domus

Volume **01** • Issue **10** • September 2012 / **DCOOP** scripting architecture / **RLDA** materiality of ideas / five questions for **David Chipperfield** / when the sky is the context: Shard London Bridge by **Renzo Piano Building Workshop** / **Bradley L Garrett** scaling the Shard / **Julian Jain** region of the rings, cities of the void / **Naresh Fernandes** everybody loves a useful slum / **Grandmother India Design, Emmanuel Grimaud, Sameer Tawde** of gods and robots / **Majlis** archive through practice

India R150

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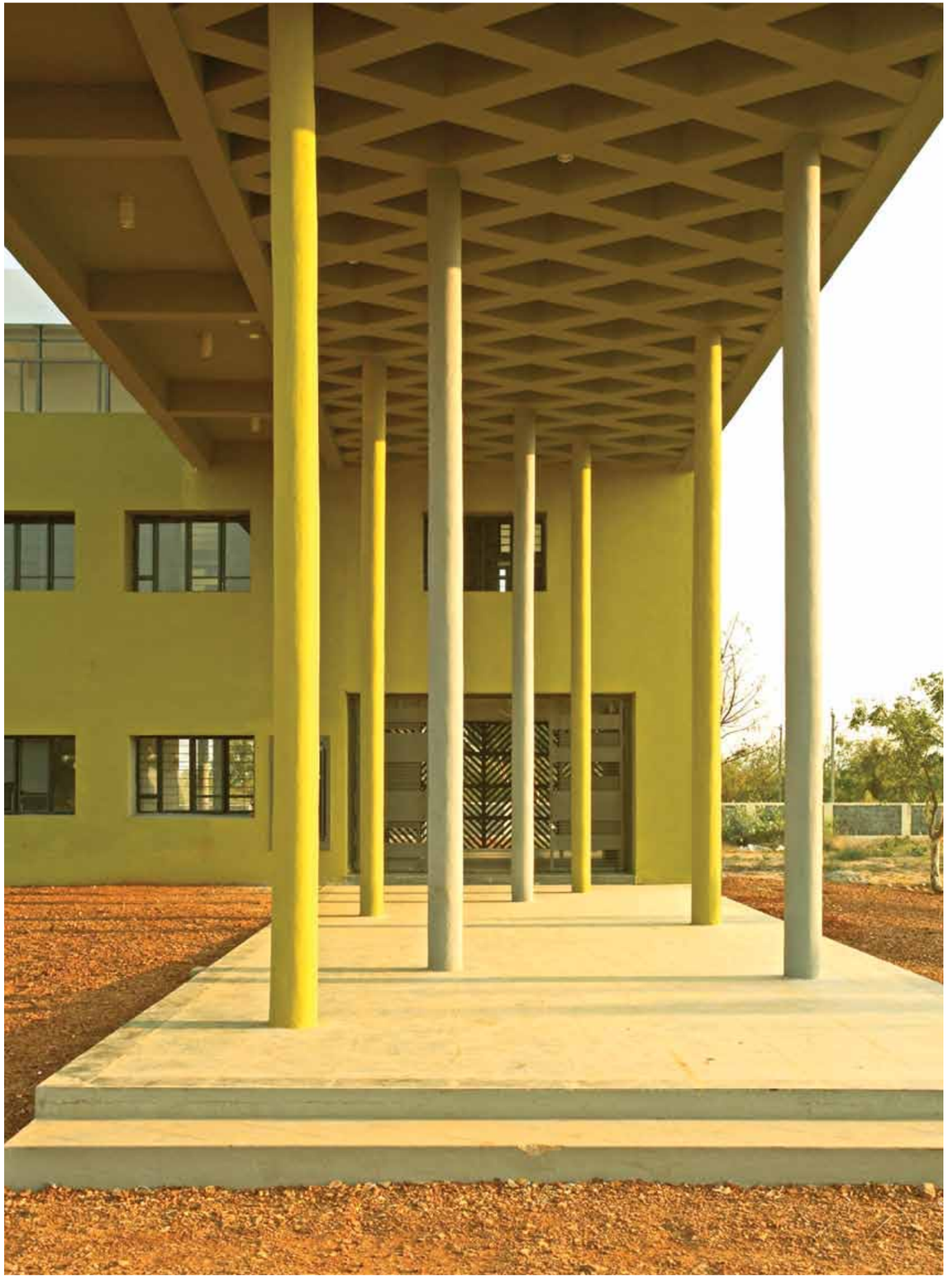
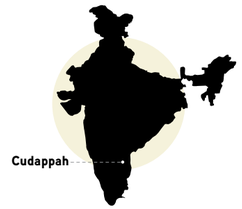
Cover
The Hostel building for the university at Cudappah emerges out of visual and formal imagination, where space and structure are integrated to achieve the architectural language



Scripting architecture

Geometry, structure, light and jaalis — various elements from the architect's kit of parts come up for discussion as we review the buildings designed by Mumbai-based DCOOP Architects for the University campus at Cudappah, a project they won through a design competition in 2005. As the project developed from its conceptual stages to constructed buildings today, we explore the sets of architectural values that allowed for an architecture of visual and conceptual coherence, also exploring the relationships of structure and space



