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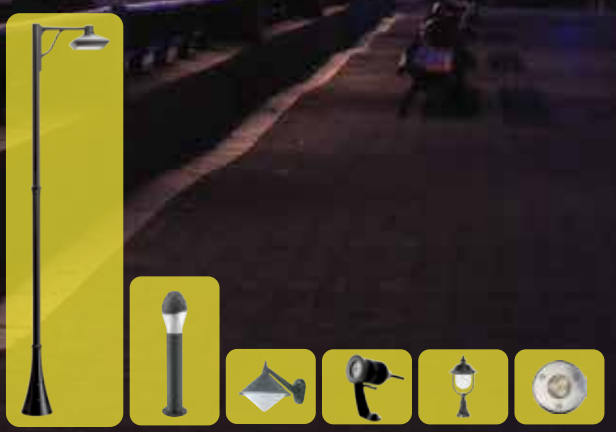

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EDITOR'S NOTE

"A NO uttered from the deepest conviction is better than a YES uttered merely to please, or worse, to avoid trouble."
Mahatma Gandhi

Honesty in Architecture comes to the fore when the structure of the building is truly expressed. Frank Lloyd Wright's works are great testimonies of architecture being true to itself. Wright deployed natural materials like stone and slate and the whole picture came together as a prodigious depiction of what the architect and the building set out to achieve. A study of his approach to design will reveal lessons in understanding the relationship between Man, Nature and Architecture.

To commemorate Wright's birthday which was on 8 June, we are delighted to present an essay by Ar. Prem Chandavarkar as a feature in this issue.

As Architect Buckminister Fuller said,
Integrity or Honesty is the Essence of everything Successful.

It's very important that as architects, we should be trusted by our clients and all the different stakeholders that we interact with. And that trust is the foundation for the relationship between the different role players. Being honest and true to our profession, playing by the rules to succeed in our professional life are tools and important building blocks to build a career that we can be proud of. Let us create a Practice which gains respect from all and can be emulated by others.

The theme for the month is HONESTY.

We are happy to include a dialogue between Ar. Christopher Benninger and Ar. Kaiwan Mehta in this issue.

The Journal would like to carry good practices, issues and challenges in the newly introduced section for Education.

We also call upon members who work in various government, semi-public or private offices to contribute articles on their experiences, challenges and opportunities in those sectors. We invite members to submit features on architectural design, interior design and landscape design projects among others.

We place on record our gratitude to all those companies, manufacturers and dealers of building materials and products, for supporting the Journal by releasing advertisements in JIIA. These gestures are greatly appreciated and will be remembered.

Honesty has a Power, Very Few People Can Handle.

Ar. Lalichan Zacharias
Editor

Ar. Lalichan Zacharias

Ar. Gita Balakrishnan

Ar. Brijesh Saijal

Dr. Shilpa Sharma

Ar. Manguesh R. Prabhugaonker

Ar. Mukul Goyal

Dr. Pratheek Sudhakaran

Ar. Tushar Sogani

EDITORIAL TEAM

PRESIDENT'S MESSAGE

Dear Members,

Greetings!

As the rays of hope emerge slowly with the improvement in the situation, relaxation of curbs with caution, the pace and improvements in health facilities, let us look forward.

The efforts of Chapters and Centres in coming to the aid of the local communities, both in cash and kind, apart from the vaccination drives and help to local authorities are very much appreciated.

The Journal has been making a steady progress with a lot of features. It is also good to see Chapters and Centres publishing their magazines and newsletters with excellent content and composition.

Our profession has grown thus far with the dedicated contribution of members across the country with **Honesty** in their approach to design, practice and academics, engagement with stakeholders, an enduring coordination during the process of execution and delivery with integrity. This is the way to sustain the growth of our profession with a steady progress leading to increased awareness amongst the members of society.

The IIA Awards for Excellence in Architecture have been launched. It's a good opportunity for members to share their exemplary architectural works and research papers for their due recognition and as a source of inspiration for others.

We have a growing number of young architects who are establishing their credentials even during these difficult times. To bring out the design talent amongst youngsters, it is proposed to have a National Competition on low cost/ affordable housing to be announced shortly with the support of the Young Architects Committee and the Chapters.

It is time to articulate our thoughts to enhance the scope of architectural practice and to explore the benefits of forming consortiums and also an organisational structure that allows for multi-disciplinary practice, with architects as the major stake-holders. This can aid in more number of firms meeting the criteria for taking up large scale public projects.

Truth is the foundation on which we build integrity, the hallmark of strong moral and ethical principles and values. Honesty as always is the best policy.

Wishing you all good health and cheer.

Ar. C. R. Raju
President, IIA

Ar. C.R. Raju
President, IIA

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COMMENTS

The two monthly Journals of IIA imparted 'lemon fresh' reading and were full of marque knowledge for IIA members. The winsomeness is that one cannot skip any page and the quality of all the articles and content is tempting.

Hope the Editorial team will sustain the predication of the Journal !

Ar. N. Mahesh

Congratulations on IIA's recent publication. It's a great example and really very inspiring. I applaud the publication. It's a good reminder to look on the present side of our daily challenges in the Diamond Jubilee Era of our esteem IIA. I was Secretary of Membership and Public Affairs Board of our Institute. I had the opportunity to arrange over a hundred visits to various sites, factories and programmes in our architecture fraternity.

The present team of the Journal of IIA is doing excellent work and I consider it our duty to support and come forward in the interest of our fraternity.

Best wishes in your future endeavours.

Ar. Harish S Hariani

I just saw the latest issue of the JIIA and I am very happy to see the new everything. Wish you and the entire team well always.

Ar. Anand Palaye

The IIA Journals are really good. Top notch. Extremely happy to see such content coming out as well. Kudos to the whole team.

Ar. Manoj Madhu

Must say I have started looking forward to our Journal. Appreciated the section dedicated to obituaries. From coverage of projects to books and concerns it gives a wholesome platform for our profession in a manner that no other publication can. Obviously it had to be an "inside job" !!! Cheers guys!

Ar. Jacob Cherian, Cochin, Kerala

We welcome your comments and suggestions.

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

THEME

HONESTY

As I have said, the first thing is, to be honest with yourself. You can never have an impact on society if you have not changed yourself. Great peacemakers are all people of integrity, of honesty, but humility.
Nelson Mandela

Honesty by virtue is a vital human value that promotes openness, empowers us, and enables us to develop a positive and compassionate society. It promotes authenticity and fosters the living standards of living beings. It is crucial to have an honest approach towards oneself, nature, and society.

As architects, we are entitled to shape society for the betterment of humankind. The role of an architect in developing the social fabric is predominant and we must work along with society to develop a sense of responsibility towards society, and indeed life itself. Architects need to adopt a holistic approach towards user-centric design, climate-responsive design and design that adheres to the current social fabric.

As an architect, you design for the present, with an awareness of the past, for a future which is essentially unknown.
Norman Foster

An honest approach in designing must be incorporated from the ground level - from the determination of site, selection of materials to the intricate detailing of the project. As architects, we can engage in sustainable practices which reduce the carbon footprint and are energy-efficient. The built spaces must be seamlessly incorporated with the unbuilt spaces creating a connection with nature. Another important aspect that needs to be encouraged is reforestation, an attempt to restore the environment. Massive impact can be made by adopting vernacular methods and local artisans for construction. It is also important to create a healthy environment for people from different sects.

No legacy is so rich as honesty.
William Shakespeare

As quoted above, an honest approach towards nature, architecture and society can leave behind a legacy for upcoming generations to embrace a better quality of living. It is our responsibility to create awareness among people about the importance of architecture. Thus an honest approach to architecture can evoke a sense of belonging and compassion towards other living creatures.

Ar. Brijesh Saijal

RESEARCH

Collage City Urbanism: a Reading of Kolkata, India
Ar. Deepashree Choudhury, Dr. Sanjukkta Bhaduri

●

A Study of Construction Workers' Accommodations in Mumbai Metropolitan Region of India
Ar. Himani Tawade Parte

●

Protean Living : Adapting to the Climate Crisis
Ar. Anushka Samant, Ar. Mridula Pillai Gudekar

COLLAGE CITY URBANISM
A READING OF KOLKATA, INDIA

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ABSTRACT

Contemporary cities exist as conglomerations of diverse components, layers, narratives and imageries. The 'urbanisms of multiplicity' they harbor require a new approach to urbanity which addresses the unique challenges they face and enables reconciliation between the existing urban differentials. This research explores the contemporary cities as collage ensembles by establishing their correspondence with the art and technique of 'collage'. The treatise Collage City authored by Colin Rowe and Fred Koetter and published by MIT Press in 1978 is selected as the key text and urban constructs for studying the collage cities are derived from it. Kolkata city, a metropolis in Eastern India is critically assessed and Park Street, a 3.5 km-long thoroughfare representing the working collage of the city is selected as the detailed study area. The different stretches are then analyzed in terms of urban spaces and facades and graded to reveal their varied state of existence, that is, intra- and inter- stretch collages. The findings conclusively prove that despite heterogeneous morphological composition, enactment characteristics and the presence of varied temporal layers, Park Street is unified through different modes of reconciliation and thus acts as an urban collage. An exploratory research strategy with a mixed-method approach is adopted for this research.

Keywords: urbanisms of multiplicity, Collage City, urban constructs, Kolkata, Park Street

1. INTRODUCTION

Contemporary cities exhibit highly complex assimilation of patches organized in different layers across different spatial and temporal scales and are characterized by rapid transformation processes and the involvement of multiple stakeholders. These cities merit representation as an interconnected mass of dispersed and heterogeneous components interacting with each other in various capacities to form a whole. Though there have been many approaches of looking at cities from the past to the present-day world cities, the perspective of looking at cities as urbanisms of multiplicity has been the dominant one among them since the latter half of the last century. These urbanisms of multiplicity which manifest the principles of collage urbanism, are assemblages composed of differential urban conditions where the whole is generated from the fragments through a process of superimposition, overlaps, and juxtaposition of parts, that may at times, have unrelated properties but work in unison to generate a functional urban entity.

This research is a quest for the methodology of reading such urbanisms of multiplicity through the lens of collage urbanism to draw certain inferences that would facilitate reconciliation between the existing differentials in terms of urban constructs that shape these urbanscapes. The thrust on 'collage cities' is particularly significant in modern times, as due to global forces of interconnection, instant stimuli generation, push and pull of modern trade and communication, cities are bound to change and thus urban spaces must be conceived as frames which are capable of altering their beings to accommodate this dynamism through multiples modes of enactment and allegiance and the principles of collage urbanism can address this need most efficiently. Collage urbanism, which has the art of collage as its mainstay becomes a particularly useful tool for shaping contemporary urban territories, composed of differential configurations into urban realms of unique identity as it prioritizes available materials over the custom made, engages multiple stakeholders over selected experts, and prefers to emphasize the spontaneous process for shaping the urban territory over the predetermined urban image.

With this background, Collage City authored by Colin Rowe and Fred Koetter (1978) is selected as the key text for the research. The treatise has very high relevance in modern urban design theory and practices as it views cities as a 'collage'; both as an 'object' wherein it resembles an art that uses already existing constituents of both built and unbuilt to create a new whole by putting them together with newly constructed themes and ideas and as a 'technique' wherein it transforms to an agency of implementation or enactment of urban nature. By referencing the built forms with the idea of collage, the authors profess urbanism of mediation between contrasting urban situations and propose a radical middle ground where urban constructs representing different affiliations can co-exist.

For further investigation, this research takes up Kolkata, a metropolis in Eastern India, having a colonial history of more than three hundred years. The city's configuration as a conglomeration of differential assemblages and simultaneous imbibing of urban binaries like wealth and poverty, efficiency and waste, peace and conflict, equality and discrimination operating at multiple scales, for example, both global and local bestow it with two paradoxical titles: the 'City of Palaces' and the 'City of Squalor' both having significant meaning in public perception. Colonial legacy combined with native culture and contrasting paradigms of urban spaces, urban lives, and urban processes characterize this metropolis but a holistic investigation into how the urban differentials construct the city is still awaited. Kolkata represents the essence of 'Collage City' as professed by Rowe and Koetter, which makes it a suitable context for this study. Also, translation of this particular urban design discourse in an oriental context has emerged as a necessity which this research aims to address.

A literature study and secondary data analysis are undertaken to develop an understanding of the morphological, enactment and temporal collages which have shaped the contemporary metropolis of Kolkata. Seven assemblages of Kolkata, whose origin goes back to the early 18th century) are selected for comparison and are graded as per the urban differentials they display. Based on the study, 'Park Street' is selected as the study area for this research for demonstrating the principles of collage urbanism as it shows maximum variation in urban conditions in terms of selected parameters compared to the others.

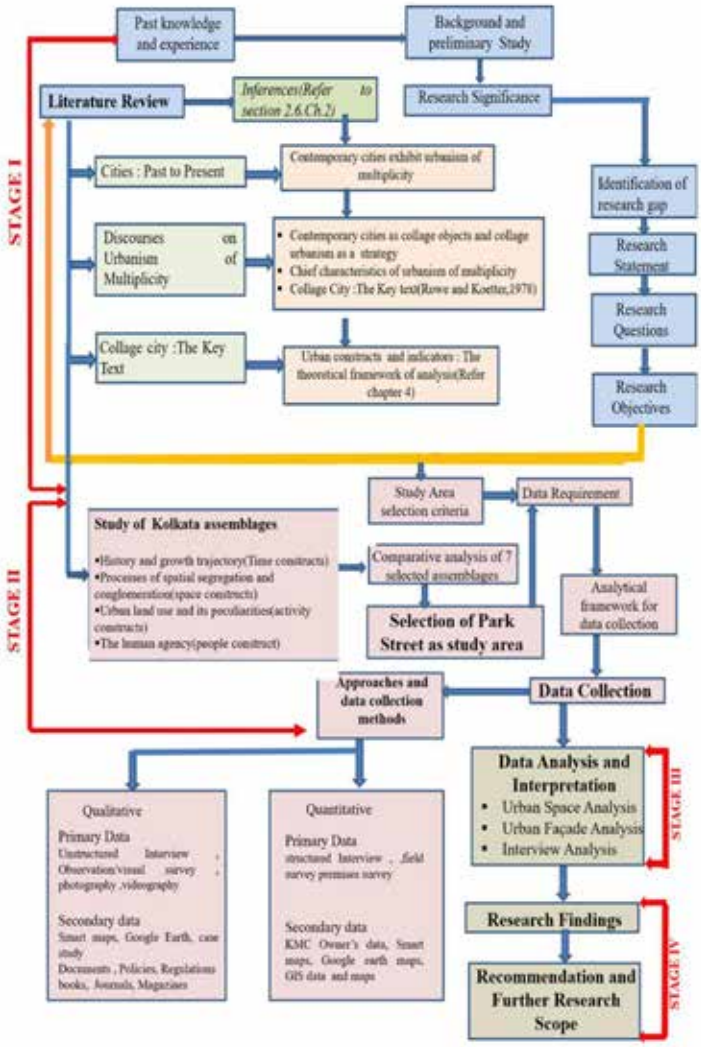

Figure 1:The Research Design for the Study (Source: Author)

2. RESEARCH AIM

To read the selected study area, that is, Park Street of Kolkata as a manifested reality of collage urbanism using urban constructs suggested by the Key text 'Collage City' (Rowe & Koetter, 1978).

The following are the objectives the research aims to address:

1. To undertake a study of the various urban design approaches that have made their mark around the world so far with a focus on understanding the process of emergence of pluralism in the domain of city planning.

2. To establish the suitability of Rowe and Koetter's Collage City (Rowe & Koetter, 1978) as the key text for this inquiry and derive urban constructs for a reading of 'urbanisms of multiplicity 'based on critical reading of the key text.

4. To read the city of Kolkata and the study area using the toolset derived from the key text and validate the urban collage inherent in it.

3. RESEARCH DESIGN

The research is undertaken in the four stages described below in Figure 1.

3.1. STAGE-I-LITERATURE REVIEW

The literature review for this study constitutes the following five sections as shown in Figure 2.

▶ The First Section:

'Cities Past to Present' reveals that the contemporary city is no more a homogeneous entity as an intervention in the form of spontaneous and unplanned function, multiple stakeholders and a mixture of temporal layers that generate heterogeneity in urbanscapes. These translate them into urbanisms of multiplicity. Also, cities have traveled from totalitarian to incremental and autocratic to participative enactment procedures and singular to multiple interpretations of memories that support this new paradigm.

▶ The Second Section:

'Discourses on Urbanism of Multiplicity' establishes the establish the 'urbanisms of multiplicity' as the main determinant of the urban realm in contemporary cities and deduces their main characteristics.

▶ The Third Section:

'Collage City Urbanism in the Context of Urbanisms of Multiplicity' establishes the correspondence between urbanisms of multiplicity and collage and

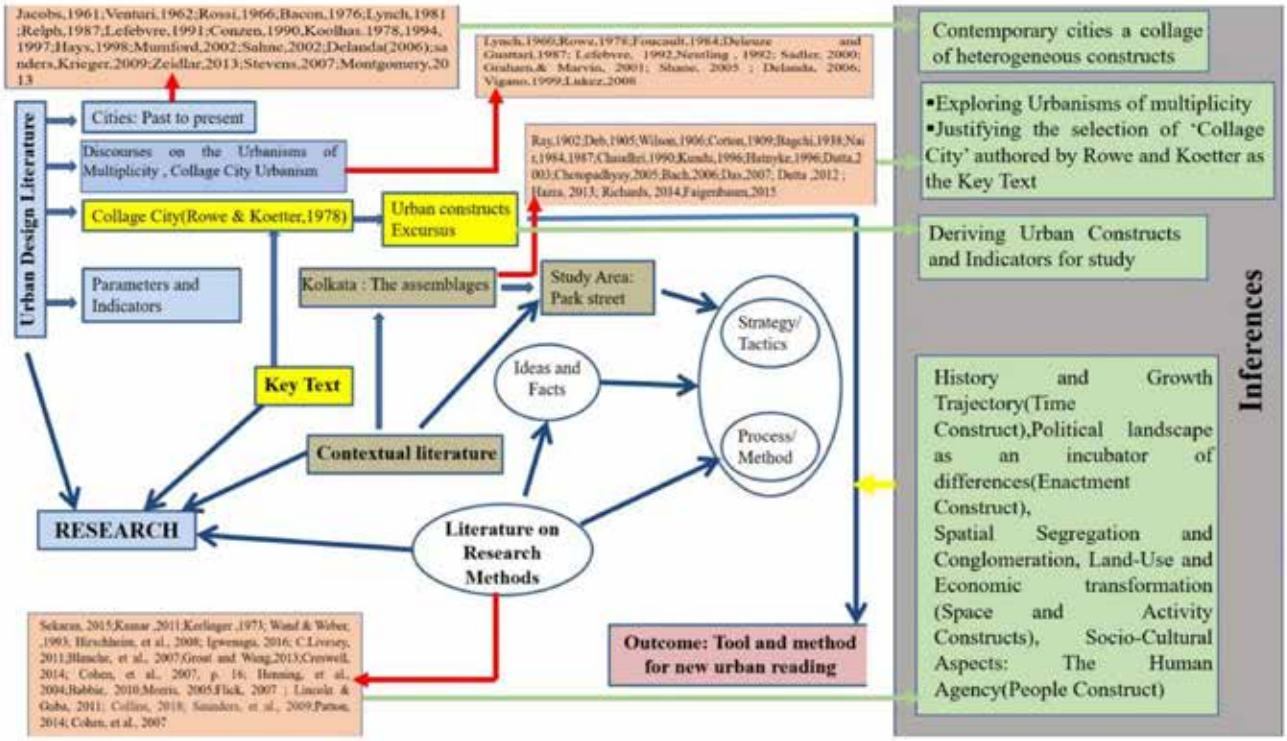

Figure 2: Outline of Literature Review (Source: Author)

Table 1 : **Urban constructs derived from the key text**
Source: **Choudhury & Bhaduri, 2020**

Morphological Constructs (M)		Enactment Constructs (E)		Time Constructs (T)	
M1	**Walkability**	**E1**	**Enactment Vision**	**T1**	**Memory as meaning**
M2	**Field Definition and Connection**	**E2**	**Enactment Approach**	**T2**	**Museum City**
M3	**Public-Private Realm Connection**	**E3**	**Enactment Agency**	**T3**	**Structure and Content**
M4	**Contextual**	**E4**	**Enactment Technique**	**T4**	**Collage**
M5	**Solid-void Relationship**				
M6	**Typological Merging**				
M7	**Object –Texture Equivalence**				
M8	**Built Unbuilt Relationship**				
M9	**Poche Integration**				
M10	**Urban Rooms**				
M9	**Poche Integration**				
M10	**Urban Rooms**				

extrapolates this connection to collage urbanism approach of urban design. The study reveals that the presence of unified single urban entities displaying urban constructs in a varied state of existence in the same temporal and spatial frame is the chief characteristic of contemporary 'urbanisms of multiplicity' i.e. collage cities and establishes collage urbanism as an apt approach that facilitates the creation and maintenance of such an urban collage. The study also justifies the selection of Collage City (Rowe & Koetter, 1978) as the 'key text' for deducing urban constructs to read contemporary collage cities.

▶ The Fourth Section:

'Study of 'Collage City'-The Key Text' undertakes a detailed study of 'Collage City' (Rowe & Koetter, 1978) to derive the urban constructs(see Table 1) and corresponding measurable indicators to be used in analyzing the selected study area.

(i) The derived urban constructs

(ii) The measurable indicators derived in four steps:

STEP-I: The excursuses[1] mentioned in 'Collage City' (Rowe & Koetter, 1978, pp. 150-177) are related to the urban concerns in terms of urban space and ur-

ban facades (e.g. the excursus' memorable streets' corresponds to 'streets', the excursus' stabilizers' correspond to 'buildings', the excursus 'potentially Interminable set pieces' corresponds to landmark and so on).

STEP-II: The attributes that define and affect the degree of presence of derived urban constructs in a particular area, related to the morphological urban constructs are listed e.g. imageability, enclosure, human scale, transparency, complexity, legibility and linkage are the identified attributes with respect to walkability construct (Ewing & Handy, 2009, p. 72).

STEP-III: The broad themes which would enable understanding, measurement, and gradation of the urban constructs regarding the attributes listed above are discussed based on a review of classic urban design texts (e.g. walkability is analyzed under the themes premise, built structure, activity, accessibility, façade and convenience/comfort).

STEP-IV: Measurable indicators related to morphological constructs are worked out and grading criteria are derived for each indicator. To cite one example; a few of the indicators considered for grading walkability construct are the percentage of premises with front and side setbacks, the percentage of buildings directly abutting footpath and accommodating multiple building uses, nos. of identified building typology and historic buildings, etc. Grading criteria applied to grade indicators include grading by boundary conditions where three equal divisions i.e. 0 to <33%,33% to 66% and > 66% to 100% corresponding to low, moderate and high grades of that indicator or the reverse depending on the interpretation of the indicator are adopted, grading by count, where the minimum and the maximum number of any indicator forms the lower and upper limit of gradation classes and gradation by value according to predetermined criteria.

▶ The Fifth section:

'Kolkata: The Collage City ' studies the city of Kolkata (Figure 3)and reveals that the present city has emerged over time as a combined paradigm of various temporal layers (collage of time construct), space idioms arrived at through different patterns of spatial organization and appropriation(collage of morphological construct) differential planning policies and visions, accumulation of diverse urban activities and multi-ethnic urban participation(collage of enactment construct), all overlapping with one another through amorphous boundaries shaping it as a unique collage assemblage.

3.2. STAGE II- THE STUDY OF KOLKATA'S ASSEMBLAGES AND THE SELECTION OF STUDY AREA

Based on the literature on Kolkata and secondary data, seven assemblages of the city that find a mention in historical accounts of the city are identified namely; Park Street, College Street, Dalhousie Square, New Market, Chitpur, Kumartuli, and Burrabazaar (Figure 4). The selected assemblages are compared in terms of variation they display with respect to certain predefined parameters with an aim to deduce their extent of conformity to collage urbanism as characterized by the city of Kolkata.

3.3. STAGE-III-DATA COLLECTION AND DATA ANALYSIS

From the study, Park Street emerged as the assemblage having maximum variation in urban conditions

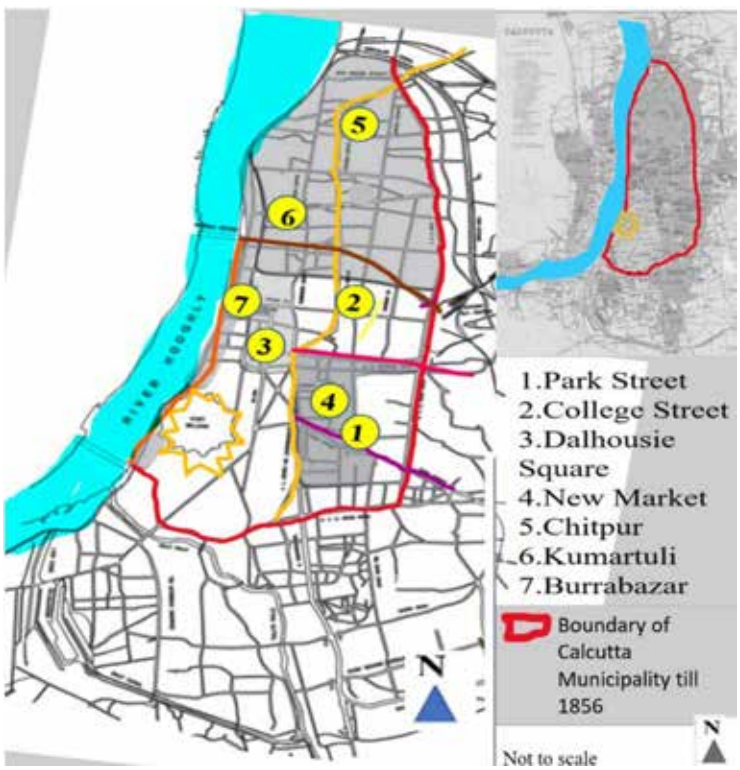

Figure 4: The seven assemblages of Kolkata selected for secondary analysis (Source: by Author, based on Google maps)

Figure 3: Location of Kolkata: An Eastern Metropolis of India (Source : https://www.freeworldmaps.net/asia/india/westbengal/)

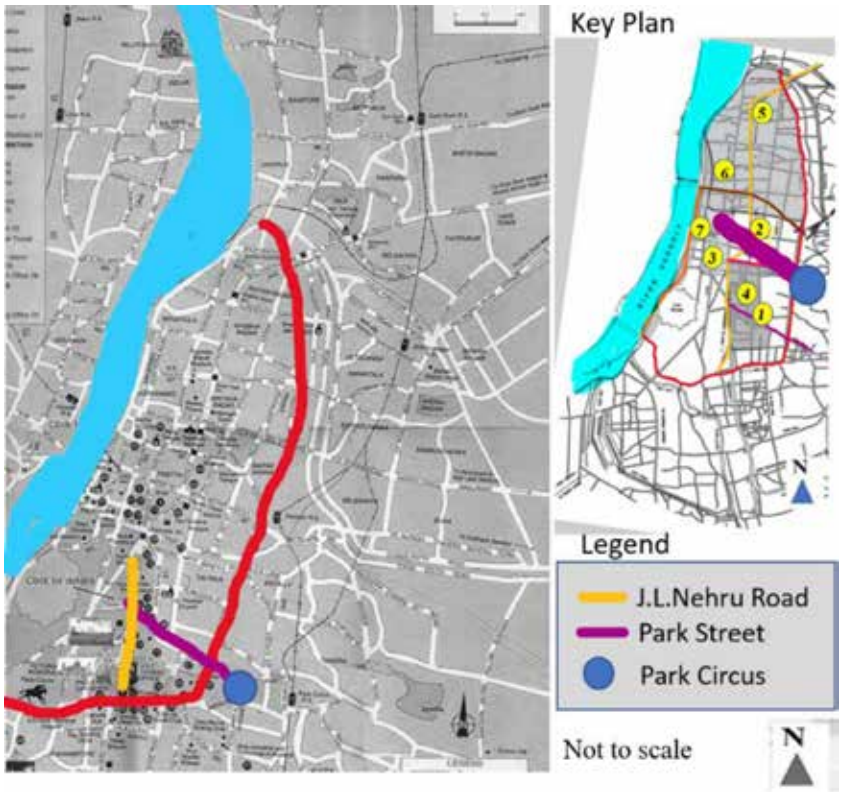

Figure 5: Park Street: The selected Study Area (Source: by Author, based on Google maps)

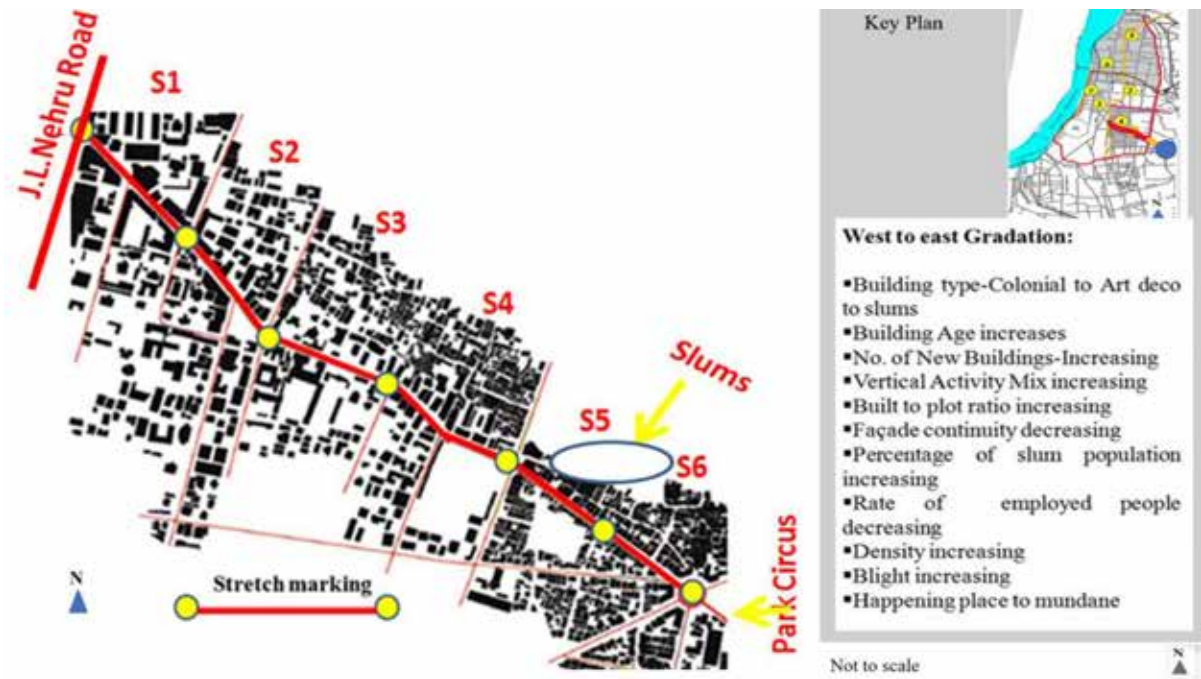

Figure 6: Division of Park Street in 6 stretches (S1 to S6) (Source: Kolkata Municipal Corporation & Author)

Figure 7: Typical Map for Urban Space Analysis (Source: Author)

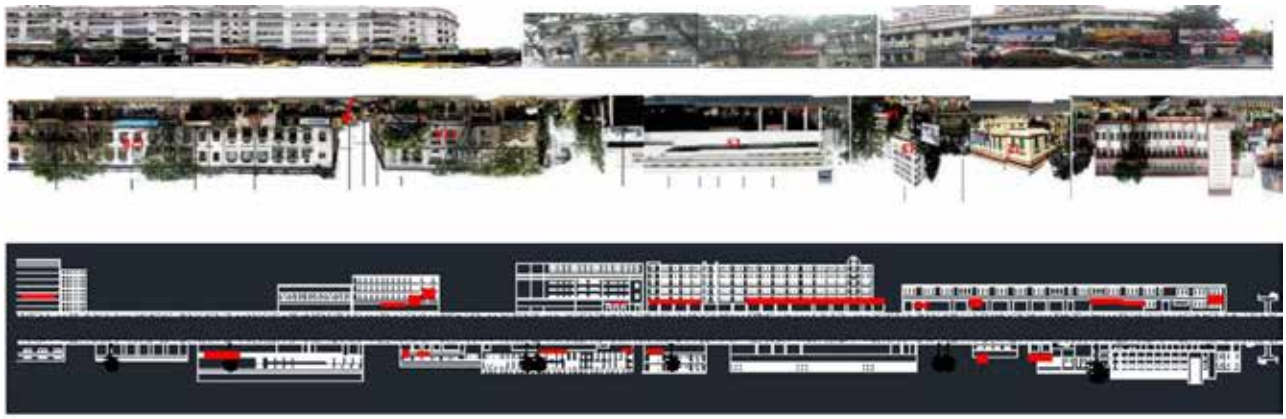

Figure 8:Typical Elevation for Urban Façade Analysis (Source: Author)

Figure 9: Map for analyzing Contextual Agreement (M4) Construct (Source: Author)

due to its unique configuration as a collection of 'urban patches' all different from each other but existing side by side and coming together both in terms of formal and informal discourses to represent a single urban identifiable unit. So, it is selected as the area for detailed study.

3.3.1. DATA COLLECTION

Park Street is divided into six stretches (S1 to S6) based on pre-decided attributes for data collection and analysis as shown in Figure 6.

This research has been accomplished through both primary and secondary data. Stage I has been accomplished through secondary data whereas both primary and secondary data have been used for stage II and stage III. Field surveys, Interviews, Electronic surveys, Photos, and Video documentation were used for primary data collection. Archival documents, cartographic sources including maps of Kolkata obtained from different sources, GIS maps, Smart maps [2], aerial photographs obtained from Google Earth, newspaper clippings, journals, books, and other articles appearing in the media were the main secondary data sources were used for the study.

3.3.2. DATA ANALYSIS

(i) In this research, all the Morphological Constructs (M1-M10) have been studied and analyzed (based on primary surveys and interviews) for all the identified stretches of the study area, i.e., Park Street in terms of :

- Urban Space through the gradation of quantified/measured indicators (under each theme) based on stretch maps generated from field survey (see Figure 7).
- Urban Façade through drawing up elevations of both sides of Park Street through the gradation of quantified/measured indicators (under each theme)based on elevations generated from field survey (see Figure 8).

(ii) The Enactment Constructs and Time Constructs have been studied and analyzed based on secondary sources (including maps, articles, but literature, narratives)and primary surveys (field survey and photo and video documentation) for all the identified stretches of the study area i.e. Park Street.

(iii) Interviews were analyzed in two stages in which they were conducted. In Stage-I, interview transcripts obtained from an unstructured questionnaire which were administered face-to-face were coded according to themes and subthemes and responses were grouped in specific categories to understand how respondents experienced Park street with respect to the identified urban constructs(morphological, enactment, and time). In Stage-II, responses of electronic surveys were aligned with findings of urban space and urban façade analysis with respect to individual constructs, and the extent of agreement of interviewees with findings was established.

(iv) Secondary data obtained from various sources are analyzed to identify the final study area from various urban assemblages of Kolkata.

3.3.2.1. ANALYSIS OF CONTEXTUAL AGREEMENT (M4) CONSTRUCT (AN EXAMPLE)

The following section describes the urban space and urban facade analysis with respect to contextual agreement construct in six stretches of Park Street (Figures 9 & 10 and Tables 2 to 6). Similar analysis has been carried out for other morphological constructs.

