

domus

INDIA

043

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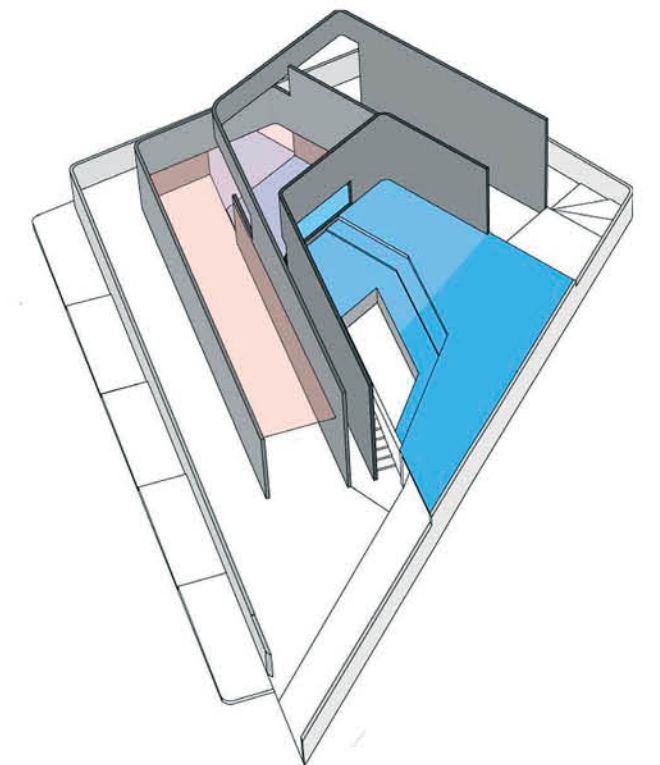
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Author	Design	Title
Kaiwan Mehta	28	Editorial Landscape of the familiar-unfamiliar
Rahul Mehrotra Filipe Vera	30	Confetti Contemporary museum for architecture in India Lessons from the pop-up megacity
Gautam Bhatia	42	Contemporary museum for architecture in India Thinking Correa
Siddharth Menon	46	Talking design It's not about mud — The role of a 21st century architect in rural India
Peter Cook Kaiwan Mehta	58	The poetics of architectural vocabulary
Ilaria Valente	68	Saul Steinberg in Milan
	74	Projects Jane's carousel, New York
	82	Vincenzo Melluso A box of light, a play of views
Suprio Bhattacharjee	88	sP+a Bipolar order
	98	Rassegna Furniture
Faruk Malhan	106	Feedback Faruk Malhan's Istanbul



Cover: The drawing on the cover is a part of Peter Cook's drawings and sketches that are being showcased in Delhi at the exhibition titled *Sir Peter Cook - Drawings from 1960s-2000s*. The exhibition looks predominantly at drawings that seem almost-unbuildable or nearly-buildable, but their components come together to build a vocabulary of working parts.



An axonometric drawing of the Fort House in Hyderabad designed by sP+a. It has a series of parallel walls, gradually increasing in height, that enclose spaces of varying scale and varying degrees of privacy and luminance.

SIR PETER COOK
IN INDIA

LANDSCAPE OF THE FAMILIAR-UNFAMILIAR

Kaiwan Mehta

Architecture is the landscape of culture, ideas, and the material world we inhabit. Architecture speaks through buildings but cannot be defined by them alone. The building exists within a landscape of culture, ideas, and the material world, and it is architecture that contextualises the roles and relationships of built form and culture, ideas and material realities. Crystal Palace in London of 1851 was not just a building with new technologies and new materials – it was a landscape that marked the advent of a whole new way of looking at the world and civilisation, it marked a changed imagination with which human beings perceived reality thereon. The many forms of Brahmanical and Jain temples in India are confluences of ideas and philosophical moorings where human and divine established terrains of dialogue – different imaginations of the cosmos and human world collide to animate the shikharas and the columns. The body in performing its circumambulatory journey builds up a dialogue with the material terrain of walls and spaces animating the building into hyper-real geography of visual forms and ideas. The Crystal Palace in its transparency expanded visual possibilities allowing the eye to run far up to a horizon from within material surfaces, through a maze of designed objects and products from the different industrial worlds and human- and machine-made products. The eye travelled in search of a limit for ever-expanding space – that travel was space, not defined any longer by material walls but by the encounters of the eye.

The encounters of the body, the encounters of the eye are architecture's primary concerns. But what the body and the eye encounter are the realities of a world-scape built on ideas and philosophies, within economic strategies and political dynamics. The body and the eye stand tested through challenges that the architectural landscape at all points throw up, and at you. Architecture is the dynamic landscape, and the building is its arena and vocabulary.