Design
DCOOP Architects

Text
Kaiwan Mehta

Photos
Rajesh Vora
Quaid Doongerwala

How does one introduce space within a landscape, and therein write a script to construct a form that is thoughtful and articulate an experience of habitation that is rich and nuanced? Virgin space attracts human intervention, where architecture introduces objects and elements to nurture the sustainance of human life. Programmes are excuses to give human activities a storyline, and this story is based on sets of ideas that one sees as concerns within human life — structure, intervention, context, movement — a series of semantic codes emerge. Architectural emergences grow out of concerns and semantics that form the toolbox for a particular storyline, yet there are also universal concerns and semantics floating within every age. The idea of a design process is exciting, but what in reality, in very practical terms, does a design process involve? And what is the relationship of the emergent scenarios — architectural conditions and elements, to the process which in itself may not have a constant narrative throughout its process-journey.
Mumbai-based Design Cooperative (DCOOP) headed by Quaid Doongerwala and Shilpa Ranade won the design competition for the Sri Venkateswara University post-graduate centre campus located in Cudappah in 2005 and now over the years some of the buildings have been completed. The campus for Yogi Vemana University is the subsequent development, with Cudappah University becoming an independent university and a change in management, the requirements for the project shifted. A new masterplan was evolved to suit the changing requirements, and also keeping the phase-wise development of the site in mind; however, the core ideas and principles with which the design was developed initially were maintained. Initial design ideas were developed within two thought-frames — education campus and context. Notions of what an education campus should nurture and instill, the environment that one sees as ideal for freedom of thought and a healthy development of the mind were central to the designer's concerns, but then there is also the reality of what educational institutions mean today — as spaces that generate a certain professional class well suited to serve the wheels of the market and the economic industry, and the making and running of educational institutions also involves large funds and investments. Architecture had to understand and emerge from these sets of concerns and conditions — where there is a demand from the ethics of the architect as a thinker who through his/her craft hopes to instill values in society and contribute positively to culture, while as a technocrat professional, s/he also serves the production of a good building within the demands of patrons and society's normative expectations. The second thought-frame — context — was the region of Rayalseema where the campus was to be built — a dry, remote and poverty-stricken region, also known for its Cudappah stone. A context that could not be accomodated easily into the ideas for a campus. The architects imagined that since the region is rich and very popular for a stone like Cudappah they would use it as their principle building material — only soon to realise that locally people did not think much of the easily available resource, and it was something used by the poor or as tomb stone and hence not a preferred material. The possibility of using local craftsmen and their traditional skills was another thought the architects considered — however the local craftsmanship was very rudimentary, not some long running ancestral skill sets, and the budget was also a constraint here.
Within these situations now the architects thought it best to take the budget as a strict reality, and rather than developing new working or construction-design methods, to develop ideas within what existed — to push limits within existing constraints but with an eye on developing new thoughts inside these limits. This was in no way romanticising constraints but the possibility of allowing for architectural emergences within limited resources,

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The projecting block of the hostel building with the waffle slab and tree stem-like columns dropping down

and also to focus more and more on the 'sense of space' that the buildings would coherently produce — as an experience of enriched habitation. In this sense now one is forced to wonder what programme or context means. Often taken as a given, as well as something that is set in a bunch of idyllic criteria, programme or context is probably no 'readymade'. It is no set of readymades to which design can respond. As in the case of the campus design, context was much more about developing an understanding of response and not the condition to respond to. Context is evolved in the design approach and design processing.

The campus design addresed various issues of educational spaces for learning as well as for interaction, residential conditions within a campus, interconnectivity as much as programmatic distribution where required, and so on. While the individual buildings had to encompass values imagined within the campus design and also the material-tectonic response to ideas of the programme that each building accomodated. We begin by looking at the School of Sciences block and the Hostels closely — the development of their design and sense of space within the larger logic of the campus, besides its programmatic response.

The School of Sciences block was developed out of a semantic structure for the programme of the building — Fingers (specialised use), Plugs (shared programmes), Stack (movement) and Spine (connectivity). The size of the building as well as the nature of it combines a variety of uses and space-types demanding a logic to the making of spaces that this building would hold within it. From the caves at Ellora to the buildings at Sarkhej — articulation of space by choreography of elements like columns and the management of light-shadow pockets or filtering light in different ways were the references for this design. The building essentially comprises floor plates on which rooms — classrooms and labs are arranged in an ordered manner, while the moving space through corridors is managed for scale and circulation by the use of columns — the structure. The programme is the starting point in this building, from which the plan emerged as an architectural idea. The building as mass and voids — where the voids are pockets of light and circulation generate the formal aesthetics of the building. The use of a very simple yet elegant trellis makes for the jaalis that contribute importantly to the form and aesthetics of the building and space. Windows, wall texture, cladding, openings, columns and vertical trellis — a series of architectural elements are pulled out of the architect's kit to organise a built volume and synchronise programme into a series of crafted experiences that visually order a landscape. The barren site, a regular daily programme, is now transformed into an environment that visually and spatially enriches inhabitation and integrates land and light into its very detailed materiality.