Step-I : Urban Space Analysis

Table 2: **Inter-stretch grading of different indicators constituting M4(Contextual Agreement) construct-Urban Space Analysis (Source: Author)**

M4(Contextual Agreement) Urban Space Analysis								
Code	Indicators	S1	S2	S3	S4	S5	S6	Remarks
Theme: PREMISE								
Cp1	Average plot size	7711	2592	2767	1973	692	582	S1 and S3 show low contextual agreement due to a very high range of variation in plot sizes and ground coverage which do not reinforce existing context but manifests differences. S2 and S3 show moderate contextual agreement due to a moderate range of variation in plot sizes and ground coverage. S5 and S6 show high contextual agreement due to low range of variation in plot sizes and ground coverage
	Standard Deviation of Plot sizes	L(2772)	M(2065)	L(2469)	M(1956)	H(344)	H(269)	
Cp2	Average Ground coverage (%)	45	53	46	55	79	83	
	Standard Deviation of ground coverage	L(1453)	M(881)	L(1115)	M(996)	H(250)	H(201)	
	ASSIMILATED GRADE	L	M	L	M	H	H	
Theme: BUILT STRUCTURE								
Cb1	Dominant typology (%)	T2c	T2c', T4c	T3c, T4c'	T3c	T4c	T4c	S1, S5, and S6 show high contextual agreement due to the presence of a high percentage of dominant building typology, dominant building use and surrounding influencers which reinforce the existing context. S2, S3 and S4 show moderate contextual agreement due to the presence of a moderate percentage of dominant building typology and dominant building use. The number of surrounding influencers is moderate in S2 but low in S3 and S4 which dilutes the context.
		H(68)	M(45)	M(40)	M(60	H(75)	H(78)	
Cb2	Surrounding influencers (buildings/ uses) (Nos.)	H(4)	M(3)	L(1)	L(0)	H(4)	M(3)	
Cb3	Dominant building use (%)	Uc2	Uc3	Uc1	Uc3	Uc2	Uc2	
		H(72)	M(45)	M(62)	M(55)	H(88)	H(96)	
	ASSIMILATED GRADE	H	M	M	M	H	H	
Theme: ACCESSIBILITY								
Cac1	Lanes through blocks or premises(Nos.)	H(5)	M(3)	M(3)	M(2)	L(0)	L(0)	S1 shows high contextual agreement due to the presence of a large number of pedestrian lanes that pass through premises which reinforce the existing context by connecting premises and the streets. S2, S3 and S4 show moderate contextual agreement due to the reduced number of pedestrian lanes that pass through premises. S5 and S6 show low contextual agreement due to the absence of pedestrian lanes that pass through premises.
	ASSIMILATED GRADE	H	M	M	M	L	L	
Theme: TRANSFORMATION								
Ct1	Contextual Infill (%)	H(78)	H(75)	L(32)	M(56)	H(79)	H(100)	S1, S2, S5 and S6 show high contextual agreement due to the presence of a high percentage of contextual infill. S3 shows low contextual agreement due to the presence of a high percentage of contextual infill. S4 shows moderate contextual agreement due to the presence of a high percentage of contextual infill.
	ASSIMILATED GRADE	H	H	L	M	H	H	

Step-II : Themewise assimilation of grades(Urban Space Analysis)

Table 3: **Assimilated grade related to M4(Contextual Agreement) construct-Urban Space Analysis (Source: Author)**

M4 (Contextual Agreement) Urban Space Analysis Grades						
Theme	S1	S2	S3	S4	S5	S6
Premise	L	M	L	M	H	H
Built Structure	H	M	M	M	H	H
Accessibility	H	M	M	M	L	L
Transformation	H	H	L	M	H	H
ASSIMILATED GRADE	H	M	NC(M~L)	M	H	H

Step-III : Urban Façade Analysis

Table 4: **Inter-stretch grading of different indicators constituting M4 (Contextual Agreement) construct-Urban Facade Analysis (Source: Author)**

M4 (Contextual Agreement) Urban Façade Analysis								
Code	Indicator	S1	S2	S3	S4	S5	S6	Remarks
Theme: FACADE								
Cf2E	Percentage of buildings having distinguishable elements in building facades	H92	H75	M60	M64	L12	L16	S1 and S2 show high contextual agreement due to the presence of a high percentage of buildings having distinguishable elements in building facades. S3 and S4 show moderate contextual agreement due to the presence of a moderate percentage of buildings having distinguishable elements in building facades. S5 and S6 show low contextual agreement due to the presence of a low percentage of buildings having distinguishable elements in building facades.
	ASSIMILATED GRADE	H	H	M	M	L	L	

Step-IV : Theme-wise assimilation of grades (Urban Facade Analysis)

Table 5: **Assimilated grade related to M4Contextualgreement) construct- Urban Façade (Source: Author)**

M4(Contextual Agreement) Urban Facade Analysis Grades						
Theme	S1	S2	S3	S4	S5	S6
Built Structure	H	H	M	M	L	L
ASSIMILATED GRADE	H	H	M	M	L	L

Step-V : Urban Space Analysis and Urban Facade Analysis

Table 6: **Assimilated grade related to M4 (Contextual Agreement) construct- Urban Space and Urban Facade Analysis (Source: Author)**

Contextual Agreement(M4) -Urban space Analysis and Urban Facade Grades						
Urban Space Analysis	H	M	NC(M~L)	M	H	H
Urban Facade Analysis	H	H	M	M	L	L

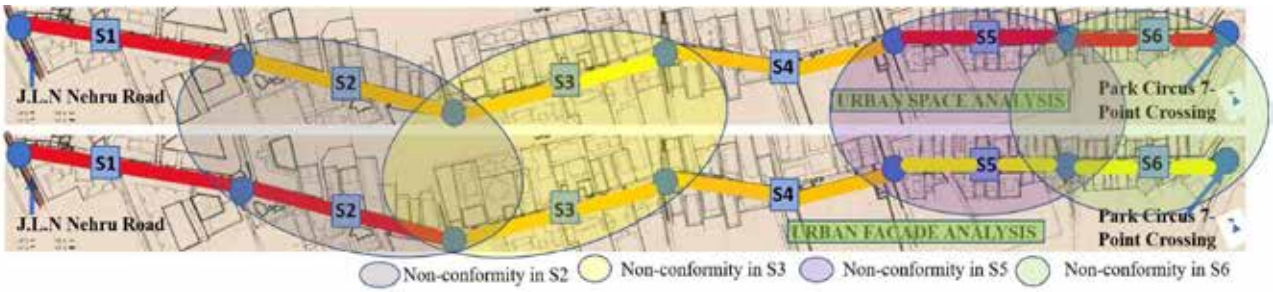

Figure 10: Assimilated grade related to M4 (Contextual Agreement) construct-Urban Space and Urban Facade Analysis (Source: Author)

It can be seen that Urban Space analysis inferences are in agreement with those of Urban Facade analysis for stretches S1 and S4 whereas in the case of S2, S3, S4 and S5 they differ.

4. FINDINGS AND DISCUSSIONS (STAGE-IV)

The following findings are put forth through the stretch wise analysis of Morphological, Enactment and Time Constructs of Park street in terms of urban space and urban façade analysis:

i) The presence of unified single urban entities displaying urban constructs in a varied state of existence in the same temporal and spatial frame is the chief characteristic of contemporary' urbanisms of multiplicity' i.e. collage cities.

ii) Analysis of the urban constructs (morphological, enactment, and time) of the stretches reveals their varied state of existence, i.e., intra-stretch and inter-, stretch collage. Park Street is perceived as a unified single urban entity in the same temporal and spatial frame despite its contiguous stretches (S1 to S6) displaying heterogeneous morphological composition, different enactment characteristics, and varied temporal layers. Thus it conforms to the primary characteristic of collage urbanism concept as suggested by the key text Collage City with respect to the urban constructs studied here.

iii) The study also reveals that the state of existence of urban constructs probed in this inquiry is closely linked to the physical urban condition and popular imagery of the place being investigated. The state of existence of various urban constructs (interpreted through grading them in this research) can be used to guide urban interventions in a contemporary collage city, where differential fragments displaying different urban conditions and ground realities exist together e.g. some urban patches of the city might display a wealth of urban resources whereas the others might struggle to survive with impoverished and inadequate urban provisions.

The findings are verified through the users' perception relating to the urban constructs being graded, inferred from the interview, and an electronic survey undertaken during the research.

5. RESEARCH RECOMMENDATIONS

The research recommends the adoption of a collage urbanism approach for designing the urban spaces in contemporary cities. According to this approach, the versatile urban constructs and indicators which lend themselves to manipulation are considered as the interventional area and incremental and small scale implementation program involving highly majestic to mundane elements are encouraged. This approach enables the creation of equitable urban conditions by employing meager urban resources.

Next, the research recommends the incorporation of contextual responses for designing urban spaces to cushion the developmental pressure speedily altering the urban fabric to create comprehensible, legible, and coherent urban realms.

This research also recommends framing of suitable enactment modalities like bye-laws and policies which would encourage the creation of urban conditions resulting in a high grade of urban constructs e.g. space definers which enclose open spaces through built structures, building setbacks that incorporate public use of space, the transparent and engaging edge between built and unbuilt structures, ground floor retail directly opening on to the footpath, etc.

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Endnote

[1] Excursus is defined as an abridged list of stimulants, a-temporal, and necessarily transcultural as possible objets trouvés in the urbanistic collage (Rowe & Koetter, 1978, p. 150) which serve e as a prescription for creating the Collage City that Rowe and Koetter envisaged.

[2] Major R.B. Smart conducted a survey of the city of Calcutta, under the supervision of major R.T. Critchton between 1903 and 1914.The survey was conducted as per the provisions of Calcutta Survey Act I of 1887.This survey was necessitated as the earlier maps based on previous surveys proved inadequate for serving the enhanced administrative requirements of the government. Scale The drawings were in the scale of 50 feet to an inch and was carried out in different phases. The map holds great relevance today due to the accurate and detailed depiction of the city where each and every plot, buildings with number of storeys , streets ,lanes, landmarks like institutions, drains, tanks, big trees, lamp posts and several other elements of the urbanscape are shown on the maps. These maps are also important sources of information related to Calcutta's past in terms of built form and cityscape. This research uses Smart map of ward 63 and 64 which includes Park Street as a source of data due to its relevance.

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A STUDY OF CONSTRUCTION WORKERS' ACCOMMODATIONS IN MUMBAI METROPOLITAN REGION OF INDIA

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ABSTRACT

Construction workers (CW) in India are usually from the rural poor or families who migrate to urban pockets of the country in expectation of better earning opportunities. Mumbai Metropolitan Region (MMR) is one of the fastest developing areas in India and absorbs a considerable amount of labour workforce on construction and interior projects. Although the BOCW Act 1996, entitles CW with the facility of free accommodations from employers, it fails to consider the accommodation requirements for un-employed and self–employed workers, who end up living in slums. The quality of employer provided accommodations too are found to be pitiful and below habitable standards. This research sheds light on the issues related to the CWs accommodations in MMR. Firstly, through evaluation of different types of labour accommodations, on the basis of parameters for Safe and Healthy Environments, the paper highlights the fact that the most commonly used labour accommodation types in MMR do not satisfy the parameters. Based on further investigations and analysis, the paper infers that the reasons leading to accommodation issues are absence of standards and guidelines, cost cutting from employers, lack of resistance from the workers and absence of alternative solutions, and concludes with recommendations for bringing positive change in the labour accommodation system.

Key Words: construction workers, accommodations, labour accommodation, standards for housings, migrant workers, Mumbai Metropolitan Region, BOCW Act 1996.

INTRODUCTION

The construction sector of India, responsible for the development of real estate projects- such as housings, commercial, hotel, entertainment etc.; infrastructural projects- such as roads, metros, transit hubs, airports etc.; and government-flagship projects- such as housing for all, smart cities, PMAY, AMRUT and others, is a rapidly growing sector and acts as a key driver for the country's economy and overall development, along with offering enhanced growth prospects for global competitiveness. With a present contribution of around 9% to the national GDP, the construction industry is the second largest employer after agriculture (Sriram, 2021). The employees of this industry, the construction workers (CW), also known as labourers, involved in actual, on-site execution of the projects, play a crucial role in the growth of the sector. In India, CWs form one of the largest categories under the unorganized sector of employment. Based on the average of various sources, around 5 Crore of workers, which form around 10% of the total employed workforce in India, are presently employed under the Construction sector. (BOCW, 2020, p. 10; Sutradhar, 2016, p. 16). The average profile of CWs in India can be summarized as rural poor - migrating from labour catchment areas like Bihar, Uttar Pradesh, Orissa, Andhra Pradesh, Tamil Nadu, Kerala and Karnataka, to urban pockets like Mumbai, Delhi and Kolkata for better livelihood opportunities, male dominant, belonging to socially disadvantaged groups and around 65% of them being unskilled with no training or skills acquired related to construction industry. These labourers channel their ways into the industry through the link of middlemen like contractors - muqadam, jamadar, munshi etc. - who also help them get employment and sometimes also decide their conditions of recruitment. (Sutradhar, 2016, pp. 15-21). These workers are acknowledged as 'Construction Worker' through registration under the Building and Other Construction Workers Act (BOCW), 1996, which looks after the healthcare, safety, social security, pension and financial assistance. Due to lack of awareness and resistance towards paying monthly contributions, around 30 percent of the workers are still not registered and unable to receive any benefits from the Government. (BOCW, 2020, pp. 9, 10) The same act also looks after the accommodation facilities of employed CWs (BOCW, 1996, p. 13).

Mumbai Metropolitan Region (MMR), spread over an area of 6355 sq.km is one of the fastest developing regions in India attracting CW from all kinds of labour catchment areas as mentioned above. Although the exact number for MMR is not found, as per BOCW's latest records, 23,15,771 workers are estimated to be present in Maharashtra (BOCW, 2020, p. 29). With a huge amount of real estate projects, (around 10500 sites) (Kamath, 2020) and infrastructural projects ongoing and planned by MMR Development Authority (MMRDA), a significant amount of labour workforce is assumed to be employed in MMR. As per sources, MMRDA has in all 17000 workers presently employed across all their projects, and has announced 16,726 more vacancies (Sachdev, 2020; Pandey, 2020). Approximately one lakh registered, self-employed workers are present in Mumbai and Thane district alone (Priolkar, 2019). Based on these numbers, and considering an almost equal number of unregistered workers, tentatively five lakh construction workers can be estimated to be living in the entire MMR at present.

As mentioned before, BOCW governs the accommodation facilities of these construction workers. However, based on observations and investigations it was found that CW in MMR are commonly found to be living either on rental basis in slums on group sharing basis or in employer provided temporary shanty hutments built in a corner of the construction site. While the quality of living in rental/ slum accommodations depends on the amount of rent, the quality of employer-provided accommodation is deplorable. The most common type of employer provided accommodations can be described as shanty hutments made using metal corrug] ated sheets or scrap materials on plain cement concrete (PCC) levelled ground with no provision of openings for light and ventilation, no furniture to sleep, cook or eat, minimum climate protection and lack of safety. Workers living in these accommodations are exposed to extremely poor living conditions and health hazards. Such a scenario of labour accommodations has been a continuous practice since long. While few research studies and articles were found to be addressing general labour issues related to their wages, gender equality, social security, harassment, health and workplace safety, and a few official documents and policies are in place to regulate social and financial security of workers, no substantial study or document was found addressing the issue of labour accommodation. The condition of labour accommodation seen throughout the region raises concerns related to the physical and mental health of workers. It also raises questions about the governance

and strategies employed by BOCW and employers that result in such quality of accommodations.

The aim of this study is therefore to shed light on the issues related to the construction worker's accommodations in Mumbai Metropolitan Region (MMR) of India and recommend alternative strategies for improvisation.

The objectives for this paper are :

1. To shed light on the poor living conditions of labourers in different types of accommodation spaces accessible to them in MMR.
2. To highlight the issues related to labour accommodation system, responsible for poor living conditions of the construction workers.
3. Recommend alternative strategies to resolve the issues and create better living environments for construction workers.

LITERATURE REVIEW

The literature reviewed for this research paper can be broadly categorized into three parts :

i) The first part included study of official documents related to construction workers employed in India. Review of Building and other Construction Workers (BOCW) Act 1996 – Regulations of Employment and Services', issued on 19 August 1996, which provides the norms related to registration and welfare of Construction workers (CW), shed light on the absence of standards and guidelines for labour accommodations. It also helped understand a few other aspects which were taken as important considerations for drawing analysis and inferences.

Another official proposal, Mission Mode Project, issued by BOCW to the Ministry of Labour and Employment on 14 July 2020, provides five-fold objectives aiming towards 100 percent registrations and utilization of cess amount towards financial security of workers. However, this document fails to propose any objectives for the labour accommodation facilities in migrated areas.

ii) The second category reviewed was online articles and publications to help understand the background, statistics and general issues related to CW. While some articles and research papers were found discussing general issues of CWs such as, their social security, poverty, workplace safety, gender inequality etc., no substantial study was found discussing CW's accommodation facilities. The book Migrating out of Poverty - A Study of Migrant Construction Sector Workers in India by Ravi S. and Sutradhar (2016) was one of the important references that helped in understanding the overall background of CW in India. A journal article The Psychological Toll of Slum Living in Mumbai, India: A Mixed Methods Study by Subbaraman and others (2014), gave a detailed idea of issues in slum dwellings leading to physical and mental distress.

iii) The third type of literature reviewed, to draw evaluation parameters, were as follows: World Health Organization Guidelines for Healthy Housing (1988); International Finance Corporation's Workers Accommodation – Process and Standards (2009) based on International Labour Organization's Workers Standards (1961); NBC India 2005 and "Planning of Railway Staff Colonies" in Indian Railways Works Manual (2000).

METHODOLOGY

This research was conducted in two parts. In the first part, based on the primary information collected through personal observations and interviews of contractors and labourers, types of labour accommodations existing in MMR were evaluated on a framework of parameters, which were derived from comparative study of standards for a safe and healthy environment. Through this method, the quality of worker's accommodations and living conditions were demonstrated. The second part of this research was focused on trying to understand the reasons leading to the poor accommodation conditions, which was done through a literature review of government policies, websites and discussions to explore the issues responsible for the existing condition of the labour accommodation system in MMR. Finally, based on the analysis of the findings and other relevant facts, alternative strategies were recommended for resolving the issues and improving the system of labour accommodations.

RESULTS AND FINDINGS

The research findings are divided into three parts: firstly, The research findings are divided into three parts: firstly, the research brought to light the fact that in India there are no prescribed standards governing the quality of accommodation spaces for construction workers. Secondly, on evaluating the quality of accommodations used by workers in MMR on a framework of parameters derived from other published standards, it was found that the quality of most common, employer provided type of accommodation failed on 9, partially satisfied and completely satisfied only 1 parameter out of 17. While rental accommodations failed on 6 and partially satisfied 11 parameters. This proved that in general, the labour accommodations prevailing in MMR fail or lack in providing safe and healthy environments to their inhabitants. On investigating the reasons responsible for such condition of labour accommodations, absence of governing standards resulting in lack of basis for inspection, cost cutting from employer due to other worker related liabilities, desperate need of jobs by workers, lack of labour unions and absence of alternative accommodation solutions in the region were found to be major impacting issues.

CONSTRUCTION WORKERS ACCOMMODATION SPACES IN MUMBAI METROPOLITAN REGION (MMR)

The job of workers involved in the building and construction industry is different from any other kind of workers. Absence of fixed work premises, unique work durations on sites depending upon the skill sets, multi-tier employment system, seasonal migrations, unstable employments are some of the peculiar characteristics of construction worker's jobs which make these workers different from the workers employed in manu-

facturing or service industry (Rao, n.d.). Due to the volatile nature of this job, construction workers live a very unstable life moving from one place to another in long or short time durations, which leads them to having no fixed accommodation space anywhere. In case of MMR, the construction workers are spread throughout the region and their accommodation spaces can be broadly categorized into two types viz., employer-provided and non-employer-provided :

1. Employer Provided Accommodations

As per the BOCW Act 1996, the owner of any establishment engaged in building and construction activity and having employed more than ten workers in the past twelve months is considered to be an "employer". He is liable to provide free of charge, temporary accommodations and facilities for drinking water, toilets, canteen and crèche (if more than fifty female workers are employed) to all his employed and registered construction workers (BOCW, 1996, pp. 4, 12, 13). As per this rule, workers employed under an establishment can be found to be accommodated within or near the construction site of the project. In MMR, most commonly, three types of employer-provided accommodations are found: on-site temporary shelters, off-site temporary shelters and within the under construction buildings. There is the fourth type of employer-provided accommodation – steel-fabricated accommodation camps. However this type of accommodation facility is rarely used.

a) On-Site Temporary Shelters – Shanty Hutments

On-site temporary shelters can be described as a group of ground storied, shanty hutments usually built in a corner of the site. Each hutment of tentative size 3 x 3m is occupied by 5 to 7 workers. The structure of these hutments is generally built using metal corrugated sheets or bamboo on a PCC leveled ground. The enclosure on four sides and the roof are also made from metal corrugated sheets or a combination of scrap materials like timber planks, plastic sheet etc. The structures have no openings other than the access door and lack of structural and fire safety. The quality of space inside these structures can be described as dark, warm, humid, with hardly any provision of artificial ventilation, no furniture or accessories to sit or sleep, no storage to keep the belongings, and ease of access to external elements like storm water, rats, insects, and dampness. Common toilet and drinking water facilities are provided near accommodation structures. Facility of food varies from site to site. While employers may provide a canteen or mess facility in some cases, in others, workers may cook their own food on stoves within these temporary shelters. Labours living in such accommodations are found to be spending most of their time outside the structures which indicate the lack of comfort within.

b) Off-Site Temporary Shelters – Shanty Hutments

Due to lack of space within the construction sites or due to undefined site boundaries such as for infrastructural projects, employers hire a piece of land near the project site for building workers accommodations. However, in quality, these accommodations are exactly the same as the on-site accommodations as described above. Figure 1 and 2 are images of on-site and off-site labour accommodations photographed from real estate and infrastructural project sites respectively.

Figure 1: On-site labour accommodation structures from construction sites in Mumbai
(Source: Author)

Figure 2: Off-site labour accommodation structures from a hired land in Mumbai (Source: Author)

c) On-Site Temporary accommodations within under construction buildings

The third common way of providing accommodation to workers is by allotting them some space within the buildings under construction. Depending on the plan of the floor plate, partitions may or may not be created for grouping of workers. Facilities related to furniture, toilet and food are similar to those described in the previous two types. However, such accommodation spaces provide workers with better human comfort conditions as compared to shanty hutments, in terms of protection from climate, light and ventilation, safety from flooding and dampness, structural safety, fire safety and ventilation. In terms of furniture, workers in all three types of accommodations use wooden planks placed on bricks as their beds to sleep on or may directly sleep on the floor. Since the BOCW Act Rule 34 in Chapter 6 only mentions the provision of temporary accommodations, it is a question whether this type of accommodation facility is acceptable under the rule or not. Figure 3 shows a few photos taken from a residential under construction site in Mumbai.

Figure 3: ON SITE - Employer provided accommodations within under construction buildings from a Mumbai construction site.
(Source: Author)

d) Fabricated / Prefabricated On-site / Off-site labour Accommodation Camps

The fabricated / prefabricated structures (seen in Figure 4) are a rarely used type of accommodation considering its higher cost of investment and space constraint. These types of accommodations are generally G+1 or G+2 structures made using a framework of steel channels and walls made of GI or PVC sheets. Due to elevated floor plates, these structures are safe from storm water issues. The roofs of such structures slope preventing ingress of rainwater. Such structures also have provision for windows and security. These types of accommodations provide rooms to the workers on a sharing basis only for resting and sleeping. While there are common kitchens and canteen and toilet facilities provided, this type of accommodation system is more organized, though expensive and provided by very few construction companies having around thousand or more workers employed on a project.

2. Non-Employer Provided Accommodations

All construction workers migrating to MMR are not always employed under a single project or under any single employer. A large section of skilled construction workers like carpenters, painters, plumbers, electricians etc., are required on sites for small duration ranging from a single day to a few weeks. These workers are also working on multiple sites at a time and usually employed for interior projects. Most of these workers are not employees of any establishment and thus have to manage their own accommodation facilities. In MMR, such self-employed or unemployed construction workers are found to be living on rental and group sharing basis. Mumbai being a very expensive city to live, construction workers usually rent accommodation spaces in the slums located on the outskirts of the city and travel all the way to their sites, which are majorly located within the cities. The quality of rental accommodations can range from shanty hutment to chawls to apartments in SRA buildings. The facilities available in these accommodation spaces differ based on the rent which ranges from Rs. 300 to Rs. 1000 /month/ person or Rs. 3000 to Rs. 8000 per room/ family. This type of accommodation is best suitable for self-employed or seasonal migrants who live and work in MMR for a few months and go back to their hometowns during agricultural seasons. However, the system of rental accommodation is highly informal and unorganized. Due to such a system, almost 30 percent of construction workers are still unregistered under the BOCW Act. This system leads to inaccurate data on the number and skillset of construction workers

Figure 4: Sample of Prefabricated labour accommodation structures (Source: Renuka Engineering industries, Indiamart, https://5.imimg.com/data5/IN/TD/MY-6126577/panel-box-cover-500x500.jpg)

present in the region as well as reduces the chances of better opportunities and benefits.

Evaluation of the Construction Worker's Accommodations based on Standards

As per World Health Organization (WHO), "Housings should provide a safe and a healthy environment for its inhabitants" (WHO, 1988). Merriam Webster and Collins define housing as 'shelter or lodging or dwellings provided for people', and the Cambridge dictionary defines housing as 'buildings or places for people to live'. On this basis, labour accommodations, where the construction workers live for durations, ranging from few months to years, can be called as their houses and should ideally provide a safe and healthy environment to the workers inhabiting them. To examine if these accommodations satisfy the requirements of providing safe and healthy living environments, the methodology used was to evaluate each typology of accommodation on the basis of certain standards that are nationally or internationally accepted to provide safe and healthy living conditions. This was done through a comparative of standards selected on the basis of different considerations as follows. The first set of standards considered was of WHO which is a detailed guideline for healthy housing. Secondly, to be more relatable to the actual situation, standards for CWs. Labour accommodations in India had to be taken as framework of evaluation. But investigations revealed that no such standards existed on any public or private domain. As per the government portal of Ministry of Labour and Employment, the International Labour Organization (ILO) has been setting standards through conventions in the interest of workers and India's approach towards ILO standards has been always positive (GOI, 2021). Therefore, taking this into account, standards for labour accommodations set by ILO were taken into consideration. Thirdly, to have national relevance, National Building Code for general building and low income group (LIG) housing were considered. And finally, considering labour as the employees of the construction industry, standards for employee accommodation set by Indian Railways were also taken into consideration. Based on a comparative study of standards and guidelines set by these institutions, requirements commonly prescribed by at least three institutes were sieved to form the framework of evaluation. (Refer Table 1 for the comparative study of standards to derive framework for evaluation). Following are the common requirements found from comparative study :

1. Protection against overheating, rain, humidity or strong winds
2. Prevention of overcrowding - max. density is 8 persons / 12.5 sq.m room
3. Separation of activities – at least two rooms / dwelling (9 and 6.5 sq.m)
4. Privacy of individual / family
5. Adequate natural and artificial ventilation
6. Adequate natural and artificial light
7. Structural safety
8. Dampness-proof
9. Fire safety
10. Safety against ingress of disease spreading elements like rats, insects, mosquitoes, flies etc.
11. Protection from intrusion of dangerous animals or other humans
12. Supply of clean drinking water
13. Hygienic cooking and eating Facilities
14. Hygienic sanitation conditions (1 toilet/ bath/wash-basin for 12 persons considering 4 persons/ family)
15. Electricity and telecommunications
16. Community gathering and recreational spaces for mental relaxation
17. Basic furniture for sleeping, storage and privacy of individuals

Table 2 presents an evaluation of each type of accommodations on basis of these 17 parameters. The score of evaluation is as follows.

0 = Does not satisfy the requirements
1 = partially satisfies the requirements (depending upon various behavioral patterns)
2 = satisfied

The examination of labour accommodations on the parameters of 'Safe and Healthy Environments' has revealed that out of the employer-provided accommodation facilities, prefabricated/ fabricated accommodation structures are closest to satisfying the standard of safe and healthy environments, whereas, the shanty hutments fail or lack on almost all the parameters of evaluation. As mentioned before, fabricated accommodations are very rarely provided and thus can benefit only a small section of workers. However, the shanty hutment type accommodations, being built on ground, without a proper structural framework and enclosed vertically with metal or scrap materials are not only structurally unsafe but they also leave unsealed joints and gaps which allow easy ingress of storm water, rats, snakes, mosquitoes, flies and Rain water from the roof. Lack of furniture such as beds, storage or cooking platforms, force them to store and carry out all activities on the ground itself. Absence of windows, force workers to keep the doors open as the only resort of natural light and ventilation threatening their privacy and security. Such living conditions can lead to physical and mental distress. As a sad reality, the maximum number of the workers employed on infrastructural projects and real estate projects within MMR are provided with shanty hutments as their accommodation facility.

The living conditions within the under construction building varies depending upon the scale of project completion and space allowed to be used for accommodation by the employers. However, it is not practical to evaluate this type of accommodation on standards for housing, as these spaces are not built completely, nor are they designed as accommodation structures for workers. Employers and workers prefer to use such space for accommodation to save cost of constructing separate shelters and to avail better living conditions than the shanty hutments respectively.

Rental accommodation spaces are not designed for construction workers accommodation. These are temporary adjustments made by workers to sleep during nights in a migrant city. Since these accommodations range from hutments to chawls, the exact living conditions vary from place to place. However, on an average, maximum rental accommodation spaces are found to be in the slums of MMR and as per a research on Mumbai slums, lack of space, overcrowding, penetration of rain water, long queues for pay-to-use toilets, adverse impacts from rats, shortage of clean drinking water, and highly unhygienic sanitary conditions are some of the reasons leading to mental distress in slum dwellers. (Subbaraman, 2014)

Overall study highlights the fact that, the labour accommodation facilities in MMR housing around five lakh construction workers, fail to provide safe and healthy living environments to their inhabitants. Due to the migrant nature and economically poor status, construction workers are left with very few choices of accommodations and negligible chances of upgradation. Such conditions of labour accommodations have been prevalent in MMR for a long time. But on research, hardly any policies, government plans or research articles were found to be addressing these issues.

INFERENCE

The continuance of any disturbing situation can be a result of either pure ignorance or purposeful negligence. Condition of construction workers accommodations in MMR is a similar disturbing situation. On investigation of various systems and policies related to labour accommodations such as BOCW Act 1996, labour laws, discussions with architects, contractors, workers and literature reviews have led to the understanding of following issues as to be responsible for the existing condition of labour accommodations. These issues are inter related and form a vicious circle that is thriving in the same condition with support of each other.

a) Absence of objectives and architectural standards to regulate the quality of labour accommodations

Although BOCW Act commands provision of free temporary accommodations to workers, it does not give any information or guidelines related to the quality of structure and space to be achieved. If specific standards and guidelines are issued by the government of India for the labour accommodations, as ILO has done, it will be mandatory for employers to follow the same. Inspection of accommodation facilities will also hold more meaning then.

b) Investment cost – an important constraint

Employers, in addition to the workers welfare cess, have to provide free accommodations and related facilities. These employers, usually being a contractor company, have tough competitions to win the project. Lower tender costs, increases their chances of winning contracts. Due to absence of regulating standards and lack of resistance from workers, labour accommodation facilities are the easiest way to do the cost cutting. Showing less number of employed workers on site register to avoid investments on their registrations, PF, ESIC and accommodations too is a common practice, leading to overcrowding in accommodation structures.

c) Acceptance of accommodation conditions without any complaint

Coming from poor rural backgrounds, earning money is the only motive of these construction workers. In case of employer provided accommodations, workers accommodated on sites are usually unskilled or semi-skilled labourers. Their jobs are extremely important to them. Getting free shelter to sleep within the work site is an added benefit. They are scared to complain or ask for better facilities in the fear of losing their job. Since the workers come from different communities and socio-cultural backgrounds, there are differences between them and unions are rarely formed. Because of all these

facts, construction workers remain silent about the quality of life they live in their on-site accommodations.

d) Absence of alternative solutions for construction worker's accommodations

For the skilled, self-employed or unemployed workers migrating to MMR, there are no official accommodation facilities. BOCW does not acknowledge the need for their accommodations in any document or policy. Living in slums or small rooms with their friends or co-workers is the only possible solution available in the city.

CONCLUSION AND RECOMMENDATIONS

Based on the inferences, it can be concluded that lakhs of construction workers migrating to MMR, in hope of better earning and living opportunities have to spend substantial time of their lives in poor accommodation spaces that are prone to cause physical and psychological distress to them. However, due to their desperate needs of the job, and psychologically giving up to their economic and social conditions, these workers show no resilience towards the accommodations provided to them. While this easy acceptance from workers keeps the water still, things continue as they have been. In order to bring a positive change in the lives of such distressed workers employed in MMR and similarly in all over India, there is a dire need to address this issue more sensitively. It is important to empathize with these workers and take actions towards improving the quality of their accommodations to ensure them safe and healthy living conditions. Following are some of the recommendations to begin the change.

1) First and foremost, design architectural standards and guidelines for labour accommodations suitable to Indian context, aiming towards providing safe and healthy environments for workers, followed by stringent inspection policies in the interest of worker's welfare. Fabricated/ prefabricated structures were found to be close to satisfying most of the requirements for providing safe and healthy living. Use of this type of accommodations should be encouraged or mandated based on project backgrounds. Employers should be motivated to provide good quality accommodation spaces to workers, in form of incentives, financial support, discounts etc. As per the BOCW records, after all worker welfare expenditures, welfare cess of approximately Rs.38000 crores is still left balance with state welfare boards all over India (BOCW, 2020, p. 11). In 2019, Maharashtra alone had a tentative balance of Rs. 6652 crores (Khairnar, 2019). These numbers show that BOCW as a welfare body is financially strong enough to support upgradation of labour accommodations. This support can be extended directly to employers in form of partial funding or can be used to develop labour accommodation communities. 65 percent of the migrant workers are unskilled and hence remain at the risk of unemployment (Sutradhar, 2016, p. 19). According to sources, MMRDA provides a month of training to willing construction workers. However, workers have to link through different contractor companies (Pandey, 2020). Another major problem is illiteracy of the workers which keeps them unaware of most of the governmental announcements. If activities like training and upgrading of skills are merged with community rental accommodations for workers, such as labour colonies, and built at regular intervals within or on the outskirts of the city, a habitat for construction workers and skilled labourers can be generated. Such spaces can act like a resource of skilled construction workers for the employers, creating better job opportunities and providing a platform for contractors and employers to hire the workers based on the skill sets required by them. Other than this, collaboration with existing unused LIG housing societies or constructing permanent construction workers quarters in different parts of the city can provide an easy platform for individual migrant workers to move from one place to another depending upon their job convenience. Such space for accommodation along with bedding, canteen and sanitary facilities can act like low cost lodging for workers, which can be used by them for limited durations based on their ID cards, etc. An organized way of providing safe and healthy accommodation alternatives to migrant construction workers can help in maintaining more accurate records of the workers and also minimize the informality of the construction worker's employment system.

At present in MMR, around five lakh and in India around five crore construction workers are living in more or less similar conditions. In order to provide a safe and healthy environment for them and for upcoming labourers, their accommodation facilities need to be looked at from a fresh and innovative perspective. Experts from fields of architecture, engineering, social sciences, political science, law and government together in collaboration with each other can resolve the issues related to labour accommodations, and provide a better life to the millions of workers who work hard towards building good spaces for us to live in.

