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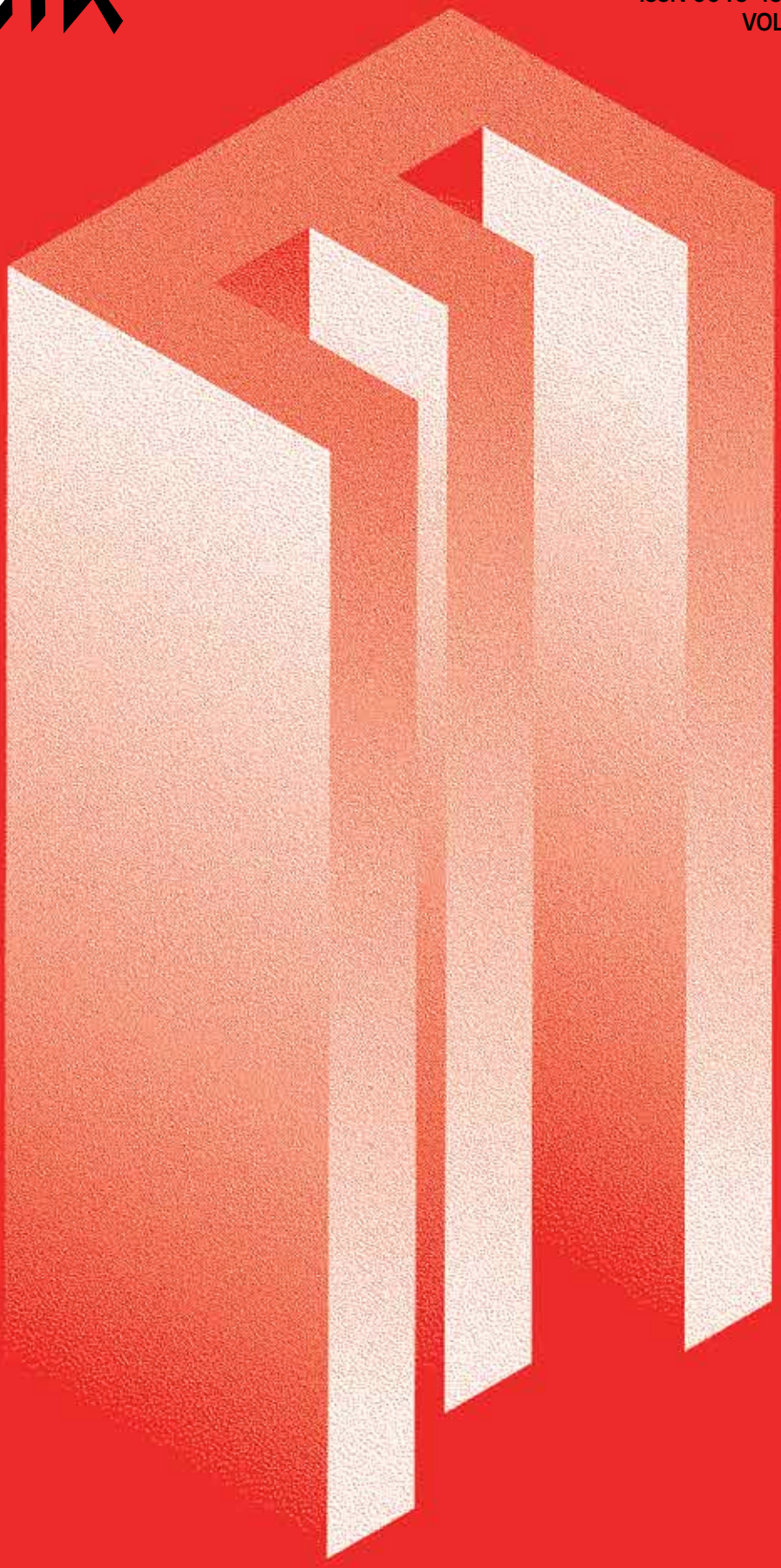

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CONTENTS

07 EDITOR'S NOTE
Ar. Lalichan Zacharias

08 PRESIDENT'S MESSAGE
Ar. C. R. Raju, President, IIA

10 THEME
EXCELLENCE
Ar. Mukul Goyal

12 RESEARCH
UNDERSTANDING ENERGY CONSERVATION MEASURES (ECMS) IN THE CLIMATE CONTEXT OF INDIA USING ECBC-R
Chitrarekha Kabre, Kalpana Tyagi

20 RESEARCH
INCLUSIVE URBAN DESIGN: LESSONS FROM SINGAPORE ON STRATEGIC PLANNING & IMPLEMENTATION
Prof. Dhiraj Nandkishore Salhotra

29 CALL FOR PAPERS

32 STUDENT WORK
CENTRE FOR CULTURAL UNIFICATION COMMEMORATING BENGAL PARTITION: CASE APPLICATION AT NEW TOWN, KOLKATA
Oishik Chakraborty, Prof. Sanghamitra Sarkar & Dr. Sanjib Nag

38 DIALOGUE
AR. SAIF UL HAQUE
Dr. Shilpa Sharma

45 IN MEMORIAM
ARCHITECT OF THE POOR : AR. HASSAN FATHY
Ar. Arun Shankar M.

49 DESIGN FEATURE
VISHWANATH DHAM PROJECT
Dr. Bimal Patel

54 DESIGN FEATURE
SYMBIOSIS UNIVERSITY HOSPITAL AND RESEARCH CENTRE (SUHRC)
IMK Architects

62 DESIGN FEATURE
BRICK MASK HOUSE
Spacefiction Studio

70 VOICES
MINIMUM FEES? WHAT'S THAT?
Ar. Monolita Chatterjee

72 YOUNG PRACTICE
ASCENSION DESIGNS
Ar. Akshay Sancheti, Ar. Achintya Rajimwale, Ar. Prateek Khandelwal & Ar. Mehul Kothari

77 ARTICLE
A PATH TO NET ZERO WATER CAMPUS AT SAC / ISRO
Ar. Matinder Kumar, Ar. Nidhi Mishra & Er. Shailendra Kumar Singhal

83 ARTICLE
VIOLENCE OF ARCHITECTURE
Devansh Hablani & Ar. Fatema Kabir

89 ARTICLE
THE DEFINING ROLE OF IIA IN PROMOTING QUALITY ARCHITECTURAL EDUCATION: BOTH FORMAL AND INFORMAL
Ar. Jit Kumar Gupta

93 BOOK REVIEW
REVERED REMINISCENCES
Prof. J. Subramanian

95 PHOTO ESSAY
KARAULI PALACE
Ar. Rajan Bhatt

102 **SKETCHES**
Ar. Akhil V.K.

107 TRAVELOGUE
THINGS AROUND A JOURNEY THROUGH KERALA
Ar. Fathil Kummayapurath & Ar. Hiba Hassan

111 A PEDAGOGUE'S PERSPECTIVE
THE INSTITUTE IS A CULTURE
Ar. Aabid Raheem

114 **NEWSLETTER**

Prof. Jitendra Singh

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Prof. Parag Narkhede

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EDITOR'S NOTE

"Architecture is the biggest unwritten document of History"
Daniel Libeskind

As Architects we need to talk about Design Excellence more often. Design Excellence requires that the building be beautiful, functional, stable and lasting.

IIA recognises the Design Excellence in Architects through its National Awards for excellence in Designs every year. We hope that the IIA Awards, postponed due to pandemic, will be happening soon.

The redesigned Journal is completing its twelve issues with February 2022. It has been an amazing journey for Team - JIIA throughout the year, to bring out the Journal with its variety of columns like Dialogue, Research Papers, Articles, Young practice, Sketches, Travelogue, Pedagogue's Perspective, Design Strokes, Opinions, Newsletter, and many others. Bringing out the Journal on the 15th of every month was a trying task that we have achieved consistently so far.

Thanks to the master designer Mr. Shiva, the layout designer Mr. Kenneth, coordinator Ms. Aiswarya, the printer Mr. Animish Thaker and IIA HO coordinator, Mr. Agnelo.

We thankfully acknowledge the unstinting support given by Ar. C.R. Raju- President IIA, the Office Bearers, the Council Members and the Chapter Chair persons.

The support and timely advice given by Advisors and the team of Reviewers are very much appreciated. Our Chapter Correspondents have done a commendable job by reporting the chapter news on time.

I place on record the meticulous job done by the Editorial team members through the year gone by. Thank you Team.

We thank the members of IIA who continuously encourage us with their kind words of appreciation.

- Dr. Shilpa Sharma is in conversation with the celebrated Ar. Saif Ul Haque from Bangladesh, in the February issue.
- We are initiating a new column 'Voices' where members can send their views on various issues faced by the profession, education or practice.

The heart of any publication lies in its contents. So I request the members to contribute to JIIA by sending quality materials for publication.

Friends, let us continue this journey and strengthen our Institute, The Indian Institute of Architects.

Ar. Lalichan Zacharias
Editor

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PRESIDENT'S MESSAGE

Dear Members,

Warm Greetings!

It's time to cheer up, as all of us have reconciled to live with reality as the world is getting back to near-normal, leaving behind the uncertainties of the past.

Breaking the monotony of the online programmes, Chapters and Centres are preparing physical events for the participation of members in the coming months. Let us participate in good numbers and make them meaningful.

The IIA Awards are rescheduled to be held on 9th and 10th of April in Goa, hosted by the IIA Goa Chapter. The Convenors, the Chairman and the organising committee is making all arrangements to make it very participative in an excellent and convenient heritage venue with a good programme.

The IIA CAD is a perpetual licence while most others have become subscription-based. We urge members to subscribe and benefit from it. All efforts are being made for its compatibility with the online approval process / platform of the states implementing this throughout the country. Some states have already incorporated it and the system is working well.

With the growth of architectural education, there are many youngsters who are doing very well in their practice and some of the projects are very innovative and futuristic. It is essential to bring such good practices and examples to the fore for the benefit of all. Every Chapter can arrange a Chapter-wise Young Architects Conference/ Seminar to bring to light their immense potential.

Sustainable architecture is spoken about in most of the forums. It is worthwhile to identify such projects which have been designed and built with materials and techniques exploring the natural resources and context and bring out a region-wise publication. This will help in spreading the value and importance of sustainability which was once our stronghold.

Best Wishes,

Ar. C. R. Raju
President, IIA

Ar. C.R. Raju
President, IIA

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THEME

EXCELLENCE

Synonyms are 'amazing', 'awesome', 'great', 'superb', 'mind-blowing', 'unbelievable', etc. to continue the chain of thought the title invokes. But of course, 'Excellence' is a single word defining the apex of the subject it is used with. In the case of architecture, it defines very clearly the brilliance of an architect in achieving the best of what he or she is at.

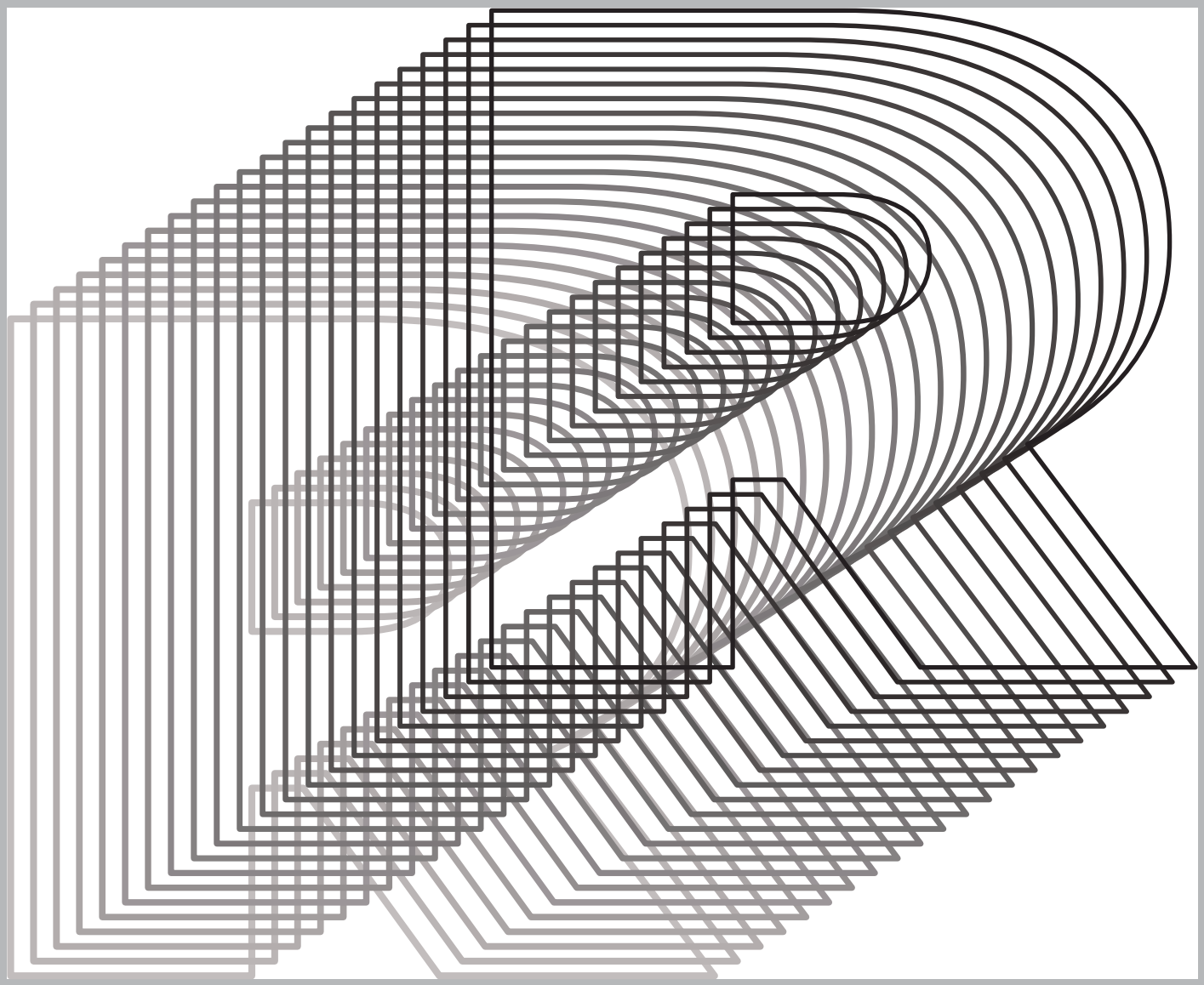
But then, in architecture, mathematics cannot be applied and there is no set formula to define excellence. Therefore, whenever we like something, we appreciate it assuming our own parameters of judgement. This can be subjective because what may be appealing to me, may not be appealing to you and therefore, there will be contradicting views. Already modern architecture is full of such contradictions so let's skip that part and come to the more appealing sensibilities.

We Architects are Socialists and Capitalists all rolled in one. On one hand we have to keep the functional interests of the client as the prime start point to the concept sketch; but at the same time we have to ensure that a sizeable number of people benefit from the project directly or indirectly. If we achieve both, in addition to creating a beautiful structure without compromising on the environment, then we have a winner in our hands. Excellence has been achieved.

Frank Lloyd Wright, Geoffrey Bawa, Laurie Baker, Nari Gandhi come to mind as we talk about aesthetics achieved by enhancing the environment around their projects. Yes, today as the whole world is talking about reducing the carbon footprint, we architects are facing an unprecedented challenge, as companies seduce us with various designer products that could enhance the aesthetics of the exteriors and interiors. This is just one part of the pressure faced by young architects . . . There is another social responsibility of safeguarding and uplifting vernacular architecture and its various offshoots, that is, artisans and artists. All this has to be done delicately, balancing Budgets and the Clients' Moods - both of which are volatile enough to tip the scales of the final product.

So, when you see a building, don't admire or criticize it straight away, without taking into account the various social and economic factors that the architect underwent in designing it. Somewhere, there has been an equilibrium achieved by him/ her to get the project up and running. And, if it has achieved in bringing happiness to a bunch of people who were instrumental in the execution of the project, then whatever anyone says . . . You have achieved Excellence !

Ar. Mukul Goyal



RESEARCH

Understanding Energy Conservation Measures (ECMs) in the Climate Context of India using ECBC-R
Chitrarekha Kabre, Kalpana Tyagi

●

Inclusive Urban Design: Lessons from Singapore on Strategic Planning & Implementation
Prof. Dhiraj Nandkishore Salhotra

UNDERSTANDING ENERGY CONSERVATION MEASURES (ECMS) IN THE CLIMATE CONTEXT OF INDIA USING ECBC-R

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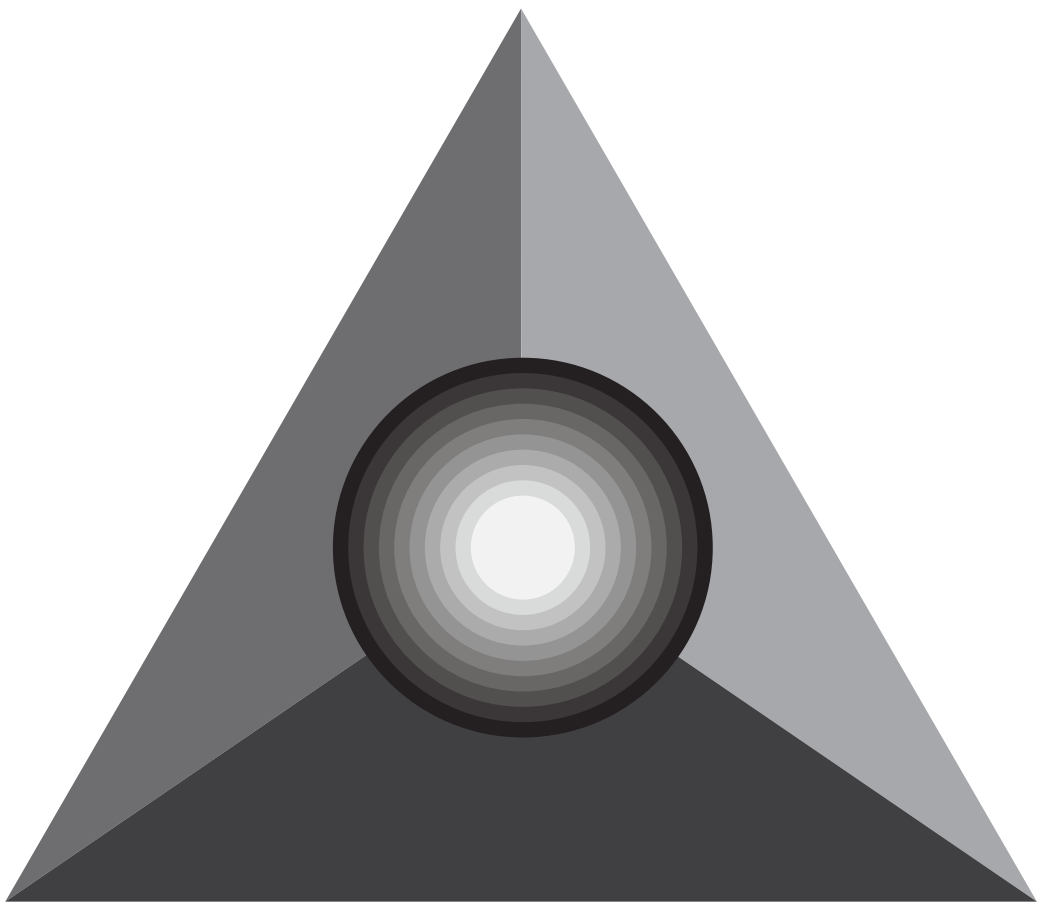


ABSTRACT

The domestic sector in India accounts for the second-largest share of the total consumption of electricity. The Energy Conservation Building Code (ECBC) for residential buildings, or Eco Niwas Samhita (ENS), introduced by the Bureau of Energy Efficiency (BEE), the Government of India, prescribes Energy Conservation Measures (ECMs) for residential buildings for the climate context of India. The ECBC-R specified limiting values of building envelope parameters like residential envelope transmittance value (RETV), thermal transmittance of roof, openable window-to-floor area ratio (WFRap,) and visible light transmittance (VLT). This paper aims to analyze the extent of benefits achievable with the ECMs for residential buildings in five cities characterizing each of the five climate zones of India: Ahmedabad (hot-dry), Chennai (warm-humid), Bengaluru (moderate), Delhi (composite), and Srinagar (cold). A stand-alone four-story fully air-conditioned residential building with a floor plate of 100 sq.m and gross floor area of 400 sq.m is modelled in e-Quest 3.64 for two situations: residential as usual (RAU) base model (specifications from conventional residential buildings in India) and ECBC-R compliant model (specifications from ENS 2018). The results of ECMs are analyzed for each of the five climate zones, and it is confirmed that ECBC-R models represent a 39 to 43% decrease in energy demand. The paper, therefore, recommends that adopting ECMs of ECBC-R 2018 will give a range of EPI of 71-97 KWh/m2 per annum in the climate context of India.

Keywords: *Residential buildings, climatic zones of India, Energy conservation Measures, Energy modelling, Energy Performance Index*

1. INTRODUCTION

Architecture is concerned with maximizing the cost benefits of providing the building fabric (in terms of building system and environmental system) to meet the requirement of the occupants (as defined by the activity/behaviour system and organisational objective). (BPRU 1972).

The Anglo-American term "ecological architecture" is the buzzword for an architectural practice that endeavours to respond to the global threat to ecological systems on which we depend. Architectural response to the ecologically sustainable development includes the energy-efficient design, which entails effective integration of climate responsive design, occupant thermal comfort, and building technology, Figure 1. This section presents the study context, energy consumption in residential buildings, EPI benchmarking, and Energy Conservation Building Code for Residential Buildings (ECBC-R) 2018.

1.1 Context

The worldwide repertoire of traditional habitat is awash with the know-how of climatically optimized built responses, which vary from region to region corresponding to the climate of a place. In India, indigenous habitat has several climate-responsive and environmentally-conscious built responses (Figure 2a). However, the dominance of the international style of architecture in the 20th century and habitat design also evolved into matchbox-like built forms irrespective of the place's climate. Modern residential design is characterized by the building envelope of a minimum thickness of 200 mm or so with a large expanse of glass

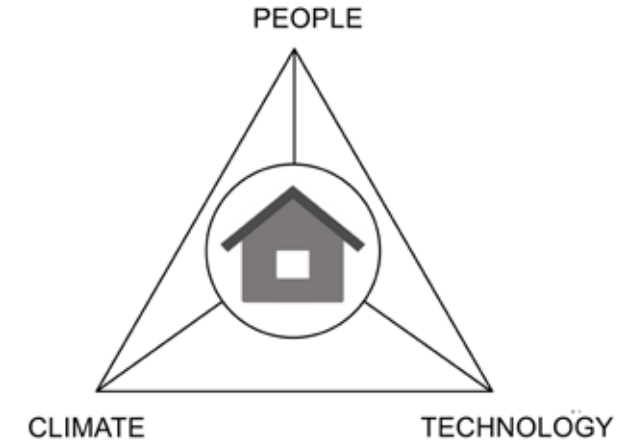


Figure 1: Energy efficiency in the built environments *(Source : Authors)*

Figure 2a: Traditional houses *(Source: https://www.caleidoscope.in/wp-content/uploads/2018/11/Traditional-Homes-of-South-India-Kerala.jpg (accessed on 26 Jan. 2021)*

Figure 2b: Contemporary houses *(Source: https://cdn.homedsgn.com/wp-content/uploads/2016/10/Mobius-Home-01-850x873.jpg (accessed on 26 Jan. 2021)*

(Figure 2b). Consequently, residential energy demands have grown, leading to environmental degradation. The building envelope is technologically the most complex element of the residential design since it has to fulfil the occupant's wellbeing and comfort requirements within a stringent cost frame.

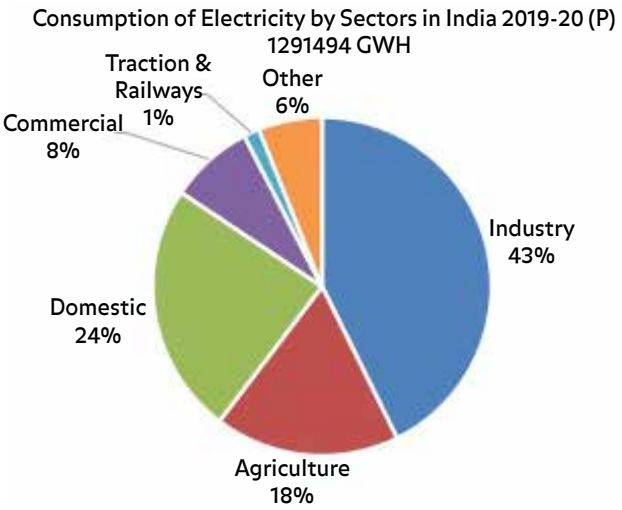


Figure 3: Sector-wise electricity consumption in India during 2019-20
(Source: MOSPI (2021))

Peninsular India, with its expanse of approximately 3.2 million sq. km, has a latitudinal extent ranging from 6°N to 36°N and a longitudinal extent ranging from 68°E to 98°E. In India, about 7.49 percent of the country's gross value added at the basic price (at current prices) is attributed to the construction sectors, more than many industries (RBI 2021). As the construction sector in India rapidly grows, conserving energy and protecting the environment presents several challenges—residential buildings constitute 75% of the construction sector (EIU 2013). The urban population is 377 million, and households are 246.69 million (Census of India 2011).

The total energy demand in the built environment consists of 80 percent operational energy attributed to the energy-intensive services and 20 percent embodied energy attributed to the building materials, construction, and demolition (WBCSD 2009). Consequently, GHG emissions of the built environment comprise 80 percent in the operational period when energy is consumed for lighting, cooling-heating, ventilation, and plug loads (appliances) and 20 percent during construction and demolition. The operational energy consumed during building occupancy comes under the purview of the real estate professionals (the planner, architect, or engineer). The buildings industry signifies an excellent potential to decrease energy utilization in existing or new buildings by a projection of 30 to 50 percent (UNEP 2009).

1.2 Electricity Consumption in Residential Buildings

India's estimated electricity consumption augmented from 6,94,392 GWh during 2010-11 to 12,91,494 GWh during 2019-20 ℗, exhibiting a CAGR of 6.74%. The electricity consumption stepped up from 2018-19 (12,09,971.63 GWh) to 2019-20℗ (12,91,493.75 GWh) by 6.74%. Of the total consumption of electricity in 2019-20℗, the largest share (42.69%) is attributed to the industry sector, followed by domestic (24.01%), agriculture (17.67%), and commercial sectors (8.04%), Figure 3 (MOSPI 2021). Thus, the highest number of electricity consumers are in the domestic sector among all the sectors. The trajectory of energy demand in the residential sector shows a growing trend (figure 4).

Since electricity is becoming affordable for an increasing number of people, about 34% of residential energy demand is towards comfort conditioning (cooling/heating), and about 28% is for lighting (figure 5).
The Energy Performance Index (EPI) is a number that specifies the overall energy performance of a building. EPI can benchmark the energy performance to design new buildings, renovate existing buildings, and frame policy, regulations, and codes:

$$EPI = \frac{annual\ energy\ consumption\ in\ kWh}{(total\ built\text{-}up\ area\ (excluding\ unconditioned\ basements)}$$

The Fraunhofer Assessment Tool is adapted for the energy performance appraisal of new residential buildings for the Indian context (Alexeew, Anders, & Zia 2015). The tool adopts the below stated EPIs established from a primary survey of 1000 households, out of which approximately 500 are air-conditioned flats:

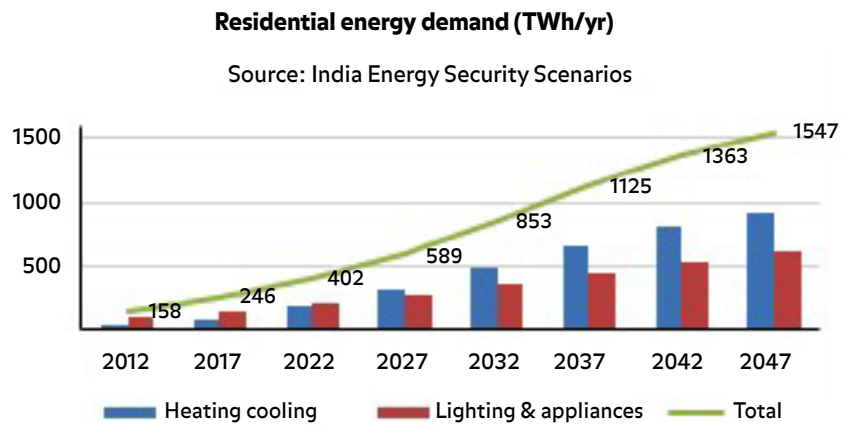


Figure 4: Trajectory of energy demand in residential sector
(Source: http://iess2047.gov.in/pathways/22202222222222220222222222201222220222222221120222022202222/primary_energy_overview_chart#)

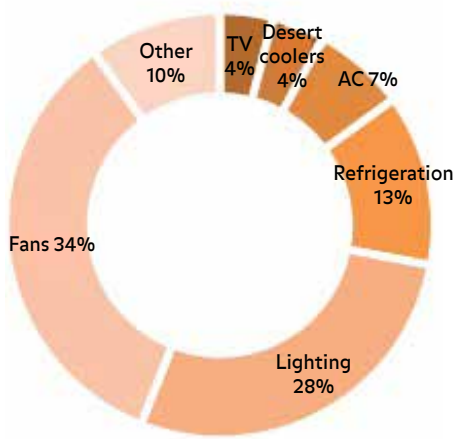


Figure 5: Break up of Energy consumption in Residential building, India
(Source: Climate Works Foundation (2010))

- Maximum consumption 107 kWh/m² annum
- Minimum consumption 21 kWh/m² annum
- Average consumption 49 kWh/m² annum

Another study arrived at the below stated EPIs based on a primary survey of 800 households in four climate zones of India (GBPN 2014):

- Ahmedabad 27 kWh/m² annum
- Bangalore 32 kWh/m² annum
- New Delhi 57 kWh/m² annum
- Mumbai 54 kWh/m² annum

1.3 Energy Conservation Building Code for Residential Buildings (Eco Niwas Samhita) 2018

Bureau of Energy Efficiency introduced the Energy Conservation Building Code for Residential buildings (ECBC-R), Eco-Niwas Samhita, to regulate energy conservation in residential buildings (BEE 2018). The building envelope has the highest impact on the energy consumption in residential buildings; the ECBC-R sets building envelope performance standards to control thermal gains in climates with elevated cooling demand and control thermal loss in climates with high heating demand and maintain sufficient daylighting and natural ventilation. The code applies to all residential buildings and residential parts of 'mixed land-use projects,' both constructed on a plot area of ≥ 500 m².

Eco Nivas Samhita covers all the properties of the building envelope, and its components are as, Figure 6:

- WWR, VLT= sets limits for glazing to ensure daylighting.
- Uwall, Uroof, SHGC= sets limit for envelope heat gain of the building.
- WFR= sets the limit for window openings for sufficient natural ventilation.

Together these all components lead to residential envelope transmittance value (RETV)

A) Openable window to floor area ratio (WFR):
Property that denotes the potential of utilizing fresh air for good ventilation and thermal comfort, leading to a reduction in cooling energy. For various climatic zones, minimum WFRop (%) is given in Table 1.

B) Visible Light Transmittance (VLT):
Property that indicates the potential of the transparent/ translucent component of the building envelope (panels used in windows/doors/ventilators). VLT values are related to the WWR of the building (table 2), and VLT values can be acquired from the glass cut sheet from any glass manufacturer.

C) Thermal Transmittance of Roof (U_{roof}):
Thermo-physical property of the roof assembly of the building is known as thermal transmittance (U_{roof}). Lower U_{roof} value helps reduce heat gain through the roof, enhancing thermal comfort. The maximum Uroof value is 1.2W/m².K.

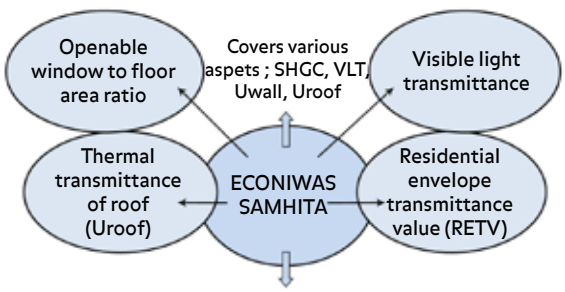
D) Residential envelope transmittance value (RETV):
Property that signifies the thermal performance, except the roof. It accounts for three parameters; the thermal conductivity of opaque (wall, door/ window/ ventilator panels) and non-opaque (transparent and translucent panels) building components and solar heat gain coefficient of non-opaque building components.

RETV considers four climate zones (Hot-dry, Warm-humid, Temperate, and Composite) with a maximum value of 15W/m².

The thermal transmittance of the building envelope (except the roof) for the cold climate is set to a maximum of 1.8 W/m²K.

2. METHODOLOGY

The first step of the research was forming a base model of a Residential–as–usual (RAU) using input data from conventional construction and materials for residential buildings in India. The second step was articulating the ENS compliant model by taking input values from Energy Conservation Building Code for Residential Buildings (BEE 2018). The outcomes from the RAU and ECBC-R models permit comparison of building performance in each of five climates and the Energy Performance Index achievable (Figure 7).



Standards for enhancing thermal comfort and reducing energy consumption

Figure 6: Energy Conservation Building Code -R (Eco Niwas Samhita)
(Source: BEE (2018))

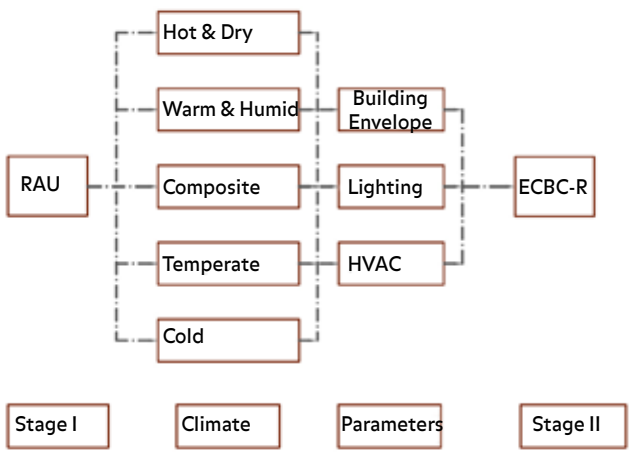
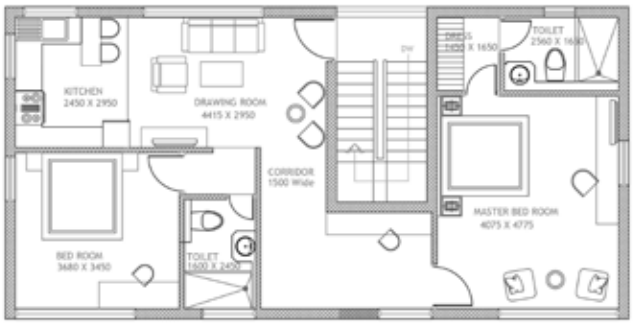
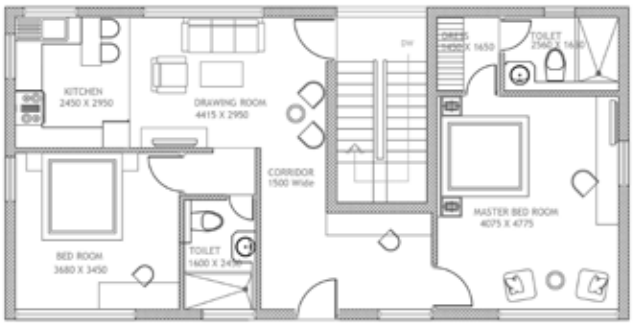


Figure 7: Building energy modelling run chart (5 x 2 = 10 runs)
(Source: Authors)



TYPICAL FLOOR PLAN



GROUND FLOOR PLAN

Figure 8a: Floor Plans
(Source: Drawing by Authors based on inputs from practising architects)

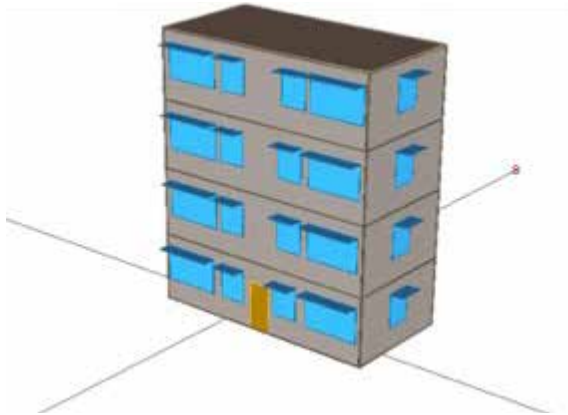


Figure 8b: 3D view
(Source: eQuest modelling by Authors)

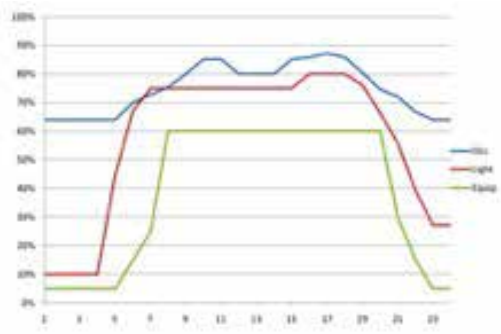


Figure 9: Hourly scheduled values of the internal loads (lights, people, and plug loads) *(Source: Authors)*

2.1 DOE-2 Derived eQuest Engine

This research uses computer-aided building thermal energy modelling software to allow parametric studies that produce comparable performance data. Energy modelling software comprises a thermal computation engine to estimate the energy consumption over a year. The software converts the user-defined thermal model into a mathematical model. Following this, mathematical model equations are solved hour-by-hour using hourly weather data over an entire year (8760 hours) for the given location.

DOE-2 of the Department of Energy, U.S., is well-known and broadly used building energy modelling software (DOE 2016). eQUEST (the Quick Energy Simulation Tool), used for this research, combines a simulation engine drawn from the DOE-2 with a building creation wizard, an energy conservation measure (ECM) wizard, and graphical reporting. Input to the software comprises a detailed narration of the study building and the hourly schedule of thermostat settings, lighting, occupancy, and equipment. eQuest offers precise modelling of building attributes such as fenestration, shading, exterior and interior building mass, and the active response of different air-conditioning and heating system kinds and controls. In addition, eQuest provides a functional daylighting model to assess the influence of daylight on electrical lighting and thermal loads (Hirsch and Associates 2009).

2.2 Building site and Climatic data

This research analyzes energy modelling conducted in five different climate zones in India (BIS 2016) represented by five cities: Ahmedabad (hot-dry), Chennai (warm-humid), New Delhi (composite), Bengaluru (temperate) and Srinagar (cold) using ISHRAE weather data (shown in Table 3). The aim is to investigate the effect of energy conservation measures (ECMs) on the different building loads and ascertain the energy reductions achievable for each climate.

