

- 1 Bellry court
- 2 Bellry
- 3 Butness
- 4 Diaphragm wall
- 5 Openings for diffused light
- 6 Parish house court
- 7 Court
- 8 Lobby
- 9 Pulpit
- 10 Priest sacristy
- 11 Sacristy
- 12 Toilet
- 13 Apse
- 14 Altar
- 15 Sanctuary
- 16 Chapel

- 17 Chapel court
- 18 Chapel vestibule
- 19 Confessionals
- Below
- 20 Statue
- 21 Shrines
- 22 Latticed column
- 23 Narthex
- 24 Latticed & deep-raised column
- 25 Gable above roof
- 26 Vestibule
- 27 Fountain
- 28 Baptistry
- 29 Baptistry Vestibule
- 30 Upto Nave
- 31 Baptistry court

## "Our Kind of Architecture — a Total Process"

Revathi and Vasant Kamath

Architects, New Delhi

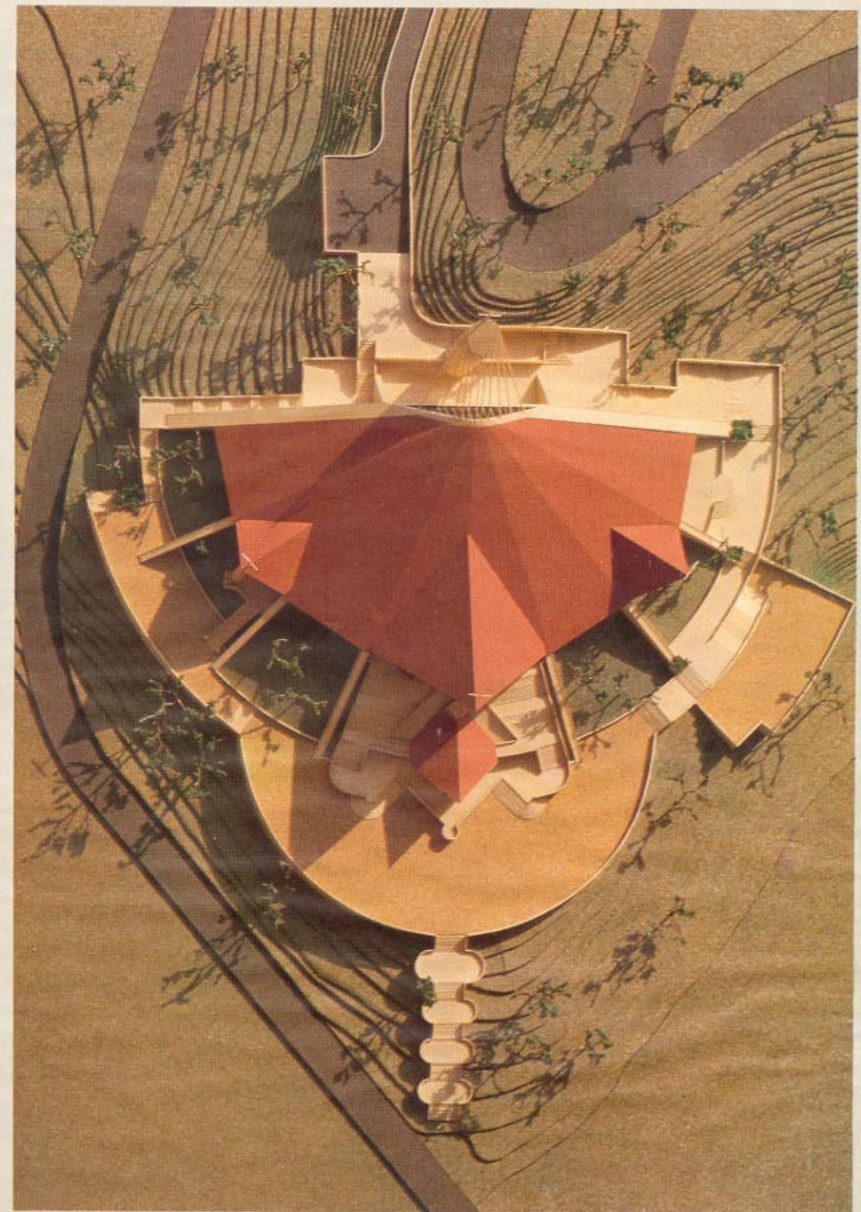