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Table 1: **Evaluation of Labour Accommodations facilities in MMR on parameters of safe and healthy living environments (Source: Compiled by Author)**

Sr No.	Evaluation Parameters	On-site employer provided shanty hutment	Off-site employer provided shanty hutment	On-site employer provided within under construction building	On-site employer provided fabricated / prefab labour camps	Non-employer provided rental accommodations in chawls and Slums
1	Protection against overheating, Rain, Humidity or strong winds	0	0	1	1	1
2	Prevention of overcrowding - Max. Density 8 persons / 12.5 sqmt room	1	1	1	1	1
3	Separation of activities – at least two rooms /dwelling (9 and 6.5 sqmt)	0	0	2	2	0
4	Privacy of individual / family	0	0	1	0	0
5	Adequate natural and artificial ventilation	1	1	1	2	1
6	Adequate natural and artificial light	1	1	1	2	1
7	Structural safety	0	0	2	2	1
8	Dampness proof	0	0	2	2	0
9	Fire safety	0	0	1	1	1
10	Safety against ingress of dangerous animals and disease spreading elements like rats, snakes, mosquitoes, flies etc.	0	0	1	1	0
11	Protection from intrusion of other humans	1	1	1	1	1
12	Supply of clean drinking water	2	2	2	2	1
13	Cooking facilities	1	1	1	2	1
14	Hygienic sanitation conditions (1 toilet/bath/wash basin for 12 persons considering 4persons/ family)	1	1	1	1	1
15	Electricity and telecommunications	1	1	1	1	1
16	Community gathering and recreational spaces for mental relaxation	0	0	0	0	0
17	Basic furniture for sleeping, storage and privacy of individuals	0	0	0	0	0
Evaluation Score out of 34		9	9	19	22	11

Table 2: **Comparative study of standards prescribed by WHO, ILO (IFC), NBC and IR for Safe and Healthy Living (Sources: WHO, 1988; IFC, 2009; NBC, 2005; IR, 2000)**
(Note : the cells highlighted in yellow are taken as evaluation parameters for CW accommodation as given in Table 1)

Sr.No	Standards for Healthy Housing by WORLD HEALTH ORGANIZATION	International Standards of Workers Accommodation by INTERNATIONAL FINANCE CORPORATION and EBRD based on INTERNATIONAL LABOUR LAW	General Standards for Habitable Space as per NATIONAL BUILDING CODE, INDIA 2016	Staff Accommodation Colonies by INDIAN RAILWAYS	Underlying Objectives in relevance to Labour Accommodations in India – Case of MMR
1	To create a state of complete physical, mental and social well-being for its inhabitants	To create a state of complete physical, mental and social well-being for Construction workers	NOT-MENTIONED	Staff Quarters	Objective: Physical and Mental Well being
2	Orientation of buildings/rooms to ensure safety and human comfort conditions	Planning to take care of safety against climate and health hazards	NOT-MENTIONED	Orientation of buildings should provide physical and psychological comfortable living conditions inside the habitable space	Protection against overheating, Rain, Humidity or strong winds
3	Decent density per habitable room to avoid crowding and spread of diseases.	Max 8 persons / room sharing. Minimum of 4 to 5.5 sqmt surface area / user	Min C.A. of a multipurpose single room should be at least 12.5sqmt Min.Height = 2.75m	NOT-MENTIONED	Max. Density 8 persons / 12.5 sqmt room
4	Separation of living, sleeping, cooking and washing facilities	Kitchen, laundry, toilet and sleeping areas have to be separate from each other.	Kitchen, laundry, toilet and sleeping areas have to be separate from each other. A dwelling consist of at least 2 rooms of min. 9 and 6.5 sqmt.	NOT-MENTIONED	At least two rooms / dwelling. Separation of sleeping, cooking, eating and sanitary activities
5	Privacy – Freedom from intrusion of unwanted people	Privacy - Separate bed, storage, table and lamp / worker separated with mobile partition or curtains	NOT-MENTIONED	NOT-MENTIONED	Privacy of Individual or Family
6	Indoor Ventilation / thermal comfort	Indoor Ventilation / thermal comfort suitable to local climate	Apertures required to ensure natural ventilation. In absence of the same artificial ventilation to be provided	Planning of buildings shall provide protection against climate, Rain, winds, temperature and humidity	Adequate natural and artificial Ventilation
7	Adequate Day lighting and artificial lighting	Adequate Day lighting and artificial lighting	Adequate Day lighting and artificial lighting	Adequate Day lighting and artificial lighting	Adequate Day lighting and Artificial lighting
8	Structural safety against seismic activity	Structural safety against climate and local conditions	Structural safety against climate and local conditions	Structural stability shall be ensured continuously and shall be inspected on regular basis	Structural stability
9	Dampness proof, avoid penetration of rain and storm water	Damp proofness of habitable spaces	NOT-MENTIONED	Waterproofing of roofs mandatory. Shall be inspected on regular basis.	Dampness Proof

10	Fire Protection	Fire Protection	Fire Protection	NOT-MENTIONED	Fire Safety
11	Protection from disease vectors like flies, rats/mice, termites, mosquitoes, cockroaches etc.	Protection from disease vectors like flies, rats/mice, termites, mosquitoes, cockroaches etc.	NOT-MENTIONED	Anti-termite treatments to be done during construction. Mosquito nets to be provided	Protection from disease vectors like flies, rats/mice, termites, mosquitoes, cockroaches etc.
12	Protection from intrusion of dangerous animal or human.	Social security against human intrusion	NOT-MENTIONED	NOT-MENTIONED	Protection from intrusion of dangerous animal or human.
13	Protection against Air pollution and harmful chemicals	NOT-MENTIONED	NOT-MENTIONED	NOT-MENTIONED	Safety from pollution and Chemicals
14	Protection from excessive Noise and Vibration	NOT-MENTIONED	NOT-MENTIONED	NOT-MENTIONED	Noise and Vibration Proof
15	Supply of clean potable water for drinking	Supply of 80 to 180Litres of water/day/ worker	Supply of 145Litres of water/Person/day including flushing	200 l/person/day to be provided including 45 litres of flushing	Supply of clean Drinking Water supply
16	Clean kitchen and washing facility	Clean kitchen, washing and Canteen facility	Kitchen shall have impermeable floor, separate utensil washing area, drainage through traps and sufficient natural ventilation	Individual Kitchen / family (residential) or Staff canteens for offices	Hygienic Cooking and Eating facilities
17	Hygienic toilet facilities with sanitary fixtures, heath faucets, washing and bathing facility	Maintain hygienic sanitary conditions. Minimum 1 toilet, wash basin and bath for 6 persona	Maintain hygienic sanitary conditions. Minimum 1 toilet, wash basin and bath for 3 families ONLY	Individual toilet / family (residential). 1WC / 25 male and 1WC / 15 female	Maintain good Hygiene and Sanitation facilities
18	Solid waste management	NOT-MENTIONED	Solid waste management	NOT-MENTIONED	Waste disposal
19	Electricity and safe electrical cabling	Electricity and safe electrical cabling	Electricity and safe electrical cabling	Concealed electrical and telecommunication wiring to be provided	Provision of Electricity and Telecommunication
20	Aesthetics	NOT-MENTIONED	NOT-MENTIONED	Internal surface finishes of walls, floor, etc mentioned. Use of New materials encouraged to achieve aesthetics	Aesthetics
21	Open space for recreation and other activities	Social spaces for recreation, exercise and mental relaxation to be created	NOT-MENTIONED	Garden and open spaces proposed in the planning	Spaces / Facilities for recreation and mental relaxation
22	Protection from airborne diseases	Protection from airborne diseases	NOT-MENTIONED	NOT-MENTIONED	Protection from airborne diseases
23		Adequate furniture to ensure storage, privacy and bedding + Comfortable bedding	NOT-MENTIONED	NOT-MENTIONED	Furniture for Construction workers

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PROTEAN LIVING
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ABSTRACT

The timescales of the Earth's climatic processes are slow. Even in the best-case scenario, if we cut down all carbon emissions by 2050, we are still looking at 1.5oC of warming. Presently, at 1oC of warming, and 415 ppm of carbon [1], these impacts are already catastrophic. As these numbers translate into real life climatic disasters, people across the globe are in search of safer lands and better opportunities. However, not all communities have the same capacity to move away, and those in fragile areas, who have had minimal contributions to this problem, and are living in poverty are most vulnerable to the impact of these changes. We need to bring to realisation, a world where everyone has the ability to combat this crisis.

The objective of this dissertation is to study the impact of the changing climatic patterns on the people on the frontlines in India, specifically the coasts. The study also looks at adaptation tactics across a wide spectrum- from indigenous techniques to modern technology. It also explores methods of polyvalent adaptation, including the scope of migration as a strategy. The dissertation assesses the scope of the built interventions in adapting to the crisis.

To face the greatest threat of our generation, we have to learn to adapt. Today, there is a need for new infrastructure with the ability to adapt to this new normal, to be designed and constructed. The framework for this infrastructure has to be polyvalent, in meeting current needs and building capacity to tackle future events. The dissertation proposes the use of anticipatory design strategies that are regenerative, and pliable and amphibious architecture that engages with the environment.

INTRODUCTION

Human beings are the only species to have existed for such a short period on earth and altered it so significantly. The early human beings knew to live symbiotically, but that relationship soon morphed into one of discord as the anthropocene progressed. The human impact is so much that we have managed to alter the earth's atmosphere. The Inter-Governmental Panel for Climate Change warns us of the precarious effects of allowing an increase of the global temperature by even 1.5ºC above the pre-industrial levels (Masson-Delmotte et al., 2018). Even at 1 ºC rise, we are experiencing the impacts of climate change. From increases in global average air and sea temperatures, the widespread melting of ice and the permafrost, the intensification and high variability of extreme weather events, rainfall anomalies, desertification, the acidification of the oceans, and the rising average global sea levels. We have changed the environment so much that we have set a mass extinction into motion. A World Bank report estimates that climate change will transform more than 143 million people into 'climate migrants' escaping crop failure, water scarcity, and sea-level rise by 2050 (Rigaud et al., 2018). Even if we manage to limit the global average temperature rise to 1.5 ºC, we will still have to deal with the irregularities it will cause.

NEED FOR STUDY

Elasticity (noun) : the ability of an object or material to resume its normal shape after being stretched or compressed.

Everything has an elastic limit. When pushed too far, that limit is reached, after which the onset of permanent alteration begins. This is known as a tipping point in the climate system. The catastrophic onset of life-altering events has already begun.

Whether we look at small island nations such as Kiribati or larger deltaic areas such as the Sundarbans, we see the plight of their inhabitants- losing houses and sources of livelihood, living on the edge of poverty. What is often found in common amongst these climatic hotspots is that they are the early sufferers of this human-induced disaster despite having a minuscule contribution to the cause of the crisis. The impacts of this climate emergency are going to exacerbate existing vulnerabilities and marginalise the marginalized.

In cities, we see gross mismanagement of resources. From building insensitivity over natural catchments to ill-planned infrastructure of cities. All of this has a cumulative impact on the overall resiliency of the city and its surrounding areas. The further construction of 'fortress-like' projects that keep natural disasters and environmental changes at bay temporarily instead of integrating them into the infrastructural fabric is doing more harm than good. In order to face the greatest threat of our century, it is essential to adapt to change.

AIM

The aim is to integrate the emerging environmental, social, and economic challenges into future resilience planning. The intention is to re-imagine living in a new normal of increased natural calamities, food shortage and water crisis through anticipatory methods that are humane and endurable, and to create alternative methods of sustenance.

HYPOTHESIS

The current efforts toward global climate action do not look promising. In order to survive the inevitable: higher temperatures, droughts, rising seas, fiercer storms, more unpredictable rainfall, and more acidic oceans, we need to design a climatically adapted society- where instead of resisting change, we Anticipate and Adapt.

METHODOLOGY

The initial background study was conducted using existing research papers and data online to understand the climatic hotspots of India and their geographical and climatic timeline. Following this, live case studies were carried out at identified sites: 5 coastal settlements in 24 South paraganas in West Bengal, including Bakkhali and Beguakhali and Devbag in Maharashtra. To carry out the study, at least 10 residents were personally interviewed in each village. The aim of the survey was to understand the socio-cultural and economic practices of the communities and the direct and indirect distresses caused due to the climate crisis. In 24 South paraganas, this also involved mapping the impact of previous cyclones and understanding the subsequent adaptation techniques. In Devbag, the first study focused on understanding the social and economic fabric of the village. All the live case studies pointed towards a grave problem of water. During this period, existing impacts of environmental and anthropogenic changes on communities using available data and satellite images were mapped out. Local, traditional methods of combating natural adversities and understanding the ecosystem's regenerative processes were also studied.

Online case studies were carried out to study various techniques of adaptation which included nature-based solutions such as wetland restoration, Sponge Cities, CALTROPe and soft infrastructure; infrastructure solutions such as Climate Tile, POP-UP: All-purpose flood shelter; investigation of native techniques which was done through live case studies; and exploration of migration as a design strategy through existing projects.

All these studies concluded that Devbag, Maharashtra would be an ideal pilot village as it represented many coastal villages in India. In that, the village, like many in India, has turned its economic base away from fishing towards tourism. It is a peninsular sand-spit of a gradual ever-changing nature. Devbag is situated on a 3.5 km long extended piece of land that projects from Tarkarli. The peninsular land lies between the mouth of the Karli river and the Arabian sea. The village is at an approximate elevation of 5 metres above the mean sea level. This means that it is susceptible to rising sea levels. Along with that Devbag has seen a steep rise in the number of environmental events and the destruction that ensues.

Field visits were carried out that focused on identifying potential sites for intervention through interviews and consultation with the residents, local experts and local bodies. These site visits revealed more information about the polluted groundwater table, and a gradually receding coastline. Factors that were studied included topography, historical landform changes, salinity of soil, sea level rise as per the IPCC SR6, mapping of existing infrastructure, wind analysis and impact of previous environmental events. All of these factors led to the generation of a vulnerability mapping that identified 3 sites on the village.

DISCUSSION

The climate breakdown is a process whose outcome is unknown. This situation has no precedence. Adaptation therefore has to be polyvalent. Durability and functionality of structures need to be reassessed, especially their purpose and reaction with the environment. People on the coasts have a better grasping of water than anyone else. Interactions with water are in-

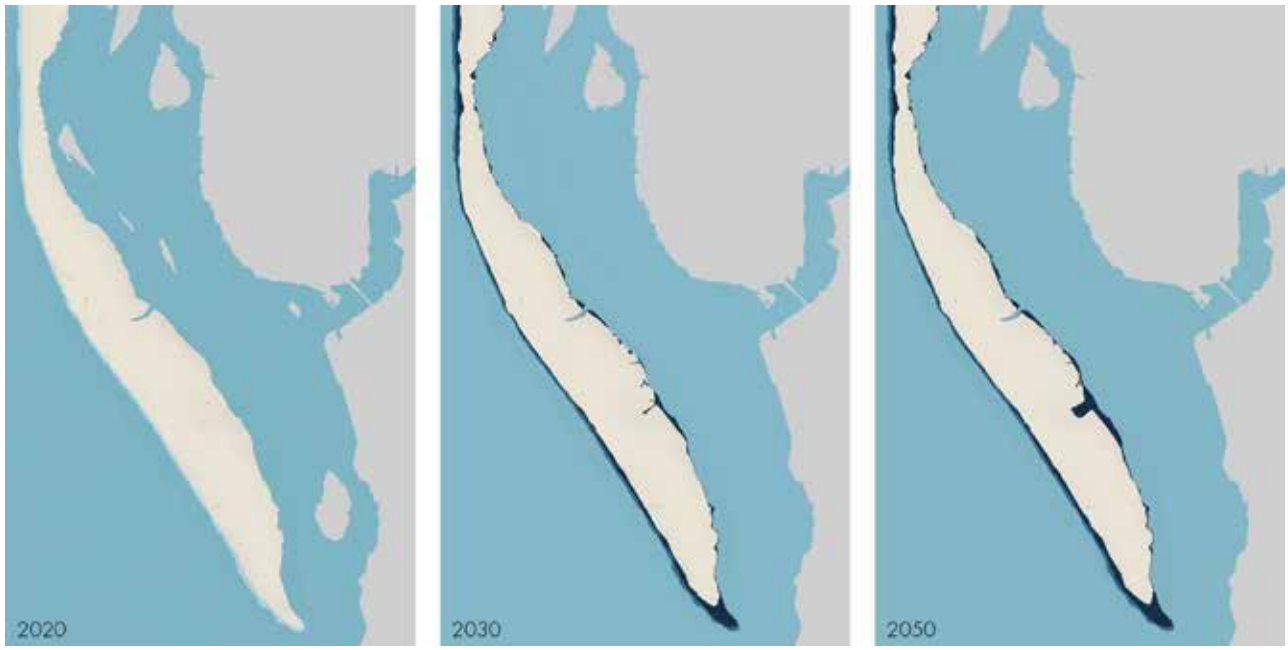


Figure 1- Mapping of sea level rise as per the IPCC SR6

Figure 2- Infrastructure mapping of Devbag (by Author on the base of Googel maps)

Figure 3- Mapping of soil salinity (Source: Pisolkar (2008)

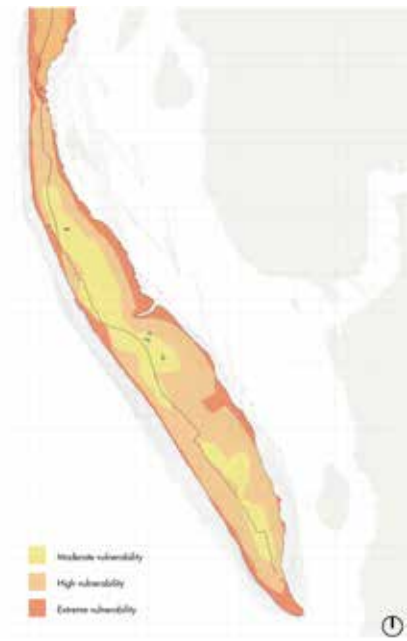


Figure 4- Vulnerability mapping (by Author on base map by Pisolkar (2008)

tegrated into their socio-cultural and economic fabric. For the viability of any design proposal in this context, it is crucial to understand and interact with water. An important outcome of all case studies was the interdependency between the two types of water- fresh and salt. The salt water provides the residents of Devbag with their livelihood while the fresh water enables their survival .Where there is too much water, there is also very little water. The design proposal harnesses this to suggest small scale interventions that are woven into the ever-changing nature of the village and the water. The proposal looks at protean living. It incorporates the ideas of regenerative systems, the pliability of structures and amphibious building to propose a design that modifies and enhances existing public infrastructure in the village to make it resilient, for it to act as a shelter when disaster strikes, and to function as a refuge when the time for migration comes.

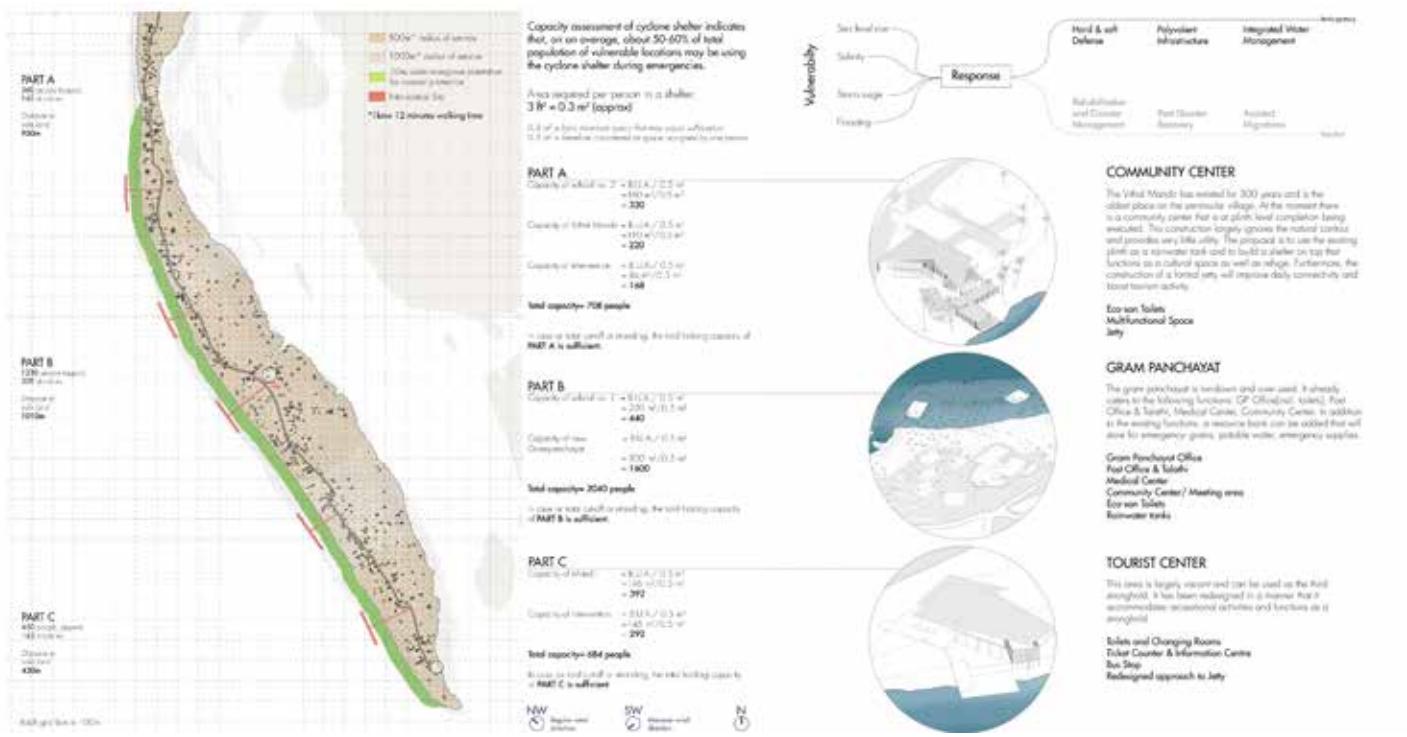
Regenerative systems are systems that not only help with adaptation to the climatic changes, while reducing impacts; they also try to mitigate the issues. A classic example of this is wetlands barriers. Pliability of structures refers to the flexibility of both structures and of the people. It heavily emphasises on the concept of going with the flow. For structures, it implies that the architecture has to be flexible. It needs to allow for the forces of nature to mould it. For adaptation it means that migration has to be looked at through a different

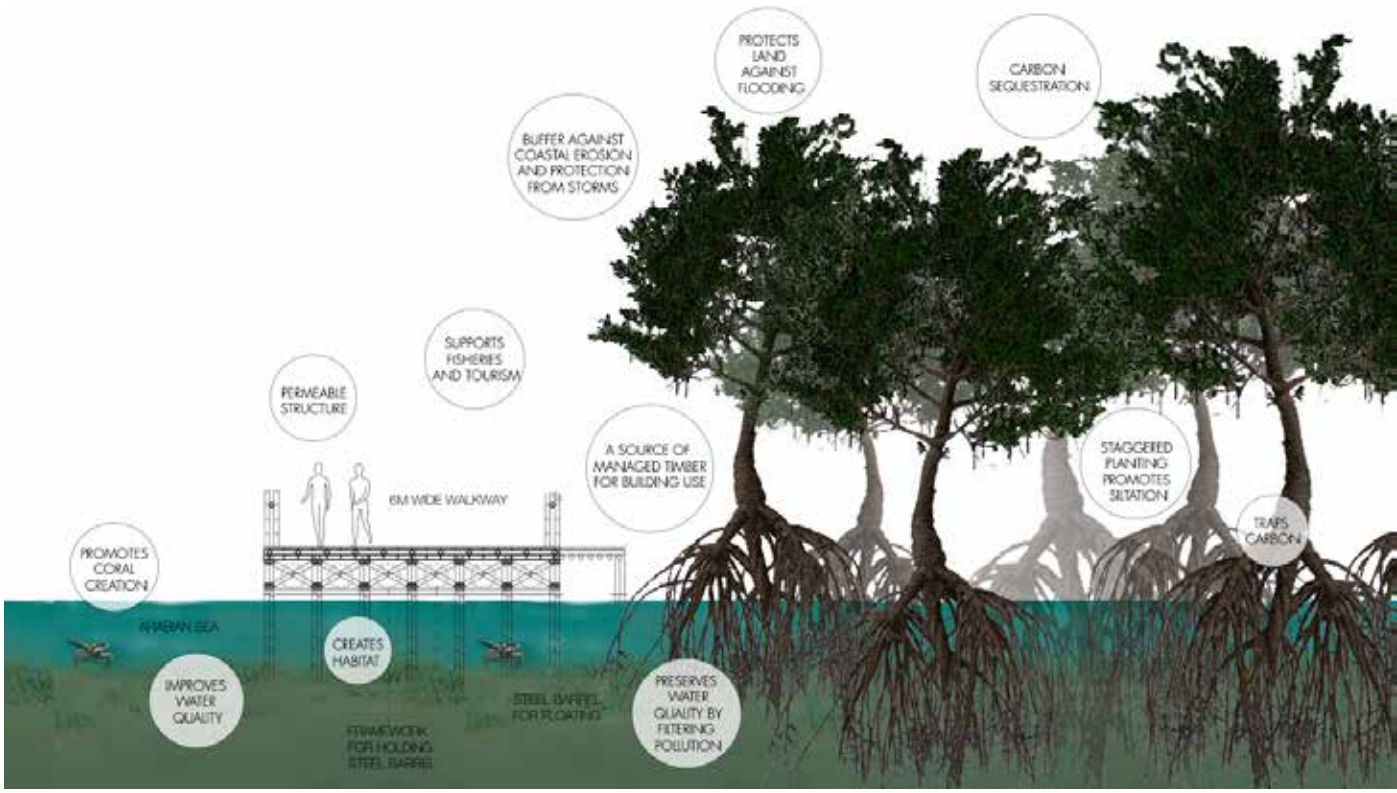
lens. Seasonal migrations should be encouraged and looked at from a new perspective. Amphibious nature refers to the ability to live on both land and water. In the context of climate adaptation, it refers to architecture's ability to engage with water.

While viewing adaptation through the lens of the built environment, anticipatory design strategies are more pivotal than reactive design strategies.

RECOMMENDATIONS

The design draws on the knowledge of sociological, economic, cultural and traditional systems of Devbag which are deeply rooted in the concept of 'living with water'. It assumes - on the basis of previous studies - that the peninsula will eventually disappear and makes recommendations for this process. The design proposes a network of soft and hard infrastructure that will provide support for, and navigate through this process of





Top: Figure 5- Design proposal for Devbag (Source: Author)
Bottom: Figure 6- Proposed wetland barrier and walkway as a method of regenerative adaptation (Source: Author)

change. The design will be such that is functions in three main scenarios:

❶ Predicted changes
❷ Natural disasters such as cyclonic events
❸ Once-in-a hundred-year event which will lead to migration

The proposal is to modify and enhance existing public infrastructure in the village to make it resilient, for it to act as a shelter when disaster strikes, and to function as a refuge when the time for migration comes. The program is to meet the present needs of coastal communities and increase their resource independence, especially with regards to potable water. It also addresses issues of increasing tourism, which has become a part of daily lives, such that it does not catalyze ecological damage. The new infrastructure enhances the existing quality of life in aspects of health care, social and cultural gatherings and economic activities.

Top to Bottom: View of the community centre on part A; View of the gram panchayat at part B; View of the tourist centre at part C (Source: Author)

As a part of the overall resilience of the village, the design proposal is a wetland barrier that integrates the functions of coastal defenses and public space. This barrier will span the entire western coast of the village, i.e., 3.5 km stretch with intermittent pockets of an amphibious walkway that gives access to the Arabian Sea. This walkway will function as a promenade for the locals and tourists and as a boat anchor for the local fishermen.

The wetland is rooted in the idea of regenerative systems. They will react to the challenges of the changes in the environment and minimize them. This will function as a carbon sequestration system, and absorb carbon. It will promote coral growth and provide a habitat for fish along with improving water quality. This will in turn promote self-sustenance both ecologically and economically.

The village is divided into three parts of 10-12 minutes of walking distance from the 3 sites. These sites have public structures situated at the highest ground in that region that will act as evacuation points. In part A, the program proposes a community centre near the Vithal Mandir and school no 2, in part B, there is a proposal of a new polyvalent gram panchayat and in part C, the proposal is to build a tourist centre and a jetty.

All architectural interventions in the proposal engage with both seawater and fresh water. The modifications to the existing built infrastructure include creation of water reservoirs to store water harvested from the monsoons. All three structures are made such that they rise and fall with the tidal frequency of the river and the sea. They are designed keeping in mind the wind velocities and directions. All roofs are designed aerodynamically, ensuring minimal impact of the stability and security of the structure. Around these structures, it is recommended to explore the process of phyto-remediation which entails planting shrubs and plants of variety that extract soil from the water and improve the groundwater table. The structures will be made out of locally sourced materials that will disintegrate alongside the landform.

CONCLUSION

The climate crisis is the greatest challenge of our generation. It will exacerbate existing inequalities and create new ones. Architecture can no longer function in isolation and disregard the environment. The biggest problem with designing in isolation, is the creation of hard infrastructure such as embankments, is that they disrupt the existing delta and their smooth concrete surfaces are detrimental to the natural processes of siltation and erosion of landforms. All and any design strategies therefore need to be woven into the landscape. In order for us to combat and overcome the crisis, we need to look at inclusive design that penetrates through different strata and provides a fair chance at survival to all.

Endnotes

[1] The Mauna Loa Observatory in Hawaii, which has tracked atmospheric CO2 levels since the late 1950s, on May 11, 2019 detected 415.56 ppm of CO2.

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

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• 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.

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(1200x2400mm) High glossy finish
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Tiles on cabinet : DARK GREY
(800x2400mm) High glossy finish
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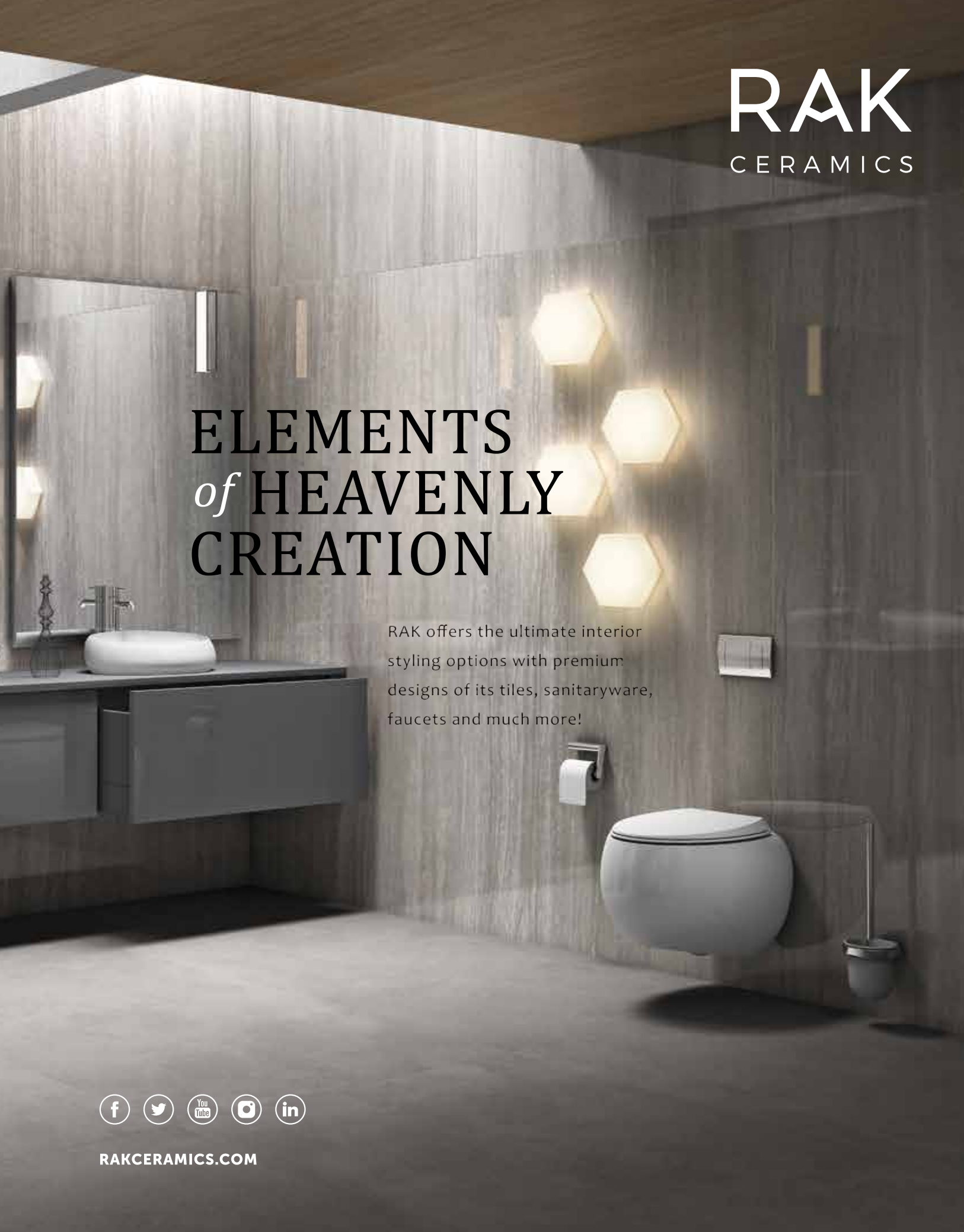
Sanitaryware : RAK CLOUD
Kludi RAK Faucet : PRIME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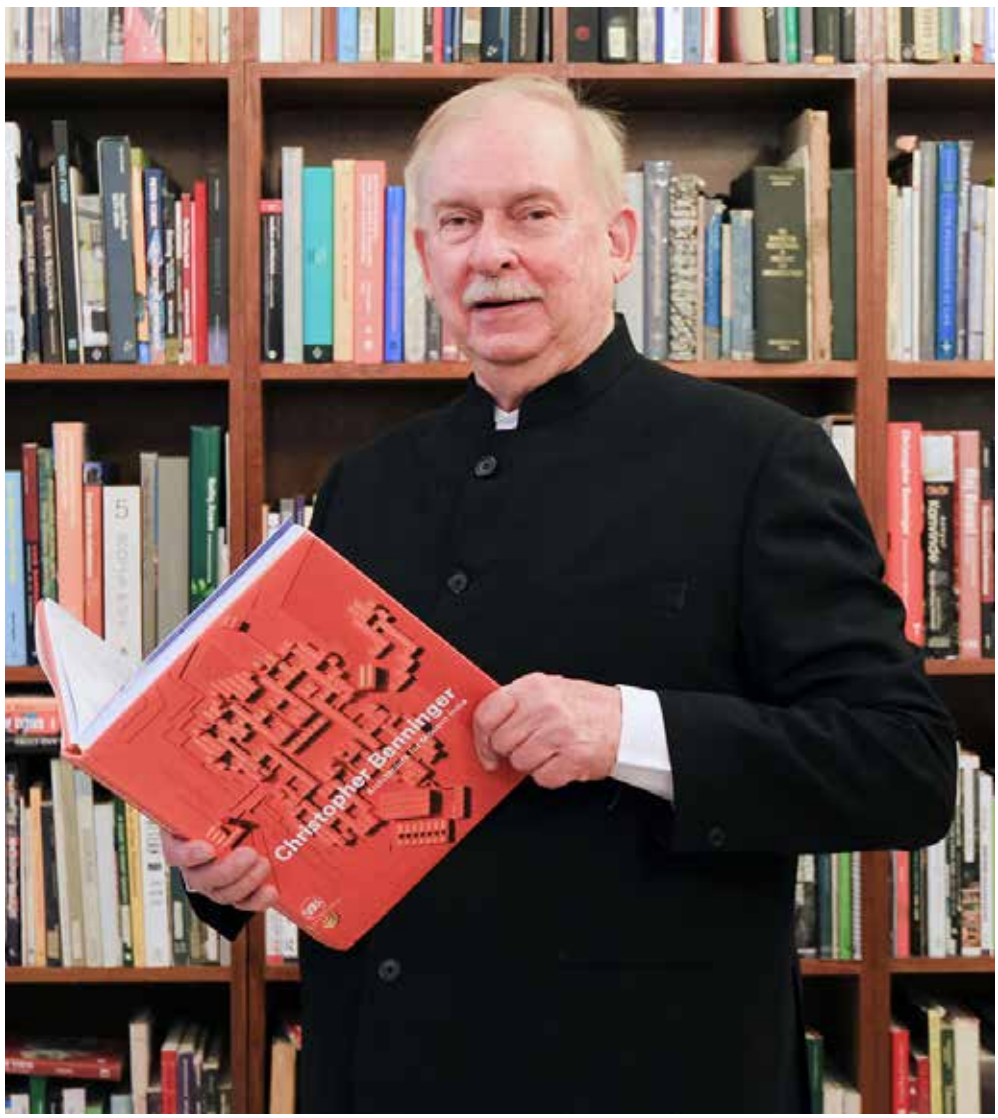

About Christopher Benninger
Christopher Benninger, Chairman and Principal Architect at CCBA Designs Pvt. Ltd., studied Architecture at Harvard University and City Planning at the Massachusetts Institute of Technology. He has taught in various institutions including the school of planning in Ahmedabad (which he co-founded) and MIT and Harvard. His book Letters to A Young Architect won the Best Architecture Book of the Year Award 2012 and has been translated into various languages. Besides numerous awards, he has won the prestigious IIA award on six occasions.

Master Architect Christopher Charles Benninger in an honest hearty conversation with Dr. Kaiwan Mehta travelling between times, nations and philosophies.

SuzIon One Earth Campus – Photo Source CCBA Design Pvt. Ltd.

Kaiwan Mehta (KM)

Christopher, you have had a long-running practice, with some important projects and strong ideas. How do you look at some of your recent and ongoing projects? Can you tell us something about them, and maybe share what drives your architecture for today?

Christopher Benninger (CB)

We architects look at our own work from our early days forward, analysing how our thinking evolved up to the present. Turning this around, looking at my recent work, and then reflecting backwards, distils out some interesting lessons, but I'd always liked to study the roots of a tree prior to analysing its trunk, then the branches that reach out, and last the sprouting leaves.

I grew up in a rather bland, small town environment composed of ground level bungalows, with two level structures around the town square. It was Gainesville, Florida, a university town of less than a hundred thousand population where my father was a professor of economics. The positive thing about this place was the very high level of education of the citizens. So, my childhood was a romance with nature, verdant farm lands, and stand-alone houses. There were also beautiful lakes, rivers, and jungles to explore. Some of the bungalows were very well designed, whether contemporary or historical.