Typical meteorological year (TMY) is a synthetic year (based on 30-year data) to represent hourly (365 x 24 = 8760) temperature (°C), relative humidity (%), normal solar radiation (kWh/m^2), and other variables within the period of record. TMY weather file of the given place is the input to the energy modelling software.

2.3 Building Model

According to the research methodology, a building model is developed for energy modelling from a standard residential design with a central core and four perimeter zones (figure 8) a & b. The same model is utilized for RAU and ECBC-R cases. The input parameters of both models are given in Table 4 and explained below:

- This model represents the scale and occupancy patterns of a residential building. A four-storeyed residential building has a floor plate of 100 sq.m and a gross floor area of 400 sqm.
- Depth of the perimeter zone is considered as 6 m with a floor-to-floor height of 3m.
- It is fully air-conditioned and was modelled using e-Quest 3.64, representing India's typical residential building type.
- The Residential as usual (RAU) building is modelled

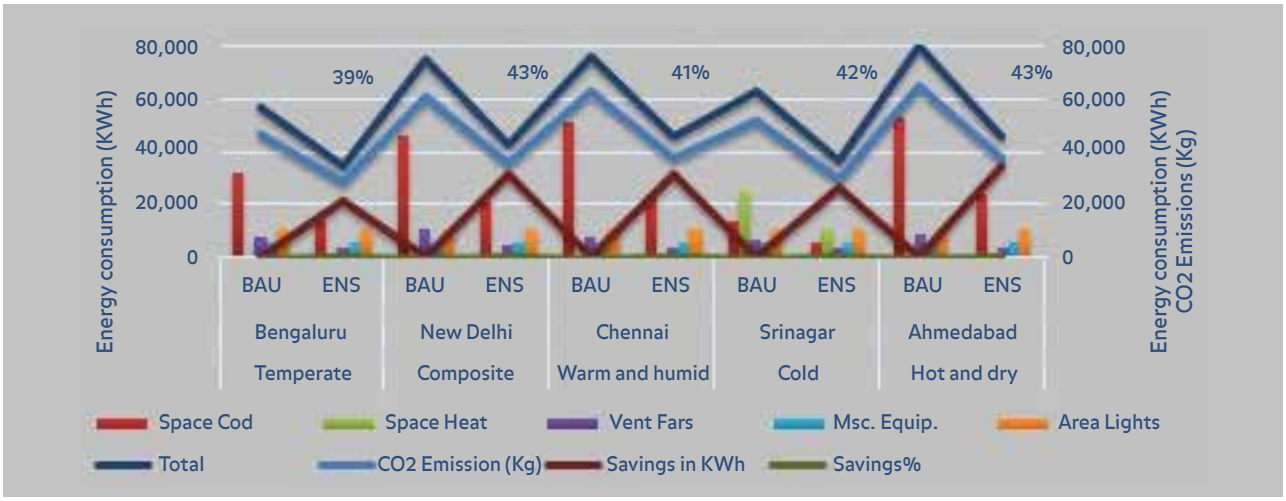


Figure 10: Energy consumption of RAU and ECBC-R models *(Source: eQuest modelling by Authors)*

as standard orientation followed in India so that the longest sides are exposed to north and south with 30% glass, and the smallest sides are exposed to east and west with 5% of glass. The building is modelled such that it does not shade itself.

- Occupancy: 24x7 hrs in a week. Hourly scheduled values of the internal loads (lights, people, and plug loads), Figure 9.
- Cooling and heating setpoints: occupied space cooling and heating setpoints of the HVAC unit are ascertained as 25°C (78°F) and 20°C (68°F), respectively: it is presumed that the heating process begins to function when zone temperature drops below 20°C in winter. The cooling process begins to function in summer when the zone temperature goes above 25°C. The cooling design temperature indoor is 24°C (75°F), and supply is 13°C (55°F). The heating design temperature indoor is 22°C (72°F), and supply is 35°C (95°F). The minimum airflow is 0.5 cfm/ft^2, and the minimum VAV flow is 30%. eQuest uses indoor design temperatures to size airflow requirements.

3. BUILDING PERFORMANCE MODELLING

The Energy Performance Index (EPI) or total energy consumption per unit area is the metric used to assess the whole building energy performance. Additionally, energy consumption by end-users is utilized to ascertain if any end-uses entail correction or if its potential energy reductions are insignificant.

The outcome exhibits significant energy savings in cooling, heating, and ventilation in all climate zones due to ENS compliant building envelope (Figure 10). This can be explained further- all five climate zones estimated cooling energy-saving range between 54 and 60%. While the heating energy savings is 58% in the cold climate of Srinagar. And ventilation energy savings is 50% in all climates. Overall energy savings range between 39 and 43%.

EPI achieved in a temperate and cold climate is 71 and 75 kWh/sq.m respectively, while in composite climate it is 91 kWh/sq.m and in warm humid and hot dry climates it is 97 kWh/sq.m (Table 5). This is comparable with similar studies.

4. CONCLUSIONS

An analysis of the RAU and ECBC-R model reveals that the energy consumption reduction is about 43%, primarily from the savings in the cooling demand energy as a result of the decrease in heat gains from the building envelope. The percentage energy savings in the instance of ECBC-R ranges between 39% and 43%. The difference in EPI between the RAU models and the ECBC models represents a 43.7% to 47.18% reduction, which aligns with the outcomes of similar studies. It is, therefore, recommended that the energy conservation measures (ECMs) of ECBC-R 2018 would be effective for each climatic zone in achieving energy efficiency.

Table 1: Minimum window to floor area ratio
(Source: BEE (2018)

Zones	Minimum WFRop (%)
Warm-Humid	16.66
Composite	12.50
Temperate	12.50
Hot-dry	10.00
Cold	8.33

Table 2: Minimum Visible Light Transmittance
(Source: BEE (2018)

WWR	Minimum VLT
0-0.30	0.27
0.3-0.4	0.20
0.4-0.5	0.16
0.5-0.6	0.13
0.6-0.7	0.11

Table 3: Geographical information and monthly temperature of analyzed cities
(Source: Adapted by Author based on weather files DOE (2016)

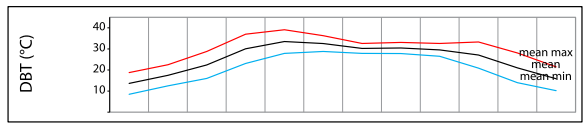
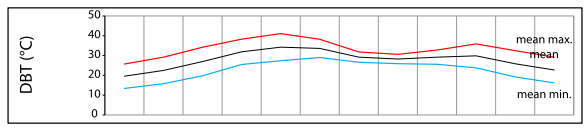
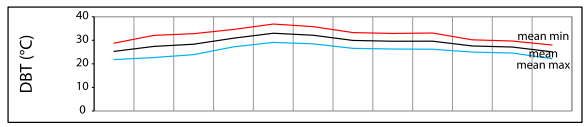
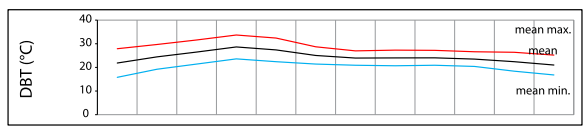
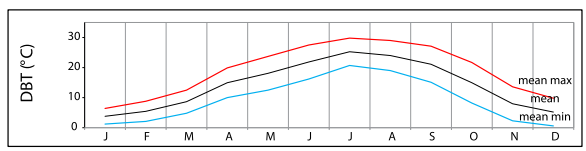
Climatic Zone	City	Mean Maximum and Minimum Temperatures
1. Composite	New Delhi Latitude: 28° 34' N Longitude: 77° 11' E Elevation: 216 m	
2. Hot dry	Ahmedabad Latitude: 26° 53' N Longitude: 70° 55' E Elevation: 231 m	
3. Warm Humid	Chennai Latitude: 13° 0' N Longitude: 80° 10' E Elevation: 16 m	
4. Temperate	Bengaluru Latitude: 12° 58' N Longitude: 77° 34' E Elevation: 921 m	
5. Cold	Srinagar Latitude: N 31° 19' Longitude: E 76° 31' Elevation: 874m	

Table 4: Input parameters to eQuest software (Residential Building area ~ 400 sqm, floors G+3, floor height 3 m)
(Source: Author)

Aspect	RAU model	Description
BUILDING ENVELOPE	Opaque Wall Assembly (W/m² K)	230 mm thick brick wall, 1.8 W/m² K
	Roof Assembly (W/m² K)	150 mm concrete slab, 3.9 W/m² K
	Fenestration (W/m² K)	single glass, 7.9 W/m² K
	SC	0.85
	VLT	48%
LIGHTING	Building Area Method	5.3 W/m2
HVAC DX	Cooling Type	DX Units
	Heating Type	Electric Heating
	COP	2.8
	ECBC-R compliant model	
BUILDING ENVELOPE	Opaque Wall Assembly (W/m² K)	0.39 W/m² K
	Roof Assembly (W/m² K)	1.2 W/m² K
	Fenestration (W/m² K)	Double glass, 1.8 W/m2 K
	SC	0.5
	VLT	48%
LIGHTING	Building Area Method	5.3 W/sqm
HVAC	Cooling Type	Direct Expansion with air-cooled condenser
	Heating Type	Electric Heating
	COP	3.5

Table 5: EPI for RAU and ECBC-R cases
(Source: Author)

Climate	City	Model Name	Benchmark EPI (KWh/m² per annum)	ECBC Energy savings on BAU model
Composite	New Delhi	RAU	170	
		ECBC-R	91	43%
Hot and dry	Ahmedabad	RAU	183	
		ECBC-R	97	43%
Warm and Humid	Chennai	RAU	175	
		ECBC-R	97	41%
Moderate	Bengaluru	RAU	126	
		ECBC-R	71	39%
Cold	Srinagar	RAU	142	
			75	42%

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INCLUSIVE URBAN DESIGN: LESSONS FROM SINGAPORE ON STRATEGIC PLANNING & IMPLEMENTATION

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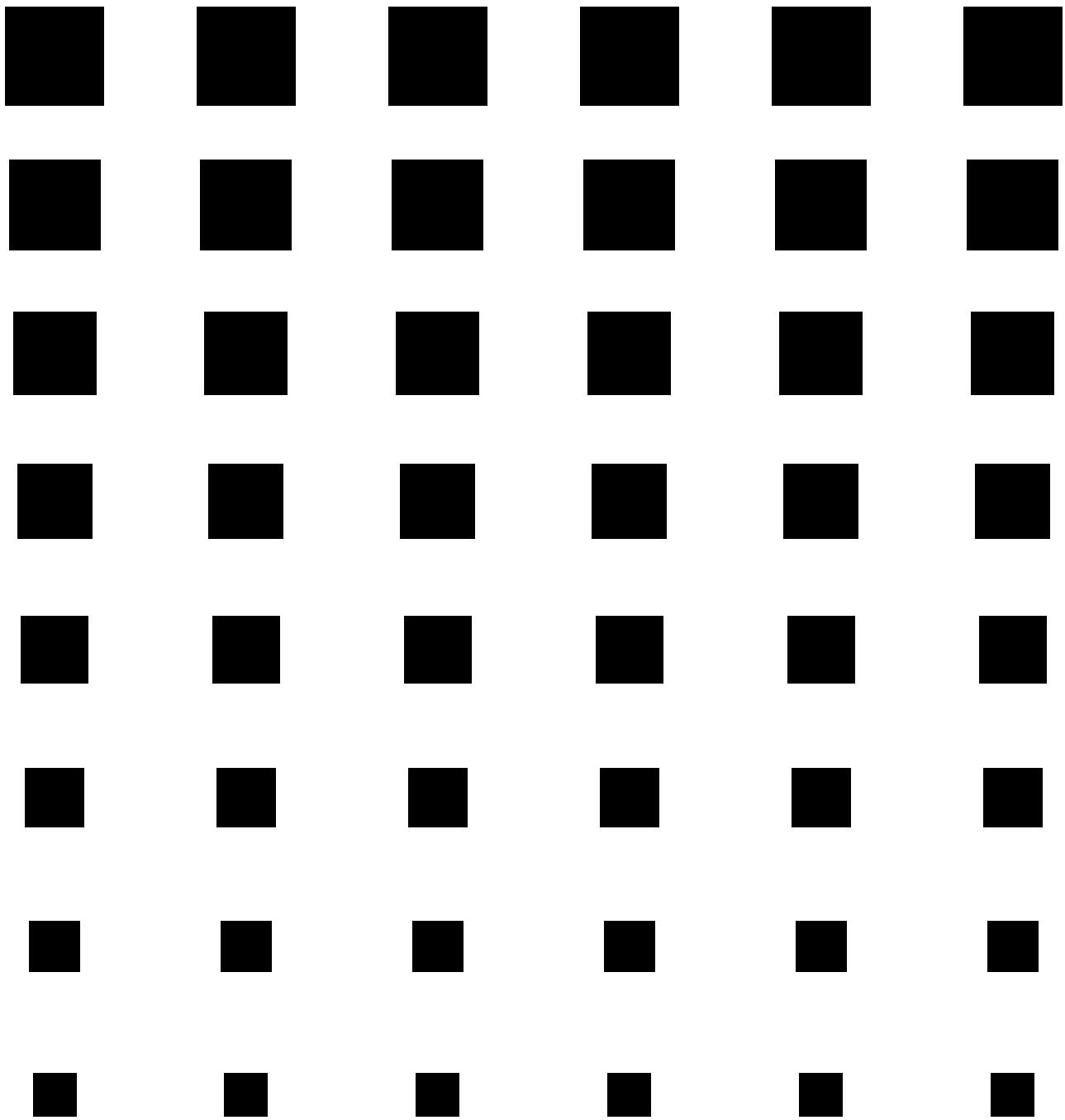

ABSTRACT

This paper is an analytical overview of the achievement of inclusivity in Singapore by transforming its once-blighted areas into vibrant centres through robust envisioning and execution. The research explores the achievement of social, economic and environmental inclusivity as a result of versatile incremental development and path-breaking archetypal thinking.

The paper enlists lessons, to address the issue of providing equitable opportunities for all, while sustaining the growth, in a live case-study-based approach. The paper maps the journey of Singapore, for learnings, that are feasible to a variety of contexts. The paper probes the 'solidarity quotient' while addressing 'diversity' by a balanced focus on mixed-use development, in new as well as renewal projects. The paper explores the gamut of catalytic interventions exercised to achieve 'multi-utility to public spaces', unobtrusive subtle segregation between 'driven and pedestrian spaces' while maintaining soft blending of 'hierarchical skylines' as the key ingredients.

The paper outlines the importance of 'interdependent resource optimization' through 'planning for compact self-sufficient neighbourhoods' while engaging in partnership between 'nature and habitat'. The paper endorses the strategic need to inculcate 'social vigilance and people's participation' in decision-making, as the irrefutable lessons for inclusivity and ingrained sense of liveability.

Keywords: *urban inclusivity, solidarity, catalytic interventions, resource optimization, people's participation*

1. INTRODUCTION

The research exploration is to identify key areas, as lessons, that can be emulated in a variety of contexts, to achieve improved components of inclusivity and liveability for citizens. The achievement of inclusivity and liveability is an outcome of stringent policies, planning and mitigation especially during the execution stage of projects, to ensure the texture of urban fabric maintains its diversity, yet achieves homogeneity and acceptance amongst the masses. The achievement is visible in the sense of belonging and ownership inculcated amongst the locales in Singapore. The paper identifies the contribution of the Urban Redevelopment Authority (URA), Housing Development Board (HDB) in Singapore for providing, affordable and serene housing facilities to accommodate its population. The stringent planning that identifies the potential of each resource and optimizes its benefit through staunch segregation, can serve as lessons to ensure a brighter future.

Dalem (1999) highlights the achievements in the large scale urban interventions in Singapore, that have been successful in achieving the quality of the built environment while sensitizing the citizens as the caretakers and responsible inheritors. The immaculate system of generating feedback and obtaining inputs from the city dwellers has contributed to sustaining the qualitative aspects of cityscapes. The inputs have led to the blending of several sensitive small interventions, for achieving the sense of harmony. Lastly, the efforts of planning authorities in revisiting heritage sites and districts for upgradation and continuous renewal of core precincts have successfully ensured retention of character and heritage with renewed vigour and maintaining attractiveness.

The research exploration has found the following key areas, as lessons that can be emulated in a variety of contexts, to achieve improved components of inclusivity and liveability for its citizens:

Role of stringent urban policies and planning and mitigation steps during the implementation stage

Urban inclusivity is the highest order of achievement and manifestation of robust mechanisms. As per the core techniques and cost-cutting guidelines specified by Baharoglu & Kessides (2002), inclusive urban planning and design is an outcome of visionary statements, stringent policies, financial support and strong design strategy. Future-centric planning decisions that impact long term benefits are credited for the success in Singapore.

The fine-grained urban texture of Singapore exemplifies planning with an equitable intensity of macro as

Figure 1: Affordable rental housing.

Figure 2: The vibrant solidarity of high rise residential apartments to address the need for mass housing.

Figure 3: The blend of mixed use development to create a humanizing ambience and pedestrian-friendly streetscapes

Figure 4: Construction of self-contained neighborhoods

Figure 5: New developments as extended suburbs

Figure 6: Pedestrian-friendly underpasses for accessibility to the War Memorial Park from Bras Basah road with an unobstructed distant vista through Esplanade Road with the backdrop of towers of Battery Road, along Marina Boulevard, Fullerton Hotel and Boat Quay.

well as micro levels, achieved vigour in new as well as renewal projects, that offers multiple lessons on zealous implementation of stakeholder-centric design.

1.1 Role of Housing Development Board (HDB) of Singapore in providing affordable housing with solidarity and livability

The Housing Development Board (HDB) of Singapore is empowered to provide affordable housing for all through stringent policies for land acquisition and a single-minded focus on providing quality housing. As per the Singapore Institute of Architects (SIA) fifty years of SIA has generated self-contented neighbourhoods for its population and still continues to provide solutions with unique solidarity (SIA, 2013). The decision of providing a rich mix of high, medium and low rise, equitable development with the blending of various housing typologies has resulted in generating the variable urban texture of enriched liveability. The strategy continues to work favourably in achieving amalgamated communities while successfully eliminating the issues of homelessness, squatters, ethnic enclaves and ghettos.

The urban housing projects and policies in alignment with cohesive land use planning have contributed significantly to creating an environment of inclusivity and care. Singapore has a successful model of HDB for an affordable housing solution that can be emulated for achieving inclusivity.

Landmarks: 50 years of real estate development. Singapore by Tan, S. Y. & Gay, G. (2010) identifies, Fine grain livability in Singapore is achieved by addressing Diversity with Mixed use & sharing of resources of common interests. Singapore holds interests of diverse communities and groups in to shared centres, bringing about cohesion and spirit of the place. In the planning of housing areas, evidently there has been a blend of low medium and mid-rise occupancies along with varying sizes of dwellings as cluster groups. The playgrounds are an excellent mix use spaces for varying age groups gender and ethnic groups. The provision of gathering areas, halt points and places of rest and contemplation are well organized to ensure co-existence.

According to Singapore Institute of Architects (ibid.) mass housing projects offer properties on lease units with a variety of affordable solutions. It is the success of HDB that currently they are able to provide housing to almost 80% of the resident population. It is able

to cater for a variety of budgets while setting up well-organized neighbourhood units complete with schools, playgrounds, parks, crèche, supermarkets in a self-contained layout often referred to as 'mini cities'. These townships can be seen at Changi Point, Bukit Timah, Marine park, Farrer Park, Seletar and Lim Chu Kang. The success of HDB in Singapore is a landmark example of managing the issue of public housing with concern and inclusivity.

The recent policy and focus on accommodating the unique requirement of senior citizens by providing compact double room housing units in strategic locations in the vicinity to health care and community facilities serves as an appropriate affordable model, that allows ease in maintenance while generating income is a step furthering the inclusivity initiative. According to Crooks, et al (1971) It is this visionary thinking and effective policymaking and operative implementation that has created the vigour and trust amongst the citizens. In addition to this, the entire mechanism is backed by economic support provided by the banking segment in providing loan and reverse mortgage schemes to facilitate efficient implementation.

1.2 Optimal Utilization of the Resource Potential in achieving large scale objectives

The balanced macro and micro level planning, has resulted in optimal utilization and management of resources. The policy to enforce macro-level decisions keeps the larger vision of holistic development at the core, driven by foresighted planning on overall long-term benefits. The bold decisions to implement water reserves and incidental stringent planning strategies for riparian zones, forests, parks, freeways, development of suburban extensions, institutional campuses, as well as tourist-centric areas covering entertainment, adventure and segregation of commercial zones with strategic backdrops are central in generating scenic urban-scapes. The interesting feature of such developments is the architectural language followed in creating a marriage between larger objective-based interventions with consideration for micro-level implications.

Singapore is able to achieve bio-diversity through strategically placed parks and gardens, it has developed special tourist attractions and explored harmonious urban-scaping. The incentives to the stakeholders in the tourism industry, for undertaking Corporate Social Responsibility initiatives, while working with local communities and encouraging energy and environmental conservation has created a fertile ground for rooting the value of resource sustenance.

1.2.1 Urban revitalization at Marina Waterfront: Mix of large and small interventions

In *From the Third World to the First,* Lee (2000) testifies to the role of Marina Waterfront today as evidence of appropriate implementation of vision through a robust mechanism of planning and implementation. The transformation of Marina Waterfront along the historic district as a vibrant hub of entertainment provides enrichment to the economic, social and cultural identity, while sensitively augmenting the environmental impact. This transformation is a result of the Singapore River rejuvenation project initiated in 1977-87. This large scale revitalization project demonstrates the ability of urban interventions in transforming wastelands and blighted cores into vibrant and dynamic city centres. The precinct can be analyzed at multi-level intervention. On one side is its environmental impact and on the other, the participation of various stakeholders, each having a different expectation and stakes.

The Marina Bay as it stands today in the picture demonstrates the alignment of Esplanade Bridge, Pedestrian Jubilee Bridge, along the Merlion with the backdrop of Raffles City, Esplanade Theatres along the Bay, with the backdrop of Mandarin Oriental dotting skyline along the Float Marina Bay Stands that optimizes the value of backdrop and used to host large gatherings, with the picturesque Helix Bridge connecting over Marina Channel leading to an intriguing skyline formed by the Art and Science Museum, Expo and Convention Centre backed by the Marina Bay Sands and the stately, majestic towers along the distant horizon of Marina Boulevard Road, while maintaining the pedestrian scale of the strategically placed plaza to explore the vista.

Singapore has a distinct history of connecting over its rivers through pedestrian bridges and boast their uniqueness. The pedestrian bridges in many locations are beautiful reminiscences of a glorious past, while ensuring that new additions are masterpieces of architecture.

The book Environment and the City: Sharing Singapore's Experience and Future Challenges (Ling, 1995) recognizes that, Singapore ensures careful placement of its architectural marvels while maintaining the appreciation space for optimization of distant and immediate horizons. The beauty is in the consolidation of the monumentality from an uninterrupted pedestrian experience. Pedestrian connectivity is established through well-defined promenades, bridges and pedestrian-friendly walkways.

1.2.2 Inclusivity and challenges of large scale projects in mitigating micro level expectations of stakeholders.

The large scale mega projects offer challenges due to their robustness and for being alien and insensitive to the immediate surroundings. Large scale projects in Singapore are aimed at addressing environmental issues at the city level, while whenever they cross or overlap the boundaries of various local neighbourhood contexts, appropriate interventions are introduced as a measure to sensitize or soften the edges. The strategy of a soft launch is evidently a success formula of major projects in Singapore. It demonstrates the potential of mixed land-use projects, wherein a pure infrastructure project takes possession of the precincts in the vicinity and addresses the local needs as a part of social responsibility. Singapore civic authorities ensure that while executing large infrastructure projects of mass rapid transport system (MRTS) to maintain the visual harmony of the city and check pollution levels of sound and air.

The projects ensure safety and an unhindered sense of movement through the use of appropriate signage

Figure 7: Waterfront development of Merlion Promenade as vantage point that showcases robust urban design and inclusive urban space

and alternative routes. The residents are confident that all projects of city significance shall be to ensure the interests and improvement of existing facilities and thus are not viewed as a hindrance or exploitation.

The Integrated Urban Infrastructure Development in Asia Report by Singh et al (1996) credits the introduction of fast-track expressway routes in Singapore that have eased across city movement, and have been lined with cycle routes and underpasses to connect with the rest of the city. The pioneering implementation of Electronic Road Pass (ERP) has ensured a reduction in the use of private vehicles while ensuring the promotion of cycle use. The mammoth projects of MRTS corridors are well lined up with greening and well-maintained kerb lines and driveway demarcations, providing streamlined streetscapes while capturing scenic views of the city.

1.2.3 The large projects blended with small interventions for inclusive experience.

Baker & Schuler (2004) suggest that the success of inclusivity in large scale revitalization projects is built on stakeholder awareness and participation. It is the understanding of the 'common good' that needs to be communicated effectively for ensuring meaningful outcomes. The Singapore model of development demonstrates the effective implementation of the people-centred approach in characterization and quality upgradation of localities. The involvement of the local population through a feedback mechanism provides community inputs in deciding the resource allocation and determining the further course of implementation of policies. This has resulted in the appropriate delivery of products and services essential for the community. Jalal (2018) says '. . . When the community feels empowered to contribute . . . not only the hardware of the neighbourhood is being revitalized, it is the heartware that also gets boosted . . .' The potential of small intervention projects that are community-centric is far-reaching and facilitate the bridging between large interventions with the city's stakeholders.

2. LITERATURE REVIEW

The notion of Inclusivity is rooted in the perceptive essence of the city dwellers. The research at the outset is based on the feedback received from a variety of stakeholders of the city and the sense of satisfaction. The experiences shared by such interactions were probed through investigation on the factors that have led to a transformation leading to the generation of a sense of inclusivity. The publications of the planning authorities such as URA and HDB provided the baseline inputs of the strategic thinking and implementation process.

The review journals of the authorities, articles and scholarly research papers on the topics of *Analyzing Urban Poverty Reports* by the Institute of Policy Studies further synthesized the findings and indicated the robust execution of the projects.

The emerging urban-scapes captured in real-time are presented as testimonial evidence of the implementation of the planning strategies to achieve the sensed, perceptive inclusivity. The nature of the research being real-time documentation is a suitable reference for further deliberations. The clues from the study shall help future research and development in the quest for achieving inclusive urban design.

3. STRATEGY FOR BLENDING LOCAL PARTICIPATION FOR INCLUSIVITY

The engagement of community and participation of industry in co-funding urban interventions has generated a blend providing a rich mix of stakeholders

and interest while providing the needed vibrancy to support the economic vitalization of precincts. The stringent policies that ensure discreet non-obtrusive interventions of projects through the use of large machinery and complete precinct management action plan have ensured that the megaprojects are scaled to match unhindered humane experience.

The unique sense of belonging, ownership and pride has increased the sense of inclusivity amongst the city dwellers. Projects such as cycle-stands with folding tables for rest and contemplation, sensitive interventions in parks and arteries of movement along busy streets, civic facilities of drinking water fountains and rest areas are some of the ways Singapore signals to its city dwellers that the city cares.

3.1 Adding the Inclusive component by addressing the pulse of the city

At the core of all-inclusive development is the empathetic understanding of multiple user needs and expectations, while arriving at a pragmatic solution that addresses and remains sustainable, humane and experientially active. Singapore stands as an international city managing tourism almost thrice the size of its population. However, the fine-grain of liveability remains intact due to appropriate policies and interventions at the mega and micro scales.

Grant (2014) identifies the immaculate feedback system that gauges the pulse of the people while addressing rejuvenation of existing products, services and facilities and has largely contributed to developing civic sense and pride for the city. The city considers intangibles of ethnicity along with age, gender, economies and physical mobility attributes of its stakeholders while implementing policies, projects and tangible interventions. The vibrant nature of the neighbourhood planned by HDB emerges from the humane scale, controlled skyline, balanced allocation of need-based resources, layout and organization of spaces that cater to the special needs of its inhabitants, providing the necessary impetus for self-contented communities. The localized need-based allocation of resources has contributed significantly to creating identities and cluster characteristics, while effectively addressing site-responsive regional plans.

Civic provisions of drinking water fountains, toilets, bus stop shelters and resting places are designed with universal design standards creating ambient inclusivity. MRTS are equipped to tackle the diverse needs of differently-abled and are inclusive by design. Urban streetscapes with well-demarcated kerb lines, ramps and traffic calming measures ensure the safety of pedestrians and cyclists. The segregated and well-illuminated pedestrian walkways provide safe and easy access across large grounds and shortcuts to move across the city without the need for vehicular travel.

3.2 Involvement of citizens in decision-making for the neighbourhood.

Singapore engages in a dialogue with its city dwellers through the 'Remaking Our Heartland' project and inviting inputs as a part of city improvement. Grant (2014) presents the setting up of booths for obtaining citizen feedback and inputs to local initiatives as an effective technique to improve inclusivity and activation of citizen interests in the neighbourhood. One remarkable initiative is the 'Friendly faces. Lively Spaces' initiative encourages the participation of local communities in identifying areas of community significance and providing for instrumental interventions that address immediate needs. The initiative has a marked influence on the citizens giving them a sense of ownership and pride.

Top to Bottom:
Figure 8: Historical Cavenagh Bridge, along the conserved heritage promenade of Boat Quake along Singapore River with the back drop of contemporary high-rise towers.
Figure 9: Pedestrian walkways with streetscaping for user-friendly experience.
Figure 10: Greening of infrastructure as a visual relief and barriers for sound and dust reduction

4. URBAN RENEWAL PROJECTS IN SINGAPORE, POLICIES AND IMPACT.

Urban Redevelopment Authority has been efficiently re-envisioning the future of Singapore through Meticulous Masterplans arrived with the cognizance of the stakeholders as a joint program. It has already lined up several development initiatives that are set up to encourage, achievement of Livable and inclusive communities. URA has its focus set on developing local hubs, global gateways, by rejuvenating spaces with renewed life and increasing the resilience of the City. A balanced approach to bring about economic growth employment opportunities and mixed use to improve quality of infrastructural and support facilities. The latest areas of focus currently on its Master Plan are Changi Region, Kallang River, Paya Lebar Airbase, Punggol Digital District, Greater Rustic Coast and Southern front.

Ng (2005) in *Ong Teng Cheong: Planner, Politician, President* has expressed that Singapore evidently revisits the sites of significance at the core of the City and doesn't hesitate in reworking it every five years. It is this unique determined effort to re-invent the core precincts that have continuously maintained the vibrancy and generated a sense of pride as well as satisfaction in the user. The city is for its people and heritage to be conserved without compromising on the needs of the present. The pulse of the city is in the manner it is able to address the housing needs of its masses. In 1995 Singapore introduced the Estate Renewal programme, followed by neighbour renewal programs for the upgradation of green areas in the residential neighbourhoods and also Home Improvement Programmes for refurbishing interiors of homes. A similar stringent strategy is followed in Europe for the maintenance and upkeep of dwellings within heritage precincts.

The comprehensive efforts by Civic Authorities in identifying the heritage precincts, projects and landmarks as distinct reminiscences of the past experiences, while investing in developing the urban new is an example of clever conservation. It clearly achieves maintaining that which can be conserved and changing the ones that cannot be restored.

5. CONCLUSION

Inclusivity in urban design is an outcome of alignment that can only be achieved through a visionary action plan, staged in a time-bound framework, supported with adequate finance and the will of the authorities. The lessons from Singapore development are testimonial evidence while addressing the multiple needs of the city dwellers. The solutions adopted are beyond mere beautification and retrofitting of precincts. The effect is truly an outcome of comprehensive efforts and a success story, left to interpret and emulate. The robust structuring of policies that are site and context-responsive require timely renewals. The single lesson as a takeaway from the study of Singapore is to revisit the core areas for the continuous upgradation and listen to the pulse of the stakeholder's expectations before bringing about any intervention.

This pages (Clockwise from L - R):
Figure 11 : Safe cycling areas midst urban cores, efficient traffic calming measures by well segregated lanes and visual communication through prominent markings on the junction of busiest roads, in the pic Junction of Andrews Road and Stamford Road.
Figure 12 : ERP tolls for fast moving traffic at the core areas with pedestrian spaces aligned with bollards
Figure 13 : Protected bus shelters along roads with acoustical sound barriers.
Figure 14 : Disable-friendly driveway parking and demarcated streets, Jurong Bird Park.
Figure 15 : MRTS disabled- friendly buses and safe cycling routes, junction of Raffles Avenue with Esplanade Drive.

Figure 17 : Development of free-way corridors to connect the core areas with latest development areas.

In the words of E.F. Schumaker in *Small is Beautiful,* " . . . Economic development is something much wider and deeper than economics, let alone econometrics. Its roots lie outside the economic sphere, in education, organization, discipline and beyond that in political independence and a national consciousness of self-reliance . . .'

All Photographs Courtesy by: **Author**

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Prof. Dhiraj Nandkishore Salhotra has M.A. (History) and M. Arch. (General). His area of research is identifying design pedagogy and creating a social response while attempting to demystify innovative ways to adopt appropriate methods in managing urbanization. He has made presentations on sustainability and humanizing agenda in several national and inter-national conferences and seminars.

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STUDENT WORK

CENTRE FOR CULTURAL UNIFICATION COMMEMORATING BENGAL PARTITION: CASE APPLICATION AT NEW TOWN, KOLKATA

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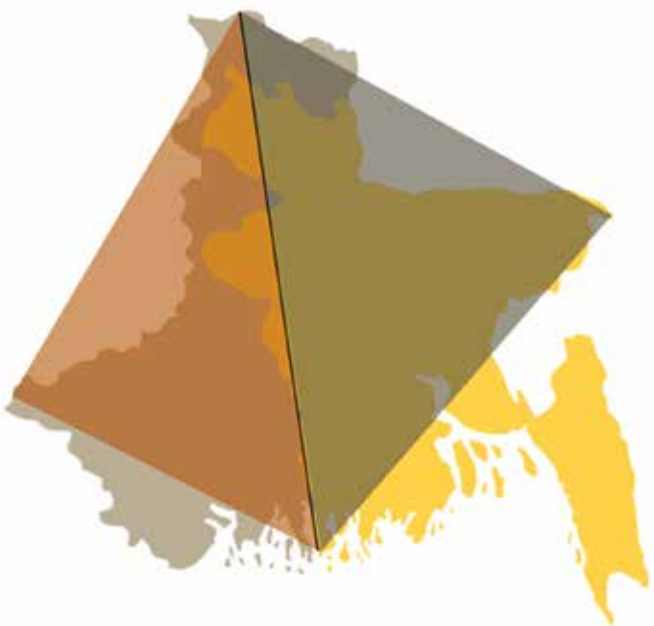

Figure 1: Plan form Analysis: Geometric Representation of Bengals
(Source: Author, 2021)

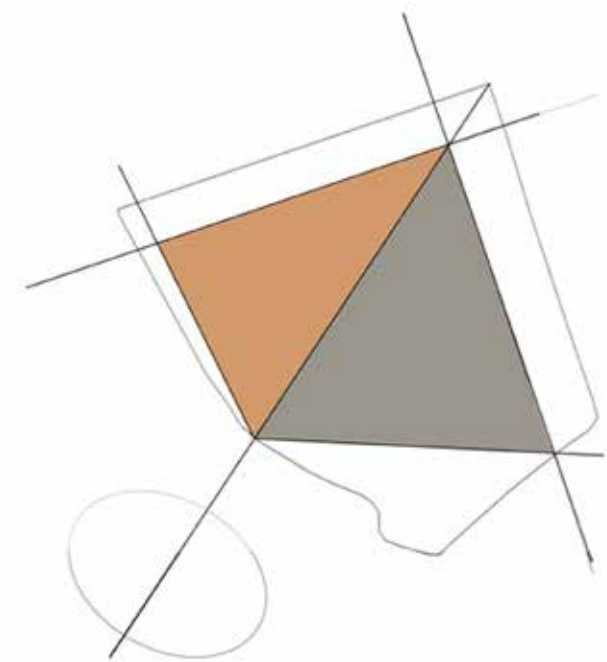

Figure 2: Plan form Analysis: Geometric Evolution on Site
(Source: Author, 2021)

ABSTRACT

The Bengal Partition is a significant chapter in the history of India. Documents on analytics and census counts display shocking figures on the number and nature of one of the largest and rapid migrations in history. Slums across the city are home to thousands of refugees, marking a significant impact to the urban life of the city, from post-Partition in 1951 till date. A Cultural Unification Centre in Kolkata along with a Museum to curate and study can help in spreading an idea of unity. This can improve tourism in the locality, encourage local artists, and raise awareness about social issues, or history of the region. In this paper, an attempt has been made to use architectural design and urban design as a tool to explore the possibilities of establishing the idea of unity of culture, language and tradition and design a proposal for a cultural centre as a part of B.Arch Thesis (2021).

Keywords: *Centre, Cultural Centre, Partition, Bengal Partition, New Town Kolkata*

1. INTRODUCTION

'Partition' refers to the act of dividing a country into separate political units or division of something into smaller parts. (Cambridge Dictionary, 2021). The Bengal Partition constitutes one of the most significant historic events in Bengal and in Bangladesh. Documents on analytics and census counts display shocking figures on the number and nature of one of the largest and rapid migrations in history. There is a lack of proper presentation of the continuous history- pre and post-Partition and an urgent need for conservation and maintenance of records, newspaper reports and objects recovered from families who have suffered from partition. In this paper, an attempt has been made to use architectural design and urban design as a tool to explore the possibilities of establishing the idea of unity of culture, language and tradition and design a proposal for a cultural centre. A 'cultural centre' is defined by Georgina DeCarli and Luckner Christophe as large buildings including an auditorium with a stage for theater performances or film screening; a library, computer hall; halls for academic activities or workshops; language laboratory; galleries and sometimes, memorials or permanent exhibits. It is to be built in New Town, Kolkata which is a fast growing planned satellite city of Kolkata, coming under North 24 Parganas district in West Bengal, covering an area of 30 sq. km.

Aim and Objectives

The aim of the proposal is to create a Cultural Unification Centre at New Town, Kolkata, to commemorate the Bengal Partition in the present day context.

The objectives of the proposal are as follows:

- To establish a museum and formulate spaces related to the Partition of Bengal and showcase images, documents and artifacts related to the events.
- To establish a research facility and public library, acting as a strong epicentre for the knowledge of the Partition's history and contemporary research.
- To establish small shops for local artisans of Bengal to showcase their art, handicrafts and allow commercial exchange.
- To create spaces for public interactions, performance areas for outdoor and indoor knowledge sharing sessions, along with a Partition memorial garden.

