradun

population of 1.3 billion and very soon expected to hit 1.8 billion people. Cities are expanding and expanding. More than 60 % of our people in cities live in unhygienic conditions. Our urban policies are bad. The land use pattern of India today is, very broadly speaking, 60 % villages and agriculture, 22 % forest cover (though actually it may be only 17 %) 11 % urban area and 7 % water.

By expanding metropolitan areas to house the ever-increasing population of urban India, we would be gobbling up villages and agricultural land, creating an imbalance in the food supply chain. We need to preserve farm lands, increase forest cover and water bodies. We need to densify urban areas, with higher FSIs even up to 10 or 20, to have a 50 – 50 ratio of built- up and green lung space in cities. Cities should have a layered distribution of activities with underground mass transit systems. Sites for development should be 20 to 30 acres each to cater to the collective requirement of living. Social housing should form an integral part of the future city, and airports should move out of the city. Our cities must very shortly accommodate 1.3 billion people to live and work in, at the given rate of urbanisation in our country. Government policies must change to take care of our population. Future cities would be designed to withstand hurricanes, earthquakes, floods. That is how I would like to see our cities of tomorrow.

LK: Concrete has been our major construction material do you think we are ready to change to other materials like steel?

HC: We began with R.C.C. construction with the initial grades of concrete up to M20, and now we have high strength concrete grades of M70. We will soon have carbon concrete that will allow us to build up to 200 floors. If steel construction comes with advantages that suit us, the industry will embrace it. There are many new materials that will enter the Industry. We must adapt to what is suitable for us and change with the times.

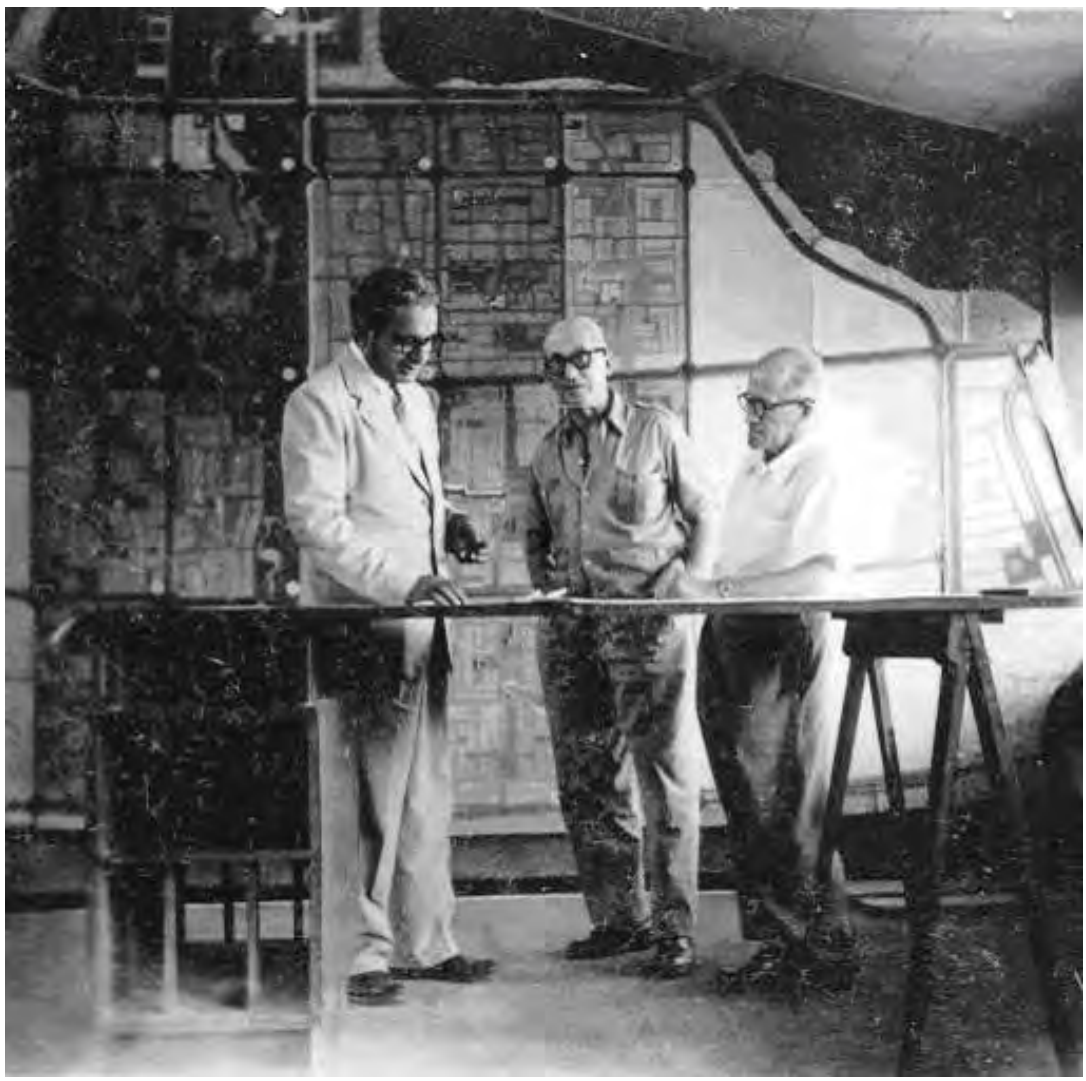
LK: Do you have any architectural heroes?

HC: No, I do not have any one particular hero – I have learnt from all the masters and their works. Neither do I dislike any architect- each has some learning to impart, and the good from every architect has a lesson to teach.

Ar. Leena Kumar is the principal architect of Kumar Consultants, Bangalore, a practice of three decades. In her own words, "Life is about relationships. Relationships with people, with ideas, with spaces, with nature, with your talents, with work. And life is essentially very simple. The difficult part is to keep it simple." Her practice is firmly rooted in this idea. Her firm has worked through projects of hospitality, residential, industrial, institutional, public and health care. She is at present the Jt. Hon. Secretary of the IIA National Council.
kumarconsultants2020@gmail.com

LE CORBUSIER'S CHANDIGARH
THE ANATOMY OF A CITY

Ar. Kamal Passi



Le Corbusier (Centre) with Pierre Jeanneret (Right) and PL Varma (Left) at Le Corbusier Centre at Chandigarh
(Source : Le Corbusier Centre, Chandigarh)

Outdoor Teaching Arena in a Govt. School in Chandigarh
(Source : A still from a 1966 Documentary by Alain Tanner)

The year is 2016. We receive a WhatsApp forward that Chandigarh's Capitol Complex along with other Architectural works of Architect Le Corbusier have been inscribed on the UNESCO's World Heritage List. Given the times, receiving Social Media forwards like UNESCO adjudging the Indian National Anthem as World's Best National Anthem or NASA releasing Satellite Images of India on the night of Diwali, was a pretty common thing. So, I wouldn't be surprised that many (non architectural) people might have considered it a fake forward and yet went on forwarding it anyways along with their Good Mornings and Have a nice day forwards. But the news indeed was true. The entire city of Chandigarh was elated when it was announced that Swiss-French Architect, Le Corbusier, and his oeuvre of seventeen buildings spread across seven countries, would be inscribed on the United Nations Educational, Scientific and Cultural Organization (UNESCO)'s World Heritage List. This almost elevated Le Corbusier's status from a Modern Master to a Saint. No other architect had been so completely enshrined on UNESCO's list (with the possible exception of Antonio Gaudi and FLW later in 2019). And mind you, this guy already has a Bank Note dedicated to him in Switzerland, the 10 CHF. The discussions and debates centered on this landmark decision provide evidence regarding how and why Le Corbusier's figuration persists and is sustained. The Corbusian figure remains foundational in modern architectural history, architectural, planning and design pedagogy, and in the folklore formed in aspiring students of architecture all around the world.

When I was asked to write this article, the very first thing that came to my mind was what could I write on such a global figure that might be of interest to anyone. The world is flooded with literature on Le Corbusier. Well, British Author Evelyn Waugh's words came to my rescue here:

Don't give your opinions about Art and the Purpose of Life. They are of little interest and, anyway, you can't express them. Don't analyze yourself. Give the relevant facts and let your readers make their own judgments. Stick to your story. It is not the most important subject in history but it is one about which you are uniquely qualified to speak.

The advent of modernism in Indian architecture began soon after India's independence in 1947. Charles Edouard Jeanneret (1887-1965), who since 1920 started signing under the name, Le Corbusier, (French for 'the crow') was one of the pace-setters of modern architecture in India, who was commissioned by the Indian government in 1950 to design the new capital city for the northern Indian state of Punjab, Chandigarh. He would ultimately be revered as the most influential architect and urban thinker of the modern era, whose ground-breaking architecture would be regarded as pinnacle manifestations of the ideals and methods that define modern architecture His views, ideologies and practices are still taught as model examples today. The most telling aspect of Le Corbusier's ability to influence others is his unusual ability to combine the functionalism of the modern movement with his own bold, sculptural, and painterly formal expression.

Starting with Villa Savoye, where Le Corbusier's five points of a New Architecture (Pilotis, Free Plan, Free Façade, Ribbon Windows and Roof Garden) are at display, his works range from a modest house for his parents, Villa Le Lac, situated near Vevey in Switzerland, capturing the merging of the Swiss Alps and Lake Geneva to the monumental Capitol Complex in Chandigarh, from the meditative Convent of La Tourette which was *"a silent dwelling for one hundred bodies and one hundred hearts",* orchestrated with a silent symphony created in collaboration with Iannis Xenakis through a series of rhythmic windows, to the Chapelle Notre-Dame du Haut at Ronchamp which represents a key shift away from the sparse, functionalist form of Modernism that Le Corbusier displayed in his earlier projects.

As Mulk Raj Anand would state that one of the biggest challenges with Chandigarh was the building of a contemporary township, in a new socialist Independent

Unité d'Habitation of Firminy-Vert
(Source : Author)

Villa Savoye
(Source : Author)

The Convent of La Tourette
(Source : Author)

Church Saint Pierre of Firminy-Vert
(Source : Author)

Sports Stadium of Firminy-Vert
(Source : Author)

Chappelle Notre Dame du Haut at Ronchamp
(Source : Author)

The Open Hand Monument at Chandigarh
(Source : Author)

India that demanded the vision of a poet, who is also the master of all the arts of India. Though Le Corbusier wouldn't be claiming mastery of all the arts, but he was certainly a multi-talented personality capable of all the mammoth task at hand. He possessed the essential empathy to perceive Indian culture and mould it for the future. His tackling of the various problems of the project, like clearing a jungle while preserving the beautiful groves of trees, creating a lake that mirrors the beautiful mountains nearby, introducing a relatively newer material to the local laborers, and perfecting them for the future, and above all to build an inspired poetic city for a modern democratic Independent India, embodying the ideals of humanity, justice and efficiency, was certainly a formidable achievement.

Contemporary Indian architecture owes much to the Chandigarh Team. They were pioneers in the planning, designing and execution of a plethora of buildings in Chandigarh. While Le Corbusier had the general responsibility of designing the prestigious Capitol Complex, the remaining bulk of the city's civic architecture was designed by his associates. They were able to carve a modern city, out of a heritage of indifference and bad taste left by the British minds who ruled us for two centuries. The team consisted of Pierre Jeanneret, Le Corbusier's cousin from Switzerland, the British architect couple of Maxwell Fry and Jane Drew, along with many young Indian architects like A.R. Prabhawalkar, B.P. Mathur, Aditya Prakash, J.K. Choudhary, U.E. Choudhary, Jeet Malhotra, M.N. Sharma, and many others who later went on to realise Le Corbusier's plan and majority of the city's civic architecture. The team indeed revolutionized Indian architecture by enabling the middle and lower classes to expand themselves into an urban life. Though they couldn't get over the class system, they still released a social revolution in the lives of the poor by giving them front gardens, verandahs, smokeless standing kitchens, flush lavatories, and the urges to demand a classless and casteless society. They shaped Chandigarh's architectural style by designing a wide array of projects that range from nursery schools to the university, from peons' houses to the Chief Minister's house, and from market complexes to the Town Hall and the designing of the fourteen categories of mass-housing dwellings that constitute the living and amenity areas of Chandigarh. Interlaced with the daily life of the common man, their work has therefore had a larger impact on Chandigarh than that of Le Corbusier.

In my opinion, one of the biggest contributions of the team was the design of educational institutions in the city. Ar. Bhanu Pratap Mathur would often emphasis the fact that it is necessary to bring up a child in the most pleasant and healthy surroundings besides food and clothing since their mind are very impressionable. Therefore. when a child attains the school-going age, it is even more important that the schools they go to are equally pleasant and provide a healthier atmosphere for them. It is in the educational institutions that the best part of life is spent. The mind is apprenticed and the seeds of good citizenship are sowed. As a modern city of independent India, it was the duty of the educational institutes to teach a certain amount of independence of mind, value of personal work, fight reactions of masses, apart from the teaching of languages and sciences.

Top & Bottom: The Assembly Building at Chandigarh *(Source : Author)*

On a larger scale, I do feel that the contributions of the Chandigarh Project Team have been rather overshadowed by the larger than life figure of Le Corbusier, which has resulted in a bias in the historiography of modern Indian architecture in Le Corbusier's favour. They are known little outside architecture circles as the entirety of their lives were lived under the shadow of Le Corbusier. Unlike Corbusier, his associates stayed back in India for the entirety of the Chandigarh Project. Their key concerns for the buildings were the climate, and its relationship to people's lifestyle. They had a strong inclination to utilise indigenous materials to generate the urban forms and the intricate motifs that went beyond decoration and fulfilled functional needs. Throughout their designs, these have a significant role to play in the development of the Chandigarh style of architecture, which was drawn from sundried bricks, plastered, lime washed surfaces, perforated screens, sun breakers, chajjahs, roof overhangs and verandahs.

Living and working in India across two decades enabled them to demonstrate and educate about the modernist principles to the younger generation of Indian architects assisting them. These young men and women went on to became the torch-bearers of modernism in northern India, and a unique style of modern architecture emerged out of cities like Chandigarh, Delhi and Ahmedabad that redefined the use of materials such as brick and concrete.

The then prime Minister of India, Pt. Jawaharlal Nehru has said in an inspired moment that, *"Chandigarh represents the most powerful idea in Indian Architecture of our time, in spite of the many things in it with which one may disagree."*

As an Architect, born and brought up in Chandigarh, I owe much of my life's success to this city. The city ensured equity to all its citizen through its Civic Architecture coupled with an Administration that strived for excellence at a time when mediocrity was acceptable. It cemented the fact that in the New Independent India, one need not be born into the riches to enjoy a good life. But today, one of my biggest fear remains that a new narrative for a New Chandigarh is being constructed which rather than being inclusive, is more and more exclusive. Excusive and Luxury Projects are becoming the norm, so much so forth that even the term Luxury seems to have lost its meaning. I simply hope that the experience of being brought up in Chandigarh that lead us to imagining and to demand a previously unimaginable future for India hasn't reduced us to becoming someone too privileged to do anything but try to preserve our own comparative good fortune. The biggest lesson one can learn from Chandigarh is sustainable development at the local, regional and global scales and scopes, and how this development can accommodate a wide range of diverging and changing needs, demands and desires. Despite being a modern city in a then-rural India, its low cost architecture exhibited the basic concepts of sustainability, both economic and social. The buildings were masterpieces displaying the art to tackle the sun with their Brise soleil. In fact, Chandigarh had become a pioneering Lab for collaboration, experimentation in architecture, urban design and town planning as well as a platform for a continuous modern symposium on the principles of architecture of the time.

Kamal Passi (31) is an Assistant Architect working for the Central Public Works Department, Ministry of Housing and Urban Affairs, Govt. of India. An alumnus of Chandigarh College of Architecture and the Indian Institute of Technology, Roorkee, India, he has worked under the Le Corbusier Centre, Chandigarh for the Restoration of the Pierre Jeanneret House and Le Corbusier Centre in Chandigarh. He was also part of the team at Panjab University overlooking Getty Foundation's "Keeping it Modern" grant for the Conservation Planning of the Gandhi Bhawan.

Bibliography

1
Anand, M.R. (1961, December). Chandigarh. *Marg.*

2
Bagga, S. (2008). *The Significance of Chandigarh as an Architectural Heritage City of Modernity.* Panjab University, Faculty of Design and Fine Arts. Chandigarh: Panjab University.

3
Bahga, S., & Bahga, S. (2000). *Le Corbusier and Pierre Jeanneret: Footprints on the Sands of Indian Architecture.* New Delhi: Galgotia Publishers.

4
Boesiger, W. (1970). *Le Corbusier Oeuvre Complete Vol. 8. 1965-1969.* Zurich: Editions Girsberger.

5
Casciato, M. (2014). *Living in Chandigarh: Pierre Jeanneret,* Jane Drew, Maxwell Fry. CLUEB.

6
Collective. (1963, December). Contemporary Indian Architecture. *Marg,* 17(1).

7
Drew, J. (1983). *Jane Drew's Lecture on Chandigarh.* AA London.

8
Evenson, N. (1966). *Chandigarh.* Berkeley: University of California Press.

9
Jackson, I., & Holland, J. (2014). *The Architecture of Edwin Maxwell Fry and Jane Drew.* Liverpool: Ashgate Publishing.

10
Joshi, K. (1999). *Documenting Chandigarh: The Indian Architecture of Pierre Jeanneret, Edwin Maxwell Fry, Jane Beverly Drew* (Vol. 1). Ahmedabad: Mapin Publishing.

11
Kalia, R. (1987). *Chandigarh: In Search of An Identity.* Carbondale: Southern Illinois Press.

12
Koenigsberger, O. (1953, October). Chandigarh: The First and the Revised Projects. *Marg,* 6(4).

13
Malhotra, J. (2006, January). Jeanneret My Guru. *Architecture + Design, A Journal of Indian Architecture,* XXIII(1), pp. 30-31.

14
Nay, E. (2018). C*anonizing Le Corbusier: The Making of an Architectural Icon as Colonial Hegemony.* Toronto: University of Toronto.

15
Panjab University. (1965). *Planning of the Campus.* Chandigarh: Panjab

16
Prakash, V. A. (2002). *Chandigarh's Le Corbusier: The Struggle for Modernity in Postcolonial India.* Ahmedabad: Mapin Publishing.

17
Scheidegger, E. (2005). *Chandigarh.* 1956.

18
Takhar, J. (2002). *Celebrating Chandigarh.* Ahmedabad: Mapin Publishing Pvt Ltd.

19
Tanner, A. (Director). (1966). *Une Ville à Chandigarh* [Documentary].

20
Touchaleaume, E., & Moreau, G. (2010). *Le Corbusier, Pierre Jeanneret: L'aventure Indienne/ The Indian Adventure : Design, Art, Architecture.* Paris: Galerie 54.

21
Wattas, R., & Gandhi, D. (2018). *Le Corbusier Rediscovered: Chandigarh and Beyond.* New Delhi: Niyogi Books.

Ar. Kamal Passi is an Assistant Architect working for the Central Public Works Department, Ministry of Housing and Urban Affairs, Govt. of India. An alumnus of Chandigarh College of Architecture and the Indian Institute of Technology, Roorkee, India, he has worked under the *Le Corbusier Centre,* Chandigarh for the restoration of the *Pierre Jeanneret House* and *Le Corbusier Centre* in Chandigarh. He was also part of the team at Panjab University overlooking Getty Foundation's *Keeping it Modern* grant for the Conservation Planning of the Gandhi Bhawan.
ar.kamalpassi@gmail.com

Tiles on wall 1 :
ARENARIA BEIGE
(800x1600mm)
Satin Matt finish

Tiles on wall 2 :
BASIC CONCRETE GREY
(1200x2400mm)
Satin Matt finish

Tiles on floor :
ARENARIA GREY
(800x1600mm)
Hard Matt finish

Tiles on Table Top :
GALAXY GREY
(800x2400mm)
Glossy finish

Sanitaryware :
AUREX DLX TABLE TOP BASIN
METROPOLITAN ONE PIECE
Kludi RAK Faucet : PRIME

RAKCERAMICS.COM


RAK
CERAMICS
GLIMPSE
OF ULTIMATE
LUXURY
Create your dream
space with the luxurious
collection of tiles,
sanitaryware and faucets
offered by RAK!

ITO SKYWALK NEW DELHI

Ar Goonmeet Singh Chauhan

Fact File

Principal Architect	▶ Ar Goonmeet Singh Chauhan
Design Team	▶ Ar Anuj Prabhakar Team
Length of skywalk	▶ 525 m (approx..)
Length of FOB	▶ 60 m
Structure	▶ Steel
Flooring	▶ Granite
Amenities	▶ CCTV, WiFi, 2o passenger lifts, solar panels, security
Photography Credits	▶ Andre J Fanthome

The unique criss-cross boot-lace trusses make the skywalk instantly recognisable from a distance.

The newly-minted ITO Skywalk, a foot-over-bridge in New Delhi, connecting four principal streets offers a ground-breaking solution to decongest and facilitate safe and seamless pedestrian flow amidst the heart of the city. Roughly 535 metres long, it spans across Sikandra Road, Mathura Road, Tilak Marg, and Bahadur Shah Zafar Marg, while catering to the ITO as well as Pragati Maidan Metro stations.

Being Delhi's longest skywalk, this integrates numerous nodes in one of the busiest stretches of the metropolis that sees office goers commute to various corporate and government buildings in the vicinity such as the ITO, Police Headquarters, PWD Headquarters, GST Office, Supreme Court, DDA Vikas Minar, Lady Irwin College amongst others.

The project defies the solidity of the surroundings and is conceived as a serpentine tube, coiling around major intersections. The program called for a unified response to the area's burgeoning commuter concerns, especially at the ITO Crossing and the 'W'- Point Junction, which sees maximum pedestrian traffic throughout the day. A network of public transport systems including the two metro stations, Tilak Bridge Railway Station and various DTC bus stops are major hubs that mobilize traffic flow in the area, especially during rush hour. The design paradigm traced this flow and came up with a safety mechanism in the form of a skywalk at 'W'- Point and a foot-over-bridge at Hans Bhawan. The skywalk was designed to not just fulfil its utilitarian purpose of serving as a medium of mobility, but also to establish itself as a landmark within the city.

ITO Skywalk's reticulated profile boasts of state-of-the-art facilities; its instantly recognizable silhouette features structural, criss-cross boot-lace trusses that are covered with tensile fabrics. The structure incorporates steel members, with all junctions (except Supreme Court and Railway Colony Junction) being constructed in RCC and clad in red Agra stone in adherence to the context. The Supreme Court and Railway Colony junctions are conceived in the form of octagonal units with steel crowns, featuring granite flooring and S.S. glass railings. The tensile fabric roofing is an ingenious intervention, fulfilling both functional and aesthetic requirements. Concepts unique to the design are glass lifts at every junction displaying sensitivity to the needs of women and differently abled; as well as public wi-fi and surveillance systems for additional safety.

Landscape and lighting have been thoughtfully integrated with the design, as patches of green coalesce with a combination of functional and facade lighting, rendering the over-bridge aesthetically appealing, yet economical. Emphasis has been laid on the tensile fabric roofing and steel structure, highlighting their form through strategic installation of lighting fixtures, while making them vandal-proof. The under deck has also been lit up with LEDs that provide a sense of height for the stream of vehicles passing below. Challenges included circumventing the various existing underground services during the foundation work and bending the structural tubular members into the proposed form to enable assembly. Additionally, maintenance of smooth traffic flow

Multiple walkways come together and meet at this octagonal structure.