The first book I ever read was The Natural House by Frank Lloyd Wright which introduced me to integrating buildings with nature, human scale, sequencing spatial experiences, and "honesty of expression" using natural, local materials. Eventually, I collected every book that Wright ever wrote and everything written about him too, integrating his theories and thinking (and I may add, his ego) into my own personality. I wanted to be him! His architecture and thinking were a counter-blast to the boring "track houses," of America in the 1950s, and the boring people who lived in them. Herbert Gans' book, The Levittowners, summed up the blandness of that urban landscape and the limited "American Dream" of a nation whose mythical past was in stand-alone farm houses, with the bread-winner disappearing into the "city," and with the family isolated in domestic splendour, isolated from all forms of reality.

As a youth I travelled into rapidly evolving, mature cities that hosted sophisticated public spaces like Washington Square and Central Park in Manhattan where I lived on the top floor of the Waldorf Astoria with my aunt and uncle, who was the U.S. Ambassador to the United Nations. Looking across the city from the 42nd floor, was the Pan Am Building to the south, the Lever House across the street and the Seagram Building to my immediate north, all just a few hundred meters away! This created a new paradigm in my mind; I liked their grandness; I liked the idea of a city within a building;

and I liked the application of advanced technology to architectonic forms. However, a dichotomy emerged in my thinking, as I loved the forested, calm, and open atmosphere of Gainesville, Florida, and also I loved the excitement, variety and creative chaos of New York City. I had two ideals floating in my mind. One, Wright's Broadacre City, and the other Le Corbusier's Ville Radieuse. Was I evolving a split personality, or a kind of architectural schizophrenia? Perhaps in a positive manner? I think today I am seeing cities within cities in my designs and buildings! If I look at my contemporary work I think there are consistent ideas that have persisted from my childhood up until now! Let me simplify! I want to do the stand-alone, iconic house like the Villa Savoy or Falling Water, yet at the same time I want to design cities within my buildings, or at least create a pedestrian, urban public space that in a "city-like" manner holds the building together. Even in very small projects, like the Vakil House, there is the imaginary "town square" in the centre. Maybe the swimming pool in that courtyard is like the Jacqueline Kennedy Lake in Central Park. But in my small and large buildings and campuses one will always find the microcosm of the vehicle-free, pedestrian, public domain as the heart of urban life. It is here even in India House as well!

KM

This allows one to clearly see why the architectural and the urban are always integrated in your work so importantly; your journey has been the choreography between the practice of architecture and the important thinking you bring in as a planner – this intensity of relationship between architecture and the landscape of development around it… can we hear from you on this?

CB

I believe that an important part of my journey is the discovery and exploration of the difference between domestic architecture (and the modern architect's concern with "housing units," along with free-standing iconic buildings), and what we call "urbane public domains." Housing units can be conceptualized as the basic building blocks of architecture, but not of cities! It is the "public domain" that is the building block of cities, not functional units. The early modernists saw this the other way around. To them "the house", or "the office," or the "factory space" were the units that added up to the city.

As a young man I soon learned that cities gifted the word civic, gifted the need for civic responsibility, and gifted the code of human gathering, which is the charter of civilization. Cities are an advanced force creating humanistic ideals, whereas the small town and the countryside farm can be havens of conservative thinking, bigotry, isolation and selfish individualism.

The modernists began with the Arts and Crafts Movement, concerns generated by the lack of human spirit and culture in mass-produced products, having no roots or contexts. Art which is intrinsic to the handmade crafts, was absent in mass-produced machine products. The Garden Cities Movement saw the pollution and slums of cities as uncivilized and wanted to isolate the city from industrial pollution, surrounding it by greenery. This evolved into the Werkbund Movement (1907) that tried to discover the balance between industry and the crafts, evolving into Van der Veldt's Craft Institute, and then the Bauhaus (1919) and soon thereafter in 1928 the International Congresses of Modern Architecture (CIAM). The early modernists idealised the countryside, institutionalizing it within the Garden Cities Movement. Le Corbusier brought gardens into his utopian city, under his megastructures, while Wright proposed that everyone could live in vastly spread out farm-gardens. While these two utopian models were apparently very different, both utopias depended upon the automobile, and both responded to the ideal of a garden city, yet in different ways. Wright was following an American illusion based on extensive open land, that idealized the nuclear family living in its own independent homestead. Corbusier was following an European illusion, idealizing the sophisticated city state, based upon a history of large, high density settlements plagued by sanitation problems, slums and pollution. Le Corbusier wanted to tear down Paris, and supplant the city with concrete slabs, floating over gardens, while Wright wanted to just forget the cities all together.

Over the first half of the twentieth century, and after two World Wars, modernist thinking matured from housing units amongst CIAM members, to clusters amongst TEAM 10 members (1954), on to "group form" amongst members of the Metabolism Group (1959). The Modernists moved from circulation and megastructures in the Ville Radieuse, to stems and public domains in the Free University, to group form as in the Nakagin Tower, in Tokyo and in Fumihiko Maki's work. They moved from free-standing iconic buildings to spatial fabrics and modular systems. The Team Ten Doom Manifesto emerged from the post-ninth CIAM meeting held at Auxen-Provence in 1954. This manifesto simply expressed the anxieties of young architects that shaped their concerns regarding the directions of post-war urban reconstruction, and not as a counterblast to the militant La Sarraz Declaration of CIAM in 1928. It, in fact, was meant as a precursor to the upcoming tenth CIAM meeting held at Dubrovnik in 1956. The Team Ten Premier, published in 1968 discusses the changes in thinking in the early 1950s into more diverse, urbane, realistic and lively urban milieus. Aldo van Eyck's urban playgrounds in Amsterdam are key references. I personally came under the sway of these movements at Harvard with Walter Gropius still a living figure there (Bauhaus and CIAM), Jose Lluis Sert (CIAM) and Jacqueline Tyrwhitt (CIAM and Ekistics), and Fumihiko Maki (Metabolism). These people were not "distant figures," but more like family members to me who welcomed me into their homes and personal lives, than the invisible brand names of today. Their book, Can Our Cities Survive, was a major venture away from two-dimensional town planning, and 3D architecture, integrating the two into a new idea called "Urban Design".

KM

It is interesting that you locate this relationship between architecture and city, the landscapes of developments and the buildings we organise our lives in, not in some abstract theory or broad poetry but in the precise development of the twentieth century and that is crucial, because our ideas are always located in histories and contexts. It is always about being attentive to your present and your past, as much as you are working in the future… there will always be arguments between the past, the present and the future… they will contend with each other, and design can play the theatre of choices…what would you say?

Suzlon One Earth Campus – Photo Source CCBA Design Pvt. Ltd.

CB

So even amongst my teachers there were contentious issues emerging. Gerhart Kallmann and I taught a studio together in the spring of 1971 at Harvard, when I was infatuated with his design of the Boston City Hall. At the same time I was studying urban sociology under Herbert Gans at MIT, who traced out the lives of Boston's resettled population, displaced by Kalman's City Hall. Reading his classic book, The Urban Villagers we learned of the social fabric of the city and how it grows in communities, not in iconic statements, but in rich, interdependent social fabrics. My teacher Kevin Lynch wrote the Image of the City which made me see human settlement patterns as an indelible part of our psychologies and knowledge systems, and how we pattern complex, multivariable urban systems in our memories. My involvement with the Ekistics Movement began in 1967 when Barbara Ward invited me to be her protégé at the Delos Symposium on Doxiadis' personal yacht, where figures like Buckminster Fuller, Operating Manual for Spaceship Earth, Margret Mead, Coming of Age in Samoa, Edmond Bacon, Design of Cities and Arnold Toynbee, A Study of History were also present. Jacqueline Tyrwhitt, Editor of the Ekistics journal, was my lifelong mentor until her death, who published my early writings on urbanism . Her book Patrick Geddes in India had a great impact on me, and Geddes' integration of biology and human habitat through his "Valley Section" continues to influence me. This group was surely the most diverse group of urbanists and regional theorists of their time, being the leaders of various disciplines from urban planning, and history, to anthropology, technology, economics and sociology and all dealing jointly with a multi-contextual, multivariable model of international transformation. Barbara Ward's book. The Home Of Man catalysed the creation of the UNCHS (Habitat) that emerged out of her initiation of the first Habitat Forum in Vancouver (1976). Her book Spaceship Earth published in 1966, catalysed the first international environmental conference at Stockholm (1972), which she organised, resulting in the creation of the United Nations Environmental Program (UNEP) in Nairobi.

I developed one line of thinking in conflict with another line of emotions. I love high art, emotive statements, while seeking the anonymous, rationale of urban fabric through combinations and permutations of elemental space and movement modules that can add up to, or subtract form, urban form, creating pedestrian walking experiences, as one moves through a variety of public domains!

KM

Rich experiences there dear Christopher… were you lucky, should I say or is it the way you extracted from your experiences that one should appreciate? Finally, every architect has to build on her/his consciousness as a designer, rather than trying to identify some stifling style or run after the stereotypes of identity expressions… what would you say about building your journey from experiences to building a consciousness?

CB

Jose Lluis Sert was teaching me housing systems and urban design at Harvard, and in his office where I worked, while Jerzy Soltan (author of Le Modular, with Le Corbusier and a Team Ten member) was encouraging me to explore my original idea of self-help housing (1966) as my professor in his studio, along with John F. C. Turner as my external guide, who wrote Freedom to Build, and was the leading

spirit behind the participatory planning movement. How did all of these competing and contradictory concepts and ideas slowly fit together into my consciousness, designs and urban plans?

In 1970 I assisted Jane Drew, as a young Assistant Professor at Harvard, teaching a studio together. Over the coming years my frequent trips between India and America always included a stop (each way) at her Gloucester Place home in London. I think their work in Chandigarh with Le Corbusier and their leading the MARS Group in the late 1920s gave them a very practical and professional view of our profession. Jane was the President of the Architectural Association, and Maxwell was running an international practice. They helped me put utopian and visionary ideas into the working space of my mind, and their book Tropical Architecture was perhaps the first book that approached sustainability directly in terms of a design practice. My travels between India and America always included stops in Athens, at Jacqueline Tyrwhitt's home in Attica, Dolf Schnebli's home in Agno, Switzerland, and the Gloucester Place home and studio of Jane Drew and Maxwell Fry. This kind of mentoring was a valued teaching form of the pre-digital age. Dolf Schnebli's early work in Agno integrated much of Wright's organic thinking with Le Corbusier's European materiality. Challenges and debates over lunch and dinner were the normal course of interaction, with different viewpoints being heard and respected. How did this discourse and guru-shishya learning leave an impact on me?

If one looks at my design of the Bajaj Institute of Technology, or the Suzlon One Earth, or the Eye of Wisdom, in Shanghai, you will notice me walking on the two legs of my youth! I am seeking the iconic, memorable statements, while wanting to make each building into a city within a city, or an important part of the city, in which it lives. There is always a major solidifying central space for pedestrians to gather! There is always separation of vehicles from the public domain, and there are always porous connections between the ground floors and this open public domain. There is an attempt at human scale and humane intrigue at the ground level plane. Even in my first building, the Alliance Francaise at Ahmedabad, one can see a totally integrated material palette, structure, space, form and light, creating an iconic building. But then there is my desperate attempt to create a small public domain, using the two old walls of the existing campus, and employing a designed "L" into the building design, making the other two enclosing walls. Somehow I create an "enclosing urban space," out of a small institution of 250 square meters. So, you see me seeking iconic form and space, while simultaneously creating a very lively public domain where people can meet, and discuss ideas with whoever happens to be sitting there.

KM

There is clearly a pursuit, through and through your growing up, building on ideas and arguments… at this stage would you tell us something about your early projects and their pursuits… even as you have travelled much further today?

CB

Beginning with my early projects like the Jamnagar Economically Weaker Section (EWS) housing neighbourhood in 1972, the SOS Children's Village at Bawana in 1973, on into later projects like the Suzlon One Earth in 2009, the Bajaj Institute of Technology in 2018, and The Eye of Wisdom (under design), one will see an attempt at memorable, stand-

Bajaj Institute of Technology - Photo Source CCBA Design Pvt. Ltd.

alone iconic buildings, living symbiotically with the "city in microcosm." All of these projects "grow" from the seed of an idea that emerged from the small public domain in the 1973 Alliance Francaise building, moving on to larger and larger central spaces, that feed through pedestrian spines and branches into networks of smaller, subsidiary urbane spaces. There is also an attempt to integrate with the surrounding urban environment, by sharing their materials palettes, and the scales of the buildings. If one studies my new buildings at CEPT University they will find that my material palette is merely a continuation of Doshi's School of Architecture palette, and the floor-to-floor heights, the width of brick pylons, the breadth of studios and expression of water spouts in this new building, all speak to the surrounding classic architecture of my guru, Balkrishna Doshi. The popular grass hillock also flows under my studios, just as it does under the original School of Architecture building.

But from there on the integration empowers me to seek out my own narrative of spatial sequences, visual surprises, murals cast in concrete, my own employment of jack arches and alignments of movement through a spatial system. But, then with the iconic put aside, the city within a city comes into play with a new gathering space that connects the ensemble's entry through a cosy courtyard, or from under the open basement, under the studios, looking out to the grass lawn, and then on down to an open air amphitheatre-like set of steps like a kund meeting the water in the tank at the far end, which is kind of an anchor in the spatial choreography.

So, if I look back at my practice stretching over decades… across cultures… the constant has been a fixation with a central, urbane, pedestrian public domain. This public domain blocks all vehicular movement and is the preserve of pedestrians. This central space has greenery and often water, inviting visitors to stop, relax, and to talk. I also believe my buildings always struggle to be contextual, with the local culture's urban fabric. Maybe that is why I have rarely employed any kind of consistent trademark style. I broke away from that line of thinking after the Mahindra United World College in 1996.

KM

It is good the way you describe your journey through your projects… the joys of dilemmas and discoveries, and we come back to what we spoke earlier, the importance of building a reflective consciousness as against a consuming style; and here your library, your references, have been your constant co-travellers… right?

CB

I think I am prepossessed with very internalized thinking processes that evolved over the years, centring on the microcosm of the city. I have moved over time in a pretty clear process from stage to stage, always looking for the iconic element of each project; how will it be a memory point for the people who visit it, or who work there?

When I am working on a design I always recall the book, How the Greeks Built Cities from which I learned that a free Greek citizen spent most of his daytime in the agora (market), in the temple, in the gymnasium where his mind and body were developed, in the amphitheatre where ideas and concepts (through plays, lectures, debates and poetry) were illustrated and questioned. Citizens would gather in the forum for racing and competitive sports. A Greek's life in the day was public, civil, civilized and in public spaces that catalysed ideas, thought, and analysis of what was meant by good and the bad! The Greek city generated civilization by bringing leaders, students and the people of the city together into one holistic community based on mutually evolved and shared values. Books by Plato, like The Republic , laid out a rational democratic idea of a republic ruled by the educated. While his book Symposium illustrated how friendship and thought-provoking meetings, in a domestic atmosphere, evolved ideas organically. The key word is "meeting," and it is the essential work of architects to encourage people, lure people, and provide the catalysts for people to gather into civilized meetings. When people meet thoughtfully discussing rationally and logically, their concepts and ideas, civilization is being enriched and is maturing.

Mid-nineteenth century culture imagined the architect as a lone thinker, maybe a genius, but always an individualistic and self-centred thinker-doer. This role model led me to be a very top-down, individualistic person. All of my gurus were living in this model, but this was an inadequate role model for the twenty-first century architect! It is not the way to go. Painfully, over the years, design projects have transformed, becoming larger, demanding more technology, demanding more integration of systems and involving more diverse investors on the clients' side. New participants, like project and construction managers, MEP consultants,

Alliance Francaise, Ahmedabad- Photo Source CCBA Design Pvt. Ltd.

Alliance Francaise, Ahmedabad- Photo Source CCBA Design Pvt. Ltd.

landscape and interior designers, kitchen and lighting designers, BOQ experts, and even security consultants have all come into the team, making the idea of the stand-alone architect ridiculous.

KM

Wonderful… we have travelled far and wide, across time and libraries with you in this interview… thanks so much! Where do things stand today, for you? What do you perceive your role to be as one of India's senior-most and most respected architects and thinkers?

CB

So, as the milieu of construction and design changed I had to change too. Surprisingly, many, many young architects still hold the "great man theory" as their life's dream and they run off on their own, setting up their one-man studios, not realising that a small office can no longer land a commission to build more than a farmhouse, or design a shop interior. In my studio I have become more and more superfluous, with my directors and senior architects all doing ninety per cent of the work. Yes, I plant a concept amongst them and propose a vocabulary of facades, an integrated structural system and spatial sequences, but they temper this, often telling me what is not a good idea and what will not work.

My struggle, and that of all architects, is to learn to work with larger and larger teams having many specialised capabilities, in a more integrated manner taking up design challenges that intrinsically change and morph with each new project. This is happening in projects like the Eye of Wisdom in Shanghai, and with the METRO 3 mass transit line in Pune, a twenty-three kilometres long string of metro stations we are designing for Siemens Germany and the Tata Group of Companies.

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FRANK LLOYD WRIGHT

REFLECTIONS ON THE SOURCE OF 'CONTINUITY' IN ARCHITECTURE AND THE INNER SELF OF THE ARCHITECT

Ar. Prem Chandavarkar

Bust of FLW at Taliesin
Photo Credit : Author

In the early 1930s, Frank Lloyd Wright began using the notion of 'continuity' as a way of framing his argument for organic architecture, proposing that rather than seeing architecture as figure and background, one should see a unified totality. This is epitomized in his famous statement, *"No house should ever be on a hill or on anything. It should be of the hill. Belonging to it. Hill and house should live together each the happier for the other."* [1]

Wright's proposition of 'continuity' implies a transcendent architecture: if surroundings are inseparable from the work, architecture scales all the way to infinity. But what do we understand as 'continuity' and where does it spring from? In a full application of 'continuity', can one divide the architect from the architecture? Does 'continuity' spring from the attributes of architecture, or from the inner self of the architect?

In some of his writings, Wright places the source of continuity in tectonic attributes of architecture, as evidenced in the following statements:

I promoted plasticity as conceived by Lieber Meister to continuity in the concept of the building as a whole....So why not throw away entirely all implications of post and beam construction? Have no posts, no columns, no pilasters, cornices or moldings or ornament; no divisions of the sort nor allow any fixtures whatever to enter as something added to the structure.....Instead of many things, one thing. [2]

Where the beam leaves off and the post begins is no longer important nor need it be seen at all because it no longer actually is. Steel in tension enables the support to slide into the supported, or the supported to grow into the support somewhat as a tree branch glides out of its tree trunk. Therefrom arises the new series of interior physical reactions I am calling "Continuity" [3].

In integral architecture the room-space must be seen as architecture, or we have no architecture. We no longer have an outside as outside. We no longer have an outside and an inside as two separate things. Now the outside may come inside, and the inside may and does go outside. They are of each other..... it is in the nature of any organic building to grow from its site, come out of the ground into the light – the ground itself held always as a component basic part of the building itself. [4]

But were the full import of continuity in architecture to be grasped, aesthetic and structure become completely one, it would continue to revolutionize the use and wont of our machine age architecture, making it superior in harmony and beauty to any architecture, Gothic or Greek. This ideal at work upon materials by nature of the process or tools used means a living architecture in a new age, organic architecture, the only architecture that can live and let live because it can never become a mere style. [5]

An assumption that attributes of architecture define the disciplinary core of design has always been a prevalent trend. It is found in analyses that do not necessarily seek a transcendent dimension, such as Ching [6] or Venturi; [7] and is also the method adopted when seeking the transcendental, such as Norberg-Schulz [8], [9] and Alexander. [10] This springs from an Enlightenment quest for rational detachment, suspicious of the inner self of the artist as subjective, non-replicable, and therefore to be excluded from epistemological foundations. If transcendentalists, like Norberg-Schulz, propose a phenomenological approach that modifies a purely rational model to include human consciousness, analysis still seeks objectivity, building on the philosophy of Heidegger [11] and focusing on the inhabitant's existential anchors rather than the architect's inner compulsions.

But Wright also spoke of another perspective on continuity, one with a spiritual focus, when he wrote, "To get continuity in the whole, eliminating all constructed features just as Louis Sullivan eliminated background in his ornament in favor of an integral sense of the whole. Here the promotion of an idea from the material to the spiritual plane began to have consequences." [12] This spiritual dimension was not objective, it was intensely personal, and more significantly sourced from within himself. He elaborated on this spiritual dimension, saying:

Constantly I have referred to a more 'humane' architecture, so I will try to explain what humane means to me, an architect. Like organic architecture, the quality of humanity is interior to man. As the solar system is reckoned in terms of light-years, so may the inner light be what we are calling humanity. This element, Man as light, is beyond all reckoning. [13]

Mankind has various names for this interior light, "the soul" for instance.....And so when Jesus said "the kingdom of God is within you," I believe this is what he meant. But his disciples betrayed his meaning when they removed the Father, supreme light, from within the human heart to inhabit a realm of his own, because it was too difficult for human beings to find faith in man. So Christianity, itself misled, put out the interior light in order to organize worship of life as exterior light. Man is now too subject to his intellect instead of true to his own spirit. Whenever this inner light of the man is submerged in the darkness of discord and failure, he has invented "Satan" to explain the shadow. Insofar as light becomes thus inorganic, humanity will never discover the unity of mankind. Only by interior light is this possible. [14]

A different, yet foundational, source of transcendent continuity is posited here; one that has remained relatively unexplored in the profession. Being interior to humanity and beyond reckoning, the first site of inquiry can only be an experiential exploration by the architect of his/her own interior, expanding outward from there toward continuity with a humane architecture. The architect must now be included in a philosophical appraisal of how architecture comes to be. To explore this aspect, it is necessary to look at the levels at which humans encounter the world.

HUMANS IN THE WORLD: LEVELS OF ENCOUNTER

In the introduction to their edited collection of essays on the study of consciousness, [15] Francisco Varela and Jonathan Shear identify three levels at which humans encounter the world:

1. First-Person Experience : This is the personal experience of internal cognitive and mental states through which one has primary access to the world. What one knows at this level may be appreciated, but never fully known in the exact same form, by another. We often refer to this level as 'con-

sciousness', and it is a poorly understood notion in Western rational epistemology.

2. Third-Person Accounts: These are seen as independent of any one person's experience. They may be physical, such as objects in the world, works of art and architecture, or texts, but also include intangible manifestations such as concepts, theories, memes, belief systems, shared identities, auras, etc. Every person's perception of them may not be identical, but the overlap is sufficient for a group of persons to acknowledge their independent existence as the foundation for what we call 'reality'.

3. Second-Person Mediation: Exchanges, conversations, interactions with others, which can be one-on-one conversations or group dialogues. Often, the engagement is with teachers, or persons with greater expertise or wisdom, and the exchange serves to enrich the relationship between the self and the world.

To speak about the architect's interior is to speak of first-person experience, whereas to dwell on attributes of architecture is to articulate third-person accounts. Mainstream academia pursues a rational definition of truth that focuses on third-person accounts, fearing that inclusion of first-person experience in epistemological models will lead to subjectivity and bias. This consequently sidelines the role played by second-person mediation, also leading to an impoverished perception of human experience. An existential authenticity known only through personalized sensory experience is ignored. More significantly, a connection is lost with an infinite creative power that we use on an everyday basis that lives within each one of us: when we speak we coax meaning out of silence, when we dance, we coax beauty out of stillness, when we love we coax community and conviviality out of solitude. This redoubtable creativity should evoke wonder within us, but is so powerful that we have to learn how to come to terms with it, and are not always successful in doing so. As John O'Donohue remarks, "One of the sad things is that so many people are frightened by the wonder of their own presence. They are dying to tie themselves into a system, a role, an image or a predetermined identity that other people have actually settled for them." [16]

This misperception erodes the core of the design process:
(a) the value of tacit knowledge [17] receives insufficient recognition;
(b) poor acknowledgment of tacit knowledge pushes the transcendental to the background; [18] and
(c) the profession valorizes a perception of architecture where interpretation is privileged over experience, obstructing a true quest for continuity. [19]

Foundational significance should not be assigned to any singular level of human encounter with the world. First-person experience, second-person mediation and third-person accounts are woven together within socio-cultural and natural networks where each level validates the other. [20] The self cannot know itself without examining how it is recognized by another, and the other cannot be appreciated without validation by the authenticity of experience that only the self knows. And both self and the other existentially anchor themselves within third-person accounts. Self and otherness are inextricably intertwined. [21] Second-person mediation plays a crucial bridging role, validating first-person experience and containing the processes by which third-person accounts get reified. Rather than seeking authenticity in any one level of encounter, consistent movement between one level and the other is the source of authenticity. [22]

This movement across levels is fundamental to the nature of living systems and has been termed as autopoiesis by the biologists Humberto Maturana and Francisco Varela. [23] The term means 'self-making' and refers to how an autonomous living being is never a closed system: if it were, it would fall under the second law of thermodynamics which states that every closed system keeps increasing in entropy until it merges with the entropy of the universe (which is what happens when we die). While the self that is alive possesses an autonomy that is defined by a boundary, that boundary is porous, allowing energy flows through the self by which it remakes itself. The nature of the exchanges that take place through that boundary are fundamental to life, and the sensitivity of the being's boundary to the environment is crucial to the success of autopoiesis.

When these exchanges are recurrent, then the living being learns, and can structure its behavior in terms that transcend immediate 'in-the-now' experience. In autopoietic terms, the cognitive boundary of consciousness absorbs a part of the environment, occupying a larger territory than the sensory boundary of the physical self. Humans can take learning to radically different levels with significant impact on their cognitive capacities, for they have the unique ability to be reflexive, thinking in the abstract about themselves and the world and changing themselves through that thinking. For non-reflexive beings, the cognitive boundary of consciousness and the sensory boundary of physical being are relatively close together. The reflexivity of humans allows them to shift the boundary of consciousness significantly beyond the physical boundaries of self. This can be seen in everyday ways one often recognizes: the loving wife who can intuit what troubles her husband of long standing, or the experienced stage actor who can read the audience's attentiveness and engagement from the sound (or absence of it) of their bodies and feed this energy into the performance.

This expansion of boundaries of consciousness is the aim in many established contemplative practices, as well as the rigorous training one goes through in acquiring the mastery of any craft. The consciousness of the masterful practitioner gets intertwined deeply with his/her craft: the musician and music feel as one, the master architect unifies with materials and aura of space. This shapes the way others encounter the craft. When you hear the performance of a masterful musician, both you and the musician hear the larger voice of music; when you inhabit the work of a masterful architect, both you and the architect have sensed the larger presence of architecture. The resonance within you happens because both you and the master, inherently as human beings, have the inborn impulse to expand and emancipate the autopoietic boundary of your consciousness. The acquisition of personal mastery and the layperson's recognition of its value happen through radically different processes, but they connect because both strike a resonance between innermost being and observed reality.

This calls for a re-examination of the conventional modes of architectural practice and architectural education.

IMPLICATIONS ON ARCHITECTURAL PRACTICE

When the architect's interior is eliminated from consideration, the architect at the creative cutting edge is reduced to superficial recognition as a heroic figure. This breeds a shallow culture of professional practice constituted largely by a bulk of followers in the wake of a handful of heroes, reproducing an idiom or philosophy without genuine access to the source of the creativity they admire. A widespread culture of deep and creative reflection that could propagate the ideal of continuity remains elusive.

Practice should not be reduced to the expression of an established visual language or philosophy. It should be predicated on two ongoing critical dialogs between the architect's inner values embodied in his/her sense of being and the outer world he/she inhabits. One dialog would be with collaborators and stakeholders within and without the practice to validate the existential self; and the other with the attributes of architecture relevant to the design challenge faced. While merely applying a theory would be 'reflection-and-action', the effective practitioner achieves 'reflection-in-action', using each professional challenge as a means of expanding his/her boundary of consciousness, thereby increasing the degree of mastery. [24] This happens through a process of 'double-loop learning', going beyond the single loop of learning through experience into a wider loop of contemplation where one critically comes to terms with overarching factors. [25]

The practice, rather than being seen merely as the vehicle for individual expression, should be structured as a crucial site of second-person mediation. When the dialogs it contains cross a threshold quantum of repetition, the inner and outer worlds achieve a high degree of tacit intimacy. At that point, personal mastery is achieved, and popular wisdom stipulates a minimum of 10,000 hours of practice to reach this level. [26]

Mastery renders the transcendental tangible and personal. When great architecture enthralls its inhabitants, they are enchanted by a voice greater than either inhabitant or architect: the voice of architecture. The mastery of the architect renders this voice alive to speak as intimately to the inhabitant as it does to the architect. A state of flow occurs here, where the architect surrenders himself/ herself to a greater reality that flows through his/ her body, [27] such that this transcendent reality becomes apparent to others.

The structure of practice must shed the cult of personality and the crutches of theory. Practice must be reinvented as a place that shelters critical and rigorous dialogs between inner self and outer world that promote the acquisition and development of personal mastery.

IMPLICATIONS ON ARCHITECTURAL EDUCATION

In the quest for objectivity, curriculum tends to foreground content and product, with pedagogy reduced to an instrumental means for achieving excellence on these counts. Once content and product are externalized from the self, the student can sustain rigour only when the surrounding context is supportive. On graduating from the crutches of academia and entering the world of commercial practice, ideals held in college begin to fade. This is why, even in cities where the standard of architectural education is considered high, the bulk of professional architectural production tends toward reproduction of the familiar. Students who sustain an internalized critical rigour well after graduation may do so more because of their innate capacities than how they were taught. There are studies that suggest that the success of reputed colleges ensues more from the profile of students they attract than the caliber of education they deliver. [28]

Pedagogy needs to transcend its instrumental status to lie at the core of curriculum. The focus should be on the self being educated, such that aspirations on content and product are not external beacons but internalized within an aspiring self as personal mastery. It is not possible to logically understand the state of flow that brings mastery into being. It must be attained through lived practice, which is why the core of architectural education should be a pedagogy that provokes the infection of passion between members of the community of learners, teachers and students, to ignite the spark of flow within the learning self. A critical pedagogy does not seek external standards, it aims for the evolution of committed and consistent selves who can critically engage with reality in order to personally participate in the renewal of their world. [29] Such a self eschews mere reproduction of the familiar or imitation of a hero, pursuing a personal mastery that is driven by an awakened inner light. The goal of education is a pedagogy that fires this inner light.

CONCLUSION: CONTINUITY, EPHEMERALITY AND TRUTH

To seek continuity only in the attributes of architecture is to search for the meaning of life. But as Joseph Campbell reminds us, "People say that what we're all seeking is a meaning for life. I don't think that's what we're really seeking. I think what we're seeking is an experience of being alive, so that the life experiences that we have on the purely physical plane will have resonances within that are those of our own innermost being and reality. And so that we actually feel the rapture of being alive, that's what it's all finally about." [30]

To connect with this 'rapture of being alive', the inner self of the architect must enter the reckoning so that the source of continuity is recognized as lying in the continuous critical engagement between this self, the attributes of architecture, and the networks within which they are embedded, so as to bind them all. Continuity truly exists only when this process sustains the personal mastery that is able to reify this resonance.

To argue this is to pursue a phenomenological argument that seeks to reconcile the later Heidegger with the early Heidegger. The later Heidegger emphasized 'dwelling', [31] and this is the aspect that architectural theory has focused on when it has taken a phenomenological approach. The early Heidegger emphasized 'being', particularly the fact that 'being' was always within 'time', and was therefore continuously being erased and reconstructed. [32] Heidegger proposed a repetitive looping in a hermeneutic circle, where one half of the circle was in a mode of 'understanding', and the other half in the mode of 'experiencing'. This is nothing other than a shift between first-person experience and third-person accounts: a process underpinned by second person mediation. But understanding is an act of claiming, whereas experiencing is an act of surrender, a willing suspension of disbelief in order to maximize one's conscious awareness of the world in all its power and subtlety.

The crucial role of surrender means that truth cannot be pinned down in a belief, theory, or philosophy that encompasses reality. The architectural reification of continuity rests on an ephemeral truth that is an act of being alive, moving continually across all levels of encounter with the world to be immersed in the 'rapture of being alive'.

The kernel of the argument of this essay is summarized in this verse from Lao Tzu's Tao Te Ching:

The things of this world
exist, they are;
you can't refuse them.

To bear and not to own;
to act and not lay claim;
to do the work and let it go:
for just letting it go
is what makes it stay [33].

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He is a former Executive Director of Srishti Manipal Institute of Art Design & Technology in Bengaluru and is an academic advisor and guest faculty at Indian and international colleges of architecture.

Besides his design practice at CnT, he writes, lectures and blogs on architecture, urbanism, philosophy, politics, education, environment, art, and cultural studies.

METARCH STUDIOS
RANCHI, JHARKHAND

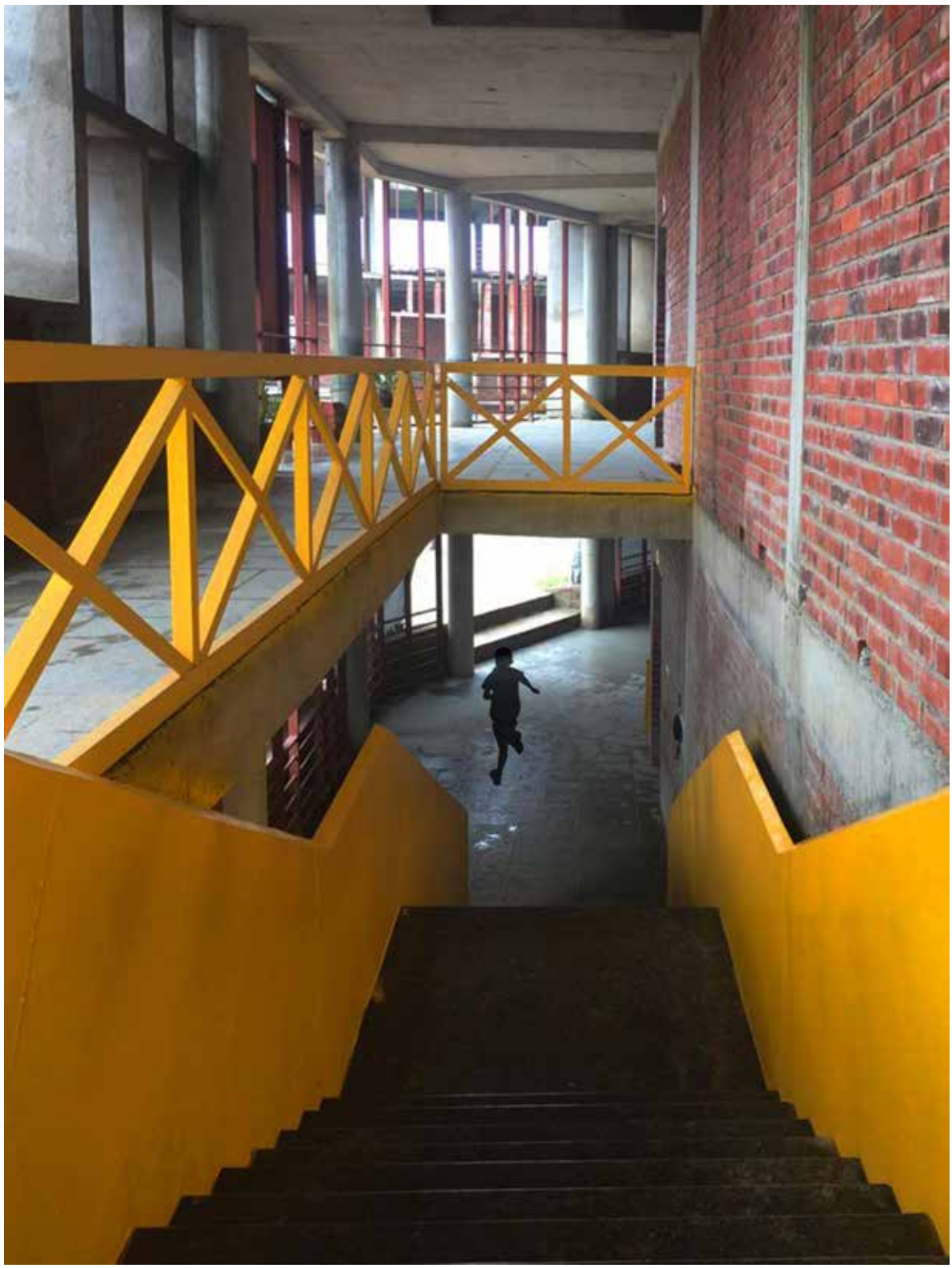


Image : 1

Image : 2

Looking back upon our history, as far one can perceive, architecture has always and everywhere been involved with ordering, ornamenting, and decorating bare structures so as to communicate a message. Even contemporary architecture portrays this practice.