### Kohima Cathedral

Kohima

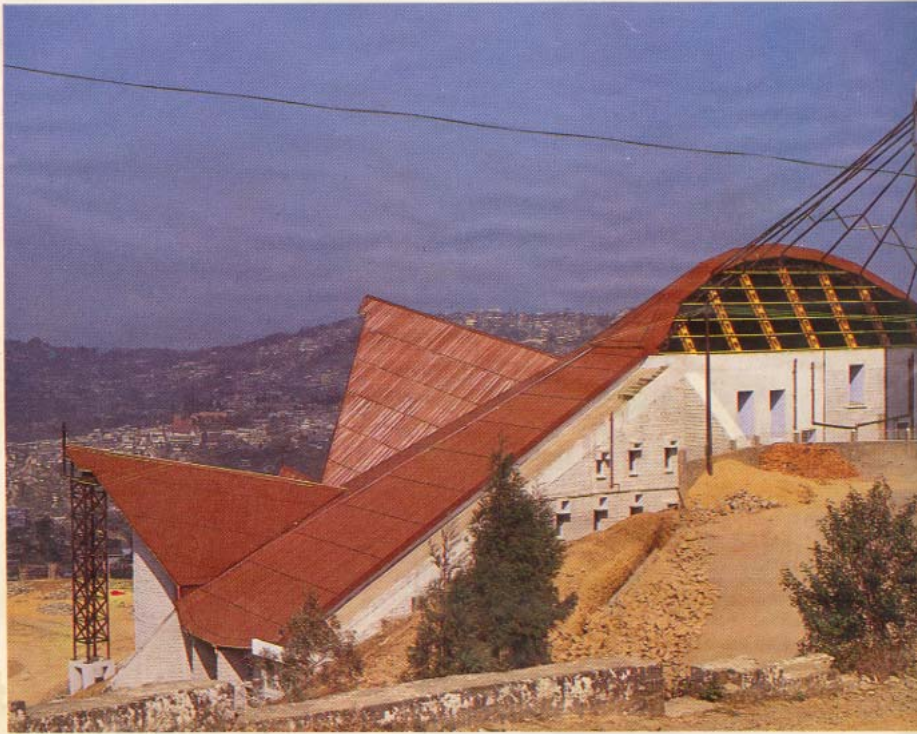
**K**ohima Cathedral is prominently located on a rising terrain, southwest of Kohima town. Approached by a wide flight of steps, the form of the cathedral dominates the vista. Encircling the church, is a large semi-circular plaza, designed to accommodate a congreg-

ation of people on ceremonial occasions.

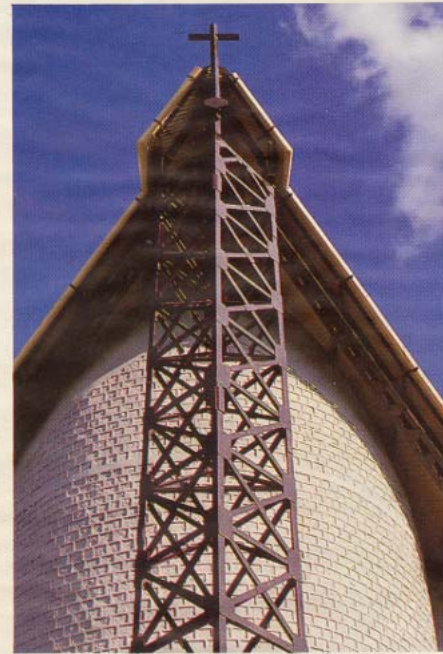
The form is semi-circular, a process of elimination of conventional rectangular and cruciform plans. A circle was more acceptable, but without focus, so was cut into a semi-circle with a strong focus along its straight wall, and