The scope of the proposal includes creation of a Grand Entrance Zone for visitors followed by Parking Zone as per requirement, a Symbolic Garden or Courtyard Zone, creation of a Partition Memorial Zone, a Museum Zone, an informal Audio-visual Zone for documentaries and presentations, Outdoor Performance Zone for folk arts of Bengal, Academic Zone, Administration Zone and Service Zone as per requirement. These specific functional zones have been incorporated in the final design proposal. Political or social ideology or communal factors are not considered in design. The design proposal has been derived from the studies carried out previously.

Figure 3: Site Plan
(Source: Author, 2021)

2. HISTORICAL BACKGROUND

The Bengal Presidency composed of Bengal, Bihar, parts of Chhattisgarh, Orissa and Assam. It was British India's largest province with a huge population of 78.5 million. For decades, British cited difficulties in its effective management, considering the large size of the province and that had caused neglect of the poorer eastern region. At the time, Hindus were known to have had a better economic status and professional qualities than the Muslims. Lord Curzon's main motive was to weaken Bengal Nationalism through communal divide. The decision to separate Bengal came in July 1905, and by October 16, Bengal had been divided into Eastern Bengal and Assam (31 million) and the rest into Bengal (where majority of the population of 4 million were Biharis and Oriyas).

After the reunification in 1911, the political situation in Bengal looked gloomy. The parties in Government were divided in their opinions. As per the plan, on 20 June 1947, the members of the Bengal Legislative Assembly cast three separate votes on the proposal to partition Bengal and a majority voted for the partition. This led to the creation of West Bengal as a province of India and East Bengal as a province of Pakistan.

Although the population of Bangladesh and Pakistan was on the brink of equalizing, political power was concentrated in Pakistan and it was evident that Bangladesh was being exploited economically, leading to many grievances. The Bangladesh Liberation War began after the Pakistani junta launched Operation Searchlight against the people of Bangladesh on the night of 25 March 1971, leading to the systematic elimination of nationalist Bengali civilians, students, religious minorities and armed personnel. An estimated 10 million Bengali refugees fled to neighboring India, most of them into Kolkata in search of jobs.

Kolkata has been, perhaps, the most important cultural centre of India. The city is the birthplace of modern Indian literary and artistic thought and of Indian nationalism, and its citizens have made great efforts to preserve Indian culture and civilization. The blending of Eastern and Western cultural influences over the centuries has stimulated the creation of numerous and diverse organizations that contribute to Kolkata's cultural life. This includes the presence of museums, libraries, institutions of art and literature, architecture, etc.

The location of the site selected for the design was New Town, Kolkata, one of the eastern ends of the city, which is contextual to the topic: The 1951 census in India recorded 2.523 million refugees from East Bengal. Among them 2.061 million settled in West Bengal. The rest went to Assam, Tripura and other states. Calcutta had 4,33,000 Bengali Hindu refugees coming from East Pakistan and their numbers continued to increase over the years. Major refugee groups have settled in slums near Kolkata and along eastern border of the city.

Slums across the city are home to thousands of refugees, marking a significant impact to the urban life of the city, post-Partition from 1951 till today. One can see the presence of slum settlements and Bangladeshi migrants in regions along E.M. Bypass, and several medical centres and hospitals catering to their needs in the region. Throughout the eastern border of Kolkata, settlements have been noted and surveyed in several books, most notable among them being *Midnight's Borders: A People's History of Modern India* by Suchitra Vijayan.

3. METHODOLOGY

The proposal has been developed in three major stages : site study, case studies and the study of standards codes and regulations. Based on the conclusions derived from the said studies, relevant architectural design guidelines have been evolved. Considering these inferences and guidelines, an attempt has been made to apply the same in the selected site and develop the proposal. Certain parameters have been chosen to analyze the site and a similar analysis has been carried out for the case studies at both, the site level and at the building level to understand the functional interrelationships and interactions with the site.

Figure 4: Contextual Site View
(Source: Author, 2021)

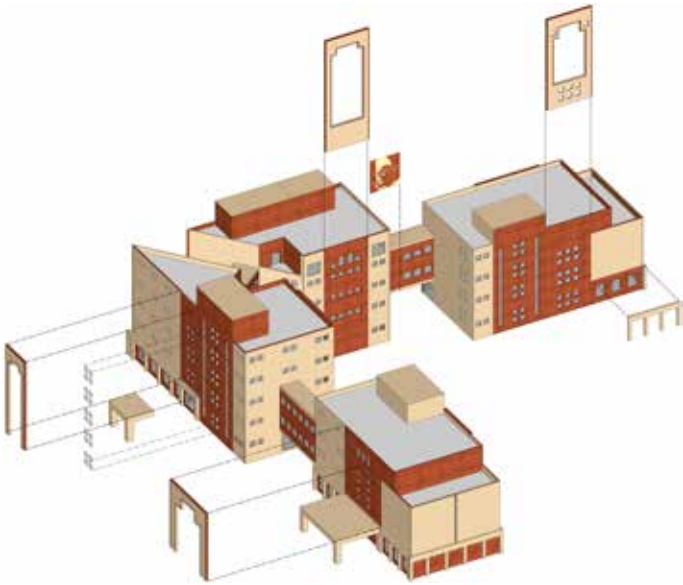

Figure 5: Built form Analysis: Exploded View 1
(Source: Author, 2021)

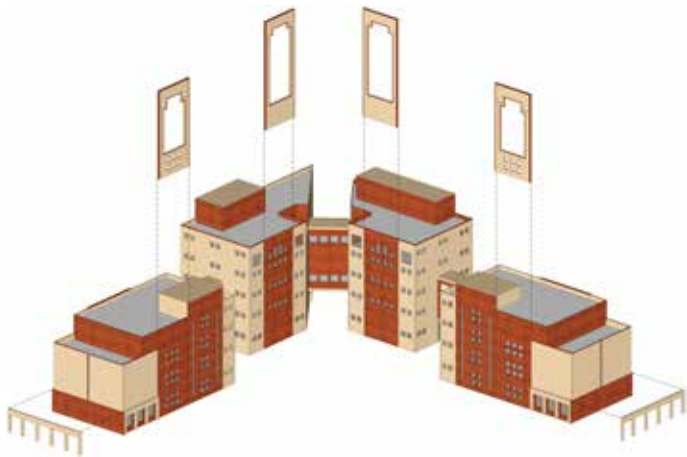

Figure 6: Built form Analysis: Exploded View 2
(Source: Author, 2021)

Figure 7: North Side Elevation
(Source: Author, 2021)

Figure 8: East Side Elevation
(Source: Author, 2021)

Figure 9: Entrance View
(Source: Author, 2021)

Figure 10: View of the Plaza
(Source: Author, 2021)

3.1 Site Study

The site is located in Action Area IIC, along the 6th major intersection in New Town, Kolkata, West Bengal. Area of the site for the proposal is 24,443 sq.m. There exists a live proposal for a Partition Museum in the chosen site by the JSW Group. The site has been studied based on the following eight parameters: (1) Location (2) Landform (3) Orientation and climate (4) Visibility (5) Movement- access and parking (6) Activity (7) Space and form (8) Architectural features.
Based on this parametric study, conclusions have been derived and discussed.

3.2 Case Studies

The case studies are carried out at both, site and building level as discussed earlier. The projects are selected on the basis of their site areas, activities and planning. The case studies selected are:

1. Indian Museum, Kolkata, India (Primary Case Study)
2. Bharat Bhavan, Bhopal, India (Secondary Case Study)
3. National War Memorial, New Delhi, India (Secondary Case Study)
4. Jewish Museum, Berlin, Germany (Secondary Case Study)

These four projects have been analyzed based on the eight parameters mentioned above for both site level and building level and conclusions have been derived thereafter.

4. RESULTS/FINDINGS

4.1. Conclusions from Site Study:

1) Site geometry and designing is contextual to the surroundings with the island installation as a visual context. Designing of site buildings will highlight the location.
2) Providing appropriate foundation as per requirements and landscaping contextual to the surroundings.
3) Providing shaded courtyards, corridors and plazas with sufficient ventilation.
4) Entry, exit and site circulations should not hamper the movement within the site or on road traffic.
5) Site buildings may include functions which are absent in the locality, thus contributing to the cultural and social establishments of the surroundings.
6) Planning of the locality, surrounding buildings may have an impact on the planning of the site.
7) Architectural features, elements etc., may be contextual to the topic and work in contrast to the adjacent building.

4.2. Conclusions from Case Studies:

4.2.1: Site Level:

1. Creation of symbolic buffer spaces. Interaction zones using landscape.
2. Visibility from the site may be controlled to avoid distraction and enrich the museum experience. Site monument or symbol may be used to aid to the site visibility.
3. On-site parking based on design requirements should be provided to prevent congestion on main road.
4. Architectural features should be contextual to the theme of design in terms of material usage or color combinations on façade and interiors.

4.2.2: Building Level:

1. Proper segregation of private and public spaces should be carried out in a museum.
2. Movement should be directional and uniform to avoid confusion.
3. Waffle ceilings to be used to provide uninterrupted spaces in large galleries or halls.
4. Interiors to be designed so as to reflect the regional character and concept of design.

5. DISCUSSION

The design proposal is approached following the results and guidelines obtained from the studies mentioned above.

a) Plan form design:

1. The entrance to the site is from the northwest and exit through southeast following a single vehicular route, keeping the rest of the site undisturbed from vehicular movement as seen in the Site Plan in Figure 3.
2. Conceptually, the site geometry has been derived from the idea of abstraction of two lands- two Bengals, as shown in Figure 1 and consequently evolved in the site as shown in Figure 2. Figure 2 also shows the creation of the focal axis which connects the site extremities with the rotary outside the site.
3. The buildings have been aligned on site, forming an enclosure at one end of the site, opening up the rest of the site towards the rotary, linking up the green spaces outside with the open area in the site, as seen in the Site Plan in Figure 3 and in the contextual site view in Figure 4.
4. Open air theatres have been designed which look out towards the city.

b) Built form design:

1. The elevation design is based on studies of elevation treatment in prominent cultural centres in India and Bangladesh. Examples of Jawahar Kala Kendra, Jaipur by Charles Correa, Indira Gandhi National Centre for Arts, New Delhi by Ralph Lerner and Friendship Centre, Gaibandha, Bangladesh by Kashef Chowdhury have been studied.
2. Elements studied from the cultural centres like massing proportions, fenestrations have been implemented in the design as seen in the exploded views in Figure 5 and Figure 6.
3. The final elevations bear a sense of symmetry along both sides of the central axis line as seen in Figure 7 and Figure 8.
4. Terracotta paint- beige combination highlights vernacular interpretations which is prominent in Figure 9 in the entrance view to the site. Elevation treatment is designed identical on both sides of the water channel to show the symbolic unity between two Bengals.
5. The plazas remind one of the traditional Bengali courtyards with shaded trees as seen in Figure 10.
6. Movement in the buildings has been organized with uniform circulation and sequential movement in gallery spaces and vertical segregation of public and private spaces.
7. Energy-efficient methods like passive illumination through light shelves, solar tubes have been incorporated in design.

6. CONCLUSION AND RECOMMENDATIONS

The chosen site has an un-built proposal for a Partition Museum by JSW Group which has been taken up in the B.Arch thesis design proposal. The idea of 'unity' explained through the creation of plazas, interaction zones etc. have been achieved, along with a display of the cultural intricacies of Bengal. Using urban design as a tool to formulate symbolic spaces and courtyards along with vernacular, yet modern interpretations of architectural elements in the buildings have highlighted the concept of the Unification Centre. It is hence possible to create a sense of unity and harmony visually and physically using design principles as illustrated in the design proposal. Such an approach towards creating a cultural unification centre in a structured format can be replicated in future for a specific function in a similar context. This can improve tourism in the locality, encourage local artists, and raise awareness about social issues, or history of the region.

Acknowledgement

I would extend my gratitude to my colleagues and friends who helped me with the required resources and valuable feedbacks. Lastly to my parents and family for their constant support, encouragement and historic accounts of the period covered in the paper.

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Prof. Sanghamitra Sarkar graduated from Jadavpur University (JU), Kolkata in 2011, and completed her M.Arch. in 2013 from SPA, New Delhi. She has two years of industrial experience in various urban scale projects across India. She has also been a part of seminars and workshops in India and abroad. Her area of research is on urban transformation and inclusive urban development of cities. She is currently Assistant Professor in the Dept. of Architecture, JU.

Dr. Sanjib Nag graduated from Jadavpur University (J.U.), Kolkata, completed is M.Arch. from SPA., Delhi and PhD from J.U. He has 10 years of industrial experience and 21 years of teaching experience. His area of research is methodological parametric study of urban transformations and related urban developments, from architecture design and urban design viewpoint. He has presented papers in conferences, published papers in journals and written books, both at national and at international levels. He is former Head and currently Professor in the Department of Architecture, Jadavpur University (J.U.).

DIALOGUE WITH AR. SAIF UL HAQUE

Interview by Dr. Shilpa Sharma

Ar. Saif Ul Haque has an architectural practice *Saif Ul Haque Sthapati* based in Dhaka in Bangladesh. He studied architecture at the Bangladesh University of Engineering and Technology, and is currently involved in practice, research and education and has also written about architecture. He has been a visiting faculty and reviewer at various institutions. His research interests include environment, architecture and urbanism and has written on these topics. He is the Executive Advisor to the Bengal Institute for Architecture, Landscapes and Settlements. His practice covers residential, institutional and industrial facilities at different locations in Bangladesh. which has won awards in Bangladesh and abroad. His most recent one is the Arcadia Education Project which won the Aga Khan Award for Architecture 2019.

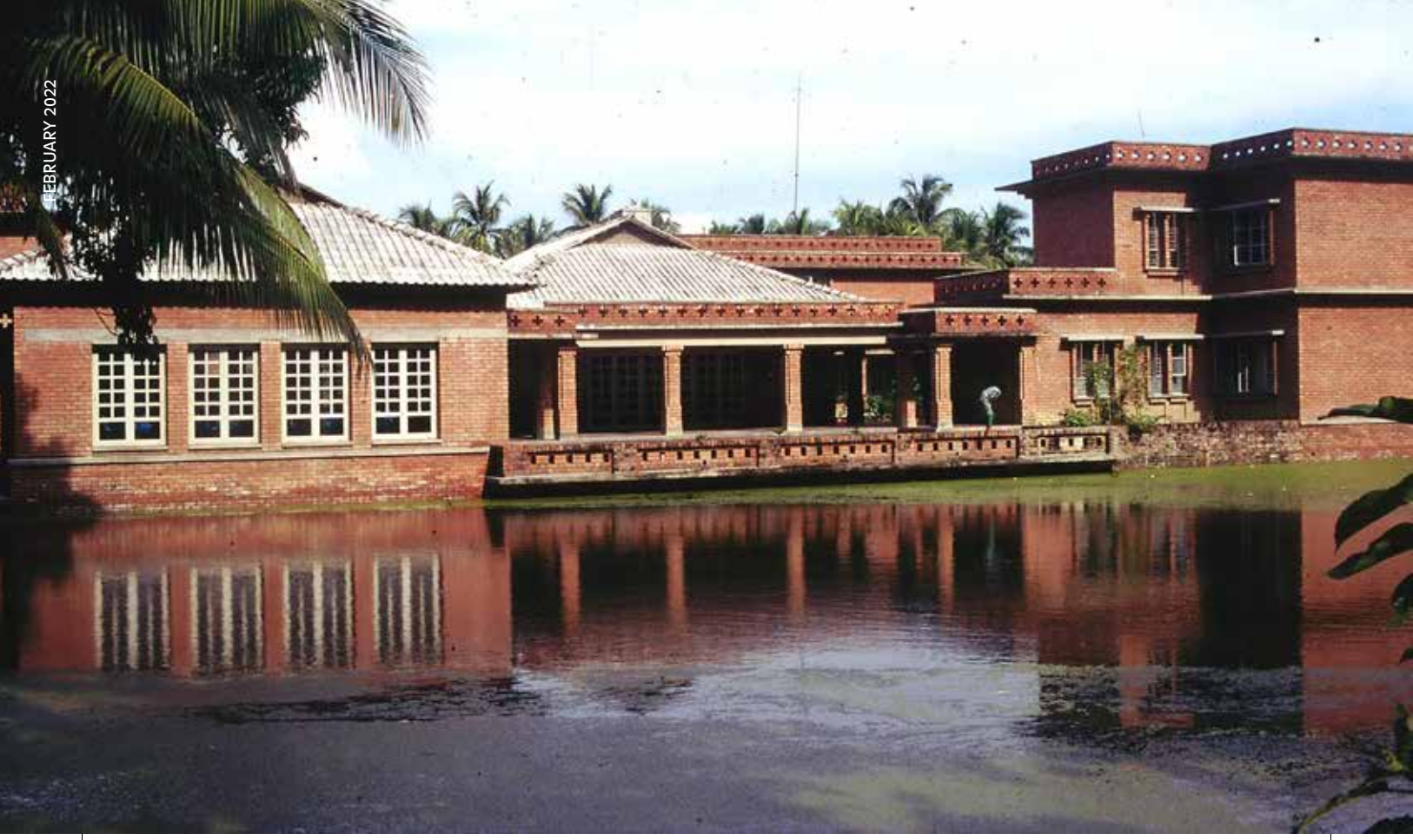
Aga Khan Award-winning architect and founder of the Dhaka-based firm, Saif Ul Haque Sthapati, Saif Ul Haque (SH) shares his thoughts about his journey with Dr. Shilpa Sharma (SS). Ar. Saif Ul Haque is invested in the profession and in academics.

Dr.Shilpa Sharma (SS): Welcome for the JIIA interview architect Saif Ul Haque. The projects by Saif Ul Haque Sthapati inhere a certain philosophy: openness, light, ventilation, social interaction and inclusivity. These are expressed through each architectural element – built or unbuilt, open or enclosed – in all projects. Can you tell us how these have been imbibed by your firm?

Ar. Saif Ul Haque [SH] : Let me start by sharing with you a bit of the context of architectural practice and education at the time of completion of my undergraduate studies in Bangladesh in 1983. There were probably a hundred architects working in the country and only one school of architecture, which was started in the early 1960s with technical assistance of the US government. Bangladesh, having a rich tradition of architecture from as early as the third century BCE needed to start architectural education from 'zero' and that too with the help of foreigners. A gap was automatically created between our existing tradition and the idea of architecture propagated by the teachers. Some of us could identify this gap and attempted to understand architecture with newer insights. While the identification of the gap was initiated by a process of inquiry during our student days but the search for an architecture based on the newer insights found a systematic process through a study circle founded by few young architects along with Muzharul Islam.

I was in my Fourth Year of undergraduate studies when I got involved with the study circle that came to be known as 'Chetana' and as I got engaged in practice the involvement with Chetana was even more invigorated. Readings, discussions, studies and inquiries led to certain ideas taking root in our thinking process. The process did not remain a static one, rather a dynamic one that continued to evolve. The process took into consideration the factors affecting architecture and through this certain aspects of design started being expressed. During the 1990s, I could get few of my works built that reflected these considerations.

Training and Resource Center, Faridpur, 1992 *(Source: Saif Ul Haque Sthapati)*



Banchte Shekha Training Centre, Jessore, 1994 *(Source: Saif Ul Haque Sthapati)*

Camphouse for French Archaeological Mission, Bogra, 1995
(Source: Saif Ul Haque Sthapati)

Most importantly these considerations were made keeping the particular historic and cultural context of Bangladesh in mind, and its location at the juncture of South and Southeast Asia that provides certain specific characteristics.

Your observations of certain characteristics in my works, such as openness, light, ventilation, social interaction, inclusivity, are correct but I am not sure whether I will like to call them 'philosophy'. These characteristics are present in most of our works- in the built, unbuilt, open and enclosed spaces and in how the outdoor relates to the indoor. I would say that they result out of the considerations of the factors affecting architecture. For example, if we look at the factor of the client's programme- a school, a house, a city, a church or a mosque, and of course the cultural factors which have evolved over the years relating to the building programme.

Here in Bangladesh, we were fortunate to have a few brilliant minds come here, work and influence our thinking in the post-partition period. Louis Kahn, was commissioned to design the Sher-e-Bangla Nagar (City of Tigers). He talked about architecture in a manner which made you think beyond the function and basics of just the programme – in square feet or number of rooms. He talked about an 'inherent' nature of the programme: how do things happen in a place we are going to call a 'school'? So understanding the programme beyond the pure functional aspects makes it philosophical.

Environmental factors are important because architecture evolved out of the necessity to protect oneself from the elements. The solution of using an air-conditioner in a hot climate may depend on the ability to afford it, but these impact the environment. We need to understand how comfort can be attained through natural or artificial means by working with nature, such as natural ventilation. Each site has its own particular characteristics which impact the design.

Although various degrees of technology are available, we have a labour-intensive construction process where until recently, buildings like the Parliament were mostly hand-built. Again, we have to understand that technology can be employed without harming the environment or the people who are dependent on this work for their livelihoods.

And then there is the factor of economy which is very important since it is the financial resources, which contribute to the ultimate result. If the fundamentals are okay, then its form becomes good.

SS: You spoke of place, of context, of programme that has contributed to your maturity as an architect which

Govindo Gunalankar Hostel, Chittagong, 1998 *(Source: Saif Ul Haque Sthapati)*

led to your award-winning Arcadia Education Project. It offered many challenges that were brilliantly overcome for the children of the school. In your experience as an educator, what is the importance of contextual references for architectural work for students while they're studying architecture? We can actually see the amount of thought put into understanding the context, through all the physical models that are made in your office.

SH: It will be forty years next year since I obtained the architecture degree and a lot of things have changed since then. When I graduated, I did the drawings by hand, not computers. I used Rotring pens, pencils, parallel bars, triangular scales and drew on tracing papers. Now, everything is digital. Even with so much technological advances that help to draw accurately and quickly, I still love to sketch, draw, make paper models and depend a lot on the way I have trained myself. I feel comfortable visualising with my eyes closed and imagine and experience the entire project.

The Arcadia School offered me an opportunity to test ideas that had been evolving over the years. Our works were designed with respect to particular Bengali regional and cultural contexts, instead of following models developed in different contexts. As mentioned earlier, in the 1990s a few works for non-governmental organizations were completed reflecting the cultural context but at the same time there was a desire to explore further with the progression of time. After nearly thirty years of working as an architect, we were presented with a designing problem that needed to look into few specific issues. Inspired by the rural landscape and historic architecture we created a solution that fused these with contemporary technology. I had seen how people built settlements on river-islands having a dynamic environment drastically different in the summer and the monsoons. That topography had left an impression on me.

The site for Arcadia, next to the river, offered a similar situation. My client, who also happens to be my aunt, wanted me build a small school she was running in a rented place until then. When I initially saw the site, it was under water. She pointed out and said, "That's where I want to build a school." And I asked "Where? I see only water. You want to build a school on the water?" Which we literally did!

Having been used to building conventionally on ground, the condition of the site triggered a unique kind of thinking. Of course there are river crafts, boats, barges and the floating houses that you see in Kashmir. But I thought of making something which could adjust to the changing circumstances: the water is there for few months and then again it's ground.

A condition was created which would allow the water to come in and stay before it recedes again. This gave rise to the idea of a floating school. It was based on a very simple technology. Because of the limited budget, we could not use steel or timber which would be more durable but would only afford making one classroom. My aunt wanted three.

Hence, we explored possibilities of using bamboo and kept working and testing, and finally we could say, 'This is what we want to do.' And that's how the project came into being, based on my experience of those places called the Char (river islands in Bangla).

Paramount School (unbuilt), Rajshahi, 2008 *(Source: Saif Ul Haque Sthapati)*

Arcadia School, Dhaka, 2016
(Source: Saif Ul Haque Sthapati/ Hasan Saifuddin Chandan)

SS: Climate change, particularly sea level rise, makes Bangladesh one of the most vulnerable countries in the Indian sub-continent. In India there the important coastal cities of Mumbai, Kolkata, Chennai which are also considered vulnerable. How do you think architecture can evolve in response to this? Do you think mobility in architecture and amphibious structures can become a good strategy in terms of dealing with floods as well as other climate change threats?

SH: Climate change is a crucial issue facing us today and repercussions are certain because we are unable to meet the targets set to stop global warming. The sea level is definitely going to rise and the temperatures will become unbearable affecting places even those which usually do not get flooded. We need to look into this holistically, instead of just as isolated events.

For example, measures are being taken to protect New York from the water rise. In Bangladesh, with its flat land, it is easy to identify the vulnerable spots which flood even with a slight water rise. We need to initiate strategies of physical planning instead of conventional building forms because the reality is we are not able to abandon all of a sudden the places we inhabit. Places already built need to be retrofitted to adapt to changing conditions. In case of floods, the building can't be raised but it can be equipped in a way so that it can continue to be inhabited even when the water comes and you would use boats to commute instead of cars. This needs to be done phase-wise, to address the vulnerable first and hopefully by 2050, address all of them.

We are trying to follow a path in accordance with the pathways that are identified in the international meetings that take place in this respect, including the last one in Glasgow. We cannot ignore people unable to afford minimum conditions of living and have to work our solutions accordingly, along with establishing a communication network connecting all parts of the country to move people rapidly in case of emergencies. As architects, we need to cooperate and start thinking about these future conditions by analysing scientific data.

SS: You have spoken several times of eminent personalities – Ar. Raziul Ahsan and Ar. Muzharul Islam- to name a couple, who have moulded Bangladeshi architecture. Can you tell us of other personalities too, and of how they have influenced your perspective as an architect?

SH: Muzharul Islam and Raziul Ahsan have been the two most important architects who have influenced and impacted the way I work, the way I see life. And I don't have to go very far from where you are- in Ahmedabad in India, I found two inspiring personalities - Balkrishna Doshi and Neelkanth Chhaya.

The first time I saw Doshi was when I was in the third year of architecture studies. I didn't get a chance to talk to him then. I along with few of my classmates were on a 'pilgrimage' to see the 'holy' sites of modern architecture in India, and Ahmedabad was an obvious destination. Doshi arranged for us to stay in the student dormitory and assigned a student to take us to all the places we wanted to see. Seeing him from a distance in the campus was one impact and then knowing more of him and his work was amazing. Raziul Ahsan and I had the privilege of inviting him to Bangladesh for a symposium we were organizing in 1986 and had the chance of spending time with him. There's still so much to learn from him.

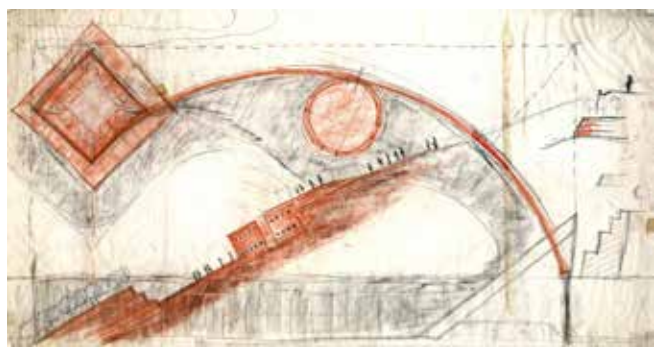
You need teachers to inspire you. In Bangladesh, I would say that Muzharul Islam was my teacher, not at school, but outside of the school. In fact, I can say that was 'the' school for me. There is also Neelkanth Chhaya who is running a school and is an inspiring person I have learnt so much from. We may not always get a chance to meet the people we admire and also they may not need to be all architects. Writers. poets, scientists can also inspire you, so can your family. A person's ideas are shaped by the interactions he has with people who may be near or far.

SS: After Independence, both yours and ours, our cities, with political impetus and foreign architects, began their journey towards modern progress. Today, they have ended up as concrete jungles. Where do you think we lost our way? What role can societal forces play in bringing about a better built environment? And how can an architect facilitate them?

SH: We have an important role to play as we are largely responsible for the built environment. With probably only three schools of architecture in India in 1947, few architects were available to build and plan the future of the nation during the post-partition period. We required schools and universities and had the best of the people from abroad to make these, whether in India, Bangladesh or Pakistan.

I remember Nehru's response to the criticism of Chandigarh: Although Corbusier's planning may not be unanimously liked, the purpose of bringing world architecture was to make

Top: Sketch study for Paramount School, 2007 *(Source: Saif Ul Haque Sthapati)*
Bottom: Sketch study for Arcadia school, 2012 *(Source: Saif Ul Haque Sthapati)*



Top: Sketch study for Brick and Bamboo House, 1992 *(Source: Saif Ul Haque Sthapati);* **Bottom:** Sketch for Martyred Intellectuals Memorial, 1993 *(Source: Saif Ul Haque Sthapati)*

Indians think after being paralyzed by 200 years of colonial rule of following orders from others and cities had been built with distinct divisions between the rulers and the ruled.

We could have definitely done better than the 'concrete jungles' since Independence and cannot say we did not try, even if we were unsuccessful in offering quality of environment for all. For example, the way Charles Correa talked about Mumbai in his book *The New Landscape,* had great ideas on the future of cities in what was called the 'Third World' at that time. I guess not many of these ideas were pursued or implemented, but we can still carry on the conversation.

With the sudden boost in economy from the nineties and higher earnings, we thought we had to spend more on fancy things to prove we had "arrived". Although all shopping malls and apartment buildings in this century are built with the 'state of the art materials', we have lost sight of the social condition of people and the sort of cities we want. Our politicians, policy-makers and others like architects who could influence the creation of the built environment, also found themselves with overwhelming opportunities of building. And then one fine morning we discovered that next to the fantastic glamorous buildings in the middle of the city, homeless people were living on the street. We were overwhelmed with the uplift in economy and the rush of foreign investment. We surely needed to study the implications more carefully and to evaluate our community. With a minimum quality of life, no one need sleep on the pavement, or be unable to send their children to school and have minimum health care facilities. This is how we need to look into the future of our settlements, city or village.

SS: The development of architecture and urban planning have become important for all cities. Traditionally, both these aspects were intricately interwoven. Bangladesh and India share the same history and have many cultural similarities. What, in your opinion, is the way forward for the cities of our sub-continent and specifically Bangladesh?

SH: One of the most important issues in Bangladesh is our large population. With about 170 million people living in an area of 144,000 sq. km, Bangladesh is one of the densest countries. Dhaka ranks among the top ten densest cities and will be among the top five in another decade. We need to do a few things simultaneously and they are to close the gaps by improving the 'well-being indicators' of society- education, health and economy. This will ensure that everyone will be able to earn enough to afford the minimum standard of living.

The challenge is offering a decent quality of life so that we don't feel uncomfortable when our neighbour struggles with basic things in life like shelter. We need to understand the demographics and decide the steps for achieving this. Until then, we need to introspect about indulging in extravagances even spending our own money for these. It is also about sharing and distribution of common resources in a way that makes everyone happy.

Architects can offer ideas to take the country forward. In Bangladesh, we are trying, in our own way and I can cite the example of the Research and Design Programme at the *Bengal Institute for Architecture, Landscapes and Settlements* where I am also involved. Founded six years ago, it is supported by people believing they can make a better Bangladesh by sharing their wealth. We have discussed the future of cities, settlements and architecture and constantly share them through exhibitions, publications, seminars and symposiums, which helps us grow support for our ideas to become reality.

SS: There are various reasons and motivations why architects design the way they do. Yours has primarily been how technology and the built form help people create a more inclusive society. How has this facet evolved for you? How do you look in retrospective at your own work? And what is the direction of your work yet to come?

SH: The ideas that are generated in our minds need to be transformed into built works for an effective communication of these ideas. We need clients or patrons to offer us the opportunities to realize our ideas. Also, not all the commissions result in built works. Though I do not have many built works but the ones that were built certainly communicate the particular thoughts that guided their design. The few works that I could realize attempted to connect with tradition, development and well-being of the users. Although architects have to wait to be engaged and can't choose the commissions offered to them, they can surely refuse the ones they feel uncomfortable to work on. As for myself, I have not been much successful in attracting a lot of clients but whenever I received a commission, I have been able to realize certain ideas that was considered important for the commission. During the 1990s I got the opportunity of working for marginalized and rural people through a number vibrant non-governmental organizations and the works offered the environment of inclusivity.

I consider inclusivity and equality as two important parameters of the built environment. I believe these are not very difficult to achieve and at the moment we are trying to do that with the design of two factory buildings.

SS: We look forward to both- the architectural environment that you will create for the factories, and also for the social message that they would carry. Your book, Pundra Nagar to Sher-e-Bangla Nagar: Architecture in Bangladesh (1997) talks of the continuum of the traditional in the face of modernization. How do you recognize the importance of this in the intertwining geo-cultural matrices? What is the core message that designers need to keep in mind?

SH: This refers to the condition in 1947 when the British had to leave India and we needed to look for sources of inspiration to rebuild our nations. One such source was the modernization experienced in the west which was taken as a standard of 'developed' lifestyles and facilities.

Many attempts were made to make buildings look 'Indian' using specific elements. I think Chandigarh and IIM, Ahmedabad are very much 'Indian'. Both, the French and American architects, understood the place and our aspirations very well- more so than us- since we were probably in too much of a rush to develop ourselves and overlooked our own potential in architecture. We have many beautiful things from our past. Gandhi talked about the potential that India has, especially with people from villages. Tagore had tried a few experiments in Shanti Niketan about settlements and how ways of life could be.

In Bangladesh, unfortunately, political events right after the Partition disallowed us to look into our history. We got into another struggle because despite the fact that we were the majority but we were treated as minority. We had to fight to establish our language Bangla as one of the state languages where the minority imposed Urdu. Starting with the language movement we had to continue with the fight for establishing our rights. We had to resist impositions and restrictions regarding the study and practice of the Bengali culture.

The rich architectural heritage of Bangladesh demanded extensive study and at Chetana we decided to start on this work. In the late 1980s we embarked on a countrywide documentation project to discover places mentioned by historians and archaeologists but missed out by the architecture syllabus. The work was presented in an exhibition and a book that helped to develop a better understanding of the architecture in Bangladesh. The exhibition took place in 1997, exactly 50 years since the partition of India.

SS: Finally, very simply, what do you think makes a building 'beautiful' or 'meaningful'?

SH: A difficult question. I don't think there is a single answer for it. To me, meaning in architecture is the interpretation of the experience one has of the work and this interpretation makes it 'meaningful'. Interpretations may vary.

As regards being 'beautiful', I will say that if the factors that affect architecture are well understood, successfully resolved and resulting in a delightful experience for the user or a visitor then it can qualify as something beautiful.

If a space inspires you, does something to you and if you feel good - that's a beautiful thing and I would consider that to be a meaningful place.

Dr. Shilpa Sharma completed her Govt. Diploma in Architecture (1993) and M.Arch. (2009) from the Academy of Architecture. She has learnt studio ceramics and pottery from master potters in New Delhi. Her doctoral research, on phenomenology with a focus on the *ranga mandaps* of Hindu temples, was from RTM Nagpur University. Along with architectural and interior design projects, she has been teaching at several institutions and is an Associate Professor at the IES College of Architecture, Mumbai.

ARCHITECT OF THE POOR : AR. HASSAN FATHY

Ar. Arun Shankar M.

Figure 1: Hassan Fathy
(Source: Right Livelihood Awards)

Perhaps in the history of architecture, it would have been just once that an architect or rather a veteran who was beyond being called an 'architect' shot to fame for one of his failed and widely criticised projects. The great mind from the land of pharaohs, Hassan Fathy, was born to an upper middle class family in Alexandria. After his formal architectural education in 1926, Fathy started his career which was also influenced by his ardent inclination towards theatrics and music. Apart from the architecture-drama-music trio, Fathy also fancied and fathomed the upper Egyptian and simple rural architectural character in which he was raised.

Fathy designed a villa in Maadi, along the River Nile for his wife. To his dismay, it was later demolished to make way for the new corniche. He had also designed the mausoleum of his wife's brother in the Neo- Mamluk style of architecture. Following these, Fathy had designed nearly 160 projects ranging from modern buildings to vernacular rural buildings. He had designed large spaces for communities with spaces such as markets, schools, theatres, complexes for worship, police stations, fire safety stations, hospitals and other allied medical services. These community spaces included functional facilities such as laundries, wells, ovens, etc., which marked significance for the modernised approach of design methods and construction materials alongside the essence of rural Egyptian architectural styles that reciprocated and reverberated the economic conditions of the habitants. His deep-rooted inclination to the rural Egyptian style paved the way for new methods of building wherein Fathy trained the local inhabitants towards making their own materials from the locally available resources and build their respective homes. These path-breaking audacious vernacular practices were still not enough for Fathy to have become 'the Fathy' with global recognition until he designed the New Gourna.

Figure 2: New Gourna Village
(Source: Hassan Fathy (1900-1989), Viola Bertini, The Architectural Review)

Fact File

Project Name	▶ New Gourna Village
Location	▶ Luxor, Egypt
Climate	▶ Hot, arid
Category	▶ Housing
Construction materials	▶ Mud bricks and adobe
Period of construction	▶ 1945- 1948
Description	▶ Sustainable human settlement

The New Gourna project is regarded to be one of the best known housing projects which gained international popularity. In 1945, the Egyptian Department of Antiquities commissioned Hassan Fathy to design and construct a new settlement to which the inhabitants of Old Gourna village were to be resettled. Fathy perceived this project to become one of his best by creating a model village that would enhance the living conditions as well as the socio-economic profile of the inhabitants, who were the rural poor. Close to 7000 inhabitants were to be housed in the New Gourna village in a site area of 50 acres. During the course of preparation of the designs, the villagers were kept in tandem with extensive consultations as a notion to study the habits, characteristics, social and physical organizations so that the essence of their previous village is infused into the new village. These efforts by Fathy to valorise the fabric of the rural poor commanded him the requisite to design each house individually. Each of the houses was based on an amalgam of Egyptian culture, heritage value, stylistic forms and their geometry. Special emphasis was given to the traditional Nubian architectural designs and ornamental techniques that Fathy had observed during his travel in 1941 across the regions. Under the leadership and orchestration of Fathy, the villagers and the Nubian master masons finished close to one-third of the village over a period of three phases from 1945 to 1948.

The images depict Fathy's approach to the spaces as he pondered the quintessential details in architecture to the holistic details in the aspects of town planning. During the planning process, Fathy expanded his horizons by involving

Figure 3: New Gourna Village
(Source: World Monuments Fund)

Figure 4: New Gourna Village
(Source: World Monuments Fund)

social ethnographers to study the community better. The amount of design specifications from unit to unit in terms of form, ventilation, material usage, transition, voids, etc. had enhanced and uplifted the morale of New Gourna village.

Despite the paramount planning and design interventions, local, national and international interest towards the project, New Gourna is regarded to be one of the best planned failures. A few of the reasons that added up as reasons for the failure of this project were that the transportation of the villagers from Old Gourna to New Gourna had affected the settlement pattern. Also, unconventional utopian designs of individual houses without a common prototype tampered the feasibility of the project. Over-usage of vaults resulted in structural damages and on top of all, poor governance and management of resources collectively contributed to the colossal failure of such a phenomenal project.