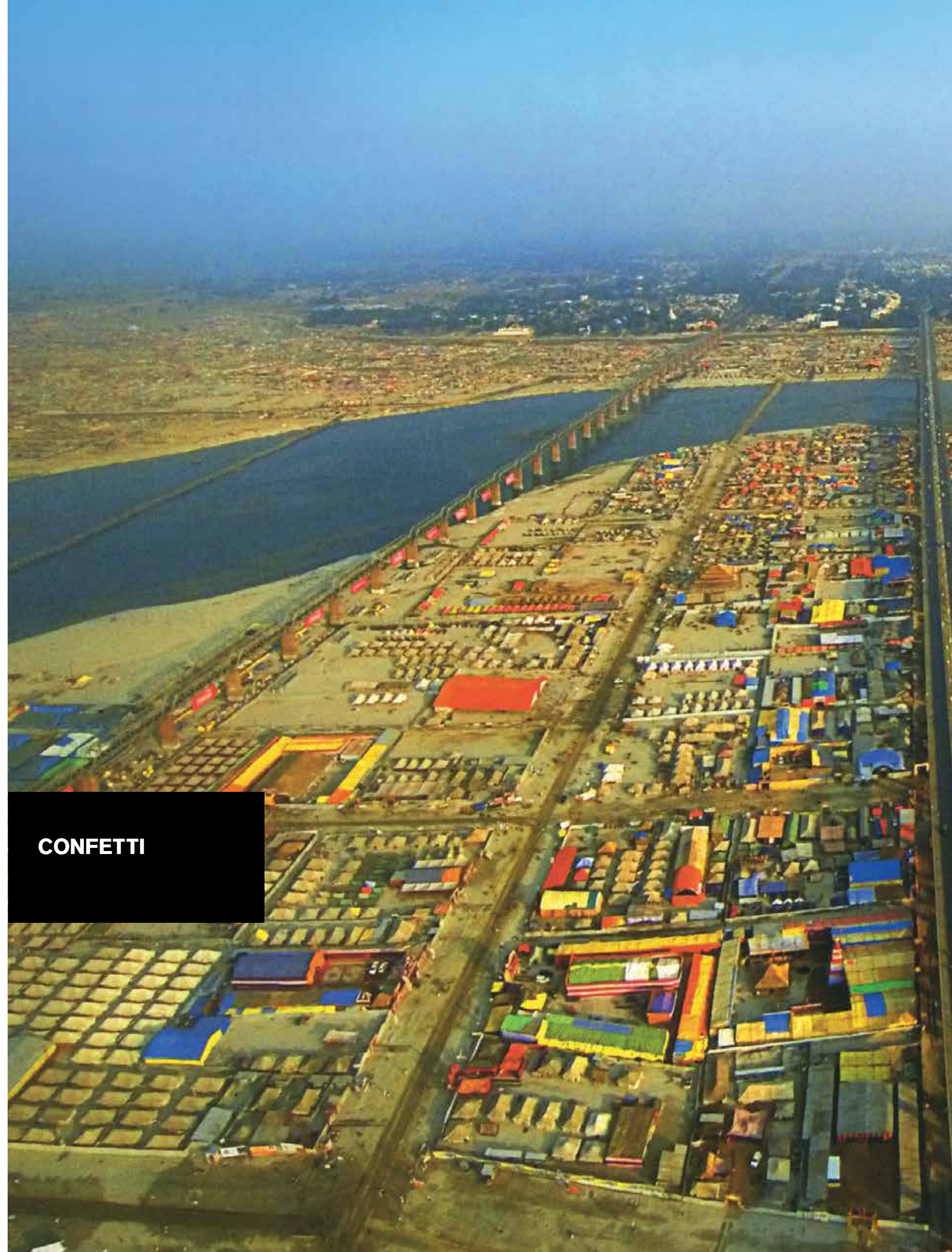
The landscape of architecture is ephemeral not the solid mass that buildings have us believe. The landscape of architecture is potent and charged, not finished and constructed as buildings again have us believe. Two features in this magazine expose the larger, unsettled, and complex imagination and world of architecture for us – the discussions on the making and unpacking of the Kumbh Mela and the collection of paintings and drawings by Sir Peter Cook. In an interview with *Domus*

India, Cook points out to a very important and delicate issue – the idea of architecture that plays in the realms of imagination and utopia versus what one would otherwise refer to as 'build-able' or 'normal' architecture; he indicates that in differentiating the thought-provoking and challenging imaginations in architecture from the normative building-type idea of architecture we keep the world of ideas and dreams in some ephemeral space as if it is to be enjoyed only there and not as a part of the real and meaty world of architecture, while the mainstream in announcing its connection with a 'reality' hides "what it often is – lacking in wit and invention". The world of dreams also emerges from the real world of buildings, inventions, struggles, and circumstances – discourse on architecture is similarly located within realities of everyday life. Dreams and discourse are not peripheral to the making of buildings, or are not meant for special appearances once in a while but are the 'stuff' of architecture, and its everyday life. The drawings of Peter Cook featured here are from a phase of his work when, as he puts it he was gathering together component "almost-unbuildable (but nearly buildable)". This terrain inbetween the 'buildable' and 'unbuildable' is the potential terrain for discourse, where architecture would and will discover itself again and again. The drawings of Cook as you read them slowly and carefully, and enjoy their visual play reveal to you the many questions you have about architecture hiding within you; the drawings generate a landscape of the familiar-unfamiliar, the recognisable vocabulary merge into unfamiliar terrain where lines and colour, as well as form are in an eternal creative bliss – the lila of Krishna, or the churning of the ocean where colour, line, and form are engaged in the creative battle of balances and challenges. The feature on Kumbh Mela, which is a series of extracts from the research and subsequent book *Kumbh Mela – Mapping the Ephemeral MEGACITY* (Hatje Cantz, 2015) discusses a Pop-Up urbanity – an architectural landscape of the built and of its 'unbuilding'. The landscape that emerges for a mega-festival or hyper-event establishes itself as if a city from time immemorial with established roots in memory, cultural moorings, design vocabulary, engineering foundations – but only to vanish and unpack and fold-up one day. Openness and Reversibility are two important concepts that one takes back as lessons from this event-city, this dynamic urban phenomenon – which is

more phenomenon than establishment. The phenomenon is structured within a historical reality – a reality that is myth-bound and geography-bound; a city that always existed and never exists. This phenomenon-city challenges the ground principles on which we think about urbanity and the stuff of architecture.