The semi-circular form of the cathedral: unconventional  
 Right: The structural system defines the roof  
 Far right: The reinforced concrete belfry borrows from local tradition its decorative element  
 Previous page: Model of Kohima Cathedral



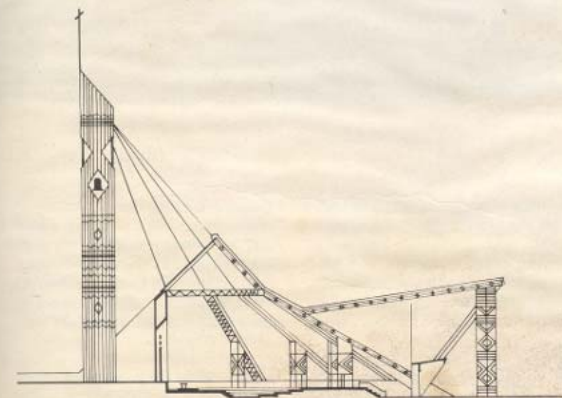
a radial arrangement of seats encouraging group participation.

The structural system is ultra-modern – the eight segments of the semi-circle constitute the structural bays while, overhead, the main girders define the roof system. An outer ring of sloping radial buttresses support the inclined girders while a compression ring above the sanctuary supports them at their outer ends. The reinforced concrete belfry suspends tension members that anchor the compression ring on top while two huge buttresses at the rear wall resist the lateral thrust exerted by the compression ring. An intermediate ring of latticed columns defines the rear aisle of the nave. The main steel girders are castellated and latticed to bridge long spans and support the subsidiary roof system. A combination of concrete, brick and stone is used with timber in small doses.

The main elements are its trussed columns and girders, dividing the semi-circle into eight clearly-defined segments. The nave is symbolically segmented into seven parts to represent the seven Sacraments. The sanctuary, altar and the apse form the focal areas, raised above the nave. The pulpit, to one side of the sanctuary, is raised further, with the other requirements of the church forming the outer ring of the semi-circle.

What gives the cathedral form, is its roof system. Small forms constitute a total enclosure. The roof slopes gently over the nave, gradually increasing its height as it approaches the sanctuary; the pitch of the roof rises over the sanctuary, steeply enclosing a large expanse of sunlight. It continues on the outside as a spire of sleek steel members suspended from a cylindrical belfry. Subsidiary roofs cover the baptistry, narthex and chapel; the emphasised version of the roof, really an inspired continuation of traditional Naga roof forms.

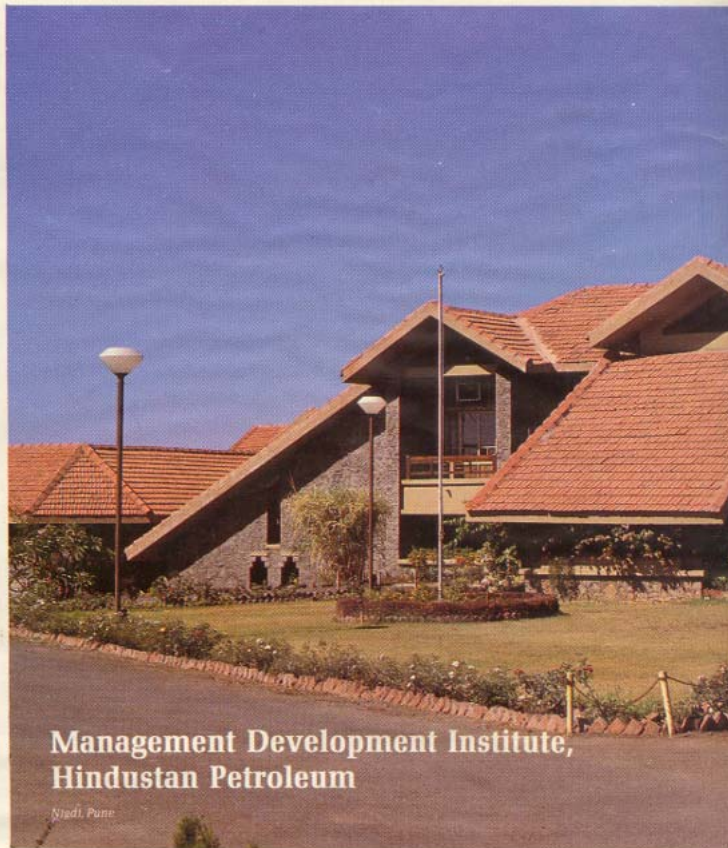
There is some attempt to translate the traditional decorative elements, richness, form, pattern, colour and texture, into the overall concept.