Fathy, in his book *Architecture for the Poor,* explained that what could have been a ground-breaking low-cost housing project enveloping social, economic and aesthetic aspects misfired because of the village not being completed due to construction being halted. The theory of mud brick construction was looked down as undoable and impractical.

Only two things flourish. One is the trees I planted, now grown thick and strong, perhaps because they were not subject to the administration, and the other is the forty-six masons we trained, every one of whom is working in the district, using skill he learned at Gourna- proof of the value of training local craftsmen.
Hassan Fathy

However, even today, New Gourna Village stands as one of the best examples of materialistic innovations, technological approaches, inclusive planning strategies, public participation, stakeholder involvement throughout the process and many astonishing experimentations. The ceaseless crusader carved an example for architects to ruminate over their scope and relevance in giving back to society what is received. Irrefutably, Hassan Fathy's contribution to architecture is incomparable for which, he is rightly called "Architect of the Poor".

Ar. Arun Shankar M. is an architect and urban planner by profession and an architectural journalist and an academician by passion. As an architectural Journalist with *Creative Group,* an architectural firm in New Delhi, he reported to national newspapers on various types of projects. He has held workshops and lectures on Architectural Writing for many architectural institutions. Currently, he is pursuing an M.A. in Journalism and Mass Communication . alongside teaching at Asian School of Architecture and Design Innovations, Kochi.
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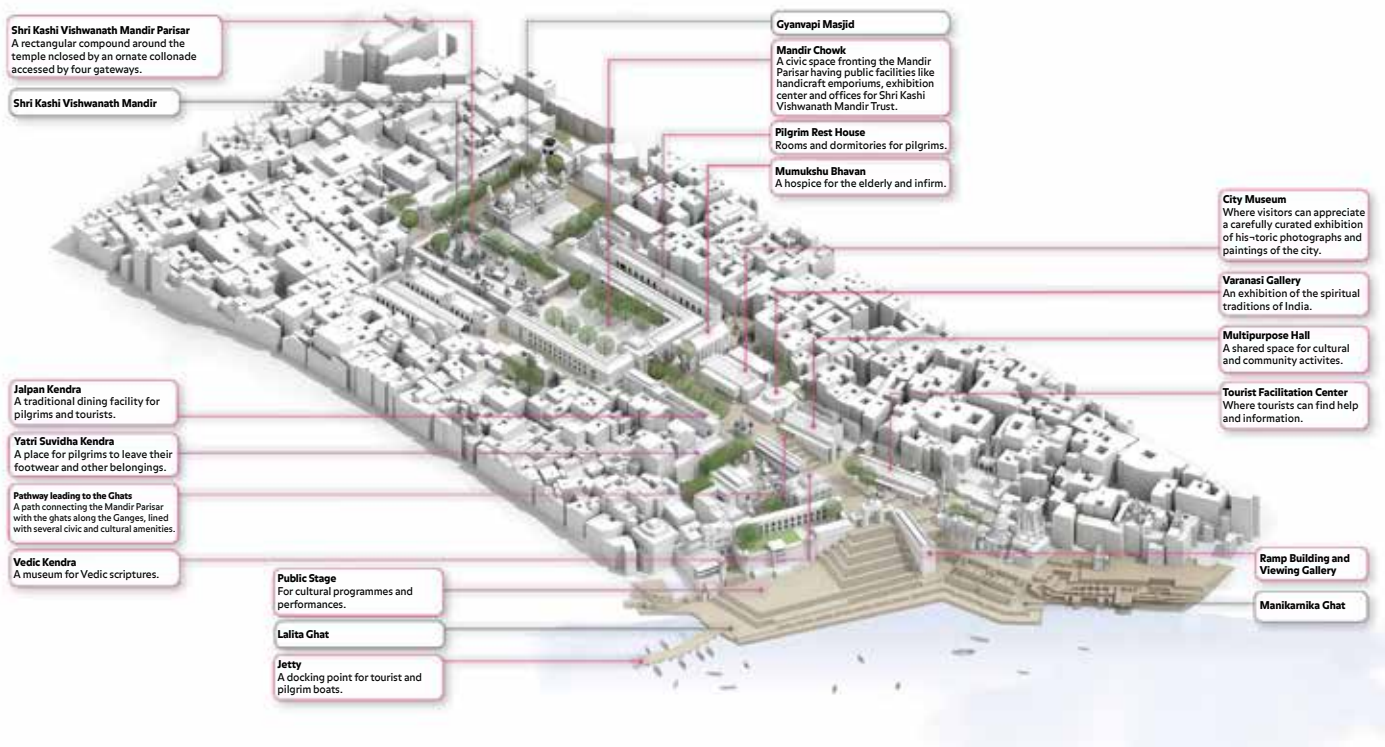
VISHWANATH DHAM PROJECT

Dr. Bimal Patel



Several new amenities added to make a visit to Vishwanath Dham a better experience overall

A grand gateway atop the ghats announces the presence of the Temple

Background and Objectives

Shri Kashi Vishwanath Temple was built in 1780. Over time, the Temple and many others surrounding it were hemmed in on all sides by very dense and haphazard development. Many temples and fine houses in the area were insensitively built over and public spaces were encroached upon. The area became exceedingly difficult to service and keep clean, resulting in an unkempt and unhygienic neighbourhood. Access to the Temple was severely constricted, unsafe, and unfriendly to those with mobility issues.

In 1916, when Gandhiji visited the temple, he remarked: *I visited the Vishwanath temple last evening, and as I was walking through those lanes, these were the thoughts that touched me… Is it right that the lanes of our sacred temple should be as dirty as they are? The houses round about are built anyhow. The lanes are tortuous and narrow. If even our temples are not models of roominess and cleanliness, what can our self-government be?*

More than a century later, in 2018, the area between Shri Kashi Vishwanath Temple and the Ganga was cleared for a comprehensive redevelopment called Vishwanath Dham. The Shri Kashi Vishwanath Special Area Development Board was constituted in 2018 and was entrusted with the task of planning and overseeing the project. HCP was hired as the architectural consultant in late 2018.

The primary objectives of the development were:

1) To create a processional route for pilgrims between the Ganga and the Temple.
2) To create a befitting temple precinct, with necessary facilities for the comfort of pilgrims, visitors, and temple priests.
3) To make the temple accessible to all, including those with restricted mobility.

The pathway from the Temple to the Ganges, under construction

Architecture that Reflects the Spiritual Experience

The path from the River Ganga to the Temple is an architectural realization of a journey towards self-discovery. It is designed in such a way that each step of the journey is gradually revealed, and the Temple is the ultimate pinnacle. From the river, the Temple's presence is announced by a gateway atop a pyramid of steps. The gateway leads to the precinct of the Kashi Vishwanath Temple. Once through, the land rises more gradually. The buildings and pathway are designed to direct the gaze towards the next gateway. Through this gateway, one can see the shikhar of the Kashi Vishwanath Temple. One is drawn up the pathway and the vistas slowly unfold as one approaches the shikhar. This gateway opens in the Temple Chowk, which is the civic space outside the Parisar, at 100 ft

The temple chowk, with the viewing gallery atop its gate

elevation. From here, to reach the temple, one must descend 15-20 feet. After entering through the gateway, the Chowk, which is centred on an axis with the gateway, guides one towards the temple. From here, one descends to reach the gateway of the Parisar, which is also centred on the same axis. The experience of the pathway is, in a sense, a slow unfolding of the journey of self-realisation.

Pilgrims spend barely a few moments in the temple, after travelling long distances from all over the country and the world. The bank of steps leading up to the temple allows them space, to be in the presence of the temple - the sacred precinct - for a while longer, adding to their spiritual experience.

A Befitting Architectural Vocabulary

Varanasi, although ancient, is composed of many layers of blended architectural styles. For the Vishwanath Dham development, we created a much-needed new typology of buildings and urban spaces that serve the temple well and blend with the context.

We collaborated with temple architects to create an ornate, traditional inner court, Parisar, around the temple, to ensure that its sanctity and dignity were upheld. This part of the development adheres to the architectural vocabulary of Hindu temples of north India. The Parisar is made entirely of stone, without any steel or concrete, so that it can last for as long as the temple itself. It is built entirely in Chunar stone from Mirzapur, which is the same stone used in the Temple.

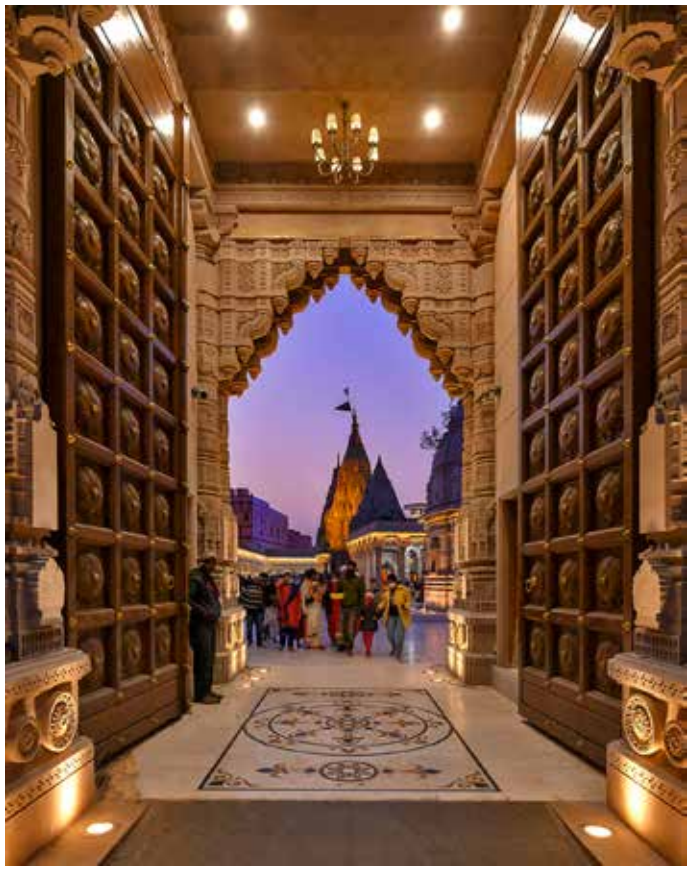
The outer court, the temple Chowk, is modern, yet uses traditional arch-shaped torans to blend in with the temple architecture. The gateway to the Chowk draws inspiration from the Ramnagar Fort gateway.

The rest of the buildings, including new pilgrim facilities that have been added, are modern and functional buildings, that match the bulk and height of the surrounding development. The redeveloped precinct provides a befitting setting to the Kashi Vishwanath Temple and upgrades this incredibly special spiritual destination for pilgrims and tourists.

Better Facilities and Accessibility

Several new amenities have been added to cater to the comfort, safety, and security of the locals, pilgrims, tourists, and temple priests. These include three pilgrim facilitation centres with lockers where visitors can leave their personal belongings and footwear, covered areas with fans for queuing, a small guesthouse for the temple trust, lodging for pilgrims, a hospice for the elderly and infirm, spiritual bookstores, handicraft shops, museums and exhibition spaces, a hall for gathering, a large kitchen for preparation of prasad and facilities for the temple priest to change clothes. There is a viewing gallery on top of the gateway to the chowk, from where one can absorb the vast expanse of the Ganga River and have a view of the Temple at the same time. The gateways are built with stone and the pathways and steps are built with granite, to ensure that the development is functional, robust, and easy to maintain.

The project has made the Temple complex fully accessible to those with mobility restrictions. It provides wheelchair-friendly access all the way from the River Ganga to the Temple. The precinct is designed to be well-lit throughout. It has high-quality and sufficient toilets, at three distinct locations. It also has dedicated spaces for lactating mothers. The development has various facilities to ensure that security arrangements can be made in an unobtrusive manner. The attempt here is to create an inclusive space for all genders and age groups.



The gateway from the chowk to the temple Parisar

The Parisar and the main temple in all its glory

A colonnade around the temple allows pilgrims to sit a while longer in the sacred precinct

The Manikarnika Ghat is a cremation ghat, where mourners need privacy from the hordes of pilgrims and tourists visiting the Temple. The project provides this by creating a wall, which also houses a ramp leading up from the Ganga River.

Challenges, Discoveries, and Learnings

The construction of the project was a huge logistical challenge because the only access for transporting construction material was either through a narrow 40 feet road that reached one end of the site, or on barges through the river. All the material was transported at night.

When buildings were demolished to create space for pilgrim facilities, many old temples were discovered within those buildings. Many of the temples were being used as structural supports for the concrete slabs and beams of the buildings. These temples were restored and included in the development.

The project was inaugurated in December 2021, and it makes us happy to see that the development is being appreciated by many pilgrims. Our key learnings were:

a) It is possible to create an architectural vocabulary that juxtaposes modern with the traditional.
b) Even in a dense urban setting, it is possible to bring about a transformative change in a respectful and sensitive manner.
c) Seemingly impossible logistical challenges can be tackled in a straightforward manner if a problem-solving approach is applied.

Renders, drawings, and text courtesy: HCP Design, Planning and Management Pvt. Ltd.

Photographs courtesy: Dinesh Mehta, for HCP Design, Planning and Management Pvt. Ltd.

Dr. Bimal Patel is an architect, urbanist and academic who has traversed disciplinary, professional, and institutional boundaries to explore the ways in which architecture, urban design and urban planning can enrich the lives of people in India's cities. He heads HCP as its Chairman and Managing Director. Since 2012, he has also been heading CEPT University as President. Patel received a Diploma in Architecture from CEPT, Ahmedabad, in 1984. He received a dual Master's in Architecture and City Planning in 1988, and a PhD in City and Regional Planning in 1995 from the University of California, Berkeley. In 1996, he founded Environmental Planning Collaborative (EPC), a not-for-profit consultancy and policy-research and advocacy organisation.

His work has won numerous awards, including the Aga Khan Award for Architecture, the Prime Minister's Award for Excellence in Urban Planning and Design, and the Padma Shri.
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Drone shot from before work on the corridor began

Drone shot of the project under development

Drone shot of the project nearing completion

SYMBIOSIS UNIVERSITY HOSPITAL AND RESEARCH CENTRE (SUHRC)

IMK Architects

Fact File

Name of Project	▶ Symbiosis University Hospital and Research Centre
Location	▶ Symbiosis University Hospital and Research Centre on Gut no 936/1 and 936/2 (P), Village, Lavale, Taluka Mulshi
Name of Client	▶ Symbiosis Society
Principal Architect	▶ Rahul Kadri
Design Team	▶ Nithin Hosabettu (Design Director) Sahil Bipin Deshpande (Architect) Viraj Naralkar (Architect) Aakash Kumar Srivastav (Architect) Oshmi Sengupta (Architect) Pallavi Rai (Architect)
Site Area	▶ 96100.00 sq.m
Built Up Area	▶ 41800 sq.m
Start Date	▶ August 22, 2016
Completion Date	▶ May 06, 2019
Structural Consultants	▶ The Axis Structural Consultants, Pune

Figure 2: View of the mammoth silver steel bird canopy that draws inspiration from the stainless-steel surgical instruments, SUHRC, Lavale, Pune (Photo Courtesy: Rajesh Vora)

Established on the lower slopes of a hill, amidst the sprawling 40-acre land of Pune's renowned educational institute Symbiosis, SUHRC has been developed on a forested hill in a discrete and quiet location. Envisaged as a multi-speciality hospital to provide excellent health care facilities and a state-of-the-art centre that would enhance skill development in the field of medicine, the development envisions the education and empowerment of medical students. Conceptualized to cater to the needs of all the stakeholders, the hospital caters to the nearby population of Pune and its neighbouring areas while providing tele-medicine services to ensure outreach services to peripheral, far-flung and access-compromised settlements. Amidst today's context, currently, the hospital is being used for government welfare as a COVID 19 hospital.

Sitting along a slope, the building is strategically positioned to minimize the cut-and-fill of the hill site. Planned as a robust curve along the contours of the land, it forms the façade of the project. Imbibing the client brief of 'grandeur' being a key element, two significant and symbolic entrances have been designed, distinct in approach to cater to the client brief of unique identities for the hospital and the academic block. While the entry to the hospital is welcoming, peaceful, it also provides a sense of grandeur along with a structure that expresses solidarity, resonating care and shelter for patients in distress. A large open-to-sky courtyard separates the Centre from the hospital. The entrances for both these blocks lie on either side of the building, making them seem like two completely different entities, providing students with a different access and a space for them for relaxation and academic purposes.

The entrance for the Skill Centre draws inspiration from the stainless-steel surgical instruments used in hospitals. A mammoth silver steel bird, with wings wide open, welcomes the visitor into the building. Supported by steel pipes, a futuristic roof under the sun beaming brightly is symbolic of a contemporary architectural response. The roof sits above the large semi-circular staircase that leads the visitor to the entrance (Figure 2). In contrast, the response to the other block is humbler. Split into two entries, where one is for casualties and the other for regular populous, the base of the entrance is lifted to be in line with the interiors. Above this large entrance, a slightly curved roof is designed, shading the entrance and making it possible for people to wait outside too (Figure 3). The tip of the entrance is stretched upwards, thus letting in more light to create a deeper canopy so that at least two lanes of vehicles could be parked along the length of the building under it. The canopy was stretched to the complete width of the building and gave it a smooth curvilinear shape in the front, which mellows down the impact of the sheer size of this structure. A balance between light and shade has been achieved with smaller skylights within the roof and a larger opening towards the upward bending tip. The upper surface of this canopy was converted into a terrace garden, such that even the single bed patients would be treated to a biophilic space, which would promote healing. Two large courtyards in the building create buffer zones that help heal patients, bring in ample light, and are overlooked by wardrooms and the Out-Patient Department (OPD). The OPD has no air-conditioning but allows for fresh, natural air while ensuring sufficient ventilation. All departments and spaces of the hospital are designed to bring in daylight and natural ventilation. Even areas like OPD waiting have courtyards on both sides and are naturally ventilated (Figure 4).

Similarly, at all levels, there is a 3 m wide corridor that abuts the central courtyard, which lets in natural light and ventilation, thereby reducing the AC load and power consumption for these areas. The courtyards act as spaces for healing for the congregation while reducing cross-infections. The terrace gardens are landscaped with flowering trees and plants to create a soothing effect for the patients as well as the accompanying caretakers. The main central courtyard transforms the space around it, unlike any regular hospitals, which are much mundane, completely air-conditioned spaces without any daylight and natural ventilation. Keeping sterility in mind, the courtyard is non-accessible, full of plants and small trees, etc., to avoid the risk of contamination and maintenance. The accessible spaces in the courtyard are paved with tiles and stones that are maintenance-free.

Figure 3: Curved roof shading the large entrance, SUHRC, Lavale, Pune (Photo Courtesy: Rajesh Vora)

Ground Floor Plan

01. Hospital Entrance Lobby & Reception Ola. Hospital Drop-off
02. Emergency Dept.
02a. Energency Drop-off
03. Skill Centre Entrance Lobby
03a. Skill Centre Drop-off
04. Skill Centre Cafeteria
05. Radiology Dept.
06. Out Patient Dept.
07. Pharmacy & Stores
08. Kitchen & Stores
09. Hospital Cafeteria
10. Hospital Outdoor Cafeteria
11. Internal Landscape Courtyard 01
12. Landscape Courtyard 02
13. Towards Hospital Drop off- Bridge Connection
14. Service Entry towards Lower Ground Floor
15. Service Entry towards Basement Floor

Figure 4: Ground floor plan, SUHRC, Lavale, Pune

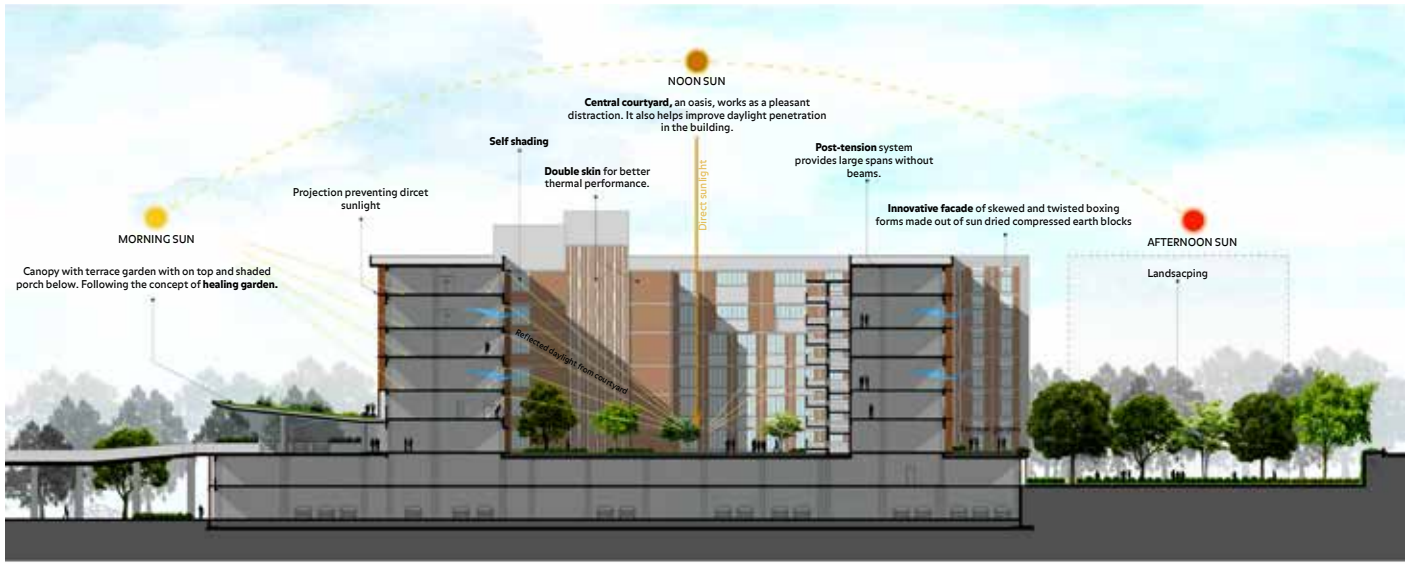


Figure 5: Section A demonstrates passive design strategies, SUHRC, Lavale, Pune

The main central courtyard brings in the above features and makes the space aesthetically pleasing, soothing to the eye, creating a calm oasis. The space is completely transformed, unlike any regular hospitals, which are much mundane, completely air-conditioned spaces without any daylight & natural ventilation in significant areas. This also helped simplify the way-finding in the building, which otherwise in other hospital projects is a complicated affair for the users adding to their trauma in searching spaces/ departments within the structure (Figure 5).

This 216-bedded hospital provides five state-of-the-art operation theatres and twenty-two equally well-equipped ICU units. The Radiology department offers MRI, CT, X-ray, Fluoroscopy, BMD, and other scans. A dedicated Cardiology department with Cath Lab facility, Kidney dialysis with nine beds, separate Gynaecology Department with an independent OT Facility. Functionally, the building comprises four sections; three of them belong to the hospital and the last one being the Skill Centre. Every section has been planned and conceptualized for its functionality-driven design and a distinct formal response as a result. The three blocks of the hospital, namely, the general hospital block, the procedure block, and the multi-speciality block, all have been planned with keeping in mind the ease of functionality and avoiding criss-cross movement.

Amongst the 900 beds in the general hospital block, 600 beds are for free patients and procedures, which are all taken care of and treated by medical college students. This block has been connected to the procedure block, with services running along one side of the corridor. At the same time, the departments are situated on the other, allowing for ease of access without causing any disturbances. Further, the procedure block is well segregated from the ward block to ensure privacy to every patient while being shared as a standard procedure block by paid and free patients alike. This block is equipped with the latest medical technology such as robotic Operation Theatres and surgical operations.

The hospital is planned across five levels; departments such as the OPD, casualty, radiology, MHC, etc., which require easy ground access and are frequented by more patients daily, have been planned at the ground level. The first-floor compromises of General, Twin, and Single bed wards, most of which overlook the garden space. The critical areas, such as OT's, Pre-Op and Post Op, ICU's Cath, etc., are planned on the 2nd floor, making it the sterile zone and thus are also segregated from other areas of the hospital. The 3rd floor, which was earlier planned for future expansion, was also converted to a ward floor as the client decided to get a DNB Accreditation, which required 200 + beds. All services are planned in the basement and lower ground level, including parking, stores, and other necessary hospital facilities such as morgue, medical gases, workshop engineering offices, garbage disposal, etc. The partly enclosed basement and LG levels are designed to use natural ventilation and daylight as much as possible. A 2.5 m wide ramp is also provided in the central courtyard, which will help patients to evacuate during a fire without being dependent on any mechanical systems.

Attention has been paid to construction details, where post-tensioned slabs are used to achieve flexibility, minimum beams, and larger spans that facilitate different size room arrangements and to allow for easy routing of ducts. The flexible grid is designed to synchronize the structural system at all levels. To enable a natural, original, and permanent finish on the building, which would be maintenance-free, brick was adopted as the material of choice for the double skin on the façade with deeper shading projections that would reduce heat gain. The resultant boxing forms were skewed, twisted, or tapered to achieve variations in shape to form a multi-faceted façade that reflects light in different tones in any part of the day. Creating dynamism through its texture, capturing the play of light and shadow each day, the façade looks different, complimenting every mood of the day. What is typically done in concrete has been made possible in the brick and looks exclusive. Naturally compressed, sundried earthen bricks (CEB) produced on-site have been used for façade, and masonry work and methods

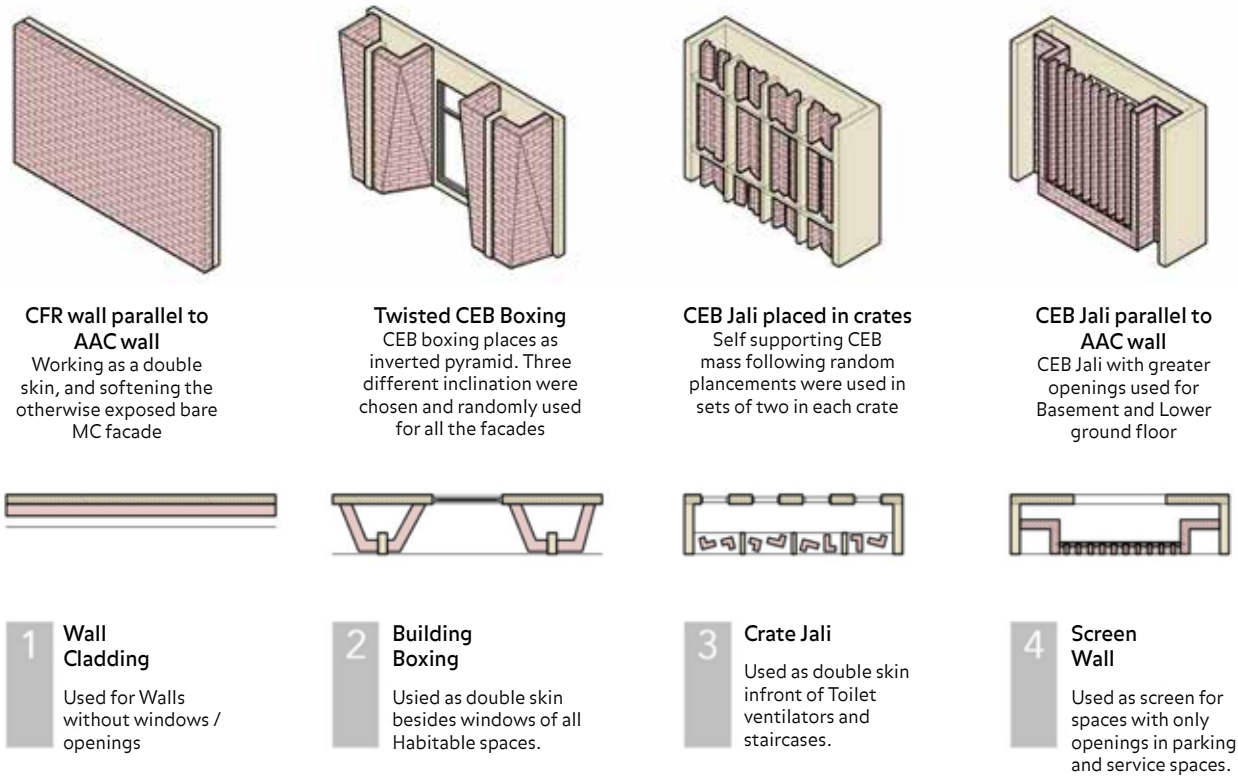


Figure 6(a): Various configurations of CEB have been used to create the façade across the blocks, SUHRC, Lavale, Pune

Figure 6(b): Twisted CEB boxing seen on the facade, SUHRC, Lavale, Pune (Photo Courtesy: Rajesh Vora)

Figure 6(c): CEB jaali screens act as shading devices, SUHRC, Lavale, Pune (Photo Courtesy: Rajesh Vora)

Figure 6(d): CEB jaali screens act as shading devices, SUHRC, Lavale, Pune (Photo Courtesy: Rajesh Vora)

such as brick-boxing were incorporated to achieve efficiency while reducing pollution. Together with exposed concrete, the skin and the façade flatter the green hills beyond. (Figure 6a, 6b, 6c, 6d). Smaller details have been taken into account to ensure a calm and serene atmosphere that promotes healing while encouraging research and creating spaces that are easy to use and maintenance-free. Colour coding has been enabled for easy identification of the assortment of spaces, and critical areas such as ICUs are endowed with light colours of soothing shades to reduce anxiety. To maintain a warm and tranquil environment for patients, soft home-like colours cover the inner walls of the hospital (Figure 7). The ward rooms are designed with warmer and subtle hues of colours that are complemented with teak laminates. Varied temperatures and light with correct lux levels have been worked out for different areas, and the furniture has been customized for special and diverse needs. Acoustic materials in the ceilings of corridors and rooms reduce noise pollution and provide easy access to services. Encouraging way-finding, the nurse stations are highlighted with shades of warm yellow/orange to be identifiable from any side of the long corridor (Figure 8).

The Skill Centre is planned on the fourth and fifth floors with a separate entrance at the ground level. Being a part of the Symbiosis institution, the client brief called for a grand entrance that would be symbolic to the medical field, reflect Symbiosis legacy and depict a futuristic approach. A grand entrance with steps ascending 8 m moves into the entrance

Single Patient Room- Detail

Figure 7: Patient rooms are bathed in natural light and air, SUHRC, Lavale, Pune (Photo Courtesy: Rajesh Vora)

Nurse Station- Detail

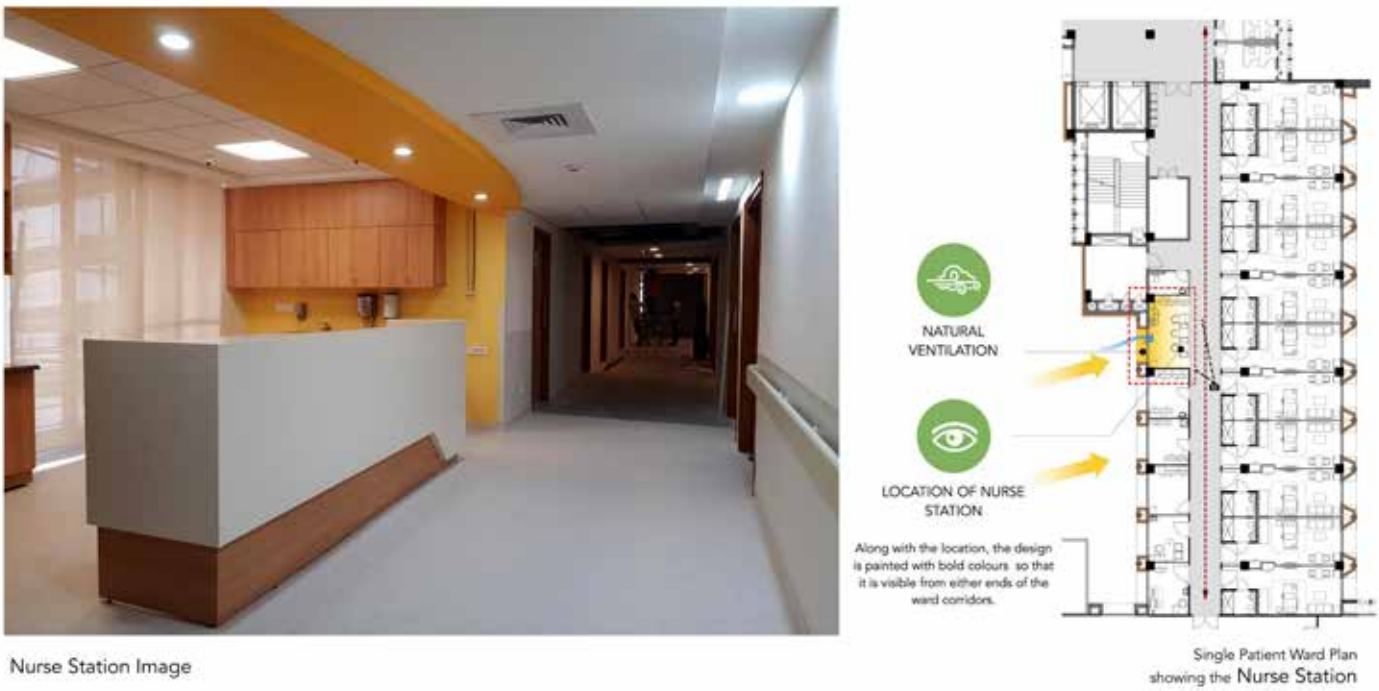


Figure 8: The nurse stations are highlighted with shades of warm orange to encourage wayfinding, SUHRC, Lavale, Pune (Photo Courtesy: Rajesh Vora)

porch. Shaped like the wings of a bird stretched to its extreme ends, the entrance is made of steel with an aluminium skin. Resting on a combination of steel and concrete columns that give it a solid base and balance, the double-height entrance leads into a curvilinear café, which in turn connects to the Skill Centre designated vertical cores connecting to the 4th and 5th floors. The café gains ample daylight and natural ventilation as it has an enclosed courtyard on one side and stepped landscaping on the other, thus creating a pleasant view for the users of the café. The Skill Centre has four departments: centre for health skills, school of nursing, institute of health science and a school of open and distance learning. They share 9 classrooms with approximately 60- 90 students per class, a 300-seater auditorium, a library, meeting rooms, labs, changing areas, where all professionals such as surgeons, doctors, nurses and other allied fields. All the departments are designed, planned, and implemented with one cohesive design vocabulary for medical professionals, with sufficient natural ventilation and daylight.

As multi-facetted angular walls create an orthogonal earthen tone on the façade, the landscape is designed as a free-flowing organic form, using plants of different colours, flower shrubs, and small trees. This creates a healing effect on the patients

Landscape Plan

01. Symbiosis Univeristy Hospital and Research Centre
02. Skill Centre Cafeteria
03. Internal Courtyard
04. Open to sky Cafeteria
05. 12M Wide Hospital Approach Road
06. Hospital Dropoff Area
07. 12M Wide Skill Centre Approach Road
08. Skill Centre Dropoff Area
09. Service Entry To Basement Floor
10. Service Entry To Lowerground Floor
11. 18M Wide Road for Future Buildings/ Residential Block
12. Towards Residential Block
13. Phase 02 Buildings
14. Signage Wall

Figure 9(a): Landscape plan, SUHRC, Lavale, Pune

Figure 9(b): The courtyard has been planned with various trees of different species, shrubs, and plants, SUHRC, Lavale, Pune (Photo Courtesy: Rajesh Vora

Figure 9(c): The courtyard has been planned with various trees of different species, shrubs, and plants, SUHRC, Lavale, Pune (Photo Courtesy: Rajesh Vora)

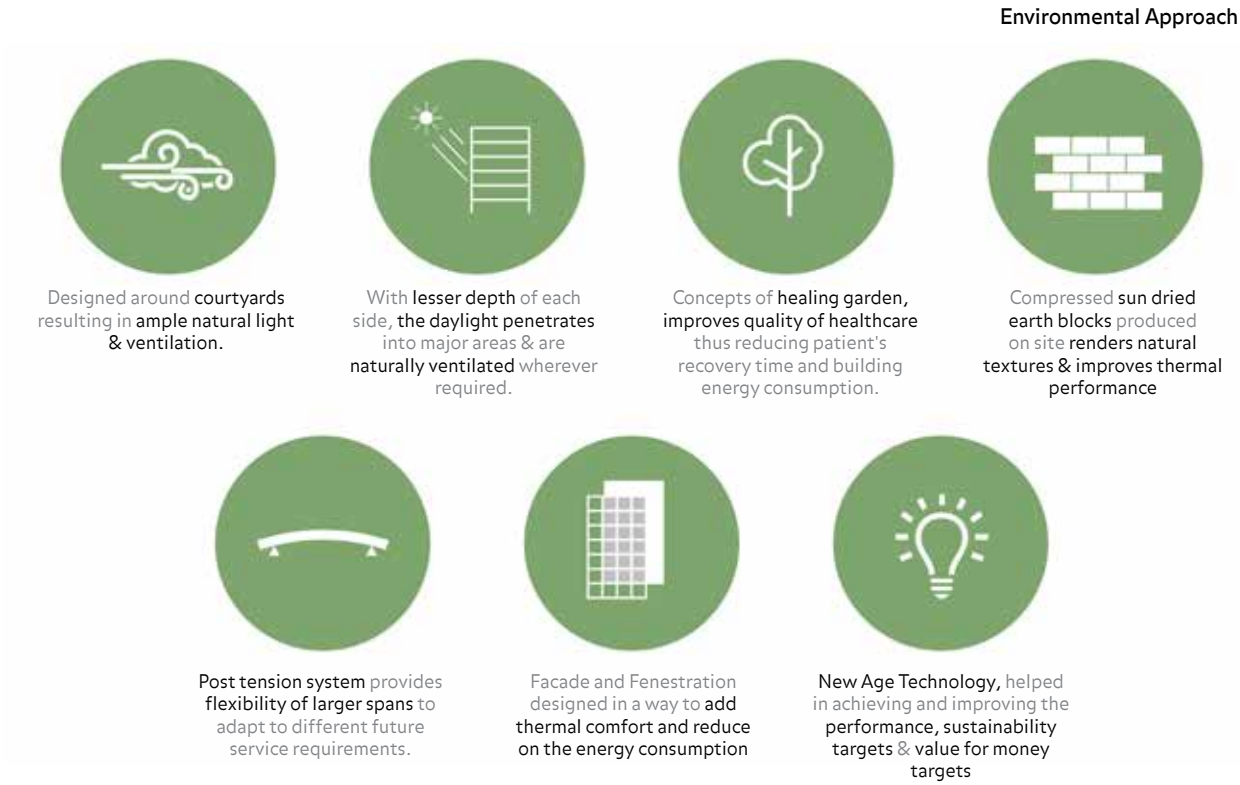


Figure 10: Environmental issues have been addressed through various design strategies, SUHRC, Lavale, Pune

while acting as pleasant distractions for the patients' relatives and hospital staff. The vast open space has been planned with various trees of different species, shrubs, and plants with a vast retention pond at the lowermost level to facilitate zero discharge (Figures 9a, 9b, 9c). The large retaining wall of exposed concrete also gets covered with climbers and plants, converting a blank mass of concrete to an aesthetically pleasing feature that adorns the approach to the hospital.