The phenomenon of urban living and the architectural make-ups for it get exposed as Saul Steinberg tears open the façade of a Parisian building in his sketch *The Art of Living*. A dynamic drawing that unveiled the hidden urbanity of 'insides' allows me to understand the urban not as 'public' (space) but rather the private (space). The hidden urbanity within the tenements and apartments influencing the mental make-up of the urban condition will deny the classic division of urban living split between the public and the private. On the terrace of this apartment building one will notice a parallel emerging landscape of terrace-urbanity reminding one of Cairo's *Yacoubian Building* or Bombay/Mumbai's Queen's Mansion – the multiple grounds on which yards of living quarters emerge shaping life and architecture. Dwelling occupies much of this issue as the architectural phenomenon of material realities and notions of urbanity. The materiality of cob, wooden trusses, terracotta components, and stone elements occupy the processes of building in non-urban contexts raising questions on the relationship between building, architecture, and the architect. While in other cases the act of architecture engages with form, memory and light, as with the Box of Light in Italy and Fort House in Hyderabad, in some the dwelling is an urban island within a wider landscape of suburban India as with the Lattice House in Jammu. The dwelling picks on the home as terrain, rather than form. It is the terrain within a phenomenon of urbanity and/or materiality, of conditions that are historical and political, or circumstances that require memory and invention.

Architecture is the landscape of culture, ideas, and the material world we inhabit. Architecture speaks through buildings but cannot be defined by them alone. The building exists within a landscape of culture, ideas, and the material world, and it is architecture that contextualises the roles and relationships of built form and culture, ideas and material realities. km



CONFETTI

IT'S NOT ABOUT MUD: THE ROLE OF A 21ST CENTURY ARCHITECT IN RURAL INDIA

Two projects based in rural contexts use local techniques, skills, and materials to harness the centuries-old indigenous building vocabulary of the respective regions while also keeping them rooted in contemporary culture – creating architecture that is truly of the people, by the people, and for the people

Siddharth Menon



In the first part of this article featured in *Domus India's* June-July issue (DI 41), we embarked on a journey through different rural regions of the Indian Subcontinent trying to understand the materials, methods, and ideologies used by the indigenous people to build their spaces. What we learnt is that although all regions differ contextually in terms of climate, landscape, materials available, techniques of using them, skills of the indigenous craftsmen, and languages spoken by them, they have a common, unseen quality that binds them all together. This quality is what I call building with 'common sense.' With 66% of India's population, rural India is very diverse and complex in terms of people, their power dynamics, socio-cultural and religious patterns, economic and political considerations, caste, and gender issues. These relationships play a very important role in the production of architecture in these regions. In developing countries like India, architecture is still made by people – skilled craftsmen, masons, carpenters and labour. With the advent of globalisation by the liberalisation of the Indian economy in the early 90s, urban metropolitan India has seen a rapid change in terms of consumption patterns, trends, fashions, leisure, lifestyle, opportunities, and ideas. While the pace of change has not been as fast in the villages, it is catching up owing to better connectivity networks like roads and transportation, and the infiltration of television and radio into the culture and lifestyle of people. Difficulties and problems arise when trends and fashions are adopted and applied without understanding contexts. This is the tragedy of our cities and the fear is that our rural areas will fall prey to this soon. If certain ideas and philosophies

are guilefully superimposed onto 1000s years of empirical research and development in lifestyles and living patterns through the use of mass media for vested interests, it is bound to create friction. This is happening in all fields of living in the villages, from food habits and lifestyle to agriculture and crop patterns. As a 21st century city-bred architect working in these regions can be a real challenge. One has to have the ability to travel back and forth in time. Rural India is at a crucial juncture of time, where, if not guided properly, we could lose its diversity and knowledge forever to the homogenising qualities of globalisation and free-market capitalism. When an architect goes into a settlement here to study it, it is important that one looks at it beyond a museum exhibit. We have to try to put ourselves in that context and time to understand why things were like this. Spaces here are very functional and practical and every detail has a reason. We have to put ourselves in that situation and try to figure it out. This is linked to materials, technologies, spaces and lifestyles. Often, studies of indigenous architecture do not move beyond this stage, as they are dubbed 'vernacular' or of the poor and not in tune with our times. Concurrently, it is equally of importance to not get stuck in the past. Things were done in the past in certain way as it made most sense at that time. Yes, we must observe, document and learn from it; but not all of it may be applicable in this time period and that is where an architect has to be judicious to know what aspects of indigenous architecture to take forward and what to leave behind. Although heritage conservation has its place, one is not trying to do that in our villages. We are trying to use these indigenous or traditional materials, technologies and ideas to build contemporary

spaces for people with aspirations for the future. It is very easy to get trapped in the romanticism of these materials and that is where the architect needs have the clarity in thought to understand what should be done. One is forever walking a tight rope over the dimension of time. Most often houses and spaces in the rural hinterland stand decayed, damaged, and destroyed by the ravages of time accelerated by change of lifestyle. What is left are mere foundations and plinths as these are generally made from stronger, impervious materials giving you a sense of how things could have been. Walls, roofs, and windows have either fallen over or have been salvaged. This sort of landscape is more common on the peripheries of towns and cities as the scale and rate of change is rapid. At times, one feels one is on production set of post-apocalypse-themed war film. This is when an architect wears the hat of that of an archeologist or a critical forensic investigator. Time and history are the alleged suspects who leave behind hints and clues. It is up to the architect to develop an eye to notice these and pick up on them. These clues then need to be critically investigated and a mental map of the spaces will be made. This task is difficult and requires a lot of skill and patience, and is the only way to find out why certain things worked and others didn't, due to the lack of documented data. This process also gives you important clues for building construction as walls and roofs are usually half-fallen, showing their construction details. The judiciousness needed to know which aspects of this mental picture to take forward and which to leave behind is required in this case as well. This process of research and experiential data gathering is usually followed during the pre-

design stage of a building and it lasts for a few months of the year. During this time, the architect needs to stay in the village with people to understand the way they live, how they interact with each other and their surroundings, and how the spaces they inhabit are governed by principles of common sense and logic. One cannot, and should not, come into this landscape with preconceived notions of architecture and design like the ones propagated in architecture schools throughout the country. This process of research and discovery is exhaustive, time-consuming and requires an investment of time and energy from the architect to make it successful. Only then can we get architecture that is truly of the people, by the people and for the people.