Honesty and portrayal play important roles which have led to new meanings in architecture and design. To start with, we can point out what honesty defines for an architect: a few believe that honest architecture only refers to being true to the material used, however this honesty has a much broader meaning.

Each material has its specific characteristics which we must understand if we want to use it. This is no less true of steel and concrete. Mies van der Rohe

Buildings are not only to speak of the function but the materials that make it, the spaces they carve and the intentions they set out to serve too. True architecture can be said to be created when the intention and spaces truly serve the function they simply should.

A building and the spaces created should have a very strong connection to materials it is built with and to natural resources as well. in a manner that truly depicts the use of nature as a context. Every material has to be considered unique, speaking of its texture, strength, colour, opacity and durability. Honest architecture is what blends each of these characteristics, merges and plays with their boundaries, and uses them in a defined structure to form a space.

In addition, architecture and sense of space have always responded to people in different ways. "Truth" and "honesty" in architecture will always be perceived in different ways, especially as the world and technology are rapidly changing.

Lady K. C. Roy Memorial School

The Lady K.C. Roy Memorial School, one of our recently completed projects is an example of an honest portrayal of materials in architecture. It is situated in the outskirts of Ranchi and currently under construction. The school itself has grown from just ten classrooms holding 500 students to 2000 students since we started with the development process.

The total site area is two acres which was large for the early requirements, and had only one small building initially. The first job assigned to us was to develop the façade for the existing building, to which the design of the overall site in housing the future buildings also got added as an additional scope. The idea and the concept essentially started with this sketch. The buildings were designed and oriented keeping the site and the existing situation in mind. The core of the project became the amphitheatre, which in future would act as the centre of activities and a place of interaction for students.

The classrooms have been oriented in a way to create spaces for different activities and the non-linear approach to the corridor allows the students a sense of surprise at every corner (Image 1), a place where students can feel free to play, learn and interact. The design interrogates whether simple architectural planning principles can create the parameters of a higher quality of education within a space in semi-urban scenarios that are characteristic of most Indian school campuses

The new building, now complete, has a distinct and raw character: exposed brick, concrete with metal shading devices convey the poetics of its spaces. Materials work alongside structure to create the form in the building, making them an indispensable precondition in the process. The use of locally-sourced materials has also lowered the carbon footprint of the construction process.

Image : 3

Celebrations Banquet

Another approach is demonstrated in the banquet hall named Celebrations completed in 2014 and constructed on a plot of 1,20,000 sq. ft. The project brief included a large banquet hall along with adjoining facilities, an office, an additional arrangement for accommodation facilities and a large landscaped area. The site begins with a huge gateway leading to a well-curated landscaped area adjoining the parking, and finally leads to the banquet hall which is a well-defined, bold, imposing structure standing as a main focal point amidst the entire setting.

The form itself signifies grandeur, strengthening the concept of minimalism and our idea of honest depiction of materiality in the volume (Image 2) .

The exterior façade uses geometry and is made of hickory brown stone cladding with an overhanging polytetrafluoroethylene (PTFE) Teflon shade. The interior of the hall is designed in a contemporary style and is elegantly infused with minimal colour tones of white, off-white and dark brown so that it is relatable to the users. The ceiling is made up of gypsum board which runs in abstract geometrical patterns throughout.

The banquet hall opens up to a pathway with a shaded pergola on one side whilst having cottages towards the rear end, both opening up to the expanse of the green lawn to be used for outdoor activities during various functions . Through exhibitions, events, workshops, haats, lectures and corporate sessions, this public space become a hub for social interaction and sharing knowledge that engages diverse sections of the city's population. The lawn sports fountains, planter beds and a classical metal gazebo which, although contrasts the style of the main building, also complements the entire setting.

Metarch Studios Office

Architecture and interiors of the Metarch Studio offices are a triad of materials, modernism and fluid deconstructivism. The space can be interpreted in individual wall-planes as a canvas for creative expressions. One enters through an interactive parametric installation revealed in the poetics of shadow and light (Image 3).

Conceptually, the office space references the spatial qualities that characterize libraries – the unpolished elegance of clean and open spaces, tidy structures, focused workstation areas and a tranquil atmosphere.

Two entrances lead into two distinct volumes – the working and the meeting – linked together by a single, transparent partition of glass. Worktops in both areas are made in a modern aesthetic with wood, steel and Corian, with engineered lights hanging above. Whereas lights in the working space have a rusty, ageing aesthetic, the meeting space is revealed with a floating lamp shade cast onsite, weaving a dialogue across computational and brutal media- a stucco wall silently yet subtly echoes the poetics in light and shadow.

Sublime contours and profile for the synthesis of an acoustic partition wall for the interior design of an architectural studio. Bio-mimetic tessellation of inner ear function parametrically morphed into topographic interiors – where sight isolates, but sound incorporates – vision is directional whereas sound is omnidirectional.

Kaveri's Restaurant

The third branch of Kaveri's, a restaurant chain in the city of Ranchi was recently inaugurated, is like a fantasia of royal colours, adorned with hues of purple and gold. Comfortable, cosy seating upholstered in rich fabric with a heavily adorned parametric ceiling makes the space an instant attraction with its dramatic interior lights.

Image : 4

The entire theme purely complements a rustic yet royal dining space. The aforementioned ceiling made of pinewood of varying sizes which adds to the contrasting form and scale to the interior space not only creates a three-dimensional texture but also defines space and directs the eye (Image 4), exemplifying our idea of pure material representation, exploring the potential of certain materials, in this case pine wood logs.

The restaurant is divided into two floors with the sweet shop and the kitchen on the ground floor and fine dining on the first, planned in such a way that both receive natural daylight. Medium wood tones, spread over the walls and columns, contrasting with the grey textured wall, which, in turn also move along the ceiling. The flooring shows the fusion of rustic motif tiles and grey matt finish tiles stabilizing the entire space while patterned metal and wood panels create non-restraining intervention at certain intervals in the fine dining area. With the help of natural wood and metal materials, we convey how natural style and modern architecture can coexist.

As important as the concept of materiality is to the visible expression of our idea, it has geographical, political, historical, and cultural significance as well. Materiality plays a crucial role in providing aesthetics and warmth to the space.

While using certain materials during the construction of an establishment, it is crucial to take into account the long-term effects on the environment, along with the building occupants. Thus, the concept of materiality and an honest portrayal plays a fundamental part in the thought process, and its relevance is not restricted to a singular area.

Ar. Anupam Deb
Metarch Studios, Ranchi
Anupam Deb is the Principal Architect and proprietor at Metarch Studios, Ranchi. Anupam has done his Bachelors of Architecture from BIT Mesra, Ranchi and went on to complete his Masters in Architecture and Urbanism from Politecnico Di Milano, Italy. He has been practicing in Ranchi and doing projects nationwide since 2014. His practice focuses on architectural, urban, interior design and landscape-driven projects. Apart from practice , he loves teaching and sharing the knowledge about architecture by conducting workshops with schools and other social groups. At present, he is a visiting faculty at the Department of Architecture, BIT Mesra.

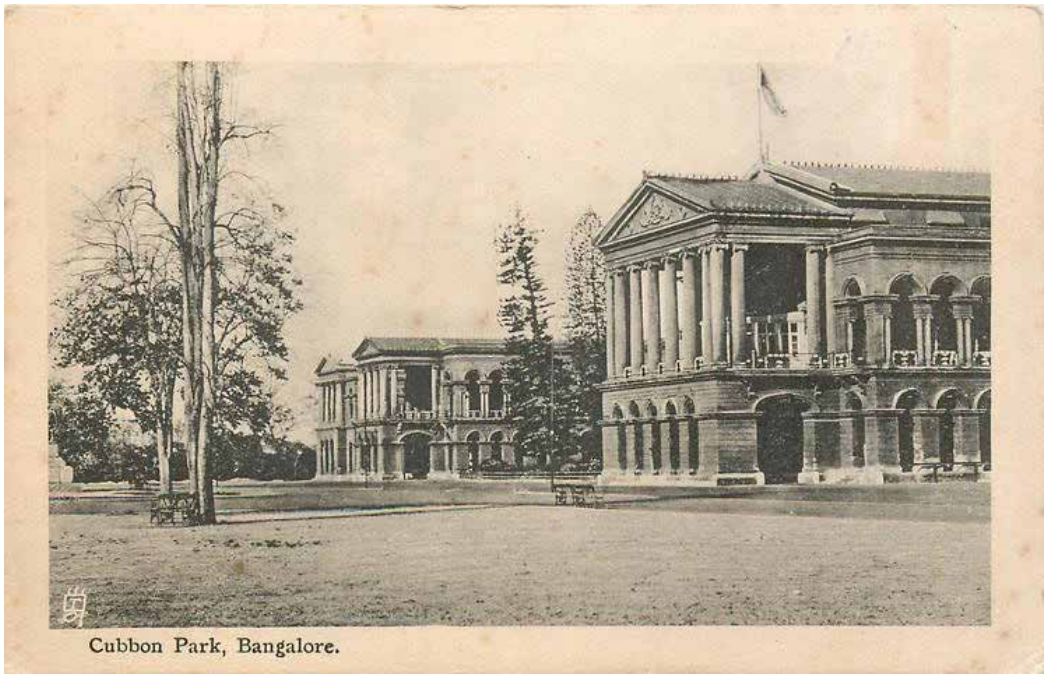
Photo Courtesy: Image 1,2,3 – Anupam Deb, Image 4 – Ratnesh Agarwal

TALUKA COURT COMPLEX HUBBALLI

Court Complex, Hubballi, Asia's Biggest Taluka Court complex

It is not only the beauty of a building you should look at: building strong, aesthetic timeless structures.

Sankalp Associates



Attara_Katcheri (1868) which gave the inspiration for the design of the Court Complex, Hubballi. ***(Source:*** *https://upload.wikimedia.org/wikipedia/commons/c/c3/Attara_Katcheri%2C_Bangalore_%28Early_1900s%29%2C_Tucks_Post_Card.jpg)*

Fact File
Project Name ▶Court Complex, Hubballi
Commissioned by ▶Government of Karnataka, Judicial Department, Bangalore
Project cost ▶122 crores INR
Completed ▶2018
Location ▶Kallur Layout, Hosur-Unkal Road, Timmasagar village, Hubli, Karnataka 580021
Plot area ▶5.37 acres
BUA ▶24,525 sq.m
Architect ▶Principal Chief Architect, Govt of Karnataka
Structural Consultant ▶Sushama Hiremath, Sankalp Associates, Hubballi
Consultant Architect ▶Mahesh. Hiremath
Contractor ▶KMV Projects Ltd., Hyderabad.
Sankalp Team ▶Umesh, Virupaksh, Vijay Sardis and Saleem
Implementation ▶Public works, ports & inland water transport Department north zone, Dharwad.

Introduction

Hubli, officially known as Hubballi, is a City in the Indian state of Karnataka. The older Hubballi taluka court functioned out of a 132-year old building located near Sai temple. This complex became very congested as the whole cluster housed seventeen court halls which were insufficient. As it was located near the circle, vehicular movement and parking was also an issue. Realizing that the old building could not sustain the increasing rush of clients and staff.

A team of judicial members from the Government of Karnataka Committee suggested overcoming the issue with a high-tech taluka level court complex with all facilities. This resulted in the new Court Complex at Hubballi which efficiently operates as Asia's Biggest Taluka Court complex. The project was awarded ICI- Ultra Tech Award, 2018 for Outstanding Concrete Structure of North Karnataka in the Building Category by the Indian Concrete Institute.

Design Approach

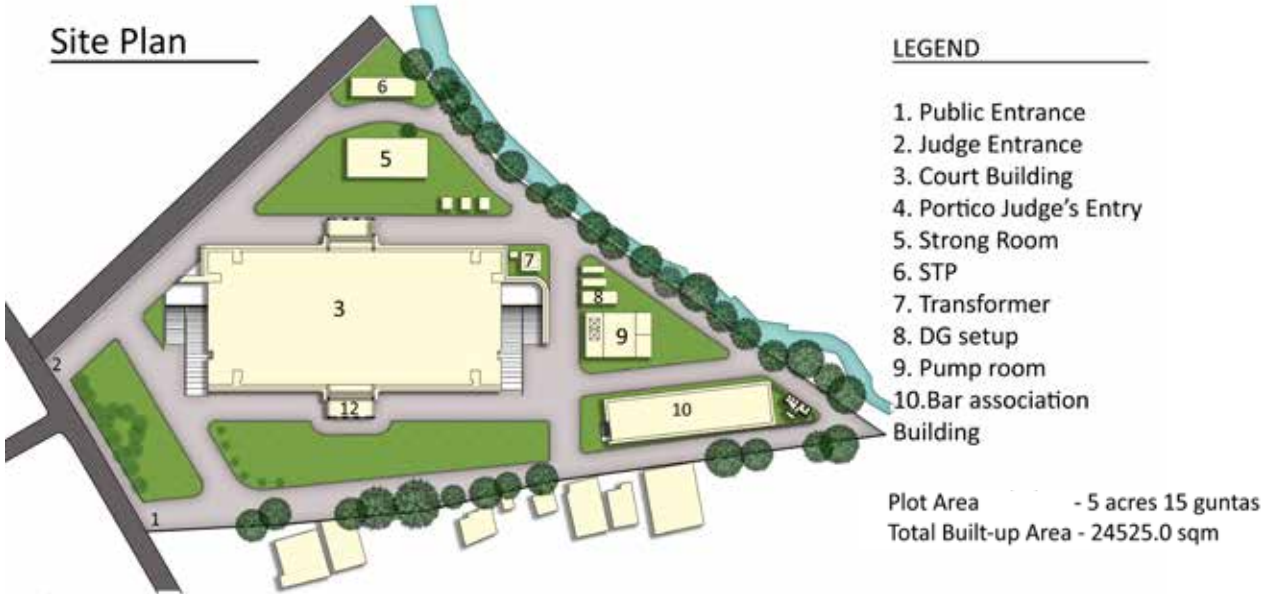
The court building is one of its kind in North Karnataka. The design is inspired by the neoclassical style of architecture and the iconic portico of the Attara Katcheri (1868) at Cubbon Park, Bangalore.

The Site

The site is located at Kallur Layout, Hosur-Unkal Road, Timmasagar village, Hubli in Karnataka state. Situated in a developed area in the heart of Hubballi city near to Central BRTS bus stop, the site area is 5.37 acres with a natural gradient of 3m. The total built-up area is 24,525 sq.m with a total height of 27 m.

The Design

This new seven-storey building consists of twenty spacious court halls and a witness lounge for each court hall. The entire court hall has centralized air-conditioning with all other modern amenities. It will also house the office of the Bar Association. One of its halls will be kept as a conference hall. It also has separate lounges and waiting rooms for clients and under-trials.



The basement and ground floor each provide parking space for sixty 4-wheelers. The successive floors house court halls of size 12 x 18m and chambers for judges, along with their personal staff. Also provided are the account's registrar room, assistant public prosecutor room, office room, record Room, property Room, public toilet blocks, litigant public waiting area, mother and child room, witness waiting room, lockup room, typing pool, computer room and other facilities with an area of 3414 sq.m for typical floors.

Services

Plumbing and sanitation

The sewage treatment plant provided is the first of its kind which has a capacity of 100 KL STP plant. Out of this, 20 KL is used for flushing, 20 KL for gardening and 50 KL for the cooling tower. Recharge pits are provided for the ground recharging of the rainwater.

Fire and alarm system

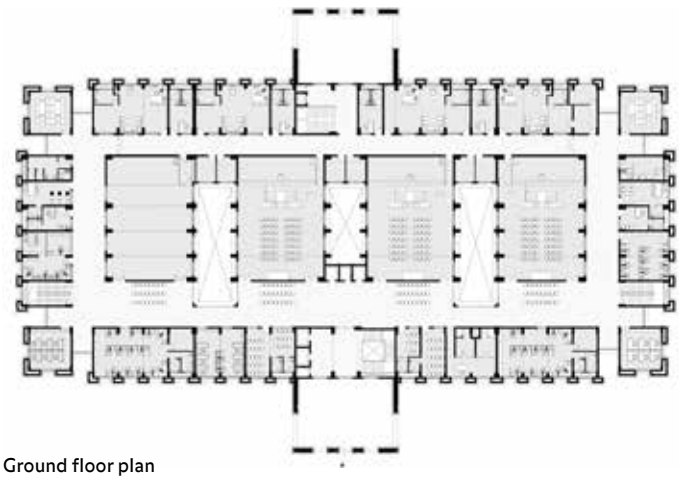
The fire and alarm system consists of a 2 lakh UG sump, fire hydrant, diesel and jockey pump with wet riser and sprinklers. The fire alarm is manual as well as auto- operational, integrated with sprinklers. External and internal hydrants are also provided.

HVAC system

The court complex is air-conditioned with a state of art centralised chilled water system. This is controlled through the building management systems (BMS). Twenty court halls on five floors are air conditioned through the ceiling-mounted AHU. Each court is served through dedicated AHUs with temperature controllers. All corridors are supplied fresh air through fresh air ventilation systems (FAV) that integrate with the existing HVAC system. Basements are ventilated with a jet fan system through CO sensors and terminal exhausts through the axial fans, fire rated for two hours. The entire plant is integrated with the BMS.

Electrical

The electrical power required is 2000 kVA. Stand-by power is provided by a diesel generator of capacity 1000, 750, 500, kVA each. Uninterruptible power supply (UPS) is designed for computers, laptop, CCTVs, server, and the security system having a 2 x 160 kVA. LT panels are considered from EB source and DG source. The DG synchronizing panel is considered for auto switch on or off, auto load sharing, auto synchronism, etc. to save fuel on the DG set.



Ground floor plan

All energy saving LED light fixtures considered. For the toilet area, the occupancy sensor is considered to switch on / off. Cable/ wire/ ducts XLPE and FRLS wires considered with fire retardant low smoke wires. Bus bar, earthing, lighting protection system, IP based CCTV, access control system, networking and lighting management is taken care.

Ar. Mahesh Hiremath **Er. Sushama Hiremath**

Sankalp Associates

Sankalp Associates is an architectural and structural consultancy firm dedicated to providing both functionality and aesthetics for their projects. They believe in the design of well-balanced utilitarian spaces to create both utilitarianism and an appreciation of space for the user. Their team comprises architects, structural engineers, interior designers and expertise for building services, 3D visualizers and a technical support team.

THE HIMALAYAN VILLAGE RESORT

Figure 1: Aerial view of the Himalayan Village complex (Phase-1)

Fact File

Project Name ▶The Himalayan Village Resort
Location ▶Kailash Nagar, Doonkhara,P.O.-Jari, Kasol, Parvati Valley, Distt.-Kullu, H.P.
Plot area ▶6400 sq.m. (Phase-I), 3500 sq.m.(Phase-II)
Total Built up area ▶1510 sq.m. + 5080 sq.m. of developed terrace area (Phase-I) 2525 sq.m. + 2035 sq.m. of developed terrace area (Phase-II)
Cost ▶INR 5 Crore (Phase-I)

The Site

The Himalayan Village (fig. 1) is situated in Kasol, at the foothills of the famous Malana Village, the oldest democracy in the world. It is just 10 km short of Manikaran, famous for its hot water springs, right on the banks of the ice cold River Parvati. The climate here is pleasant, mild and generally warm and temperate with snow fall. (fig. 2) The valley is full of adventurous treks through flower valleys, thick flora and fauna, clear waterfalls, rivers in the serene Parvati valley, the tapo bhoomi of Lord Shiv Shambhoo. Tourists are attracted to the scenic valley for its untouched natural beauty, low population and great climate throughout the year. Kasol is also a base for trekking to Sar Pass, Pin Parbati Pass and Khiriganga. The village has a thick deodar forest as the crown and the River Parvati at its foot. The mountains are made of craggy black granite with snow-covered peaks. This forms an ideal backdrop for nature lovers (fig. 3).

Challenges faced in design and construction in hilly regions

Though architecture on hills always seems to be beautiful and attractive, it is always a challenge for architects and structural engineers for planning, design and construction of these buildings. Planning and design of buildings on a hill is a tedious and challenging task due to difficult terrain, steep gradient, adverse climatic conditions, rich flora and susceptibility to natural hazards. The existence of tall, shady trees and dense forests obstructs the winter sun required for habitation in the buildings. In additions, high costs are involved for the site development due to the cutting and the filling process. Non-availability and transportation cause problems of accessibility to construction materials. Since vernacular practices have proven to be sustainable, it is essential to take lessons from sustainable vernacular practices for new development and formulation of building regulations for achieving contextually appropriate and sustainable development in hill settlements.

Figure 2: Night view of huts covered with fresh snow

Design Concept

This place envisages poets and writers who stay here for long periods to complete their work in the cool weather and calm nature, amidst the scenic beauty of the surrounding environment. The design envisaged the creation of a self-sustainable village with use of local materials and adopting local technologies with minimum disturbance to nature. All the building blocks were planned to cause the least disturbance to the ecology and topography of the site, using the half-cut and half-fill concept for small structures and planning buildings with basements for developing flat surfaces including a terrace for the central lawn. All the natural features like the nallah have been kept intact. Since, there was no connection

Figure 3: Built form complementing the deodar trees in backdrop

Figure 4: Pagoda-style temple with upright machaan

Figure 16: Site plan

Figure 5: Reception block with raised plinth level with respect to natural topography

Figure 6: Mud-plastered interiors

between the two areas, they have been connected with wooden bridges. The area in main entrance has been paved with loose aggregate flooring, to help natural percolation of rain water for recharging the underground water-table. All overflow is diverted into the existing site nallah. The drainage system of the whole site is facilitated through swales. There is no artificial drainage system and the rain water travels through natural terraces or swales which collect into the rain-water harvesting tank. To avoid flooding of water during monsoons proper slopes have been maintained.

All the blocks placed without any physical hard barriers between the huts. Instead hedges form green barriers, meticulously incorporated and aligned in the whole scheme. They not only divide the huts but also ensure adequate privacy to the residents and guests.

The angle of the slope of the roof has been kept to a minimum 30 degrees due to the snowfall, and made in timber and local slate roofing tiles. The walls are constructed with 40 cm thick dry stone masonry with mud plastering and wooden panelling

Figure 7: Snow-covered slate roofing

Figure 11: Multi-purpose open green space above the health club

Figure 8: Floating residential space of machaan

upto certain heights. This helps maintain thermal insulation and is appropriate in terms of seismic measures. All huts are specifically dedicated to different districts and different cultures.

Zoning of the building blocks

The arrangement of building blocks is so that the Shiv temple, built in pagoda-style is kept at the top-most level, along with two tall machaans facing the River Parvati. Below are six individual cottages placed to allow unobstructed views of the valley as well as ensuring privacy with a central open green plaza over the health club at the entry level. The office, bar, restaurant with kitchen and dining blocks are placed close to the public approach areas from the entry side in the Phase-I site. Display of local artefacts near the reception showcases the material and skills of local artisans.

Phase-II is planned to provide eight double huts with individual open landscaped terraces at various levels connected through pathways which give a clear view of the valley and the river. (figs. 4 and 5).

Open restaurants at two levels have constructed, one with thatched roofing and the other one with slates. Waiters in traditional outfits serve in these open structures. The entire complex and the huts have unobstructed views of the valley. Privacy and security have been maintained in such a way that each cottage has its own personal lawn and a clear view of the River Parvati or the valley. The village has a clear view of the snow line at Shilla, 18 km from The Himalayan Village.

Materials and construction details

The construction technique in this village uses the traditional kath-kuni style, which consists of walls built by dry stacking of stone and wood and mud-plastering them from inside, which blends with the deodar timber. The interiors are enhanced by decorative wooden panelling, beautiful carved teak wood furniture, handmade silk curtains and traditional brass fittings (fig. 6).

Local stones were brought from the quarry at their own orchards nearby, transported through trolleys, locally known as spans. The client was environmentally-conscious and promoted the use of locally available materials without disturbing the local ecology. Local artisans and skilled labourers were involved in construction works. The project blends the traditional together with modern techniques for and aesthetic that matches yet stands out with the local flavour. The use of natural timber plank bands used in facade with exposed natural stone dry masonry reduced the requirement of natural wood (fig. 7). These bands are in front of seismic bands and vertical reinforcement at corners which are seismic necessities in this earthquake –prone zone V area.

Figure 9: Dry stone retaining walls as green walls with relief work

A few structures in the village, which are three-storeyed, like the machaans (fig. 8) are similar to the tall temples of the valley, built with timber in the kath-kuni style. In order to reduce the usage of natural wood, it was decided to make the core in RCC frame from within, and finished with an external kath-kuni features. This is a composite masonry with the use of modern and traditional construction techniques.

Landscape Development

All the pathways are finished with locally-available slate in dry masonry without usage of cement mortar. Small niches were also created in the retaining walls to depict the local cultural events of Kullu in relief work as the backdrop of the central lawn. All retaining walls and toe walls are constructed in dry stone masonry and covered with native species of creepers. Large expanses of lawns atop the RCC terrace of the Health block for naturopathy. They have sky-light panels placed over health club and spa.

Ar. N. L. Chandel has received his Diploma in Architectural Assistantship in 1984 from the Government Polytechnic, Sundernagar. He graduated in 1992 from IIA, Bombay, and his post-graduation in landscape architecture from *School of Planning and Architecture, New Delhi* in 1995. He is the Chief Architect of Himachal Pradesh Public Works Department, state-nominated member to the Council of Architecture and Chairman of IIA Himachal Pradesh Chapter. He has been an international award winner in a competition held at Taiwan during his post-graduate studies, and a recipient of the *Pahari Nirman Shaili Sanrakshan Samaan* (Appreciation Patra) from Puratatwa Chetna Sangh, Mandi, HP in 2011. He is also a member, Board of Studies for B.Arch. in Himachal Pradesh Technical University, Hamirpur.

The text for this article has been provided by **Ar. Vijay Thakur**, Executive Member, IIA HP Centre and Ar. Amrita Kumari.

SARVAH KSHEMA HOSPITAL AND RESEARCH FOUNDATION (SHRF)
SALIGRAMA, UDUPI

Figures A: SHRF

Fact File
Project Name ▶Sarvah kshema Hospital and Research Foundation (SHRF) - Phase I
Location ▶Saligrama, Udipi
Type of Project ▶Spiritual Healing Centre
Completion Date ▶1 February 2020 (Phase 1)
Client : Divine Park, Saligrama, Udipi
Landscape Architects ▶Ravikumar and Associates, Chennai
Consultants
Architects ▶Sajith and Vivek Architects, Chennai.
Site Area ▶11.4 acres
Landscaped Area ▶7.7 acres

Introduction

The client, Divine Park founded by Shri Chandrasekhar Udupa and followed by Shri Dr. Vivek Udupa have been conducting various yoga programs with spiritual content for the past eight years. Yoga Parwa is one such a program where participants come and stay at the Divine Park premises for a week for the inpatient treatment along with yoga. In the presence of the divine atmosphere of Divine Park, along with the scientific and simple yoga practices, patients return to good health and overall personality. As the next phase of Yoga Parwa, a unique yoga hospital Sarvah Kshema Hospital and Research Foundation (SHRF), an advanced centre for yoga, rehabilitation and research is being built at the plot near Saligrama. SHRF will be the first of its kind where yoga and spirituality will be taught with scientific evidence in the divine and serene atmosphere with the concept of 'Return to Nature'. This project was awarded the first prize in HUDCO National Design Awards 2021 in the Landscape Planning and Design Category.

Project Programme and Zoning

The project programme consists of the following components :

(1) Security Block, Parking area, Rest Room (2) Administration Block (3) Consultation Block (4) Doctor Office (5) Treatment Block (6) Yoga Block (7) Diet Block (8) Water Tank (9) Accommodation Block (10) Tulasi Garden (11) Homam Area (12) Rehabilitation Block (13) Research Block Lab (14) Walking Track (15) Staff Quarters (16) Library

Area 1 : Since this area is full of dense, mature trees, it has been allocated as the Experience Zone with pathways through forests, groves, herbal gardens for walking in the woods.

Area 2 : All the secondary activities and facilities - play area, arrival court, drop-off zone and gardens - which support the primary activity have been housed in this area.

Area 3 : This area is square in shape and fairly flat and devoid of mature vegetation. Hence the primary requirements and activities of the hospital and research have been located in this area.

Inspiration from Temple Planning Principles

The project being spiritual in its background and context, inspirations from temple architecture and planning form the basic design principles. The underlying principle in Hindu temple architecture is built around the belief that All things are one, everything is connected. In the temple's master plan, the movement of the devotee from the outer noisy world, cutting across the different layers to the inner serenity and tranquillity, to the deity. The inner sanctum or garbha griha, the place of the deity, is always the centre. This symmetry-driven structure depictsg perfect geometric shapes like circles and squares. At the centre of the temple, typically near the deity, is a mere hollow space with no decorations, symbolically representing Purusa. A Hindu temple is meant to encourage reflection, facilitate purification of one's mind and trigger the process of inner realisation within the devotee.

Guiding Design Principles

The daily schedule of the patients and visitors at this centre is such that they have to visit the various blocks very frequently resulting in criss-cross movement between them.

Figures 1: Landscaped drop-off zone

Top: Figures 8: Landscaped Antar Pradakshina; **Bottom:** Figures 5: Landscaped Bahya Pradakshina

Since these movements happen throughout the day, covered corridors connecting all the primary blocks becomes essential. This also leads into an introvert, compact and well-connected layout. The lotus being the symbol for many religions - Hinduism, Buddhism, Jainism, Bahaism and many others, is a symbol of beauty, youth, life, non-attachment, purity, spontaneity, passion, love, compassion etc. The five elements of nature - water, earth, light, wind and space - which are the basics of life, become the five defining open spaces of the architecture. Hence the lotus became the inspiration for the built form with 8 as its basic geometry.

Landscape Concept

The centre of the complex is a lotus-shaped pond with the iconic statue of Swamiji as a focal element. The stepped seating around the pond makes it a serene meditative place. Around this is arranged, in two concentric circles, the buildings predominantly in square modules connected through shaded corridors and interspersed with courtyards and flanked by two concentric pedestrian walkways. Thus, all buildings are oriented to the centre lotus court with Swamiji's statue. The space in between the buildings are filled with native trees, fragrant gardens and herbal plants. Vehicular circulation is kept at the periphery, leaving the entire campus predominantly pedestrian.

The landscape proposal aims at merging and integrating the architecture with the surrounding agricultural environment. The landscape concept and design detailing attempts and fairly achieves a sustainable, close to nature built and open environment. The landscape structure has a minimal or no impact on the natural environment, retaining it as it is, throughout the development. The landscape structure is completely of natural and sustainable elements like semi-pervious meandering pathways, eco-ponds, water channels, planting of local trees, plants and grasses. The materials used in the landscape proposal are entirely natural and pervious to suit the theme and the spirit. Hard paving is largely reduced to a minimum and is just enough for pedestrians and battery cars. Water consumption for landscape irrigation has been kept to a minimum through shaded gardens and local native species, and by using drip irrigation. Storm water management of the entire site has been dealt with as per the natural gradient by means of open channels and grassed swales along the pathways. All circulation areas and most of the site is well shaded to minimize the heat island effects and imperviousness of the site.

Sustainable Design Practices

All mature trees on the site are retained by careful planning. Native trees and vegetation will be planted to encourage bio-diversity. Minimum building footprint and maximum greenery area (70 per cent of the site) is maintained to improve the micro-climate and encourage bio-diversity. Minimal ecological footprint is retained by preservation of existing trees, retaining the natural gradient and the water bodies on the site. On-site sewage treatment plant to recycle and reuse waste water is used. Bio-swale and rainwater harvesting features exist. A drip irrigation system is used to treat water. Eco-friendly construction materials that are sourced locally, such as recycled materials, agriculture waste based materials etc., laterite blocks, clay tiles, semi-pervious paving materials are used. 70 per cent of site area is allocated for flora and fauna to encourage bio-diversity. 70 per cent of the materials used are natural or earth-based. Efforts are made to preserve local heritage and traditional skills in construction. Entire fertile top soil is preserved for reuse. Natural slope of the site is retained. All the lighting used is down-lighting which minimises light pollution.

Ar. Ravikumar Narayan
Architect and Landscape Architect, Ravikumar Narayan is the Founder Principal of "Ravikumar and Associates (RaA)" based out of Chennai.

RaA consults on Landscape Architecture, Master Planning and Environmental Design and has completed 1000+ projects in 27 years of practice and have been recognised with several National and International award for Sustainable Design Practices Landscape Design Excellence. Ravikumar Narayan is also engaged with many Architecture and Landscape Architecture Schools across India as BoS member, Juror and Guest Lecturer. Landscape Urbanism, Master Planning and Biophilic Design being his favourite subjects, he has presented papers on these topics in many Green Summits and Landscape Conventions. Presently he is the Chairperson of ISOLA TN and PY Chapter.

Photos Courtesy : Divine Park, Saligrama, Udipi

Figures 11: Landscaped Swamiji Court

SKETCHES

Whether at college or while actually executing a project as a professional, in my sub-conscience, there was a secret place, unexplored, yet constantly evolving. And it is from here that ideas nurtured, unknowingly, till they could be brought to fruition. Some of these led to actual architectural projects, but there were yet others which could be expressed through drawings and sketches alone. The sketches might depict the reality of a temple amidst nature unseen by the camera lens or they might illustrate castles in the air of my childhood imagination.

Many a time, until the pencil touches paper, I myself do not know what it is that will issue forth. And it is this unpredictability that I actually enjoy. The pictures created hold a magical quality for me; without the constraints of physical rules, all become a reality on a blank piece of paper.

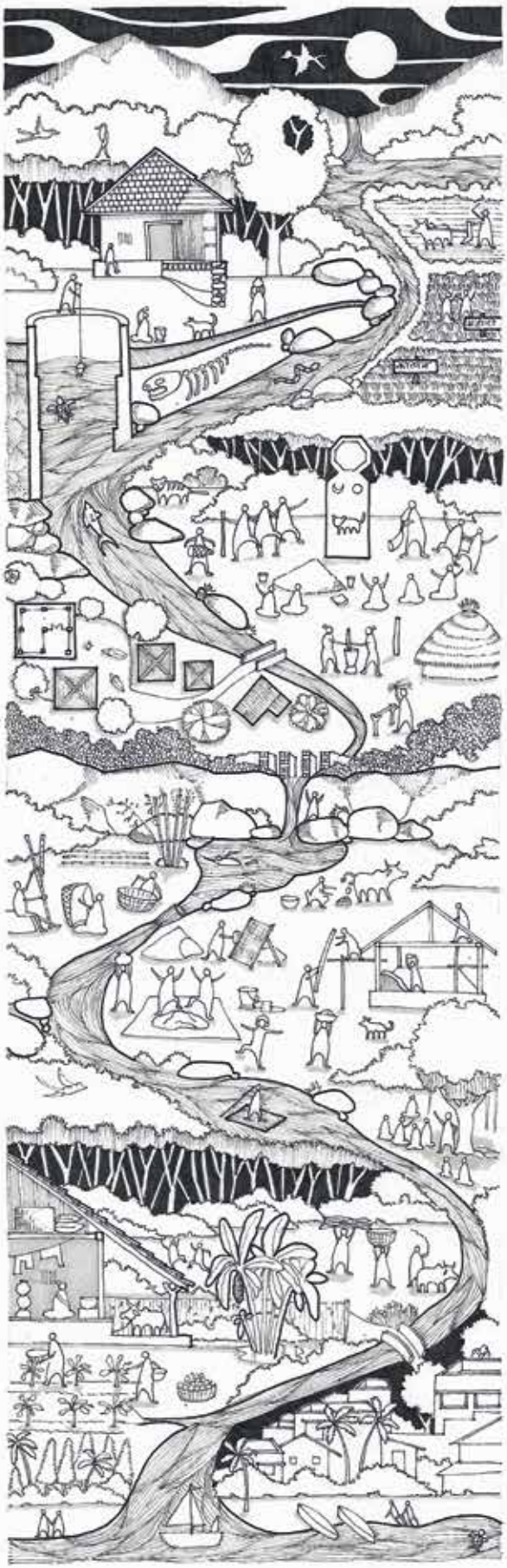
Winding rural pathways leading to my dream-house in village Palsunda

An architectural setting for the drama of a neighbourhood

The Bhagawati temple on the banks of a lake in village Dhamapur, district Sindhudurg

An imaginary built-scape on Mars – an embodiment of the unanswered questions, as countless as the stars of the Akash Ganga (Milky Way)

The Ghats – an abstraction of the solids and voids of the hilly terrain



A narrative sequence encompassing the four "ज" or "J" of Adivasi life : जल *jal* (water), जंगल *jungle* (forest), जमीन *zameen* (land), जानवर *jaanvar* (animal life) coexisting with जन *junn* (people).