Controlling space — structuring it, is the mainstay of design for the School of Sciences block. The usual awe of vast and unrestricted spaces is denied for an understanding of space that is vast and yet controlled and punctuated. Like in the classic Hindu temple, here too largeness is emphasised by punctuation — rather than the lack of it. A layering of spaces, with a variety of spatial inclinations and heavy columns makes for the architectural concept. Associations from many architectural examples in our manual of historical buildings come together in this building. An architecture that

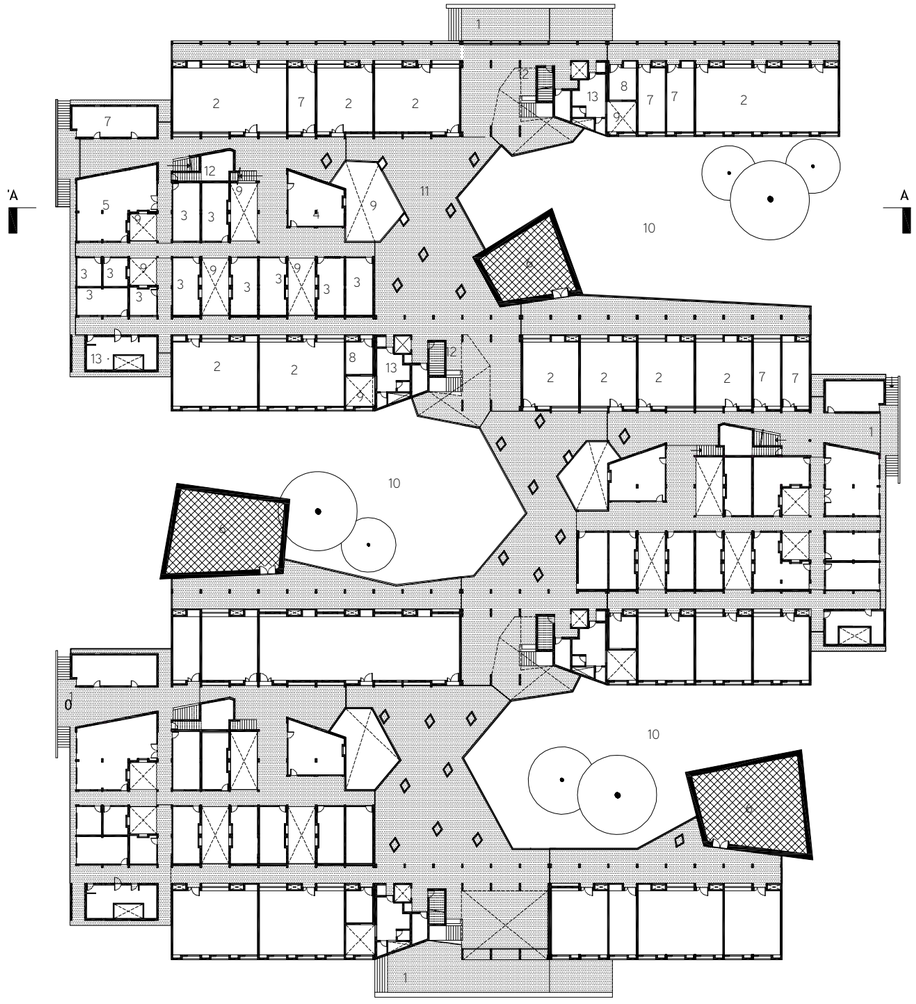
The Science block building is articulated through material modulation as well as the use of elements like slender columns, jaalis and size of openings; the use of the waffle slab not only defines movement within the non-linear spinal corridor but also visually integrates with the flooring and jaali patterns

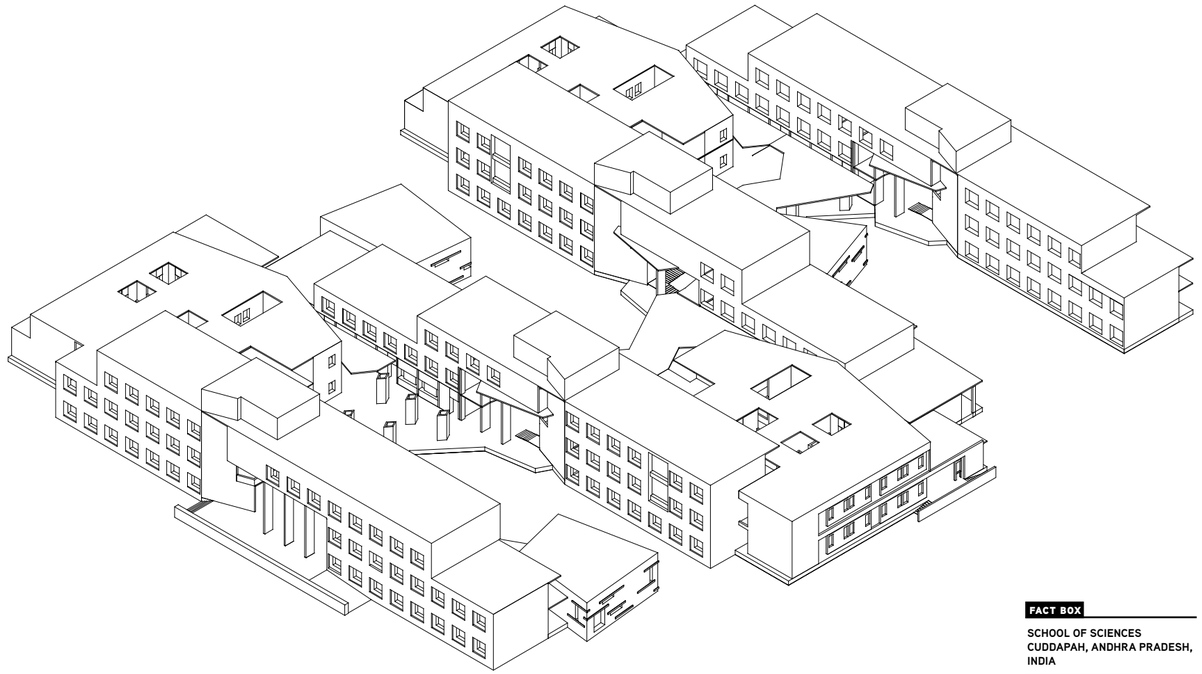
is 'experienced viscerally through the movement of the body in space' is playful with space-types like the courtyards, terraces and columned halls. Movement is enhanced with the use of structure and elements but also through the control of light and temperature.