Anubhuti Pragati aur Parivartan Kendra, Uttar Pradesh, India

Anubhuti Sewa Samiti (www.anubhutisewa.org) is a not for profit organisation based in Lucknow, India. Deeply disturbed by the abject poverty and growing economic disparity in their home state of Uttar Pradesh, a group of like-minded individuals, particularly women, decided to intervene by setting up this organisation whose primary aims are to motivate and catalyse the capacity for self-help among the local populace, to provide for economic opportunity to all the sections of society, to deliver relief in emergencies and adversities of life, to optimise influences at policy decisions at political, social and economical arenas, and to address discrimination in all forms and curb it to negligibility. Until 2013, the organisation conducted their programmes, workshops and activities in leased-out spaces in Tier-3 towns and cities, some distance away from the target beneficiaries of

these programmes – the inhabitants of villages. Transport was difficult and cumbersome, and this added to overall costs. The need arose for a community centre in the rural setting that could function as the base for all the activities of the organisation. This would get the benefits of these programmes straight to the people who direly needed them. Since the community centre is set in the context of rural Uttar Pradesh, it made common sense to harness the centuries old indigenous building vocabulary of the region and breathe into it a sense of contemporariness. After all, this building would address the dreams, aspirations and ambitions of the community over the next few generations and it was important to address the same. This required nearly three months of study and documentation of traditional housing patterns and technology, available local materials and skill of local craftsmen, wind flow directions, solar orientations and angles, rainfall data, and peak summer and winter temperatures of the area. Time was also spent with the local community to understand their socio-cultural habits and patterns, their economic conditions and limitations and the socio-political implications of these. Only after this comprehensive study and understanding, a design solution was proposed. The Anubhuti Pragati aur Parivartan Kendra is a G+1 mud building spread over an area of 6500 square feet. in rural Uttar Pradesh which witnesses extremes of summer and winter. This called for the building to be oriented in the cardinal north-south direction so that the southern courtyard and amphitheatre can act as a spill-out space to tap the low winter southern sun. This amphitheatre is shaded by the shadows of the western part of the building, thereby becoming a

space that can be used post 3pm on all days. The built space is open to the east and south and the deep southern verandahs let in low winter sun while blocking the harsh summer sun. The built space includes two 40-person meeting rooms, kitchen with stores, an office, resource-person rooms, and common toilets. The kitchen and meeting rooms are oriented to receive the first rays of the sun, while the common toilets face the brunt of the western sun. High 12 feet ceilings and ventilators create a natural draft in the rooms which let warm air rise and escape while drawing in cool air from windows. This keeps the ambient air temperature inside rooms in check. The indigenous technology of using sun-dried mud bricks or adobe has been used for load-bearing walls. These are made on site with earth excavated from the foundation trench with help of local community labour. The earth is excavated and then mixed with sand, wheat husk and slaked lime. This mix is then put through steel moulds of 9 inch x 4.5 inch x 3 inch to produce wet mud bricks which are then allowed to dry in the sun. Once dried, they are picked up and stacked and used in construction using regular bonding patterns for 18-inch-thick walls. This whole process is labour-intensive and ensures that money spent on material circulates within the village economy and can be used for education, health and development of village amenities. They are not siphoned off into the global economy with the procurement of expensive market materials. Since adobe is made on site, it uses no scarce fossil fuel in its production and transportation, therefore having a low embodied energy. Also as adobe has poor compressive strength, walls need to be at least 18-inch-thick to take the weight of the load above. These thick walls act like a heat

battery, absorbing and storing solar heat during the day and releasing it at night. This helps in regulating internal temperatures. Adobe walls are plastered with three coats of mud plaster using sand, wheat husk which is an agricultural bi-product, slaked lime and cow dung. As a modern addition, synthetic adhesives are used in the final coat to hold the plaster together for a longer time and decrease the frequency of periodic maintenance. Baked brick is used to a minimum only in the foundation, plinth, external walls upto cill level and wet walls to take advantage of its superior compressive strength and imperviousness to moisture as compared to adobe. Although in this context, baked brick is an indigenous material, it still uses huge amounts of fossil fuel and hence

its must be kept to a minimum. There is a wrap-around verandah connecting the meeting rooms, office, and resource-person rooms which can be used in all seasons as a transition space between the inside and the outside. The pillars of these are made of unplastered baked brick which gives the mason some stake in the project to produce better craftsmanship and to inhibit the use of energy intensive cement plaster to cover up bad workmanship. Baked brick has also been used as jalis to screen the harsh summer sun and as window openings in toilets to save on energy-consuming wood and glass along with a standard rat-trap bond. A cement-lime mortar is used for baked bricks. The indigenous vocabulary of western Uttar Pradesh does not have adequate natural