SECTION A-A

Client: Catholic Church of Nagaland  
 Architects: Revathi and Vasant Kamath  
 Consulting engineers: Shirish Futei and Associates





**Management Development Institute,  
Hindustan Petroleum**

*Njali, Pune*

**T**he management's brief was to enhance its corporate image through architecture. Our response, was to emphasise blending with the environment. The architecture achieved both – the former, through an unanticipated spatial formation; the latter, through visual expression.

The long narrow site rises gradually from the highway to a point of about 2.43m, from where it slopes down to the fields against a backdrop of hills.

The main building sits on the highest point, dug into the slope opening out into the fields on the other side. Not only is it tucked away from the noise and pollution of the highway, its scale is diminished with only a floor visible from the main road.

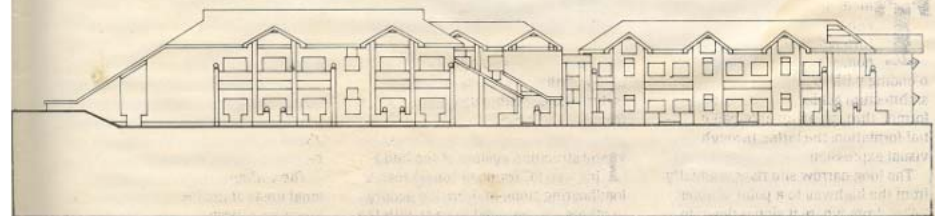
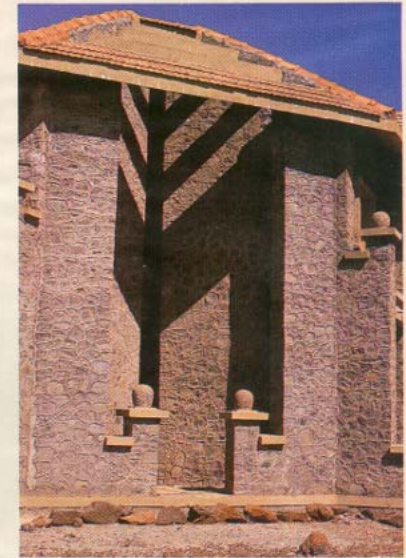
The structural system of the building – an RC frame in some areas, a loadbearing stone and brick masonry in others – is designed to vary with the situation. The academic wing, hostel

lounge and dining-wing structures, where the spans are 6-7m, are, essentially, RCC framework with stone and brick masonry infill walls and partitions. In the hostel block and Director's Bungalow, smaller spans of 3-4m enabled 400mm external stone walls and 230mm internal brickwalls as load-bearing elements.