The Hostel buildings emerge out of a visual and formal imagination — for a programme that can impact a student's life in decisive and memorable ways. As the architects' say, "The design approach consciously engages with the architectural legacy of Indian Modern Masters — a successful negotiation of tropical climates, creative use of limited resources and a concern with the production of social spaces. Yet it departs from this paradigm significantly in its playful manipulation of form and structure."

The design grows out of the modular block of rooms which are made to undergo either of the three actions — swivel, slide or scoop — which are then plugged into a central spine. The series of actions produces a range of dramatic spaces and architectural features like terraces and overhangs, which adds to the variety of space-types once again. Balconies and jaalis negotiate for the users a kind of engagement with the landscape, which is now also punctuated with a forest of slender columns — a cluster of tree-trunks in an otherwise barren landscape! The columns are the structural as well as the spatial system — the structural logic of locating columns is expanded and played around with to make it an architectural gesture and a spatial formulation. Once again a simple jaali pattern wraps and limits — hence shapes spaces of varying shades within the building, while substantially adding to the form and image of the building. Corridors, entrace-exit locations and the verandahs weave entrails in and out of the building — alive by the movement they will accomodate and encourage, alive by the way light and then shadows animate the space — they puncture and punctuate, making the building porous yet neatly drawing limits. In the crafting of this weave of linear, light-marked spaces, the building learns ways in which to engage with the landscape and the environment — air and heat, and light. The use of slender stanchions, with minimal horizontal connector-railings, and the crucial location of jaalis plays decisive roles in managing these entrails and articulations.

In the buildings we discussed, it is clear that programmatic inclinations, negotiating climate or site and the visual sense of the building — all three operate within the same degree of importance. One may weigh heavy in one decision, but then the other may influence the next — the sense of the building is a balancing of these operational frameworks. In their attempt to make the space-structure relationship meaningful and seamless in ways — geometry is explored for form as well as function, for struture as well as contouring spaces and sightlines. The waffled slabs that hold the nearly-cantilevering block of the Hostel building or spinal-corridor within the Sciences building is engineering structure and also journeying movement or emboldening geometry. The waffles in case of the Hostel block weave a visual carpet, from which tree-like slender columns drop to sit the flying cuboid on the site — the ground — firmly but delicately. Weight disappears only to become visual, and drawn by the diagonals of the waffles. In the spinal-corridor the criss-crossing beams, also reflected in the floor pattern, accentuate the





FACT BOX

SCHOOL OF SCIENCES
CUDDAPAH, ANDHRA PRADESH, INDIA

Client
YOGI VEMANA UNIVERSITY

Design Architects
DCOOP (DESIGN COOPERATIVE), MUMBAI

Principal Architects
SHILPA RANADE
QUAID DOONGERWALA

Design Team
SHILPA RANADE
QUAID DOONGERWALA
ABHIJIT DOSHI
SHWETA KETKAR

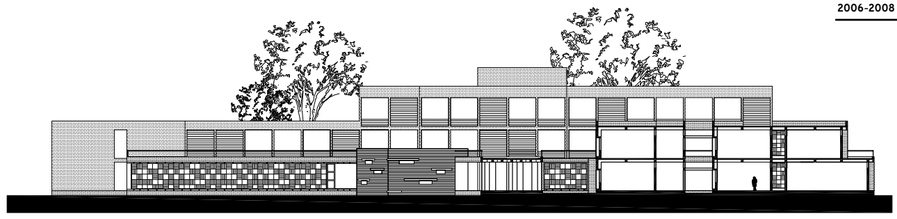
Civil Contractors
SVEC HYDERABAD

Structure Consultant
SANJAY CHIKERMANE

Plumbing & Electrical Consultant
SYNERGY CONSULTANTS

Built-up Area
18,000 **m²**

Project Duration
2006-2008



1 Entrance
2 Classrooms/ Lab
3 Faculty Room
4 Administration
5 Library
6 Seminar Room
7 Store/ Office
8 Electrical Room
9 Light Court
10 Courtyard
11 Hall
12 Staircase
13 Toilets