Previous spread (from left): random rubble for foundation with mud mortar; checking the plumb line; water buffaloes mixing mud for cob; external walls in granite upto cill level; community women making cob balls

tensile materials like bamboo and wood. Hence compressive masonry elements like arches and vaults are used to span lengths and spaces including a one-and-a-half-brick-thick brick masonry vault over a span 15 feet over which stairs have been built up. Although these are traditional techniques, the skill of constructing them has diminished over the years due to the advent of reinforced cement concrete (RCC). These techniques inculcate an atmosphere of using more labour work days and lesser energy-guzzling cement and steel, without increasing the overall cost of building, thereby giving the mason an incentive to produce better work. Time had to be spent on site with craftsmen to relearn basic principles and techniques of arches and vaults. Door and window frames are made of

locally available Jamun wood called *mamma* in the local parlance. This prevents the encouragement and use of plantation timber and all its negative effects. Locally grown Eucalyptus or *safeda* trees are used as floor joists to supports the weight of the floor above. This is topped with 3/4 inch plywood layer and a two inch impervious ferro-cement layer. Reinforced Cement Concrete (RCC) is used for the final roof with locally made clay pots acting as the filler material. This not only reduces the amount of cement as dead weight in the slab but also creates employment opportunities for the local community potter, and gives him a stake in the project. RCC is also used as two continuous three inch horizontal bands – one at the plinth level that acts as a damp proof course



This spread (top, from left): building cob walls; fixing neem wood window frame; carpenter Santosh fixing shahbad chajja; corner bracket detail. Below (from left): intricate wood carving on bracket; detail and views of the roof truss

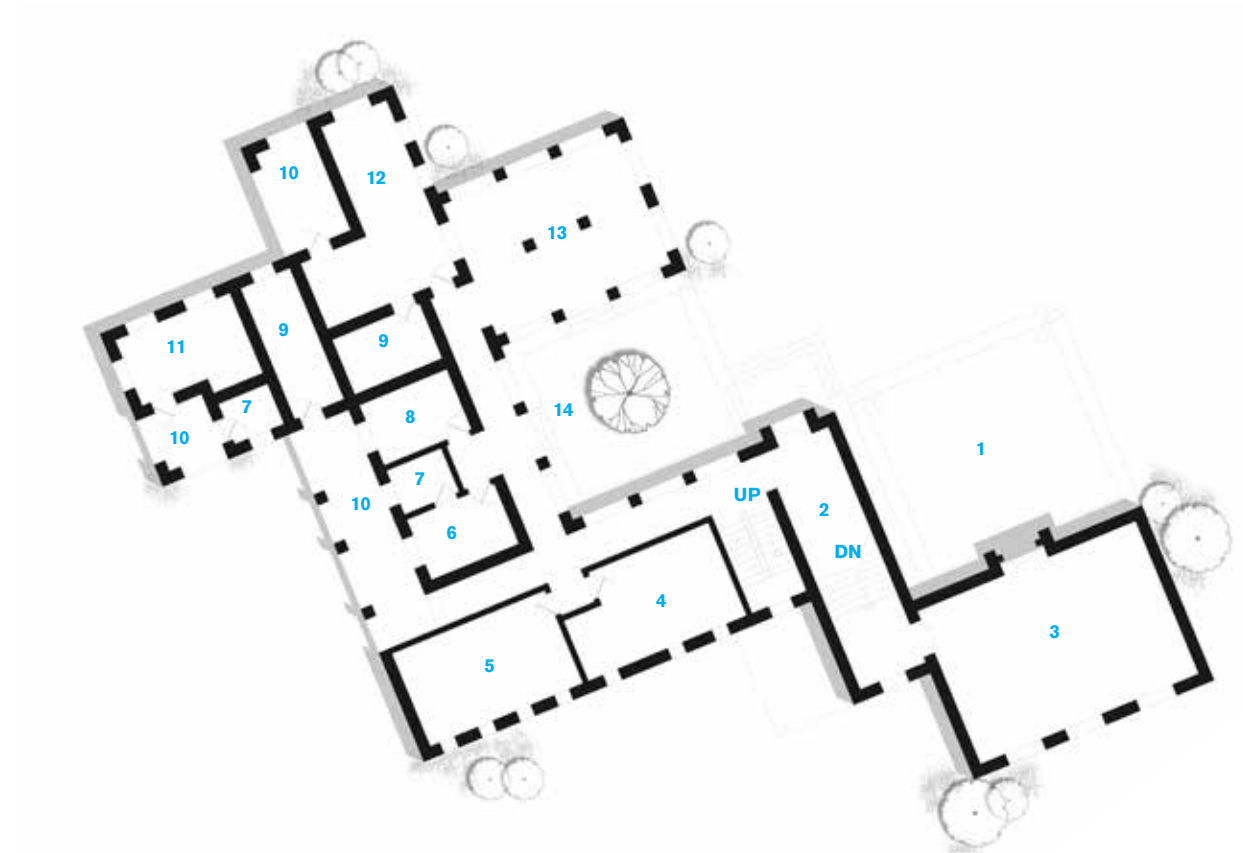




Project
 Anubhuti Pragati Aur Parivartan Kendra
 Location
 Village Daheli Buzurg, Block Sidhpura, District
 Kasganj, Uttar Pradesh, India
 Client
 Anubhuti Sewa Samiti, Lucknow, India
 Architect
 Siddharth Menon
 Design Team
 Deepika Amonkar
 Site Supervisor
 Bihari Lal
 Mason
 Chattrapal, Avdesh, Rohan Lal
 Materials Consultant
 Pappu Kumar
 Commencement
 December 2013
 Expected Completion Date
 August 2015
 Area (Built Up)
 603.86 m²