The various blocks, wings or functional areas of the institute core were, however, conceived as one continuous built form wrapping itself around

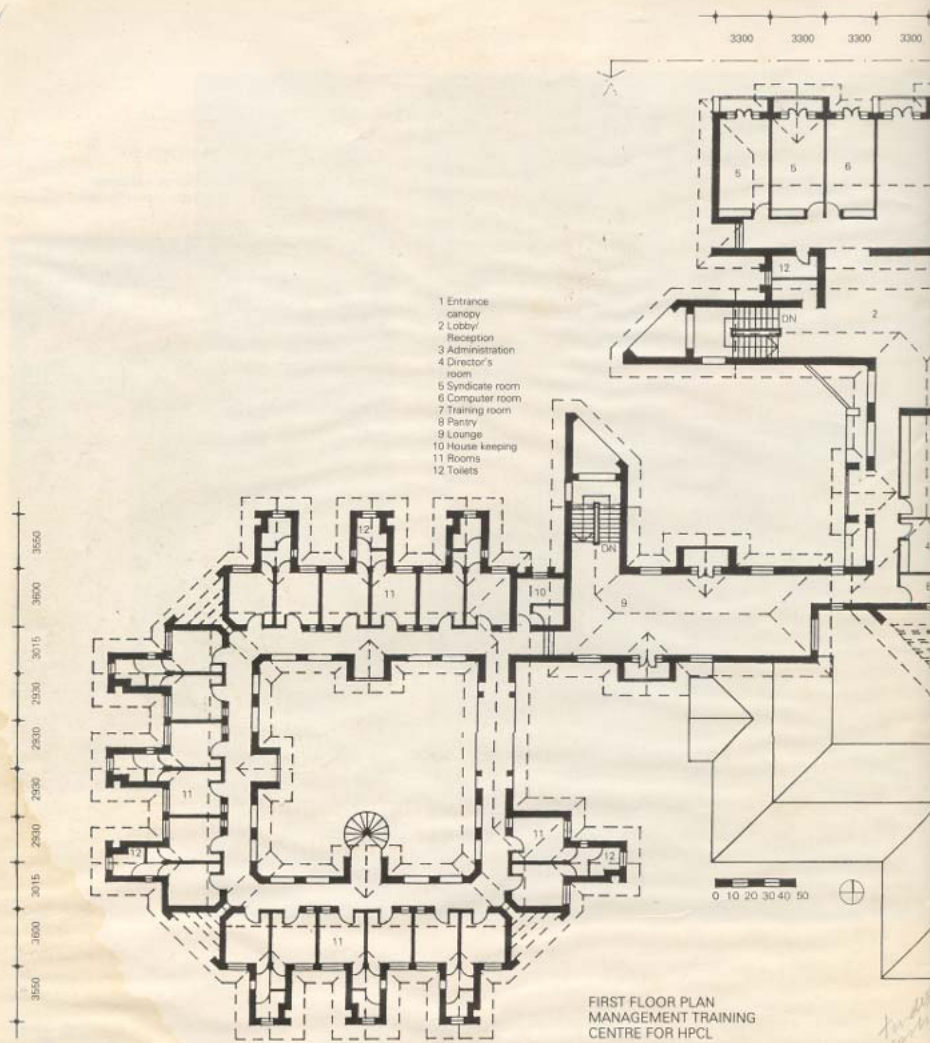


Left: The corporate image blends with the environment  
Below: A multiple visual expression – concrete framework, exposed stone, plaster, concrete and Mangalore tiles