SCHOOL OF SCIENCES BUILDING

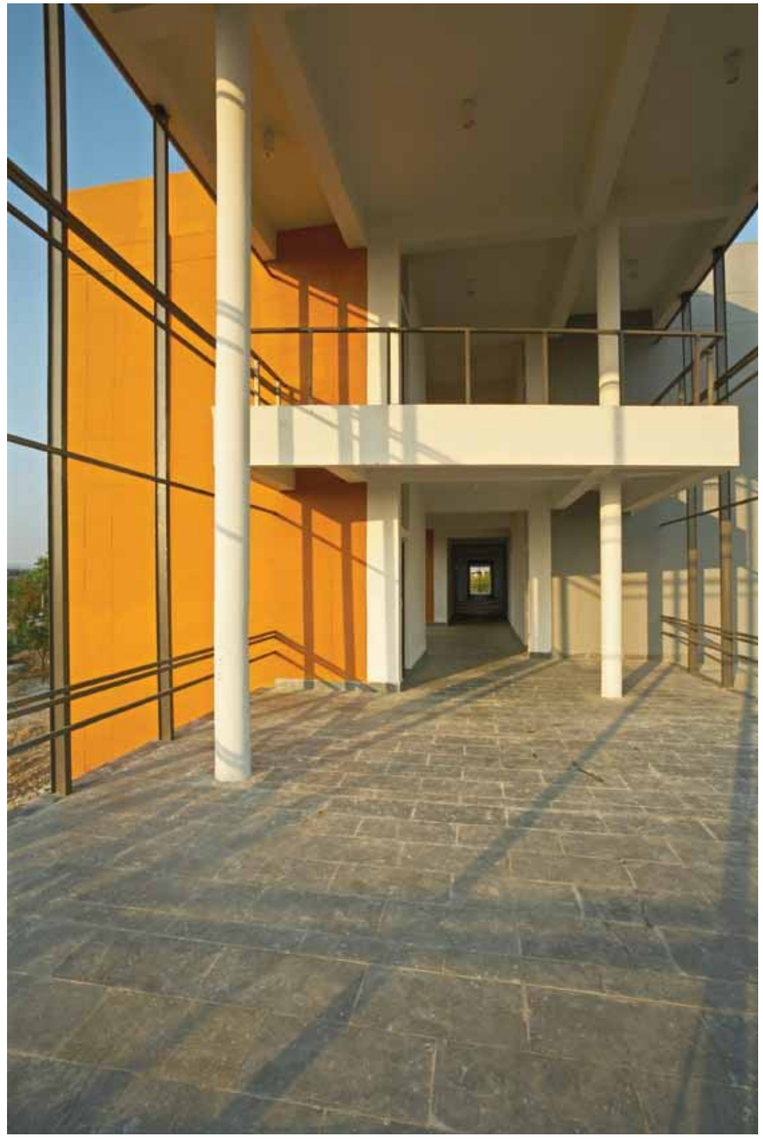
GROUND FLOOR PLAN A
NORTH ELEVATION B

0 5m

SCHOOL OF SCIENCES BUILDING

AXONOMETRIC VIEW A
SECTION AA B

0 5m



sense of movement in the non-linear corridor; bodily movement and visual movement tend to take two separate journeys, but running parallel and not against each other. The non-linearity of the corridor also marked by light pockets, is controlled by the geometry of the waffled plate — controlled only so that one can enjoy the free-flow of the spine as it moves in and out of the programmed spaces of classrooms and research labs as well as the site outside. Throughout the project the architects worked very closely with the structural engineer, and discussions with him, including arguments and challenges and interrogating questions posed by the engineer were central to the way the design shaped up. The structural drawings were made within the architects' studio, and that also made a structural difference to the way struture was viewed and seen integral to spatial vision. In both cases the geometry and the structure of the jaalis also adds a further dimension in the imagination of interlocking a variety of spaces and visually formulate the built form.