Carefully and strategically planned, the building attempts to make gestures that are grand yet local and responsive with attention to details such as the brick-art and the exposed concrete. Sitting comfortably on the fringe of the hill, the inner courtyards seem like a continuation of the hill, where the built form amalgamates with the site. Allowing nature to be a part of the hospital and integrating it as a comforting element for the patients, the hospital creates a space for recovery and rejuvenation.

ENERGY

To ensure efficiency in terms of cost, time, and impact, all details such as glass façade, percentage of glass vs brick (not more than 30% glass on the entire façade), shading factor, temperature, and humidity requirement, etc. were finalized at early design stages. This ensured energy efficiency as per functionality and not based on other projects or standard values.

In a centrally air-conditioned hospital, 55-60% power gets consumed by the air-conditioning system and 15-20% power by the medical equipment. The balance of 20% is shared by all the other systems such as lighting, water circulation, treatment, convenient power outlets, the vertical transportation system (elevators), etc. Since there is a limited option to reduce energy consumption by medical equipment, it is crucial to arrive at an appropriate air conditioning system. Water-cooled chillers with variable speed drive, premium efficiency pumps, and cooling towers with CTI certification for assured thermal performance has been selected. The chilled water system is designed for low flow high delta T (temperature difference), making the chilled water flow requirement 17% lesser as compared to the regular conventional system. Vertical transportation elevators are selected with gearless drive motors and VFD controls to save the energy consumed by elevators by 35%. Transformers are selected to meet the loss values permitted by the Energy Conservation Building Code published by the Bureau of Energy Efficiency of India. Light fixtures are selected with LED bulbs, and the domestic water is wholly recycled, treated, and used for secondary applications such as air conditioning, gardening, etc. – all resulting in zero liquid discharge from the building. Water-cooled heat pumps integrated with the air conditioning chillers are used for hot water production, thereby consuming only 35% of the energy as compared to conventional electric heaters. Additionally, the by-product of chilled water produced is taken back into the chilled water system to reduce the load on the chillers. A thorough mode of System Testing, Adjusting and Balancing was enabled to ensure that the design intent is achieved in the actual functioning of the project by a third-party testing and commissioning agency (Figure 10).

Ar. Rahul Kadri is a Partner and Principal Architect at IMK Architects, an architecture and urban design practice founded in 1957 with offices in Mumbai and Bengaluru. He holds a graduate diploma in architecture from the Academy of Architecture, Mumbai, and a Masters in Urban and Regional Planning from the University of Michigan, USA.
media@imkarchitects.com

BRICK MASK HOUSE

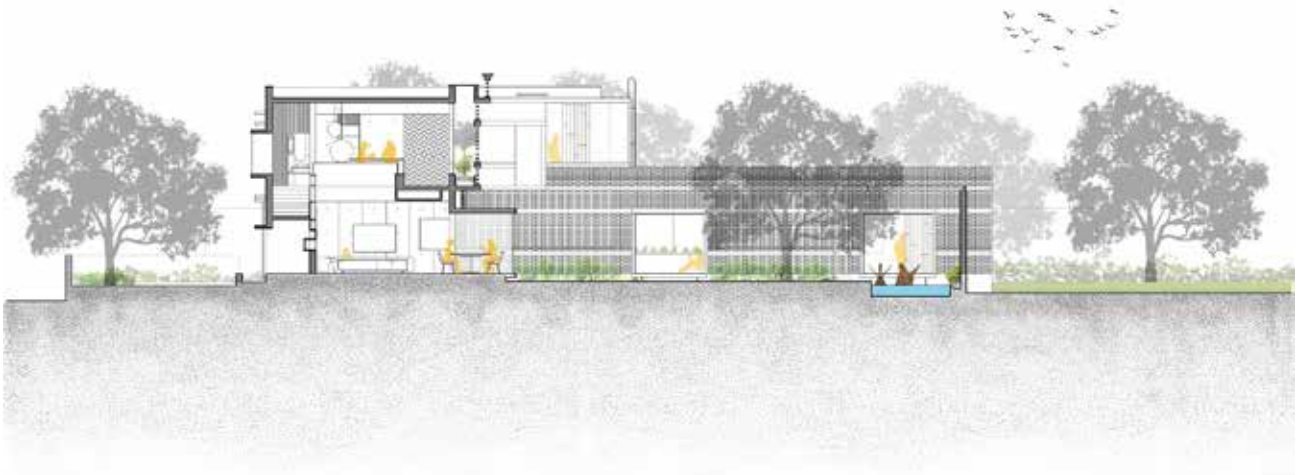
Spacefiction Studio

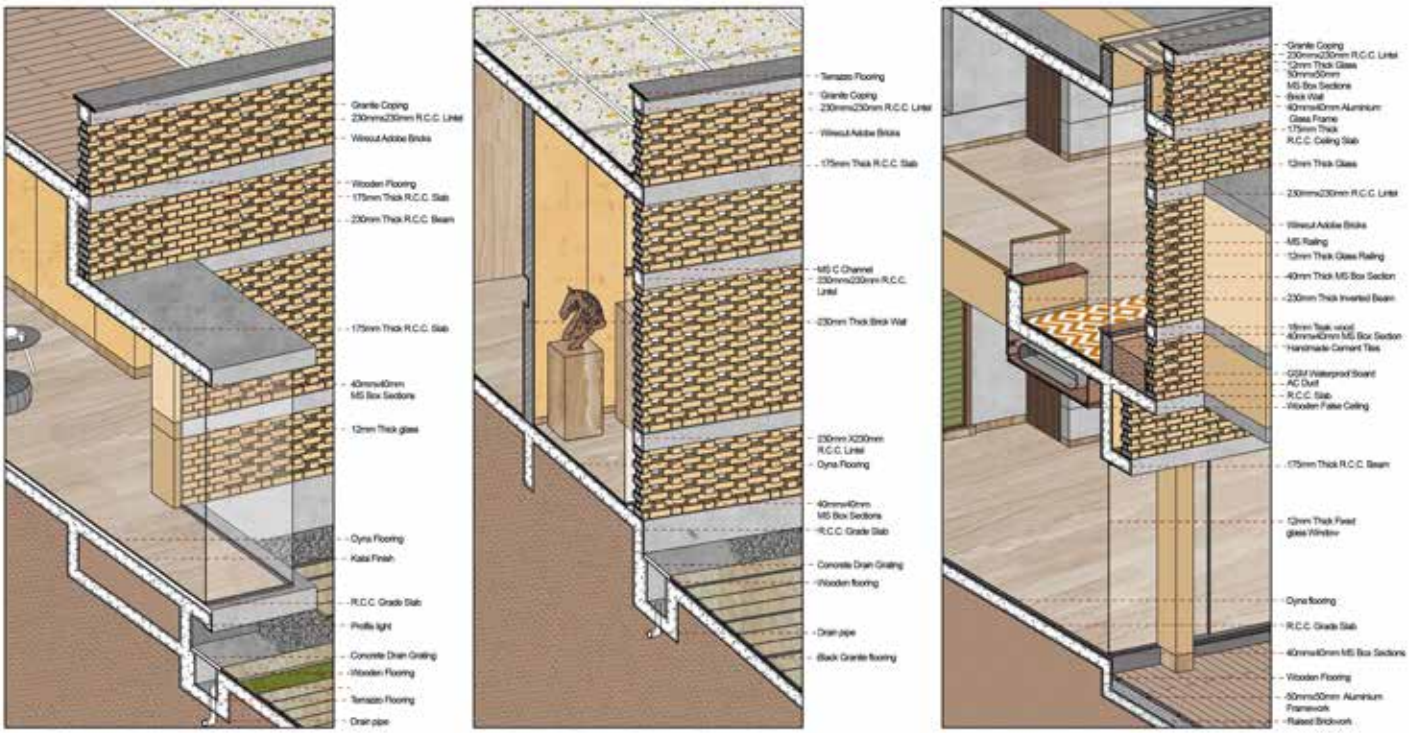
Fact File

Project Name	▶ Brick Mask House
Office Name	▶ Spacefiction Studio
Project location	▶ Hyderabad
Firm Location	▶ Hyderabad, India
Completion Year	▶ 2021
Gross Built Area (m^2/ ft^2)	▶ 930 m^2 / 10000 ft^2
Program	▶ Residence
Lead Architects	▶ Baba Sashank, Vindhya Guduru
Team	▶ Santhosh Kandanala

The house, nestled in an acre of grid-planted mango trees, was to serve as a secluded retirement home for a couple, away from the chaotic city life. None of the existing twenty-year-old mango trees was removed. Instead, the house weaves itself around these trees, creating a multitude of experiences.

The peripheral walls of the house are made up of local wire cut bricks, with interjecting layers of exposed cement lintels. This is a conscious attempt to blur the insides and outsides even further. The perforations are controlled depending on the space it divides or encompasses. When lit by the sun, they transfer ever-changing shadows inside and when backlit, they offer a playful hint of what is happening behind them. This jaali wall's presence is felt from all the areas of the house. There is no façade to the building from the outside. The brick layer is the only hint of the house, seen as a backdrop behind the trees, and vice-versa.




Granite Coping
230mmx230mm R.C.C. Lintel
Wirecut Adobe Bricks
Wooden Flooring
175mm Thick R.C.C. Slab
230mm Thick R.C.C. Beam
175mm Thick R.C.C. Slab
40mmx40mm MS Box Sections
12mm Thick glass
Cyna Flooring
Kota Finish
R.C.C. Grade Slab
Profile light
Concrete Drain Grating
Wooden Flooring
Terrazzo Flooring
Drain pipe
Terrazzo Flooring
Granite Coping
230mmx230mm R.C.C. Lintel
Wirecut Adobe Bricks
175mm Thick R.C.C. Slab
MS C Channel
230mmx230mm R.C.C. Lintel
230mm Thick Brick Wall
230mm X230mm R.C.C. Lintel
Cyna Flooring
40mmx40mm MS Box Sections
R.C.C. Grade Slab
Concrete Drain Grating
Wooden flooring
Drain pipe
Black Granite flooring
Granite Coping
230mmx230mm R.C.C. Lintel
12mm Thick Glass
50mmx50mm MS Box Sections
Brick Wall
40mmx40mm Aluminium Glass Frame
175mm Thick R.C.C. Ceiling Slab
12mm Thick Glass
230mmx230mm R.C.C. Lintel
Wirecut Adobe Bricks
MS Railing
12mm Thick Glass Railing
40mm Thick MS Box Section
230mm Thick Inverted Beam
Handmade Cement Tiles
GSM Waterproof Board
AC Duct
R.C.C. Slab
Wooden False Ceiling
175mm Thick R.C.C. Beam
12mm Thick Fixed glass Window
Cyna flooring
R.C.C. Grade Slab
40mmx40mm MS Box Sections
Wooden Flooring
50mmx50mm Aluminium Framework
Raised Brickwork

The Brahmasthala (heart of the house), is an open to sky courtyard. All sides are enveloped by the brick façade, from which glass projection boxes protrude around the existing trees. One is constantly aware of the large, looming mango trees through the sound of them swaying in the wind, or the large perforated shadows that they cast. The traditional granite south Indian temple statues and the sound of water from the temple spouts of Mahabalipuram fill the central courtyard with a sense of spiritual serenity. The north pergolas cast long, transitioning shadows on the stone-clad walls and a large pool below it.

The house is made up of two wings, connected by a double height space. The entry door leads to the east wing, which has a drawing room, beside a water court housing a mango tree. The puja corridor leads to a pebble court, also accommodating an existing tree. A shaded wooden deck with a swing is opposite this. The other west wing houses two bedrooms and a study in between. These are accessed through a long corridor, which is made into a gallery of paintings and sculptures on pedestals. The morning eastern sun casts varying shadows on this wall through the perforated, brick façade. The whole wall receiving this light is finished with yellow stucco lime plaster and brass knobs fit on a grid.

The two bedrooms on the top are accessed through the stairs in the central, double height area. A brass and brick accent wall encloses the staircase. A bridge connecting the two also accommodates a bar area and sitout. Throughout the length of the bridge, is a planter with light raining from above. A long window cuts above the south wall, which offers a view of the lake from afar while walking over the bridge.

The ceilings are exposed concrete. The flooring is primarily Italian marble, with pockets of handmade cement tiles laid in a pattern. Accent walls of different areas are finished with different shades of lime plaster. Teak wood, brass accents and glass make up the rest of the material palette.

SPACEFICTION STUDIO was started in 2014 by Baba Sashank and Vindhya Guduru in Hyderabad. Intended to be a blend of design disciplines with architecture as the base, the firm handles projects of various scales and nature. Experienced in shaping the architecture and interiors of large scale housing, institutions, research labs and commercial spaces, the studio often dabbles with everything related with design and art.
info@spacefictionstudio.com

Photo Credits: **Monika Sathe Photography**

Voices

The Journal is starting a new section called **VOICES.** Members are welcome to write on any issue regarding the practice, profession, education, etc. in about 700 words. Selected articles will be carried in this section.

MINIMUM FEES? WHAT'S THAT?

Ar. Monolita Chatterjee

Sounds familiar? Well, yes, it is the bane of all practising architects. But the question arises not from ignorance, but from ununiform service delivery within our profession, as also ignorance from the client of what a full architectural service should comprise of. And then there is the elusive factor called design, which is unquantifiable, yet speaks for itself.

How do we as a community of free-thinkers come to an agreement on this most crucial aspect of our profession? And is it really something we need to agree upon? Let us look at the evidence.

Council of Architecture stipulates minimum fees for projects, yet the greatest violator of these norms is the government. Governments at all levels have thousands and thousands of different sizes of public projects and no norms to independently employ architects according to COA minimum fees norms. As a result, either some architects monopolise government projects with ridiculously low fees, or most government projects simply do not employ an architect. Yet these projects meant for social welfare, built with our tax money are the ones urgently in need of design services, and professional scrutiny so that they utilize public money in the best possible way while delivering humane and user-friendly, functional spaces to the citizens who have often paid to put these design professionals through college.

Instead, the greater number of architects crowd the private projects space, where the profit bottom line rules everything and good design becomes subservient to economics alone,

marginalizing the space for the design professional. The biggest casualties are young architects, who are forced to sell their services at the lowest prices – 'because your seniors do so', to the point of having unviable practices and unenviable design portfolios. If some architects break through to demand their just price, they are mostly anomalies.

What happens when architects do not make enough to compensate for requisite design services? Let us understand clearly that no one is in a profession to run a charity show. So, every time a client underpays, they are getting a product that is under-designed or even un-designed. For an architect, forced to work at below workable fees, it is a matter of survival to pare down your services and make it work financially for you. Not just that, an ethical architect would always give their client the benefit of their negotiation expertise with other service and product vendors, making huge savings for them and guiding them to the best-suited solutions. For an architect not paid for their time, the temptation to scrimp over such efforts, even make money out of it, can be quite understandable. Further, again the unquantifiable – design. When an architect is underpaid, they are forced to pick up as many projects as they can to make themselves financially solvent, leaving them less time and attention to devote to projects, and hence to that unquantified factor – design time. This value is very elusive as no one other than architects really knows that there is a certain amount of sheer time on the drawing board which is required to come up with well-resolved yet sensitive and aesthetically pleasing designed spaces. Let alone designs which deal with crucial aspects of climate crisis or exclusion in their solutions.

All of the above are not unknown to the profession. Yet, it seems not the basic understanding we employ within the industry. Rather architects are made to fight against each other, play dirty games and underhandedly steal each other's projects, vying for the same narrow space of private projects where the builder is the king. A less united profession has not been seen. Compare it with the nationwide doctors' strikes for pay parity or the way chartered accountants and lawyers guard their turf. Hell, we seem to have so little value to our professional training that we keep giving justifications for nonprofessionals poaching our space, while we undercut our community.

What is the solution? Is it time for architects to seriously come together for our common good behind a minimum standard of work to be delivered at a minimum fee? Is it time that we as a community convince the government to establish transparent processes for the hiring of design services just as they hire engineers and project managers, to make public buildings and spaces designed for the best quality as well as optimum costs? And can we convince the public to demand basic minimum quality from public buildings, so that hiring an architect becomes a norm for the government? Can we come together to open up trapped projects to good design and so create a larger playing field, especially for young architects, so that we are not all struggling to find a footing within that same narrow space?

And does that bring a brighter dawn not just to our profession, but also to our cities, our urban spaces, our government schools, colleges, hospitals, markets, panchayat offices and all such areas, where design intervention has become an accident today?

Ar. Monolita Chatterjee, Partner, Design Combine Architects and Designers, has a two decade long career as an award winning architect in fields of Leisure, Heritage, Urban Renewal and Transit Design. She is empaneled in the Urban Design team for the Kochi Municipal Corporation, and with Archaeological Survey of India, South India. She conducts academic workshops and exercises with architectural students, faculty and professionals as also general public, corporators and central and state development missions on aspects of inclusion and gender through design, especially in the public realm. She founded the Gender Rights based NGO Raising Our Voices Foundation in year 2013. She is also part of the teaching faculty in KMEA College of Architecture, Kerala.
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ASCENSION DESIGNS

PHILOSOPHY

Established in the year 2016, *Ascension Designs* is a multidisciplinary studio located in the city of Jaipur, which was set up by four college friends, Mehul, Prateek, Achintya, and Akshay, right after graduating from Aayojan School of Architecture, Jaipur.

We strive to remain a close-knit group with a shared zeal for creative experimentation to facilitate a more intimate approach to every project. This style has led us to operate on a diverse range of projects spanning across India and across the sea. The firm has worked on architecture, interior, and landscape design, across categories such as residential, commercial, retail, institutional, and hospitality. The design philosophy directs our design approach to be unique for every project that allows for extensive research and creativity to come up with the best possible design solutions that are prevalent in the prevailing socio-cultural context. It helps us approach every design with a new vision and allows us to push past our limits and dwell further and explore the endless expanse of architecture.

As a studio we believe in maintaining a healthy work-life balance and we strive to put it in practice. We invest time in activities that help us and our colleagues grow and become better version of themselves. Interactive brain storming sessions, and scheduled travels are all part of our philosophy and approach.

PROJECTS

1. Little Italy, Bengaluru

A paradigm shift from the side of the client called for an entirely new approach. A style that would reimagine the long running image of the brand without forsaking that which had been established since its inception. With the addition of new brands, the new image would have to stand in harmony with the new brands that were appended.

Little Italy, Akss, and Tutto Bene were to coexist. The existing elevation was completely redesigned to showcase the novel vision, and better reflect the brands' new orchestration. Little Italy indoor hall followed a palette that was new but did not deviate from the original at the same time. Devising the ceiling as the dominating trait left the walls free of this duty and gave the space its typical soft elegance. Little Italy outdoor aisle was cleaved into varied spaces, each with its unique spatial quality. Owing to a variety of contextual and climatic factors, the approach taken was much bolder. Akss and Tutto Bene follow a contrasting palette. The overcast bold hues of Akss are sharply distinct from the vibrant jolly of Tutto Bene. Almost the entirety of the first floor was dedicated to Akss, divided into various zones. The building front is dedicated to Tutto Bene. The naturally lit double heighted glass front compliments the brand's theme highlighted with ample greenery and a jovial flooring pattern.

Right Top: A warm ambience for the outdoor sitting

Right Bottom: Pellucid front connects the exterior to the interior

The space hosts a jovial ambience

2. Contento Culinary, Udaipur

The intent, the vision, and the design approach was directed towards creating 'spaces within a space'. The idea was to design a building with diverse spatial qualities. The challenge that followed was to enable co-existence between these spaces, creating harmony and easing a smooth spatial flow. The client brief also accounted for Little Italy's subsidiary chain 'Akss', along with a banquet hall, a party lawn, an isolated bar, and decked seating areas. Little Italy restaurant took a huge step forward when they decided to open their first ever stand-alone restaurant in the city of Udaipur. Each space has a distinct language with pool side decks, bar area, garden area, Al fresco seating, mezzanine area, indoor halls, banquet area and rooftop party space.

The building was intended to provide the user with a new experience with every visit owing to the diversity in the nature of spaces. The variety of spaces required provided an incredible opportunity to execute the intended idea of creating several spaces with their own unique identity.

The entrance serves as a portal to the change that follows

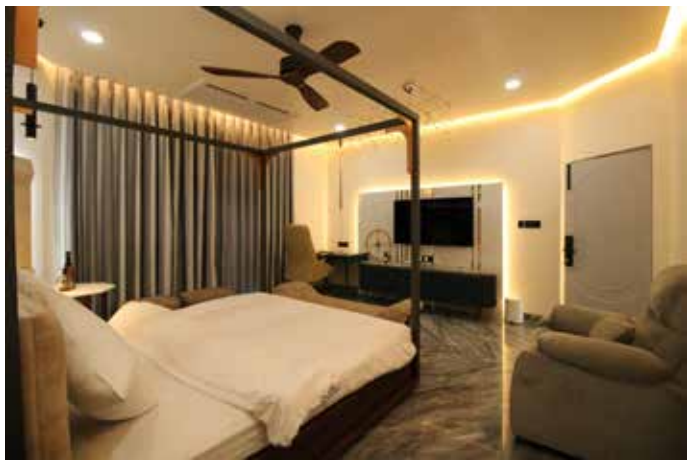
The water body compliments the ambient quality and cools the microclimate

The building showcases a variety of spaces

3. Residence Revamp, Jaipur

The interiors of the house demanded a complete makeover. The brief required an approach that traverses the boundary between earthy and flamboyant. A warm and cosy ambient quality is derived through the use of a beige palette. Keeping the entire room in shades that complement each other and giving only the floor a contrasting colour keeps the visual balance grounded. The use of a variety of marble projects the diversity sought in the brief. A serene harmony is created in the space where multiple materials coexist without overpowering the other. The arched doorway adds character to the space which is complemented by a stone pattern on the washroom walls. The curvilinear geometry softens the bold impact of stone while the warm lights and gentle colour palette give the space a soothing ambience.

Geometrical botticino bed back



Harmony between colour palettes keeps the room unified

Curvilinear geometry softens the boldness of stone

4. An Ode to the Valorous

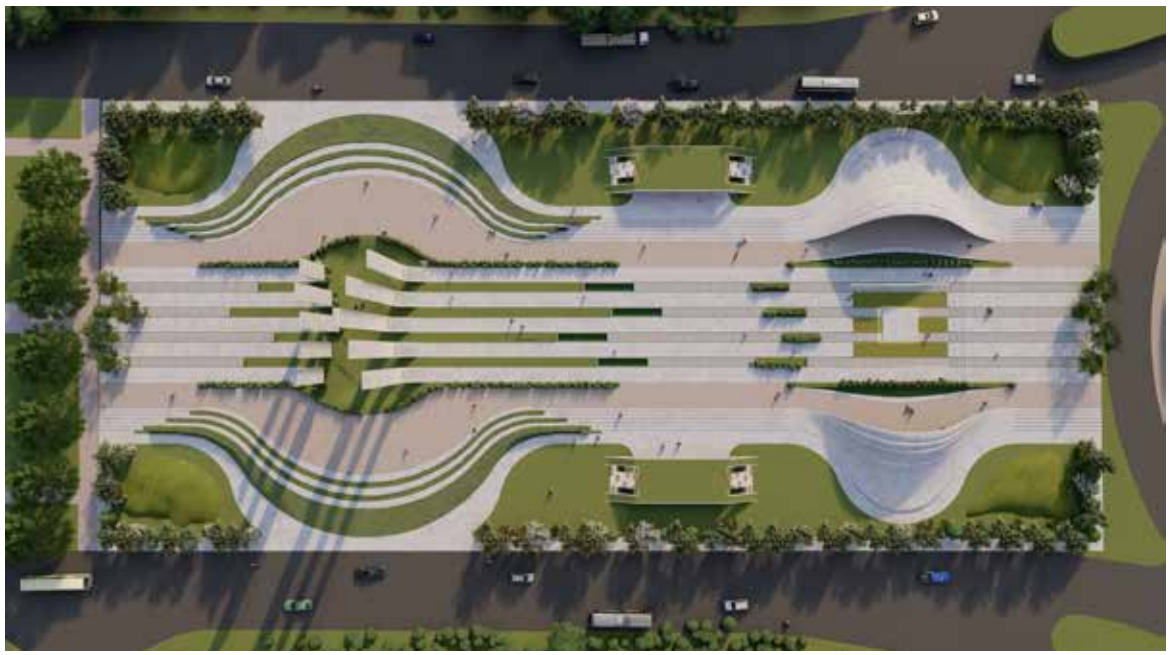
The design is the winning entry of a competition by the Nava Raipur Development authority for the design of a martyr's memorial for the martyrs of Chhattisgarh. The design titled, An Ode to the Valorous is a monument that stands tall in a land where once stood souls full of vigour and resolve. The design is a tribute to the fallen souls who have fought for their land, its people, and their home.

The site is axially aligned along the Naya Raipur Marg. Ten pillars rise up towards the sky like ashen grey hands to pray to the heavens for the souls of those martyrs. Every structure on the site arises from within the warm embrace of the very soil that they fought for. The pathways rise up to form 50 m high structures. Five on either side, these structures form 'hands that pray' to the heavens for the departed souls. Between the hands is a walkway with lights that shoot straight upwards. These lights are symbolic to the martyred souls that move towards their heavenly abode and the light starts to fade as they draw closer to the destination. Standing at the central patch the user can appreciate the massive scale of the structure. Standing at the nexus, the user feels the weight of the sacrifices and the gratitude in the blessings.

Right Top: The dominant central axis

Right Bottom: Ten structures rise up to form two 'hands that pray'

The entire site is a connected whole



Bird's eye view of the site

Ar. Akshay Sancheti has been thoroughly involved in client relationship management. Drawing on his skills, he coordinated the Arcasia event of 2017, also co-founded HiveKraft, and has been invited to Jaipur's universities for workshops and reviews.

Ar. Achintya Rajimwale has been active in the firm's professional practice over the more theoretical and philosophical aspects of design. Having a background in academics, he is also keenly involved in architectural research and has written and published research papers.

Ar. Prateek Khandelwal is more into the design process, to explore and experiment with the diverse possibilities of design solutions. Apart from architecture, he has a passion for fine arts and photography.

Ar. Mehul Kothari has his sights on creating something durable and timeless. He also looks towards more sustainable alternatives to his designs. He takes immense pleasure in coordination and managing various projects.

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A PATH TO NET ZERO WATER CAMPUS AT SAC / ISRO

Ar. Matinder Kumar, Ar. Nidhi Mishra & Er. Shailendra Kumar Singhal

The wars of the next century will be about water.
Ismail Serageldin, Former VP, World Bank

Water is an abundant natural resource, as three-fourths of the surface of the earth is covered with it. Total water from all resources on earth is about 1360 million cubic kilometres, which is 0.25 per cent of the planet's mass. More than 97 per cent of water is in the form of ocean and seas, 2 per cent is locked in ice-caps and glaciers and a large proportion of the remaining 1 per cent lies far too deep in the ground to exploit. Thus, only 0.2 million cubic km is freshwater from rivers, lakes, swamps and reservoirs and 23.4 million cubic kilometres is groundwater, which is mostly saline. It is only this limited quantity, which is available to meet the water demands of humans and livestock the world over.

The growth in urban population is a positive feature of economic development particularly as the combined contribution of the service sector and industry to gross domestic product is significantly higher than that of agriculture. The growth has been so rapid and uncontrolled that urban planning and investment in infrastructure has proved to be insufficient, for example, the demand for water and sanitation services is growing faster than cities can supply. The inadequate access to potable water and sanitation facility is assuming serious proportions and a major threat to public health (Fig. 1).

Figure 1: Drinking water scarcity
(Source: The Harald Editorial Comment_ 09.06.2014, Harare water: Use alternative carefully)

Looking at this scenario, it becomes our utmost responsibility to utilise this invaluable resource in the best possible manner. This approach gives rise to the 'Net Zero Water Campus'.

What is Net Zero Water Campus?

Net-zero or water-neutral campus is where the quantity of water used for all purposes be it for drinking, cooking,

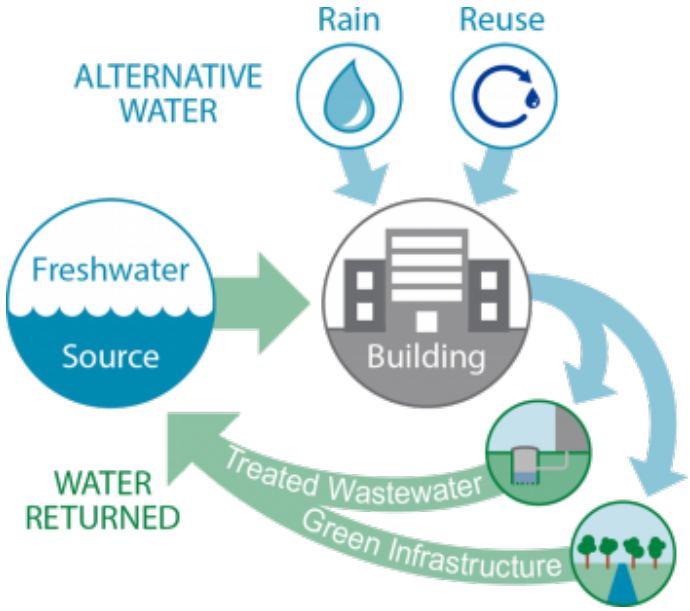

Figure 2: Water cycle for net zero water building/ campus
(Source: https://www.energy.gov/eere/femp/net-zero-water-building-strategies.)

cleaning/washing, air-conditioning plants, etc. in a year is almost equivalent to water recharged back to the ground or collected/recycled for reuse.

The main aim for net-zero water planning is to preserve the quantity and quality of natural water resources with minimal depletion of the water table, minimal deterioration in quality and re-routing of water by utilizing potential alternative water sources and to adopt water efficiency measures to minimize the use of ground/surface water.

Ultimately, a net-zero water building or campus can be created by completely offsetting potable water use, with alternative water plus water returned to the original water source.

INTRODUCTION

The 39-acre campus of SAC, ISRO has been designed sensitively to address ecological challenges and to be at the fore front with all green parameters in place to conserve water and other resources by recycling and reusing them onsite. Much of the brainstorming has gone into planning efficient and optimal utilization of perishable resources, which saves on operational cost and provides easy installation and maintenance for such a huge campus having critical facilities working 24x7 throughout the year.

The main requirement of water on the campus is for drinking, flushing, washing, cooking food, AC system and landscaping. The major source of water in the area is groundwater. Two bore wells, 800 feet deep have been made to meet the freshwater requirement of the campus.

The methodology used for saving water is by adopting the '3R Philosophy' (Refer Fig. 2):

- Reducing the requirement of water by 20-30% used for day-to-day consumption by occupants and for the operation of services etc.
- Reusing the wastewater after proper treatment.
- Recharging of rain water to ground

Reducing water requirement

Following the above mantra, the consumption of water has been reduced by adopting the following measures:

- Using low flow plumbing fixtures: In all the buildings the plumbing fixtures used have low flow resulting in saving of almost 25% of the water required (Fig. 3).
- Use of aerators in taps also results in water saving. Aerators run on the principle of separating a single flow of water into tiny multiple streams which introduces air in the water flow resulting in reducing space for water to flow through. (refer Fig 4)
- Water efficient landscaping has been achieved by planning low turf area and high drought tolerant species

In addition to the above, all the water tanks- be they the drinking water tank, fire-fighting tank, soft water tank or roof top rainwater collection are planned at a centralized location with a single pump house to optimize the project cost compared to having them at discrete locations and multiple distribution networks. Water is effectively utilized with minimum wastage as the tanks are at a common location. It also limits the withdrawal of water from the ground as if one building is not using it is being used by another building there by reducing the dead storage of water at any moment of time.

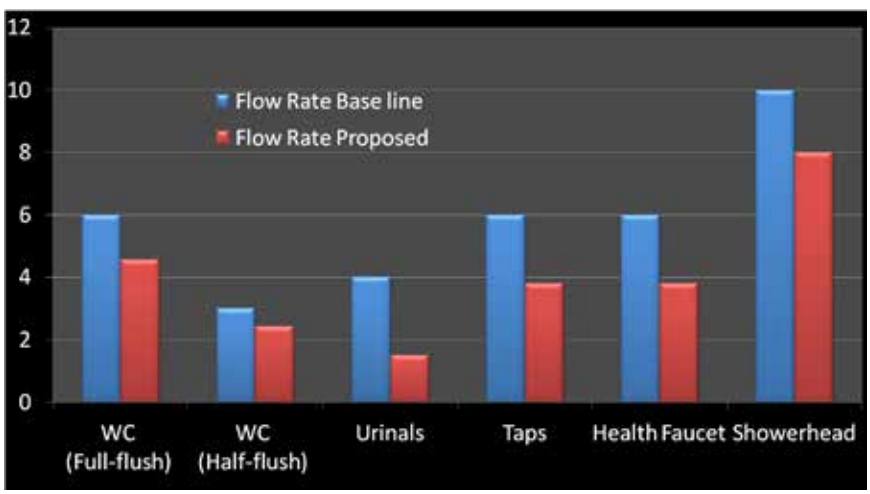

Figure 3: BAR Diagram Showing Water Usage [normal fixtures v/s low flow fixtures]
(Source: IGBC certification report for kiosk building at New SAC Campus Bopal, Ahmedabad)

Figure 4: Aerators
(Source: https://www.indiamart.com/proddetail/neoperl-21303730812.html)

Reusing the wastewater

To reuse the wastewater, a sewage treatment plant of capacity 115 KLD is constructed for treating wastewater (sewage) generated at the 39-acre new SAC Campus and residential campus. Sewage treatment is carried out in the following stages:

1. Primary treatment – Separation of floating materials like tree branches, papers through screen chambers.
2. Secondary (biological) treatment- It involves biological decomposition of organic matter under aerobic conditions
3. Tertiary Treatment (pressure filter) – A pressure filter with an activated carbon filter (double filtration is provided for filtering the secondary treated effluent.
4. Post- Chlorination -The filtered effluent from the pressure filter is collected in GLR. The chlorination is done by using bleaching powder in this GLR and the disinfected effluent is pumped to 39-acre New SAC campus for use in horticulture and internal PH flushing system.

As seen in Table 1, the annual water balance sheet is prepared considering the following assumptions:

- No. of working days in a year = 52-week x 5 days - 10 official holidays = 260-10=250 days
- For Residential Area Annual Water consumption has been considered for 365 days
- For Landscaped Area Annual Water consumption has been considered for 300 days.

Water Requirement for AC system (water-cooled) is considered 6 litres/ TR/hr for 2500 h per annum.

As per the calculation of the annual water balance sheet shown in Table 2, the total annual wastewater generation is 30,971 KL. and the same is used for flushing and irrigation purposes. Hence there is zero discharge of wastewater from the campus.

In addition, to monitor the usage of water, water meters have been installed at a centralised level as well as building level.

Recharging ground water

Surface rainwater harvesting is planned after doing a ridge and valley analysis of the campus. After calculating the total runoff of the different surfaces, eight recharge wells are planned to collect the storm water and percolate it to the ground beneath. The capacity of the RWH system captures rainwater almost 15% of average peak month rainfall, that is, 317.90 mm and annual rainfall of 803 mm.

While studying the drainage pattern of the site, the water balance sheet (refer Table 1) was prepared and the efforts have been put to have zero water discharge campus, that is, no overflow of storm water to the city drainage line ensuring 100 % water being recharged in the ground. Accordingly, the locations of the recharge wells have been thoughtfully decided as per contours and invert level of side terrain.

As per Table nos. 2 and 3, the freshwater requirement is 73,437 KL and rain water harvesting is 80,016 KL. This shows that we are putting more water into the ground than what we are extracting. Hence fulfils the requirement of the Net Zero campus.

The other methods used for saving water are:

a) Shifting to alternate source of water with maximising collection

Rooftop rainwater harvesting has been implemented at the campus by constructing two centralised water collection tanks of 9 lakh litre capacity each. All the major buildings of the campus are being connected with this network. After online filtration, the collected water is being used directly as soft water in AC plants. It drastically reduces the groundwater requirement for AC in the rainy season as well as a few months thereafter.

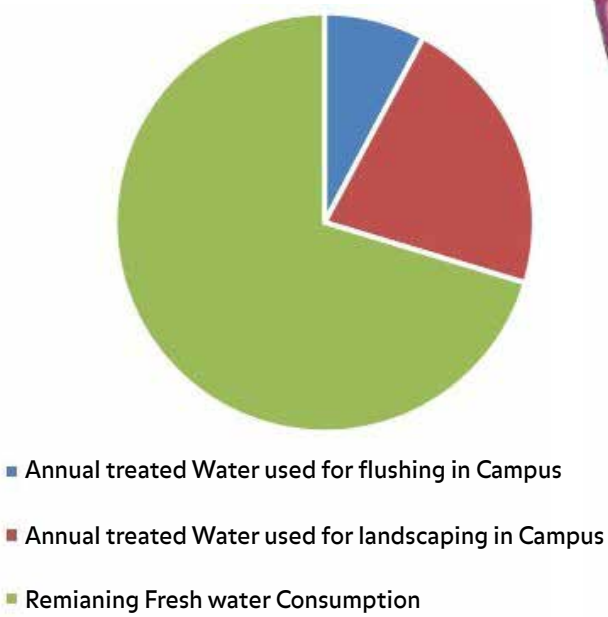

Figure 5: Annual Water demand
(Source: Derived from Table-2)

Figure 6: Zoning Map of New SAC Campus for recharge wells calculation
(Source: EC Report submitted to CPCB)

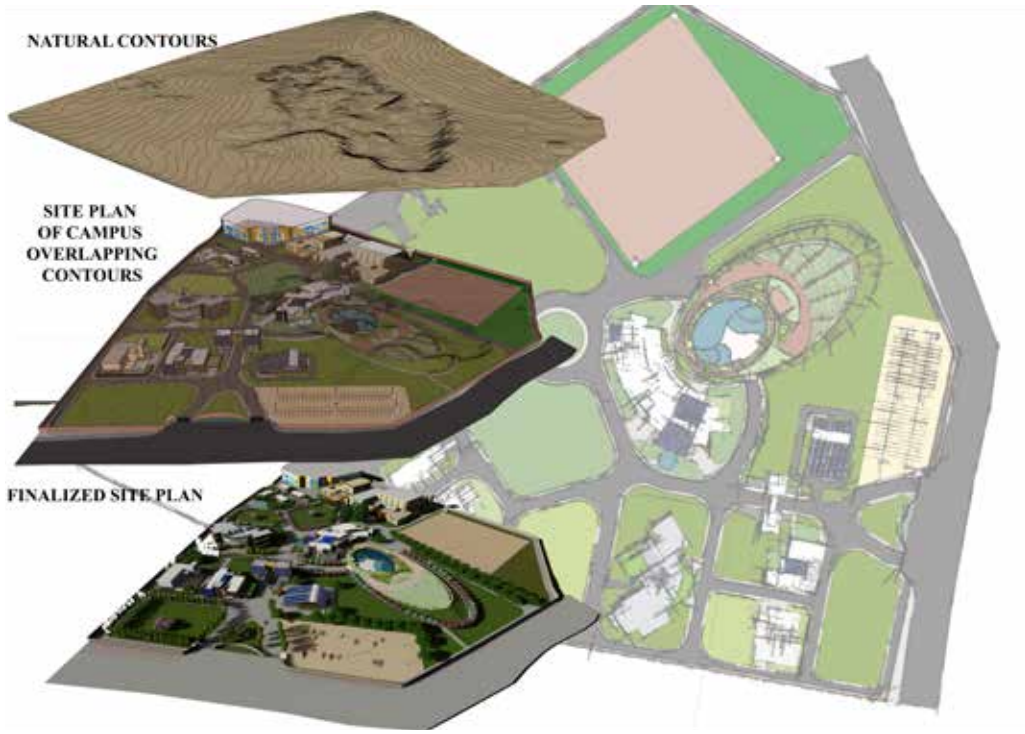

Figure 7: Master Plan showing design process based on existing site contours *(Source: Site Plan of New SAC Bopal Campus, ISRO, Ahmedabad)*

b) Avoiding contamination of water

Avoiding contamination of the groundwater source is equally important as reducing/reusing/ recharging groundwater. To achieve this, the campus has a well-planned waste segregation system for e-waste, paper, plastic and organic waste at the building level as well as at the campus level. Different types of dustbins are placed in every building. A further provision of a covered drain has been made which in turn reduces the stormwater contamination from hard surfaces.