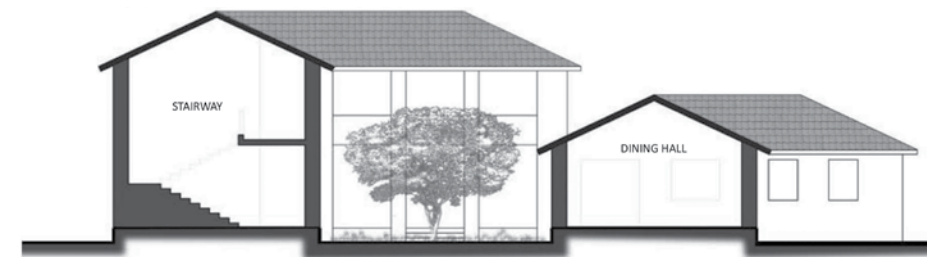


This page (left, from top):
 stone pillars; roof truss;
 weathered tiles. Right (from
 above): clay tiles over wooden
 batons; plastered corners.
 Opposite page (from left):
 view during plaster; 1.5' high
 horizontal bands



- 1 Amphitheatre
- 2 Pre Function
- 3 Multi Purpose Room
- 4 Women's Toilet & Bath
- 5 Men's Toilet & Bath
- 6 Guest Room
- 7 Bath
- 8 Seed Bank
- 9 Store
- 10 Verandah
- 11 Bedroom
- 12 Kitchen
- 13 Dining Hall
- 14 Courtyard

GROUND FLOOR PLAN

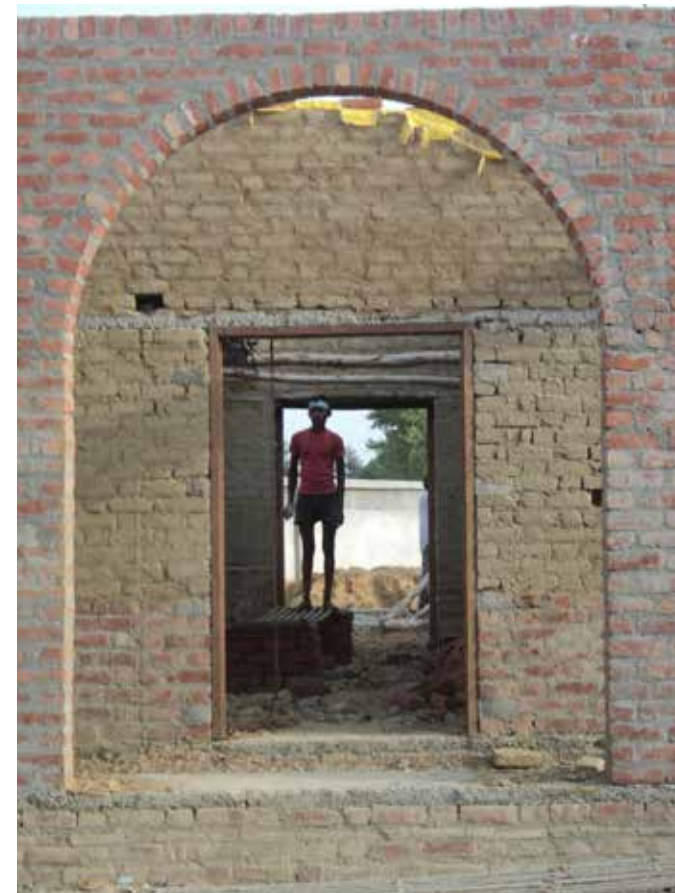


SECTION AA





Opposite page, top left: foundation trench with baked brick and stabled cement mortar. Top right: baked brick external walls upto cill level. Below left: building the adobe walls. Below right: red sandstone slab chajjas. This page left: making of adobe. Below left: exposed brick arches in verandah. Below right: eucalyptus rafters nailed to jamun wood wall plates. Far below right: eucalyptus rafters at 1 foot spacing



and the other at the lintel level above all doors and windows. These are connected at junctions and corners with one single 12 mm vertical reinforcement that binds them together and helps in countering lateral forces during earthquakes that cause extensive damage. Locally available red sandstone slabs or *pathiya* are used for tiling and flooring instead of energy-intensive ceramic tiles. These slabs are also used as *chajjas* over windows to cut out the harsh mid-day sun. *Baan* is hemp that grows in rivers and waterbeds. It is harvested in the months of May and intricate patterns are weaved for *khats* and *khatiyas*. Traditional community *baan* craftsmen have been employed to produce indoor screens and lattices to create opportunities for them to continue their crafts and skills. While working with the indigenous community here, one of the main challenges was to overcome the negative perception with respect to their own traditional materials and technology. Mud brick or

kacchi inth is considered a material of the poor. Once the root cause of these prejudices was understood and overcome, and the space built, it had a direct visual and psychological reference to the place and community due to the range and sensitivity of local materials used. Additionally, care had been taken to understand and respect local proportions, scales and spans giving the built space a sense of rootedness in this context. This was an importance factor for it to be accepted as a community centre by the people for them to occupy and use.

Yakshi Inter Generational Learning Centre, Telangana, India

Yakshi (www.yakshi.org.in) is a non-government organisation based in Hyderabad, India. They are a team of indigenous educators, theatre activists, artists, researchers, community organisers and leaders, primarily from *adivasi* communities who work with *adivasi* communities in India, towards

reclaiming democracy and for indigenous self-determined visions of development. Their work supports and strengthens the efforts of these *adivasi* communities to protect their lands, resources, cultures and worldviews, through democratic governance structures of self-rule, using customary laws, and other safeguards in Indian and International law. Yakshi also facilitates spaces for *adivasi*, dalit, pastoralist and peasant communities to connect and interact around common concerns related to resources and food sovereignty, and work especially with young people and children of these communities. Up until 2013, the organisation's participatory workshops, community-level meetings and programmes were held in rented spaces in Tier-3 cities, thereby adding to overall costs without giving much back to communities. There arose the need for a community space in the village which could be used as a base where all activities of the organisation could be consolidated. This