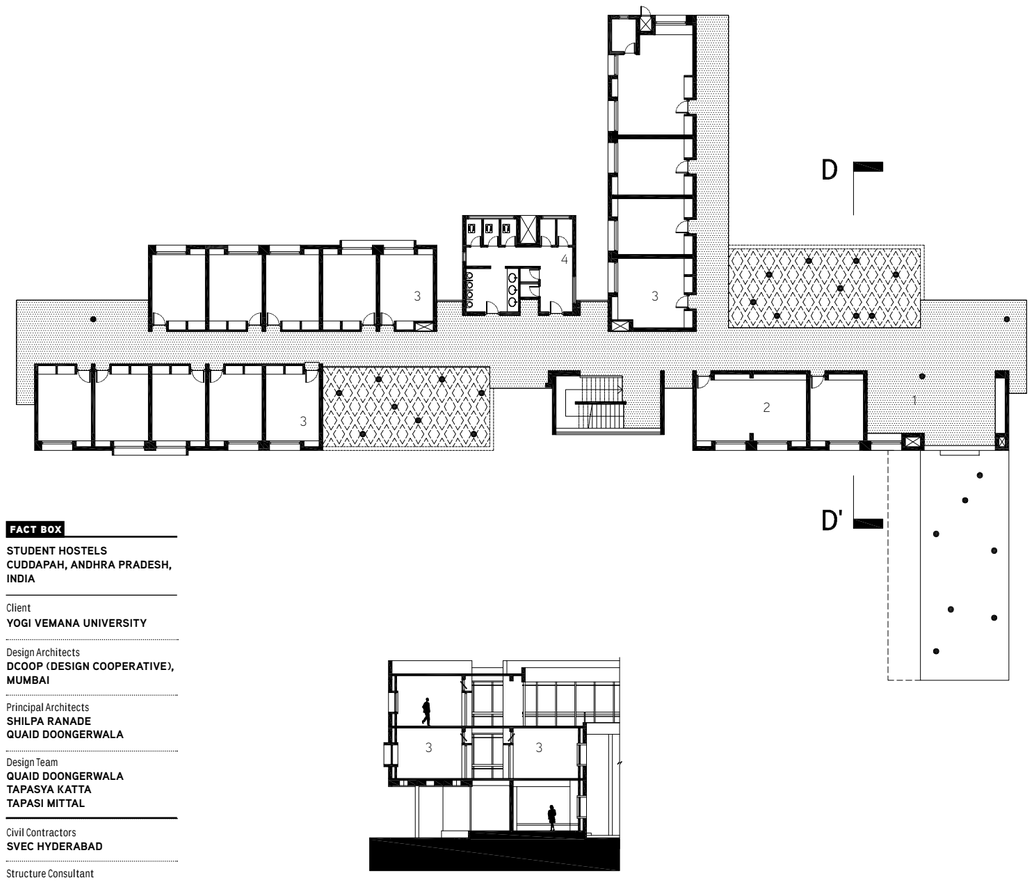
The Students Dining Hall and the Guest House both are structured around a clear geometry in the classical way of building-making. The Students Dining Hall is a stark cuboid, carved and scooped out at certain locations to allow entry of light and site. Harsh light filters into the dining space, and the pockets created also allow for small gardens. The stark block is only marked by slender vertical fins. The architects note, "These light wells strategically filter the harsh sunlight and double up as landscaped areas. The light wells also transform the internal space dramatically, creating a dynamism that is further accentuated by a random placement of circular columns. The building has a stark feel on the outside broken with thin vertical concrete fins that act as the second layer of skin from the inside. While the thin horizontal ribbon windows frame views of the hostel courtyard when one is dining, the primary experience of the space is introverted."

The Guest House, that draws inspiration from a caravan serai — the travellers' resting place — is structured around two introverted courtyards — cuboid in shape and wishfully disturbed by a protruding block that also marks a transitional node. These buildings, though programmatically less complex, continue with the concerns of geometry, light and structure as building principles. A continuity of language, with its grammar emphasised in every new construction makes the design of this campus — a cluster of buildings and

The modular blocks of the Hostel building undergo actions like — 'swivel', 'scoop', 'slide' to define the spatial structure, while jaalis and slender I-section columns along the verandahs and circulation spaces wrap the building, generating variety of spaces and light conditions that animate the built volume

spaces — an important exercise in cluster design as well as draw out visual coherence.

The architects constantly emphasise how the buildings are multiple spaces coming together — or rather different kinds of spaces engaging with each other to make the building. The building is not a single-space-emphasis architectural scheme for sure. At the same time the acknowledgement that a campus is interweaving of spaces — from within buildings to spaces inbetween buildings, but also maintaining a flow of ideas from one building to another is central here. Each building on the campus has a characteristic identity of its own, addresses its own programme very specifically yet maintains the sense of a 'common thread' that weaves through. This is an important occasion to address the idea whether a building is a bounded volume or one that actually allows spaces and movement patterns to bleed out - and if the non-bounded/amorphous nature is the architectural logic itself. Visual coherence is also something that needs further discussion as the buildings, characteristically different from each other, hold a sense of place and also materiality, that is becoming generic to the campus. Elements out of the architects' tool box are employed freely — however, their intrinsic logic is developed from the basic design guidelines that the architects outlined at the onset. These were not guidelines that they listed, or one can list out now — there were concerns and there were ideas — they crystallised into buildings — and in the process