At the centralised level, an organic waste converter (OWC) composting machine having a capacity of 200kg/day has been installed at the campus to recycle the garden waste and food waste from the kitchen for the production of in-house organic compost. Due to this, the purchase of inorganic fertilizer has been reduced considerably which in turn protects the soil as well as groundwater from contamination.

CONCLUSION

Water is a precious natural resource. Conserving water and preventing water contamination is a need of the hour and thus should be holistically followed by each one of us. We need to be mindful of water consumption before a drought hits. It's a lot easier to deal with a little inconvenience rather than to deal with depleting natural resources of potable water. Be wise when you turn on that faucet … you never know when your tap may run dry. Making the New SAC campus a Net Zero Water Campus is a small journey towards saving planet earth and its resources.

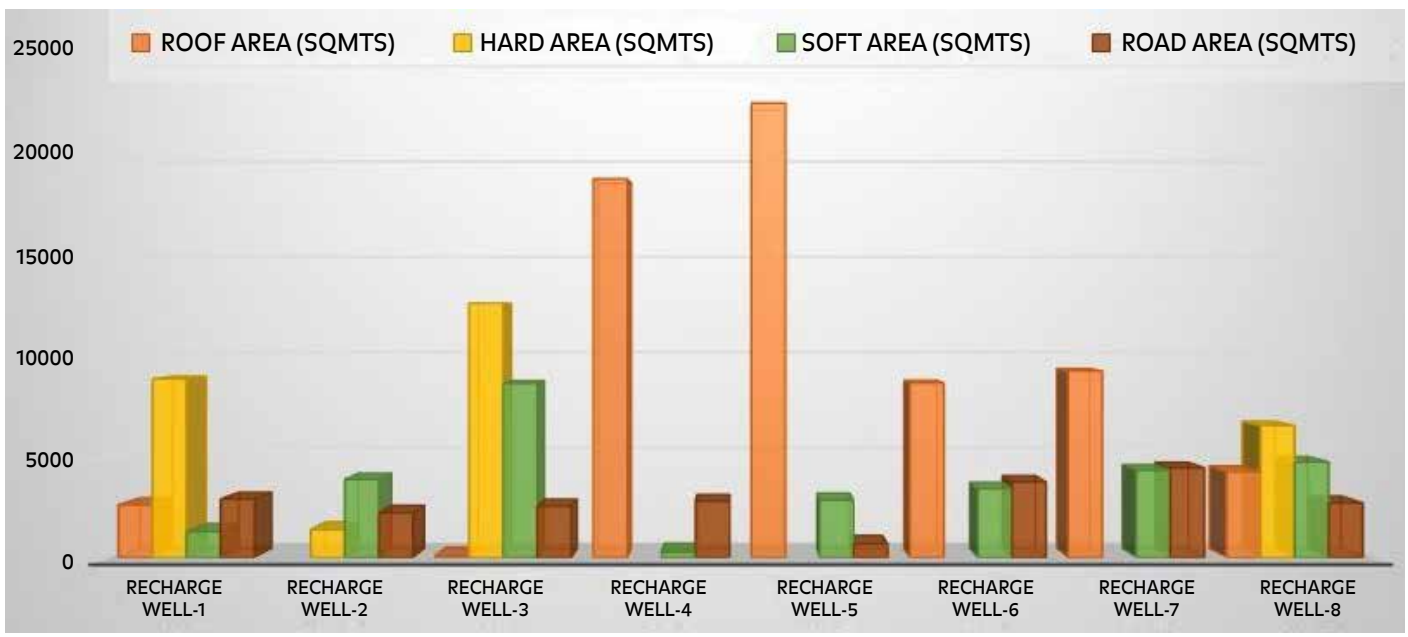

Figure 8: Bar chart showing rain water harvesting from various recharge wells *(Source : EC Report submitted to CPCB)*

Table 1: Annual Water Balance Sheet For New Bopal Campus & Residential Area Bopal
(Source Ref. : EC Report submitted to CPCB)

S.No	Description	Occupancy	Water Requirement in Lts./Capita/Day as/NBC	Annual Water Consumption in KL	Flushing Water Requirement in Lts./Capita/Day as/NBC	Annual Flushing Water Requirement in KL
1a	Kiosk	11	45	124	20	55
1b	Kiosk dining (in 3 shifts)	450	35	3,938	10	1,125
2	Cisf pro building	50	45	563	20	250
3a	Auxillary building	80	45	900	20	400
3b	Auxillary building dining (in 2 shifts)	750	70	13,125	15	2,813
4	Gate complex building	30	45	338	20	150
5	Fire station building	25	45	281	20	125
6	Vendor complex	80	45	900	No Provision of dual plumbing system	-
7	LTVC building	150	45	1,688		-
8	PFTF building	350	45	3,938		-
9	PICF building	180	45	2,025		-
	Total Occupants (Excl. 1b & 3b)	**956**		-		-
10	Visitor's Population (15% of Total)	143	15	538	15	538
11	Residential area, BOPAL	164	135	8,081	45	2,694
	Subtotal		**(A1)**	**36,436**	**(A2)**	**8,149**
12	Landscaping Water Requirement (Canopy Area X Evapo-transpiration rate (mpd) X plant factor X 1000/ irrigation efficiency	50700		28,971		
13	AC System (Water Cooled)	2600	60	39,000		
	Total Water Consumption in a Year (A1+11+12)		**(B1)**	**1,04,408**		
	Waste Water Generated in a Year (85% of A1)		**(B2)**	**30,971**		

Table 2: Freshwater Requirement
(Source Ref. : EC Report submitted to CPCB)

S.No.	Usage	Annual Water Demand in KL
B1	Annual Water Consumption in Campus	1,04,408
B2	Annual Waste Water generation from Campus and Residential Area	30,971
A2	Annual treated Water used for flushing in Campus	8,149
C1	Annual treated Water used for landscaping in Campus	22,822
C2	Remaining Fresh water Consumption	73,437

Table 3: Rainwater harvested in various recharge wells
(Source Ref. : EC Report submitted to CPCB)

Recharge Well No	Tentative Roof Area (sq.m)	Tentative Road Area (sq.m)	Total Area (sq.m)	Approx. Surface area (sq.m)		Harvested rain water Q = Rainfall (m) x Area of catchment (sqm) x Runoff Coeff. X filter efficiency			
						Roof Top & Road	Hard paved Surface	Soft paved Surface	Total Runoff
	A	B	C=A+B	Hard	Soft	C	D	E	
					E	Cum	Cum	Cum	Cum
1	2612	2890	5502	8829	1288	3,578.67	4,785.54	325.79	8,690.00
2	0	2221	2221	1382	3862	1,444.61	749.08	976.87	3,170.56
3	78	2533	2611	12561	8596	1,698.27	6,808.38	2,174.32	10,680.96
4	18698	2779	21477		275	13,969.29		69.56	14,038.84
5	22443	677	23120		2840	15,037.94		638.55	15,676.49
6	8620	3739	12359		3401	8,038.66		764.68	8,803.35
7	9216	4427	13643		4310	8,873.82		969.06	9,842.88
8	4244	2702	6946	6521	4721	4,517.89	3,534.55	1,061.47	9,113.90
TOTAL									**80,016.97**

Note
1. Runoff coeff. considered are : Soft Paved = 0.35 for turf slopes, Hard paved = 0.75, RCC Roof / Road - 0.90
2. Filter efficiency = 0.90
3. Average Annual Rain fall for Ahmedabad = 803 mm

Acknowledgement

This article has been a team effort with all the disciplines of CMG and SAC working towards the same goal, be it architects, planners, HVAC, electrical or civil engineers. We would like to thank our Director, Shri Nilesh M. Desai and Controller, Shri Piyush Verma for motivating to make things possible on ground. Our sincere thanks to Shri R.S. Sharma and Shri B.S. Munjal for their efforts towards reviewing the paper and suggested valuable additions.

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VIOLENCE OF ARCHITECTURE

Devansh Hablani, Ar. Fatema Kabir

INTRODUCTION

The Architectural Paradox

Bernard Tschumi believes that people connected with architecture feel a sense of dismay because the split between the utopian dream and social reality has been deep-rooted. Attempts to reformulate the concept of architecture have long existed to bypass this split. However, in this process, a new split appears, regarding the essential element of architecture: space. The author describes the split as, "an unavoidable paradox: the impossibility of questioning the nature of space and at the same time experiencing a spatial praxis." (Tschumi, 1994, p.31)

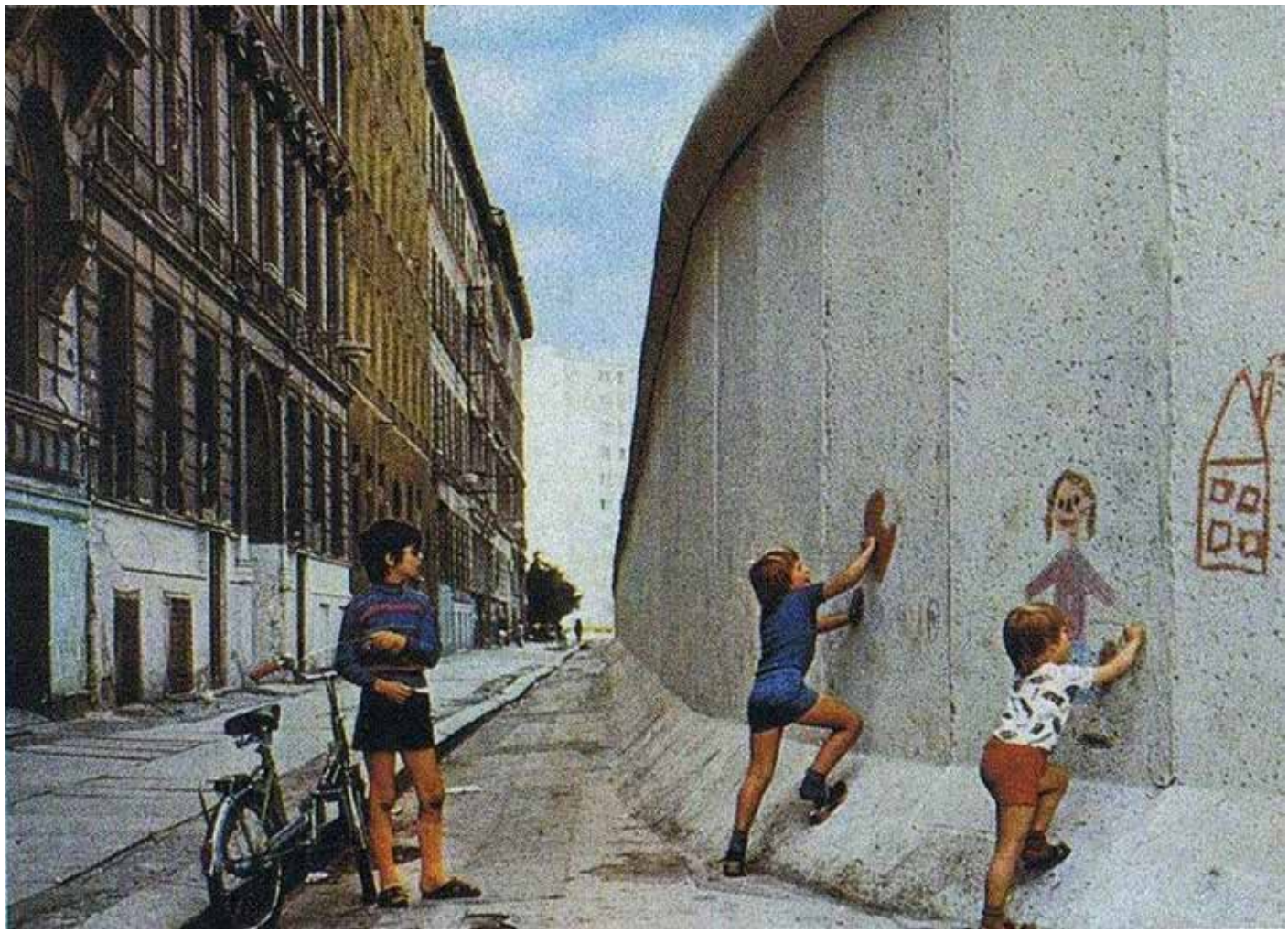
In *Typical Plan* (1993), Rem Koolhaas proclaims that "Architecture is monstrous in the way in which each choice leads to the reduction of possibility" (Koolhas & Mau, 1995, p.334-353). Even more dramatically, he argues that, like "Often before in this history of mankind, architecture was the guilty instrument of despair." (ibid., p.5). Planning is seen to entail the limitation of freedoms, for it imposes a particular scheme and establishes a system of order onto a given site. However, he goes on to say, "It is possible to imagine a mirror image of this terrifying architecture, a force as intense and devastating but used instead in the service of positive intentions." (ibid., p.5). Rethinking the idea of architecture as a means of restraint, division, and exclusion, Koolhaas investigates new ways in which planning could become a tool for initiating change, for providing freedoms, and for allowing the emergence of unpredictable, virtual events.

A discussion of examples—such as ancient city walls, the Roma quadrata, the Indian border, the Venice Ghetto, and the Kowloon Walled City—elaborates how enclosed space can also provide specific conditions of freedom, so that the voluntarily imprisoned, in fact, dwell in an area with new options.

1. THE WALL AS A MEDIUM OF DIVISION, EXCLUSION AND DIFFERENCE

1.1 The Berlin Wall as Architecture (Decision making and Authority)

A notorious symbol of Cold War politics, in particular of the Iron Curtain, was the Berlin Wall which was part of a physical arrangement that stood between Western Europe and the Eastern Bloc. For most people, it is a shock to realize that "It is not East Berlin that is imprisoned, but the West, the 'open society.' In my imagination, stupidly, the wall was a simple, majestic north-south divide; a clean, philosophical demarcation; a neat, modern Wailing Wall. 'I now realize that it *encircles* the city, paradoxically making it 'free.'" (ibid., p. 216-217).



The Berlin Wall as architecture
(Source: Koolhaas and Mau, S, M, L, XL)

Running a length of 165 kilometres, the Berlin Wall appears in various permutations, depending on whether it is a historically significant part, a more central location, or some other, more distant urban site. According to Koolhaas, the wall has become the basis of a script, because "It was impossible to imagine another recent artifact with the same signifying potency. And there was more: in spite of its apparent absence of the programme, the wall – in its relatively short life – had provoked and sustained an incredible number of events, behaviours, and effects." (ibid., p. 222). Though Koolhaas describes the wall as "heartbreakingly beautiful," he is also aware of the immanent cruelty of the demarcation. Its physical appearance expresses an insurmountable obstacle. Its only function is to divide a city into two areas and, thereby, make one of the parts inaccessible and consequently even more appealing. The Berlin Wall deploys the vocabulary of the prison, from which even the attempt to escape can end tragically. Looking at the Berlin wall as architecture, Koolhaas claims that it is inevitable to "transpose the despair, hatred, frustration it inspired to the field of architecture." (ibid., p. 226). For him, the wall was a "graphic demonstration of the power of architecture." Koolhaas draws a few general conclusions from this case study: "The wall suggested that architecture's beauty was directly proportional to its horror." In other words, the aesthetic effects of architecture result from its performative powers. Moreover, *"the wall … made a total mockery of any of the emerging attempts to link* form to meaning [.] . . . I would never again believe in form as the primary vessel of meaning." (ibid., p. 227). "As an object the wall was unimpressive, evolving toward a near dematerialization; but that left its power undiminished. The wall was not an object but an erasure . . . it was a warning that – in architecture – absence would always win in a contest with presence." At this point, Koolhaas acknowledges, "It was as if I had come eye to eye with architecture's true nature." (ibid., p. 222). Though its physical presence is marginal, "in its 'primitive' stage the wall is a decision, applied with absolute architectural minimalism." (ibid., p. 227). This minimalist statement is not taken lightly but constitutes the core of Koolhaas's argument.

1.2 Exodus: or the Voluntary Prisoners of Architecture

In the 1972 project Exodus, or Voluntary Prisoners of Architecture, Koolhaas turns the scheme for a prison into a voluntary, desired habitat by a radical mirror inversion of significance and attraction. He proclaims that "division, isolation, inequality, aggression, destruction, all the negative aspects of the Wall, could be the ingredients of a new phenomenon: architectural warfare against undesirable conditions, in this case, London." (ibid., p.5).

The Strip, 1972
(Source: Koolhaas and Mau, S, M, L, XL)

The form of the prison, implying the notion of institutional order, control, and constraint of individual liberty, is presented as a desirable retreat from the anxiety of an isolated and therefore pointless individual existence. His architectural proposal seeks to make a case against objectionable aspects by presenting the confined space as a series of new extraordinary experiences. The Exodus project is defined by the hermetically enclosing Walls and the intermediate Strip, cutting through the centre of London from east to west. The tip of the Strip continuously expands into the existing urban fabric of London, even though a few of the old buildings are preserved and incorporated into the new territory. Most of the structures from the past will be destroyed and replaced by the constantly modified models of public monuments and symbols. Thus, the scheme for the monumental linear form of the Strip creates the maximum possible contrast between the new area within the Walls and the context of the city. The violation of the urban fabric through architecture produces the effect of a cynical and blunted rendition of power so that the city of London is treated as an insignificant series of private spheres, whereas the new world is projected as a meaningful environment of public spaces. The Walls of Exodus divide the city into a good half and a bad half, into the disparate spaces inside and outside the enclosure. Inside the Wall, the territory of the strip presents the important, valuable part, whereas the zone outside the Strip is an underdeveloped and futile area of urban chaos.

The Exodus zone is only accessible from one door leading to the Reception Area, where the "voluntary prisoners of architecture" are received with an overwhelming welcome. During their initial training period, the "fugitives" of urban disorder and insignificance reside in a kind of environmental sluice that comprises preserved fragments of London's old city fabric. From here, the new inmates can ascend via a gigantic escalator to the roof of the Reception Square, where they get a first overview of the two different urban structures, the old fabric and the new order. The area of the Strip is divided into ten programmatically diverse square blocks, such as the Ceremonial Square, the Park of the Four Elements, the Square of the Arts, the Institute of Biological Transactions, the Baths, the Park of Aggression, and the Allotments. In each of these public monuments, the inhabitants can encounter experimental forms of social interaction initiated by a variety of institutional settings.

The Reception Area, 1972
(Source: Koolhaas and Mau, S, M, L, XL)

Koolhaas's title Exodus explicitly refers to the Second Book of the Torah and the Old Testament, describing the departure of the Israelites from bondage in Egypt, the crossing of the Red Sea, and the years wandering in the wilderness where Moses received the Ten Commandments and the Covenant Code. Picking up the Biblical theme of suppression and departure, Koolhaas uses architecture as the central instrument for transgression, collectivity, and freedom. From this point of view, London can be associated with Ancient Egyptian civilization, whereas the Strip, by contrast, correlates to the Promised Land, a utopian vision yet to come. Indeed, the project can be interpreted as an ironic comment on the Promised Land, given that the monumental scheme of Koolhaas's Exodus rather resembles the "house of bondage" in Egypt than a desirable place to live.

1.3 Demarking the World and Enabling Difference

An enclosure or boundary establishing difference need not necessarily be conceived as an effective obstacle but can also function as a kind of sieve. In the Deleuzian sense, it functions as an environmental modulation with only marginal physical traces. According to Mary Douglas, the pursuit of purity is directly related to the fears held by a society that can displace its self-loathing onto an outside territory or a particular social group regarded as impure (Douglas, 1980, p.1-2). The community seeks to shut out all that appears strange, unassimilable, or undefined.

For example, the approximately 3,323-kilometre-long India-Pakistan border, drawn in 1947, served more as a strategic tool to ensure unity of the individual nations and exclude a contrasting culture as much as an efficient physical barrier. It was a means for securing elements that could threaten the concurrence of the community. The Partition was an extraordinary, nearly unique, event: demonstrably an outcome, on the surface, of decisions by a small group of political actors. Kaushik Roy's *Partition of India: Why 1947?* takes into account the animosity between Hindus and Muslims predating the British Empire and the divide-and-rule strategy by the British, and the thousands of people that died in what is known as *The Great Calcutta Killings of 1946.* In this atmosphere of civil unrest, Britain announced their withdrawal from India. And it fell to Lord Mountbatten, the Viceroy of India, to broker a deal between Nehru and Jinnah and to organize Britain's exit from India. It was at this moment that these men agreed to the partition of India along religious lines. Jinnah would get Pakistan, the new nation that he believed would protect Muslims from oppression. Nehru, fearing more religious violence in India, agreed to the plan." (Roy, 2012, p.148). The final straw has been described as a piecemeal structure. In Roy's view, the creation of these fragments committed to finding unity and closure does not simply fail. Rather, in the process of building, the very existence of such unity and wholeness is a *priori* uncertain. Despite the botched handover of power by the British, the presumed existence of the dominant religious ideology ensured unity within the two nations. Although in its initial stages, the border could not be regarded as an effective barrier nor an urban planning success. It is in line with the principle of exclusion. "This way, it serves as a means of self-restriction that makes the segregated territory compatible with the prevailing ideology." (ibid., p.211).

The border not only functions as a division that supports the dominant ideology through the expulsion of foreign influences. It can also be a means by which a majority seeks to control the territory of an apparently threatening minority. Another case in point is the situation of the resident foreigners in medieval Venice. For the right to do business in the archipelago city, immigrants (such as Germans, Dalmatians, Greeks, and Jews) lived as segregated members of society. They were obliged to reside in special buildings, to which they had to return at nightfall. For example, to ensure that the Germans could not smuggle in goods after dark and avoid paying customs, the Venetian government locked the gates of the Fondaco dei Tedeschi at dusk from outside, and guards patrolled the area around it. For economic reasons, the building became a space of permanent surveillance. By contrast, the Jewish quarter, the Ghetto Nuovo, was found on a single island situated far from the centre of the city. Connected to its surroundings with only two bridges, its building structure functioned like one wall towards the outside that created an open area in the centre [1]. As the Jewish community grew over the years, the ghetto was threatened by severe overcrowding. When diseases struck the lagoon, the government often connected them to the conditions and the population density of the ghetto. Yet, although the walling-in was a compulsory measure that was ordered by the dominant majority, the seclusion also provided a secure retreat from visibility. As a consequence of the spatial isolation in the ghetto, the members of the community gained bodily security and a protected place, which offered the opportunity to build synagogues and practise religion openly.

Like the territory enclosed by the Berlin Wall, the Ghetto Nuovo presents a place of escape within architectural confines, which, in some way, also provides unexpected options for its inmates. In the Ghetto Nuovo, by means of the wall, the residents could gain an unprecedented form of social life, forestalling or, at least, reducing external control and observation. The walls of the Ghetto Nuovo are a means to provide a safe, segregated place amidst a prevailing culture of visibility, whereas the India-Pakistan border functions as an agent of establishing and maintaining the dominant ideology. Referring to Amrijit Singh, Nalini Iyer, and Rahul K. Gairola's "Revisiting India's Partition", the border serves as a strategic device, both to transpire the nation's past and to create an ideal unity during the building process. In addition, its confinement and exclusion provide a dominant ideology. By demarking the environment, "India affirms its identity and meaning within the new world." (Singh, et al., 2016, p.85).

India-Pakistan border, 1947
(Source: https://www.vox.com/2019/3/22/18277409/british-failed-india-pakistan)

2. Sacred Nature of City Walls

Physical structures, ranging from simple signs to insurmountable barriers and hermetical enclosures, prevent any interference between two places. They manifest the difference between the two spaces. According to Mircea Eliade, "the enclosure, wall, or circle of stones surrounding a sacred place – these are among the most ancient of known forms of man-made sanctuary [and serve] the purpose of preserving profane man from the danger to which he would expose himself by entering it without due care." (Eliade, 1949, p.370). This principle of separation and change is emphasized, for instance, through the ritual importance of the threshold of houses, temples, and cities.

The notion of inside and outside space is not only essential to a single building but also to the idea of a city. The founding rites of ancient towns served to ensure that city walls were regarded as a sacred and invulnerable segregation for a new settlement: "Long before they were military erections, they were a magic defence, for they marked out from the midst of a 'chaotic' space, peopled with demons and phantoms, an enclosure, a place that was organized, made cosmic, in other words, provided with a 'centre.'" (ibid., p.371). The founding rituals hence make a connection to the transcendental order that does not change over time.

The border sets up the difference between inside and outside, yet it also creates an opposition that requires justification. The quality of sacredness is then a particular condition of the precinct within. It is dangerous to approach the threshold of the sacred space unprepared or unaware of its ritual importance, whereas following the rites of entering ensures that the person will share certain qualities with the sacred. Moreover, by being admitted into the sanctuary, the ordinary or useless thing becomes meaningful and sacred.

The sacred nature of city walls is guaranteed by a complex procedure of divination, whereas its violation means sacrilege. In *The Life of Romulus,* the most well-known narrative on the foundation of Rome, Plutarch emphasizes the sacred and inviolate character of the city walls by describing the cutting of the initial furrow, the *sulcus primigenius* (Plutarch, 1991). He states that the founding of Rome is tainted by fratricide: "As Romulus was casting up a ditch, where he designed the foundation of the city wall, [Remus] turned some pieces of work into ridicule, and obstructed others, at last, as he was in contempt leaping over it, some say Romulus himself struck him, others one of his companions. He fell, however." (ibid.). Given that the Romans considered all ploughed land that is part of the city walls as a sacred place, Plutarch's account suggests that Remus committed sacrilege and was killed in return.

In antiquity the very idea of *urbs,* which means city, is associated with ploughing, as the word is etymologically connected to *urvum,* which is the curve of a ploughshare [69]. In addition, it relates to *orbis,* which is a curved object: a globe and the world. Yet, thinking of the city primarily as a tissue of buildings, streets, and public squares stands in opposition to the idea of the city as primarily a community of citizens, as expressed in Nicias's poignant words to the Athenian soldiers after the defeat at Syracuse: "You are yourselves the town, wherever you choose to settle . . . it is men that make the city, not the walls and ships without them." (Thucydides, 1910, p. 63, 308–9).

Sacredness was an attribute of the city walls, but not of their gates. According to Plutarch, "Where they designed to make a gate, there they took out the share, carried the plough over, and left a space; for which reason they consider the whole wall as holy, except where the gates are." (Plutarch, 1991, p.35). The ritual of raising the plough and carrying it over the place of the gates should have ensured that the plough ridge itself was not crossed. The idea of this ritual is conveyed in the Latin word *porta* for the gates, meaning 'carry' (*portare*). Referring to the sacred character of city walls, Kari Jormakka notes that during the celebration of a Roman triumph, Rome is symbolically conquered, and "the city symbolically drops its defense before the hero, then rebuilds the enclosure to safely capture the good fortune within its walls." (Jormakka, 1995, p.89). The spoils that were captured from the defeated country then transmit their powers to the triumphant city.

The route of the triumph, framed by the important monuments of Rome, projected a symbolic order onto the urban fabric. Following the same principles, in the sixteenth century, Pope Sixtus V and Domenico Fontana inserted new streets into the old structure by connecting the main churches into a sacred route. The new streets enabled not only the circulation of the pilgrims along the path but also functioned as attractions and commercial elements. These interventions can also be interpreted as a means to recreate the sacredness of the city: Rome was turned from a city with sacred monuments into a sacred city as a whole.

3. The Wall as a Medium of Freedom Beyond Planning

Kowloon Walled City at the boundaries of Hong Kong provides an example that outstrips Koolhaas's idea of Exodus. Here the wall as means of separation and a spatial difference becomes a tool that allows a liberty zone beyond planning. Both schemes, Kowloon City and Exodus draw on a dialectic view of the existing city; both enclaves introduce an artificial and scaleless design within a deficient exterior. However, Kowloon's dense and chaotic spatial structure is quite the opposite of the giant squares of Exodus but nonetheless outperforms Koolhaas's plan. Whereas the autonomous shantytown of the Walled City provides refuge and asylum for various people outside society, the inmates of Exodus voluntarily leave society and enter a totalitarian system of preprogrammed activity and surveillance.

The Walled City was a political no man's land free of government interference and its inhabitants can be regarded as the true

"voluntary prisoners of architecture." (Girard & Lamnot, 1993; Miyamoto, 1997). Throughout the ninety-nine-year lease of British rule in Hong Kong, the Walled City, which was initially a walled fortress built in the mid-nineteenth century, remained an area of *anomaly* inside the British domain and yet outside the colonial authority. Because the disagreements between the Chinese and British governments over the status of Kowloon Walled City were never settled and as the situation threatened to spiral out of control whenever authorities tried to impose their will, the territory became a kind of political vacuum free from political control. So Kowloon's continually growing community developed its autonomy within the confines of the old city's walls. And although the wall was torn down during the Second World War, the site became the perfect place for refugees, because there the illegal immigrants were free of legal regulations and prosecution. Using architecture as a means of migration and freedom, the Walled City proved highly adaptive to future change.

The population of Kowloon continued to expand, from a few thousand inhabitants in the fifties to 40,000 people in the early eighties. The low-level houses gave way to high-rises until the entire area was covered with a single dense structure of fourteen stories covering 2.7 hectares. (The site itself measured little more than 100 x 200 m).

Its constant dampness came from overhead pipes carrying water, which, along with artificial lightening also contributed to its greenish atmosphere. As there were no automobiles in Kowloon, the only circulation space was a warren of passages that one could traverse without once setting foot on the ground. The roofscape was the only escape from the density below. Without legal regulations regarding property rights, labour, or the environment, the Walled City quickly became a hotbed of untaxed and unrestricted economic activities of any kind. Many illegal businesses flourished under conditions of exploitation so that Kowloon became synonymous with all that was dark and threatening in society. Of course, the illegal activities could flourish inside the Walled City only because of the demand from outside. Eventually, after its final demolition in 1993, the site became a public park and the former residents were moved to public housing areas. Yet, behind the negative image of decay and social marginalization, Kowloon was closest to an autonomous, self-organizing city. Despite its chaotic structure, it also provided utopian conditions for its inmates.

CONCLUSION

The wall as a minimalist architectural means represents the principle of decision, inference and the supposition of order onto a place. However, when Koolhaas proposes that each architectural choice inevitably leads to the reduction of possibility and liberty, it need not necessarily involve such intentions as confinement and exclusion, but can rather engender new activities beyond planning. The Berlin Wall, the Venice Ghetto, or the Kowloon Walled City make clear that, by encircling a certain area, a wall allows for specific conditions and liberty zones beyond legal order. Even though such disciplinary schemes involve, for the most part, fictitious means of power and control. When stripped of its ideological framework, space proves flexible to different and new functions beyond a deterministic correlation between form and content. Adopting the idea of the *social condenser,* Koolhaas speaks of an architectural nuclear reaction initiated by extraordinary building size and maximum program

Kowloon Walled City, Hong Kong, 1980
(Source: https://www.archdaily.com/493900/the-architecture-of-kowloon-walled-city-an-excerpt-fromcity- of-darkness-revisited)

difference. By creating conceptual voids, these spaces are experiments of freedoms, even if they create temporary, unintended, accidental, involuntary, unplanned, and unforeseeable events. In this understanding of architecture as a means of creating freedoms, space is not something static and unchangeable but a creative process of unfolding and evolving, a constant creation of new worlds.

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Footnote

[1] During the pogrom of 1636, the walled territory became a deadly trap that shut in the residents. The Venetians could easily attack the members in the confinement and set fire to the synagogues and other buildings.

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THE DEFINING ROLE OF IIA IN PROMOTING QUALITY ARCHITECTURAL EDUCATION: BOTH FORMAL AND INFORMAL

Ar. Jit Kumar Gupta

With a history spanning over a hundred years and having originated in the sprawling lawns of the excellent academic environment of the Sir JJ School of Art and Architecture, Mumbai, The Indian Institute of Architects had its beginning as the Architectural Students Association, formed in 1917, which later became The Bombay Architectural Association in 1922 and reorganized and registered as THE INDIAN INSTITUTE OF ARCHITECTS on 2nd September 1929. The Institute was established, primarily to continue the work of the Bombay Architectural Association and to encourage the study of Architecture, evolve the standard of Architectural Practice and by mutual support to promote the interests of Architects throughout India by uniting them in fellowship to promote aesthetic, scientific and practical efficiency of the profession. With membership standing at 158 in the year 1929, the Indian Institute of Architects has grown gradually and steadily in stature and strength over the years. Its membership now stands at more than 25,000. It is the apex body of professional architects in the country, with a spread over the entire length and breadth of the country.

The journey began in India, under the stewardship of professional architects with vision and ideals at the helm of affairs, having a thorough understanding and appreciation of the complexity of the role and importance of the architectural profession. This helped the Institute, in laying and building a strong foundation for rapid growth and expansion of the profession of architecture in the country, duly supported by ideals of sustainability, the latest innovations, and technological advances made in the art and science of planning, designing and construction of the quality built environment.In addition to promoting and putting the profession of architecture on a high pedestal, locally and globally, IIA has continued its focus and commitment to play critical role in promoting the quality of architectural education in the country, by engaging in and promoting aesthetic, scientific and practical efficiency of the profession in the domain of architectural education. Looking objectively at the history and geography of its functioning and operations, it can be safely concluded that the past journey of more than a century of the IIA, right from its inception, has been one of continued and sustained commitment. It has been responsible in promoting architectural education and rebirth, growth and development of architecture as an exclusive and stand-alone profession in the country. The Constitution governing the IIA, in addition to looking at and promoting the profession inter-alia, also provides and makes dedicated and specific provisions (as given below) for encouraging standards of architectural education and creating space for establishing architectural institutions, including a library etc.

- *To encourage the science and the art of planning and building the standards of architectural education, training and practice, by making grants to the technical institutions, or by paying or assisting to pay the fees and expenses of the students, or by providing and giving scholarships, prizes or other rewards to such students, or by any or all such methods.*
- *To devise and impose the means for testing the qualifications of candidates for admission to membership of the Institute, by examination in theory and in practice or by any other tests or to arrange with any technical institute or institutions for the imposition of any such tests.*
- *To purchase, lease, rent, hold and dispose of any land or property, and any building or hall, and to erect any such building or buildings to be used as a place of meeting for the members of the Institute, or as a College, School, or Reading Room or Library for the advancement of the objects of the Institute, and to provide accommodation for any meeting, conference, exhibition or congress, whether promoted wholly or partly by the Institute or which, in the opinion of the Council, may conduce to or assist in the carrying on with the objects of the Institute or tend to do so.*

Considering its objectives and absence of any institution imparting education in architecture in the country, propelled IIA to collaborate with *The Royal Institute of British Architects for creating opportunities for higher learning / education in architecture, for the aspiring student/ professionals. Footprints of architectural education, were laid initially by affiliating the Institute with The Royal Institute of British Architects, London.* Five-year Diploma Course in Architecture was inaugurated in 1923 and subsequently recognized by the Royal Institute. First examination was conducted in India in 1930. Affiliation with RIBA brought credibility and also necessity for making changes in the constitution/ bye-laws , for bringing large number of architects registered with RIBA, into the fold of the Institute of architects. It enlarged the institute scope and area of operation from Mumbai to pan-India. Over the years, in addition to making architectural education more qualitative, IIA, through its Chapters/ Centers have helped in setting up a number of institutions, imparting architectural education in the country. Till the year 1972, when the Indian Architects Act became operational, and the Council of Architecture was entrusted with the task of defining minimum standards of architectural education in the country, the entire framework of architectural education was being catered, supported, looked after and empowered by the Indian Institute of Architects.

Genesis of introduction of granting Associate Membership of the Indian Institute of Architects.

In addition to promoting formal education in architecture, Institute is also credited with creating appropriate opportunities of higher learning and improving the career options, through an informal system. However, this facility remains limited to the in-service three-year diploma holders, engaged/ working, under the continued supervision and guidance of practicing architects. To cater to the needs of higher professional learning , Institute runs a dedicated program for granting Associate Membership of The Indian Institute of Architects (by examination). After successful completion/ qualifying the prescribed exam, candidates become eligible for election as Associate members of IIA and for registration as architects under the Architects Act, 1972.Introduction of examination for grant of Associate Membership of IIA, was the outcome of a number of interventions/ evaluations/ reviews/ decisions made at the levels of the Ministry of Education and Social Welfare, Government of India, Indian Parliament, All India Board of Technical Studies in Architecture & Regional Planning and Council of Architecture, as detailed below :

• The genesis of the introduction of granting Associate Membership of Indian Institute of Architects by examination, lies in the detailed representation made by the Association of Architectural Assistantship, Diploma holders in September 1972 to the Ministry of Education and Social Welfare, Department, Government of India, regarding providing opportunities for higher studies and career promotion.