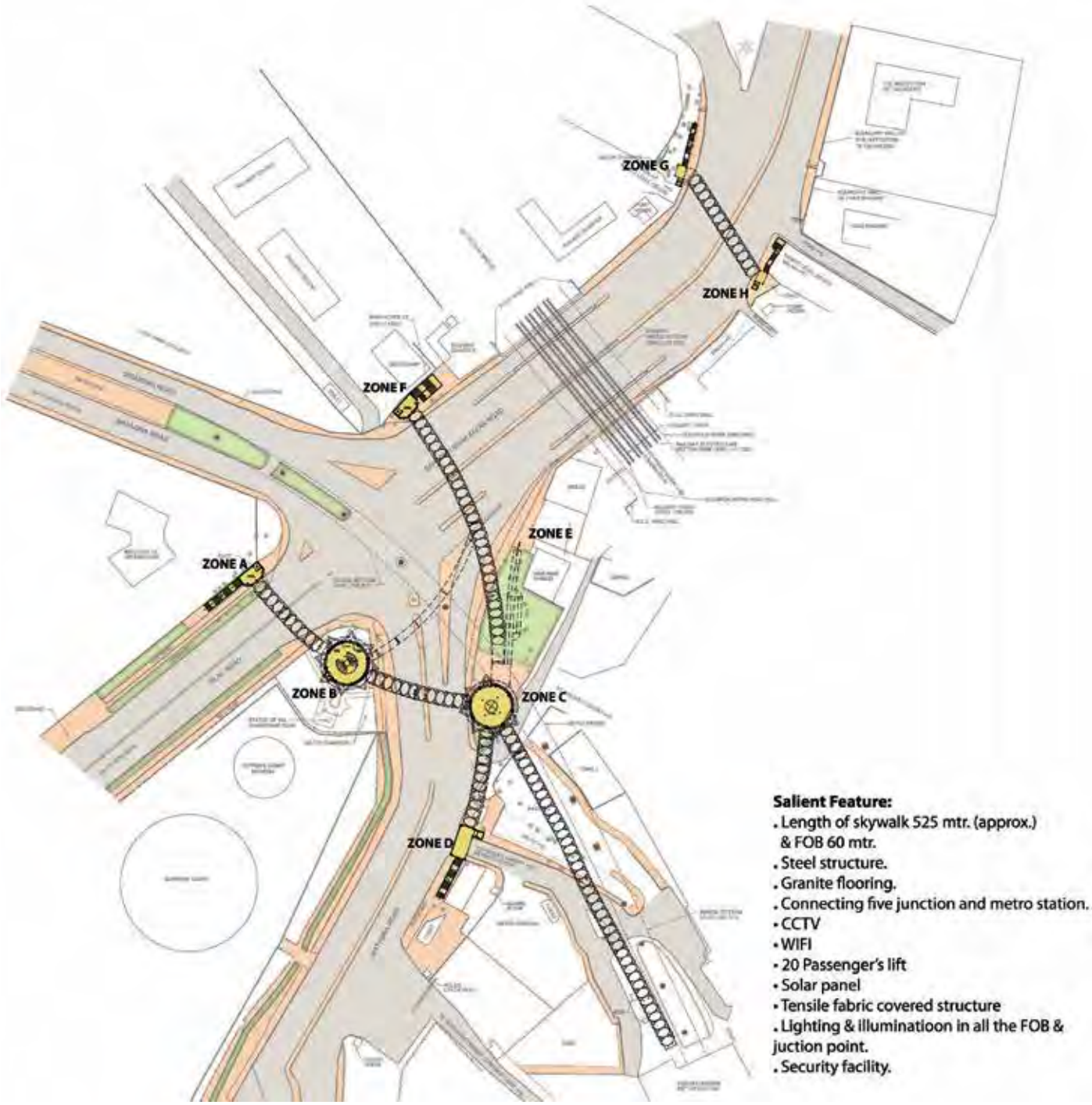
The ITO Skywalk solves the problem of pedestrian movement at one of the busiest nodes in New Delhi, and its unique form is a design and engineering marvel that acts as a significant landmark in the city.

The winding walkway appears to be floating above the high-traffic junction.

The octagonal unit consists of steel crowns and uses granite flooring and S.S. glass in the railing.

The criss-cross boot lace trusses are covered with tensile fabrics, resulting in the unique silhouette of the skywalk.

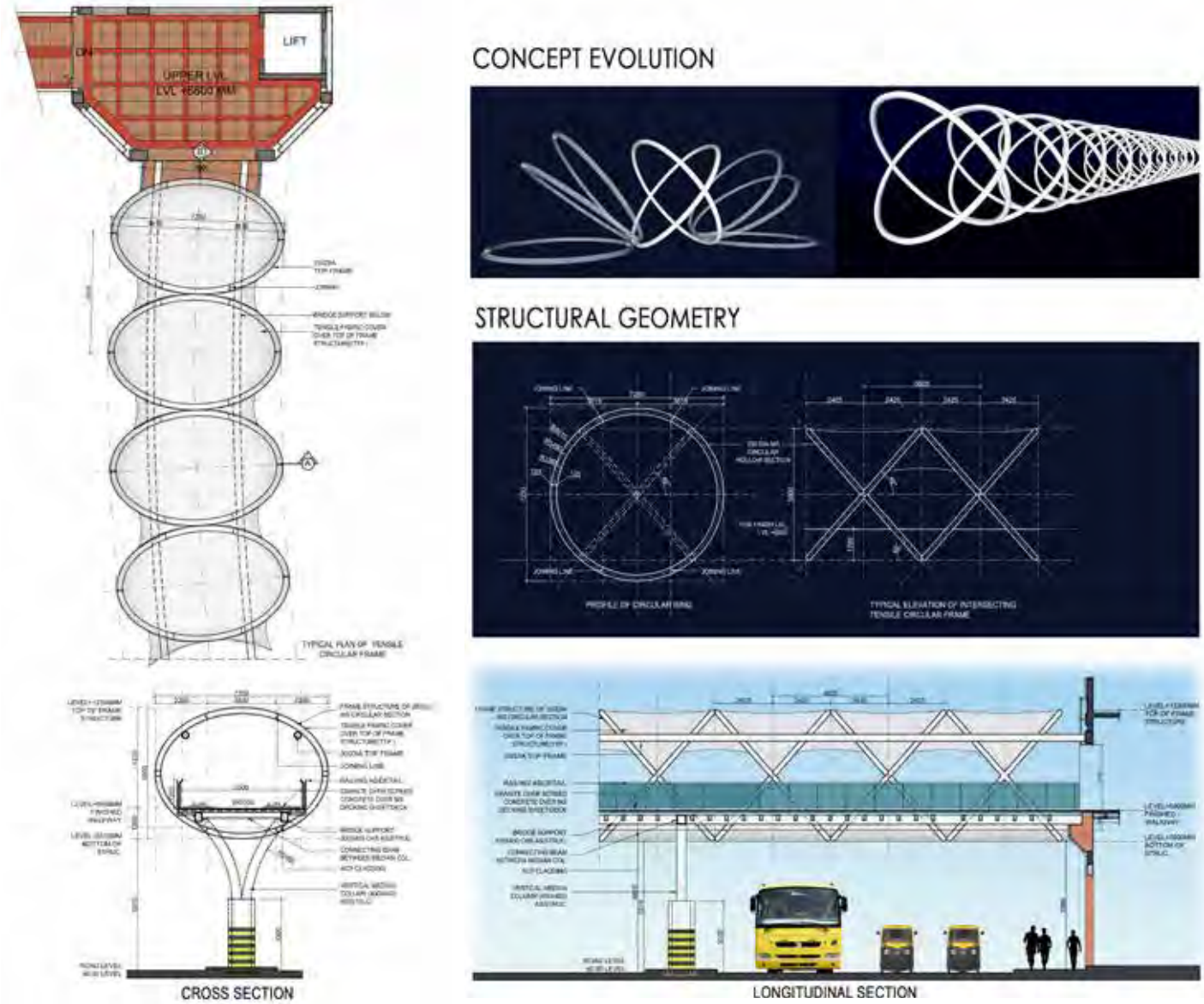
The skywalk and a landscaped footpath create a pedestrian-friendly environment at one of the busiest nodes in Delhi.



Planning of the ITO Skywalk

Elevation

Plaza



Railing detail

during the deck launching and extreme weather conditions also hampered the execution of work.

The ITO Skywalk has been an endeavour to impinge positively upon the existing character of the neighbourhood that it serves, aiding hundreds of thousands of citizens daily. By creating a physical configuration towards the mobility infrastructural network to provide commuters with a connectivity of a sustainable alternative network, a better reach is enabled amongst the cross junctions in the busy ITO neighbourhood of the dense metropolis city of New Delhi. Solutions such as the Skywalk are seen as not just modes of commutes, or to generate ephemeral experiences through spaces, but more so as contributions to the architecture, public infrastructure and the urban context in which they thrive.

Ar. Goonmeet Singh Chauhan is an architect, urbanist, author and a futurist who has worked on large-scale projects that have become landmarks across major cities pan India. Chauhan has won many accolades for his works including the Outstanding Papers and Design Works at UIA Seoul Congress in 2017 and the IndeXcellence Awards in 2019. He is founder and partner of Tevatia, Chauhan and Sharma Architects as well as Design Forum International.

CRÈCHE FOR DAYALBAGH EDUCATIONAL INSTITUTE AGRA

Ar. Neelam Manjunath

Fact File

Location	▶Within Dayalbagh Educational Institute campus, Agra
Completion Year	▶2018
Gross Built Area	▶610 sq.m
Typology	▶Creche for children of ages 0-3 years
Firm Name	▶Manasaram Architects, Bangalore

The Project-Context, Site and Architectural Decision

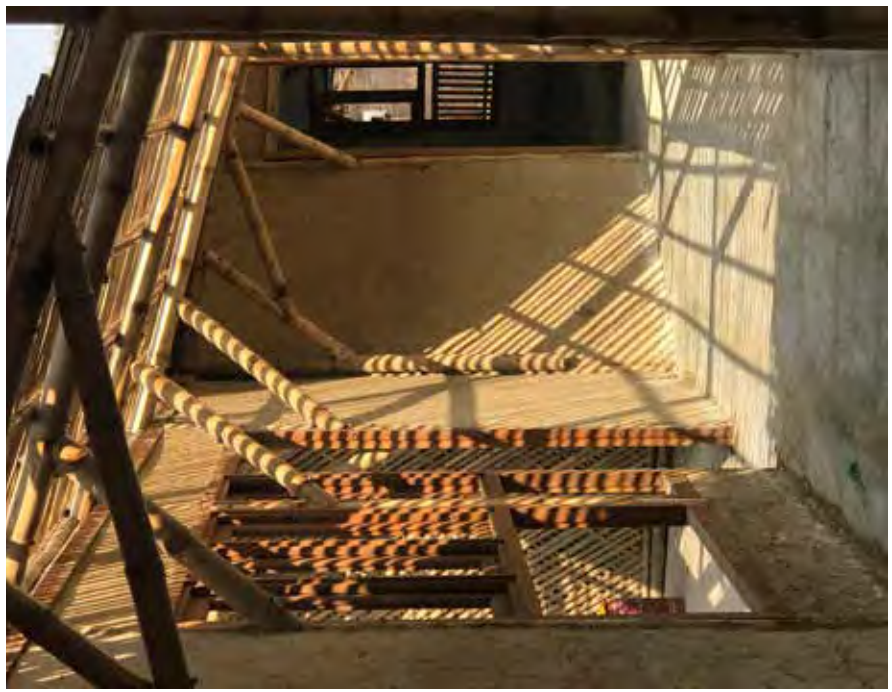
The site of this project is located within the campus of Dayalbagh Educational Institute (DEI), which is a deemed university in Dayalbagh, Agra. The Crèche is designed to be an educational space for the children of the institute's staff from the ages of 3 months to 3 years. Dayalbagh has a semi-arid climate that can get very hot and is also prone to sand and dust storms. As a response, the spaces were provided with generous roofs in order to prevent overheating.

The main purpose of the project was shaping children in the lap of nature while experiencing the five elements of earth, air, fire, water and space. The concept was that children growing in close contact with nature will develop all the three faculties of man, i.e., physical, psychological and spiritual in a balanced manner. Hence, the classrooms were designed accordingly for the ages from 0-1 year, 1-2 years and 2-3 years. They are large in area and connected internally for the children to move and play freely. This playful construction created a stimulating environment where children can develop their sensibilities and connect to nature. The building uses locally-available and low-embodied energy materials resulting in low carbon footprint, especially as compared to current concrete and steel constructions. The site has vegetation but also plenty of sun exposure, hence, ample shade was provided all-around. The project plays a major role for providing a wholesome environment for the children to enjoy and is an advocate for sustainable building techniques and methodologies. Apart from the main structural frame made from bamboo, walls and roof were designed with local traditional materials.

Promotion of Local Construction Methodologies

All the bamboo poles were sourced locally from bamboo bazaars of Agra and nearby areas. They were treated with dip-fusion method with boric acid and borax to render them resistant to environmental degradation. The walls are made with woven bamboo panels plastered with mud mortar for all the external walls. The interior walls are made with woven bamboo panels to ensure good air circulation. They are finished with PU coating. Walls are lime-washed over traditional mud plaster. The mud from the excavation for the foundation was used for plastering. Local brick has been used for foundation and brick bats for BBC for foundation and sub-flooring. The flooring is of local stone.

The building, constructed primarily with bamboo and mud, consists of four interconnected pentagonal classrooms, along with an entrance alley. Each room is enclosed with bamboo walls with mud plaster and a spiralling bamboo roof frame, which extends beyond their perimeter, creating a verandah that encircles the whole building. The bamboo columns are connected to the plinth MS pipes, 2 inches in diameter (50 mm), grouted in a foundation pad of 450 X 450 X 600 mm. Since longer bamboo poles were unavailable locally, smaller bamboo poles were used. This dictated the design of the roof structure to be a pentagonal pyramidal shape.



Site Plan

Ground Floor Plan

Cross Section

Elevation

Crèche Exterior

Crèche

The roof structure of the project is its unique feature. It is designed as a spiralling roof looking like a merry-go-round frozen in motion. All the pentagon roofs are connected with each other seamlessly. Thatch over a tarpaulin sheet has been used for the roof cover. To address the concern of fire from the crackers falling over the roof from the adjoining road, a thin coat of mud was applied over the thatch. This added extra weight on the structure. To resolve this issue, we added a ring of bamboo in the roof and a central column in a tree-shape. All the joints of the bamboo have been filled to prevent slippage of joints.

Ecological performance

Thermal, Energy Consumption, Waste Management

DEI campus is one of the most sustainable campuses in India. The building is lit through indirect light and clerestories in the centre of each room that also allows the hot air to escape. The building uses power from solar and other alternative sources installed inside the campus for 100% of its energy requirements. The rainwater harvesting system is implemented and the water is used for landscaping etc. The toilets located at the back of the building are connected to a composting pit system. The children are taught the value of waste disposal and recycling at the tender stage through on site systems in the building.

A New Pedagogical Approach

The construction process of the project was envisaged as a new direction with a pedagogical approach to teach building design and construction at site. It started with a five-day workshop with lectures and hands-on sessions with students from DEI Architecture faculty, DEI works department, Centre for Green Building Materials and technology (CGBMT), and artisans from Rajaborari, MP, India. All these participants worked along with *Manasaram Architects* as stakeholders. The faculty members and the students of architecture also participated in the whole construction process. DEI Works Department was the Project in charge. *Manasaram Architects* were responsible for design and detailing. CGBMT, Bangalore were responsible for training and artisans' support.

Ar. Neelam Manjunath is the Proprietrix of *Manasaram Architects,* Bangalore. She is also the CEO, *Centre for Green Building Materials and Technology,* Bangalore; Advisor, *Bamboo Affairs and Sustainability,* DEI, Dayalbagh, Agra; National Convener, *WC-ADCE; Member, National Governing Council, BSI;* Chairman, Karnataka Chapter of *Bamboo Society of India;* Member, *INTACH;* World Bamboo Ambassador, *WBO* and Key Expert, *Bamboo Construction Task Force, INBAR.*
mansarch@gmail.com

STUDIO CAMARADA
A COLLABORATIVE

Ar. Andre Camara

The studio in Bangalore, with its open plan layout allowing for maximum interaction, is run by Ar. Andre Camara and Ar. Shravya Shetty

A 'studio' by definition is in essence an artists' or workers' workroom. It is where creativity is brewed and translated into the art-form itself. While the definition holds good for most cases, the term 'architectural studio' is, in fact, a class in a graduate school in which students receive hands-on instruction on 'architectural design'.

Having said that, we at Studio Camarada believe our style of work is in fact much like a 'studio' itself. The learning, interactions, collaborations and overall vibe resonate with that of a classroom or 'architectural studio'. It is a conscious effort that enables us to maintain this type of work style and one we pride ourselves in having for ourselves. Everything about our day to day working resonates with a collaborative approach. From the team interactions, to site activities, we have built our practice around the idea of an ecosystem that feeds off the energy of like-minded personnel. In this piece, I will be breaking down the various types of collaborations that we as an office see on a near-to-daily basis and its importance in maintaining the balance of our preconceived ecosystem.

Collaboration in Design

As mentioned before, we consider our practice an amalgamation of the best ideas and thoughts available at our disposal. This means, every single person in our team has a voice in every part of the process right from design to the point of handover. Being a young practice, we have the advantage of a near-to-nothing age gap between team members. The partners, architects and interns for that matter find themselves on familiar grounds as far as communication goes which in turn vastly helps the entire process at large. Besides the obvious effectiveness of the process in making the whole process highly efficient, the collaborative approach helps everyone have a great time working on the task at hand in general. It is essentially a melting pot of good energies.

Interior design projects completed by Studio Camarada

Interior design projects completed by Studio Camarada

Collaboration with Industry Partners

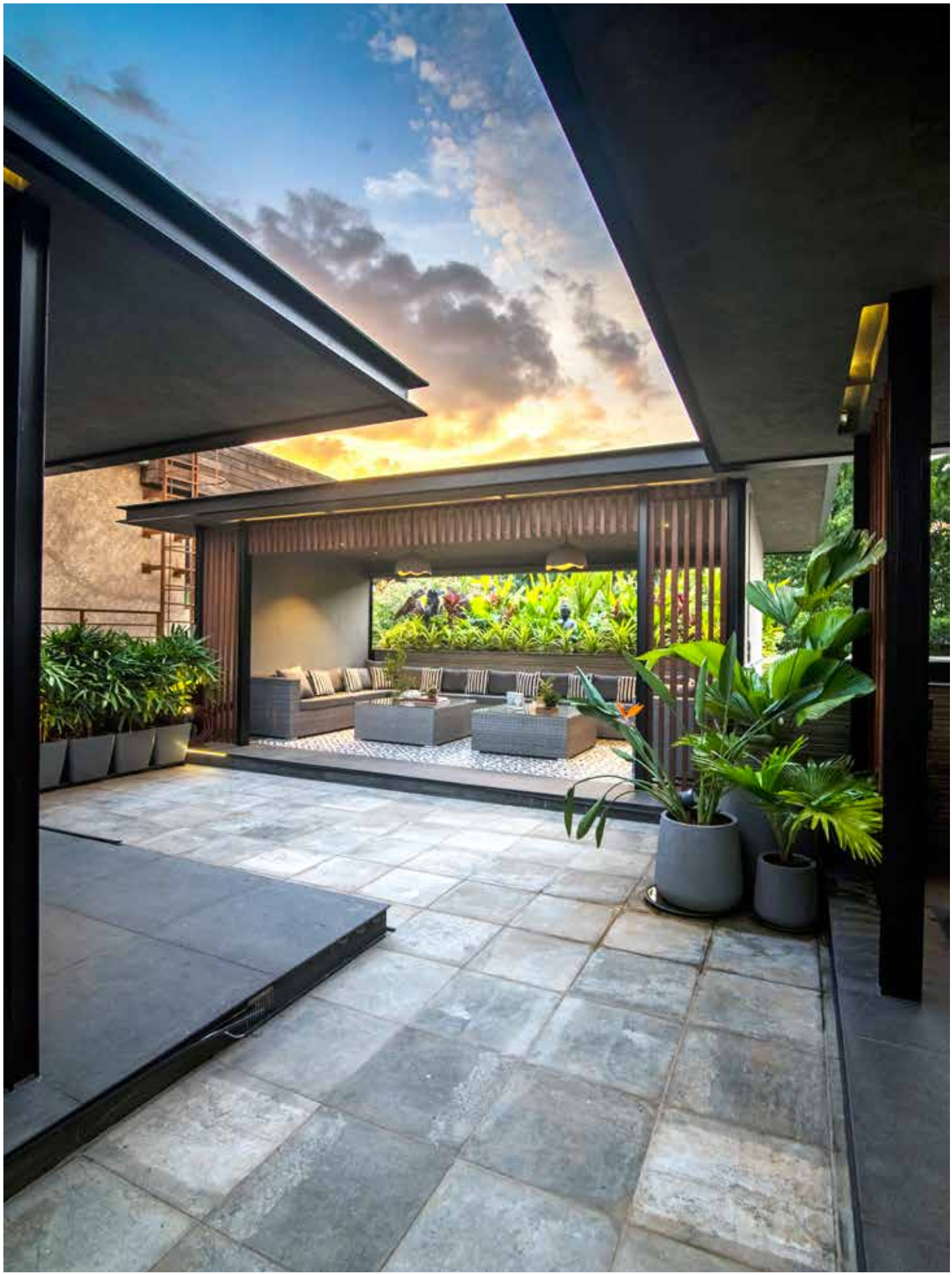
We as designers are nothing without our extended team - the 'industry partners'. Now when I say 'industry partners', the list includes a vast array of personnel - contractors, vendors, consultants and even ground-workers. This extended team forms an integral part of the design and construction process. In our experience, we have stumbled upon better details, materials and even methodologies of working thanks to this collaboration. The plethora of knowledge and experience that can be gained from interacting with the extended team is boundless. We as a practice are relatively flexible in details and specifications, which in turn help with the overall learning experience. Also, involving the extended team in the design and site decisions vastly helps gain confidence and in turn increases the overall outcome of the product or space.

All in all, our practice strongly believes in a consistent learning curve. It quite frankly is a quality we wish to take along as we grow. Apart from the learning itself being tremendous, the bond it creates instantaneously is reflected not only in the project at hand, but in subsequent jobs after that. In fact, I remember getting this piece of advice from my boss while at the firm I first worked at before setting out to start my practice. He said to me, "Go have a cup of chai with the carpenter or worker at site. What he will teach you will be priceless!" From that little piece of advice, as a fresher architect, not only did I get my first bit of industrial collaboration, but it taught me a lesson on humility that no book or program could instil.