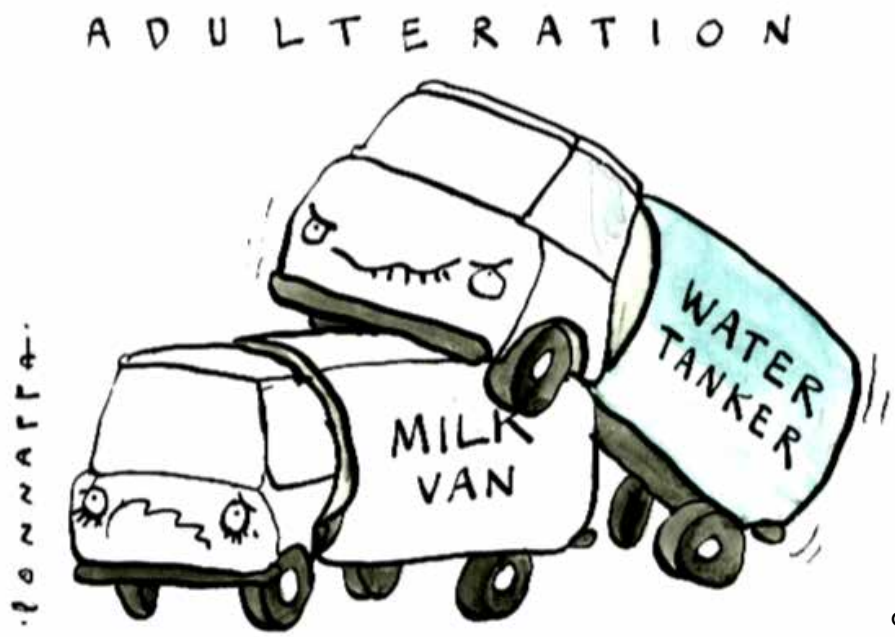
Ar. Pratik Dhanmer is a practicing architect in the Dahanu region of Maharashtra and actively works with local craftsmen for his projects. He firmly believes in their skills and expertise in local techniques. He is a co-founder of architectural organisation Design Jatra which works towards creating an ecologically sensitive built environment.

CHANGE

I woke up to a change!!!
A change that brings joy…
But followed by anxieties,
Joy of stepping out after long…
But the fear still remains strong.
For a few days, the world appeared greener…
The only change that made us happier,
There was a pause to our misuse…
Taught us a lesson to be more grateful,
Now the mornings are refreshing again…
'Cause there is an excitement of socialising,
I stepped out of my abode…
To cherish the world we built for,
The air outside is cleaner than ever…
And the sky is brighter and sunnier,
Again, the roads are occupied with motors…
And there is lesser honking all along.
The faces are covered on pavements…
But the eyes are precautious while walking,
The nooks of lanes are not crowded like before…
Because the fear is utmost in that zone.
Workplaces are following the new norms…
And the people are reluctant to handshakes!!!
Our culture of 'Namaste' to greet is back,
The parks and gardens still await the children…
So the flowers can blossom to their season,
Again our vibrant bazaars are glittering…
But many prefer not to come and order online,
The lights of nights are dimming quickly…
As everyone has to rush to their homes early,
The change is evident in the way people behave…
'Cause the wind of fear still prevails.

Ar. Chintan Shah has graduated from KLSGIT, Belgaum and completed master's degree from SCET, Surat. He is the founder and principal architect of the design firm Shodh Architects and Urban Shodh. Chintan is also a city designer and has won several competitions. Apart from design he has keen interests in writing and photography. He is faculty at GCP Institute of Architecture.

NALA PONNAPPA



Cartoon

Known to most of us as Ponnappa the cartoonist, graduated as an architect, and then changed course. Not so well known is the fact that he had an illustrious twelve-year career as an architect, having worked with Geoffrey Bawa in Chennai, Chowdhury and Gulzar Singh & C.P. Kukreja in Delhi, and a five-year stint in Nigeria, West Africa. Many architects would hanker for that experience.

He also went to Chicago, a year after graduation, to study for a master's degree, but came back home without completing it. However, he began drawing cartoons in Chicago that he would sell for 5 US dollars apiece in 1972, which must have made him a very merry student! His journey to Chicago revealed two things to him – that he was done with studies, and that he could earn through his cartoons. Perhaps, subconsciously, that's when his voyage began.

Architecture, as a practice, is a complex cocktail of design, engineering, technology, consultants, contractors, vendors, construction, budgets, certifications, payments and clients, to name only just a few of the ingredients. And we architects must negotiate through all of these to deliver a complete built space. For a puritan, as Ponnappa perhaps is, it must have been ungainly and sometimes frustrating. And so eventually, in 1980, he changed course and took on his passion that until then, had been an obsessive hobby.

The career migration to being a cartoonist was not the easiest to begin with, taking time to establish, but eventually to proliferate. He has always been a freelance cartoonist to maintain his freedom of expression and thoughts, and not be bound by the economic and ideological dictates of a full-time job. His cartoons have been varied- to cover plants, animals, society, politics, et al. Beginning with black and white on paper, he moved to watercolor and pencils, and now sometimes on the iPad. It seems that technology touches all, and that perhaps, is his DNA, to continuously change.

Does he sometimes have a change of heart with regard to his career decision? He is in a happy place now, drawing cartoons and living life on his own terms in Goa, with no regrets. But in the past, there have been times, he says, when he has thought of architecture, only to allow those thoughts to pass on . . . . .

Ar. Leena Kumar
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.

TURVO
DESIGNER WEB

Front office

Fact File
Name of Project ▶Turvo
Project Carpet Area ▶2800 sq.m.
Builtup area ▶3155 sq.m.
Location ▶Financial District, Gachibowli, Hyderabad
Project type ▶IT Office
Project cost ▶7.1 Cr. INR
Design Team ▶Manoj Wahi, Rohit Rajpal, S. Durga, Ismail, Surjeeth, Abiraman
PMC ▶New Designer Web Private Limited and JMB Associates
Project Team ▶Surendra Babu, Bala, S. Dileep, Yak Chander
Electrical, Fire & ELV Consultant ▶Synergy Infra Consultants
HVAC Consultant ▶BBN Escendo Consultancy
Modular, Work stations & Custom Furniture▶ Seating World, EURO, Soft Touch
C & I Contractor ▶JRD Interiors
HVAC Contractor ▶HVAC Engineers
Electrical Contractor ▶Listen Lights
Fire Fighting & ELV Contractor: E Zone
Networking Contractor ▶Global Networks

In order to attract and retain the best industry talent, the California - headquartered company wanted to create an office that fosters creativity, collaboration and transparency across a flat organization. The theme was industrial with a material palette restricted to bare natural materials and their substitutes, without adulteration of colour and props, was successfully achieved by polishing the existing floor screed, retaining the exposed concrete slab and columns, red clay brick tiles, matt black MS sections and mesh, naturally polished cement board partitions and timber (packing pine wood and wood substitutes).

The design layout was designed to accommodate 322 seats. This was done so that they all essentially have natural light, flexible seating for individuals and teams while punctuating the office with enough open collaboration spaces and informal work seating, leading to increased spontaneous staff interactions. The work culture and theme being "work from anywhere".

The design highlight is the flexi - open collab spaces using writing boards and cork boards mounted on MS frames and mesh moving on tracks with lockable castors. These allow for discussions in various setups and capacities and also create semi-privacy screens.

The entire office is high speed Wi-Fi enabled for flexi working, just by moving one's laptop to any location. The high tables spread across the office along the window areas allow one to stand and work whenever needed and double up as an instant informal meeting touch point. Telephone booths across the floor help reduce noise during one on one calls. Meeting rooms for three, four, eight and twelve pax allow for formal discussion and virtual meetings.

Carpeting has been laid only in closed meeting rooms for increased acoustics during meetings and calls. The acoustics in the absence of carpet and fabric panels in work areas

Left: Café & screen

Collaboration with movable frames

12 pax exterior

and open collaboration spaces is achieved with great efficiency by placing 50 mm thick open cell nitrile rubber sheets over metal mesh ceilings.

All loose furniture is custom built for a unique look, including the door handles that have an etched logo of the company. The wide use of planters adjacent to each work cluster help camouflage the electrical and data cable drops from the slab to the work stations across the office. The staff can adopt any of the natural plants of their choice and care for them creating a unique green bond between them and the office environs. This also improves IAQ.

The Town hall / work lounge has an informal café feel and by folding the entire DGU partition can be used to accommodate a full house when needed. The 64 pax café is combined with adequate recreation facilities separated by a geometric pattern screen giving it a dramatic effect under lights.

The eco-friendly approach to design comes from the minimum use of materials and elements, shading the glazing with reflective screen blinds without compromising on the views and natural light. The use of VAV in all AC ducts and VFD in AHU, BMS, stand-alone units for certain meeting areas for after office and weekend operations optimize the AC use.

Wrapping the entire periphery internally with red clay brick tiles and punctuating it with timber or polished cement finished partitions with an extensive use of glass in matt black frames and meshes all on a bare concrete floor lends a striking timeless appeal and impact, knitting the entire office together.

Café exterio

Work lounge

Designers

New Designerweb Pvt. Ltd. or 'Designer WEB' as we call ourselves, celebrates 25 years of its existence this year. Founded by four classmates and friends who joined hands while doing their M.Arch. in Industrial Design at SPA Delhi, Designer WEB, has evolved into a design practice with offices in Hyderabad, Chennai, Kolkata and Delhi with projects spanning all over the country.

Their project portfolio consists of various typologies of projects ranging from exhibitions, buildings and interiors for corporate offices, IT companies, health care, hospitality and the residential and retail segment. The main focus however has been on workspace design and office environments.

Their clientele consists of companies like Tech Mahindra, Cognizant, Capgemini, Larsen & Toubro, Reliance, Birla Group, Nielsen, Petrofac Engineering, Turvo, TTec, TAFE and so many others.

The success and growth of the firm is attributed to our ability to respond to our clients' requirements, understand and analyze them and propose design solutions consistent with the site, budget and other constraints. Our growth story has lot of repeat clients who have bestowed their confidence on us again and again and also a team of dedicated professionals who have given their best in each project.

The team consists of 60 plus professionals consisting of architects, engineers, draftsmen, and support staff.

Ar. Yogendra K. Shrivastava B. Arch., SPA, Delhi (1985) and M. Arch.in Industrial Design, SPA, Delhi (1996). He has worked with reputed architects Ram Sharma, N, Delhi. and PACE, Kuwait. A person of few words, Yogendra is a methodical worker with great ability to analyze and provide simple effective solutions. An avid runner, he has participated and completed many half and full marathons across the country.

Ar. Manoj Wahi B. Arch., GCA Lucknow (1993). Manoj had apprentice training under Ar. Hafeez Contractor, Mumbai. A warm and dynamic individual, he has been instrumental in expanding the client base and also inspiring the younger architects with his design capability and eye for detail. He is presently the secretary of the Hyderabad Chapter of FSAI and Chairman Designate of Hyderabad Chapter of IIID.

Ar. Vyom Sinha B. Arch., GCA Lucknow (1993) and M.Arch. In Industrial Design (1996), SPA, Delhi. Vyom has worked as an apprentice with Akriti Consultants, New Delhi. He is based out of Chennai and takes care of the Design Studio there and projects down south.

Ar. Rohit Rajpal B. Arch. GCA Lucknow (1993) and M. Arch. In Industrial Design (1996), SPA, Delhi. He had apprentice training under Ar. Ravindra Bhan, New Delhi. Based out of Delhi Rohit involves in projects pan India and guides the studio team with holistic design inputs.

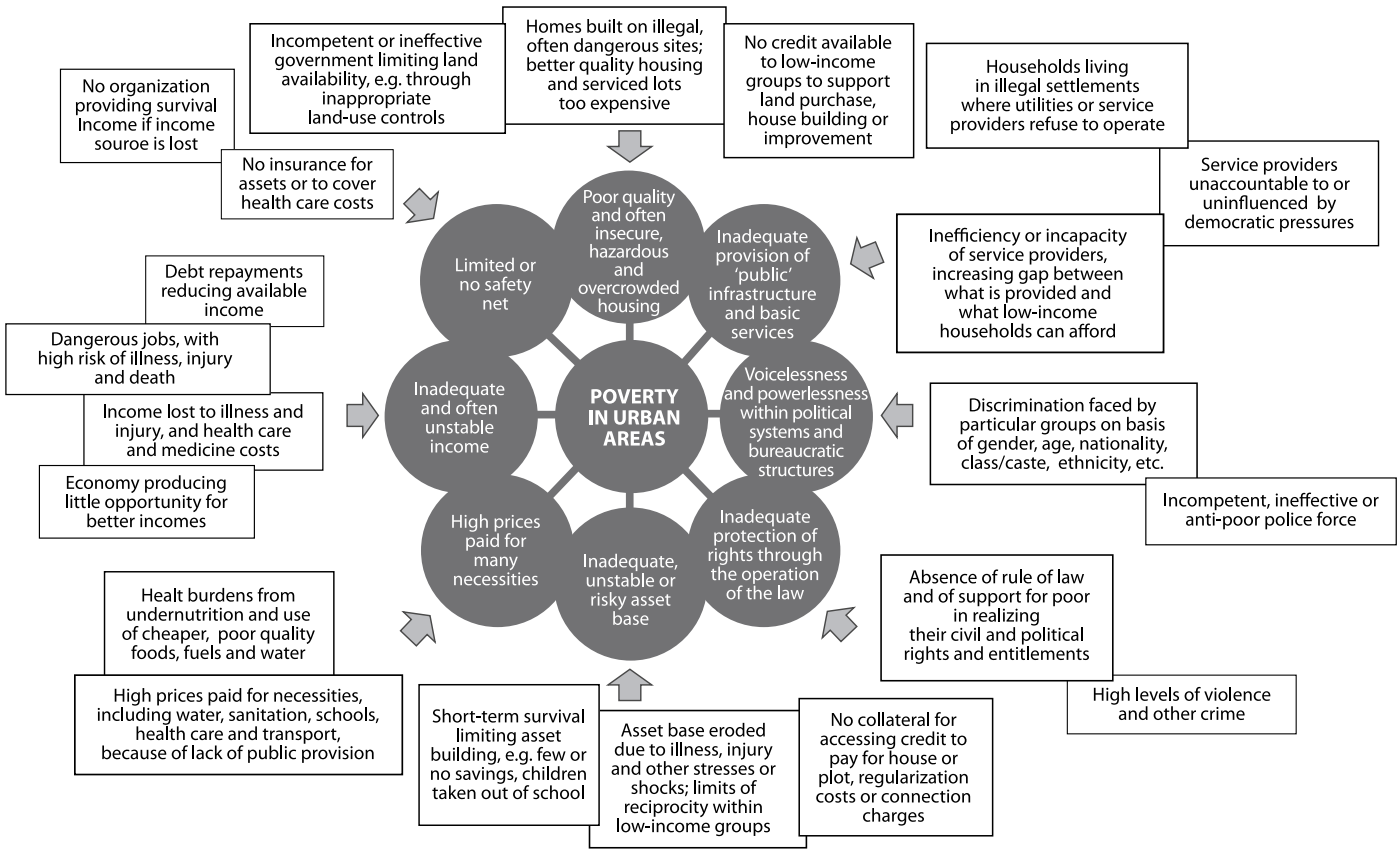


Figure 1 : Aspects and impacts of urban poverty
(Source: Adapted from Urban Poverty in Global South Scale by Mitlin and Satterthwaite, 2012, fig. 2c, p. 32)

ANTYODAYA VIA INCLUSION
RE-THINKING URBAN INDIA

ABSTRACT

Antyodaya defines the upliftment of the last person, the weakest part of society. The best theory of inclusion with limited understanding is the concept of antyodaya, priority is given to 'the last man standing in the queue' in terms of resources, facilities, opportunities, or value within the society, or, in this case, a group of people within the city who are less fortunate. This article explores why inclusive design is necessary and needs to be included in re-thinking design with the discussion on limitations and challenges in the inclusive spatial design process. This article draws an overall picture of urban areas in India and how we can re-think for the antyodaya group via inclusion. Findings provide some critical conclusions for the enhancement of design thinking and provide equal socio-economic opportunities for everyone.

Keywords: spatial inclusion, social inclusion, inclusive growth and development, antyodaya, urban planning and design

INTRODUCTION

Antyodaya combines two terms : ant and udaya, where the firsAntyodaya combines two terms : ant and udaya, where the first signifies the end and the latter means rising. Antyodaya denotes the rise of the last person. Economic planning, development and productivity expansion cannot be measured by people from the high income group (HIG) or middle income group (MIG) of any country or urban area. This can be a mere check of who is at the bottom of the social pyramid, a guarantee of every individual's minimal level of life and readiness for the national defence. Antyodaya is the elevation or lifting of the weakest part of society. In India, numerous weak sectors have historically existed in society and are still present - females, untouchables, few minority religious groups, etc. During the eighteenth and nineteenth centuries, in order to strengthen their dominance, the British exploited these inequities and the Indians' lack of brotherhood. A few zamindars and others backed the Raj openly. The result of this was that the economically weaker section got poorer and poorer not only in terms of earning but were also kept from community facilities. After Independence, the government worked on policies which were helpful for development and upliftment of the weaker sections of society. Antyodaya was, therefore, an essential element in the growth, development and autonomy of the country for the underprivileged and exploited masses and helped head towards sarvodaya or development for all.

Why Inclusive Design ?

The foremost objective behind any architectural design lies in making the user comfortable. This comfort can be expressed in terms of ergonomics, functionality or aesthetics and degree of all these three aspects may vary according to a subjective understanding of user and architect or designer. This zone of comfort designed for that person or group of people is called his/her/their home. In macro-perspective, this is also true for lakhs or sometimes crores of people, who consider any city as their home. By 2050, approximately 50 to 70 per cent of the world population will be living in urban spaces, according to a forecast of the United Nations and other esteemed organizations such as the World Bank (Lahariya, 2008). In such a scenario, it becomes the duty of the designer of spaces, to make citizens of urban spaces comfortable in their own homes. How can we make cities liveable rather than just a space of living? Can someone feel comfortable at any place if he/she doesn't have a feeling of belonging? This article is a small effort to answer these queries with a hope that there will be more efforts to make our urban spaces become more inclusive and people-centric as compared to the current thinking of resource-centric (McKinley, 2010; The World Bank Group, 2015).

Who Needs to be Included?

It needs to be clarified that when we talk about less privileged classes, it may be anyone : it need not to be only a person with monetary limitations, but includes every woman who feels unsafe while returning home alone from work at any blind spot after sunset; every elderly person who finds himself/ herself unable to do a simple task such as topping up a metro card at a vending machine or every child who doesn't have a safe space to experience the world from. All these people don't even know why they feel excluded from the city or even society which may have led them to loneliness, anxiety, clinical depression or sometimes even worse. So, whose duty is it to make the city inclusive for them? The answer may be the society at large, but executing this duty on behalf of society lies with us through designing (Chataway et al, 2014; Ali and Zhuang, 2007).

Changing Design Thinking: Resource-centric to People-centric

Let's suppose we provide a small assignment to our upcoming generation of architects or students to create a greenfield development of the city or a small settlement with marketplaces, offices, and housing facilities. In that case it is well expected that the majority of them will have a first thought to create a business center at the heart of the city. Then their priority will be shopping places, housing for HIG, MIG and at last LIG respectively. Have we ever thought about how this thinking line is adopted by the majority of students? The answer lies in the very basics of our psychology, which is more tilted towards resources or inclined towards materialism, not society or people-centric. Firstly, we need to change this. In a similar way, for the last decade, we have had discussions about making our cities sustainable extensively but if we see the transportation system old or new, pedestrian/ cycle or even public transport of any city, the answer is no! This shows our collective inability and combined failure to persuade, advocate and propagate the very necessary concept to our policy makers and masses that they need to change their lenses so that they understand how to perceive urban spaces and also how they need to be perceived.

Antyoday: Concept for Inclusive Design

It should be our collective effort to rethink and even redesign urban spaces, if need be, and make them inclusive. The best theory of inclusion with my limited understanding, is the concept of antyodaya where priority is given to 'the last man standing in the queue' in terms of resources, facilities, opportunities, or value within the society, or in this case, groups of people within the city who are less fortunate. Designers need to first prioritise the needs and expectations of this person from the city system or urban space in consideration. This will lead the designer to minutely changing the design and facilitate the basic needs of the person who is the least capable in terms of finance or physical capability.

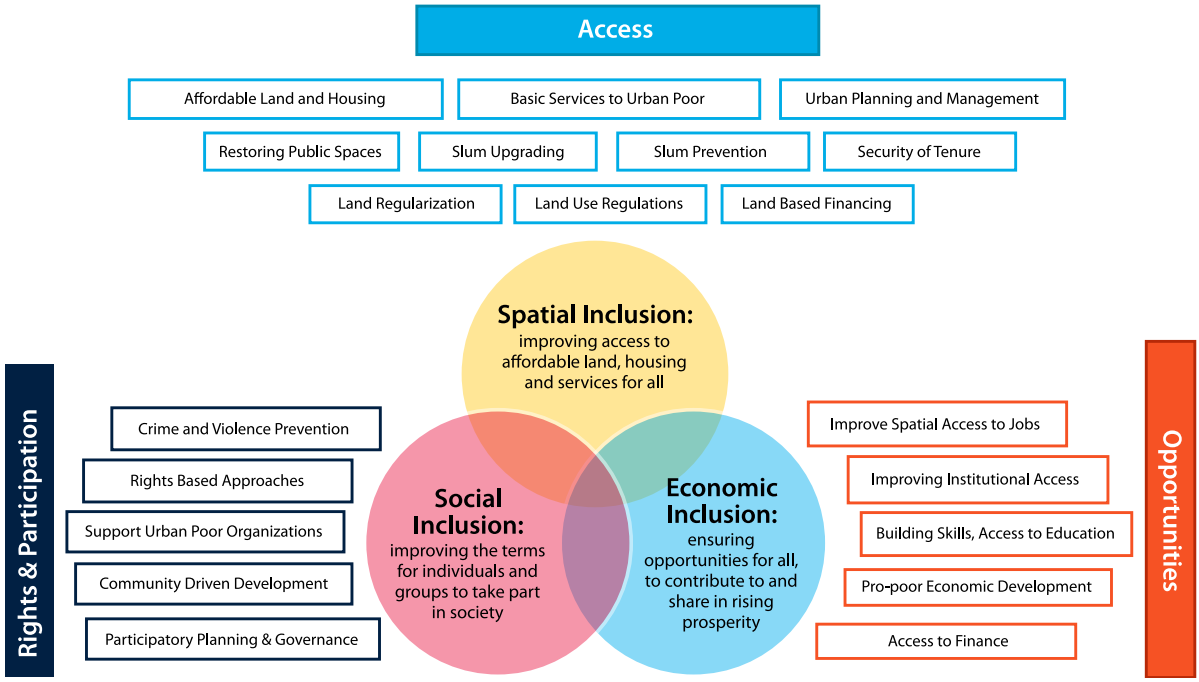


Figure 2 : Correlations and aspects of inclusion
(Source: Adapted from World Inclusive Cities Approach, article by World Bank Group, 2015, fig. 2, p.13)

Inter-linkage of Social and Economic Inclusion with Spatial Inclusion

The spatial aspect of inclusion can't be seen or considered separately from the other two aspects of inclusion: social as well as economic inclusion. From the designer's point of view, it may be said that spatial exclusion leads towards economic exclusion and further pushes into social exclusion. Focusing only on one aspect of inclusion will not be enough but understanding the close inter-linkage of all three aspects of inclusion, assures that working towards one aspect will surely improve the moralized section in two other aspects too (Ramos et al, 2013; Ranieri and Ramos, 2013).

For urban areas or cities, spatial inclusion is the cornerstone which ensures equal reach to basic amenities such as transportation, housing, and economic opportunities as well. Land tenure, land use planning, and land-based financing are some of the tools that could help in achieving inclusion. Similarly, housing and infrastructure provision also has a role in ensuring inclusion in addition to its importance for economic growth. While services such as water and sanitation are important for ensuring public health, services such as transport are also important due to their impact on mobility, asset building and the community's image (World Bank Group, 2015).

Antyodaya in Urban Design

Few ideas which may seem vague or a little off-beat may lead us towards a solution. If we provide housing to the poorest section of society in upcoming city development projects or in future projects at city centres, what is the implication? There may be many disagreements, but we will have a discussion here with a different point of view:

• Firstly, it will surely reduce the cost of transportation for them, since in the case of satellite settlements, it takes hours and large portions of income in daily transit for work.

• Secondly it will give them a feeling of empowerment and being part of society in a more inclusive way instead of a feeling of worthlessness.

• Thirdly, being at the centre of society and the development process as well, with time, even with their small entrepreneurial efforts, whether it is a movable shop of any basic needs or food, a respectable income would be ensured.

• At last, it being at the centre, the political representative will keep providing best infrastructure, basic amenities and keeping anti-social elements in check. I

These measures will ensure the uplifting of the poorest section of society in a sustainable fashion which will be the application of antyodaya in the true sense.

Although India is a young nation with more than 800 million people within the age group of 18 to 35 (Census of India, 2011), the same data gives us a glimpse of a future where a large section of society will be aged just as Japan or European countries. So, keeping the futuristic scenario in mind; we need to include the marginalized section which may be elderly people. It may also include children; people with low representation in the population such as people of different races, few caste groups or even any social minorities who may have different outlooks in terms of attires or visual identity. To counter the issue discussed above, we need to make people safer, open for interaction and access to mingle with the rest of society. This can be done with more open spaces, parks, and places where every section of society can socialize. It will create an ecosystem where children will develop a wider acceptance for differences, elderly people will share their day-to-day issues and people will have a chance to closely observe and understand the rest of society. Although the idea of open interactive spaces is not a new one, designing such places will surely have a long-lasting impact on society in an affirmative manner.

The last section of society which may have a feeling of exclusion is the constituent 50 per cent of the of population : it is a general phenomenon and a sad reality of our society that while claiming to be the fastest-growing economy in the world and the largest democracy on earth, we haven't yet created a situation in society where women feel as safe as men in common public places. It might be true that education and attitudinal changes are required to overcome this issue but there is also a role for designers here. It is generally observed that fear develops when a person feels unsafe. It mostly happens in the absence of light or where general movement of the public is missing. This should be properly countered with design. Regarding this, there is one more important aspect that generally people, regardless of gender, feel unsafe in. This is not as much in the working space or at home or even during transportation, but it is the last mile distance from transit to home or transit to workplace, which most gives a sense of insecurity. It might be due to poor supportive infrastructure, street lighting or the last mile connectivity, apart from the law and order situation for which administration is to be accountable.

Limitation and Challenges in Inclusive Spatial Design Process

The two most pressing concerns regarding making cities inclusive are : first is that inclusion is a multi-faceted issue and all the aspects – spatial, social, and economic – are interlinked. Experiences tell us that a divided approach to curb the lack of inclusion doesn't work efficiently. To answer this, we, as designers, need to be more vocal as well as passionately advocate inclusive policies and practices for making our cities a home for every person living there.

Currently, a census is conducted in India every ten years. This is the only tool that showcases every parameter necessary for planning at the city level. It clears the picture about populations and various attributes related to it including socio-economic status. But the rapidly changing scenarios and steep growth in urbanization make it difficult to understand ground realities. Despite progress in technology and related advancements, it hasn't yet helped on this front. When we work towards the upliftment and inclusion of deprived sections of communities, we often find that they are "invisible" due to lack of article-work, correct information and sometimes authorities don't even consider them at all while planning for development. This leads to a condition where formal government articles or city plans don't pay any attention in this direction. So as a design community, we also need to work towards this before designing or implementing our designs for any urban space.

If and only if, we successfully implement the theory of antyodaya in our spatial planning and design thinking, then we may be able to fulfil the dream of Gandhiji and Deen Dayal Upadhyay, two great political thinkers of modern India, who always advocated Antyodaya se Sarvodaya.

CONCLUSIONS

Few factors that we need to change and a few need to be redefined. This article recommends the following key points:

a Change design thinking from resource-centric to people-centric.
b) Try to follow the concept of antyodaya and prioritise the 'last man standing in the queue' while designing urban spaces.
c) Make sure to provide equal socio-economic opportunities to marginalized sections of society.
d) Keep the lowest strata of society at the centre of design.

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Ar. Avitesh is an Assistant Professor at Sushant School of Art and Architecture, Gurugram. She has won the Young Achiever Award in Architecture from A3 Foundation, Chandigarh in 2020. Her areas of research include new trends in construction details and materials, renewable energy systems and black architecture.

WORLD ENVIRONMENT DAY 2021

PLANNING STRATEGIES @ IIA LOOKING BEYOND

Architecture and planning, across generations, have always faced transformation in planning processes- both in urban and rural contexts in terms of natural processes and natural resources. While experiencing this change in the built and natural environment, we as architects face challenges of multi-dimensional biological ecosystems due to which human beings survive. In today's contemporary world, measures to prevent all the losses due to degradation of existing ecosystems in various climatic zones becomes very critical for architects and their role while analysing and understanding impacts of climate change around our built forms.

The recently-held celebrations by the National Council of The Indian Institute of Architects, various chapters, centres and sub-centres reflected the sensitive approach and concerns that architects practice through their review, re-adapt and re-visit strategies of ground realities along with the emerging quality of architecture and the ecosystems within. All the initiatives organised by the members of the Indian Institute of Architects and the fraternity, focus and emphasize the planning guidelines and the strategies in the field of biodiversity.

Preservation and conservation of this agenda at IIA, to upgrade existing restoration policies towards the ecosystem and also propose appropriate strategies for the futuristic and sensitive guidelines through architecture practice.

All above roadmaps initiated by architects cannot be restricted only to celebrate the World Environment Day with a specific theme, but has to be an integral part of architectural practice and architecture education.

Architecture practices, both traditionally vernacular and digitally oriented, and contemporary typologies need to be focussed towards ecosystem restoration as a part of the new normal post- 2020. Climatic disasters, sustainable concepts and ability to be resilient in all types of developments needs to be prioritised by architects at the grassroots level context-based analysis and interventions through environment-friendly planning. Every built environment has a challenge when it gets inserted upon a natural environment, during which the role of architects becomes very significant, with their honesty influencing the comprehensive master planning and micro-detailing through architecture.

Ecosystem restoration does need innovative and futuristic guidelines. Do architects simply restrict all these restoration policies only to get commercially-driven brownie points as per clients' requirements? Or does architecture and planning adopt a sensitive honest approach way forward.

The ecosystem restoration and its purpose has to meet the complex challenges by providing a platform for environmental and social scientists, planners, designers, policy makers, developers and communities to unite and to research and design new ways of improving the ecological performance and quality of life in cities and towns worldwide.

As we begin to understand the true complexity and holistic nature of the earth system, and begin to appreciate humanity's impact within it, we can build a new identity for society as a constructive part of nature. This is ethical. This is optimistic. This is a necessity.
This is what it means to "design with nature".
Ian L. McHarg, Design with Nature

Building materials, sustainable strategies, innovative emerging technologies across design, execution, operation and maintenance timelines - all need to be sensitively strategized in our designs to make a difference. Impacts of natural resources, interventions of new alternative forms of energy for our projects through user friendly infrastructure and technologies all pose a wider thought-provoking challenge to architects in understanding real objectives of creating trendy green buildings.

On this World Environment Day, let's plan our built environment with a focus on creating a good relationship with nature; let's address the liveable aspects of being on earth.

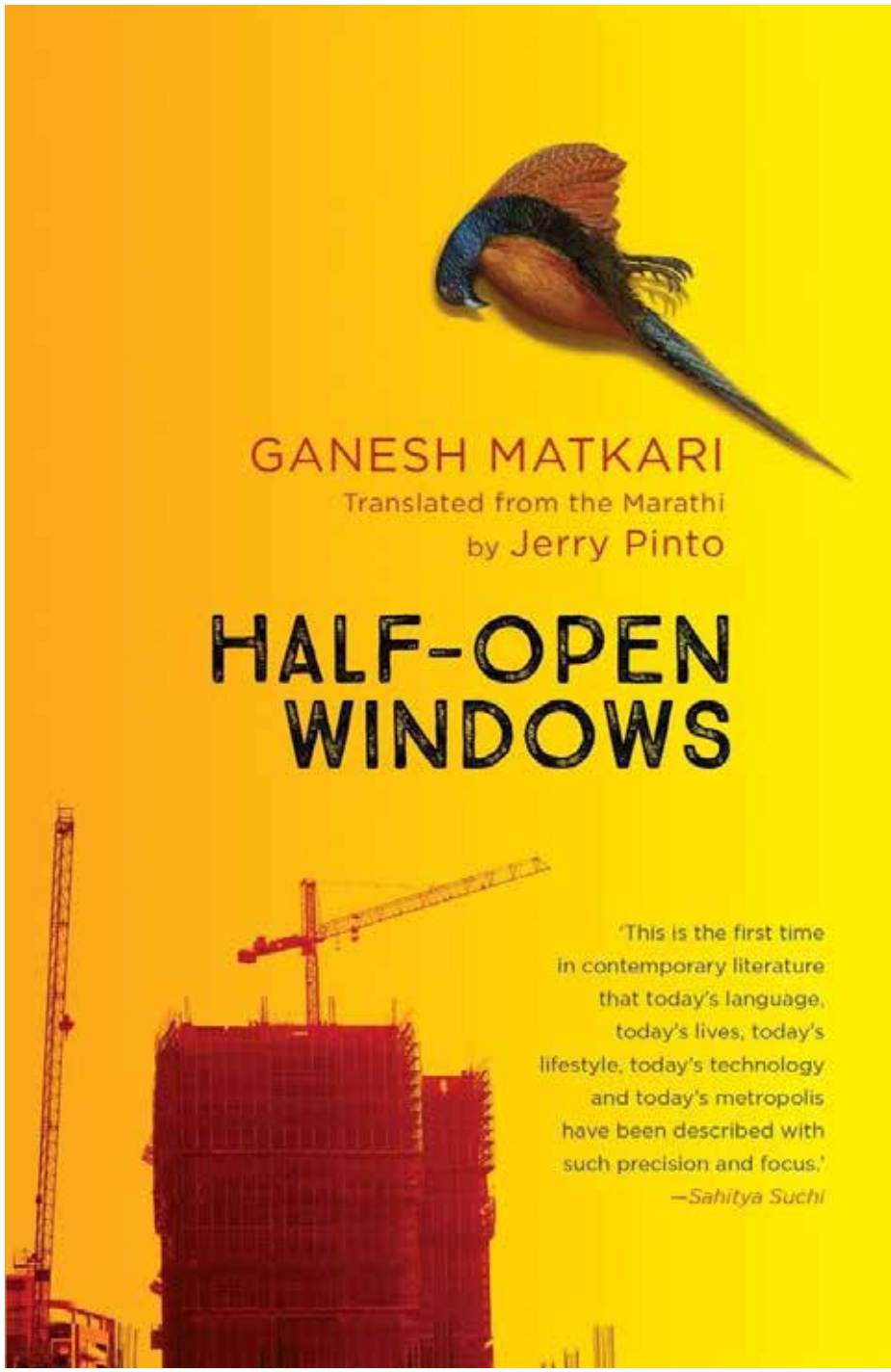
We for nature or nature for us is always going to be a challenge. Let us move collectively towards restoration of the ecosystem with real HONESTY, which will do justice to our natural resources for the generation next through Architects.

Ar. Manguesh R. Prabhugaonker, along with B. Arch. degree, has a Masters 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 Member of the IIA National Council Member. He is also an Expert Member of Goa state Wetland Authority and a Senate Member at School of Planning and Architecture, New Delhi. He is also a visiting faculty at Goa College of Architecture for Masters in Architecture.