• The request was forwarded by the Ministry of Education and Social Welfare to the All India Board of Technical Studies in Architecture & Regional Planning, (then responsible for guiding, directing and regulating the profession of architecture and planning in the country), for consideration and taking appropriate decisions.

• Board considered the request, forwarded by the MOESW, under item 7 of the 29th meeting held on December, 4, 1972 at Delhi, under the item, 'To receive the report of the Curriculum Committee regarding the revised Architectural Assistantship Course' and decided as under:

i. "While accepting that the revised syllabus of the Diploma in Architectural Assistantship covers the syllabus of the first two years of the five-year full-time Degree/ Diploma Course in Architecture, successful diploma students would be eligible for admission to the 3rd year of the B.Arch. Course".

ii. The Indian Institute of Architects, Bombay be requested to conduct the professional examination, equivalent to a degree in architecture, as soon as possible for the benefit of architectural personnel engaged in the profession.

• Based on the decision taken by the Board , the Ministry of Education and Social Welfare Department, the Government of India, in its letter dated 10 May, 1973, addressed to the Secretary of the Association of Architectural Assistantship, diploma holders, informed that the IIA was going to conduct a professional examination equivalent to a degree in architecture for the benefit of those engaged in the profession in the near future. This examination would open avenues for the holders of the Diploma in Architectural Assistantship to acquire a higher qualification in architecture .Further MOESW informed that the IIA has been requested to organize their examination as soon as possible.

• The issue of conducting examinations for the diploma holders by the IIA, was also raised by Shri Ram Bilas Paswan, Member Parliament, in the 6th Lok Sabha under unstarred question no 4564 dated 28 August, 1978. In reply to the said question, the Minister of Education, Social and Welfare and Culture replied that:

1. The Indian Institute of Architects, Bombay, has stated that it will be pleased to conduct the professional examination in Architecture for the diploma holders.

2. The Institute will enroll the successful diploma students as 'student members' of the Indian Institute of Architects on the same lines as the Royal Institute of British Architects. These students can appear for the final examination of the IIA, but the scheme of final examination has yet to be confirmed. The Institute has intimated that the subject, dates and other details of the examination are being finalized.

• The syllabus and subjects to be studied for the studentship examination was finalized by the IIA based on the recommendations made by the Council of Architecture.

• The first Examination by the IIA was conducted in the year 1982 at six centres in country- Bombay, Delhi, Calcutta, Hyderabad, Chandigarh and Madras.

• Later on, based on the request made by the IIA, to the Ministry of Education and Social Welfare , Department, Government of India, to accept the Associate Membership of the Indian Institute of Architects to be at par with the Bachelor's Degree in Architecture of a recognized university for recruitment to the superior posts and services under the control of the Central Government, MOESW, referred the matter to COA for consideration.

• The Executive Committee of the COA in its meeting held on 27 October 1988, constituted a three-member Evaluation Committee with Shri S.Y. Madan as the Convenor and Ar. Uttam C. Jain; Ar. Raja Poredi as its members.

• Said Evaluation Committee visited IIA and sourced detailed information with regard to: Administrative set-up ; criteria for eligibility criteria; mode of examination; centres for examination; syllabus and subjects for examination; the basis for selection of paper-setters and examiners; review of question papers &answer sheets and financial resources available. After interacting and examining relevant documents, made following recommendations in its report dated 16 November 1990:

"The Committee, therefore, recommends recognition by the Council of Architecture, of the examination conducted by the Indian Institute of Architects and consequently the Associate Membership of the Indian Institute of Architects (by Examination), to be at par with the Bachelor's degree in Architecture of the universities recognized by the Council of Architecture and for recruitment to superior posts and services under the control of Central Government."

• The said recommendations of Evaluation Committee were accepted by COA in its meeting held on 19 October 1991. Based on the said recommendations of the Board of Assessment for Educational Qualifications, Government of India recognized the Associateship Examination of IIA (by examination), at par with the Bachelor's degree in Architecture, for the purpose of employment to posts and services under the Central Government in the appropriate field, vide letter dated 5th August 1992, later on made applicable retrospectively w e f December 1982, vide letter dated 30 March 1998.

Philosophy and approach for conducting the examination

Since 1982, The Indian Institute of Architects has been conducting the Associateship Examination for the in-service diploma holders in Architectural Assistantship, employed and working in offices of qualified architects, having a minimum experience of five years in the profession, to help them improve their academic qualifications and better career opportunities. Candidates are mandated to gain practical experience under the continued guidance of the qualified architect during the entire duration of studentship. The Institute conducts the exam with the objective, that students qualifying the exams should

have acquired the appropriate level of competency, capacity and expertise to discharge professional duties as an architect . The examination system is carefully planned and designed to empower, assist and add value to the knowledge, appreciation and understanding of the candidates in the art and science of planning, designing and construction of buildings.

Structure and Operation of the System of Examination

It needs to be understood and appreciated that IIA is a professional body and not a body imparting architectural education like other institutions or universities. However, in order to conduct the examination and discharge its professional duties in a most professional manner, IIA ensures maintaining the highest standards of the professional learning. Accordingly, large number of checks and balances have been put in place for maintaining the appropriate standards of professional competency, which include; setting up of a separate and independent Examination Department at Belapur, Navi Mumbai, headed by a qualified and experienced Controller of Examinations, who also acts as an Ex-Officio Member Secretary of the Board, duly supported by qualified manpower. The Controller works under the overall guidance, supervision, control and direction of a high-powered Board of Examination and Architectural Education (BOE & AE) constituted by the Council of the Institute. The Board, comprising eminent professionals and academicians, working / teaching architecture, is mandated to regulate, guide, monitor, evaluate and promote a quality-based system of examination while maintaining the highest professional standards. The existing BOE & AE includes six members ,who have been/ are Dean/ Director/ Principal/ HOD of reputed Universities or Institutions, imparting architectural education. Along with these, there are also eminent professionals working in the profession. Board has a tenure of two years and appoints eminent professionals and academicians, to set question papers and to evaluate the answer books. The Board is also empowered to moderate and declare the exam results besides taking all policy decisions related to the conducting and regulating the examination to make it relevant and quality-based.

Eligibility requirements

Based on the eligibility criteria defined for admission, also approved by COA, candidates having qualified three-year full time Diploma in Architectural Assistantship or Interior Design; with minimum of 50 % marks; having qualified the aptitude test conducted by COA and possessing one/ two years of architectural experience; are eligible for registration as studentship. Candidates admitted, must continue to work under qualified architects during the entire duration of the Associateship, for remaining in touch with designing/ construction of various architectural projects. No provision exists for granting exemption to any candidate in any subject and in any part of examination. Lateral entry is also not permitted. Eligibility criteria prescribed for admission, remains higher than what is specified for admission to the regular B. Arch course.

Course contents and Syllabus

The entire course, from admission to completion, is divided into five distinct stages. The course contents, subjects to be studied and scheme of examination for the studentship examination have been prepared and designed by the Board of Examination involving experts comprising eminent professional architects, working and operating in both, academics and practice. Course contents are based on the pattern followed by leading institutions imparting architectural education in India. Detailed syllabus has been evolved considering the basic needs of the profession and maintaining the highest standards of professional education. Course content and subjects of the study compare favorably with what is defined and prescribed for students studying in the formal system of education. System of examination, conduct of examination, setting and evaluating the question papers are monitored on continual basis to make it more objective, relevant and quality-oriented to cater to the emerging needs of architectural education and profession. The syllabus and scheme of examination has already been reviewed and revised five times in the years 1988, 1992, 1998, 2004 and 2014.

Question paper and assessment of student work

The Board of Examination , is mandated to regulate and manage the entire system of examination. Paper setters and evaluators for different subjects are selected from amongst eminent and experienced academicians and professionals pan India, working in various institutions imparting architectural education or in practice, within the framework of the given syllabus. Process of table marking is used for evaluating the answer sheets by qualified professionals at Belapur, Navi Mumbai, adhering to all norms of confidentiality, transparency and objectivity. IIA believes in following the highest professional and academic standards while setting the question papers and evaluating the answer-sheets.

Conduct of Examination

Exams are conducted at the approved centres , under supervision, guidance and control of the respective Chapters of IIA, following a detailed and well defined-system. Independent observers are appointed for objectively evaluating the process and conduct of the examination at each centre of examination. Observers are mandated to visit the examination centres and send a detailed report about the quality and conduct of examinations to the BOE for consideration and taking appropriate decisions. Due to COVID 19, for the first time, online examinations were conducted, using the platform provided by the IES's College of Architecture, Bandra, Mumbai. In the physical mode, IIA , in the past, has conducted exams at centres including Delhi, Mumbai, Kolkata, Chandigarh, Chennai, Kottayam and Lucknow. Assistance, help and active involvement of architectural institutions ,operating in the identified cities, is also sourced for conducting the exam in a professional manner.

Focus on Architectural design

Besides working on various architectural projects, as part of employment and taking exams periodically in the specified subjects, students are required to carry out a detailed design exercise in each part of the examination under the supervision of a qualified architect appointed by the BOE. The student is required to prepare a design portfolio on a specified topic. The progress of the candidate is monitored on a regular and continued basis. BOE appoints internal jurors to supervise, guide and advise the candidates. After submission , final evaluation of the project is done by eminent jurors. In Part-II study, students are required to study the subject of Architectural Appraisal, for understanding the role, importance, observation, analysis and expression of the various components of the built environment. This helps in improving their understanding of the architectural design and architectural vocabulary. Besides

drawing and theory subjects, students are also required to undergo an external examination in the subject of Architectural Design at the level of Parts I, II, III and IV-A. The duration of this examination is 6, 12, 15 and 18 hours respectively. Design problems are framed , solutions are evaluated by experts from architectural practice and academics, appointed by the Board.

Architectural Thesis

As an integral part of the study curriculum of Part IV- b, candidates are required to prepare a thesis, on an approved subject, based on the knowledge and learning made during the earlier four parts. Thesis is required to be prepared under the supervision and expert guidance of an architect appointed by the Board. Students are required to interact with appointed guide at regular intervals. The guide is required to maintain record and give internal marks based on the student's work. Final design solution is evaluated through a viva-voce by a panel of external jurors. The marking system has a well-defined allocation for concept, site analysis, case studies, site plans, detailed plans of all floors, elevations, sections, services, model, views, etc. In order to aid, advise, assist and guide the candidates in the art and science of preparation of the design portfolio, IIA has prepared a detailed manual for Architectural Design Thesis, for Part- IV-b. Manual details the process of preparing thesis in terms of; selection of the project, defining objectives, selecting site, site analysis and case studies, besides defining the various stages of preparing the thesis. Manual also details the intent/contents of synopsis, data collection, preliminary viva-voce, pre-final/ final design and viva-voce defining/ detail the contents of the report and the guidelines while preparing the architectural drawings.

Way Forward

Based on the study made and data sourced, regarding the journey of the IIA studentship exam since 1982, it can be concluded that the Associateship examination has made valuable contributions to the growth, spread and development of both, the profession and education of architecture in the country. The total number of students completing the prescribed course of the Associateship examination, since its launch and till 2022, stands at 2423. Large number of these students, after completing the examination ,have pursued higher studies in architecture and planning, leading to award of doctorate and master's degree in architecture & planning, and are heading institutes of learning imparting architectural education in the country, in the capacity of directors, principals and senior faculty. In addition, many Associates after qualifying exam are also practicing in the metropolitan /other cities, providing employment opportunities to graduate architects and offering training to the students of architecture studying in the formal system of examination. Being involved in architectural practice, after qualifying the architectural assistantship exam, these Associates have facilitated the growth and spread of the profession at the local level. Several Associates ,who were employed at the junior level, in the service of the state or central government departments, at the time of admission, have progressed, after completing the examination, in their career / status in the service. A large number of them are positioned at the level of senior architects, senior town planners, architects/ district town planners or assistant architects in the various state and central level architectural/ planning services. Few are known to head even the state departments of architecture, as Chief Architect. Besides contributing to the rapid growth, spread and expansion of the profession and academics, accepting its quality;, Associateship examination has also been accepted and recognized by leading academic architectural and planning institutions of the country, including School of Planning and Architecture, Delhi, Jamia Milia University, and others; for admission to the doctorate level and master level courses in architecture, urban and regional planning , housing, urban design, landscaping etc.

Indian Institute of Architects is taking all possible steps and making constant efforts, on regular basis, for improving the quality of examination and updating the knowledge of candidates pursuing the Associate examination, to help them stay relevant to the ever-changing needs of the profession. For enabling, facilitating and empowering students in professional learning, students are being provided easy access to study material, course material and reference books relevant to the subject of study, which are defined and made integral part of the syllabus. Reading material received from the various sources and experts is shared with the student community through a dedicated portal created for the students from time to time. E-books prepared by the architects are loaded on the IIA portal for reference and study of the candidates. In addition, invitations to participate in the various expert lectures, programs, conferences and workshops organized by the respective Chapters/centres of IIA are also extended to the students. All queries pertaining to examinations are regularly answered. Members of IIA are also requested to support students in adding value to their learning of architecture. For facilitating architectural education and meeting its objectives, IIA has already established *Sohrab Bharucha Architectural Library,* which remainns accessible to all the members and students of architecture in the country. To maintain the quality of the examination, IIA is involving large number of eminent professionals to engage with the students and share their professional knowledge and experience, to improve their professional capacity and understanding. The Institute also looks into the pattern, approach and good practices followed by similarly placed professional institutions conducting examinations for in-service professional courses of higher learning, including the Institute of Town Planners India (ITPI) who run an Associateship examination leading to the award of Masters level qualification in Town Planning for the in-service professionals employed in Town Planning since 1963. The Indian Institute of Architects looks forward and remains open to receive all suggestions/guidance/support for making value addition to the quality of the associateship examination, improving the capacity and learning of the students, making them better professionals and making learning more focused and qualitative.

Ar. Jit Kumar Gupta holds professional and academic experience spanning over five decades. He is Fellow of IIA; ITPI, Senior Fellow IGBC, ex- co-opted member of the working group of Planning Commission, India; Past Chairman, BOS(Architecture) of Punjab Technical University, Jalandhar; Past Vice-President IIA, Chairman, BOE & AE; Chairman, Chandigarh Chapter, IGBC. He has been the winner of several academic and professional awards. He has conducted guest lectures in the USA, China, Kathmandu, Bhutan and Switzerland. He has served as Member of the jury for the ACA-19 Awards. He has been guest faculty at reputed universities and institutions, team leader for World Bank Project-CADS Gujarat; Consultant 8 Master Plans. He has authored over 300 technical papers and 10 e-books on architecture and planning.
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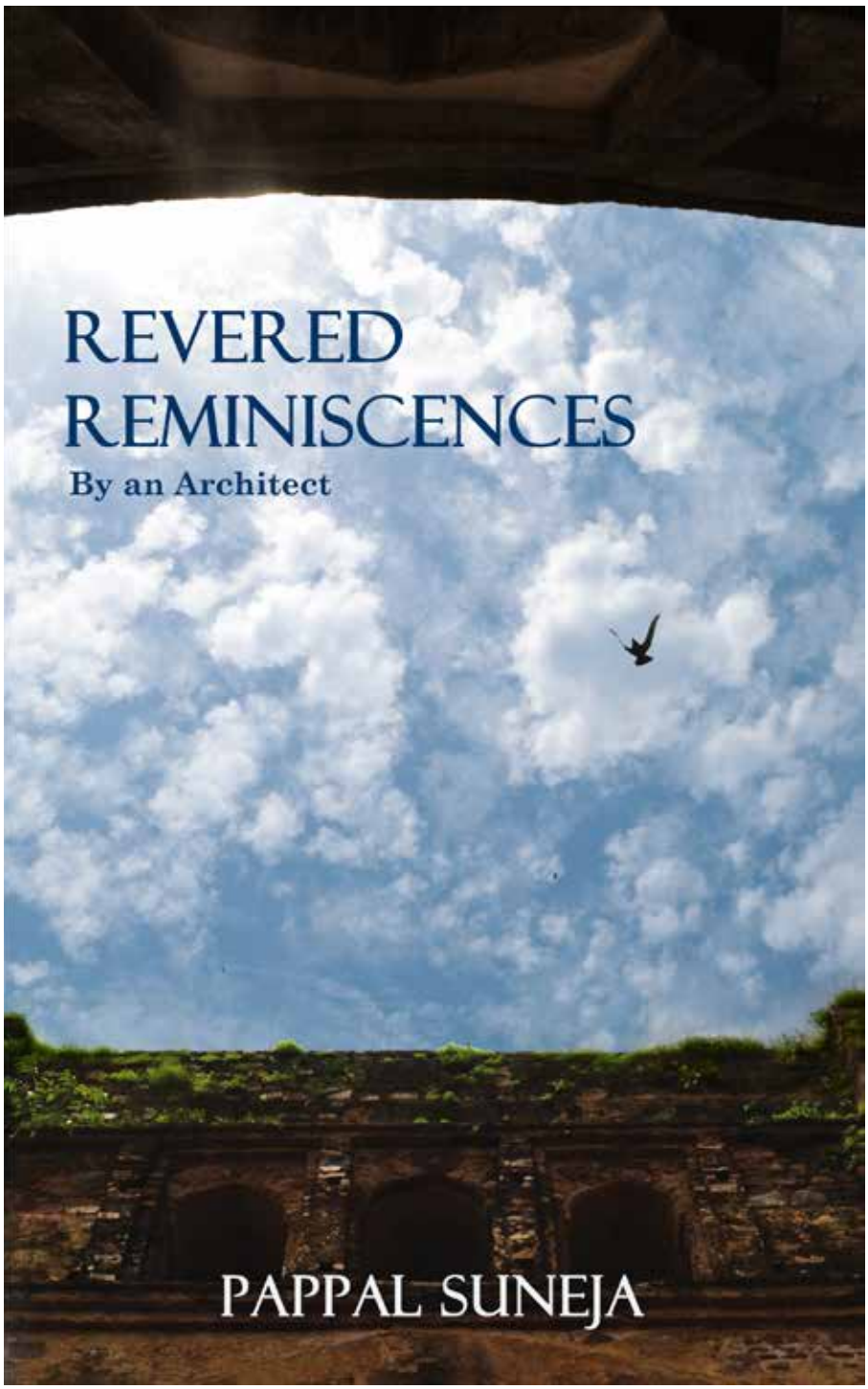
REVERED REMINISCENCES

Prof. J. Subramanian



Fact File

Book Title	▶ Revered Reminiscences
Author	▶ Ar. Pappal Suneja
Publisher	▶ White Falcon Publishing, Chandigarh
Year of Publication	▶ 2021
ISBN	▶ 9781636401720
Language	▶ English

The book Revered Reminiscences authored by design researcher, journalist and architect, Pappal Suneja, currently based in Germany and published by White Falcon Publishing, Chandigarh has been launched recently. According to the author, "Communicating architecture is very reflective. One can understand the mistakes and hence learn not to repeat them in the future, and one can also grasp the advantages and the positives so that they can be replicated, keeping in mind the conceptual and contextual details." This book primarily covers the best publications of the author related to diverse disciplines of architectural writing, including creative writing, book reviews, Germany Architecture News, dialogue section, design project features, web portal articles and remembering veteran architects, etc."

During the long history of this planet, man at any point of time, has always been rewinding his past, objectively searching for worthy precedents for emulation and not so worthy ones for either correction or avoidance. Documentations of these rewindings - particularly the worthy ones - contribute immensely, if not act as a stimulant -to the further evolution and growth of any civilization at large or any profession or trade in particular.

In that light Revered Reminiscences by Ar. Pappal Suneja has turned out to be a very authentic and useful document capturing various events, facts and commentaries relating to the architectural profession of the modern era. The compilation has been very selective and the choice of topics and their contents have been judiciously mixed not only to make interesting reading but also in a larger context to expose the multi-dimensional aspect of the architectural profession. A compilation of this kind will certainly enthuse any discerning reader to seek for more information and knowledge. The author's references to the various architectural approaches ranging from "Blending luxury with cost effectiveness" adopted by Laurie Baker to the "imaginative, rebellious and worthy minds" of the creators of the Golden Temple are very pertinent.

The writing on Design Methodology is very useful for budding architects. The Rome undergraduate programme, Bauhaus Open Studio, and the outcomes thereof are very informative and will motivate any bright and ambitious architectural student. The historian in the author is flourishingly revealed in the chapter relating to Germany Architecture News. The description of the Berlin Museum, Werkbund programmes and their relevance to contemporary commodity culture, the Steel House, The Bauhaus museum itself- all make fascinating reading.

The interviews with both, Ar. Jaisim and Keshav, are very candid. The chapter on Book Presentation and reviews are very useful. It is quite thoughtful of the author to have included students' works in this compilation in over one context. The reference and brief on the book Design for the Real World by Victor Joseph Papanek is an eye opener to all those who get swept away by mass commercialization. References to and comparisons between movements propagated by BMC, Santiniketan and Bauhaus make an interesting reading.

One thing is certain, the author Pappal Suneja has proved the famous quip by Hegel, "We learn from history that we do not learn from history", wrong!

Ar. Jayaraman Subramanian Jayaraman Subramanian is the Executive Director of STUP group of companies; Technical Director, AEEC, Oman and associated as Adjunct Professor with many architectural colleges pan India.

Ar. Pappal Suneja Pappal Suneja is a design researcher, an architect and a writer. He is founder and curator of the Architectural Journalism & Criticism Organisation and PhD Scholar at Bauhaus University Weimar, Germany.
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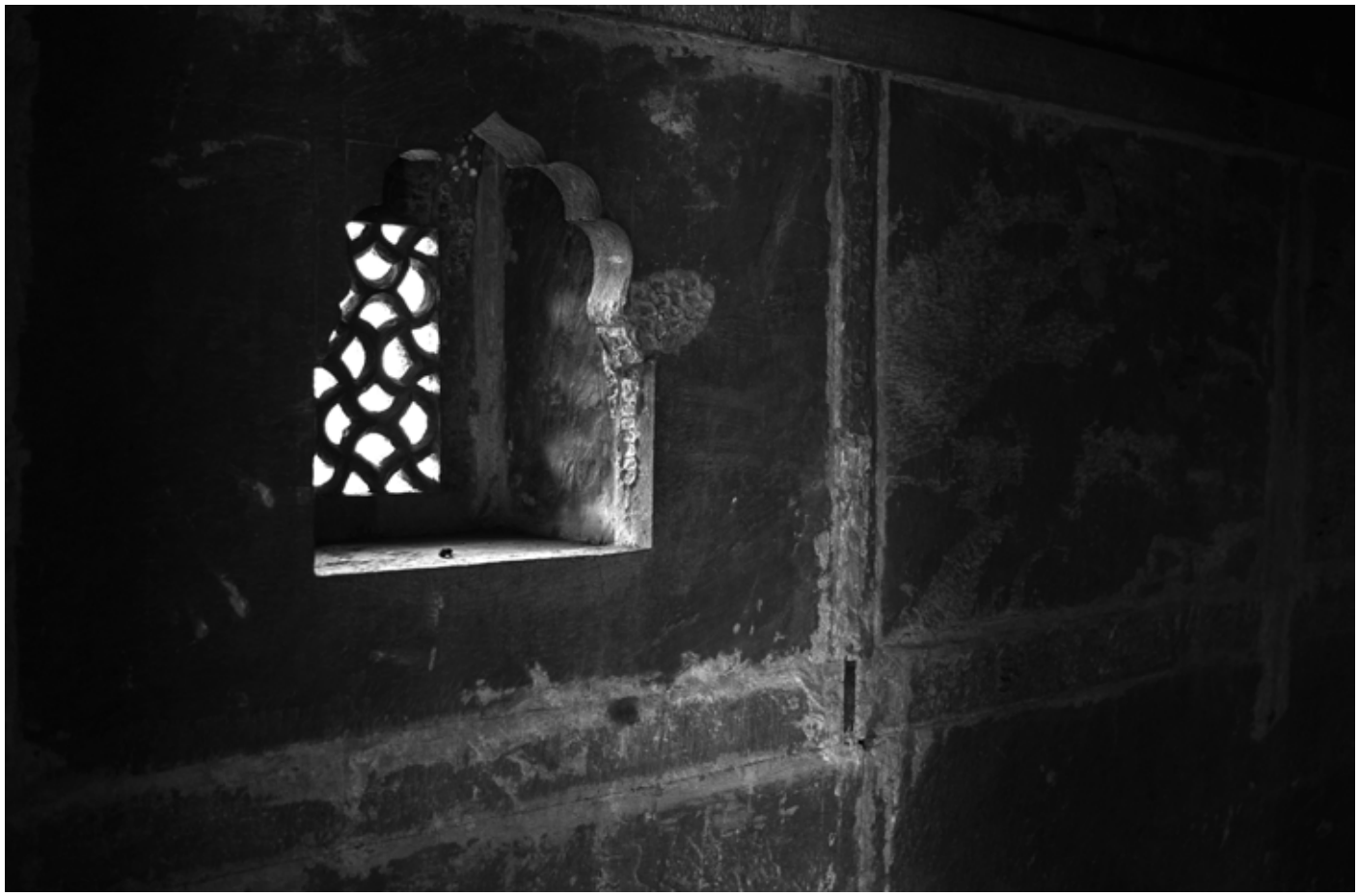
KARAULI PALACE

Ar. Rajan Bhatt

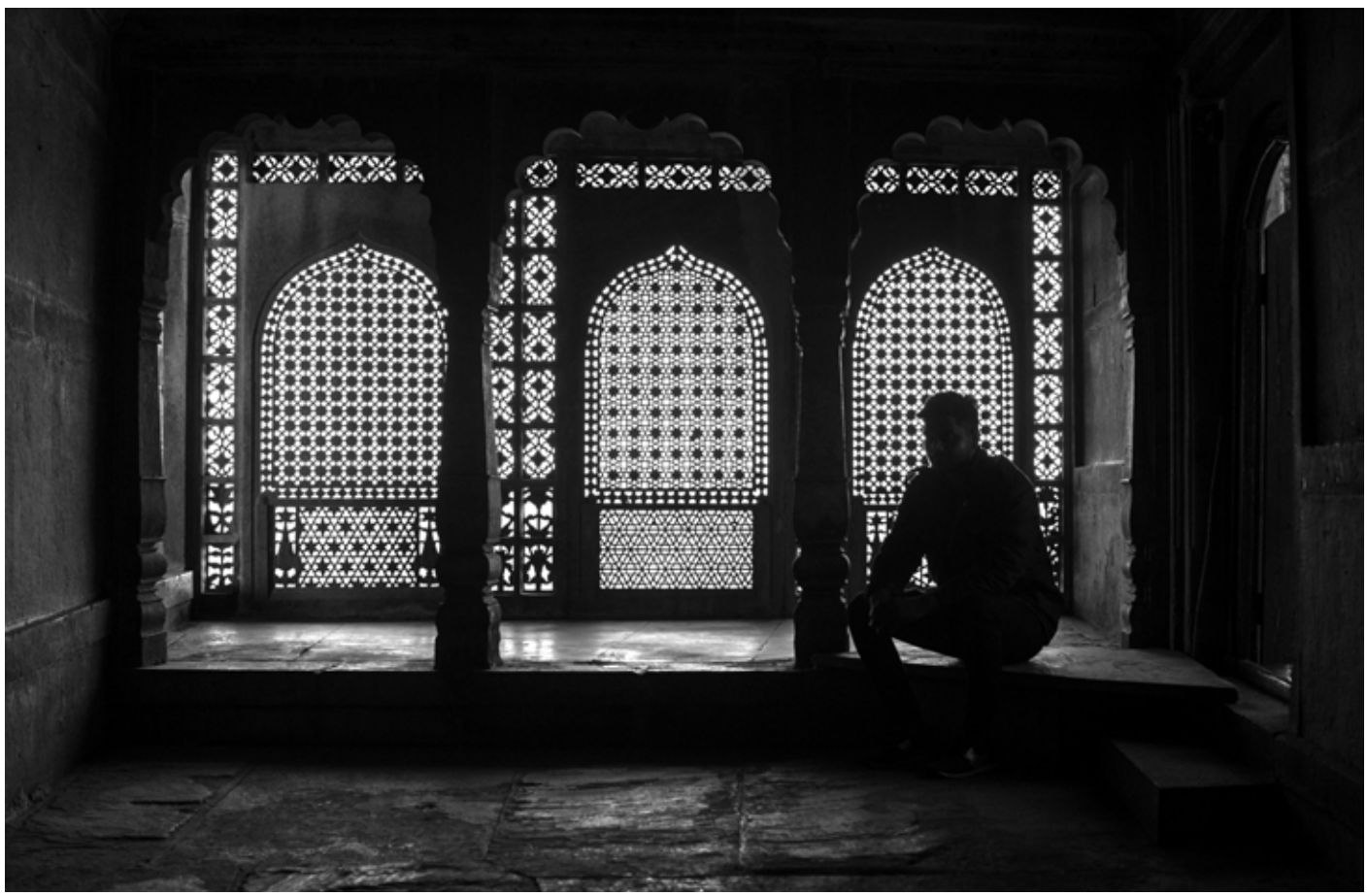
Karauli is an old town in Rajasthan, An erstwhile princely state at some point, Karauli is probably the most underrated destination for its heritage value in our country - clearly from an architectural perspective!

The palace and the houses built in red sandstone dating back in the late 1600s and early 1700s are outstanding samples of aesthetics and immaculate detailing! This feature shows interiors of the Karauli Palace and the streets of the old town.

Interesting shadow-play in a secondary corridor overlooking the palace courtyard.



A small ventilator just about enough to make the low height 'Kop Bhawan' breathable.



Intricate Jali Work on the south - west facade of the palace to have diffused light in the circulation spaces.

Verandahs around the terrace with an arcade of bow arches with intricate detailing and amazing proportions

Side courtyard surrounded by barracks and an 'Akhada' with a well.

Arcade overlooking the town

King's pedestal overlooking the court below where the hunt was exhibit to the public

Gateway to the temple and the cavalry area.

Ar. Rajan Bhatt is a creative professional, practising his craft via several mediums. He trained as an architect at Sir JJ School of Architecture, Mumbai and as an industrial designer at the School of Planning and Architecture, New Delhi. He abides by the dictum that better design improves the quality of how humans live, work, and play.

Rajan is an avid photographer, passionate about capturing landscapes and street life across the globe. He pays close attention to detail, composition, perspective, and the interplay of light, shadow, reflection, colour, and texture in his work.
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SKETCHES

Ar. Akhil V.K., an architect by choice an artist by passion, was born and brought up in Calicut. He has been curious about almost all fields of art since childhood. He loves to travel, and has developed his own signature style in 'live visualization' through various media. His favourite medium is water colour, although he is trained and eloquent in sketching, acrylic and oil painting, photography, sculpturing, digital media and classical dance.

Art for him, is not only a way to express his true self, but also a never ending journey of spiritual and existential inquiry. 'Nature' being his seed of inspiration, he discovers the moments of genuine sync between nature and manmade rather than following the traditional patterns. All his work of arts tells stories of life that stroke him during the art travels.
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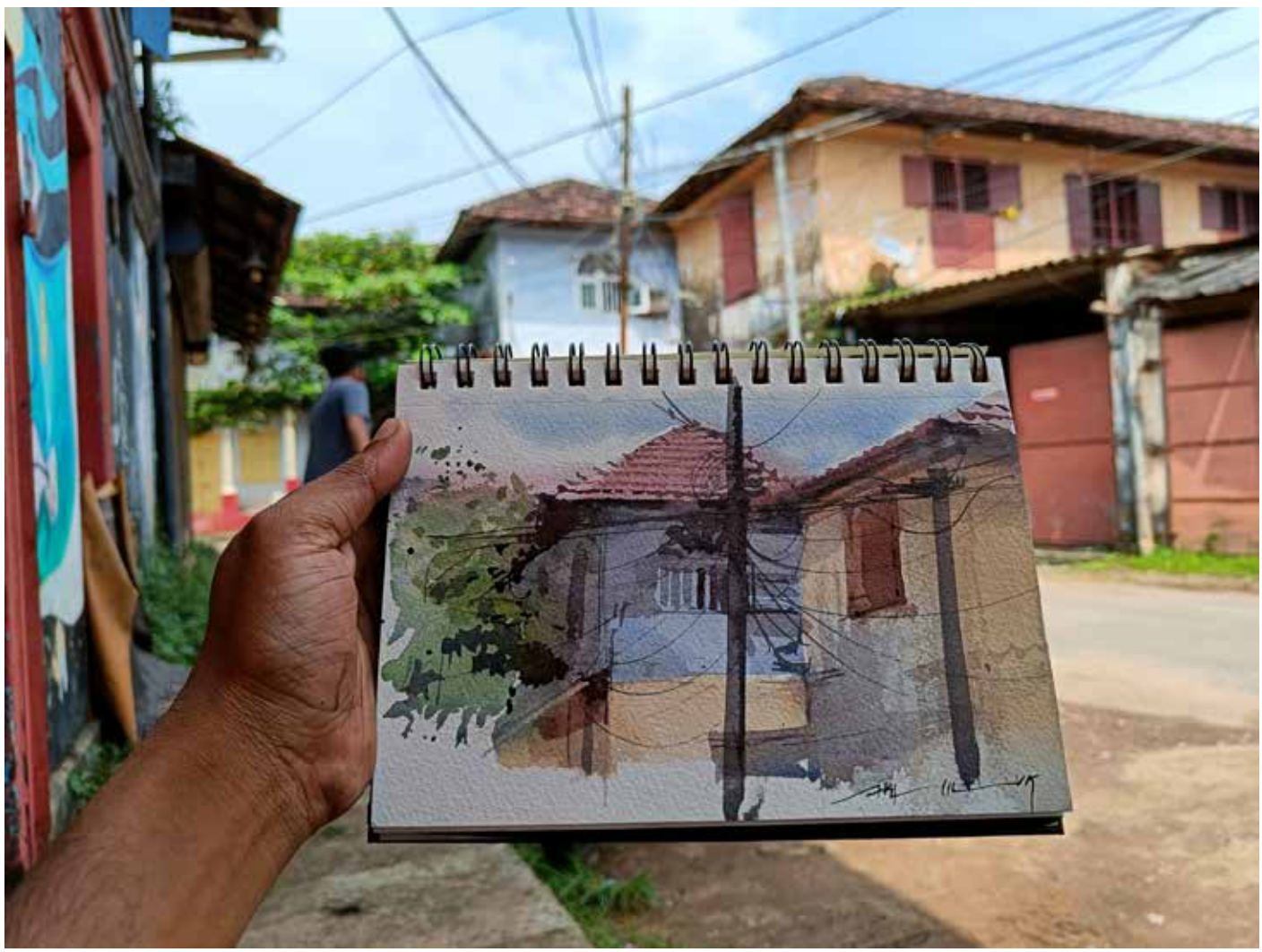
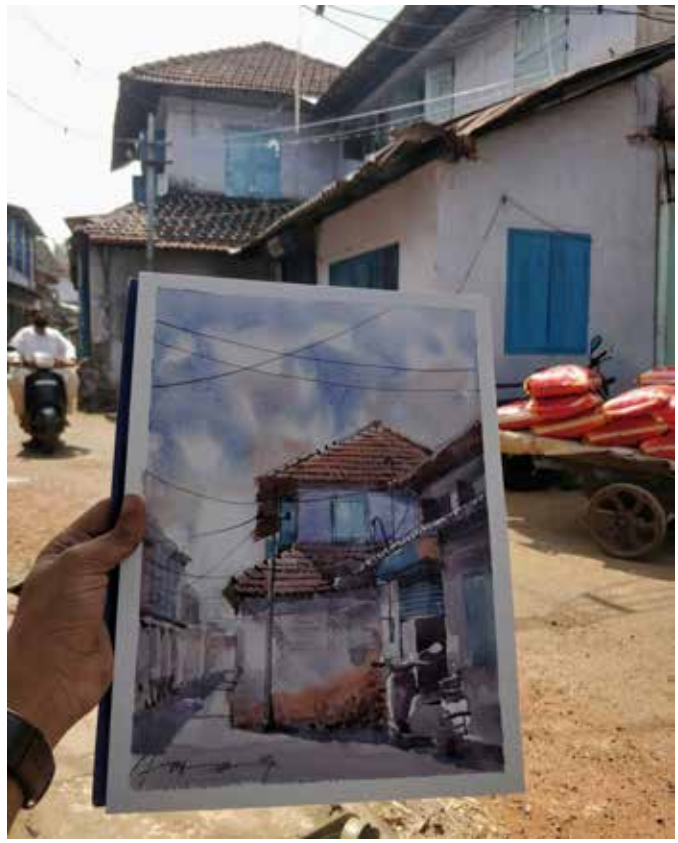
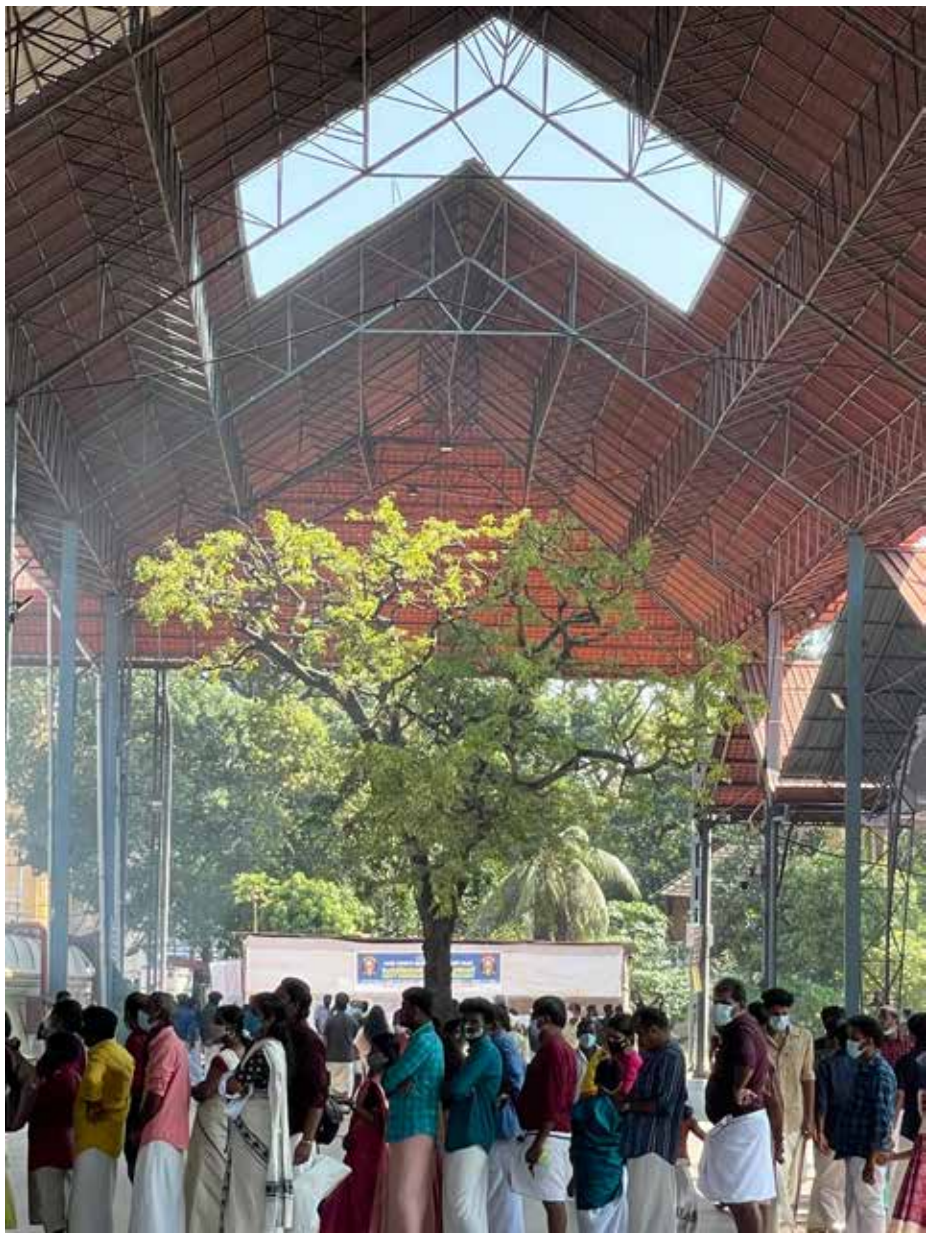




THINGS AROUND
A JOURNEY THROUGH KERALA

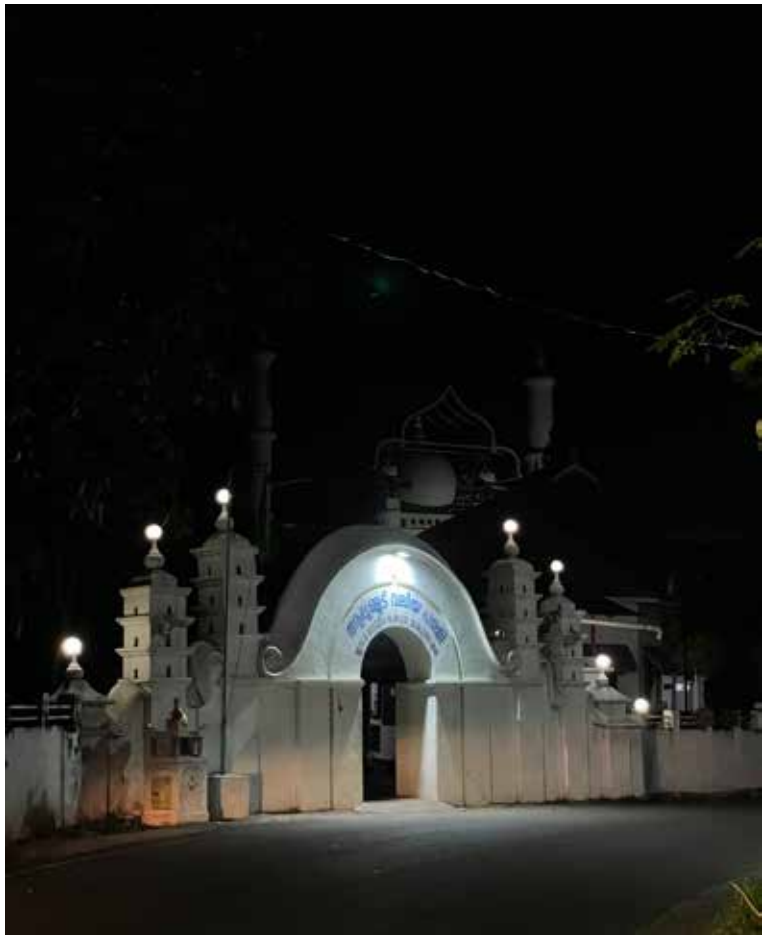
Ar. Fathil Kummayapurath & Ar. Hiba Hassan

Here are some thoughts, experiences and pictures of our recent trip to Kerala, our homeland. My life partner, Hiba Hasan and I thought of visiting some places and looking at things around. After we started the journey, everything was quite slow throughout the trip. Our initial thought was all about enjoying the normal without being critical observers but as an architect couple, we candidly started absorbing places and appreciating beauty deeply. Maybe it's a product of our culture and in relation to our education. By the end of the trip, we were embedded with a lot of information and thoughts. The profound experiences are always not virtual but truly physical- it's all about looking at real things and encountering real experiences. So here are some things about our trip.