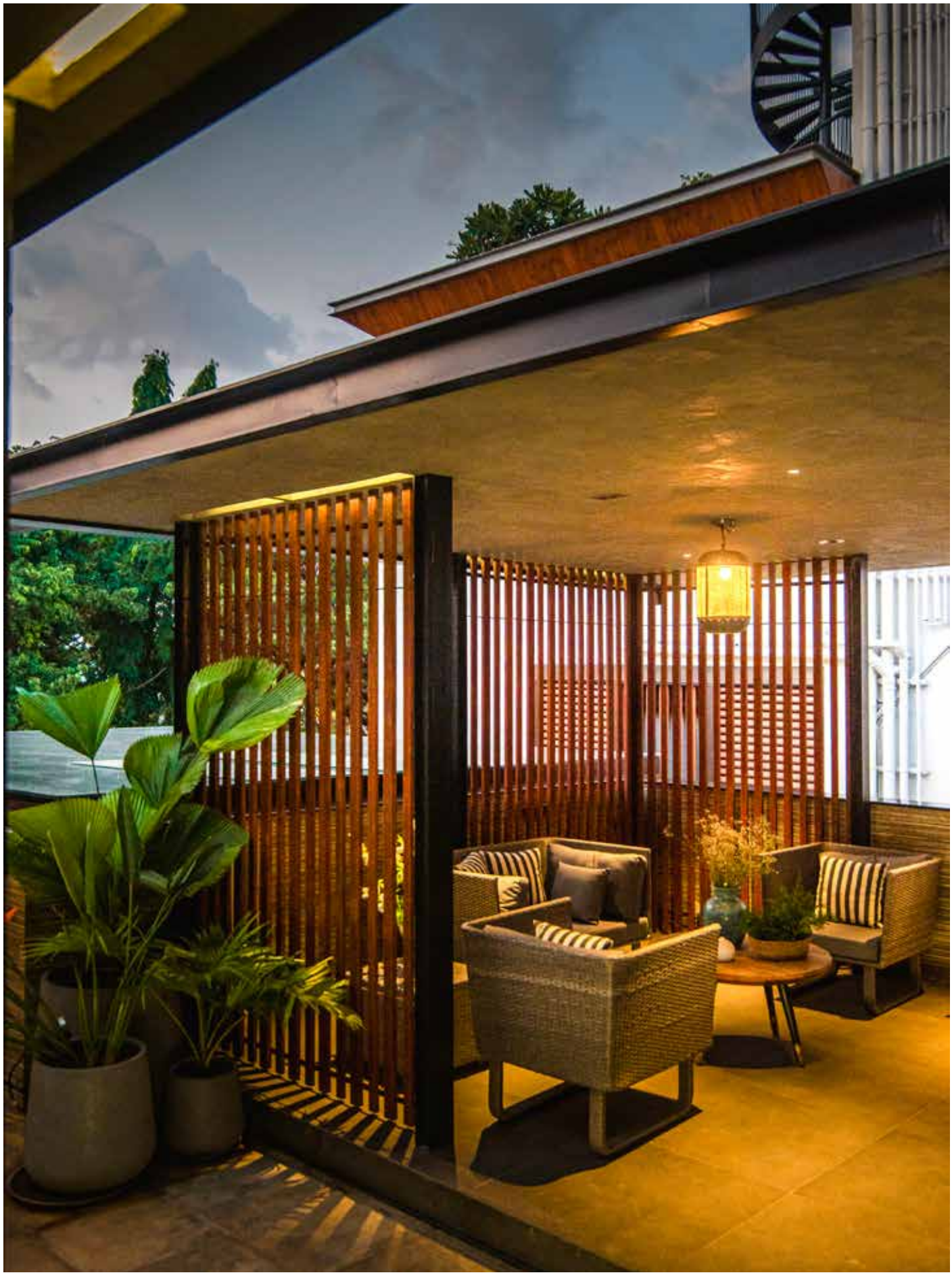
Collaboration in Innovation

Our industry is in a constant state of bettering itself : from newer materials to better construction techniques. The only way to be part of the movement forward is to dive right into it. One such collaboration we have found extremely endearing is working with modular construction techniques.

Modular construction is a philosophy that has made some great headway in the west and is slowly finding its space here in India. Using essentially drywall construction and metal frameworks, this form of construction is able to reduce time taken to build structures to a fraction of the time it takes for conventional construction and at extremely competitive price points.



Landscape intervention on a terrace space designed by Studio Camarada



Landscape intervention on a terrace space designed by Studio Camarada

F & B and retail interiors completed by Studio Camarada

Interior view of the Pool Villa constructed using modular technology

In this particular instance, I consider this engagement a pure form of interdisciplinary collaboration. The team at this modular construction firm worked with us from their time of inception and we as designers have been a part of the process throughout. Being among the first in the country, the amount of research that went into the making of this product is unimaginable, and we as designers are extremely proud to be a small part of that process.

Testament to this feat is one project that was completed in December 2020, a few months after India decided to lift the nationwide lock-down. The project included building two pool villas and one presidential suite amounting to a total area of approximately 5000 sq.ft. Having visited the site for the first time in September, we were left with the daunting task of handing over these three structures by the end of the year complete with interiors and the landscape. With the clock ticking and close to a dozen agencies that had to work together to coordinate amidst the fear of a second wave, the feat seemed near to impossible. It was pure teamwork and healthy collaboration that allowed the project to see the light of day by the first week of December. The entire experience was filled with immense learning and memories that will last us a lifetime.

Collaboration in Life!

The story of our little practice coming together was in fact a collaboration that blossomed into a marriage before it found its way into this architectural studio. Having been inspired by a couple-run architectural firm in the very first place we worked and met, back in 2010, the roots to the penultimate collaboration were sown all the way back then. Running a practice together with another individual is a marriage in itself. Finding the right match to steer the ship in the same direction that you see befitting is so important to not only the success of the practice, but to your immediate state of mind. The way I see it, a healthy relationship between business partners is as crucial to the practice at large as the principles of a healthy marriage. Getting it right requires a great deal of work and mutual respect. In our case particularly, this collaboration truly is a complementary one.

The Architect- Client Collab!

While every single collaboration I spoke of before this is as important as the next, this particular form of collaboration is of the utmost importance. Whether it is a residential interior project or a commercial complex, collaborations between the architect and client are detrimental to the health of the project as any other aspect of the project. A healthy communication protocol, mutual respect and adherence to each other's protocol are some of the key aspects that make a good collaboration between these two.

So those are my two bits on collaboration and how we, as a practice, have managed to imbibe its ethics into our lives. The future too seems very bright as far as collaborations go. With the internet bringing the world so much closer, collaborations can now be easily possible across regions and from anywhere in the world. It truly is the future of our work culture.

Ar. Andre Camara is a partner at the architectural firm *Studio Camarada* at Bangalore and Goa, along with partner Shravya Shetty. The studio is a multi-disciplinary practice specializing in architecture and interiors of residential, commercial, retail and hospitality-based projects.
Email: andre@studiocamarada.com

Exterior view of pool view

APPLICATION OF SOFTWARE IN ARCHITECTURAL DESIGN

Dr. G. Yogapriya, Ar. Narayanan Muthuraman, Ar. Nikitha Ranganath

ABSTRACT

When a new building is being designed or an existing building is renovated, the first step that is taken by architects after listing down client requirements, is the generation of conceptual ideas, zoning and the process of drawings which leads the way. While CAD programmes have made this much easier in the digital age, some people believe that drafting by hand offers them a better understanding of the design. The architects of the past were always found to be with adjustable stools and giant drawing boards that were almost as big as dining tables. Nowadays, with the latest advances in computer technology and with the evolution of sophisticated software, the architectural profession has become a futuristic one. This article tries to understand the evolution of software in the field of architectural field with their merits and demerits.

Keywords: *architecture, rendering, software tools, techniques, visualization*

INTRODUCTION

The aspects of design with the basic lines drawings, sketches, 2D to 3D visualization through models, rendering with pen and ink, one/ two/ three - point perspectives, perspectives of interiors and exteriors and rendering with water colours, use of various mediums (Figure 1) has been used in earlier periods for conveying the thought process of an architect and also for using at site for construction. Previously, all drawing was done manually with t-scales, flexi-curves and various tools involved in the designing purposes.

Manual drafting (Figure 2) seems to be have been quite tedious for large scale projects. Autodesk developed and marketed AutoCAD in 1982. It worked as a desktop application that ran on microcomputers that have built-in graphic controllers The scenario has changed after that. From initially being a commercial product, AutoCAD is available as computer-aided design (CAD) and drafting programme. Furthermore, various software and rendering tools were developed that resulted in the designing field reaching greater heights.

The efficiency of the various software led the way to create aesthetic and innovative structures. In relation to software development, hardware develops at a faster pace. There are several ways in which the design can be communicated to clients and the architects are at liberty to use any appropriate method for social media, presentations, diagrams, visualization, models, etc. Architects can use numerous software to market their diverse skill-sets and their designs can be showcased and portfolio built.

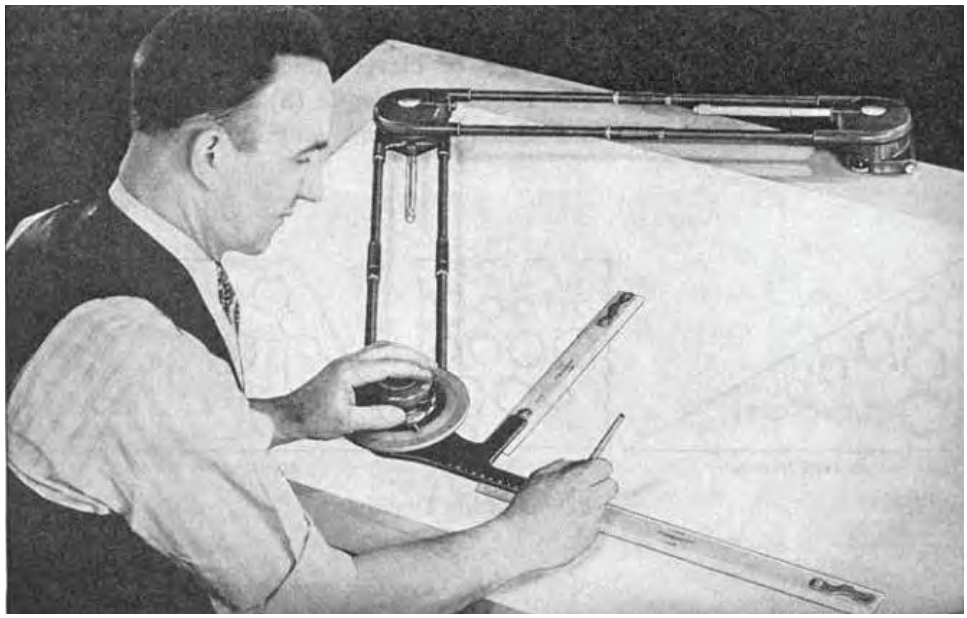


Figure 1: Creating an aircraft master layout
(Source: http://cadhistory.net/02%20Brief%20Overview.pdf. Accessed : Sept. 2021)

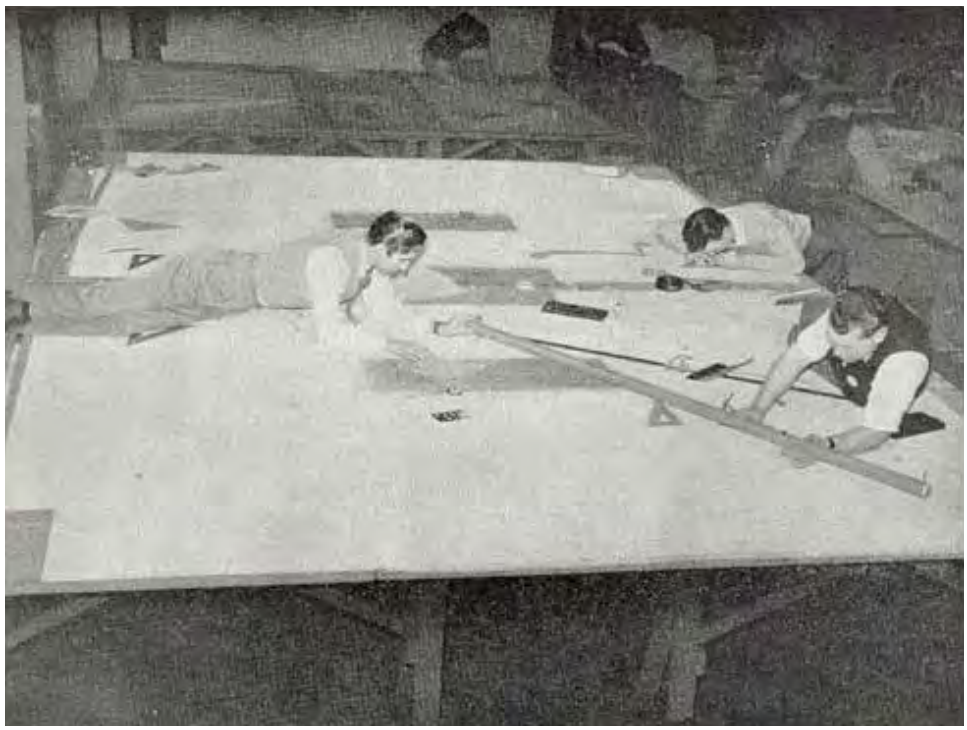


Figure 2: Universal drafting machine
(Source: http://cadhistory.net/02%20Brief%20Overview.pdf. Accessed : Sept. 2021)

MATERIALS AND METHODS

Many areas of the architect's profession have grown meaningfully easier as a result of technological advancements. They can make use of cutting-edge technology for design concepts that would be difficult to sketch on paper otherwise. The process of gathering materials to give shape to the designs, on the other hand, has been a battle for decades. With such difficulties, certain platforms are springing up to meet the needs by connecting with the suitable manufacturers with a focus on detail and the construction process, these initiatives will complement the design. Overall, it should assist the architect in completing the work with greater ease, speed, and technological intelligence.

CAD is frequently assumed to be a recent invention, however, it has been in use for more than 50 years The first version of CAD was developed by Patrick Hanratty, who was said to be the father of CAD, in 1957. Ivan Sutherland developed Pronto into Sketchpad as part of his thesis in 1963. It is very primitive compared to AutoCAD as we know it today, but it was very complex even then. In the 1960s many other developments of Sketchpad were seen such as Auto-trol and DAC-1. Many studies shifted from 2D to 3D in the 1970s, including Versprille's NURBS innovation, which laid the groundwork for modern 3D curve and surface modelling. Many such inventions were seen which brought the engineers into the 3D modelling world. By 1980, commercial CAD systems were used by the aerospace, automotive and ship building industries.

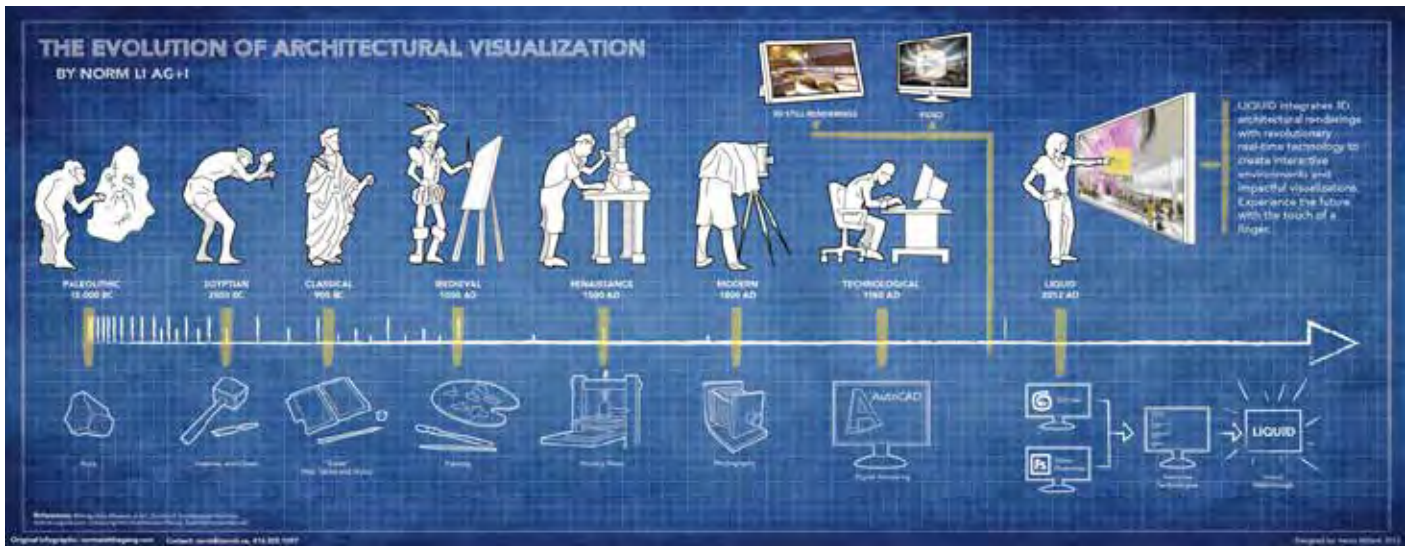


Figure 3: Evolution of architectural visualization
(Source: https://visual.ly/community/Infographics/other/evolution-architectural-visualization. Accessed : Sept. 2021)

By 1990, the PC had evolved to the point where it could perform the calculations necessary to run 3D CAD. In 1995, SolidWorks, the first major model for Windows, was released. Autodesk saw a lot of successful releases of software in the 1990s such as Autodesk Inventor, Autodesk's Mechanical Desktop etc. When many of the software offered almost the same kind of functions, innovations lead to product data management software and it was first used in the making of a paperless design of Boeing 777 with CATIA.

In the 21st century, the introduction of web-enabled CAD and client-side CAD tools was found. AutoCAD 2000i, the first web-enabled CAD software was very successful and Autodesk has seen various peaks throughout the years till the present with software such as Revit, Creo, etc.

From CAD as the beginning of the phase where architecture shifted from hand drafting to manual designs, the trend has kept on changing making it absolutely necessary for architects to keep learning and growing their skills.

RESULTS AND DISCUSSION

Various application like Revit, Vector works and Archicad has been used in current scenario. In addition, the number of apps used for measurement, drawing, project management, playing, and stimulating ideas has increased. Building Information Modelling (BIM) technologies emerged as another computer technology and professionals are now settling down to incorporate BIM technologies into their workflow. The software mentioned above are used to conceptually portray the designs of architects by means of 2D and 3D renders and realistic walk-throughs to making the client understand how it will look in real life. Table 1 gives an idea of recent software details with their cost per year. Developments are constantly on the rise and have reached a state where Virtual Reality presentations and 3D printed models are also prolific.

Workflow is a set of tasks that processes a set of data. It occurs in every type of organisation and sector. Each stage of architectural design caters to a distinct set of requirements. The ideal one is determined by a number of variables including cost, compatibility with other programmes, and ease of use. It also depends on the design process. Starting from sketching on paper before moving on to architectural software is the most used and appreciated one. Graphic design software is even required to illustrate the ideas and design process. Selecting the suitable software to fit into the workflow is a much-needed decision to be taken in architectural design.

CONCLUSION

For centuries, technology has always been on the road of development and has been constantly evolving. Advancement in technology will enhance the way spaces are designed for fellow human beings, which leads to a better lifestyle. Architecture will continue to develop and hence all designers need to keep progressing with time to sustain in the field. Additionally, with the help of new and advanced technologies like 3D visualization and 3D printing, the way towards virtual site inspection has been paved and also methods that could print a live scale building.

Table 2: **Recent Software**
(Source : Compiled by Authors)

Name of Software	Usage	Price (INR) per annum (Year 2021)	Remarks	
			Pros	Cons
1. Rhinoceros	To work with curves or mathematical formulas that can accurately describe a 3D shape	₹ 75,000	Good quality results were given by internal renderer.	Sheet layout tool is limited
2. Revit	To integrate multi-discipline management and create some multi-platform drafting system	₹ 1,13,280	Huge library	Difficult perspective editing, unable to save in previous version
3. SketchUp	It is an intuitive, powerful and simple-to-learn 3D drawing tool	₹ 52,000	Simple interface	Less modern tools than other 3D programs, needs plugins to create advanced designs.
4. V ray	It is used for photo-realistic renderings	₹ 52,000	Extensive material library and resources	Manually unloading and then re-loading the V-Ray for Maya plugin may cause crashes
5. Lumion	To express your vision as an image, video or 360° panoramas	₹ 1,32,000	Render time	Cost for full version, computer configuration and cost for upgrading the system.
6. Grasshopper	Create generative algorithms, for example for generative art. The programs may also contain other types of algorithms, including numerical, text, audio-visual, and haptic applications	₹ 30,000	It saves time and allows to automate complex design without programming knowledge.	Collaboration with multiple designers on the same project might be more difficult."
7. Fusion	2D sketches or reference material, then design using TSpline's modelling strategy. It is particularly useful for detailed design features like door knobs or window latches	₹ 15,700	Powerful, intuitive tool	Functionality changes can disturb the workflow.
8. Maya	Help to build realistic 3D model, 3D apps, animated films, TV series, technical and non-technical advertisements, 3D video games, visual effects, and a variety of other effects	₹ 1,26,700	Can add scripts and plug-ins	Expensive

Name of Software	Usage	Price (INR) per annum (Year 2021)	Remarks	
			Pros	Cons
9. 3DS Max	Create photorealistic images of buildings during the design phase	₹ 96,760	New feature as perspective matching is a new feature that sets the users in, easily fitting any 3D model	Difficult to achieve UV mapping
10. AutoCad	Basic drafting software used for creating 2D and 3D drawings. Used in all industries such as civil, mechanical, architecture, etc.	₹ 93,320	Can create 2D drawings and can be shared with everyone. Easy to use	Can be used only to create simple basic 2D drawings; need to go for other software such as Revit or Archicad for complex and parametric designs
11. IIA CAD	Powerful, innovative DWG based CAD Software for IIA Members. It has the highest compatibility with AutoCAD. It offers modern DWG editing with significantly better collaboration for 2D and 3D drawings.	Perpetual one-time license cost is ₹ 22,500	User-friendly; cost-effective; no compromise in features and innovation; smart dimension; drawing compare, data extraction wizard; works much faster in 3D; PDF import; Save in AutoCAD format; BIM features	Relatively new in market ; might need some time for acceptance and change over to new software in offices

REFERENCES

1
Onur, Zeynep & Nouban, Fatemeh. (2019) Software in the Architectural Presentation and Design of Buildings: State-Of-The-Art. *International Journal of Innovative Research in Computer and Communication Engineering,* Vol. 8(10), 2723-2729.

2
Gamayunova, Olga & Vatin, Nikolai. (2014). BIM- Technology in Architectural Design. *Advanced Materials Research,* 1065-1069.

3
Funding Universe (n.d.) *Autodesk, Inc. History.* Available at: http://www.fundinguniverse.com/company-histories/autodesk-inc-history/ [Accessed 10 September 2021]

4
Keskeys, Paul (n.d.) Blood, Sweat, Tears, Architecture: 10 Challenges Faced by Every Architect. *Architizer Journal.* Available at: https://architizer.com/blog/inspiration/industry/blood-sweat-tears-architecture/ [Accessed 10 September 2021].

5
Weisberg, David E., (2016), *Chapter 8: Autodesk and AutoCAD.* Cadhistory.net. Available at: http://cadhistory.net/08%20Autodesk%20and%20AutoCAD.pdf<http://cadhistory.net/08%20Autodesk%20and%20AutoCAD.pdf [Accessed 9 September 2021].