primary need was the genesis of the programme brief which required a community kitchen and a dining hall to seat and feed 40 persons at a time, a 40-person meeting room for workshops and meetings, a community seed bank managed by women *sanghams* from the surrounding villages, two resource-person rooms to host activists and volunteers from outside, a women's dormitory for 20 people, common toilets for both men and women, a caretaker's room and an open-air amphitheatre to be used on hot summer evenings for folk artists for their theatre, music and dance. Tight budget constraints required the meeting room to double up as a men's dormitory at night during large workshops and gatherings. Since the built space is set in the context of rural Telangana, it made most sense to adopt an indigenous building vocabulary of the region. After spending a few months studying the traditional building systems and patterns, available materials and skill of craftsmen, wind-flow directions, solar orientations and angles, rainfall data, and summer and winter temperature, a design solution was mooted. This solution propagated the use of the vast indigenous building knowledge in terms of building material, technology and principles to build the Yakshi Inter Generational Learning Centre after carefully weighing its benefits and limitations. The Centre is a G+1 mud building spread over a ground area of 5160 square feet. Oriented in the cardinal north-south directions, the central east-facing courtyard acts as the heart of the built space. To its north is the semi-open dining room with two carved wooden pillars at its centre.

The kitchen is located in the north east corner of the building and gets the first rays of the sun. The central courtyard acts as a spill-out for the dining room on hot summer afternoons and cool evenings. A 6-feet-wide stone-pillared verandah circulates around the central courtyard and connects the dining room to the community seed bank, common toilets, meeting room and stairs. Apart from being a circulation space, the verandah also acts like a transition space between the inside and outside to be enjoyed and used in all seasons. Three toilets and two baths have been provided for men and women each including a dry compost pit toilet. This aims to provide a solution to the acute water shortage in this region while also engaging in dialogue with local customs and prejudices related to it. The upper floor contains more private spaces of the resource person's rooms and an office. The toilets are placed to the south of the building as this faces the brunt of the sun for most parts of the year. The south and west wings of the building are G+1 rising to a height of 20 feet ensuring the post-mid-day sun casts a cool shadow onto the east facing courtyard. Thereby the courtyard becomes a usable space post 3pm every day due to mutual shading of the building. Moreover, the south and western facades of the building elevation have been broken using a lean to roof which protects mud walls from south west monsoons. Since earth is required to build the walls of the centre, the meeting room and amphitheatre are sunk into the ground to a depth three feet. This also ensures the space remains cool in the summer and warm in the winter, owing

to the thermal mass of the earth surrounding it. The load-bearing walls of the building have a strip foundation of roughly cut granite stones with mud mortar, granite being sourced from a local quarry. The foundation has a depth of three feet below which the hard strata begins. Once the buildings emerge above the ground, granite blocks dressed on site by skilled masons are used. These are bonded using a stabilised cement mud mortar of 1 part cement, 6 part sand and 6 part mud. A reinforced cement concrete (RCC) band is cast at the plinth level that runs across all the walls and doubles up as a damp-proof course. Neem wood being a part of local culture and vocabulary is used extensively for tensile elements. Door frames of Neem are placed and external walls are raised in dressed granite to the window cill level. This is done to prevent the erosion of mud on exterior walls due to splash back of the rain. Interior walls need only a single course of stone after which the mud walls can begin. The technique of mud that is used indigenously in this region is that of cob-balls of slightly wet stiff mud slapped and massaged on top of each other to form walls. The earth that is excavated from the foundation and the sunken amphitheatre are mixed well with water, sand and slaked lime slurry. Lime acts as a local stabiliser binding the clay particles together and consumes lesser energy in its production than its cousin cement. Also mud walls with lime can be easily recycled and reused for agriculture on the completion of life of the building. This is not possible if stabilised with cement, as cement changes the chemical properties of soil and renders it uncultivable. Lime



Opposite page, top left: RCC filler slab. Top right: layering of cement over clay pots. Below left: before the final roof. Below right: exposed brick arches. This page, top left: construction of the arches. Above: removing the formwork immediately. Left: Nubian vault

Project
Yakshi Inter Generational Learning Centre
Location
Village Badampet, Block Hathnoor, District Medak, Telangana, India
Client
Yakshi, Hyderabad
Architect
Siddharth Menon
Design Team
Deepika Amonkar
Site Supervisor
Pappu Kumar, Mason
Bipin
Mason
Vinod Kumar, Jagtamba, Ashok, Kashi
Carpenter
Santosh, Laxman
Commencement
December 2013
Expected Completion
December 2015
Area (Built Up)
606.19 m²



GROUND FLOOR PLAN

- 1 Stairs To First Floor
- 2 Entrance Foyer
- 3 Amphitheatre
- 4 Verandah
- 5 Meeting Room
- 6 Kitchen
- 7 Store
- 8 Care Taker's Room
- 9 Back Verandah Spill Out
- 10 Wash Area
- 11 Toilets
- 12 Store
- 13 Office
- 14 Wheel Chair Ramp





also acts as a strong deterrent to termites. The wet mud is mixed together with the use of local buffaloes that use their webbed feet to good use here. Moreover they also enjoy an occasional cool splash and sprawl in the wet mud mix. This mix is then made into small balls of diameter of 6 inch-9 inch that are easy to hold and throw from one person to another. Each ball thus forms a single building unit akin to a brick in conventional buildings. Once they are slapped on top of each other, they amalgamate into one homogeneous mass and cannot be differentiated from the other. Each wall section is made to be not more than 1.5 feet high. This is left to dry for a few days before the next sections begins to prevent the wall from collapsing under its own wet weight. A strategy is applied to complete one course across all buildings walls before the commencement of the second course. This ensures that the first course dries up completely until the second one comes along. The top surfaces of two successive courses are made rough with the addition of small protruding pieces of granite. This is done to ensure sufficient bonding between them. Coarse sand and small gravel are added to the mix to decrease cracking due to drying. Large flat pieces of granite measuring 18-inch-wide by 3-feet-long by 4-6 inch-high are used intermittently in corners and junctions to prevent the formation of continuous vertical joints. This whole process of using cob is very labour-intensive and provides ample opportunities for the employment of the rural craftsmen and youth workforce thereby preventing them from distress migrating to cities in search of jobs which adds to already existing urban chaos. This indigenous technique ensures that money spent on building circulates within the village community and can be used for various welfare activities like education, health, sanitation, etc.