ELEVATION A-A





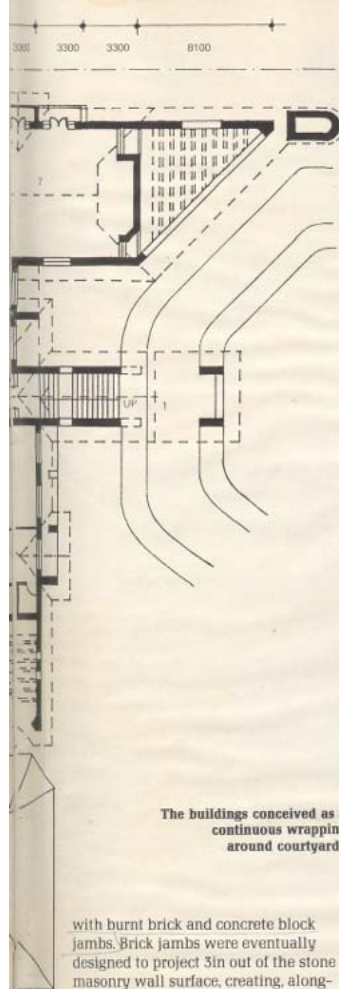
FIRST FLOOR PLAN  
MANAGEMENT TRAINING  
CENTRE FOR HPCL

three major courtyards. The visual expression of the different structural systems had to be integrated into a comprehensible whole, carefully and selectively suppressing the concrete framework to achieve the desired balance and composition of exposed stone masonry with plastered concrete. We had, initially, intended to give all the external concrete elements an exposed

shutter finish, but as the contractor was unable to achieve a satisfactory quality, we decided on plaster.

Curiously enough, the projected borders around the external windows and openings, which are a major visual feature of the buildings, arose as part of a major cost-reduction effort undertaken after tenders for Phase 1.

As the stone walls were to be in random rubble masonry, an 'extra' item for dressed stone masonry was included in the tender for jambs and corners. As the tendered costs were higher than anticipated, the specifications and areas had to be subsequently changed according to the budgeted cost. We struck a considerable saving by replacing the dressed stone jambs



The buildings conceived as a continuous wrapping around courtyards

with burnt brick and concrete block jambs. Brick jambs were eventually designed to project 3in out of the stone masonry wall surface, creating, along with concrete sills and lintel 'boots', a plastered border around the openings.

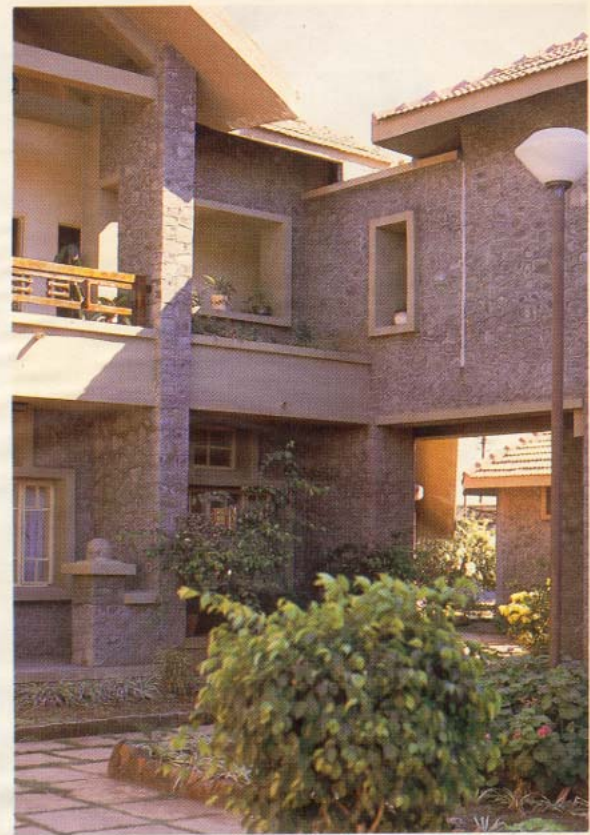
The decision to use Mangalore tiled roofs with stone walls, was taken right at the beginning, but the traditional timber trusses, framing and false ceiling had to be rejected on the grounds of cost, maintenance and an excessive use of timber. Thus, the roofing now consists of sloping RC slabs, on which nominal timber counter-battens are fixed to receive the battens and tiles. The tiles are seen as a finish to the concrete slab; the air gap between the

tiles and the slab, adding to the thermal insulation of the roof assembly. The doors and windows, initially intended to be in teakwood, were also slashed in the post-tender cost reduction effort. All the frames were changed to pressed steel sections, with glazed doors and windows in standard steel sections and solid doors in teak.