6
DBpedia (2021) *About AutoCAD.* Available at: https://dbpedia.org/page/AutoCAD [Accessed 10 September 2021].

7
Bethany (2017) *How CAD Has Evolved Since 1982.* Scan2CAD. Available at: https://www.scan2cad.com/cad/cad-evolved-since-1982 [Accessed 9 September 2021].

8
John, Lea (2019) *The Demise of Manual Drafting in Architecture.* LeaDesign Studio. Available at: https://leadesign.com.au/architect/the-demise-of-manual-drafting [Accessed 9 September 2021].

9
LaValley, Michael (n.d.) Young Architect Guide: The 6 Design Programs I Use Most and Why. *Architizer Journal.* Available at: https://architizer.com/blog/practice/details/the-6-design-programs-i-use-most-and-why [Accessed 9 September 2021].

10
Arch2O (n.d.) 8 *Architectural Design Software that every Architect Should Learn.* Arch2O.com. Available at: https://www.arch2o.com/architectural-design-software [Accessed 9 September 2021]

Dr. G. Yogapriya did her B. Arch and Ph.D. from PMIST, Tanjore. She has been involved in teaching and research for the past 16 years. Currently she is Associate Professor at School of Environment Architecture & Design, SRMIST, Ramapuram. Her area of research mainly involves identify the perceptual qualities of a heritage structures. She is skilled at space syntax and QGIS and has published articles in various reputed journals.
yogaprig@srmist.edu.in

Ar. Narayanan Muthuraman has graduated from SRM School of Architecture and Interior Design, Chennai in 2012. Currently he is Assistant Professor at School of Environment Architecture & Design, SRMIST, Ramapuram. He is a freelance architect executing projects for Chennai clientele. In addition, he has completed M.Arch. (Building Management) in 2018 from Sathyabama Institute of Science and Technology.
narayanm1@srmist.edu.in

Ar. Nikitha Ranganath has graduated from Mohamed Sathak A.J. Academy of Architecture, Chennai in 2020. She is now in the first year of M.Arch. at the School of Environment Architecture & Design, SRMIST, Ramapuram. She is a self-employed architect executing projects for Chennai clientele.
nr8072@srmist.edu.in

ARTICLE

TRANSIT PURPOSE IN ACCESSIBILITY VS MOBILITY

Ar. Sonika Sharma, Ar. Monica Sharma & Ar. Piyush Pant

A good public transport system must be easy and convenient to use, fast, safe, clean and affordable.
Rachel Kyte

ABSTRACT

Commuting is a part of our life nowadays. Everyone must have witnessed a joyful as well as a stressful trip at least at once. Now the question is, what are the factors which cause a trip to be joyful or stressful? In urban design, experts have defined accessibility for mobility. As seen in the title, 'accessibility' and 'mobility', these two words are similar in intent: they are directly associated with transport on roads by means of a vehicle.

According to the dictionary, 'transport' means carrying someone or something from one place to another and 'urban' means 'related to city'. If we combine these two, it forms 'urban transport' which defines a transportation system for a mass of people. Urban transport gives a huge picture of a lot of vehicles, roads crowded with lots of vehicles and traffic. But this is far from actual facts. To understand urban transport, we should have knowledge about the real meaning of transport. Urban studies say 'transport' is to carry humans, goods or anything else from one place to another with adequate comfort and with the required facilities.

After combining the term 'urban' into it, 'urban transport' or 'urban transportation' is the movement of people within urban areas using their vehicles or group travel methods such as buses and trains. The essential feature of mass transportation is that many people are carried in the same vehicle (buses) or a collection of attached vehicles (trains). Apart from these two terms, there are a few terms as well such as 'mobility' and 'accessibility' which are also often used. So what is the meaning of mobility? Is it related to any mechanical equipment? Or does it have some other definition? Mobility in the aspect of urban design refers to movement - whether it is the movement of human beings or movement of goods from one place to another.

Key words: accessibility, mobility, urban transport, mass transportation

INTRODUCTION

Accessibility is how well we can reach our destination without discomfort. So what is necessary is only movement or comfortable movement. But it is also important how travel or movement from the point of origin to the destination can be comfortable. The essential components for comfort will also be discussed in detail, along with an initial overview of urban transport issues in India. Rather than covering every aspect of urban transportation, we will primarily focus on accessibility in urban transport and how it can be improved in urban areas. This article will review the trends of vehicular growth with the example of capital city Delhi followed by a discussion on the nature and magnitude of urban transport problems such as congestion, pollution, and road accidents. The case- study of Chicago, USA will help understand the problem-solving process and its components. Building upon this background, policy measures are proposed for improving urban transportation in India.

Trends of vehicular growth and availability of transport infrastructure in Indian cities

Many years ago in India people did not prefer to go very far because of lack of transport facilities. But with time, they invented animal-oriented vehicles for going from place to place, but that was limited to a maximum of 8 - 10 km. That was the starting point of the invention of vehicles. These types of vehicles consumed a lot of time and were not so comfortable. This discomfort forced the innovation of faster modes of transport. As time passed, bicycles were invented and then cars. These were comparatively comfortable and faster than previous modes, although few of these were limited to shorter distances and accommodated only 2-6 people. This was followed by the invention of mass transit modes of transportation such as buses, trains, etc. Alongside this, proper roads, channels, related infrastructure and other aspects were also being developed. At the start, early vehicles ran on simple cut ways and then slowly new organized, properly paved roads were made. As far as the public transport system in Indian cities is concerned, dedicated city bus services operate in about 17 cities only, while rail transits exist only in 4 out of 35 cities, which have a population in excess of more than one million.

Transport demands in most Indian cities have increased substantially, due to increase in population as a result of both natural increase and migration from rural areas and smaller towns. Availability of motorized transport, increase in household incomes and in commercial and industrial activities have further added to the transport demand. To fulfil these demands, good infrastructure is required. According to statistics provided by the Ministry of Road Transport and Highways, Government of India, the annual rate of growth of motor vehicle population in India has been about 10 percent during the last decade. For example, Delhi requires 12000 buses, but only 5000 buses are in use.

Building relations and need between urban transport and accessibility (Accessibility in urban transport)
Migration from rural to urban places has been commonly witnessed in India over the last 70 years, after Independence. This migration caused the population growth in urban areas and with this, the need of infrastructure also has been generated. The government and concerned authorities have been trying to fulfil the need of areas. Among all the sectors, the transportation network system is one of the key components of city planning, which needs to be designed in such a way that it fulfils the demand without creating any disturbance in the city's movement. The basic formula of a successful transportation network are:

- It should have proper allocation of crossing lanes.
- It should have all the associated infrastructure like lights, medians, etc.
- It should have clear demarcation of different lanes like, pedestrian, cycle tracks, carriage ways for vehicles, bus route, roads, rails, etc.
- Furthermore, it should have sufficient stop points/ pause points/ leisure space after certain distances.
- Transportation should be planned as per the development of transit oriented development (TOD)

An intelligent transport system is the best way to get successful urban transport.

Building a multimodal network
With these transportation guidelines, it will be easier to design accessibility during movement or during a journey. All these help in creating a successful accessible transportation system. These are directly proportional to the accessibility and means that more facilities will provide good accessibility.

Current data of Delhi
Delhi has the biggest transportation network in India where there is a mix of different transport systems like MRTS, BRTS (LRTS). All of these have huge road networks. Initially when they were planned, they had good results, but over time we can clearly see a lack of supporting infrastructure. There are few statistics which can define the growing status of Delhi:

- 9% population of Delhi are using their own cars
- 14% population of Delhi are using metros
- 30% population of Delhi are using buses (capacity of one bus is 45 people)

Demand and increase of cars in Delhi
One of the most common and irritating problems that one faces in the national capital of our country is getting caught in traffic jams. The daily commuting on the roads of Delhi is becoming longer and more grueling day by day, depicting the failure of public transportation infrastructure to keep pace with the growing developing activities in the capital. The reasons for traffic jams or congestion is an increase in the number of vehicles on Delhi roads. The road length in Delhi has increased at the rate of 4.53 % per year due to mixed traffic and increase in the growth of population in Delhi. The following figures show the increase in cars on Delhi's roads:

- 1951 – 4000 cars
- 1981 – 0.3 million cars
- 2016 – 4 million cars
- 2018 – 11.2 million registered cars

This shows an increase of approximately 27 percent since 2016. In 1995, people of Delhi spent an average of 1.25 hours a day in a car, a 14 percent increase from only five years earlier. The increase in the number of vehicles on the streets of Delhi played a major role in establishing it as one of the most polluted and complex transport network cities in the world. Delhi is facing the problem of air pollution because of the increase in vehicles, which is causing a health crisis. This has seen an increase in vehicle accidents too. Till 10 October 2021, 433 people were killed because of rash and negligent driving on Delhi's roads. Over 38,000 people were booked for rash and negligent driving this year.

This clearly shows that just facilities (cars, networks, etc.) cannot make things successful, which is the case of most of India's transport. Provision of accessibility in mobility needs to be added, which is the only way to ensure a successful transport system. The terms 'accessibility' and 'mobility' are often used together in transportation planning but without clear distinction. For example, the long-range transportation plan for the Delhi/ NCR metropolitan region has as a primary goal "to provide an acceptable level of accessibility and mobility for the region's residents."

Justification of the need of accessibility in urban transport
The built environment must be accessible for desired and intended use, and where necessary, inaccessible to undesirable and unintended use. More accessible public places are the outcome of more clear and grid planning. In order to achieve good accessibility in the city, it is important to plan the city as simplest in design. More complexity will lead to more difficulties. In historic cities or villages, everything that was needed was placed nearby, in the proximity of 200- 350 metres. It was only along these distances that residential, small commercial, small scale occupational units were placed so that routes for reaching all these places would be easy and clear. With time, expansion of these places, residential and commercial routes led to more roads and public places coming up, resulting in congestion and excessive time spent in journeys. Apart from these issues, this also led to the security, mental and physical health issues.

Accessibility is the ease with which public spaces such as streets, parks, squares, always can be accessed, used and left.
How easily can you get somewhere and what is the probability that you meet someone? It is observed that a neighborhood which is easily accessible, is generally busier than a street or neighbours that are less accessible. When it comes to social security the rule applies: more people on the street = more social control.

All the issues whether - are social security, safety, mental physical health or mobility-related issues can be solved by providing distribution of accessibility at the municipal level, local level or street level. This includes proper land use and distribution and a simplistic road network.

Behavior and pattern of transportation system of Chicago, USA towards accessibility

Chicago is one of the best planned cities in the USA. It was established in the 1830s as a water transit hub. The geographic condition of Chicago allowed strong transportation between the great lakes and Mississippi River. It has now grown into an industrial metropolis, mainly processing and transporting material. Chicago has an estimated population of 2.7 million people. In 1837, the city had a population of 4170 when it was in its process of development. Chicago started out as grasslands and forests, but has since become a major metropolis, made up of steel and concrete. It was planned in such a way that it was located at the intersection of a river, lake, and railroad routes. Chicago was also surrounded by rich farmland. The railroad was a major transportation route that brought grain from the surrounding region into Chicago, where it was then transported by ships to the East Coast and Europe. This caused Chicago to grow quickly as many people migrated to the area. Boats from the river and lake also brought iron to be processed, while the trains transported livestock.

Industrial establishment, developing into IT hubs etc. were the outcome of good transportation systems that welcomed people into the city. Factories grew quickly in Chicago due to its transportation lines. This created many jobs, so more people continued to migrate to Chicago. As more people came, the need for additional housing, retail and banking increased. "The Loop" in downtown Chicago became a business district as bankers, real estate developers and large retailers were drawn to the quickly-growing city. At the same time, the railway system grew, allowing people to move further away from the downtown city centre. As lower-income families moved further away from the centre of the city, manufacturers moved with them to take advantage of cheap labour, such as women and children for sewing clothing.

As development continued, the suburbanization of Chicago began, which continued to grow as streetcars and automobiles were invented, allowing citizens to live further away from the city centre, but still easily access it. As automobile travel continued to increase, this led to the construction of new paved roads. Eventually, the expressway system was developed. Urbanized areas that had been considered rural were now part of the metropolis. These areas include Bolingbrook, Bloomingdale, Darien, Carol Stream, Schaumburg, Rolling Meadows and Elk Grove Village. As the suburbs of Chicago grew, citizens began to rely more heavily on automobile travel. Today, the continued growth of transportation keeps Chicago an international business hub. There are two airports, O'Hare and Midway. O'Hare is the second busiest airport in the US. Chicago's transit system connects the airports to downtown Chicago and is the second largest transit system in the US, utilizing rails, buses and cabs.

Chicago's transportation planning is the outcome of various precise research and analysis. That was based on forecasts of future land use and development patterns with assumptions about economic activity of the region. The forecast was quantitative in nature. It was rigorously controlled with internal consistency checks to insure technical precision. Northeastern Illinois Planning Commission (NIPC) developed five plans:

1. The Depressed Regional City Plan
2. The Finger Plan
3. The Multi-towns Plan
4. Satellite Cities - Greenbelt Plan
5. The Trends

All these plans were based on parameters like :

1. Determination of person trip totals
2. Determination of mode choice
3. Distribution and assignment
4. Network performance evaluation

Economic Evaluation

The long-range plan for the Chicago metropolitan area establishes the goal of providing "an integrated and coordinated transportation system that maximizes accessibility and includes a variety of mobility options".

For planners, it is difficult to define and measure accessibility. The American Heritage Dictionary (fourth edition) defines 'accessibility' as 'easily approached or entered'. On the other hand, The Oxford English Dictionary defines 'accessibility' as 'the quality of being accessible, or of admitting approach'. Hansen (1959) defines the accessibility for planners as 'the potential for interaction'.

If we add all of these ideologies, accessibility includes reflecting the time or cost of reaching a destination, and an attractiveness factor, reflecting the qualities of the potential destinations etc. Planning for accessibility rather than mobility can create benefits by expanding choice and reducing the need to drive.

Chicago has a multimodal transportation system where intelligent transport systems enhance the transportation facilities. The city has no gate. It is designed in rectangular loops where streets meet at 90-degree angles. Bus, rail and private motorcars are the main transport mode which connects almost all the major points of the city. The concentric planning of Chicago forms the central business district (CBD), the centre of planning all roads networks connected to the main point.

There are few major key factors that make Chicago successful in terms of transport planning and the impact of the city's ease of movement are clearly visible :

1. The city has aimed to promote pedestrian movement. In order to make the city pedestrian-friendly, clear demarcation of pedestrian paths has been laid.
2. Appropriate signage and demarcation.
3. Each block of buildings has sufficient parking but not along the road.
4. In order to provide accessibility in pedestrian movement, sitting areas are planned after every 400-500 m along the roadside
5. To control movement of wind, vegetation, trees and artificial installations are put up at possible spaces.
6. To control vehicle movement, carriageways have limited width size.
7. Resting spaces are planned after certain distances.

8. City has planned beautifully to attract tourists significantly.
9. Recreational areas

Accessibility enhancing strategies

In India there are six levels of service for roads termed as follows:
A = Highway
B = Arterial road
C = Secondary road
D = Collector road
E = Street
F = Failure of roads

There are several policies to increase mobility which can increase accessibility as well by making it easier to reach destinations. But it is not possible to have good accessibility with poor mobility. For example, a community with severe congestion, but where residents live within a short distance of all that is needed and desired destinations has poor mobility but good accessibility. In this case, accessibility is not dependent on good mobility. It is also possible to have good mobility but poor accessibility. For example, a community with ample roads and low levels of congestion but with relatively few destinations for shopping or other activities or with undesirable or inadequate destinations has good mobility but poor accessibility. The following are some strategies to limiting mobility:

- Pricing strategies
- Road pricing strategies
- Distance pricing strategies
- Parking pricing strategies
- Road restriction (diverted traffic) and removals

To plan for accessibility, especially in any area, we should focus on the ends rather than the means and to focus on the traveler rather than the system. Before planning, it should be borne in mind that people should have access to the activities that they need or want to participate in. This will lead to the best result required. There are few thumb rules for designing accessibility in mobility:

A. More people on the street = more eyes on the street = more social control.
B. Land use
C. New urbanism
D. Transit-oriented development
E. Infill development

CONCLUSION

With the support of discussion above, it can be seen that good mobility is neither a sufficient nor a necessary condition for good accessibility. And the purpose of transit is basically to improve accessibility with good mobility. After discussing each aspect in detail, it is easy to differentiate between mobility and accessibility as : 'mobility' is how far you can go in a given amount of time, and 'accessibility' is how far you can get to in that time. There is a major point that needs to be considered, that nothing can be an ideal solution for any case. Only a few thumb rules can be applied to each situation; the rest depends on area, locality and their specific needs. It is highly recommended to analyze the type of trip that needs to be planned.

REFERENCES

1
Akbar, P., Couture, V., Duranton, G., Ghani, E., and Storeygard, A. (2017). *Accessibility and Mobility in Urban India.* World Bank. Retrieved 2021, from https://thedocs.worldbank.org/en/doc/582481505498149114-0050022017/original/Urbanization2017.Duranton.PPT.pdf

2
CMAP. (n.d.). *Transit.* Retrieved 2021, from Chicago Metropolitan Agency for Planning: https://www.cmap.illinois.gov/mobility/transit

3
Friedner, M. and Osborne, J. (2015). New Disability Mobilities and Accessibilities in Urban India. *City and Society,* 9-29. Retrieved 2021, from https://anthrosource.onlinelibrary.wiley.com/doi/10.1111/ciso.12054

4
Joshi, V. (2011). *Houses, Household Amenities and Assets : Transportation.* Census of India. New Delhi: NCT of Delhi. Retrieved 2021, from censusindia.gov.in: https://www.censusindia.gov.in/2011census/hlo/Data_sheet/delhi/8Transport.pdf

5
Libguides. (n.d.). *Chicago Area Transportation: Statistics and Data.* Retrieved 2021, from libguides.northwestern.edu: https://libguides.northwestern.edu/c.php?g=114808andp=748275

6
Ministry of Road Transport and Highways. (n.d.). Retrieved 2021, from en.wikipedia.org.

7
MoRTH. (n.d). *Basic Road Statistics of India.* (M. o. Highways, Producer, and Government of India) Retrieved from morth.nic.in: https://morth.nic.in/basic-road-statistics-india

8
Wang, L., Guo, X., Li, W., Tong, Y., Chen, F., Meng, H., Xiao, S. (2012). DFM Study in Low k1 Lithography Process. *ECS Transactions, 44*(1), 187-196. Retrieved Sep. 18, 2021, from https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.827.2182andrep=rep1andtype=pdf

Ar Sonika Sharma is an architect and urban designer and has contributed towards heritage development and research. She is working with MSG Global in the USA. She has also worked with Delhi Development Authority as well as at a variety of architectural and urban level projects. She has researched urban level historic areas and has over four years of teaching experience. She has been awarded for Best Research Work in her specialization in M.Arch from Sushant School of Art and Architecture, Gurugram, India. She has authored a book Urban Design of Braj Bhoomi.
ssharma.uc@gmail.com

Ar. Monica Sharma is a sustainable architect, with a passion for energy-efficient and green architecture. She has been awarded with a gold medal in M. Arch. (Sustainable Architecture) at Bharati Vidyapeeth Deemed University, Pune. She has worked on a variety of architecture projects related to GRIHA and LEED certification. She has also worked with The Energy and Resource Institute (TERI) in Delhi; Greentree, Noida and Sukarman Architects, Delhi NCR. Along with practical experience she has more than nine years of teaching experience.
monicasharma971@gmail.com

Ar. Piyush Pant has specialized in landscape and has done more than 150 projects along with his partner. As he is inclined toward the digital world of architecture, he runs his YouTube channel (peoples TV) as his knowledge centre and is associated with architecture colleges internationally. His projects are of various scales and also has a number of research publications to his credit. He also has seven years of academic experience.
arpiyush21@gmail.com

ARTICLE

MAKING OF THE COA MANUAL OF ARCHITECTURAL PRACTICE

Ar. Manoharan J.

"Every time I felt I have mastered it, each new completed project has made me aware of how much more there is to architecture." writes Ar. Doshi in his book Paths Uncharted.

Well, I was reminded of his words every day of the seventy weeks' period during which we, a selected group of seven architects, were working on the task of preparing the Manual of Architectural Practice (MAP) , a Council of Architecture (CoA) initiative. Season I and II, the lockdown and the new normal to us, was indeed a blessing in disguise as we met every week for over three hours to debate, deliberate, argue and always arrive at a tangible outcome in the process of mapping the MAP "online".

The Executive Committee of CoA and more particularly President Habeeb Khan had assigned us the task in mid-April 2020 with the intention of elaborating, explaining and providing clarity on various aspects of architectural practice as a ready reckoner not only for architects but all stakeholders and also as a kind of handholding for young architects and start-up practices. Our initial deliberations for a few weeks were to list out the contents for the Manual and group them in various volumes. Then a team member or one of the others volunteered to be the principal compiler for each volume. Interestingly joint authorship for a particular volume and also principal authorship of a couple of volumes by the same members also took place. For all the volumes, there were co-authored contributions in terms of a few chapters or sections by other members as well. Earlier CoA handbooks and IIA handbooks, besides manuals and professional handbooks of other countries, were referred to while preparing the Manual. Eventually the five volumes the team had compiled were captioned :

1. Architectural Practice (some historical background, Architects Act, regulations, ethics, etc.)
2. Engagement of Architects (including architectural competitions)
3. Contracts for Professional Services.
4. Guidelines for Fees
5. Management of Firms

The volumes in draft form consisting of several sections each were made in a few weeks' time, each in a sequence and presented to the team during the weekly online meetings. Normally the drafts were mailed to the team members days in advance so that they could be ready with observations, corrections, modifications, additions and deletions for the presentation by the compiling member. Debates and discussions invariably occurred in each meeting leading to pertinent incorporations and modifications. Particular care was taken to see that the contents catered to the practices across the nation right from small towns to metro cities. The Manual in principle ensured legally correct, ethical and fair practice taking into account various stakeholders involved.

President Habeeb Khan participated in the initial meetings and also in crucial meetings whenever the situation demanded and offered his vital inputs. Vice-President of CoA, Ar. Sapna made it a point to be present in all the meetings and shared her knowledgeable opinions and informed inputs. The Registrar and the Legal Officer of CoA were both present in most of the meetings and enlightened us on legal aspects and points pertaining to the Act, Regulations and Rules whenever they came up for discussion and clarity. In about forty weeks the first three volumes were ready after several rounds of discussions and fine tuning. There were several one-to-one offline discussions, debates and conference calls made during the process of fine-tuning the volumes.

The draft volumes of the MAP were then scrutinized by an independent Review Panel consisting of Ar. J.P. Agarwal

(Kolkata), Ar. Vivek Gupta (New Delhi), Ar.M.V. Milana (Bangalore), Ar. Naresh Narasimhan (Bangalore) and Ar. Lalichan Zacharias (Kochi). The Review Panel members, Ar. Vivek Gupta and Ar. Narasimhan, participated in an online meeting of the MAP team to interact and express their points. Observations of the Review Panel members on each volume were studied by the respective volume compiler, discussed during the meetings and suitable modifications were incorporated in the manual.

Publication and book design consultants were identified and their inputs were reviewed in detail. A senior member with his recent firsthand experience in publication, President Habeeb with keen interest in quality gave useful instructions to the publication consultants.