FACT BOX

STUDENT HOSTELS
CUDDAPAH, ANDHRA PRADESH, INDIA

Client
YOGI VEMANA UNIVERSITY

Design Architects
DCOOP (DESIGN COOPERATIVE), MUMBAI

Principal Architects
SHILPA RANADE
QUAID DOONGERWALA

Design Team
QUAID DOONGERWALA
TAPASYA KATTA
TAPASI MITTAL

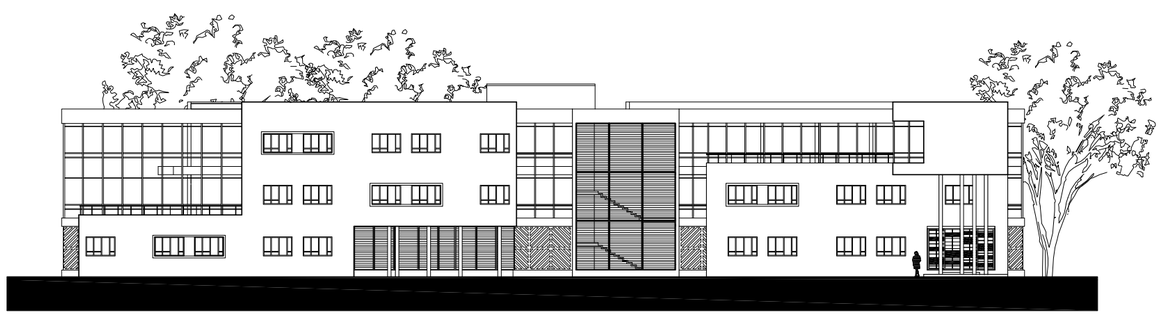
Civil Contractors
SVEC HYDERABAD

Structure Consultant
SANJAY CHIKERMANE

Plumbing & Electrical Consultant
SYNERGY CONSULTANTS

Built-up Area
2,050 **m²**

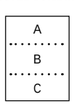
Project Duration
2006-2007



1 Entrance Porch
2 Administration
3 Rooms
4 Toilets

HOSTEL BUILDING

GROUND FLOOR PLAN
SECTION DD
ENTRANCE ELEVATION



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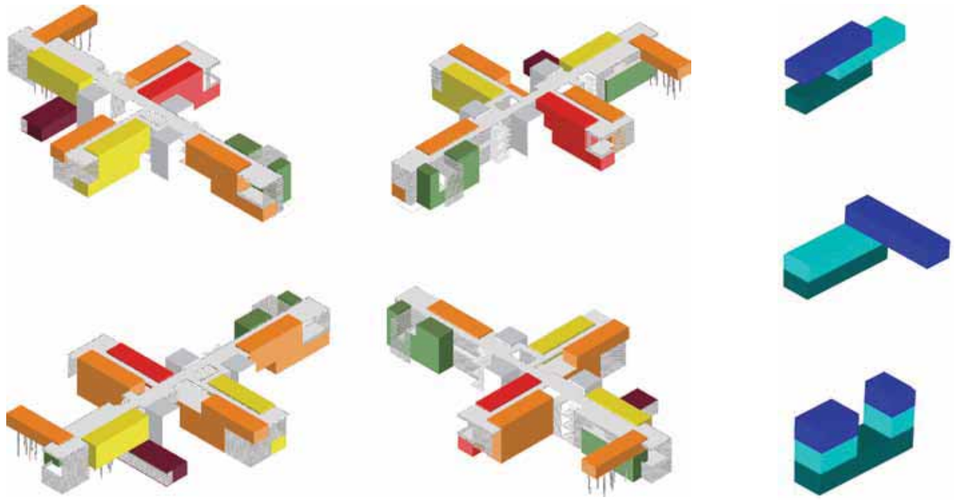
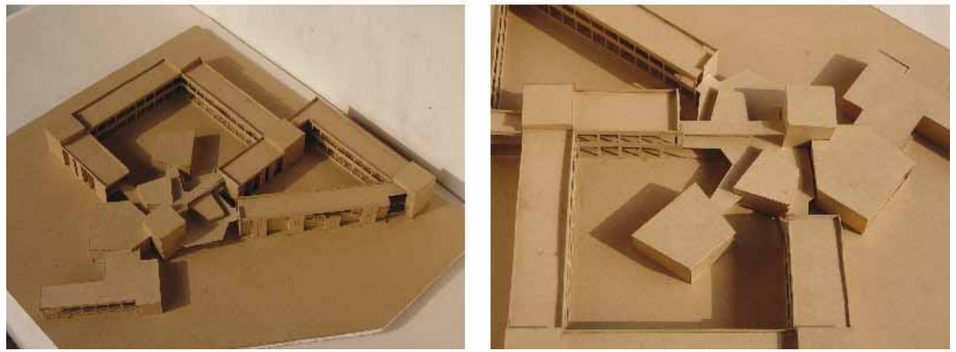
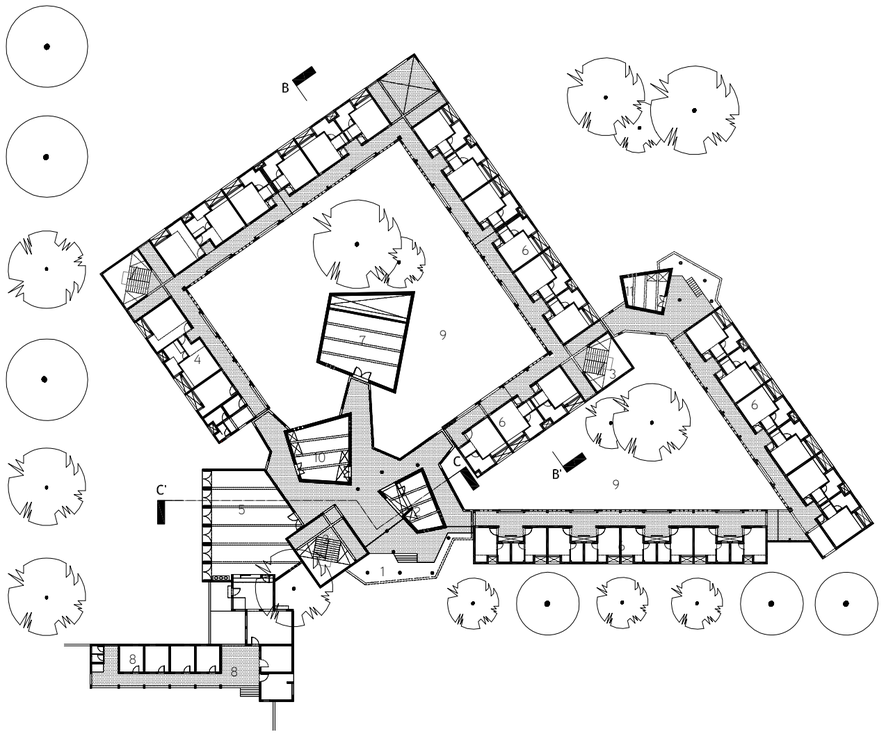
Slide-Swivel-Scoop — process drawings for design development of the Hostel buildings