Old university buildings of Pune underscored the decision to use local stone masonry walls and sloping tiled roofs. In some places, the roof slopes almost to the ground, reflecting the silhouette of the hills beyond. The spatial form of the complex evolves as the buildings wrap themselves around

three courtyards – the academic court, dining court and hostel court. These semi-enclosed courts are encountered with the openings, enclosures, sloping roofs, lit and cloistered spaces in darkness, with surprise.

**Client:** Hindustan Petroleum Corporation Ltd  
**Architects:** Revathi and Vasant Kamath  
**Design team:** Sunando Dasgupta, Saplay Kumar (Phase I), N S Ashok (Phase II), Indrak Roy (Phase III)  
**Consultants:**  
**Structural:** Saleem Moiedina, Saracha and Motivala, Design and Consultancy Pvt Ltd  
**Sanitation & electricals:** Mecas Pvt Ltd  
**Quantity surveying:** O S Negi and Associates  
**Contractors:** Advance Construction Company (Phase I), Hind Construction Company (Phase II), Pylon Engineers (Phase III)



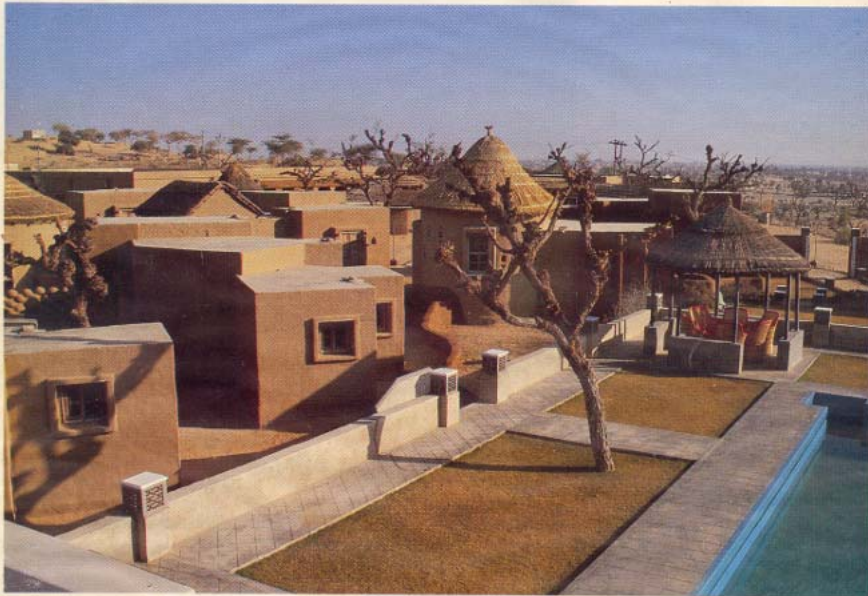


Culturally inappropriate architectural expressions contradict, and ultimately obliterate traditional culture. To serve social needs with new techniques and materials, inherent simplicities in building are overlaid. Desert Camp is an attempt to create contextual architecture, and progress, sensitive to cultural values. It is wholly commercial, but respects the cultural authenticity of the Shekhavati tradition.

The architect wanted the international tourist to experience rural

India's cultural diversity and rich traditions: "Wanted this project to be a very contextual expression that preserved the socio-ecological fabric, while drawing on the indigenous architecture of the Shekhavati region. I find the spatial quality of the village very exciting, and I wanted to re-create this set of spatial experiences – a cluster... a street... a courtyard... a room", influenced by the spatial sequence of an Indian village fostering much interaction.