The Team was given an opportunity to make a presentation to the Executive Committee of CoA, wherein useful interaction took place and encouragement was given to complete the process. In a total of 67 weeks with 67 plus online meetings, all five volumes were ready. The MAP team had the unique privilege of making a presentation in person to the Council of Architecture in their 75th Council Meeting at India Habitat Centre, New Delhi on 28th August 2021. Satisfactory answers were given by the team members for the queries raised by the Council members on the floor. Later we were informed that the Council had approved the Manual as presented and appreciated the Team's efforts. In fact, the members of the team who had travelled to Delhi had met one another for the first time in person on that memorable day only.

I have been talking about the Team without introducing the members who were part of the meticulous task. Now let me introduce them :

- Ar. N. Mahesh with more than 48 years of pioneering, and having a reputed and award-winning practice based in Thiruvanathapuram
- Ar. Vijay Uppal former Vice President of CoA, former Architect-in-Chief of Himachal Pradesh, a renowned expert in mountain architecture
- Ar. Manoharan J., Convenor, currently a Professor of architecture after forty years of architectural practice based in Chennai, with several awards and publications to his credit
- Ar. Sandeep Shikre, heading one of the large-scale architectural practices in the nation, with several national and international accolades
- Ar. Prashant Sutaria, heading a firm of nationwide practice with several national and international awards
- Ar. Salil Ranadive with wide-ranging projects and recipient of numerous awards and accolades.
- Ar. Vaitianatin, architect nominee from Puducherry to CoA, an IIA outstanding member award-winner and recipient of the Best Centre award as Chairman of IIA Puducherry Centre

Offices of the members also assisted the team in making of the MAP, and Ar. Sandeep Shikre took the responsibility of regular follow up with the publishing consultant.

The contents of MAP are not discussed in detail here as the Manual shall be formally launched in about a month's time or so. Soon the digital version also shall be accessible. However, I would like to add that appropriate outreach programs shall be curated online and otherwise to take the Manual to all architects and other stakeholders. IIA with its nation-wide grassroot-reach would have to be an important platform to be aptly availed for the purpose.

I shall conclude with a few lines I had written to CoA President Habeeb before passing the baton to Ar. Lalichan as the IIA elected representative in CoA:

ADIEU

Normal tenure is three years but I was given five and a half
To be in Council as an elected member on South Zone's behalf.

Three Presidents I have been with, and an Acting one too,
Three different Executive Committees' execution period too.

The current one though pandemic is the new normal,
Tread along a progressive path not so normal.

Outreach hitherto unknown in Council's days
Reached North and South in interactive ways.

Minimum Standards four decade old and out date
Replaced with MS 2020 more real, new and update.

Webinars and online workshops for academics and field
Frequently held by TRC and CoA Social reception did yield.

Approval of schools with policy deterrent to crowd over
Appreciating and encouraging in needy remote corner.

National Aptitude Tests in centres few hundreds so nice
Utmost care was conducted defying the pandemic, not once but thrice.

Manual of Architectural Practice- a task so great and tall,
Update and upgrade the info data and codes for all.

The Council is pronounced all powerful and numero uno –good.
Another pronouncement - profession free for all -not good.

Challenges are many tasks aplenty faces the Statute
But it's in good hands, passionate hearts and able, I salute.

I, with three others of IIA, say adieu to you
But trust and call, we shall always be with you.

We do wholeheartedly thank you thank you.

Ar. Manoharan J.
Erstwhile Council Member
(This one is inspired by poet Habeeb Khan)

Ar. Manoharan J. is a Fellow member of The Indian Institute of Architects. He is Chairman, IIA Tamil Nādu Chapter (2002-04). He was an Outstanding Member of IIA 2004. He was Convener IIA Natcon 2013 in Chennai. He was IIA elected member of Council of Architecture from southern region 2015-2021. He has forty years practice with awards and publications. He is currently Professor- Design Chair.
manoharanj@gmail.com

ARTICLE

APOCALYPTIC ART

Ar. Fatema Kabir

Salavador Dali, "Soft Construction with Boiled Beans", 1936
(Source : https://www.dalipaintings.com/soft-construction-with-boiled-beans.jsp)

ABSTRACT

Apocalyptic literature has been witnessed from the time of the Messianic period. The human race has and will continue documenting ideas of apocalypse. Today different forms of art depict apocalypse as a theme. Apocalypse may not be limited to the revelation of the end of the world but a revelation or a premonition in varied forms. Premonition may be for a catastrophic event; one that could end the world but not necessarily one that will.

This article looks at apocalyptic art works of a Surrealist and a Cubist artist, Salvador Dali and Pablo Picasso respectively. "Soft Construction with Boiled Beans" by Dali will be studied in detail to understand its apocalyptic nature. Picasso's "Guernica" and Vasco Gargalo's "Aleppo(nica)" will be looked at as an expression of apocalypse that is timeless.

1. INTRODUCTION

Now the earth was corrupt in God's sight, and the earth was filled with violence. And God saw that the earth was corrupt; for all flesh had corrupted its ways upon the earth. And God said to Noah, "I have determined to make an end to all flesh, for the earth is filled with violence because of them; now I am going to destroy them along with the earth.

Genesis 6:11 (NRSV Bible)

Literary form has been a medium for conveying apocalyptic messages. In this article, art, as a medium, will be explored. It is not a new idea: art has always been a source of expression. From the very beginning of mankind art has been the most critical language. Egyptians drew the reincarnated form of the pharaoh as he would come back to life after death- this was an understanding of the future and expressed through art. The artistic expressions went from daily expectations to emotions to religious symbolism to future predictions. At times predictions of the future took the form of a warning of an apocalypse.

This study concentrates on three artists whose works may be understood as premonitions and / or reactions to wars, revolutions, and catastrophes that may strike as an end of mankind. Salvador Dali, a Surrealist Spanish artist from the 1930s was and is recognized for his artwork named *Persistence of Memory* (1931). Along with other genres he also has a couple of hits on apocalyptic art. The most renowned one is *Soft Construction with Boiled Beans also called Premonition of Civil War* (1936).

As a response to the Spanish Civil war Pablo Picasso, a Spanish Cubist artist painted a mural named *Guernica.* It is a piece that is celebrated as a cry against war even today. Though *Guernica* was an after-war expression, it was and is still a premonition of the future. Artists today are inspired by these pieces and are putting together more expressions of aftermaths and premonitions. Vasco Gargalo adopts Picasso's Guernica as his inspiration and tool. He creates a new cry against war in Syria using *Guernica,* an artwork named *Aleppo(nica).*

Whenever a Master Artist is studied, the work is analysed in multiple layers. One of these is always a personal, emotional expression of one's self. Similarly, these artists had their individual catalysts that brought them to the kind of art they finally created. A study of their art helps us realize the impact of political, social and structural surroundings upon the artists and their works. The old and new pieces will be explored individually and in relation with each other for a deeper understanding and value of Apocalyptic Art and its interpretation.

2. PREMONITION OF CIVIL WAR (SOFT CONSTRUCTION WITH BOILED BEANS)

Salvador Dali's *Soft Construction with Boiled Beans* (Image 1) was painted in 1936, six months before the Spanish Civil War broke out. Post-war, the artist renamed his art work as *Premonition of the Civil War.* It is a surrealist piece, one of Dali's treasured works of art. It is 99.9 X 100 cm in size, oil on canvas, displayed at the Philadelphia Museum of Art.

The painting has many elements of Dali's intrigue- from cabinet drawers to tiny men, blue skies, human anatomy, boiled beans, etc. Each element has a background of social and or political connection with a reflection of the future. Study into the connections also leads us to an older painting by Spanish artist, Francisco Goya of the early 1800s. Hence a multi-layered inter-disciplinary reading is woven into each of Dali's art. Though Dali would want to believe himself as having prophetic foresight, the art is more of a premonition based on his surroundings at the time. It gets stronger in expression and seems apocalyptic in nature due to the language of surrealism.

Catalan Landscape

As in most other paintings, *Premonition of Civil War* is also set on a background of rocky terrain and blue skies of Catalan in Spain. Catalan was Dali's birthplace and he spent most of his time at the seashore observing the rocks. In the form and shape of these rocks he found the figures of his artwork. They came to life for him and he built a conversation with them through his art. Artistically conversing with an object of his observation was one of his skills that made him see a new world beyond the one that already existed. This foresight at one point facilitated him in the premonition art.

Sigmund Freud

The painting has a huge human-like creature in the centre of the scene. This creature is sitting on a cupboard having two sections. It is enclosed without any door knobs. The opening seems to be deceptive or implied as impossible. The origin of the cupboard and drawers comes from Dali's obsession of understanding the human mind. Dali stumbled over Sigmund Freud *(Father of Psychoanalysis)* and his works, at a time when Surrealism was taking hold of him. Theories of the human mind and dreams went well with the idea of Surrealism. Cupboards became the mind and drawers were the multiple sections in it. Each drawer, as Dali understood, would have varied ideas. At a given point of time, a mind could be thinking of the kitchen and the war field simultaneously. His painting *Spain* (1938) is a clear narration of this theory (Image 2). It was as a reaction to the Spanish Civil war. Hence the kitchen drawer has a blood soaked cloth hanging from it. Unlike *Spain,* the painting *Premonition of Civil War* has the cupboard and drawers locked. He is keeping the suspense within, one does not know what is next- yet the human-like monstrous creature sitting on the cupboard cries out the premonition loud and clear.

Centre Piece

A human-like creature is the centerpiece of the painting which draws the viewers' attention completely to itself. In Dali's words, the painting is *"a vast human body breaking out into monstrous excrescences of arms and legs tearing at one another in a delirium of auto-strangulation."* (Neret, 2007).

Salvador Dali, "Spain", 1937
(Source : https://www.dalipaintings.com/spain.jsp)

Francisco Goya, "Saturn Devouring His Sons", 1820
(Source : http://www.franciscogoya.net)

On analysis one realizes that there is a body at the top with a head, bust and leg. The second body is at the bottom with two hands, a hip, a foot and a separated leg bone. Neither one is complete- they both appear to be similar in many senses. One would say it is a single body torn into parts. Yet the top body is sitting on the hip of the lower one, while the lower hand is pulling the bust of the upper one. The creature hence created appears to be in extreme tension and ecstatic pain.

Muscles of the hand pulling the bust are distinguishable, hence the pressure on the pull is understood. The head is pulled back with neck bones and muscles exaggerated. They are tight and popping out. The tension of the whole body is best understood at the neck, while the pain is best experienced at the bust. The head appears to be an inspiration from Francisco Goya's painting, *Saturn Devouring his Sons* (Image 3). The monstrous head of Saturn is possibly reappearing as the head in Dali's work. The fact that Saturn was devouring his own children is an idea that is linked to the war- mankind eating itself.

Another clue that Dali leaves in his work as premonition, is the difference in the colour and shade at the ends of the body parts. The bust, leg, hands and hip appear to be more human-like, while the head, neck, palm, finger and foot are all black, probably burnt and more skeleton-like with a wrinkled skin effect. The decaying of the body had begun from the outer boundary. If one could recognize and stop the decay, the rest could be preserved.

Pablo Picasso, "Guernica", 1937
(Source : https://www.pablopicasso.org/guernica.jsp)

Vasco Gargalo, "Aleppo(nica)"
(Source : http://ilustragargalo.blogspot.in/)

Map of Spain

The two creatures connect with each other and create a huge void in between. One can either choose to see the Catalan landscape behind it or imagine the missing body parts. To add on, the void is the exact shape of the map of Spain. While the viewer is locked in the monstrosity of the creature; Dali has hidden the premonition in the form of the creature, but one would realize the void and the map only if they can overlook the echo of the creature.

Little Man

There is a little man in the painting hovering over the lower hand who seems to be observing or studying some details. One could say he is the eye that is looking into the future, but ironically in a premonition painting, it is so small that one would never know the future. Usually Dali has these tiny figures lurking around in his Catalan landscapes at the back of the main painting. The figure is himself, his mother or some friend. Here also one could say it is him, or a lost friend but an eye of the future is better fitting.

Skyline

In the landscape at the back is a very subtle skyline of buildings and settlement. It could imply the peaceful neighbourhood of Spain right until the war came up in the form of the creature.

Food

Very often Dali's paintings have food elements in them. Here boiled beans are seen strewn around at the bottom of the painting. Food is scattered, shelter is lost in the background, the mind is enclosed in the cabinet and an unclothed body is severed in pain : a perfect analogy of war.

3. AFTER THE CIVIL WAR : GUERNICA

Guernica is a narration of the event on 27 April 1937 at the Spanish village of Guernica. It was the first-of-its-kind aerial bombing of civilian population. Pablo Picasso painted this 349 X 776 cm sized mural as an outburst of his shock and poignancy about the conditions at Guernica (Image 4).

The painting is a perfect narration of the devastation at Guernica, a culmination of various stories. There are severed body parts lying around, people crying in pain and agony, some are caught in fire and are desperate for help, animals are lost and scared- all of it narrating the painful tragedy of Guernica. There is a light bulb at the top centre and a hand holding a torch, which looks like Picasso did leave room for hope. Considering that this painting is after the Guernica attack then what is left for hope here? Yet Picasso depicts it.

He probably did not look at *Guernica* as an isolated attack, not that it was, yet his image captures the catastrophe while calling out for mankind to understand the consequences of war. The light bulb acts as an image of enlightenment, probably a realization and a revolution. Hence *Guernica* cannot be put on the shelf of only aftermath paintings. It was meant as a narration of the past, realization in the present, and if not realized, then a repetition of history in the future. *Guernica* continues to be a premonition for the future in every era.

This understanding is further confirmed by a remake of *Guernica* by a Portuguese cartoonist, Vasco Gargalo. The painting is called *Aleppo(nica)* (Image 5). Andrew Mitchell said, "They are doing to Aleppo precisely what the Nazis did to Guernica in the Spanish Civil War." (Jones, 2016). Similar to this statement is the painting. Vasco Gargalo inserted the face of Vladimir Putin on the White bull- the only character that is a silent observer in the painting, looking onto the woman in distress, as if observing his own creations. Bashar Al-Assad is posed in place of the woman who was stretching her hand out of the window with a lantern of hope, which is now replaced with a missile. Considering that after 80 years of Guernica's disaster, and its original painting, we still find Guernica live on our streets. It is apt for Gargalo to have replaced the hope lantern in the new painting with a war weapon. The horse in the centre is framed as USA, whose warnings are unheard and unheeded.

4. CONCLUSION

We now live in the era of apocalypse that Pablo Picasso was trying to wave at us. We may also be living in surrealism that was only art for Dali.

Art will always be a true reflection of one's self or the society one is living in. How well are we able to read and decipher its multi-layered language is up to us. Art works like *Guernica* and *Premonition to Civil War* will keep coming our way. Warnings in them are for us to heed and act upon. Apocalypse or the end of the world may not be in the control of mankind, yet one can choose to be or not be its catalyst.

REFERENCES

1
New Revised Standard Version Bible.

2
Neret, Gilles. *Salvador Dali : The Triumph Of Avida Dollars.* Taschen, 2007. p.45.

3
Jones, Jonathan. "As Aleppo Burns in this Age of Lies, Picasso's Guernica still Screams the Truth about War", *The Guardian, Art & Design.* 12 October 2016. Accessed : https://www.theguardian.com/artanddesign/jonathanjonesblog/2016/oct/12/picasso-guernica-aleppo-syria

4
Dali Paintings. "Famous Salvador Dali Paintings, Soft Construction with Boiled Beans". Accessed : https://www.dalipaintings.com/soft-construction-with-boiled-beans.jsp

5
Phila Museum. "Collections, Permanent, Soft Construction with Boiled Beans". Accessed : https://www.philamuseum.org/collections/permanent/51315.html

6
The Dali. Accessed : http://thedali.org/

7
Ewell, Bernard. "Provenance is Everything". *Park West Gallery.* Accessed : http://dali.parkwestgallery.com/provenance.htm

8
PQ. "Thought through my eyes – Epilogue Part 1". *A Building Roam.* 29 June 2011. Accessed : http://www.abuildingroam.com/2011/06/thought-through-my-eyes-epilogue-part-1.html

9
PQ, "Thought through my eyes – Epilogue Part 2". *A Building Roam.* 14 July 2011. Accessed : http://www.abuildingroam.com/2011/07/thought-through-my-eyes-epilogue-part-2.html

10
PQ, "Thought through my eyes – Epilogue Part 3", *A Building Roam.* 24 July 2011. Accessed : http://www.abuildingroam.com/2011/07/thought-through-my-eyes-epilogue-part-3.html

11
Dali, Salvador. (1936). "The Conquest of The Irrational", *A Building Roam.* 4 December 2010. Accessed : http://www.abuildingroam.com/2010/12/salvador-dalis-essay-conquest-of.html

12
Freud Museum, London. "Dali's Portrait of Sigmund Freud". Accessed : https://www.freud.org.uk/education/topic/76547/subtopic/76549/

13
Prado, Elena. "A Silent Understanding – The Influence of Sigmund Freud for Salvador Dali". *Domigo,* 2 May 2010.

Ar. Fatema Kabir, is an Associate Professor at Aayojan School of Architecture, Pune. With eleven years of teaching experience. She is currently pursuing her Ph.D. in Experiential Analysis of Architecture. In her quest of Architectural Theory, she has gone from being a writer at IA & B to being a teacher in architecture schools to being a workshop organizer and resource person for Teachers Training Programmes (TTP) held by the Council of Architecture. Ar. Fatema has also curated art galleries as part of her exploration. She has a couple papers published to her name that reflect her varied interests.
Email : kabir.fatema@gmail.com

FROM ARCHITECTURE TO FLEET MANAGEMENT

FROM DESIGNING BUILDINGS TO DESIGNING CAR POLICIES

Ar. Maneesha Srivastava Bhatnagar

Life does not always play out as we plan it … but that doesn't mean it won't turn out better than you could have ever imagined. It's the bends and twists and turns that make life such an adventure. As a young girl in the 1980s who ventured into the B.Arch. course with great ambitions, I could have never imagined where life would lead me. After graduating in 1994, I had five years of good work experience with different architectural firms at projects in multiple Indian cities. The rigours of training, apprenticeship and extensive travelling in my early jobs was the 'real learning process' enhancing my appreciation of design and honing my capabilities to work with diverse workforce and see an idea to fruition.

The next decade, starting after my marriage, saw twists and turns at every step. I travelled extensively, living in five different countries, and bringing up a family at the same time. For some part of it, I managed to continue working in the construction field; changing roles to accommodate every opportunity that came my way. Sometimes it was as an Infrastructure Construction Coordinator for the Dabhol Power Company (an Enron entity), at others as a Project Manager in Bahrain, commissioning a multi-storeyed serviced apartment complex, or working for the Bahrain Defence Force with their Tender & Purchasing department. But it kept getting more difficult with the moves and managing kids.

There was a period of utter despair and hopelessness which was making me bitter and resentful every day. All my ambitions of earlier years, my learnings and struggle were stopping me from accepting that this was the end of my professional life's road. By then we were in Dubai, in the UAE and it was almost five years since I had left my last job. I couldn't go back to hard-core designing or construction management with such a long gap. I had no knowledge of the new digital designing tools nor a solid portfolio of work to approach any firm in Dubai. I realised a total reinvention was required. What better way to start a new life than going back to school?

So, at 39, I enrolled into Manchester Business School's 3-year Global MBA program. Studying for the degree as a part of a cohort with 22 nationalities and being taught by world-class professors was another experience. I was also ready to let go of old baggage and start again from the beginning. By the 4th semester, with the help of the Manchester Business School Career Centre, I was able to secure an internship with LeasePlan, a company I had never heard of before. The internet told me LeasePlan Emirates was a part of the LeasePlan Corporation, a 50 plus-year-old Dutch multinational with their UAE entity owned 51 % by the local government. In 2012 I joined LeasePlan as their '41-year-old intern'.

LeasePlan is a fleet management company. They provide total fleet solutions through leased vehicle fleets to large corporates, SME and public sector entities. The Dutch corporate entity has a banking license and falls under the jurisdiction of the European Central Bank. My internship exercise helped them totally overhaul their pricing policy directly benefiting their business in the UAE. The managing director was a Manchester Business School alumnus and in him I found a new mentor and guide who showed faith in my work and approach. I was hired as a full-time employee by the year's end as an Account Manager, while still pursuing the MBA. By 2013 I graduated with an 'outstanding academic achievement' award from Manchester Business School for the best performance within the cohort.

In 2013 I was also chosen as the Designate Consultant from the UAE entity. This gave me the opportunity to travel to the Netherlands and undergo training with the world-renowned consultancy firm AT Kearney. The Consultancy angle gave my profile the well-rounded approach that I was looking for. My results improved and I was promoted to key-account management. By 2015, I was the top performer in the UAE entity and one of the top 20 performers in the entire group of 32 countries. In 2016 I not only got felicitated beyond my expectation for this performance, but I was also suddenly thrust into a leadership role as the 'National Sales Manager' as our current NSM had decided to move on.

I now lead a team of ten people comprising six different nationalities. It is a demanding role and nerve-racking sometimes. The sales numbers that I always dreaded are my bread and butter now. My team is the face of the company and carries the weight of reputation and success of the company on its shoulders. I have to ensure they have focus and purpose so they can succeed. I also have to ensure they keep believing in themselves after every deal they lose. I need to take care of their training and skills and steer them towards their own professional growth. The hardest part is to keep the team together as one cohesive unit such that people can work together and learn together and most importantly accomplish the goals of the organisation.

Being the Consultancy Lead I am heavily involved in all process improvement and new initiatives within the organisation. I learn something every day. At present I am deep into 'sustainability'. Though the focus is on LeasePlan, in the process I am also learning so much about every aspect of sustainability and why we need to prioritise it over everything else. When I introspect, I feel my architectural education, training and job experiences have not only enhanced my work skills, but they have also imbibed in me a deep sense of empathy which comes handy every day. At the end of the day any profession is about managing people and their expectations. It makes no difference whether you are designing a home or a car policy for a client, it's all about listening, understanding clients' needs and steering them to a solution. And in the process, implement our professional knowledge and skills in a way that they can own and cherish.

I wake up each day with the feeling that I need to make a difference, to nurture a team member, to inch closer to a win, to learn a new skill or a new term, to meet a new client or to solve another client's problem. Looking back, I feel the roller-coaster ride of my life couldn't have led to a better destination and I just hope there is more excitement to come.

Ar. Maneesha Bhatnagar, with 26 years of experience, is a mom, manager, mentor, consultant and sustainability enthusiast. She has a B.Arch. from GCA Lucknow (now Abdul Kalam Technical University) and MBA from Manchester Business School, Dubai Campus. Originally from Lucknow, India, she has moved across six countries, and is now living in Dubai, UAE. She works as a National Sales Manager and Fleet Consultant with LeasePlan Emirates a Dutch MNC. maneeshasb2000@yahoo.co.in

BEYOND THE FORESTS, THE ARCHITECTURAL JOURNEY OF JHARKHAND

by Ar. Manguesh R Prabhugaonker

Beyond the forests , The architectural journey of Jharkhand is a first kind of document with well compiled valuable reference material that reflects architectural history of Jharkhand with emphasis on the built and natural environment of the region over the years .