BOOK REVIEW

HALF OPEN WINDOWS BY GANESH MATKARI

(Translated from Marathi by Jerry Pinto)



Fact File
Book Title ▶Khidkya Ardhya Ughdya
(Original in Marathi)
Half-Open Windows (Translated to English)
Author ▶Ar. Ganesh Matkari
Translator ▶Jerry Pinto
Publisher ▶Speaking Tiger Publishing Private Limited, New Delhi
Year of Publication ▶2014 (Marathi) & 2017 (English)
ISBN-10 -9789386338358
ISBN-13 - 978-9386338358
Language ▶Marathi & English (Tr.)
Genre ▶Literature & Fiction
No of pages ▶208
Dimensions ▶20 x 14 x 4 cm
Type ▶Kindle & paperback
Available at ▶amazon.in, flipkart.com and others

Half Open Windows is an interesting narrative which unfolds through a variety of protagonists having overlaps in their lives. These protagonists range from children to adults to seniors from different walks of life giving us limited glimpses and their points of views. It is quite like in the world of architecture where the same things are seen differently from different perspectives. None of these are either right or wrong, it's just that they coexist. What I find most enthralling in this story is that the characters, the situations and the language are very contemporary and what I come across every day. The book gives a meticulous insight into the psyche of the children, the adults, the 'namesake' hero Sushrut and heroine Sanika. In fact, I think that the title is like a literary photograph which captures a moment, an incident, a happening and then there is a reference of it in another narrative, which makes it very true to life.

We have all read *Fountainhead* as students of architecture and have often come across situations where we have to choose between being Howard Roark or Peter Keating and go through the agonizing dilemma on a daily basis in our professional life. This book opens up and shows the shades of grey along with the black and white. It does not pose on an intellectual high ground nor does it take the pessimistic view point. All it does is put facts as they stand in their relatable perspectives. There is an undercurrent of the systematic decay of the grandeur of old Mumbai giving way to the rash manipulation of people, the bye laws and the matter-of-fact acceptances. It makes me wonder if a city influences its inhabitants or is it the other way round.

The cover of the book is a striking yellow orange with an image of an under-construction building and a crow pheasant *(bharadwaj).* The cover is also representative of the changing cityscape around us which we are all experiencing and the small subtlety of death of the rare. It makes you question beliefs of whether a bird which is considered a good luck charm and associated with fulfillment of wishes is really so? Does the change in perspective change the event?

It is refreshing to see a plethora of unlike characters like Sushrut, an aspiring writer and a stay-at-home partner; the architectural firm of SNA with Sanika, an ambitious, honest but naïve founding partner; Niranjan the corrupt and ruthless partner, ready to bend the rules and ready to risk it all and Anant the silent and reticent partner; Joshi Kaku a lonely widow contemplating a move to US to stay with her son; Ramakant, a young student of architecture craving for attention; Swarupa a NGO worker swayed to be a whistle-blower and wanting to do right by her old friend and the entwining narrative from an award winning project to the censure of morality, to forging of connection, and all of this coming together in the mundane routine of an urban environment of Café Coffee Days, airport lounges, press conferences in the Marriott hotel to gloomy rainy days and the flooding so common to the urban upper middle class canvas of Mumbai. Interestingly each of the chapters is narrated in the first person by one of the characters and gives a sense of a complete story with a sense of relatability which connects with the reader. The incessant references to the nuances of Mumbai, its social fabric, frustrations stemming from the ever-increasing crowds, perpetual story of construction of infrastructure, coexistence of slums adjoining large skyscrapers bring to life the city with the multitude of characters who inhabit its streets. The story is truly a roller coaster ride of flashbacks taking leaps into the days of architecture school (which I could relate to), complex human behavior and relationships, love, human aspirations, manipulation and a storyline that is riveting, with a narration that is matter-of-fact. The book is compelling enough to be unputdownable once you start reading it.

Ganesh seems to have unfolded the lives of these characters and in turn painted layers after layers of Mumbai as though it has its own living breathing soul. Being an architect and a film critic, his narrative has a visual quality in its telling. He has an acute sense of observation in describing people and places in general which makes him an astute story teller.

This truly unfolds Megalopolis Mumbai!

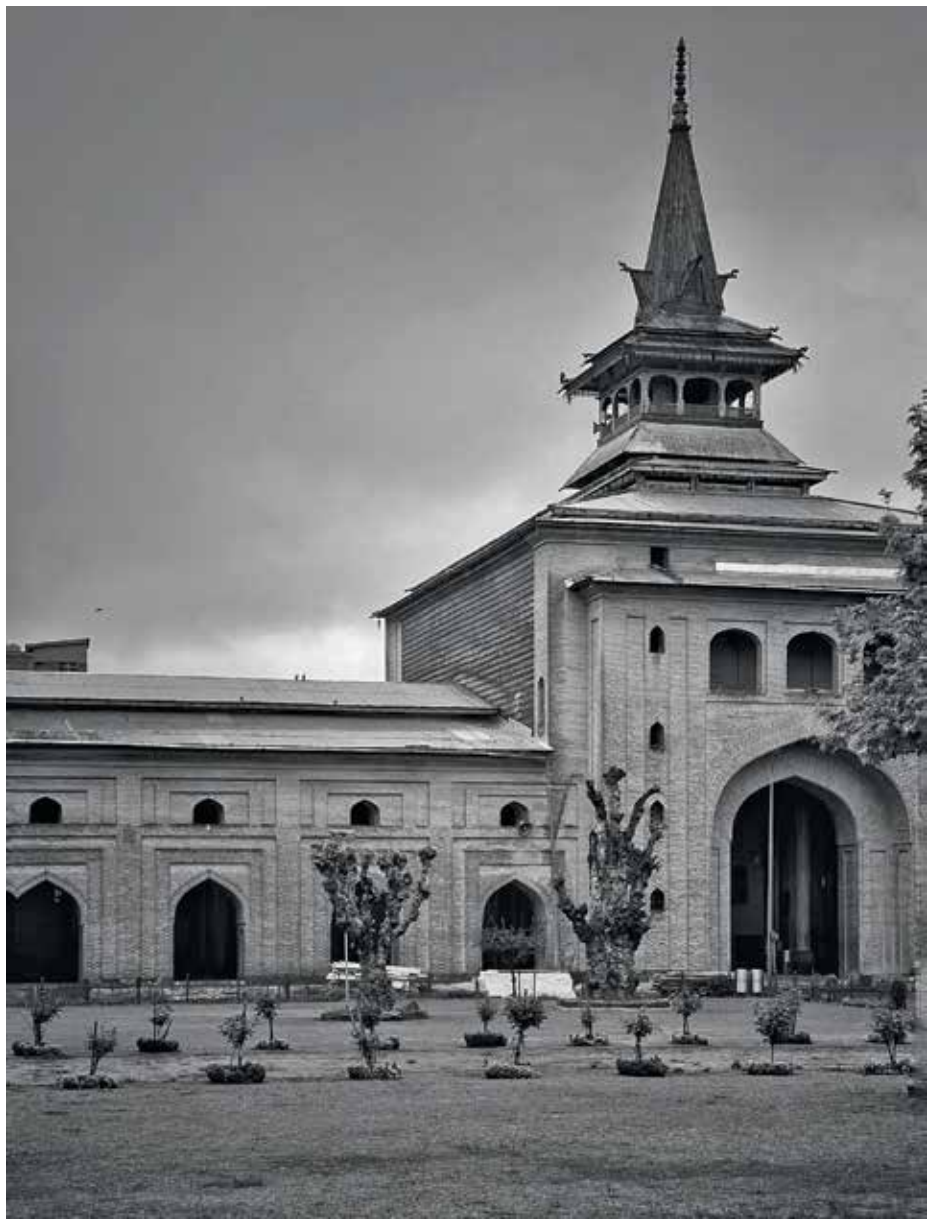
Ar. Ganesh Matkari graduated from Academy of Architecture (1993) and started practising primarily as a landscape architect, while pursuing his interests in writing fiction as well as film criticism. Recently, he has also ventured into screenwriting. He has co directed a national award winning Marathi film Investment and being a notable film critic, regularly lectures in film appreciation courses. He has authored a short-story collection, Installations and three books of film criticism, Filmmakers, Cinematic and Choukatibahercha Cinema. He co-directed the national award winning Marathi Film, Investment and directed a short film, Shot, which premiered at the Indian Film Festival in Stuttgart, Germany and has been shown at various film festivals since.

Ar. Ajay Ghag graduated from Academy of Architecture (1993). He has successfully tried his hand on product design. Set design and logo design. Thought Projection, his design studio work in the design disciplines of architecture and interior design executing residential, commercial and lifestyle projects since 1998.

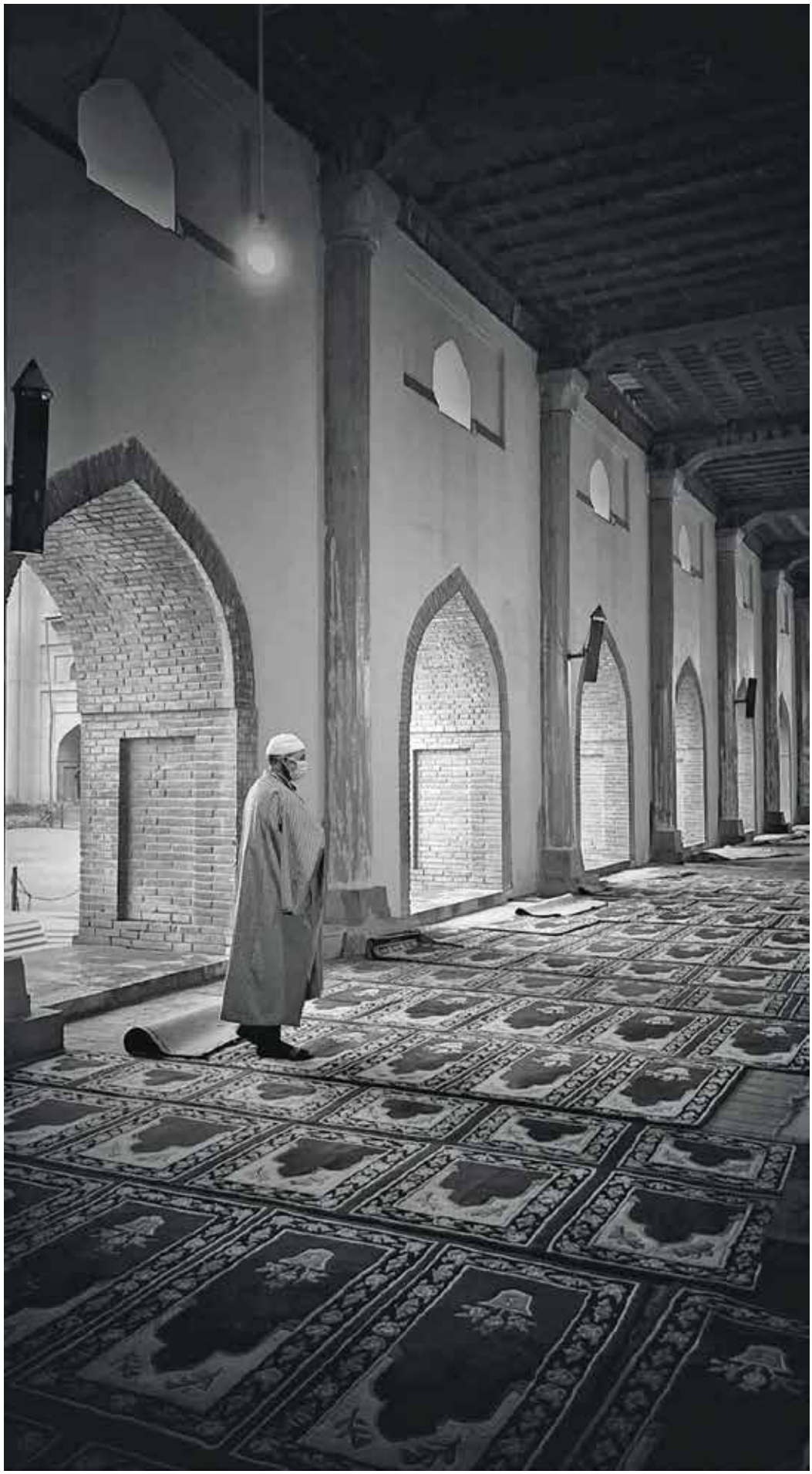
PHOTO ESSAY

STROLLING THROUGH THE OLD STREETS IN KASHMIR

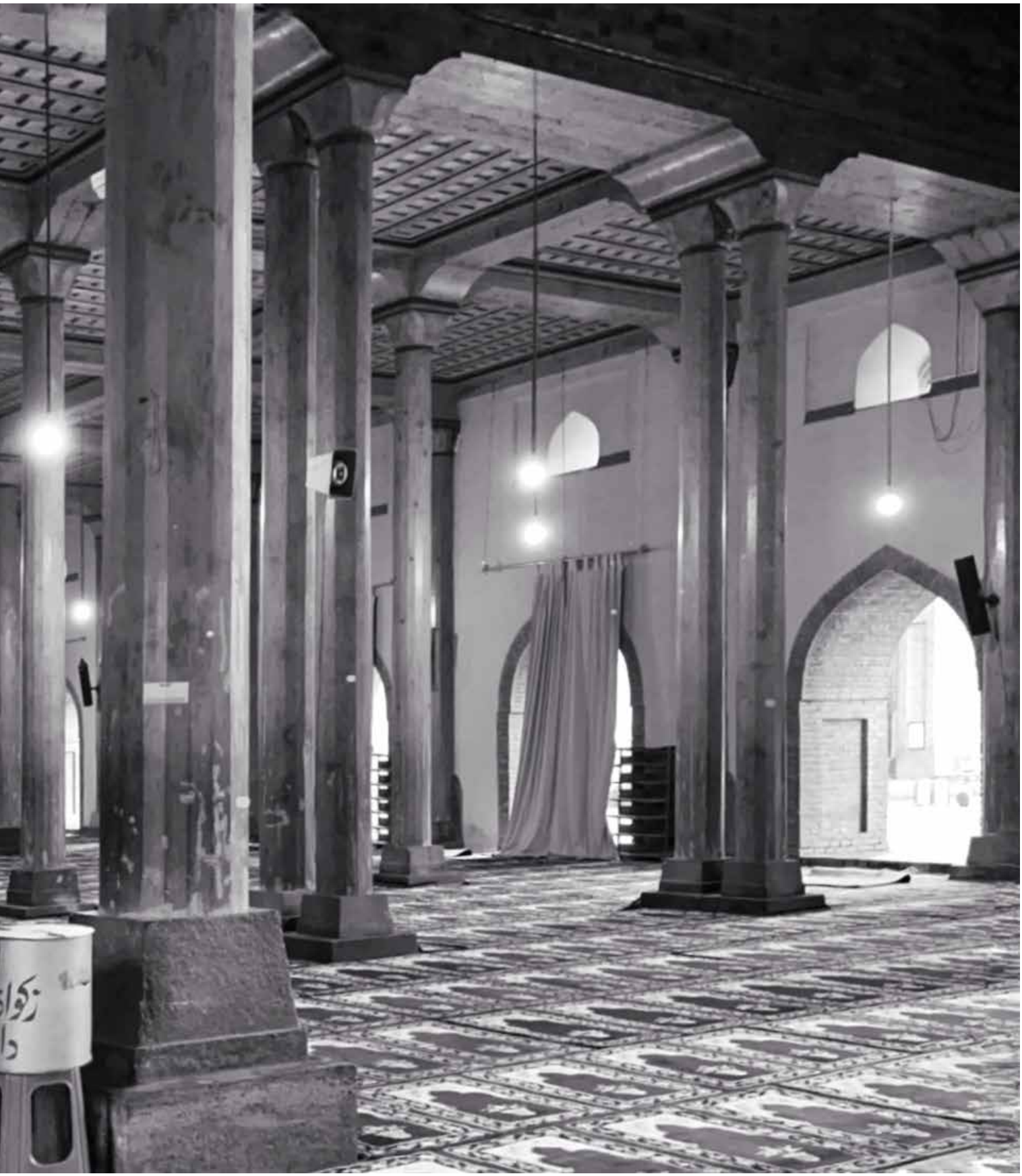
Ar. Nimisha Shaijal graduated with a Bachelors in Architecture from College of Engineering, Trivandrum and Masters in Urban Design from School of Planning and Architecture, New Delhi. She is the Principal Architect of her collaborative studio practice in Calicut called Design Ashram (DAC) and is currently a visiting studio faculty at Avani Institute of Design, Calicut. At DAC, Nimisha leads projects in urban regeneration, building restoration, and rehabilitation. As a solo traveler, she has explored many national and international destinations with keen interest in learning its history, the local people and the cultural values and tries to communicate her perspective through the images.



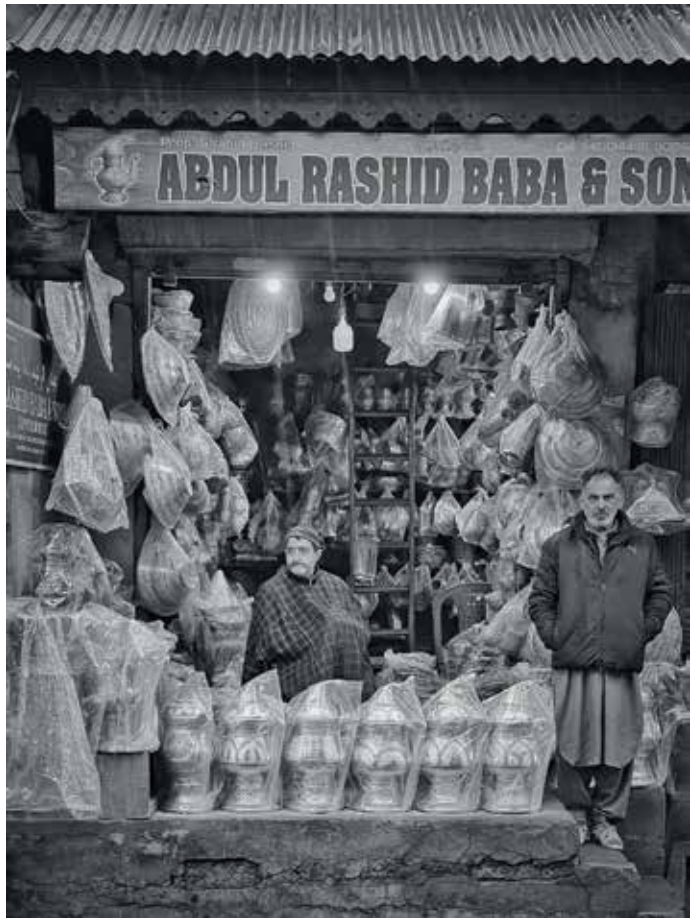
The architectural style of the Jamia Masjid is inspired by the Indo-Saracenic style and also carries similarities to Buddhist pagodas.



The courtyard is made up of a pointed arched, brick arcade which lends a solemn atmosphere.



The minars are connected by spacious halls, whose principal feature is the vast array of single piece wooden deodar columns supporting the wooden ceiling.



Top Left to Right The court is enclosed by arched cloisters covered with two tiered sloping roofs. ; The old streets gleaming with large beautiful samovars, intricately carved trays, and bowls, reflecting the glamour of this fine art.

Bottom The principal features are the four minars, covered by pyramidal roofs. The central open space is similar to the pattern of Mughal gardens.

The multi-domed tomb was built within an ancient graveyard. The layer of bricks and the basement made of stone has followed two completely different architectures.

Shwedagon Pagoda

BURMA BURMA

A gift for my fiftieth birthday, Burma Chronicles, a graphic novel by Guy Delisle whet my curiosity once again for this country, that I had read of only in the news until Amitav Ghosh's Glass Palace brought it to life, a few years ago. But the actual trip to Myanmar began to take shape when I met a college friend at a conference and we decided to spend New Years' Eve (2019-20) together with friends. We were three families that decided on going together and just as I had bought our tickets, the other two dropped off ! That is when I realised that making plans with friends who are a couple of years apart has its risks. We were an empty nest while the other two had college or school-going children and understandably, academic schedules took over. So that made me and my husband, lovebirds going on another honeymoon to an exotic land!

What struck me about Myanmar is how religion is completely intertwined with every aspect of life - be it architecture, politics, what you wear, what you eat, your education; in effect religion may be equated to life. While one may say that is true for many of our countries in this region, it is definitely different and a lot more intense in Myanmar. This is possibly because they were a totally introverted nation until recently, with no access to modern trappings such as the television, internet etc. The British rule and the wars that preceded and followed resulted in Myanmar being divided into territories that have their own governing bodies and even armies. They continue to grapple with this and look for ways to unite. The recent coup is a case in point.

To prepare myself, I read Glass Palace a second time and followed it up with A Savage Dreamland by David Eimer. While it did turn out to be a dreamland, we were fortunate to see only the softer side of this culturally rich country.

We began with our first day in Yangon and the sheer size of the Shwedagon Pagoda, said to be one of the oldest pagodas in the world, amazed us. The reflective gold covering made it difficult to walk around without sunglasses. Interestingly the place was teeming with locals who were making their offerings or were praying at the corner that was symbolic of their day of birth.

Not many may know that the burial site of Bahadur Shah Zafar, the last Moghul Emperor of India lies in Yangon. It is not a coincidence that while he was exiled in Myanmar and buried unceremoniously when he died, King Thebaw, Queen Supayalat along with their daughters were banished from Mandalay to Ratnagiri in India - a strategy of the British to make their followers forget them!

The visit brought with it poignant reminders of Bahadur Shah Zafar's poetry that I had read in school and later as well, Le udi khakh baha le gya sailab mujhe in his own words probably point to how the British rule changed things. Hence, I followed our trip up with The Last Mughal by William Dalrymple.

Our next stop was the Kaba Aye Pagoda and the Mahapasana cave. We were lucky to witness the final oral examination of monks - hundreds of them sat, one each reciting holy texts from memory to a teacher who was their examiner. The hall reverberated with mesmerising chants. The oral and written exams are held over a period of 33 days in December every year and have been conducted since 1948 by the Burmese government. Candidates are expected to recite over 2.4 million words with correct pronunciation and smooth flow, and transcribe over 200 texts from memory. The first monk passed all levels in 1952 and even today the number that have achieved this feat is below 20. And we complain of learning by rote in our schools in India!

After a quick stop at the Kandawgyi Lake and a peep into the replica of the Royal Barge in Mandalay, we were on our way to the airport to board a flight to Bagan. We also had our first taste of Khow Suey as it is meant to be and not how we have come to know it in India.

Bagan is full of temples and stupas. Stupas contain relics of Buddhist monks and are usually used for meditation while temples are for religious activities. The Shwezigon Pago-

Royal barge at Kandawgyi Lake

da was our starting point and then we went on to the Wetkyi Cave temple to see the beautiful Jataka paintings on its walls.

Our guide gave us a detailed tour of the Ananda temple, one of the largest. Through the paintings, murals and sculptures, he took us on a tour of history with anecdotal pointers on how the hairstyle of the Buddha changed from period to period - curly hair due to Greek influence to straighter hair in more recent times. The philosophical and the spiritual narrations by the guide made me read Siddhartha by Herman Hesse again after my return and I also went and splurged on the 8-volume graphic novel series The Buddha Box by Osamu Tezuka. This was certainly a special addition to our library.

While walking the streets of the small town of Bagan, we came across Kayan Lahwi women who wear brass coils on their neck, although they are originally from the Shan region. One of the interesting reasons given by our guide for these coils is that they are meant to protect them from tigers that attack at the neck. The other reasons are of course attributed to beauty and elongating their neck.

Nothing quite prepared us for Inle Lake, which made Tonle Sap of Cambodia pale into insignificance. I am thankful that we finally added this beauty to the itinerary. Around an hour from the airport, we reached the jetty and got into a narrow boat and the magic began. We were first in the narrow lanes

The Wetkyi Cave temple

A fisherman in action at Inle

A weaving factory on stilts

Sunset at Inle

seeing life on either side until we reached the wide expanse of only water all around with fishermen performing stunts, or so it could seem, as they steered their boats and cast their nets. They do have a unique and picturesque way of fishing indeed!

We were being tempted by our guide to visit factories of silver jewelry, cigars, etc. but we chose to stop at a weaving factory where we got to see lotus stem fibres being woven into fabric. These are small scale factories, all on stilts. We got to our hotel, Sofitel - one of the finest that we have stayed in, more because of the setting.

Sitting on the deck and watching the surreal colours of the sunset that evening will remain one of my most treasured memories. The Master-Artist seemed to have saved his masterpiece for Inle. The setting and rising of the sun always have the power to move me and that evening with the setting of the sun at Inle, the New Year and a new beginning had already dawned for me.

Little did I know then that a few months down the line, Myanmar would go through a political upheaval once again. Added to that, our world would be in the throes of a pandemic that would make such memories invaluable. It already does seem to be a lifetime ago and it appears that it will be some time before such uninhibited travel becomes a way of life once again.

Sunset at Inle

A graduate from the School of Planning and Architecture, New Delhi, **Ar. Gita Balakrishnan** is the founder and curator of Ethos, an organisation focussed on learning. She is also a trustee of the NGO AVAS, Association for Voluntary Action and Services and IHCNF, Indian Heritage Cities Network Foundation.

ARCHITECTS CORPORATE SOCIAL RESPONSIBILITY (ACSR)
THE SYMBOL OF HONESTY

Top Left As a part of IIA Calicut Centre's Corporate Social Responsibility (CSR) project, the DAC Team in collaboration with PRISM (Promoting Regional Schools to International Standards through Multiple Interventions) restored the Karapparambu School. Being a monumental landmark nearing its golden jubilee of existence and being a government project as well, the team came up with restoration of the same, playing it fair to the structure and nature. Followed by this school, at present IIA Calicut Centre is involved with more than ten schools and other public projects in the region. Setting this as a benchmark the state government has identified over a hundred schools to be renovated.

Bottom Pazhayannur palace- A small palace attached to the pazhayannur temple ; used by the members of the Cochin Royal Family while visiting the temple is historically connected to the Family. Before settling in Kochi , the members are said to have been in Pazhayannur briefly as they moved from Perumbadappu in Malabar. Around 250 years old, the structure was set for demolition and the tenders for this were allredy in place. Due to the timely intervention and with support of Archeology Dept and the District Collector, a stop memo could be issued which halted the demolition. Currently steps are in progress to bring back the palace to its former glory... (Vinod Kumar MM, Chairman IIA Thrissur, convener INTACH Thrissur)

The word social responsibility is not a new terminology. The Google meaning says that it is an ethical theory in which individuals are accountable for fulfilling their civic duty and the actions of an individual must benefit the whole of society. In this way there must be a balance between economic growth and the welfare of society and the environment.

Corporate social responsibility is a type of International business practice, self regulation that aims to contribute towards societal goals of philanthropic activist or charitable nature by supporting or volunteering for ethically oriented practices.

The Corporate houses started this concept to create an ethical or value based business practice and dissipate the same to their employees for better productivity and as an alternative method for creating job satisfaction by "DOING THE JOB FOR A CAUSE" theory. Governments across the Globe has found this as an excellent method to include private or corporate houses partner with the development process .Corporates also found this as a good opportunity for better "Brand building "and "Social connect". It also helps them as an alternative for merely paying tax, thus becoming win-win situation for both parties. Governments announced tax exemption for corporates doing CSR activities.

In the year 2010 a standard was derived following several years of negotiation between many stakeholders across the world. Representation from Governments, NGO's, Industry Partners, Consumer groups, corporate houses, labor organizations were involved in the development to mark its international consensus. The most popular of these standards are ISO 26000:2010.

ISO 26000:2010 provides guidance for those, who recognize respect for society and environment is a critical success factor, as well as being the proper thing to do. It is also looked upon as a way of assigning the commitment of an organization to sustainability and its overall performance.

All sections of society accepted the good deeds and importance of having values in business and the Brand value it carries around the society. The profession of architecture is also got attracted to this ethical theory and associations of profession and individual practices started adopting the CSR format. In the year 2012, ARCASIA (Architects Regional Council of Asia) adopted this as one of its major verticals and started deliberations to develop a charter for its functioning and guidance. In the year 2015 a charter was formulated, adopted and approved in the 38th forum of ARCASIA.

Top & Bottom CCC building having the biggest permanent LOGO & name plate of IIA on the public building center of the city On completion of 100 years of IIA The Indian Institute of Architects - Saurashtra center under chairmanship of Ar. Mauktik Trivedi decided to give back to society. The IIA team decided to build the Command & Control Center (CCC) project for a safe and secure society & donated it to Gujarat police. CCC building has 2 floors, 4000 sq.ft & 10000 sq.ft landscape area with an overall Expenditure of Rs 2 crores. Architecture, Interior & landscape of CCC project designed, executed & funded by the IIA Saurashtra & their sponsors.

THE CHARTER
2015
General

[Corporate Social Responsibility] is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis.

(EU Commission "Corporate Social Responsibility: A business contribution to sustainable development", 2002)

Social Responsibility is an ethical ideology or theory that an entity, be it an organisation or individual, has an obligation to act to benefit society at large.

(ARCASIA Committee on Social Responsibility, Bali, Indonesia, 31 October 2012)

Accountability

ARCASIA supports initiatives to encourage individual professionals and companies engaged in architectural practice to conform to socially responsible standards.

Transparency

ARCASIA supports a policy of total transparency with all stakeholders in order to build trust, create a positive brand image and reduce reputational risks in times of crisis.

Respect for Stakeholder Interests

ARCASIA supports respect for the interests of all stakeholders, including ongoing engagement and formal acknowledgement of stakeholders' expectations.

Respect for the Rule of Law

ARCASIA respects the rule of law and the legal systems as applied in all respective Member Organization countries.

Respect for International Norms of Behaviour

ARCASIA supports respect for international norms of behaviour in order to promote and protect the implementation of adequate environmental and social safeguards.

Respect for Human Rights

ARCASIA encourages and supports respect for human rights and strives to secure dignity and equality for all people.

A lot of research and studies have carried out after this and substantial results produced. We shall go through some of the developments at individual level and as an Association. After the advent of The CHARTER in 2015, Architects Corporate Social Responsibility is termed as ACSR.

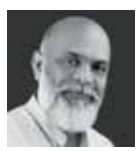
1. Crafting A Professional: Social responsibility of any professional begins at their academic period. The reason being they replaced the chances of thousands of students who seriously wish to study or learn the profession. So studying in a responsible position will craft a responsible professional. Basics of social responsibility shall be part of our academic curriculum.

2. Universal Accessibility: The fundamental principle of ACSR is universal accessibility. Even if there are rules & regulations prescribe universal accessibility some of us tend to overcome these rules and try to comply them for the sake of it. It is the attitude which matters our compassionate thinking process. Gender equality, age friendless, etc shall be engraved as part of our thought process. Individual interventions in own practice, suggestive recommendations to other colleagues and public projects, etc can be part of this initiative. How many of us make sure that all the toilets or at least one toilet in a residential unit we design to be universally accessible? How can we make sure the footpaths in our neighborhood pedestrian friendly or universally accessible?

3. We should always have our thinking process in Green and sustainable manner with unstinted respect to our Mother EARTH.

4. Respect for the rules of the land is an essential parameter for any responsible designer.

5. Self discipline, socially responsible and relevant way of life will make each one of us a role model/ ambassador of the new genesis of Socially Responsible Architects.



Ar. B. Sudhir holds a B.Arch. from the University of Kerala (1993). He has thirty years of experience in the field of architecture. He was the Chairman of the Committee of Social Responsibility, Architects Regional Council of Asia (ARCASIA) during the period of 2017 - 2019 and has been the Chairman of Institute of Indian Interior Designers (IIID) during 2017 - 2019. He has written several articles in JIIA and many other leading architectural publications. His firm Architects' Consortium was the National Award Runner up for IIID Design Excellence in 2017.

ARTICLE

AUTHENTICITY IN THE CONSERVATION OF HISTORICAL ARCHITECTURE

Ar. Kavita Jain

Architecture is a reflection of time, culture, and place. Building form, elements, materials are reflections of culture. The cultural significance of a place or object is created by the meanings, uses, or benefits attributed by distinct societies to something they define as a legacy. Buildings speak about the culture that they were built as a part of : that when, why, how, and by whom it was constructed. As a result, it serves as a link between the past, present and future. Honesty in architecture here may be understood as the authenticity of historic architecture and honesty in creating a new architecture.

Culture is what makes us who we are and forms our identities. Culture helps to pave the path for a more humane, inclusive, and equitable development. Without it, no development can be sustained. Putting culture at the centre of development strategies is a critical investment in the future of the globe and a pre-requisite for effective globalization processes that respect cultural diversity. The values of heritage sites, whether natural or cultural, are vested in them by the belief that these values exist with a particular place. Different communities, groups, or even individuals attribute different values to each heritage site. Some sites have more than one meaning, and also spiritual or religious values. The potential range of Sites of Memory is very broad, ranging from ancient archaeological sites to rather recent ones with memorial aspects. In that sense, honesty in architecture changes with context, which is especially true of historic buildings. Any honest preservation projects would capture that change as well. In today's world, development and change are growing challenges and dangers to the built heritage, a global condition that frequently results in compromise or loss of historic fabric and its related values. This applies equally to individual historic buildings, assemblages and historic areas of towns and cities. A conflict frequently arises between heritage and development, the past and the future; different stakeholders and players in the conservation and development processes take up opposing positions and seem unable or unwilling to find common ground. Making alterations in the form of a traditional building, material, elements (if unrecognizable, non-identifiable) may mislead future generations.

NEW CONSTRUCTION

Sometimes people, including architects and designers, just add traditional elements to the façade. They are often juxtaposed as an ornament just to make it look like a traditional building without planning a building as one. The new building may look 'new', and not necessarily like an old one, even in a historical context. Material or color texture may be adopted in harmony with the traditional context so that the new buildings doesn't look alien in its surrounding context.

A building should have a strong connection to its material whereby they could be used from the natural resources available locally. However, the fundamental goal is to let the materials used, the spaces conceived, and the structure built speak for themselves about nature and intention of the building. Substitution of materials however could imitate lies and deception in a building. A prime example is Gothic architecture when construction techniques changed from timber to stone, it initiated the metamorphosis of the architectural sense.

In one of the articles by John Ruskin, Architectural Deceits are broad to be considered under three heads:

1. The suggestion of a mode of structure or support, other than the true one
2. Painting surfaces represent a different material than the one in which they are constructed.
3. The substitution of cast or machine work for that of the hand

I believe that ornamentation, and prosthetics over a real structure are considered to be "deceits" in architecture. For instance, Frank Gehry's Guggenheim Museum at Bilbao uses wall cladding material for an aesthetic purpose when the real structure is covered up.

CONSERVATION WORKS

All actions are designed to understand a heritage property or element, know, reflect upon, and communicate its history and meaning, facilitate its safeguarding and manage change in ways that will best sustain its heritage values for present and future generations. While restoring or conserving the historical structures, falsification with the elements, their scale and proportions is the wrong approach.

Without any evidence, tampering with the building is not justified. Sometimes people replace the original material with new ones, like a lime mortar jaali with a stone jaali or a masonry parapet with stone railing, stone railing with metal railing, and so on. Sometimes the exposed stone masonry is painted with modern paint, or lime-based paint with emulsion paints, or lime plaster with lime kada, etc.

By doing this, both the intangible and tangible dimensions of heritage change and hence the interpretation of the site. Interpretation should be an integral part of managing a heritage place, and of its management system. This new concept has been developed since the nineties, at the crossroads of human rights advocacy and heritage conservation.

Sites of Conscience are defined as places that:

- Interpret history through a site
- Participate in public initiatives that promote conversation about urgent social issues
- Participate in public activities that encourage discussion of pressing social issues.
- Promote justice and universal cultures of human rights

The results of this conflict can be damaging on several levels, from the loss of historic fabric to impacts on community and social values and the failure to take advantage of economic and developmental opportunities. All of this contradicts the vision of culture as an essential component of sustainable development and heritage as a powerful contributor to social development.

Ar. Kavita Jain is a practicing Conservation Architect and Dean, Faculty of Architecture and Planning, Vivekananda Global University, Jaipur. She is a graduate from MNIT, Jaipur and post-graduate in Architectural Conservation from SPA, New Delhi. She has been a consultant to Asian Development Bank, World Bank, World Monument Fund and Archaeological Survey of India and many more. She has won the prestigious NDTV Grohe award for adaptive reuse of a historic building in 2015. She has been featured in various documentary films for various television channels on historical buildings and temples.

ERRATA

We regret some of the information being missed out in a few articles of the May 2021 issue of JIIA.

Captions of the photographs in Joseph Allen Stein : An 'Indian' Architect by Ashok Lall in the In Memoriam section (pages 46 – 47)

1. India Habitat Centre by Stein (Photo courtesy: Ar. Meena Mani)
2. India Habitat Centre by Stein (Photo courtesy : Ar. Habeeb Khan)

Captions of the photographs in the Design Feature *Shanti Sadan* by Ar. Divya Ethirajan and Ar. Pramod Jaiswal of *Between Spaces*, Bangalore (pages 49 – 53)

1. The corridor overlooking the courtyard below
2. Passage to the sacristy
3. The courtyard forming the buffer between the Chapel and the rest
4. Intricately laced brick *jali* screens
5. The Chapel and its landscaped courtyard, detached from the two-storeyed mass
6. The two towers punctuate the otherwise grounded mass

Captions of the photographs in the Design Feature Green Cascade by Collage Architecture Studio (pages 66 – 69).