Process models for the design development of the Guest House



FACT BOX

UNIVERSITY GUEST HOUSE
CUDDAPAH, ANDHRA PRADESH, INDIA

Client
YOGI VEMANA UNIVERSITY

Design Architects
DCOOP (DESIGN COOPERATIVE), MUMBAI

Principal Architects
SHILPA RANADE
QUAID DOONGERWALA

Design Team
SHILPA RANADE
SIDDHI SHAH

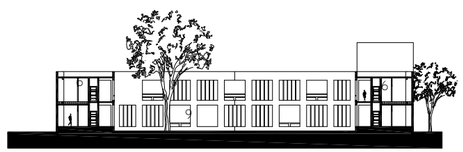
Civil Contractors
SVEC HYDERABAD

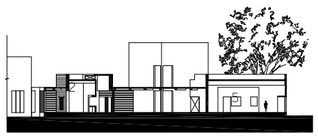
Structure Consultant
SANJAY CHIKERMANE

Plumbing & Electrical Consultant
SYNERGY CONSULTANTS

Built-up Area
6,000 **m²**

Project Duration
2006-2009

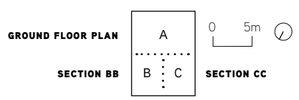


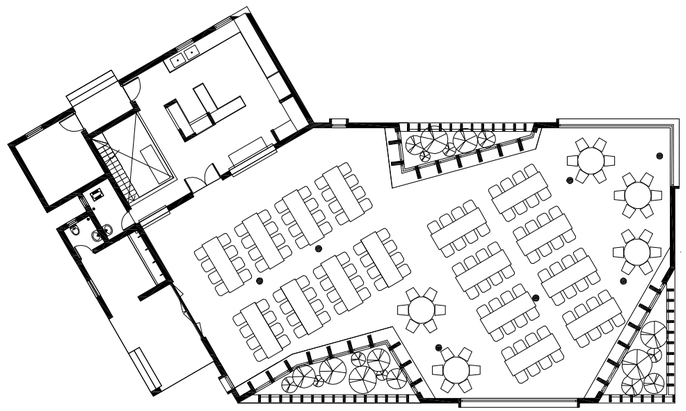


1 Entrance
2 Reception
3 Staircase
4 Suite
5 Dining Hall
6 Rooms
7 Meeting Rooms
8 Staff Quarters
9 Courtyard
10 Lounge
11 Multi Purpose Room

GUEST HOUSE

GROUND FLOOR PLAN **SECTION BB** **SECTION CC**





FACT BOX

STUDENT DINING HALL
CUDDAPAH, ANDHRA PRADESH, INDIA

Client
YOGI VEMANA UNIVERSITY

Design Architects
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ABHAY KOTAK
CHIKIRSHA VAIDYA

Civil Contractors
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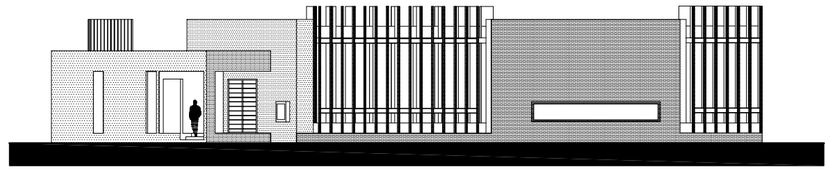
Structure Consultant
SANJAY CHIKERMANE

Plumbing & Electrical Consultant
SYNERGY CONSULTANTS

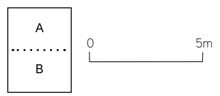
Built-up Area
425 **m²**

Project Duration
2006-2008



DINING HALL

GROUND FLOOR PLAN **ENTRANCE ELEVATION**



The dining hall is a stark cuboid punctuated by scooping out volumes that design the entry of light into the deep interiors as well as make pockets of landscape possible; these scoops are marked by vertical fins that modulate the entry of harsh light while thin horizontal slits allow for outside views while dining

of this building-making the guidelines emerged from the subconscious of architectural values. Architectural values is what, one can clearly see, forms the bedrock of DCOOP Architects; and the values learn to take architectural shape day by day with every new building getting constructed — as engineering and visual logic, geometry and spatial flow are hammered and moulded on the designer's anvil. This project embodies many markers for architectural practice in India — a government project for a public institution that begins with a competition and a young firm is genuinely awarded the project, although changes happen over the period of years the architects were largely and broadly able to maintain their design ideas throughout from concept to construction. But it is also the idea of designing clusters of buildings, incremental development of a site where an overall design logic is developed, but individual buildings have their own demands and identities. In this situation what made working systems and flow possible was the sense of architectural values and concerns that one discussed above — a foundational logic that took shape, became sharper in the process of building-making, architecture-making — ideas crystallised into logics of geometry and materiality, but geometry and material both realised new ways of self-imagination here. In the forthcoming issue we will engage further with the work of Doongerwala and Ranade in a feature that focusses on their studio processes.

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KAIWAN MEHTA
Architect and critic

The guest house modelled on the caravan serai is centred around two introvert courtyards disturbed by intrusions that also connect the courtyard to the circulation and outside spaces