The content in the book with well researched factual records from different aspects of human interphase and how it has shaped sustainable building habitats is appropriately listed from the prehistory to modern times of this amazing region . The book can anytime be rated as a guide that narrates socio-economic growth and development through research and chronological sequence through a well drafted research methodology especially for inspiring young architects,

The built environment and its emerging architectural typology in Jharkhand especially among land uses like religious, residential, educational, administrative and heritage usages are like tutorials which opens up newer dialogues among younger architectural practices with significant historical trends on how the timeline of the past influence the architecture of the region & its context .

The book is an amazing wealth of inspiration which defines the future of the architecture of the state as one reads multi-dimensional chapters . While reading, one cannot miss the various layers of history opening up the think tank towards architectural styles that have shaped the region and their way of life .

The construction detailing and techniques as practiced during vernacular patterns as documented provokes the young minds to introspect mode with a challenge to critically analyse the emerging architectural vocabulary of the contemporary times in Jharkhand across the state in the name of urbanisation and growth in development . Going beyond just built environments the authors have done tremendous justice on the unexplored hills, unmeasured roads with the objective of searching & exploring the true identity which has gone unrecorded thereby missing out on the true essence of architectural language and its visibility across the prevailing precincts. The artisans and their significant role in contributing to building settlement patterns with character has been very well highlighted through art and architecture in the climate responsive architecture styles .

The book certainly ignites and provokes many thoughtful minds to explore and understand the genesis of the architectural language of Jharkhand .

The book - *Beyond the forests , The architectural journey of Jharkhand* is much more than just the much published tag lines such as steel city of India, the core capital of India , The city of waterfall and the latest being M.S Dhoni homeland Mahi hometown Ranchi and many more. The book exhibits rich cultural traditions and heritage of the past which is hidden deep within the land of forest with true understanding that has given us a significant character for the architecture & its quality index .

The entire journey documented in this book reflects professionally structured three different time periods namely, the pre independence, the independence to formation of the state in 2000 and post 2000 period , which is going to be a huge reading reference facilitating the journey that addresses the architectural history for architects , students , travellers ,researchers ,historians and to everyone with the interest in history of beautiful state of Jharkhand .

The book with its journey beyond the forest since the prehistoric age highlights various vernacular builforms followed by various settler's among indigenous tribes with religious structures like temples across the various era times of Mughals and the native provinces up to arrival of the British and missionaries which holistically and comprehensively becomes a perfect guide that gives a direction to the entire process of how history has influenced the architecture and its resiliency across centuries .

The two characteristic settlement patterns across centuries in Jharkhand , namely the new architectural language post freedom moment and new beginning of formation of Jharkhand have been like a very important platform for young architects who can position themselves to identify and promote skills and talent showcasing uniqueness of architecture of Jharkhand .

The sustainable resources prevailing within the age-old practices among diversity in religion, culture have been very well explored over centuries which never got its justice in spite of its uniqueness which has been very well reflected through the spirit , culture, climate, topography and sustainable concepts practiced by people .

The documentation of such rich contents is the need of the hour for many regions of our country which shows Art & aesthetics with humanity and socio- cultural identity that has been shaping the architectural typology within the built and natural environment of this region . the authors have set an excellent example of how documentation and writing such contents facilitate the process of design among the thought processes of architects' design frameworks through their planning and strategies .

Enjoy reading *beyond the forest The Architectural journey of Jharkhand.*

Entire India with complexities of architectural identities needs such initiatives that not only assist in documentation but creates a stage to think way forward .

Ar . MANGUESH R PRABHUGAONKER, along with B Arch degree, has a Masters post graduate degree in Landscape Architecture from SPA New Delhi and is a Fellow Member of IIA, ISOLA and an Associate Member of IIID . He is a National Council Member of the National Council Member, The Indian Institute of Architects . He is also an Expert member of Goa state Wetland Authority and a Senate Member at School of Planning & Architecture, New Delhi . He is also a Visiting faculty at Goa College of Architecture for Post graduation in Masters in Architecture.
mangootata@gmail.com

PHOTO ESSAY

ENCHANTING VESTIGES OF A TOWN
A STORY OF SIDHPUR

Ar. Binsan Oommen Baby

A silent, misty morning guides you through the town of Sidhpur, located in the Patan district of Gujarat.

Top to Bottom:
▶ The clock tower is the nodal point, the monumental navigator that directs you as you move through the gallis and raastas.;
▶ The rising sun hits the perfect note as the old houses wake up to a new day, rising above the newer constructions, their triangular gables a work of beauty.;
▶ The family crest is distinctive and displayed

These gables form an entrancing rhythm as they rise up and fall down, with the streets of mohallas such as Saifeepura, home to architectural masterpieces that differ only in the scale and detail of the ornamentation and finishing that the facade carries.

Top to Bottom:
▶ It is beautiful how spatial necessities are similar across the subcontinent and manifested in different ways. For instance, the otla here is a semipublic (or semi-private) space that traverses between the public and the private, a gathering space for the family and neighbours;
▶ It occupies an important place in the social life of the community, a space to spend the late afternoons and evenings, catching up on the latest news and happenings.

As the late afternoon sun touches the buildings, a beautiful poem is created, a spectacular skyline that takes you on a glorious journey.

When you near these buildings, the journey takes a different route, and you visualise and experience the structures and spaces from an entirely new perspective.

The other face becomes clearer, and you can notice it being present on the buildings themselves, their age and decay starkly visible if you took a closer look.

The missing links have become gaping holes, and are no longer unnoticeable. A lot is getting lost in a short span of time.

Top: As you walk away from the town, with one last look at the towering edifice, you are left with a bitter-sweet feeling. The vivid, many-hued assemblage is right in front of your eyes, but you see the loss it has suffered as well; the thoughtless destruction and the un-aesthetic 'modernity' laughing at the elegant and skilled craftsmanship and the countless stories that lie hidden. You hope that all is not lost as you board the train back.

Bottom: Meanwhile, the town continues to develop and try to match with the fast-paced life that has become popular, while the clock tower continues to stand in witness to everything that is changing around it.

Ar. Binsan Oommen Baby
Binsan is a moulded architectural photographer who takes immense pride in capturing the vision of architects and designers through the lens of professional photography services. Upon graduating from Sathyabama University with a Bachelor's degree in Architecture, he co-founded an architectural photography studio called triple o PIXEL in 2017. The initiative works towards capturing the essence of architecture and heritage and has worked extensively with professionals across varied fields. He has worked with over twenty firms and completed more than 150 commissioned photo-documentation projects, which includes residences, schools, colleges, corporate offices, commercial establishments, hospitality, urban projects, heritage buildings and sites, artworks, products and industrial projects across the country.
mail@tripleopixel.com

Caption Courtesy: Ashmitha Athreya

THE GOTHIC INFERNO

Ar. A. Gaurav

The uneventful night of 15th April 2019 saw the destruction of Notre Dame de Paris due to an accidental fire caused during the regular restoration of the Cathedral. "Our Lady of Paris" or simply "Notre Dame" has been the finest example of French Gothic architecture since the 12th century. I have loved and spent more time at the "Lady" than at the *Tour de Eiffel* for which Paris is better known for. That night, one need not have been an architect to have that sinking feeling in their hearts. There was an urge to document this event over the course of a few days in the form of oil paintings inspired by a few images published in the media and a few photographs clicked during my visits. These paintings were done as impasto with various palette knives.

Top:
The Forest Fire: The roof and the attic of Notre Dame contained timber from thousands of 300 -400-year old oak trees. The structure was famously called *La Forêt.* The roof severely damaged, and pratically the whole timber structure was reduced to ashes, with stalactites forming as a result of molten lead from the roof plates.

Bottom:
The Silent Spectator: The evening skyline of Paris saw a spire-less Notre Dame among the embers and rising smoke. The Iron lady of *Champs De Mars* watched over silently and helplessly.

Top:
Fireproof Faith: Countless fire tenders worked for hours to douse the fire in order to save the Lady as seen from the opposite bank of *La Siene.* The trademark flying buttresses and the central spire and scaffoldings were still visible but engulfed completely by the inferno.

Bottom:
Of Gods and Gargoyles: The fire did not spare the gargoyles watching over the Cathedral for centuries, saving it from wars, weather and people. It is also said that it was only because of the gargoyles that the Lady was not destroyed completely. Coincidently a few days earlier, the statues of the twelve apostles were moved from the Cathedral for renovation.

The Lady of our Dreams: The recreated satellite imagery of Notre Dame on Île de la Cité before the fire gives hope that the Lady shall be restored to her former glory. The structure might be modern after the complete restoration, but it will be loved like ever before.

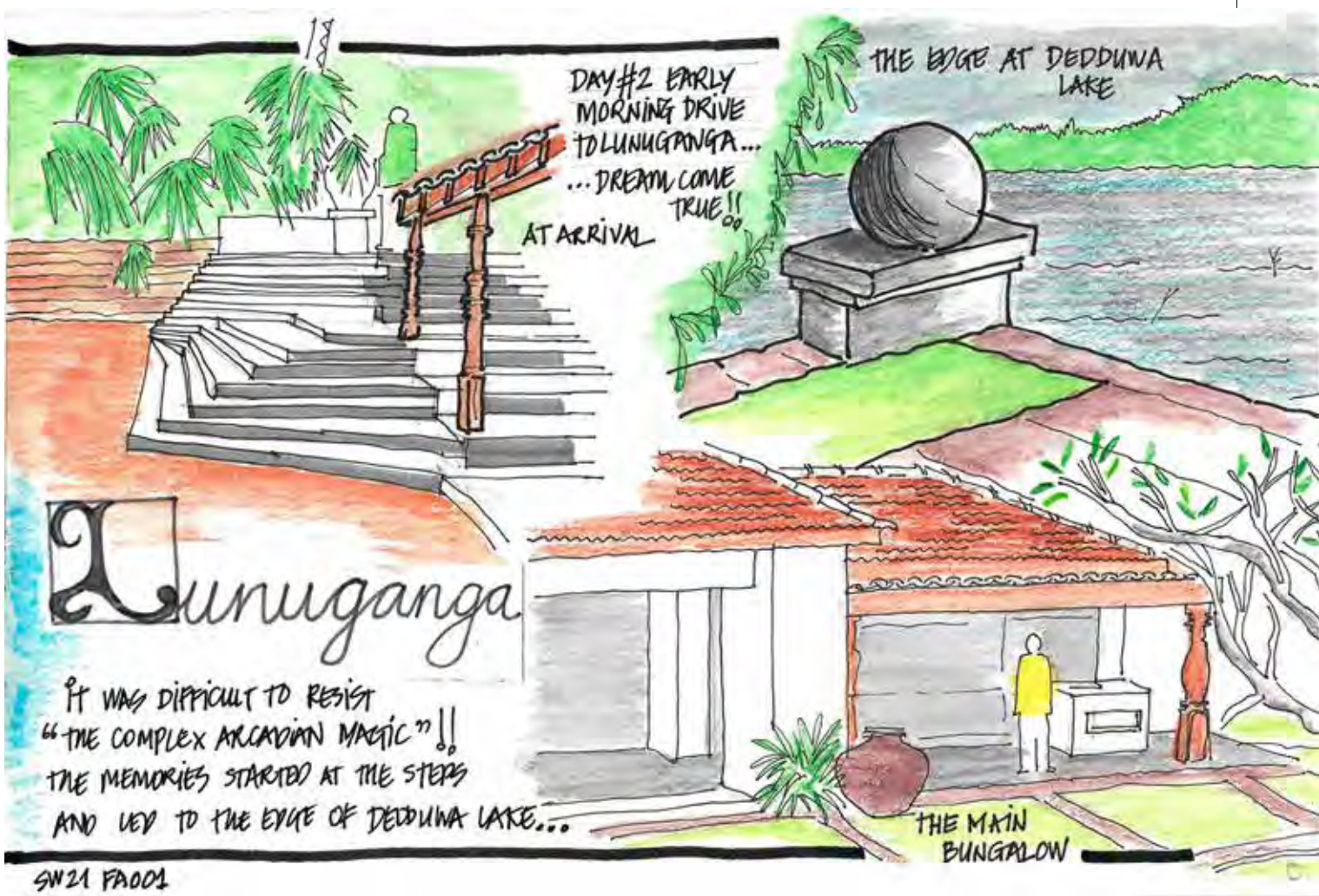
Ar. A Gaurav is an alumnus of SPA Delhi and Sathyabama Chennai. He has been associated with various IIA events, both local and national. Travelling, sketching, painting, photography and riding his poor old motorbike has been his escape from the other worldly things. Under the guise of @thexeroxman on social media, he has been creating art work on a regular basis, and is mostly found scribbling in his little travel sketchbook not adhering to any single style of art.
agaurav.aga@gmail.com

SRI LANKA

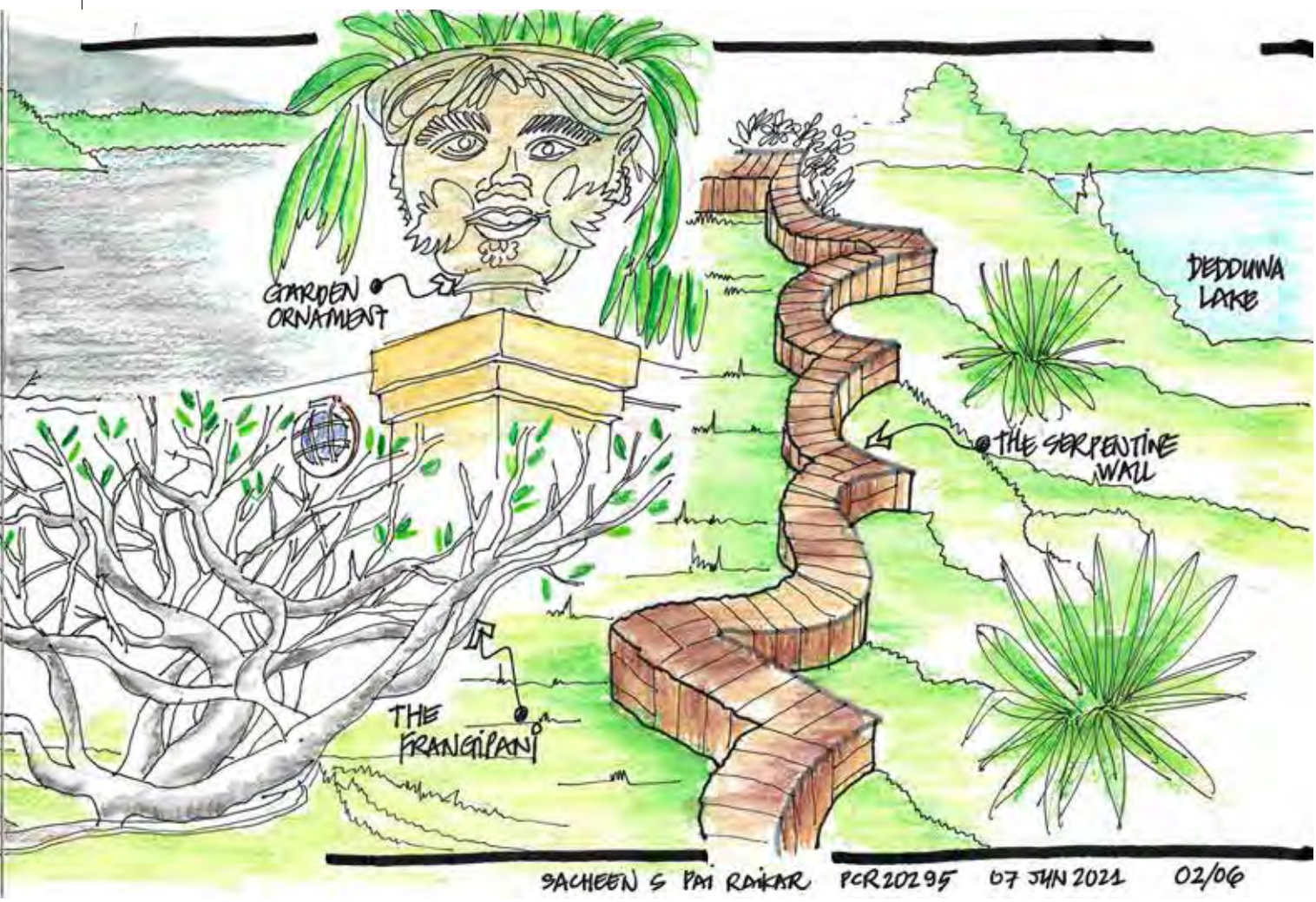
Ar. Sacheen Suresh Pai Raikar

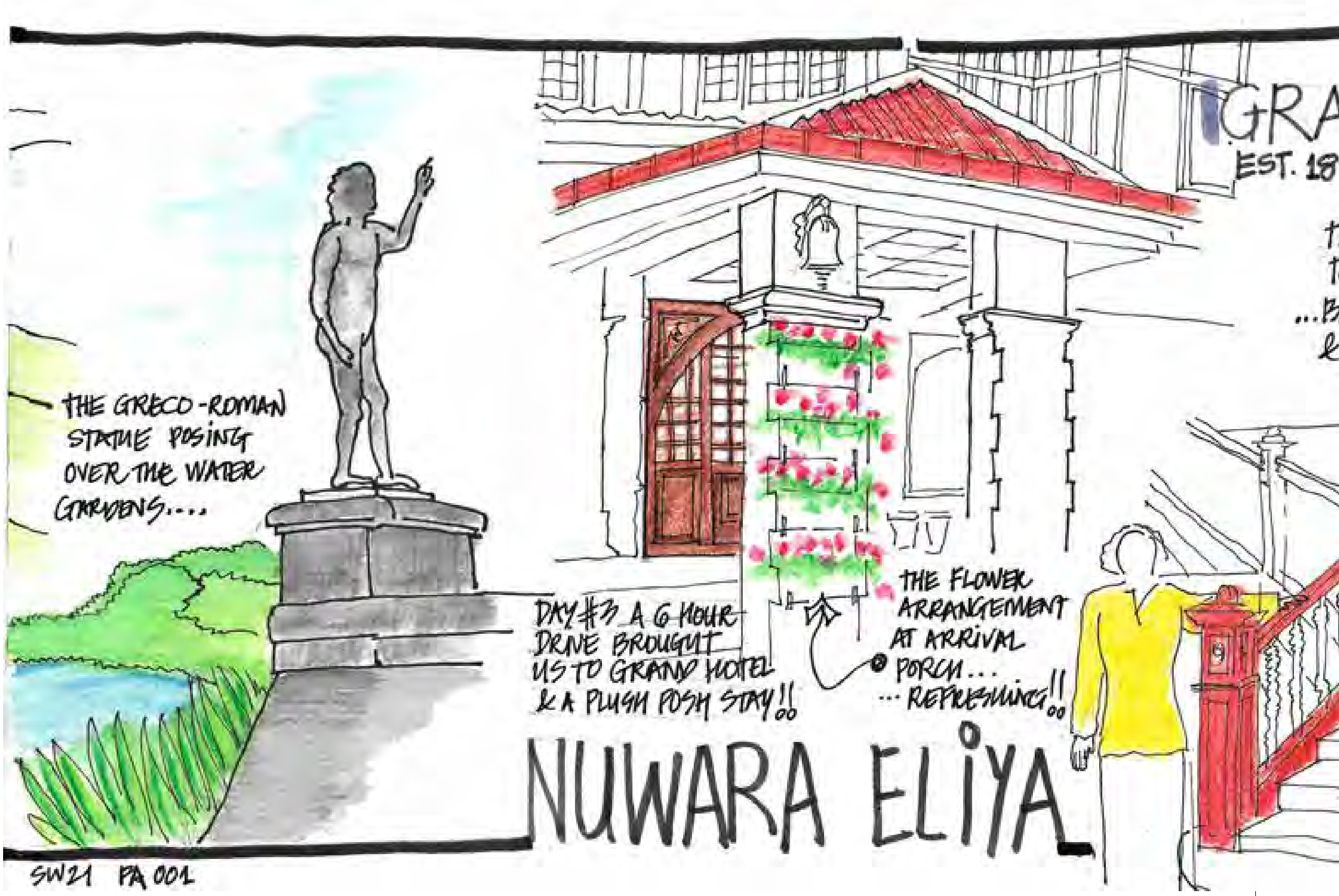
We took a road trip passing through four cities in the South of Sri Lanka in early November 2010. Landing at Colombo Airport, we drove four hours straight to Ahungalla where we stayed at a beach resort designed by Ar. Geoffrey Bawa. The next day we made a day-trip to his garden estate at Lunuganga. A day later we drove six hours to Nuwara Eliya, a hill-station surrounded by tea estates, where we spent a cold night in one of the warmest of hotels. It took us three hours to reach Kandy, the following day, for a glimpse of the Tooth Relic Temple and the Botanical Gardens. We went up to the top of the hills overlooking this beautiful city before driving up four hours to Colombo. Walking around the city of Colombo, taking in the sights and food, followed by shopping, brought our short trip to a happy conclusion. The sketches here, are an attempt to capture vignettes of our trip and share our experiences.

I hope you enjoy our journey through the sketches, which was one way of sharing the essence of our travels, rather than the infinite travel photographs we would have otherwise shared. The intent is to use this inspiration to record more of our journeys in this form, which might inspire you to travel to these places and experience all the sights, sounds, aromas and flavours, from our viewpoint.