1. View of the Green Cascade building
2. View of entrance
3. View of the Green Cascade building
4. Ground floor plan
5. Section

We regret the misprint in the biographical note of Ar. Nitin Ghule on page 81 of the May 2021 issue of JIIA :
Ar. Nitin M. Ghule graduated with honours from Government Engineering College, Raipur (1995).

Captions of the photographs in the Travelogue section article Istanbul by Ar. Meena Mani (pages 82 – 85)

1. Inside the blue Mosque
2. Tulips abloom in one of the gardens of the Topkapi Palace
3. Cicek Pasaji, off the Istiklal Cadessi
4. Entrance to the Hagia Sophia
5. The East face of the Hagia Sophia

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APPLICATION OF THEORY OF STRUCTURES (TOS) IN THE SYLLABUS OF ARCHITECTURE

ABSTRACT

To understand the application of Theory of Structures (TOS) in the syllabus of architecture, a demonstrative, hands-on or graphical method would be more appropriate. Hence we started TOS studios at Rizvi College of Architecture, Mumbai in 2010. After a couple years of trials and varied projects being undertaken we realized that not only the student's understanding improved but also their interest was rekindled in the subject. This article shares the various projects undertaken during TOS studio. The reader is encouraged to try them, share feedback and hence together we nurture the value of TOS in Architecture.

Key words: theory, structures, studio

INTRODUCTION

During the discussions of design, we tell students to broaden their imagination. But a question is always raised by the student of how those wild ideas would stand or be constructed? Of course, we sketch ideas, solutions, give them building references to study from; but is it enough? Have we answered the larger issue of understanding structural stability? In the subject of Building Construction, we teach brick-bonds. One is forced to believe that the student has understood the logic of brick bonds looking at the beautifully drafted sheets. So, one day we asked the students to sketch a brick wall elevation, no brick bond type was specified. The wall should have a couple openings, while the use of concrete lintel was not allowed. To our surprise many sketches had openings within which the bricks would collapse, because there was no lintel. Without a lintel what is the logic of brick bond (staggered perpend) was put to question, which was clearly unclear. These experiences and questions brought the studio and this article into existence.

Trials of TOS studio were conducted on first, second and third year B.Arch students. A few selected projects are shared here. They range from sketching to small scale model making to creation of life-size shelters to case studies. An idea of varied methods is provided here; one can learn from them and evolve your own projects. Some experiments were successful while some had their own challenges and later realizations. While one is narrating this story of experiments, the learning continues.

1. Theory through Sketching

i) Vocabulary

TOS lectures do teach various terminologies, but to begin with vocabulary revision seemed appropriate. These terms were made more easily available and understandable for the student by accompanying sketches. Tony Hunt's Notebook for Structures and Visual Dictionary of Architecture by D.K Ching came handy at this stage. A literal copy-paste exercise, as one would call it, from the book to sheets was yet again adopted. To make sure that the idea sank-in, notes were taken down on A3 sheets as seen in figure 1. These were later pinned in class and each student explained one term. These sheets then stayed on board for daily reference.

Figure 1: Theory of Structures vocabulary understanding sheet

ii) Load-Transfer Diagrams

When we draw a sloping roof, mostly the student imagines that that load is like a ball of snow over the roof that is going to roll till the tip of the roof and after the tip. Usually it's not questioned or assumed that the load will also drop down like the snow-ball. Load transfer systems of these simple structures were addressed in this exercise as seen in figure 2. Students were asked to draw simple structures in section, elevation or views and show load transfer on them. During this exercise one would stumble over a drawing of a cantilever and realize that that the load is at the tip of the projection - either you provide a column below it or find another solution. At first, one is glad that the unsupported large cantilevers were questioned by the students themselves. Later we also had an opportunity to explain in the same diagram how else it could be supported without a column underneath. These diagrams also led to discussion of forces and various materials that work under them or otherwise.

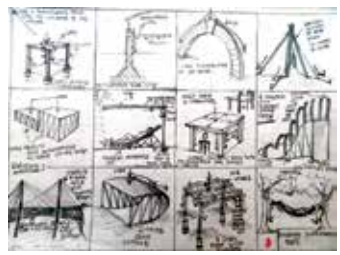


Figure 2: Load-Transfer Diagrams of simple structures.

iii) Awareness through Case Study

Case study in design is a regular exercise. Our methods have also been questioned and evolved to encompass a wider range of study. Yet one feels that study of structural systems in design is still compromised. Hence similar projects from Design Studio were taken up and studied under new aspects. Explanation of these aspects was done through load transfer diagrams as learnt in previous exercise, as seen in figure 3. Some varied aspects addressed here are: construction material and

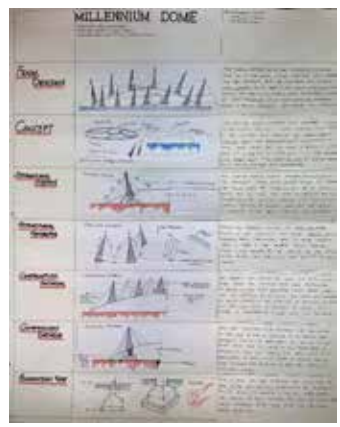


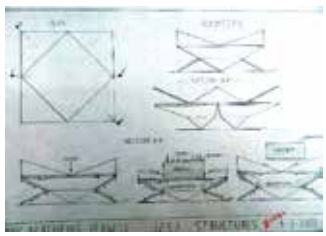
Figure 3: Case Study of Millennium Dome

technology, load transfer system, identification of structural members and their role, study of foundation. An advantage of this study is also to make the student aware of challenging structures that are built and existing in the world around. Hoping that this exercise would not only widen their imagination, breaking the misconception of stability issues, but also make them confident at designing.

2. Understanding through hands-on activity

i) Models

Basic design does take up exercises where spaces and shelters are created from various materials, sometimes are even origami-driven. A similar exercise is undertaken here. A4 paper is folded to create various structures and shelters. The paper is only to be folded, no cutting or sticking was allowed. The objective was to explore the folding of paper as a catalyst to structural stability. These A4 structures were discussed as structures at various scales. Then the question of structural members and load transfer was raised. The folds, if played with appropriately, acted as the structural systems. This understanding was later drawn by the students in the form of plans and sections (as load transfer diagrams). Models and drawings are seen in figures 4 and 5.



Figures 4 and 5: A4 paper model and its drawings

ii) Life-Size Shelter

Execution of your own design is a thrill and through that process one can learn all required skills from designing to building. Hence a project was taken up to build structures, furniture and other life-size objects. This can be tried with various materials and accordingly, restrictions of the use of material can be provided. Our first trial was with paper. No cutting was allowed- paper could be folded or rolled in any required form. Sticking was meant to be at a minimum. This helped to keep the A4 paper exercise understanding intact that 'folds if played with appropriately acted as the structural systems'.

Figure 6: Student walking on bridge of paper rolls

Figures 7 & 8: Low height seat of folded paper

This exercise in the first round worked partially. Exploration was to its fullest- objects, and furniture was built that could take the designed load. The part that was missed was the use of glue or adhesive tapes. A couple groups of students used adhesive tapes and glue intensively, making those the structural anchors as opposed to the paper and its materiality. Figure 6 is a bridge of paper rolls where the structural strength is made from the thickness and tightness of the roll and the unwanted adhesive tapes. Eventually this idea was understood by us and later attempts of this exercise saw varied results. Figures 7 and 8 show a low height seat of paper where the folds are heralded for their success to take human load.

THE WAY AHEAD

Design studios always have one or more objectives to fulfil through a particular project. We made structural system exploration as our objective for a short design project. Keeping the design innovation intact, the student was pushed to explore the structural system and make the design functional. Learning from the TOS studio, load-transfer diagrams were drawn as design output as seen in figure 9.

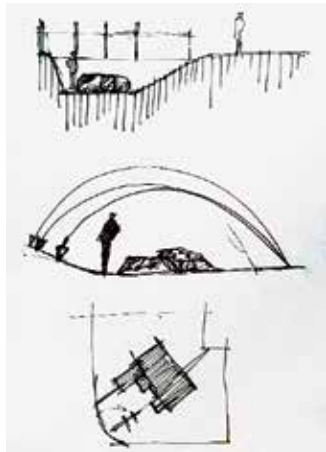


Figure 9: Architectural Design exercise with exploration of structural systems as focus.

This yearning to explore the subject of TOS and make it our tool rather than a hurdle, should be ingrained in students of architecture. Because we already see the discipline being compromised when the designs of architects are at the mercy of the engineering of a structural designer, one should be equipped to understand and explore the varied structural possibilities in their design. Only then will they be holistically responsible and independent.

ACKNOWLEDGMENT

Special thanks to Prof Akhtar Chauhan who has been my inspiration for Theory of Structures studio during my short span of teaching at Rizvi College of Architecture; from 2010 to 2014. I also thank my colleague; Ar. Durgesh Samalkar who had been an asset in these new endeavours.

All the work is of the students of Rizvi College of Architecture Mumbai from I to III Years during 2010 to 2014. Without their work this paper would not have been possible.

Ar. Fatema Kabir
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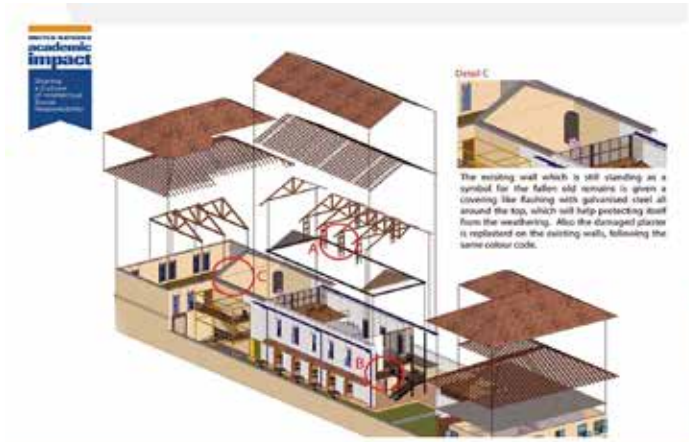
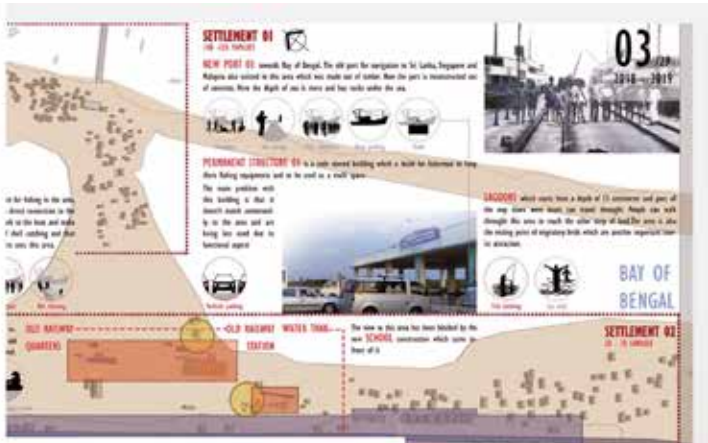
Ar. Fatema Kabir, is an Associate Professor at Aayojan School of Architecture, Pune. With eleven years of teaching experience. She is currently pursuing her Ph.D. in Experiential Analysis of Architecture. In her quest of Architectural Theory, she has gone from being a writer at IA & B to being a teacher 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.





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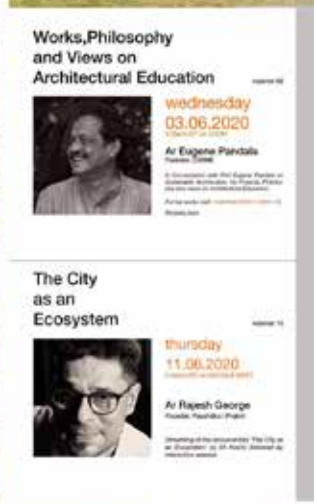
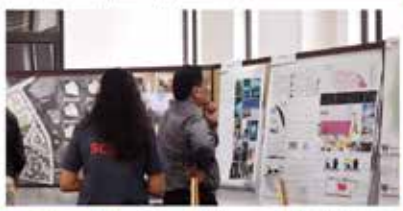


KNOWLEDGE UPGRADATION of FACULTY is a CONTINUING EXERCISE



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NEWSLETTER JUNE

OBITUARY

Ar. Prithvi Raj Luthra

Ar. Luthra graduated from Chandigarh College of Architecture (CCA) in 1966. He taught at CCA from 1967-'74. From 1974 onwards he served in Department of Architecture, Government of Punjab in various capacities. He worked as Chief Architect of the state from 1996-2001. After his retirement, he was involved in teaching at Chitkara School of Planning and Architecture, Punjab.ness and through outreach programmes.

NATIONAL

GO GREEN INITIATIVE @ IIA
CII- IGBC SIGNS MOU WITH THE INDIAN INSTITUTE OF ARCHITECTS

The CII-Indian Green Building Council (IGBC) and Indian Institute of Architects (IIA) signed an MoU to give a fillip to the green building movement and sustainable development in the field of architectural design and planning. Er. V. Suresh, Chairman, IGBC and Ar. C R Raju, National President, Indian Institute of Architects exchanged the MoU on the virtual platform in the august presence of the supporting organisations.
Er. Suresh said that this engagement of strengthening the green movement will go a long way in setting new global benchmarks in environmentally sensitive building design, resource conservation, energy and environmental management and in the process facilitate India consolidate its leadership position in the global green buildings map. IGBC will work closely with IIA team in facilitating projects to build greener, smarter and provide healthier workspaces, he underlined. He said India is one of the top three countries in the world in terms of registered green building footprint in the world today, with over 6,548 green building projects registered with IGBC, amounting to a footprint of 7.83 billion sq. ft.

Ar. Raju said the buildings and infrastructure development which are sustainable is the need of the hour. This MoU will go a long way in development of built environment that is aligned with the green building concepts and practices. Together they plan to work in the areas of research related to architectural design, handholding projects in creating awareness and through outreach programmes.

IIA-Chhattisgarh Chapter

World Environment Day was celebrated by IIA Raipur Centre, Durg Bhilai Centre, and Bilaspur Centre with great fanfare on 5 June to spread awareness about various ways of protecting the environment. The annual plantation drive was organized by IIA Raipur Centre with the help of Green Army at Purana Talab, Mahavir Nagar. Indoor and outdoor plants were distributed by local architects to the general public. The IA CG Chapter President Raj Prajapati, President of Green Army presided as the chief guest. Ar. Subodh Bagrecha, Ar. Anand Khadia, Ar. Dilip Panigrahi, Ar. Navin Sharma and several senior were present along with the IIA Raipur Centre Committee members at this event.

Bilaspur Centre organized various programmes on the occasion of World Environment Day. Mango, neem, peepal and kadamba Trees were planted by the local architects in D.P. Law College premises along with Ar. Debashish Ghatak along with the Principal of the college, Dr. Anu Bhai Soni and Sports Officer Alok Sharma.

An online dialogue was organized for the members where a presentations were made : Sustainable Architecture by Pooja Sao; Urban Heat Island by Namrata Gupta and Rainwater Harvesting by Ar. Vivek Yadav. Expert environmentalist Er. Prathmesh Mishra and Er. Ravi Singh gave a talk on Grey Water Treatment and Usage.

The architects and students of architecture made a pledge to promote green building architecture and materials towards the restoration of the ecosystem. Students from NIT Raipur, Academy of Architecture, Mumbai and PVP College, Pune also participated. IIA Durg Bhilai Centre also celebrated this day with a tree plantation drive. Local architects with the help of the general public planted more than 100 trees that do not require much water.

IIA-Assam Chapter

World Environment Day 2021 on 5 June 2021 was celebrated by IIA Assam Chapter with two programmes:

The first was the city beautification and plantation drive in Guwahati city. As a pilot project, in association with Guwahati Municipal Corporation, fifty Foxtail Palm trees were planted along the median strip of R.G. Baruah Road, Guwahati, from Assam State Zoo cum Botanical Garden to Ganeshguri. The trees shall be maintained by IIA Assam Chapter. Similar beautification and plantation drives have been planned at various locations across the city to be taken up in subsequent programmes by the Chapter members who have contributed for the cause. This includes a plantation drive along Rajgarh Road as well.

The second programme was named A New Plant in Every Home. Keeping the ongoing pandemic and lockdown in mind, the Chapter members celebrated by planting a new sapling in their homes and shared pictures online.

IIA-Bihar Chapter

The second wave of COVID 19 in 2021 affected the population greatly. IIA Bihar Chapter also received a big blow when one of its members Ar. Arun Kumar Prabhat lost his life to Covid on 27 April 2021. Realising the gravity of the situation, the Chapter members took the initiative to raise funds of Rs 5,25,000 to help his wife.

The Chapter also took up with social concerns, such as a plantation drive on World Environment day on 5 June 2021.

IIA-Himachal Pradesh Chapter

To highlight the importance of the environment, School of Architecture, RGGEC Kangra and IIA Himachal Pradesh Chapter jointly organised an environmental awareness drive for two weeks during 1-12 June 2021. Students of architecture, stepped forward to preserve the environment by planting more than 120 trees at their native places during the COVID pandemic. Various competitions were also initiated to promote environmental consciousness : on ecosystem restoration, ecological footprint and sustainability. These were conducted online by four jury panels each compromising of one member from School of Architecture, one member from IIA Himachal Pradesh Chapter and one independent architect. The results were announced by Ar. Rohit Thakur, Ar. Pranav Sharma, Ar. Karan Sharma and Ar. Harshodaya Bhardwaj:

▶ Poem recitation : Ms Arpita Mengi (Sem. 2)

▶ Declamation : Ms. Hitaishi Sharma (Sem. 6)

▶ Short video : Mr. Upender Pathania (Sem. 2) and Mr. Parvesh Kumar, Ms Harshita Negi, Ms Akanksha Sharma, Mr. Maheshwar, Ms Kanika, Mr. Aashish and Mr. Divanshu (all from Sem. 8).

All events were sponsored by Ar. Nand Lal Chandel, Chairman IIA HP Chapter and cash prizes awarded of Rs. 1500/ as first prize, Rs. 1200/ as second Prize, Rs. 1000/ as third prize and Rs. 500/- as consolation prize.

Dr. Satish Kumar Katwal, Head, School of Architecture, Kangra extended a warm welcome to the Chief Guest and other participants on the concluding day celebration on 12 June, 2021. Ar. Shalochna Dhiman, Executive Member of IIA Himachal Pradesh Chapter, Ar. L.M. Mastana, Sr. Architect, HPPWD Kangra Zone and Executive Member of IIA Himachal Pradesh Chapter, and Ar. N.K. Negi, retired Architect-in-Chief from HPPWD shared their ideas and experience on the role of architects in making buildings greener. It was also emphasized that native species of plants should be given preference while landscaping for sustainable development. Ar. Nand Lal Chandel, Chairman of IIA Himachal Pradesh Chapter also expressed his views on the occasion and extended his sincere thanks to Dr. Satish Kumar Katwal and his team for organising the event. Ar. Manguesh Prabhugaonkar, landscape architect based in Goa and Executive Member of IIA National Council, also shared his views on the occasion. Prof. P.P. Sharma, Director & Principal of Rajiv Gandhi Govt. Engineering College, Kangra graced the occasion as the Chief Guest. He congratulated the School of Architecture for setting new trends since its inception under the dynamic leadership of Dr. Katwal. This event was witnessed by over 300 guests who pledged to make the earth a better place to live. Ar. Aman Deep Gupta extended the vote of thanks to all those present.

IIA-Karnataka Chapter

CSR partnership of the IIA Karnataka Chapter with Government of Karnataka

The IIA Karnataka Chapter engaged with Department of Information and Public Relations, Government of Karnataka as a CSR partner and conducted a baseline assessment for setting up of ICU beds in government hospitals in Bengaluru on 21 May 2021. The assessment was done for taluk hospitals in and around Bengaluru to assess how these hospitals can scale up to accommodate 4000 ICU beds.

Discussion on the letter and amendments to the Architects Act 1972

The Professional Concerns Committee of IIA Karnataka Chapter met virtually on 22 May to discuss the letter and amendments to the Architects Act 1972, along with the Centre's members and industry experts. The letter written by Association of Consulting Civil Engineers, India (ACCE) was discussed in detail. Architects were encouraged to share their experiences about managing professional work with civil engineers in current times. Dr. Sridhar Rajan, Ar. Wodeyar Vidyadhar, Ar. Shashi Bhooshan and Ar. Appanna Deshpande were able to identify few key areas of concerns.

Launch event of the CLF Hub of India, Bengaluru.

The IIA Karnataka Chapter Chairman, Ar. B.R. Mohan, was a panelist at the launch event of the Carbon Leadership Forum (CLF) hub of India at Bengaluru, on 29 May 2021. CLF is a worldwide movement to empower professionals to decarbonize and reduce embodied carbon from the built environment.

IIA Hubballi Dharward Centre

Philanthropic Donations

Several donations were made by the IIA Hubballi Dharwad Centre :

▶ A sum of one lakh rupees to Sevabharati Trust, Hubballi for COVID-related services on 17 May 2021

▶ Service donation of Rs. 15,500/- to Veer Shasan Group (VSG) on 28 May for their COVID-related food service for the needy

▶ A sum of Rs. 14,000/- to Feed the Hungry through Shri Laxmi Bhavan, Hirepeth. This helped feed 120 hungry and needy people for a period of seven days. The food was distributed at Sevabharati COVID counter in Karnataka Institute of Medical Sciences (KIMS), Hubballi.

IIA-Jharkhand Chapter

IIA Jharkhand Chapter has created a platform called Saturday Strings in which there are seminars held on various subjects which are of interest to individuals at large and especially the architect community. On this platform, a seminar Online Breathing Exercise was held on 22 May by Dr. Parul Behl, a trained physiotherapist practising in Ranchi, which was relevant considering the current pandemic. Dr Behl explained and performed the exercises which helped understand and learn the correct techiques.

IIA-Kerala Chapter

Kerala is moving ahead from more than a month of complete lock down to an eased lock down here after. Even though the sites could function, the construction industry has been in a quandary due to the price hike in materials, inconveniences of travel, unavailability of materials etc. Architectural firms have been working from home and maintaining strict COVID protocol on sites as precaution. In addition, IIA members have sought the best ways of staying active through the Verticals, planning and implementing new ventures :

Led by Ar. Monolita Chatterjee, the Social Security Vertical initiated a very quick and efficient vaccine drive, setting up blocked vaccine doses with hospitals in the north, center and south of Kerala, for the IIA members and their staff through private hospitals on a priority basis. The vaccination drive was first held at Aster MIMS, Calicut on 2 & 3 June 16, 2021 where a total of 165 members and beneficiaries were vaccinated. The second phase of the vaccination drive was held on 4 & 5 June at Aster Medcity, Ernakulam where 350 vaccines were provided. This continued initiative will schedule the third phase at Trivandrum.

To ensure effective collaboration between architectural and academic practices, the first Initiative of the Pedagogy and Profession Cell was an Impact Lecture Series by prominent architects from India and abroad to guide undergraduate students of architecture. The first lecture Reimagining Architecture, conducted by Padmashree Dr. G. Shankar, Founder, Habitat Technology Group, targeted final year B. Arch students towards developing their independent thesis projects and providing possible guidance for their theses by IIA members who have expertise in the typology of specific project typologies. Dr. G Shankar spoke to the students about the need for sensitivity towards nature, how creativity and innovation can be beneficial in these crucial times, the strategies to be adopted and ways of handling the different stages of thesis : the point of view of a reviewer, importance of having proper justifications for design decisions, and other relevant points. 65 students from Kerala and different parts of India who attended the session will be awarded participation certificates and complimentary student memberships of IIA.

Architects Benevolent Society (ABS) is a charitable society of architects of Kerala, formed to take care of benevolent activities in consultation with IIA Kerala Chapter. Its objectives are to support elderly architects, providing insurance coverage to its members, professional indemnity, death compensation to families of members, financial and legal assistance, support during hospitalization, etc. It is an achievement that this month, over a hundred members joined ABS.

IIA-Madhya Pradesh Chapter

The second edition of Samwaad Madhya Pradesh was conducted online on the occasion of World Environment Day, jointly by IIA Madhya Pradesh Chapter and CII's Indian Green Building Council, Indore Chapter. It was led by Ar. Jitendra Mehta, Chairman of both the units, as a deliberation to exchange ideas amongst evolved and iconic personalities to reach everyone. Ar. C.R. Raju, President, Indian Institute of Architects and Er. Vasudevan Suresh, Chairman, Indian Green Building Council were the guests, while the keynote speaker was Mr. Ashutosh Rana, renowned actor, poet, orator, author and motivational speaker. The essence of the session was to understand the environmental issues and involvement of the masses in general.

The inaugural addresses of Er. V. Suresh, Ar. C.R. Raju and Ar. Jitendra Mehta made it clear that both organisations advocate and work for sustainable development through green buildings and projects for making our cities smart, green and citizen centric. Ar. Jitendra Mehta, Jr. Vice President, IIA emphasised that IIA and IGBC would work together for research related to architectural design, hand-holding in projects, awareness and outreach programmes. With these common goals, a Memorandum of Understanding was signed and exchanged between the two organisations and was formally announced by Ar. C.R. Raju, Er. V. Suresh and Ar. Jitendra Mehta. Ar. C.R. Raju expressed that the MoU would go a long way in development of built environment that is aligned with the green building concepts and practices.

Mr. Ashutosh Rana, who is a versatile actor, producer and director, having worked in over 200 movies in 8 languages, began his talk with spiritual and human take on the importance of various numbers: zero, as the start and end; one as the ultimate goal; two indicative of form and function; five, which is the number of elements and their relation to us, and eight

for the kinds of wealth. He also spoke of the golden ratio, the three energy forms that run parallel- the scientific, spiritual and religious points of view. This interactive session was conducted by Ar. Amber Vyas. (The session can be seen at https://www.youtube.com/watch?v=sRAcDiCzY6M). Impressed by the exposed brickwork of the house of Er. V. Suresh, designed by Ar. Laurie Baker, Mr. Rana requested the architect of his own residence to design a similar treatment for his office and study as well.

This was followed by the felicitation of Ar. Anupama Sanjiv and Ar. G. Sanjiv for their initiative of Urban Forest At Kaliyasot River Bank, Bhopal. Mr. Ashutosh Rana along with Ar. Nitin M. Ghule unveiled the poster of Ensemble-2, a competition for poets, writers, artists and singers within the IIA fraternity. Ar. Vibha Shrivastava expressed the vote of thanks.

IIA-PUNJAB CHAPTER

International seminar series on Future of Chandigarh

In yet another series of webinars which started in March 2021, an international seminar on the future of the ideal city of Chandigarh was held. It was organized by Ar. Surinder Bahga, Principal Architect, Saakar Foundation and IIA member in collaboration with the Foundation Le Corbusier, ACT! Chandigarh with the support of the Consulate General of Switzerland. This platform presented a fusion of international ideas with local culture. In his inaugural address H.E. Dr. Ralf Heckner, Ambassador of Switzerland to India and Bhutan, congratulated Ar. Bahga on the celebration of the spirit of Chandigarh. Dr. Philip Ursprung, Chair of the History of Art and Architecture from ETH Zurich, Switzerland also presented his work. Other speakers were Senior Advocate M.L. Sarin and former Chief Architect Sumit Kaur.

The event was held under the guidance of Dr. Ar. Atul Singla (IIA Jalandhar Chapter Chairman and Principal Architect IDEARCH Architects and Designers and Dean, LSAD, and was supported by the faculty, ex-students and students of Lovely School of Architecture (LSAD) and Lovely Professional University (LPU), Punjab. Members of IIA Punjab, along with Ar. Sanjay Goel, Chairman of IIA Punjab Chapter also participated actively in this event. This webinar series will continue to June 2021.

World Environment Day 2021

IIA Jalandhar Centre celebrated World Environment Day online on 5 June 2021. Ar. Sanjay Goel, Chairman of IIA Punjab Chapter and Director of SSCL urged all attendees to save the planet by actively participating in drives against pollution, assuring that the COVID pandemic can be tackled by "Good Earth and Good Environment" measures. He said saving the earth from pollution and further deterioration of its assets was the best way forward to curb disease and epidemics. Understanding and awareness of the effects of pollution and measures against them are paramount.

Seminar on "Restoring Planet Earth"

Dr. Ar. Atul Singla, Chairman of Jalandhar Sub-Centre and the Dean of LSAD addressed the students of LPU at an online seminar on Restoring Planet Earth. In resonance with the well-known adage, "Prevention is better than cure", he advised the students to base their design philosophy in tandem with the natural systems while planning the built environment, which was also seen in the speaker's own works.

IIA-Rajasthan Chapter

Vaccination Camp families

A mega-camp for vaccination for members of IIA Rajasthan Chapter and their families was successfully organised on 10 June 2021. The camp was supported by the local MLA Shri Ashok-ji Lahoty. Chapter Chairman Ar. Tushar Sogani led the initiative which benefitted 250 people. All the members appreciated the much-needed safety of COVID 19 vaccination for the vital work force of architects of the state. The doctors and support medical staff were felicitated by the IIA Rajasthan Chapter Executive Committee.

Plantation drive on the occasion of World Environment Day

Towards the socio-environment responsibilities of the architectural fraternity, a plantation drive was organised by the IIA members to plant trees and saplings within their premises and pledged to maintain it. All participants were motivated with a Guardian of the Environment" certificate.

Yoga Camp for Architects

The online Yoga Program, started by Chapter Chairman, Ar. Tushar Sogani ,in the month of May is being continued and actively participated in by several architects not just of Rajasthan but across the country. The program successfully ended on 16 June, 2021.

IIA-Telengana Chapter

What began as a routine online Executive Committee meeting veered towards a passionate plea by some members to do something about the raging second wave. As we saw close family and friends falling prey to the virus, there was no doubt in anyone's mind that to keep safe was the top priority. A few members were already taking personal initiatives by helping organise medicines, oxygen, hospital beds. EC member Ar.Ravi Bathula had volunteered cooked meals to patients in isolation. As a fraternity, we had to reach out and after much discussion a special vaccination drive emerged to be the most feasible and helpful initiative from IIA Telengana Chapter.

As our profession involves frequent site visits, meetings with a varied cross-section of people and interaction with staff and consultants, we had to protect ourselves and our near and dear ones. Within a few days, a special EC meet was held to arrange the modalities. Ar. Niranjan Mallangi, who took the lead had already created a google form for registrations. Ar. Jalda Balasubramnyam shared his insights about working with local communities. Members started contacting vaccine providers, hospitals and obtaining government permissions. Ar.Kuldeep Singh took up the job of making publicity material. Chairman Ar. Uday Shankar pro-actively spearheaded the initiative along with General Secretaries Ar. Asha Acharya and Ar. Aditya Singaraju coordinating the whole effort.

On 14 & 15 June more than 300 vaccinations of both Covaxin and Covishield were administered in partnership with leading hospitals. The venue quite fittingly was the forecourt of the centrally located campus of the Jawaharlal Nehru College of Fine Arts and Architecture, Hyderabad made available through the whole-hearted support of Vice Chancellor Dr.Ar.Kavita Daryani. It was a well organised, orderly event maintaining all COVID protocols. Apart from members, the vaccine was availed of by other architects, their family members, students, building craftsmen, etc. Even walk-ins without registrations were accepted as the goal was to keep everyone safe. Telangana Chapter will be planning a follow up event for the second dose.

IIA-Uttarakhand Chapter

COVID curfew continued in Uttarakhand during May and June. E-posters were used to announce the various commemorations and events from mid-May to mid-June. World Interiors Day was observed on 29 May 2021. Architects of Uttarakhand joined together to greet the architects of Goa on the Goa State Foundation Day on May 30 2021, and architects of Telangana on 2 June 2021, on the occasion of Telangana Formation Day. Other virtual observances included World Milk Day on 1 June, 2021, and World Bicycle Day on 3 June 2021. The digital posters for World Bicycle Day, to promote non-motorized transport (NMT) and also a healthy lifestyle showcased cycling ambassadors from the architect fraternity, Ar. Nilesh Suchdev from Rajkot and Ar. Kapil Mudgal from Nainital.

Virtual Celebrations on 4 June 2021, the eve of World Environment Day, were hosted by IIA Uttarakhand Chapter in association with ITPI Uttarakhand Regional Chapter. As part of Segment One, the six-member Green and Sustainability Committee of IIA, participated in a round table dialogue moderated by the Committee Chair, Ar. Debatosh Sahu. Discussions took place on a variety of topics ranging from zero waste construction, water efficiency in design, use of vernacular and passive design interventions, life-cycle analysis of construction materials employed for building structures and means of reducing carbon-emitting construction methodologies. Ar. Tushar Sogani, Chairman Elect, CGSA, ARCASIA and IIA Rajasthan, championed the cause of adoption of vernacular design techniques in a country like India which has five different climatic zones. Ar. Nalin Goel, IIA Jharkhand, strongly advocated that we would save water only when we measure/ meter our water consumption. Ar. B. Sudhir, IIA Kerala, presented his philosophy of Necessity being the mother of Invention, whilst affordability is the father of consumption. Ar. Debatosh, the Committee Chair, summarized green and sustainability being a philosophy of life, rather than being professed as an object of course curriculum or a sermon.

Segment Two of the virtual celebration had three online presentations : Ar. Lalit Kishore Bhati, Auroville; Ar. Sanjay Bhargava, Dehradun and Ar. Riyan Habeeb, Dresden, Germany, who presented their thoughts and work on Sustainable Living, Zero Waste Living and Vegetation Indices in context of Uttarakhand respectively. Over seventy attendees from IIA Uttarakhand as well as other IIA Chapters attended the 150- minute programme, supported by GREENIFYI, our event partner from the LGSF/ CFS prefabricated steel building segment.

The run up to the virtual event witnessed nearly two dozen video messages from various architects from IIA National Council, Chapters, Centres and Sub-Centres. The Vice President of IIA launched the Second Digital edition of Dhvani, the newsletter of IIA Uttarakhand Chapter during the event. This edition is themed upon World Environment Day and can be accessed at https://tinyurl.com/IIAUKC-Dhvani02.

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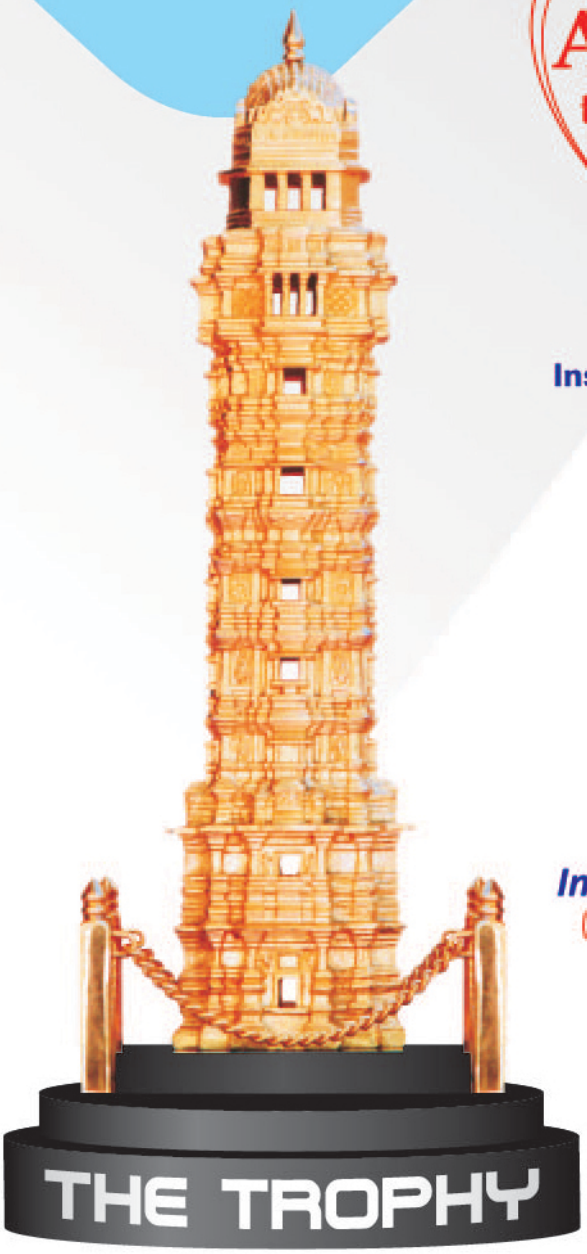

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