In Guruvayur Temple, Trichur, a hall on the east side, just next to *kizhakke nada*. I was actually there to enjoy the traditional architecture of the main temple building but this time I was enjoyed this pavilion-like structure built with simple means in the near past. Walking to the pavilion, somehow that space was really engaging me. The simple sloping roof, steel space frames, the wide cut out, light coming out through and a huge tree right down there. Light scattering on the leaves and the rest. Overall the architecture made an impression and the activities around made it even more engaging. I spent some time looking at the lights and the tree and soon a neat queue formed near the huge tree. Some worshipers are waiting for the *prasadam*. We walked around the temple, there was hardly any room left for me. I followed Hiba and reached the same pavilion on the east side. Once again my attention was filled by this large hall and the lighted tree in the huge outdoor space. For a moment I was thinking, what about this normal space interested me more than this sculptural temple and just wondered what is sculptural space.

Centre for Performing Art in Varkala, is on a shallow hill, with Ezhilam Pale trees, and just the white walls. That's the first picture of the building, though it had a powerful sense of imageability. It's great, she says, so nice, really grounded. This is a place for murals, I can see white walls, I had a feeling that these white walls had made us unaware of the murals inside. It has the countenance of a resting monument, like an undisturbed mist. Other than the white walls I can see the grey roofs and at the porch pavilion the wooden ceiling, the door, all were made in teak wood, not the best workmanship. Enjoyed the first mural at the front door, like a strip around the architrave.



A lime plastered gateway dividing the road and the mosque behind. The arch leaves a void below to enter, there isn't any door and hardly two people can pass at once. At that point, it's no longer the road, not yet the mosque. The whole thing stands very firmly on the ground, looking like an old fort with its thick walls, moulded arch and small lamp towers with niches on all faces. I have seen lamp niches in many temples but these are different. They look wide while passing by and white, normally painted. Nothing compelling to grab attention, though it made me strangely overloaded and gave me an immediate impression. I liked the structure, it was more like a sculpture for me. Is It because of proportion, the arch, niches or thickness? I don't know, but still, feel it's a delight.

This pages (Clockwise from Left):

► Here stands a pillared building with a strong geometry and a charming balance, well placed upon the site. It is welcoming- a large colonnaded space, well-shaded. In between the columns, low-height vegetation, setting the roof hovering high enough. I think, there is a feeling of attraction here, a gentle presence and as a shopping place which was inevitable. Attractiveness is often a quality but not always. This one is fine so far. I never knew this building before and don't know the architect. It was made with simple means and techniques but I guess they were ambitious too. This building is a medium for different activities. It stands aside from the road, its physical body stays as an object of use and as an imagery. The building contributes to the location and to the town.

► We had seen a big house designed by my friend that made a great impression on her. The spaces were so polite and the ceiling so high. There was a long study area on the second floor with special pendant lighting hanging down. The house evoked a special vertical atmosphere that we may have never experienced before. I had seen this project long ago during its construction. From the drawings, had thought there won't be anything exciting in this deep. The client lady was happy to take us around. She almost had a vocabulary of a young architect explaining different things and the stories behind them as well. She persistently gave all credit to my fellow architect. Finally, as we were almost stepping off that high plinth to leave, the lady was looking at us with a polite smile. It was like we were walking off from a temple. I thought I like the high plinth, I like the high ceiling, I like those lights and I know how she feels about the house.

► Driving along a road on the banks of Meenachil, Kottayam, we saw canals and backwaters very often. There were a few houses in the immediate vicinity, one after the other. We decided to spend some time there though this place was not on our list of places. They are old but well-maintained houses that look like a series of pavilions. They all have a profound horizontality and lie parallel to the river and the road. None of them had compound walls, though they had characters of old town houses but still located in a comparatively semi-rural context. They have long window units filling much of the front facade. I liked those windows, they gave a sense of the river nearby "in a flow". Projecting pitched roofs, large eaves in some places, some roofs forming a decorative gable at the top, and a lot of woodwork. All of them have a plinth jutting out of the walls, looking very comfortable to sit upon. The river and houses speak something very similar, they had a constant notion. I think I liked their proximity.

In the banks of Vembanad Lake, this resort was designed by a star regional architect, I know his works and this was one of his early projects. We went for walks around and always came across water. The design had succeeded in absorbing traces of the land. It was a delight to see people embracing the landscape. I would describe the resort visit in terms of what's built and what's left unbuilt. Basically the building and the landscape. To me, the built structure throughout the resort campus is a proud announcement of vernacular architecture, an exciting place to look at, a sculptural piece of architecture with stone, timber, cement and the rest. But the landscape is truly poetry, it offerers me freedom and calm. I think the architect had the right degree, how much should be built and unbuilt. So the building is able to age with the landscape, slowly becoming a part of it.

The town we were visiting had a peculiar nature, it had an approach of a planned city. It's not just the historical significance nor the architectural substance that evoked my attention but the layout and the topography. We were there for a series of art exhibitions, temporary galleries are scattered in every niche of the town. So we have to move constantly from one to another, a buffer to our eyes and mind. But that's the time to look at the bits of the city. The next gallery is always next to a canal and the pattern continues and by the end of the day, we had seen much of the town and much of the canals.

The image of Alappuzha town stands for canals, bridges, a grid road network, old godowns, tea stalls and the rest. It is at ease, to roam around in this town instinctively, making imagery, wondering at different activities, physical and mentally very comfortable to move. I almost had a cognitive map of the town in one day. Kevin Lynch must be really happy if he could make a visit to this town.

Ar. Fathil Kummayapurath & Ar. Hiba Hassan
Fathil Kummayapurath is an architect and urbanist currently working in London. His researches and writings revolve around urban imagery, walkability and public acquaintance.
Hiba Hasan is an architect based in Calicut, working at Common Ground Architects.
Her research focuses on urban housing and sociability.
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THE INSTITUTE IS A CULTURE

Ar. Aabid Raheem

While it's easy to reduce education to simply the transferring of knowledge, anybody seriously involved would agree that receiving a good education is so much more than the gathering or accumulation of information. We live in the age of cheap internet, smartphones, social media and search engines, and today's students have easier access to a lot more information than what a teacher could provide. The informed teacher isn't the primary or sole source of information as he or she may have been long ago in the times of the gurukul system. Yet teachers still have a great responsibility in preparing students to be able to contribute to future societies as well as addressing the problems of tomorrow. And this present situation, where the role and relevance of the physical presence of teachers are being questioned by many, is truly a reminder for everyone about the other roles that a teacher is required to play in class and in the institute, beyond disseminating knowledge. In some sense, it is also a reminder of the role of the institute itself and our expectations of institutes in shaping graduates in so many ways beyond the mere acquiring of knowledge and skills.

Constant Ubiquitous Enculturation

Everyone would probably accept that we form particular impressions of people simply on being aware of them having graduated from reputed premier institutes. At first, it may be hard to describe these impressions but if one put some effort one would realize that these impressions relate not only to expectations in terms of expertise, knowledge or understanding but also a wide variety of skills, dispositions and personal attributes including attitude, confidence, exposure, leadership, proactiveness, thinking skills, outlook, mindset, competitiveness, behaviour, civic sense, ethics, values, etc. In other words, one could say, there is a culture we associate and identify with people from these institutes. When we think of it, there is a culture we associate with and assume we could expect from graduates from institutes of lesser reputation or of disrepute as well.

As with ethnic cultures, the interesting thing is that people aren't always fully aware of the fact that they are adopting a culture nor are they fully aware that they are passing on a particular kind of culture onto others through the various individual activities and actions they are involved in. You wouldn't be surprised to find that people struggle to define what the culture they have adopted over time constitutes or is all about either. This may be because the process occurs in a decentralized, distributed and indirect manner. Beliefs, ideas and values are embedded in actions, events, interactions and so many other things that we do, and the repetition of these lead to a subconscious acceptance of the ideas associated with them. As with ethnic and religious cultures, what's also possible is that people engage with various activities almost in a ritualistic, mechanical and unquestioning manner- thereby accepting and adopting various beliefs and ideas- but

ignorant of their wider ramifications and without a deeper understanding of them. This implies that each individual and their repeated individual actions or words could go a long way in shaping their own thoughts and that of other people involved in, exposed to or affected by those actions.

In the case of institutes, students are affected by the actions and activities of the academicians and administrators to whom they are repeatedly exposed to. Students are very much a part of various activities initiated by the faculty and others within the institute. Every interaction and activity is sending 'messages' to the students involved and hence is relevant. Just as they can be constructive and contributory towards building a particular culture, they can also end up being destructive and undermining.

That organisations are defined not only by their products, services and output but also their organisational cultures, is not something radically new. Being organisations themselves, institutes also have their own organisational cultures or ways of doing things and these are passed on to new members through various formal, informal, explicit, implicit and other means. This takes place as one constantly participates and engages in the activities of the organisation. Administrators and academicians often operate bearing in mind the culture and expected behaviour of the students. The students, being an integral part of the institute and many of its activities including academic sessions, are therefore not only exposed and affected by the organisational culture of the institute but are also involved in giving shape and transferring the culture while simultaneously also imbibing them. While there may or may not be distinct sub-cultures within the institution, the dominant organisational culture, institutional culture, classroom culture and student culture are interrelated and may very well be considered to be extensions of each other. Essentially the different stakeholders are being shaped by each other. What I've come to believe is that, while an institute may be many things, it surely can be referred to as a 'culture'. An institute goes beyond its buildings, courses and people or merely the sum of its parts. It remains in the culture that ties these up together and gives each of these parts meaning: it's what tends to remain even when people, buildings and courses change; it's what remains in the graduates and faculty even after they have left the institute. It's embodied in everything the institute chooses to do and how it chooses to do things.

The Many Manifestations of Culture

The culture of the institute is expressed in how its administration treats its people and how people treat each other. While in businesses people look up to the founders and bosses as role models of the organisation's culture and on what and how to do things, it is the head of the institute, other leaders and faculty who are the people who are likely to be looked up to as role models whether they like it or not. They are expected to embody the culture of the institute, and if they don't, then one can only assume that the students will be drawing inspiration from the wrong place and aren't the ones to be blamed.

This clearly indicates how significant the way faculty and mentors behave is. Through what they say, how they say things and their body language itself, they say quite a lot and send so many cues and messages for students to pick up - how respect, regard and dignity are extended; how peers, subordinates and superiors are treated; how considerate, helpful and kind people are to each other, and how people collaborate and work as a team- all reflect the culture of the institute. Therefore, the culture of the institute exists and is made in every interaction between its members inside and outside the classrooms. The interesting and delicate thing is that cultures are not only established through a top-down process but may very well be created through a bottom-up process.

There are many characteristics that define who we are and that enable us to contribute to organisations we are part of or to society in general. Some of these include- a general enthusiasm towards life, a desire to be a life-long learner, curiosity and a fascination for the world we are in, passion towards one's areas of interest, creativity, optimism, open-mindedness, confidence, the ability to ask questions, listening skills, critical thinking skills and clarity of thought, ethics, compassion and humaneness, humility, genuineness, discipline, ability to work hard, perseverance, a positive work culture, etc. Most of these are sought in graduates as well during recruitment and all of them could very well become an integral part of the student culture if required to be so. Academicians tend to often get misled into thinking that their's and the institute's role is about imparting information, the subject content or just the curriculum whereas their roles also involve instilling these traits as well. Especially in these times of rapid change and development, it is being increasingly acknowledged that what the workforce of tomorrow needs, more importantly, are these above traits, so as to be able to advance the world or for that matter to be able to advance for oneself, in tomorrow's world of constant flux. It may very well be the case that imparting these kinds of traits, soft skills or whatever one may call them, is what is the primary role of faculty.

Just as the dominant culture is reflected in people's individual behaviour and their relationships with each other as brought up earlier, it also reflects in how the organisation operates. The organisation's culture is reflected in how decisions are made and communicated, whether decision-making is a participative, democratic process or a closed activity, how much control and freedom exist for all the individuals, how accessible are people of authority, how much ownership exists across all levels of the organisation, how far is there a sense of being a collective, the propensity towards risk-taking, whether a culture of meritocracy is promoted over a culture of hierarchy, whether members are encouraged to speak up and question, whether the organisation is rigid or flexible, whether there is an environment of positivity and possibility characterized by encouragement, motivation and inspiration, whether the focus is to constantly maintain the status quo or enable growth, how conflicts and problems are resolved, the presence of genuine goodwill or animosity between teams, etc. The values of the organisation are embedded in all of these, and in an educational institution, students learn from and are imbibing these values as well and hence become part of their education.

Along with these are the various rituals that the institute adopts as part of how it operates and that become commonplace over time. Some rituals and aspects that reflect the culture of the organisation relate to what happens when new members join the team, when they leave, how the team and its members start/ end the day/ the year, what they

celebrate and how they celebrate, how/ where/ for what/ how often meetings are organised, how much and how information is shared within the organisation, how often and in what way they interact/ socialize/ relax/ have fun/ take a break/ spend time together, the occasions when and the manner they engage with members of the public, and the nature and frequency of events and occasions where everyone within the organisation comes together and how these are organised. There are many more such rituals and routines. The daily schedule or timetable, as well as the annual calendar, are themselves representations of the culture of the institute. They indicate what is valued and prioritized. Then there are the anomalies, exceptions, violations and conflicts that arise in the process and how the institute deals with these are also defining aspects of the institute's culture. In cultures where control over the student body is a key agenda a lot of time is spent on dealing with these kinds of problems. Institutes must realize that many lessons on how to collaborate, work as a team, come together as a social organisation/ community, discipline ourselves, balance work and leisure, treat each other, what to value in life within and beyond the realms of work and productivity, etc. are taught to the student caucus in the way they operate.

With regard to all academic matters as well, institutions have their own cultures. And these are reflected in everything, such as- how and on what basis faculty are hired and prospective students are admitted to the institute, how faculty conduct their sessions, how classes are structured, where they happen, how learning and understanding is prioritized over test-based performance, what are the expected attributes of prospective students, how much time is spent in student sessions to help them think and develop all the other soft skills mentioned earlier, how much of reading and writing is encouraged, how seriously is plagiarism/ any sort of delays/ attendance looked at, how performance is assessed, what qualities and aspects are looked for in student work, how feedback is given, whether breadth of knowledge is balanced with depth of knowledge; how competition and competitiveness is built into the system, what are the expectations of the faculty and students in terms of quality of work, how hard working the students are expected/ trained to be, how seriously students take their education and work, how engaged they are in their work, how much process is prioritized over the product of the students' efforts, what excuses are acceptable, how is failure looked upon, what constitutes quality and excellence, etc.

There is a particular kind of work culture that exists in each institute. As with academic and curricular matters, there are similar considerations with regard to co-curricular activities. What constitutes curricular and co-curricular activities itself reflects the philosophy of the institute and is part of its culture. Employers often complain about the work ethic of their new hires. Employees take time and may struggle to adapt to new work cultures depending on what they have picked up from their educational institutes.

Nurturing Cultures

While at times there is a clear vision as to what the culture of the institute should be for those who founded the institute or those leading it, this is not always the case and the culture of the institute is sometimes something that has evolved over time involving many different people. The decisions of these many individuals are on many occasions incidental and with no consciousness of such effects on the institute and its individuals at a larger institutional cultural level. At times these disconnected decisions don't add up and are inconsistent with each other. These may send mixed signals to their members or even the wrong ones and can lead to frustrations, problems and conflict. Similarly, if different faculty or leaders of the institute portray very different and conflicting cultures or values to the student body, they could end up undermining each other's efforts, leading to under-performance, conflict and frustrations. When there is conflict in values and priorities amidst those in charge, it can get very difficult for students and subordinates to operate, go about their work and meet the conflicting expectations.

Yet culture isn't about traditions fixed in stone. Culture is dynamic and constantly evolving. It allows itself to be modified by those who participate in it. Hence, there is always the possibility for new precedents. But if new precedents are made that are accidental and unintentional, then that could be problematic as well. Hence, cultures in institutes need to be constantly monitored, shared and nurtured. The building, policies, rules, systems, etc. of the institute need to align and embody the culture, which otherwise can end up becoming counter-productive to it. Where change is welcome, they may need to be overseen to ensure they do not become problematically disruptive to principles and values that are not meant to be dismantled. Change and improvement are integral to a creative culture and the notion of establishing cultures is not at all about advocating rigidity and uniformity. A culture that celebrates diversity could itself be a defining aspect of it.

Institutes in these parts perceive various things as benchmarks of their performance. People talk about the quality of institutes in different ways. Yet maybe it's the seemingly intangible and hard-to-describe or define culture of their graduates that they should be thinking about. I don't know whether institutional cultures can be categorized, named or quantified, yet educational institutes need to look at education in a more comprehensive manner looking at their graduates in a more holistic way- as individuals in their fuller and complete sense. They need to look at their institutes in a fuller way. They need to appreciate how institutes are about cultures, and therefore need to look at everything they do as well as how they do them. There needs to be an appreciation of the significance of the fact that cultures are dynamic and evolving and are influenced by every person who is involved. This requires institutions and all their individuals to work in a concerted manner, always conscious that each of them is involved in institution building, or in other words, building a culture.

Ar. Aabid Raheem co-founded the practice [ar&de], Kerala. He has worked with B.V. Doshi, Suhasini Aiyer, Andre Hababou, Spacelab London. He was the founding Head of Faculty at Avani Institute of Design. He graduated from The Bartlett- UCL & MESSOA, Kerala. He has won multiple design awards, published research papers and has presented his work at global platforms.
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NEWSLETTERFEBRUARY

OBITUARY

Heartfelt Condolences

Ar. Suhas Tomey
(24 April 1954 – 17 February 2022)

Ar. Suhas Tomey from Hyderabad passed away after a brief illness. He was a leading architect doing very innovative buildings and some of the large commercial and housing projects which he pioneered in Hyderabad. Due to an unfortunate accident 25 years ago, Suhas lost his memory and could not continue his practice. If he were to continue his work, he undoubtedly would have been a leading light of our country.

IIA Kerala Chapter

IIA Kerala Chapter received a total of 225 entries from various categories for the IIA Kerala State Awards 2021. The jury includes Ar. Bijoy Ramachandran, Ar. Madhav Raman, Ar. Girish Doshi, Ar. Biju Kuriakose, Ar. Abha Narain Lambha and Ar. Anand Wadwekar. The shortlisting of projects and site visits shall be conducted and the final project presentations will be at the final event held at Kannur. The dates shall be eventually finalized according to the pandemic situation and government regulations. IIA Kannur Centre is also conducting competitions alongside for student architects to encourage the involvement of youth.

The IIA KC Gender Inclusion Cell has come up with the initiatives of collecting women architects' data in Kerala, conducting POSH and ICC awareness campaigns in architecture schools and firms and a panel discussion on Architecture as a Tool for Inclusion.

IIA Maharashtra Chapter

Ar. Pankaj Chimanpure, Mumbai Centre and Ar. Abhijit Shirodkar, IIA representative to the Council of Architecture are doing a great job of ensuring equal opportunities for architects. The scenario, so far, was in the context of banks as well as government projects, where non-architects were permitted to apply for the scope of architectural services. In addition, like contractors, they were required to give quotations, EMD and performance guarantees. With active follow-up at the COA level, the COA has issued letters to the Indian Banking Association and all member-banks to refrain from such illegal practices. Similarly, the PWD had invited architects to submit tender for an ayurvedic college in Baramati. COA has also issued a letter to the said authorities. It is hoped, that in this process, two wrongs will be corrected and architects will get the respect they deserve.

Some of the principal activities conducted by the Centres of Maharashtra Chapter are enumerated below:

IIA Navi Mumbai Centre

IIA Navi Mumbai Centre had organised a Mural Competition in January for students of architecture in collaboration with the Indian Women Scientists Association. The Jury Panel comprised eminent personalities from the fields of art and architecture: Ar. Shekhar Bagool, Ar. Ritu Deshmukh, Ar. Gulshan Kumar, Ar. Archana Patil, Ar. Krishana Murthy and Mr. Achyut Palav. The final selection of the nine shortlisted entries was held on 27 February. The winning entries are as follows:

1st prize

2nd prize

3rd prize

a) 1st prize: Team 11 – Tanishka Nevase, Anushka Kulkarni, Nikita Mohol, Shravani Khire, Shraddha Parange. Their theme was "Women Empowerment".
b) 2nd prize: Team 13 – Shivani Shinde, Piyush Lohakare, Nimit Gada, Ishika Garg. Their theme was "Women Empowerment".
c) 3rd prize: Team 4 – Prachi U Yashwantrao, Atharva Mundhe, Aditi Yadav, Dhawanit Saraf, Gauri Mulay. Their theme was "Ecological Restoration".

IIA Navi Mumbai is also the host for the Maharashtra Chapter Executive Committee Meeting to be held on 5 March, 2022. They have planned a grand event of presentations, panel discussion, exhibitions and short films. Architects from across the country will interact with the Maharashtra Chapter members through the events planned in conjunction with this EC meeting.

IIA Satara Centre

IIA Satara Centre has collaborated with the Zilla Parishad of Satara to organize a Design Ideas Competition for various public government buildings across the rural sector in Satara, Maharashtra. The website was launched at a ceremony on 26 January on occasion of Republic day.

There were a total of five design sections: education, healthcare, housing, veterinary and administrative. The competition will run in two stages : Stage I includes prototype ideas for various buildings divided under categories based on PWD norms and budgetary restrictions set by the Satara Zilla Parishad. The participants qualifying for Stage II will have to submit detailed working drawings and estimates based on the current SSR item rates.

The juries appointed for the selection process are eminent personalities and with expertise in the field: Ar. Madhav Joshi, Pune; Ar. Usha Rangrajan, PCMC, Pune; Ar. Sachin Agshikar, Mumbai; the Superintendent of PWD, Satara and the Civil Surgeon of Satara or the Education Officer of the Z.P. of Satara.

The competition was launched at the Zilla Parishad, Satara on Republic day by dignitaries like Mr. Balasaheb Patil, Co-operation and Marketing Minister Maharashtra and Guardian Minister Satara; Mr. Shekhar Singh, Collector & District Magistrate Satara; Mr. Vinay Gauda, CEO ZP Satara; Mr. Ajay Kumar Bansal, Superintendent of Police, Satara and all the other dignitaries of Zilla Parishad Satara and PWD Satara with IIA Satara centre members.

During this ceremony, IIA Satara Chairman, Ar. Suhas Talekar presented the competition programme and timeline to all the dignitaries. The Ideas Competition is open to all those person registered as an architect. Further information is available at: www.iiazpsataracompetition.com.

IIA Pune Centre

IIA Pune Centre is planning to host the Maharashtra Chapter Convention in April 2022. The initial planning will be presented during the EC meeting to be held in Navi Mumbai on 5 March 2022. Ar. C.R. Raju, the National President of IIA has confirmed his presence for the event.

IIA Jalgaon Centre

IIA Jalgaon Centre in association with CREDAI Jalgaon and government officials met with Mr. Avinash Patil, Director of Town Planning, Maharashtra, to discuss the problems faced due to monopolistic software requirements. It is expected that the issues will be soon resolved.

IIA-Punjab Chapter

The Advent of Modern Architecture in India

The online webinar The Advent of Modern Architecture in India by Dr. Pankaj Chhabra was organized on 5 February 2022 by Lovely Professional University School of Architecture and Planning. Its purpose was to acquaint students and faculty about the advent of modern architecture of post-independence India due to the various influences with respect to context, Indian lifestyle and climatology and also with the timeline of world architecture. The session was attended by 87 students and 3 faculty members.

Principles of Space Making

The online webinar Principles of Space Making by Dr. Venu Shree was organized on 12 February 2022 by Lovely Professional University School of Architecture and Planning. Its purpose was to acquaint students and faculty about the principles of space making in architecture with respect to various influences with respect to the user profile group, lifestyle, context and climatology, and the importance of space in architecture that enhances human life and life-style. The session was attended by 80 students and 3 faculty members.

WELCOME NEW IIA MEMBERS

5th Council Meeting Held Online 23rd December, 2021

Sr. No.	Associate to Fellow	Memb. No.	Place
1	Ar. Kasirajan Jayapandian	F13619	Chennai
2	Ar. Kuldeep Yashwantrao Hangirgekar	F15616	Bangalore
3	Ar. Qamar Irshad	F15835	Delhi

Sr. No.	Dirct Fellow	Memb. No.	Place
1	Ar. Dhileep P	F25035	Pondicherry
2	Ar. Mark Paul Raj S	F25036	Chennai
3	Ar. Gaurav Chandra	F25037	Uttar Pradesh
4	Ar. Kader Meera M	F25038	Tamil Nadu
5	Ar. Basawarajappa Patwari	F25039	Bangalore
6	Ar. Guru Pyara Bhatnagar	F25040	Uttar Pradesh
7	Ar. Fathim Rashna Kallingal	F25041	Cochin
8	Ar. Prasoon K V	F25042	Cochin
9	Ar. Sheik Habeeb M	F25043	Tamil Nadu
10	Ar. Riyhad Ramesh Kundanmal	F25044	Mumbai
11	Ar. N Saravanan	F25045	Tamil Nadu
12	Ar. Sultan Samsool Kabeer K M M	F25046	Tamil Nadu
13	Ar. Nisar Khan	F25047	Northern
14	Ar. Madhup Mazumder	F25048	Uttar Pradesh

Sr. No.	Assoicate	Memb. No.	Place
1	Ar. Nikhil Sebastian	A25049	Kerala
2	Ar. Lijo John Mathew	A25050	Kerala
3	Ar. Shobha Dastapur	A25051	Kalaburgi
4	Ar. Vivin Andrews V	A25052	Coimbatore
5	Ar. Smit Yagnesh Vyas	A25053	Ahmedabad
6	Ar. Sonik Bhausaheb Bhandare	A25054	Pune
7	Ar. Shailesh Vishnu Ghule	A25055	Pune
8	Ar. Jaideep Sunil Deshpande	A25056	Pune
9	Ar. Yogesh Shivkumar Surkutlawar	A25057	Satara
10	Ar. Arun S	A25058	Tamil Nadu
11	Ar. Heerendra Kannan M	A25059	Chennai
12	Ar. Ashok Prabhu	A25060	Trichy
13	Ar. Aiswarya V	A25061	Tamil Nadu
14	Ar. Ahila S	A25062	Trichy
15	Ar. Sethuraman C	A25063	Tamil Nadu
16	Ar. Anmol Ravindranath Warang	A25064	Mumbai
17	Ar. Arbaz Rizwan Samera Pathan	A25065	Mumbai
18	Ar. Bhudev Nand Kishore Yadav	A25066	Kalyan
19	Ar. Harsh Bharatbhai Barad	A25067	Ahmedabad
20	Ar. Trivedi Kush Utpal	A25068	Ahmedabad
21	Ar. Rohan Snehalbhai Gujjar	A25069	Ahmedabad
22	Ar. Smit Rameshbhai Patel	A25070	Ahmedabad
23	Ar. Manit Alkesh Patel	A25071	Gujarat
24	Ar. Akash Anil Savita Patil	A25072	Thane
25	Ar. Rohit Dipak Tejashree Katti	A25073	Navi Mumbai
26	Ar. Harshal Kishor Mohini Kavekar	A25074	Thane
27	Ar. Aaditya Sanjay Pramila Gupta	A25075	Maharashtra
28	Ar. Kartik Kishor Pratibha Kulat	A25076	Navi Mumbai
29	Ar. Swastik Sanjay Ranjana Keni	A25077	Navi Mumbai
30	Ar. Ashutosh Keshao Anjali Kulkarni	A25078	Maharashtra
31	Ar. Pratik Prakash Pravina Chavan	A25079	Maharashtra
32	Ar. Twinkle Nathani	A25080	Chhattisgarh
33	Ar. Niraj Mukesh Kansara	A25081	Maharashtra
34	Ar. Viren Sunil Talreja	A25082	Kalyan
35	Ar. Karthikeyan S	A25083	Tamil Nadu
36	Ar. Arockia Heartlin Rojar S	A25084	Tamil Nadu
37	Ar. Punith Bohra R	A25085	Chennai
38	Ar. Mohammed Alif S	A25086	Chennai
39	Ar. Lishali K	A25087	Tamil Nadu
40	Ar. Bahavathi Raj S	A25088	Coimbatore
41	Ar. Mohit Dev	A25089	Bhopal
42	Ar. Aravind K	A25090	Tamil Nadu
43	Ar. Kalaivendhan K C	A25091	Tamil Nadu
44	Ar. Syed Suhali Ahamed T M	A25092	Tamil Nadu
45	Ar. Siva Kumar R	A25093	Tamil Nadu
46	Ar. Vinoth Priyan S	A25094	Coimbatore
47	Ar. Samuel Jeba Kumar T	A25095	Coimbatore
48	Ar. Surendharan P	A25096	Chennai
49	Ar. S Surendar	A25097	Tamil Nadu
50	Ar. Naushad K	A25098	Tamil Nadu
51	Ar. Sruthiish R	A25099	Tamil Nadu
52	Ar. Vineeth T K	A25100	Kerala
53	Ar. Maya Mohan	A25101	Kerala
54	Ar. Vikas Khurana	A25102	Hisar
55	Ar. Ragul R	A25103	Coimbatore
56	Ar. Karthik B	A25104	Tamil Nadu
57	Ar. Aman Atal	A25105	Delhi
58	Ar. Sachin	A25106	Haryana
59	Ar. Ramkumar R P	A25107	Madurai
60	Ar. Kiruthika R	A25108	Tamil Nadu
61	Ar. Febin Mohammed	A25109	Kannur
62	Ar. Sriraj B	A25110	Bangalore
63	Ar. Deepu B G	A25111	Bangalore
64	Ar. Shilpa A V	A25112	Calicut
65	Ar. Arjun Parengal	A25113	Kerala
66	Ar. Gautham Siddharth	A25114	Kerala
67	Ar. K. Chandra Kanth	A25115	Telangana
68	Ar. T Dinesh	A25116	Telangana

Sr. No.	Assoicate	Memb. No.	Place
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70	Ar. Vaishnavi Suhas Jagtap	A25118	Goa
71	Ar. Mandeep Singh	A25119	Punjab
72	Ar. Harkishan Singh	A25120	Ludhiana
73	Ar. Shaikh Jaffar	A25121	Telangana
74	Ar. Ashiq Krishnan K J	A25122	Kannur
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78	Ar. Neelam Subhash Sanghvi	A25126	Pune
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80	Ar. Labanya Baidya	A25128	Bilaspur
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83	Ar. Ravinder Pal Singh Bagga	A25131	Madhya Pradesh
84	Ar. Ishu Shukla	A25132	Madhya Pradesh
85	Ar. Gaurav Shankaran	A25133	Jabalpur
86	Ar. Ankit Lambhate	A25134	Indore
87	Ar. Shreyash Tiwari	A25135	Indore
88	Ar. Ankit Shrivastava	A25136	Madhya Pradesh
89	Ar. Achuthan Vadivel R	A25137	Tamil Nadu
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91	Ar. Nitin Kumar	A25139	Punjab
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100	Ar. Saqib Riyaz Mulla	A25148	Kolhapur
101	Ar. Sushant Baburao Chimate	A25149	Kolhapur
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106	Ar. Raja Durai P	A25154	Madurai
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115	Ar. Meljin Mano M J	A25163	Tamil Nadu
116	Ar. Richis Jenisha J	A25164	Tamil Nadu
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119	Ar. Venkata Subba Reddy Mule	A25167	Andhra Pradesh
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143	Ar. Anay Anand	A25191	Bihar
144	Ar. Jagrati Jain	A25192	Madhya Pradesh
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151	Ar. Priyanka Shrikant Kulkarni	A25199	Maharashtra
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153	Ar. Deepankar Sharma	A25201	Uttar Pradesh
154	Ar. Jai Prakash Mahaur	A25202	Uttar Pradesh
155	Ar. Satyajit Deepak Deodhar	A25203	Maharashtra
156	Ar. Raunak Prasad	A25204	Kota
157	Ar. Nitin Ashok Kelkar	A25205	Pune
158	Ar. Siddhant	A25206	Panchkula
159	Ar. Amit Rawal	A25207	Uttar Pradesh
160	Ar. Pitcha Seshu Kumar	A25208	Visakhapatnam
161	Ar. Ankush Lakhera	A25209	Jabalpur

Sr. No.	Assoicate	Memb. No.	Place
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163	Ar. Anant Mishra	A25211	Madhya Pradesh
164	Ar. Manmohan Saxena	A25212	Madhya Pradesh
165	Ar. Reena Bisht	A25213	Uttarakhand
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JKcement

AWARD CATEGORIES

32nd Architect of the Year Awards
JK AYA

GREAT MASTER'S/ CHAIRMAN'S AWARD

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

Green Architecture (Environment Conscious Design)

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

Indian Architecture Awards (IAA)

Eligible: Any Indian Architect

Architecture Student of The Year Award

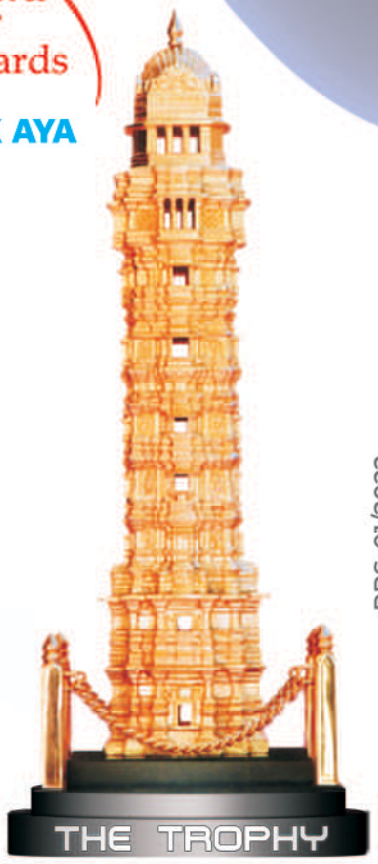
Eligible: Final Year Undergraduate students of Indian Colleges

Foreign Countries' Architecture Awards (FCAA)

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

Indian State Architecture Awards (ISAA)

Eligible Status/UT: State by Rotation



RPS-01/2022

OPEN FOR PARTICIPATION

APPLY ONLINE AT: || www.aya-jkcement.com ||

Last Date of Submission: 30th June 2022

For Further Information

About JK AYA Please Contact:
Award Secretariat:

RANA PRATAP SINGH
(Administrator JK AYA)

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