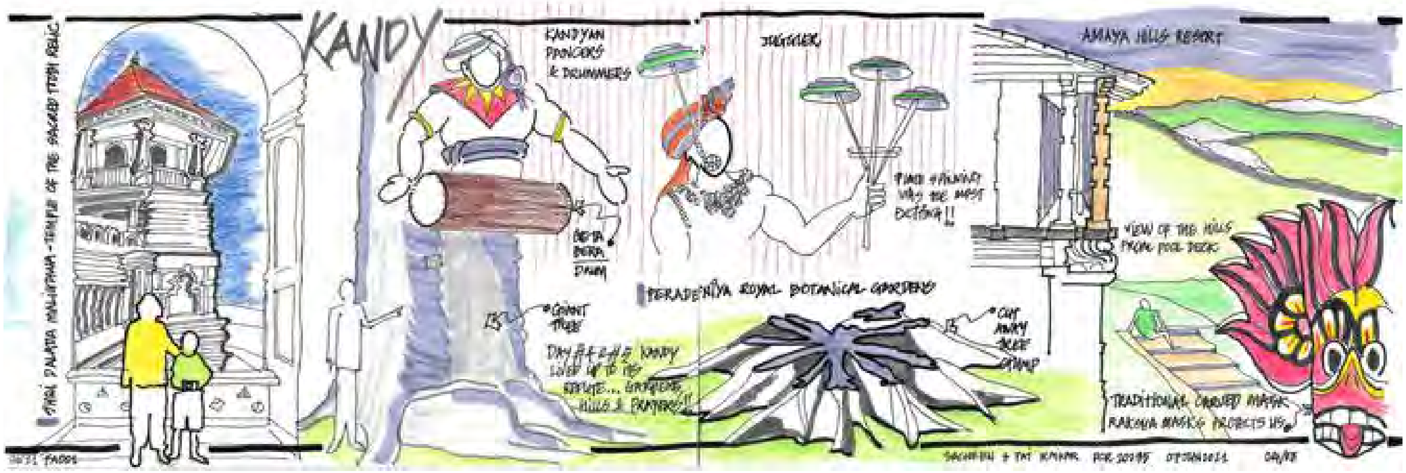


Ar. Sacheen Suresh Pai Raikar is a Fellow Member of the IIA, and a graduate of Goa College of Architecture, 1993. He runs a private practice in Goa with his wife Ar. Hemlata and is presently pursuing a Master's degree of architecture in Conservation and Regeneration at CEPT University, Ahmedabad. This travel sketchbook was part of his assignments in the Summer Winter School course.
sacheen.pcr20295@cept.ac.in

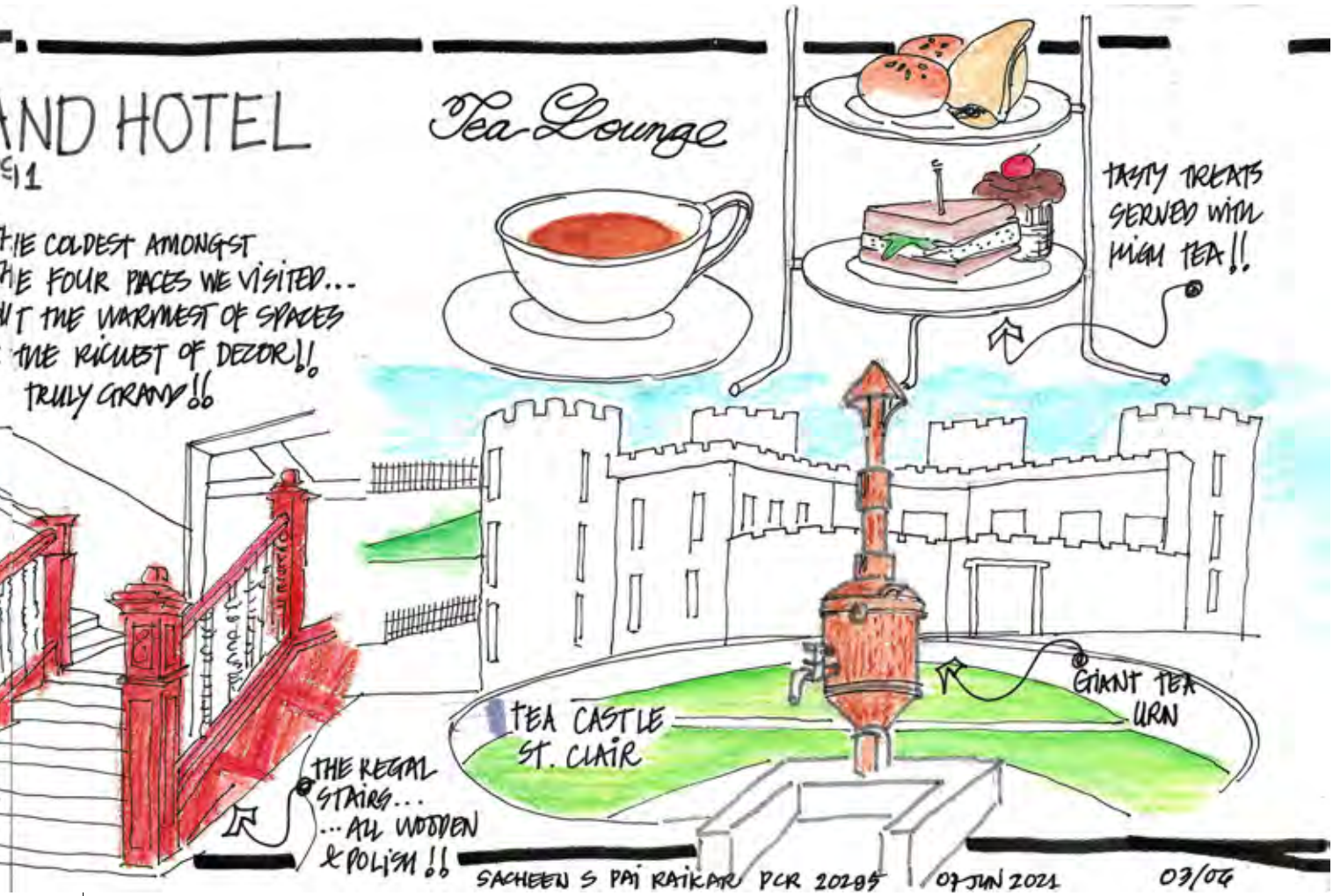




GRA
EST. 18
THE GRECO-ROMAN STATUE POSING OVER THE WATER GARDENS....
DAY #3 A 6 HOUR DRIVE BROUGHT US TO GRAND HOTEL & A PLUSH POSH STAY!!
THE FLOWER ARRANGEMENT AT ARRIVAL PORCH... ...REFRESHING!!
NUWARA ELIYA
SW21 PA 001



KANDY
KANDYAN DANCERS & DRUMMERS
JUGGLER
AMAYA HILLS RESORT
PERADENIYA ROYAL BOTANICAL GARDENS
VIEW OF THE HILLS FROM POOL DECK
TRADITIONAL CARVED MASK


ND HOTEL
Tea Lounge
IE COLDEST AMONGST
E FOUR PLACES WE VISITED...
T THE WARMEST OF SPACES
THE RICHEST OF DECOR!!
TRULY GRAND!!
TASTY TREATS SERVED WITH HIGH TEA!!
TEA CASTLE ST. CLAIR
GIANT TEA URN
THE REGAL STAIRS... ...ALL WOODEN & POLISH!!
SACHEEN S PAI RAIKAR PCR 20295
07 JUN 2021
03/06


DAY 06 & 07 TWO DAYS OF THE CAPITAL CITY... ...SIGHTS, FOOD, SHOPPING, MEMORIES!!
INDEPENDENCE MEMORIAL HALL
A MAJESTIC STRUCTURE INSPIRED BY THE 'MAHAVA MANDIRA' OF KANDY IN THE HEART OF COMMONWEALTH GARDENS.
STATUES OF THE BUDDHA WITH STONE SCULPTS ARRANGED ON STEPS
GANGARAMAYYA TEMPLE
COLOMBO
LOCATED IN HULFTSDORP CAPITAL STYLE CHURCH
ALL SAINTS CHURCH
SACHEEN S PAI RAIKAR PCR 20295
07 JUN 2021
09/12

GAPS BETWEEN PROFESSIONAL READINESS AND EDUCATION OF ARCHITECTURE

Dr. Deepti Gupta

Our nation is in a stage of development where we are fast creating infrastructure, and heavy investment is coming into the building industry. This offers us unprecedented opportunities of growth. However, along with it comes the challenge of keeping up with international standards of design and delivery. In response, architectural practice is becoming more financially competitive and technologically challenging.

Unfortunately, architectural education has been unable to keep up with the changing needs, and when fresh graduates reach the profession, they are at a loss, and need to get further professional education. These gaps between university education and professional readiness need to be addressed sooner rather than later.

As a professional, one could list out the skills that a fresh graduate lacks. To start with, often fresh architects do not have adequate knowledge of converting a design into reality. If a structure has to be built, it has to be done within the realm of physical limitations of the material and the construction technology used. It implies that it has to be worked out how the building is to be engineered and built. Most of the time, fresh architects do not even have a basic understanding of structural systems at a broad level in the sense of structural stability, or knowing what kind of structural technology would be appropriate for a particular design with its specified requirement of spaces and volumes. This understanding, rather than being static, has to be basic knowledge with room for continually evolving technology, and with an openness to futuristic materials and buildings.

There also needs to be an understanding of the appropriate use of that system along with its set of appropriate construction technology and materials. It is essential to understand that every structural technology is dependent on the construction materials and their constraints in terms of buildability and structural strength. Mostly knowledge of building construction possessed by fresh architects is inadequate and outdated, and the ability to create design in accordance with that is quite sparse.

We build in a world where the construction is governed by laws, regulations and bye-laws. And rightly so, for they are needed at an urban level. These are constraints which need to be addressed adequately during the design process. One of the biggest constraints in design being the financial framework of the project, is least understood by a fresher. The fresh architect does not understand the importance of all these aspects and is unable to create a design incorporating the essentials and resolving it to a stage where it can be constructed.

To add to that, quite often, fresh architects come to office without even an adequate understanding of the complete set of drawings required to "convey" the design or its basic principles, drawing being the language of architecture and design tools being the vocabulary. Therefore, to put it bluntly, *the fresh graduate does not have the skills prerequisite to design architecture that can be made into reality.* Before joining the profession, the fresh architect designs in utopian dreams or virtual realms, and has to be taught the actual process of hardcore design and detailing. The distance between dreams

Fig. 1 Student of architecture designing in an academic environment
(Source: Author)

Fig. 2 Fresh architect at a loss in the profession due to lack of professional readiness
(Source: Author)

and design is to be covered with knowledge and integration of technology as well as legal and financial framework.

The paradox is that the situation is so in spite of many of these aspects of architecture already being taught in universities and colleges under various subjects. This brings us to the issue of not only upgradation of the syllabus, but also to the subject of the interpretation of the syllabus, and methods of teaching and learning – where the learning, being professional learning, has to be a process of proactive and participative learning, enriched with theoretical dissemination of knowledge.

From the author's experience in academics as visiting faculty and from the limited participation in an attempt to modify the syllabus for architectural education, the suggestion is dared being made, that in order to keep up, *it is not only the syllabus that needs to be up-graded, rather the way we look at it.*

The current system of education is quite fragmented: as of now, the subjects are divided in a linear way, sequentially happening one after the other. Each subject is taught separately, and it is up to the student to connect the dots for the relevance in design, which is something that rarely happens. "DESIGN" too has been separated out as a subject which is interpreted as only articulation of spaces and volumes, according to the project requirements and site, with inadequate consideration to other aspects. The design submission usually culminates at a stage which is very elementary and therefore the students are clueless about detailed resolution of design, to bring it to a workable stage. The "DESIGN" is sometimes isolated to such an extent that even the ability to completely resolve and represent it in three dimensions is not an integral part of it. The attitude towards "working drawings", without which you cannot "convey" your design to the execution team, are another example of a very important element inadequately addressed. Even with the facility of Computer-Aided Drawing, the fresh architect is often unable to resolve and express the design effectively.

In the current system of linear division of units, or subjects, if one could compare each "subject" to a carrot, the linear division would be similar to chopping it linearly into rings, each ring being taught progressively in each year, whereby one eventually reaches the other end of each subject. This, without adequate reference to the WHOLE.

Instead, if the approach would be cyclical, or as in the analogy of an onion, one would peel each layer of the onion to get to the center, where a combined knowledge of all subjects would be started with, and would be intensified and taken to the next level in terms of complexity and scale. The knowledge being thus disseminated could be better imbibed, and the understanding could be holistic, with the awareness and understanding of the WHOLE at all times.

Another aspect that needs to be addressed is that architectural practice has very many aspects, and that every architect has a different aptitude for various aspects of architecture. Furthermore, in the larger practices and projects, the responsibilities are segregated and professionals perform as a team. Here the different "specializations "as per aptitude come in very useful. It is time that this could be merged into a win-win situation. Perhaps, the education system could provide a possibility of flexible and variable levels of depth for different facets of architecture, for different students. The choices could be integrated from early stages of education, thereby enabling the individual students to maximize their education as per aptitude and ability.

To summarize the above, it can be stated that the architects, when they graduate, should have the basic skills of creating architecture which can be made into a reality, which is done by resolving the design into a workable scheme by fulfilling project needs, at the same time designed in tune with appropriate and sustainable structural and constructional technology, and within the practical constraints of financial and regulatory framework. In addition, the attitude has to be one that is ever open to learning and evolving with changing opportunities and requirements. We have to ensure that, as professionals, we produce and deliver architecture of the highest standards, and not only eliminate the need of foreign professionals stepping in, rather, create a situation where the world looks at us for architectural solutions.

Dr. Deepti Gupta is a Partner at *PNG Design Consulting LLP.* She did B.Arch. and M.B.E.andM. from School of Planning and Architecture, New Delhi, and M.Engineering in Tensile Structures from Germany. She has work experience of 31 years in architecture, project management, and tensile structures. Due to her passion for academics, she has been teaching for the last 21 years at School of Planning and Architecture, New Delhi as a Visiting Professor.
guptadeepti07@gmail.com

IIA CAD

The #1 alternative CAD for IIA Members

MEMBER IIA CAD

HOW TO BUY IIA CAD

IIA CAD can be bought only by an active IIA member, with his / her membership paid fully. You can request for the approval to our email id orders@iiacad.com

Gov of Kerala has officially approved IIA CAD for e filing

NATIVE DWG SUPPORT

IIACAD is a powerful, and innovative DWG based CAD Software developed by IIA for it's members

COST EFFECTIVE

IIACAD is an affordable, and cost effective solution, with a user friendly interface

WORK OFFLINE

Fully installed on your computers as you have ever been used to

EASY SWITCH

IIACAD is a perpetual license products like other CAD software available

IIA GOA CHAPTER

Presents

INDIA's most sought after awards for excellence in architecture

IIA
National Awards
2020

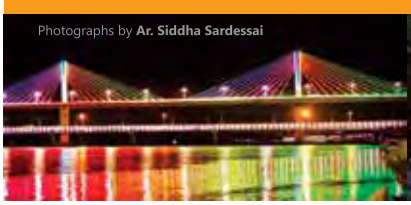
Sketch by **Paurus Narvekar**

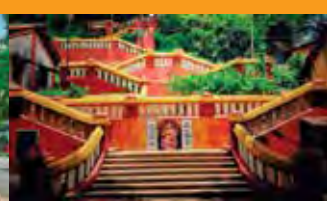
15th - 16th December 2021

Taj resort & Convention center, Dona Paula - Goa.

iianationalawardsgoa@gmail.com

Photographs by **Ar. Siddha Sardessai**






NEWSLETTEROCTOBER

IIA JHARKHAND CHAPTER

YOUNG ARCHITECTS' FESTIVAL 2021 AT RANCHI, JHARKHAND

Inaugural Event of YAF '21

IIA Jharkhand Chapter, one of the youngest chapters got the opportunity to host the *Young Architects' Festival 2021* in Ranchi from 22 - 24 October at the Hotel BNR, the venue for the event. The inauguration of the Festival started with the ribbon-cutting ceremony of the building material expo in the afternoon. Here, the national and international brands and all event partners had exhibited their modern and innovative construction materials and techniques. This was followed by the IIA national Council Meeting chaired by the President Ar. C.R. Raju and attended by all the Office Bearers and a majority of the Chapter Chairpersons. After this meeting, the IIA national Office Bearers were accompanied to the entrance portico and led to the Convention Hall in a procession in true Jharkhand folk style of *Parchana* with a live tribal song, a band of *Bhair* musicians and dancers. This laid the foundation for the festivities to follow which everyone looked forward to.

The inaugural programme started with the lighting of the lamp and the welcome address by the Jharkhand Chapter Chairman, Ar. Sandeep Jha, who welcomed all the dignitaries, Council Members, delegates and everyone present at the event. He spoke on this year's theme, *REthink, REstore and REconnect.* Ar. Jitendra Mehta, Jr. Vice President, IIA introduced YAF and its history through his perception, stories and experiences. Following this, IIA President, Ar. C.R. Raju talked about the importance of events like the YAF, issues faced by young architects and the need to take collective action.

The IIA Jharkhand chapter released a Chapter video, the event's official souvenir including all event details and participatory articles from authors across India. A coffee table book called *Beyond the Forest* was also released during the proceedings. This book has been developed through the meticulous work of the research team of IIA Jharkhand Chapter, about the architectural heritage and stories of the built structures of the state of Jharkhand. These releases were well received and created interest for the event and for the state of Jharkhand.

Further elaboration of YAF '21 was given by Jt. Hon. Secretary of IIA Jharkhand Chapter, Ar. Anurag Kumar who explained the event's proceedings for the next three days with details of all speaker sessions, cultural events and other proceedings. A vote of thanks was delivered by the Vice Chairman, Ar. Saurabh Sahu, thanking all dignitaries present at the dais, delegates, volunteers and all industry partners. The inaugural session created a feeling of warmth and geared up everyone to witness the extravaganza of YAF 2021.

IIA-Andhra Pradesh Chapter

Elections

IIA Andhra Pradesh Chapter held elections for the next term on January 25-26, 2021. The newly-elected body took over from the previous body and the previous Chairman, Ar. Vivekananda Swamy, during the inaugural event held on September 11, 2021. Ar. C.R. Raju, President of IIA, was the Chief Guest or the event along with other Guests of Honour, Sri V. Ramudu, the Director of Town and Country Planning, Andhra Pradesh, Ar. Uday Shankar Doni, the Chairman of Telangana Chapter and Dr. Ramesh Srikonda, Professor-School of Planning and Architecture, Vijayawada. Other members of IIA, architects across the state and students were also present. As informed by the Chairman, Ar. Kranti Kumar M. of the newly elected body, stressed upon creating awareness about the field of architecture, to promote various aspects related to the architectural profession and architectural education. The Committee stated their assurance that that would build a stronger architectural community and take the profession to new heights in the state with perseverance for better tomorrow.

The new Elected Body for IIA Andhra Pradesh Chapter 2020-2022 are: Dr. M. Kranti Kumar, Chairman; Ar. E. Vijay Bhaskar, Vice Chairman; Ar. K. Radha Krishna, Hon. Treasurer; Ar. K. Vijay Ananda Kumar, Jt. Hon. Secretary and Ar. V. Venu Gopal, Jt. Hon. Secretary

The Executive Committee Members are : Ar. C.S. Prakash, Ar. M. Raja Shekar, Prof. K. Subba Rao, Ar. Revathi, Ar. D. Srinivas, Ar. T. Srinivas, Ar. D. Sudas, Ar. R.L. Sahitya, Ar. B. Sandeep Kumar and Ar. B. Suresh Kumar.

World Architecture Day

As its very first initiative to contribute to the profession, IIA Andhra Pradesh Chapter unveiled the platform for intellectual discussions titled ARUGU, which in Telegu means the semi-open space in front of a traditional house, used as an informal space for discussions. The intent of the platform is to conduct talks, seminars, webinars, exhibitions and have discussions. The platform was introduced on the occasion of World Architecture Day this year.

The first session was a talk by Dr. Kailasa Rao, Professor, School of Planning and Architecture, Vijayawada, who has extensively worked on diagnostic approaches in understanding and evaluating the traditional Indian built environment and uses state of art technology for his explorations. He is currently collaborating with multi-disciplinary teams in scientific explorations for development of a holistic and sustainable understanding of the built environment and working on decoding the embedded wisdom from traditional sthapathis and master builders of Indian temples. His online presentation, *Concepts of Computational Design Development in Traditional Indian Temple* was attended by several architects and students of architecture.

IIA-Assam Chapter

World Architecture Day 2021

IIA Assam Chapter celebrated World Architecture Day 2021 on October 4. A small gathering of twenty architects, keeping in line with the prevalent COVID-19 protocols, was arranged. The event was sponsored by Varmora Granito Pvt. Ltd. The welcome address was delivered by Jt. Hon. Secretary Ar. Budhin Borthakur during which he emphasized the pioneering work carried out by the senior architects of the state. Chairman Ar. H.K. Rajkhowa couldn't be physically present during the programme owing to health issues. However, he sent a message which was read out during the programme. His message highlighted the importance of this year's theme Clean Environment for a Healthy World, and mentioned that architects are not just responsive to the new Agenda for Sustainable Development, but instrumental in its implementation and evolution. Ar. Ramendra Nath Baishya and Ar. Syed Taskir Hussain were felicitated with a Fulam Gamusa for being the key members in formation of the chapter. Ar. Arup Kr. Das presented the activity report of the Chapter. Several activities, both online and offline, were planned to be carried out in the coming days. Ar. Ramendra Nath Baishya, Imm. Past Chairman, expressed his joy in being able to meet and gather in person after a long gap, and also delivered the vote of thanks.

Ar. Sukanya Das hosting the programme and Office Bearers on the dais

Architects of IIA Assam Chapter on World Architecture day 2021

Covers of the latest issues of CONCORD, the quarterly journal published by IIA Assam Chapter. So far, the Spring and Summer issues of 2021 have been published, with the themes of Times of Pandemic and Architecture and Sustainable Tourism respectively.

IIA-Gujarat Chapter

Saurashtra Centre

• Distribution of oxygen flow meter

During the Corona virus pandemic, IIA Saurashtra Centre sent around 200 oxygen flow meter to various Centres and Chapters across the country. Flow meters were sent to Jammu, Nashik, Raipur (Chhattisgarh Chapter), Indore and Bhopal (Madhya Pradesh Chapter).

• Memento Design Competition

A memento design competition for architects and architecture student from across India was held, to design a memento to felicitate those who have contributed towards empowering IIA and its members, guest speakers, sponsors, guests of honour and winners of competitions. Around 50 entries were received nation-wide.

The result of the competition was declared on 4 October. There was total Registration of 127, participation from 33 cities and 35 colleges. The Judges were from the IIA National Council : Ar. Vilas Avachat, Vice President, Ar. Jitendra Mehta, Jr. Vice President and Ar. Leena Kumar, Secretary. 23 entries were shortlisted. The winner (professional category) was awarded Rs. 11000 and in student category, Rs. 5000.

• Get-together (first physical meet) of term 2020-22

The first physical get-together was held on 12 August at Saiyaji Hotel, Rajkot, along with the official announcement of the memento competition and launch of the U-tech mobile app developed by Ultra-Tech Cement for the various professionals of construction industries. The event was attended by around 40 architects from Saurashtra region.

• Social Responsibility Project

IIA Saurashtra Centre had taken the responsibility of completing the projects of Ar. Umesh Bhatt who lost his life during the pandemic. More than 20 architect members, including senior-most architects have come forward help in the cause of completing the remaining work of architects who lost their lives due to the pandemic or accidents, and give the fees to their family members.

• Knowledge Series

On the occasion of World Environment Day on 5 June, IIA Saurashtra Centre had arranged an on-line talk by well-known architect and academician, Ar. Surya Kakani, from Ahmedabad on Sustainable Building Construction Practice. He was appointed Dean at Faculty of Architecture at CEPT University, Ahmedabad in April 2017.

An awareness seminar on Energy Efficient Residential Buildings was held on 9 September at Patria suites Hotel at Rajkot, in association with Indo-Swiss Building Energy Efficiency Program (BEEP). Over 50 architects participated in the event. Ar. Ashok Lall from Delhi also lectured on Energy Efficiency Residences via video conferencing.

Ahmedabad Centre

• Touch the Craft

Ahmedabad Centre in association with IIID Ahmedabad organized a 3-day event on 10-12 September called Touch the Craft with Ar. Neelkanth Chaya sir in Bhuj, with about 50 participants. On the first day, there was a visit to Khamir, a craft-learning centre, with presentation by Ar. Chaya on the project Hunarshala, designed by him, accompanied by an interactive session. On the second day, there was a workshop on lime plaster in Hunarshala and experienced the application of lime plaster hands-on. On the third day, the participants had a guided tour of the museum and craft centre Shrujan LLDC designed by Indigo Architects Ahmedabad.

• Term Partners Meet

On the evening of 13 September, a Term Partners Meet for the period of two years (2021-2023) with more than 15 company representative.

• Celebration of World Architecture Day

Ahmedabad Centre celebrated this year's World Architecture Day on 3- 4 October with the idea of a unique exhibition, Ahmedabad Collective, of the work of twenty leading architects which saw a record footfall of more than 3000 visitors in 2-days' time. Henceforth, this will be a regular calendar event.