At the 7-foot lintel level, another RCC lintel band is cast running continuously across all the walls. This is joined to the lower plinth band at the corners and the junctions with a single 12mm reinforcement rod. This flexible frame counters the lateral movements of an earthquake keeping the damage to a minimum. The lintel band also helps in redistributing the load on mud walls and provides for larger window openings to negate the drawbacks of traditional building materials. As mud is poor compressively, walls need to be at least 18 inch thick. This adds to its thermal mass thereby acting like a heat battery, slowly absorbing and storing the heat during the day and radiating it back in the night. There is significant difference of 8-10 degree Celsius between peak summer and winter interior and exterior temperatures. This calls for a nomadic lifestyle on behalf of the occupants to maximise the advantages of living in such a building. Summers call for days to be spent indoors and nights outdoors or in verandahs while winters call for days to be spent outdoors under the southern sun and nights indoors in the warmth of the mud walls. This is similar to living patterns of the local community. An intricate Neem wood truss, beam and rafter pitched roof system is adopted based on local traditions. Neem is extensively found in this region and has socio-cultural and religious implications. Local carpenters have a history of detailed designs and carvings in Neem, and due encouragement has been provided to entice them to produce good craftsmanship and thereby have a stake in the building process. They are the trustees of this heritage and it is easily incorporated into the built space without increasing building costs. The trusses are made to fit into each other without the use of nails, staying in place owing to the weight of the roof and tiles



This spread top (from left): view of the meeting room, stairs and the brick jail. Below: view of the filler and the amphitheatre

above. Neem wood battens are used to provide an impervious layer above the rafters on which lie hollow semi-circular clay tiles. Care and respect of indigenous spans and proportion were followed to initiate the craftsmen to take ownership of the built space as they were familiar with it. Due to slow demise of these roofing systems in this area with the advent of RCC flat slabs, potters had ceased to make these hollow clay tiles. This problem was overcome with the sensitive adaptive reuse of hollow clay tiles from old neglected houses of the region. These tiles are fixed on a 2-3 inch thick layer of mud which also provides the requisite thermal insulation from the torturous summer heat. The mud walls are plastered with three coats of mud plaster, the final coat of which is mix of cow dung, water, and millet husk. As a modern addition, chemical adhesives work well to hold this final layer together for a longer period of time and decrease the need for constant maintenance. An advantage of reusing old clay tiles is that they have already weathered beautifully with the ravages of time and this gives the built space a sense of timelessness, like it has existed in this context for centuries. It is completely of its place.

Conclusion

The advent of modernity at the turn of the twentieth century has altered the way people live and behave in everyday life. This has changed landscapes and cultures across the world with increase in communication, data-sharing and travel. While the advantages of a smaller globalised world should be welcomed and rejoiced, one does need to tread with a bit of critical caution. Traditional rural economies around the world have a rich cultural legacy and heritage of life that should not be allowed to be trampled over by the marauding forces of free-market

capitalism and globalisation. A dialogue is needed between the two to imbibe the positive aspects of each and discard the rest. Unfortunately with the case of vested interests of certain forces, it is a one sided battle, in which these indigenous cultures are destined to lose. With this knowledge of the larger context, what is the role of a twenty-first century architect in rural India? That is the crucial question. Working with these considerations in this rural hinterland can be very challenging on more days than one. The vast diversity of building materials, techniques, principles, ideologies, languages and cultures in rural India make it imperative for an architect to spend as much time on site as possible. The responsibilities of an architect go above and beyond those taught in architecture school and require of us to be a designer, a builder, a contractor, a materials procurer, a labour terms negotiator, a travel agent, a dusty tired traveler, an activist, a mason, a carpenter, a daily wage labourer and sometimes even a client all at different stages of the building process! There are days when we go hungry without basic food; be abused by a police constable in feudal Uttar Pradesh, shudder in sub-zero temperatures in Himachal Pradesh while waiting for a peak of the winter sun, get burnt under the sun with dehydration in drought-hit Telangana, get stung by hot lloo winds blowing across the summer plains of Uttar Pradesh, travel three hours non-stop on a noisy rickety boat in the Sunderbans, all this while dealing with the insecurities of youth; and yet we must persist. For there comes a moment, a silver lining in the otherwise dark gloomy horizon when maybe we see the new found confidence with which your dalit mason Chattrapal conducts himself in hierarchal Uttar Pradesh where caste is everything, or the gratitude on the beaming face of carpenter Laxman at the prospect of working

on a wooden roof after eight years in Telangana. It is precisely these moments that light up your day and truly make it worth much more than the art and aesthetics of the built space. After all, architecture cannot exist in a vacuum to be considered pure art. It is fundamentally about the people who use them and build them. Our generation of architects has an opportunity to make amends for errors and faults of the previous ones. We stand at a unique precipice in history where the bombarding forces of modernity are right at the doorstep of age old rural indigenous systems, and if not answered to swiftly and correctly, we could lose more than just 'vernacular' buildings. The clarion call to act is now. The only question is how will you act? @