IIA-Haryana Chapter

Knowledge Session to Celebrate World Architecture Day 2021

Haryana Chapter celebrated World Architecture Day by organizing a Knowledge Session on 3 October at Faridabad. Delivering the Welcome Address, Ar. Shiv Singla, Vice Chairman, Haryana Chapter, welcomed architects from across the state and NCR to the program. He said that architects play an important role in society and through their actions can have a positive influence on the environment. Setting the tone for the Knowledge Session, Ar. Punit Sethi, Chairman, Haryana Chapter explained the importance of World Architecture Day and the theme of this year's celebrations. He elaborated the role the architects have to play in achievement of Sustainable Development Goals, specially Goals 11 and 12. He urged all architects to become sensitive about their responsibility towards the environment. He reminded the members that architects are fully equipped to respond to the complex challenges of the built environment, and they must become instrumental and proactive through design actions for sustainable development. He said that architects have the ability to change the world that we live in with the amazing work they do. He also talked about World Habitat Day being celebrated along with World Architecture Day, its theme and relevance.

Prof. Charanjit Shah delivered the key note address on the subject Towards a Greener Tomorrow. He established the importance of green architecture and demonstrated it through his projects. He emphasized that unless architects become conscious of the context they are building in, they cannot create appropriate architecture. He reminded everyone of their responsibility in adopting green practices and connecting with Mother Nature.

Ar. Vijay Garg, Chairman, State Level Expert Appraisal Committee, appointed for assisting the State Level Environment Impact Assessment Authority, National Capital Territory of Delhi, elaborated on the architects can play in preserving and conserving the environment. He elucidated various aspects pertaining to building construction and the environment. He emphasized adoption of appropriate design and construction methods and choosing environment-friendly materials. He further talked about the importance of The Indian Institute of Architects in bringing architects together for the betterment of the profession and urged

young architects to actively participate in the activities of IIA.

Ar. Kapil Mehta, who has held important positions in IIA in the past, congratulated Haryana Chapter for organizing the Knowledge Session. He said that World Architecture Day is about recognizing the good work architects do and got the audience to give a big round of applause in celebrating the wonderful work architects do in shaping the built environment and influencing peoples' lives.

Ar. Surender Singh, Jt. Hon. Secretary, Haryana Chapter, organised the felicitation of the guests and expressed his gratitude to Prof Charanjit Shah for accepting our request to be the key-note speaker. We have learnt so many things from him, he said, and look forward to preparing ourselves for enacting our roles for a greener tomorrow.

Ar. Nirmal Makhija, Chairman, IIA Faridabad Centre, proposed a vote of thanks.

The event, hosted by IIA Faridabad Centre and organised by Tricon Realtech Pvt Ltd and Somani Ecobuild Products LLP, was attended by a large number of members from across the state of Haryana and adjoining cities of Delhi, NOIDA and Ghaziabad.

IIA-Himachal Pradesh Chapter

World Architecture Day 2021

To highlight the importance of the architectural profession on 4 October, the event *Understanding the Rapidly Changing Development Trends in Himachal Pradesh* was celebrated at the School of Architecture at Rajiv Gandhi Govt. Engineering Kangra at Nagrota Bagwan in collaboration with IIA Himachal Pradesh Chapter, with a vision to encourage developed and developing professionals to work together. Over 120 architecture students and 80 architects from all over the state participated in the event hosted by Ms Snigdha Rawat and Ms Diksha Chauhan from T.Y. B.Arch. under the guidance of Event Coordinator Ar. Harshodaya Bhardwaj, Assistant Professor, School of Architecture, RGGEC.

The changes affecting the landscape of Himachal Pradesh due to factors like business, untouched, infrastructure, infiltrating economy, lockdown, lack of opportunities, social, tourism, illiteracy, frustration, social pressure, etc. have caused people to shift from their natural way of life style. A screening on this prevalent issue was organised, showcasing the changing trends in Himachal Pradesh with the collective efforts of students of 3rd, 4th and 5th Years under the guidance of Student Coordinators Ms. Priyanka Thakur and Ms. Harshita Negi. The Guest Speaker for the event was Ar. Savneet Kaur, alumni of Chandigarh College of architecture and founder of *Imarat Architects* established in 1994, who shared her work and experiences, showcasing her sensitive way of practicing architecture.

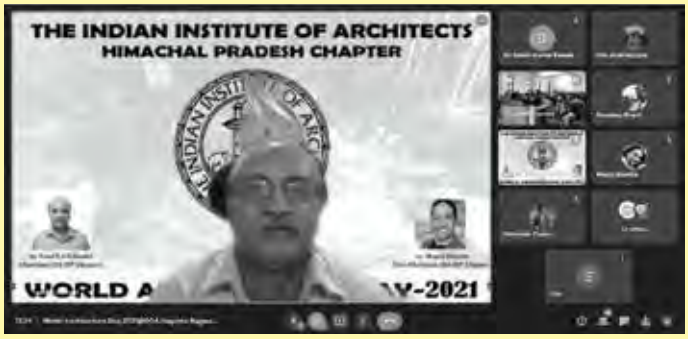
Among various dignitaries, also present at the event were Prof. P.P. Sharma, Director/ Principal of Rajiv Gandhi Govt. Engineering Kangra, Chief Guest Ar. N.L. Chandel, Chairman IIA-HP Chapter, Ar. Manuj Shardia, Vice-chairman IIA HP Chapter, other members of IIA- HP Chapter along with various practicing and teaching architects.

Dr. Satish Kumar Katwal, Head, School of Architecture, Kangra welcomed the Chief Guest and dignitaries. He shared his ideas and experience on the role of architects in the sensitive ecosystem of Himachal Pradesh. He announced the imminent opening of a student chapter of IIA at the School of Architecture at Rajiv Gandhi Govt. Engineering College Kangra at Nagrota Bagwan.

Ar. Nand Lal Chandel, Chairman, IIA HP Chapter congratulated all the architects of the state and requested them to contribute in a way to make their role visible in the development of the state. He also extended his gratitude to Dr. Katwal, Head, School of Architecture and his team for organising the event.

Prof. P.P. Sharma, Director/ Principal of Rajiv Gandhi Govt. Engineering Kangra congratulated Dr. Katwal for arranging outreach projects in the region for the students and offered help to learn practical implementation in the built environment. Ar. N.L. Chandel also contributed Rs. 11,000 towards the outreach projects for their exemplary efforts and Rs.1,100 each for students: Mr. Shagun (4th Year), Mr. Hemant Parashar (3rd Year), Ms Urvashi Thakur (2nd Year) and Mr. Tarun Thakur (1st Year), for the Academic Excellence Awards (2020 - '21).

The student team included Ms Harshita Negi and Ms Priyanka Thakur as the Student Coordinators, Ms Diksha Chauhan and Ms Snigdha Rawat as Executive Members and Mr. Ayush, Mr. Harshit Vasu, Ms Priyansh, Ms Pragati Chauhan, Ms Urvashi Thakur and Mr. Parvesh as the team of volunteers who successfully coordinated the webinar.



BLUEPRINT

For architects, *Blueprint* is not just a word that denotes drawings: it is an undeniable nostalgic emotional connect to many. At the IIA Karnataka Chapter, this is the aspect that the newsletter represents – the layered narrative where the legacy of IIA is taken forward, wrapped in a contemporary outlook and offering a platform to connect with its Chapter's members.

Blueprint is the official bi-monthly newsletter of the IIA Karnataka Chapter. It was launched on 1 June 2021 and crossed 1000 views within the first week of its launch catapulting its readership and is still counting. This newsletter aims to connect and update its members with the activities of the IIA Karnataka Chapter and its Centres. Alongside, the *Blueprint* also brings together associated readings that are relevant, pertinent and informative. Every newsletter has a featured article on a significant topic that the Chapter's members would like to read about or be informed. Through these articles, thoughtful dialogues and actions are initiated that can extend beyond the pages of the newsletter and bind the members further in meaningful conversations and engaging interactions. The section *Book Shelfie,* brings the members' attention to books that are beyond the popular titles, in addition to book reviews and recommendations that are offbeat yet greatly valuable.

In the first newsletter, the May 2021 edition launched by Ar. Shamit Manchanda and Ar. B.R. Mohan, the Chairman of the IIA Karnataka Chapter, *Blueprint* chronicled the conversations between three established and emerging practices in Karnataka in an interview, on tiding the pandemic challenges together by supporting each other and letting experience meet hope. In the second newsletter, the July 2021 edition launched by Ar. Christopher Benninger and Ar. Vijay Garg, Ar. Sanjay Mohe penned down his thoughts on sketching as a tool to design and visual thinking and also illustrated the article with his sketches.

Climate change is real and it's here. In the latest newsletter, the September 2021 edition launched by Ar. C.R. Raju, President of IIA, the architectural community's attention was drawn towards green building design and sustainable practices. In this edition, Ar. Autif Sayyed, building sustainability expert, put green building design into perspective while outlining some of the vital sustainable measures which if followed could collectively lead to an eco-friendly environment.

Prashant G. Pole's presentation on Design Concept Framework and Understanding at K. S. School of Architecture, Bengaluru on 17 September 2021.

Overall, through its newsletter *Blueprint,* the IIA Karnataka Chapter aims to connect and update its members with the activities of the its Centres and hopes to grow as the voice of the Chapter that its members would love to hear from.

Felicitation of Ar. Shashikala Ananth by IIA Mysuru Center on 29 September 2021

Lecture Series

The first of the Lecture Series for students of architecture was organized by the Education and Academics Committee of IIA, Karnataka Chapter on 17 September at the K.S. School of Architecture, Bengaluru and it was streamed live to all architecture colleges in Karnataka. Ar. Prashant G, Pole, Design Chair & Professor and founding member of WCFA, Mysuru and Principal Architect of Genesis Architects spoke on Design Concept Framework and Understanding. The programme was inaugurated by senior architect, Satyaprakash Varanasi and attended by more than 150 students from the state. The Chairman of IIA Karnataka Chapter acknowledged the insightful, analytical and educative nature of the lecture. The lecture was appreciated by both students and faculty.

Professional Development Programme (PDP)

The Professional Development Program was organized by BMS School of Architecture, Yelahanka in association with IIA Karnataka Chapter between 18 - 25 September consisting of sessions with expert speakers from various fields such as Artificial Intelligence, BIM, Robotics and IoT, among others. The purpose of the theme of the eight-day PDP, Emerging Technologies for Architecture and Construction (also termed as disruptive technologies), was to understand their impact on architecture and related fields that are increasing rapidly further affecting how the buildings will be designed and constructed in the near future. The programme had on board eminent national and international resource persons from academia and industry in the fields of architecture and civil engineering - Dr. Shrikant Gable, Ar. Joy Mondal, Dr. Suryakanta Biswal, Dr. Manu Santhanam, Dr. Vishal Garg, Ar. Aldo Rossi, Dr. Kristof Crolla, Rakshit B., Ar. Amit Barde and Ar. Shrinath Tandur.

The PDP was inaugurated by the Ar. Habeeb Khan, President, Council of Architecture, jointly with the convenors, Ar. Mohan B.R., Chairman, IIA Karnataka Centre and Dr. Shaila Bantanur, Director, BMSSA. The valedictory function was addressed by Ar. C.R. Raju, President of Indian Institute of Architects, who also released the September 2021 edition of Blueprint, the official newsletter of IIA Karnataka Chapter. The sessions invited engaging discussions between the speakers and the participants, making the dissemination of knowledge a more dynamic process.

Demystifying Vastu Shastra

On 29 September, IIA Mysuru Centre organized a presentation on Demystifying Vaastu Shastra by Ar. Shashikala Ananth, which highlighted key insights on the science and architecture of Vaastu Shastra. Ar. Shashikala Ananth is one of the foremost experts in the field of Vaastu shastra today and has been a student of Sri Ganapati Sthapathi and has conducted research in this field for over three decades. Ar. Shashikala Ananth was felicitated with a traditional Mysuru peta, shawl and a garland. The event was well attended by IIA members, practicing architects, architects in academics, staff and associates of architects.

IIA-Punjab Chapter

Awareness and significance of a sustainable healthy life post-pandemic India

To spread awareness of the importance of leading a sustainable healthy life on the occasion of World Architecture day, a webinar was organized by Lovely School of Architecture, Lovely Professional University, Punjab. On this occasion eminent speakers, Prof. Charanjeet Singh Shah, Ar Sangeet Sharma and Ar. Puneet Sethi had sent an awakening message of witnessing the alarming situation and possible solutions for post-pandemic times to ensure a healthy environment through architecture.

The session was compered by Ar. Nagendra Narayan, who awakened young architects to take up responsibility to educate the clients to create a healthy living and working environment. With this idea, Prof. Charanjeet Singh Shah, The Airport King had given a slogan 'Nature is life and Life is Nature'. With this note, he stressed upon the fusion of architecture to nature to enhance life of the user profile group.

Ar. Sangeet Sharma started his talk with the sustainable environment of Chandigarh. He motivated the upcoming and young architects to work on the sustainable architecture that upgrade human's life. Ar. Puneet Sethi drew the attention towards the effect of Covid-19 on human life and its possible solution through architecture. As an architect our role is very important to fulfil the SDG 11 and 12 at large for the betterment of the society and the nation.

The session was started with the inaugural speech of Dr. (Ar.) Atul Kr. Singla, the Dean of Lovely School of Architecture and Design, whose message was very vital for faculty and students to bring a healthy environment into teaching and learning that could benefit human beings in the long run. The session concluded with the final words of Prof. Himmat Bhatia and Ar. Amrita Shukla which affirmed that architects needed to be educated to make the best use of natural resources in their designs, so as to create healing and healthy buildings. This would be the best contribution of this profession to humanity.

Education about sustainable health-care services in hospital design

To spread awareness of the importance of sustainable health care services through the hospital design process, a webinar had been organized by Lovely school of Architecture, Lovely professional University, Punjab, in collaboration with IIA Jalandhar Centre, IIA Punjab Chapter. On this occasion, expert speakers, Ar. Sangeet Sharma, enlightened young professionals and architecture students with his vast practical experience in hospital design. He touched upon methodologies that ensure a healthy environment in hospitals through architecture. He acquainted the participants with advance health care systems by which treatment of a patient can be transformed to healing through architecture. The session was attended by many academicians, architects and allied professionals from all over India though live streaming.

The session was compered by Ar. Nagendra Narayan and started with the inaugural speech by Dr. (Ar.) Atul Kr. Singla, the Dean of Lovely School of Architecture and Design, whose message urged young professionals and students to transform this knowledge to create a healthy environment that could benefit human beings in the long run. The session concluded with Prof. Himmat Bhatia who asked the audience to use architecture that helps in healing patients and make suitable spaces that ease working conditions for doctors and healthcare workers.

ADVERTISE WITH JIIA

	3 ISSUES	6 ISSUES	12 ISSUES
BACK COVER	**12,00,000**	**20,00,000**	**36,00,000**
INSIDE COVER Front & Back	**9,00,000**	**17,00,000**	**30,00,000**
INSIDE COVER Front & Back Together	**14,00,000**	**24,00,000**	**42,00,000**
FULL PAGE	**7,00,000**	**12,00,000**	**18,00,000**

WHY SHOULD ONE ADVERTISE IN JIIA?

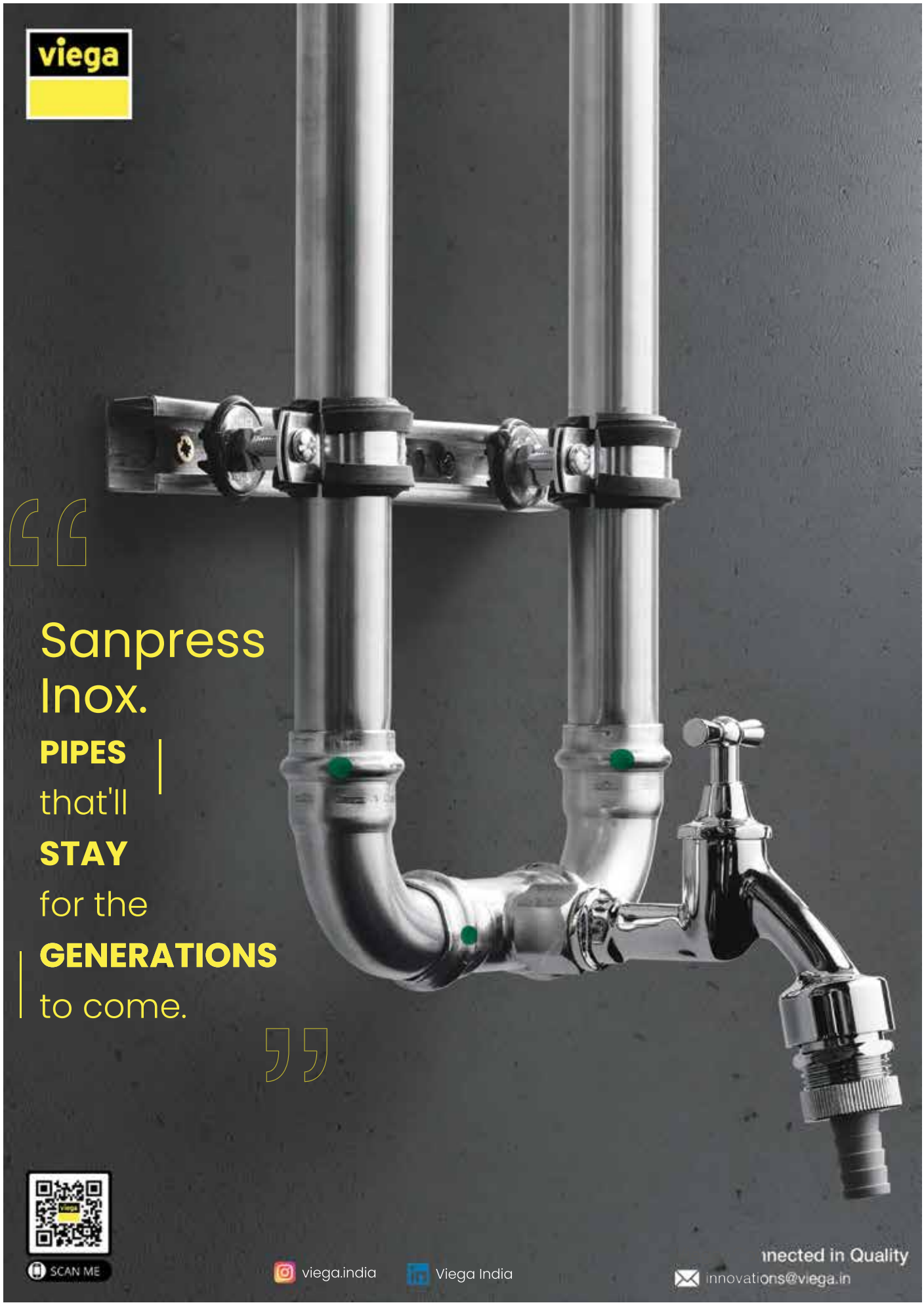
Advertising in JIIA gives a unique opportunity to reach the 'design elite' of the country directly, as a printed hard copy together with an electronic version, every month. The journal will be the perfect source for updates for the trends and happenings in the architectural/design/research/products world.

The strong brand value as the official journal of one of the largest organisations of architects in the world, The Indian Institute of Architects, will get automatically transferred on to the advertisers of the journal.

The advertisements will be very few and selected ones.

As a result the Architects/readers will have an impression of an Authorised Product, on advertising in the Journal. The new creative Formats, papers and advanced printing technology, can create a positive impact.

So advertising in JIIA will be worth the money spent.


viega
Sanpress Inox.
PIPES that'll STAY for the GENERATIONS to come.
SCAN ME
viega.india
Viega India
nected in Quality
innovations@viega.in

Roca

EMBRACE THE EARTHLY DESIRES

Beyond *Un*limited edition

The new color range of the Beyond Unlimited Edition.
Emerged from the depths of Earth, enriched with artistic hues.
Urging you to get closer to what feels like home.

Visit Roca Stores at: Amritsar: Ashwani Enterprises - 9356000318; **Anand:** Hari Om Tiles Traders - 9825595055; **Bangalore:** Chandra Sales - 9341225745; Neeladhri Ceramics - 9480581705; Tile Print - 9945242099; Arihant Sales - 9141664431; K.S.R. Ceramics - 9663501122; Aman Trading Company - 9341210407; SJR Tiles And Sanitaryware - 8050506749; **Bhubaneswar:** Garg Trading Company - 9337103221; Vectus World - 9337623499; **Chandigarh:** Pandit Khushiram & Co. - 9216541301; **Chennai:** Lakshmi Sanitations - 9840113270; Presencia - 9841022284; Ajantha Bathroom Products & Pipes P - 9840042475; **Coimbatore:** Beautywares - 8754736333; **Delhi:** Fcml Distributors Pvt Ltd - 9350616421; Ramdhari Gupta & Sons - 9810288049; **Gurgaon:** Bath and Beyond - 9811717974; **Hisar:** Kay Ell Overseas - 9416177111; **Hyderabad:** Intex Concepts - 9949012342; Home 360 - 9912210959; Srushti Baths & Interiors Pvt Ltd - 8885557396; **Indore:** S.S. Ceramica Arch.(I).Pvt.ltd - 9425081343; **Jaipur:** Kasliwal Sanitary Shoppe - 9829016920; Fantasy Bath Collection - 9983310611; **Jalgaon:** Birla Sales - 9822327347; **Jodhpur:** Soni Traders - 9414132408; **Kanpur:** Parsons Sales - 9935544784; **Kannur:** ABC Emporio - 9447394696; **Kochi:** ABC Emporio - 9400422224; **Kolhapur:** Ashirwad Ceramic - 9372955669; **Kolkata:** Deb Construction - 9230538151; **Kozhikode:** Paarol Agencies - 9446007664; Siyona Sales Centre - 9846753773; **Kutch:** Ramesh Trading Agency - 9904029301; **Lucknow:** Om Traders - 9910516227; **Madurai:** New Identity - 9894073073; **Mukerian:** Parkash Trading Co. - 9417341623; **Mumbai:** Ceramic Castle - 9967922333; Perfect Ceramics - 9867614163; Vardhman Ceramics - 9892133111; Apple Tiles - 9819079909; **Nagercoil:** Lavanya Sanitary Centre - 9500811084; **Nagpur:** Vedas Overseas - 9650939688; **Patna:** Bath N Room - 9835035465; **Pondicherry:** Honesty Engineers & Contractors Tru - 8903039255; **Pune:** Levante - 8600000039; **Raipur:** Parekh Sanitary Stores - 9826163373; Taps N Tiles - 9575715000; **Rajkot:** Patel Interiors Pvt Ltd - 9427213610; Popular Traders - 9586111612; **Ranchi:** Marbella - 9308522277; **Siliguri:** Anil Agencies - 9434221390; **Tiruchirapalli:** Kamak Associates - 9944463331; **Tirunelveli:** Venuva Tiles Mart - 9366717746; **Vadodara:** Siddhi Trading Co - 9825026523; **Visakhapatnam:** Raise & Raise - 9063702999

Find your nearest Roca store

www.roca.in

86/10
IIA PUBLICATION
POSTAL REGD. NO.MCS/007/2021-23

RNI NO.9469/57
POSTED AT PATRIKA CHANNEL SORTING OFFICE, MUMBAI-400001
PUBLISHED ON 14TH OF EVERY FOLLOWING MONTH AND
POSTED ON 15TH & 16TH OF EVERY FOLLOWING MONTH