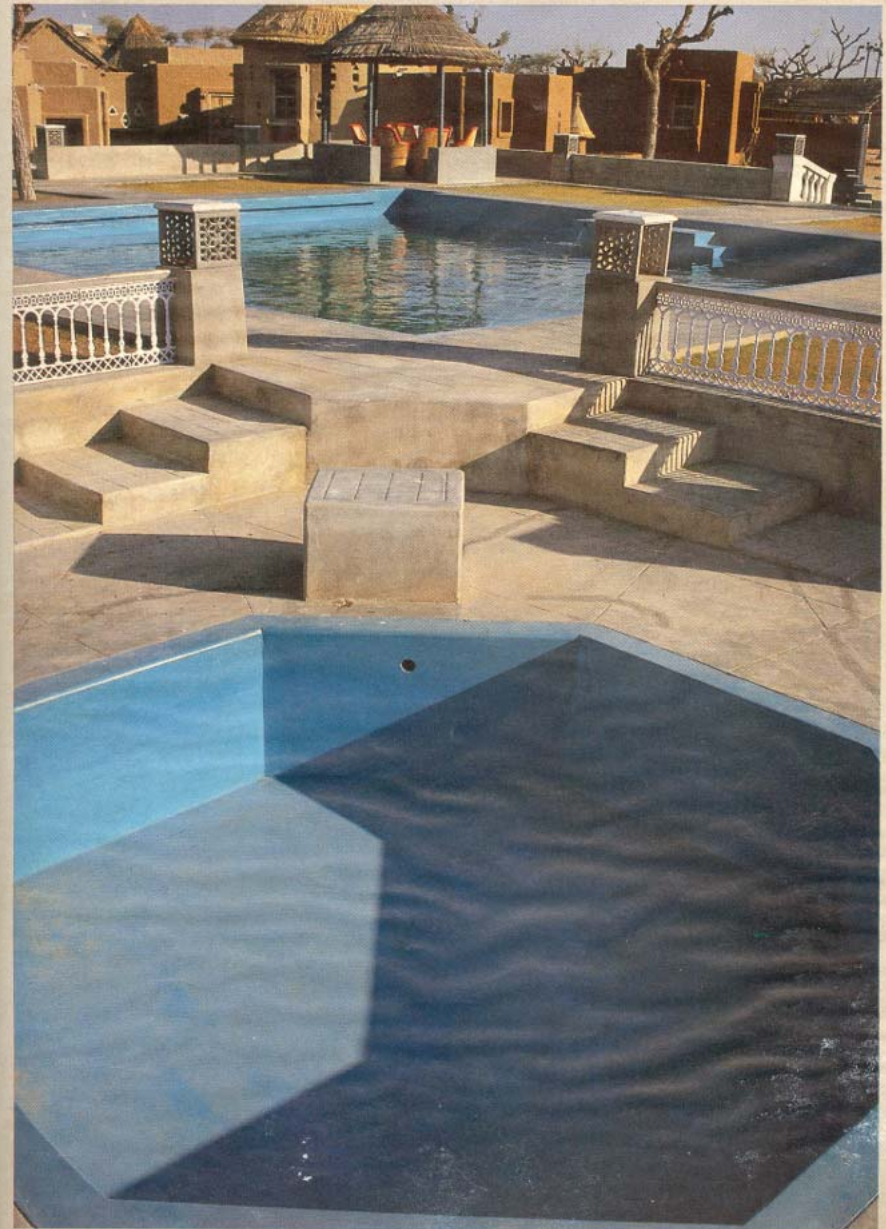
The built form was to act as a med-



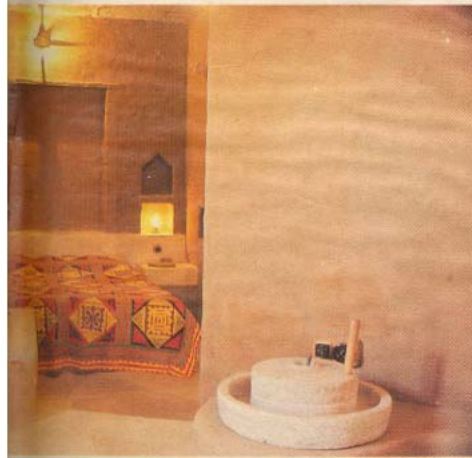
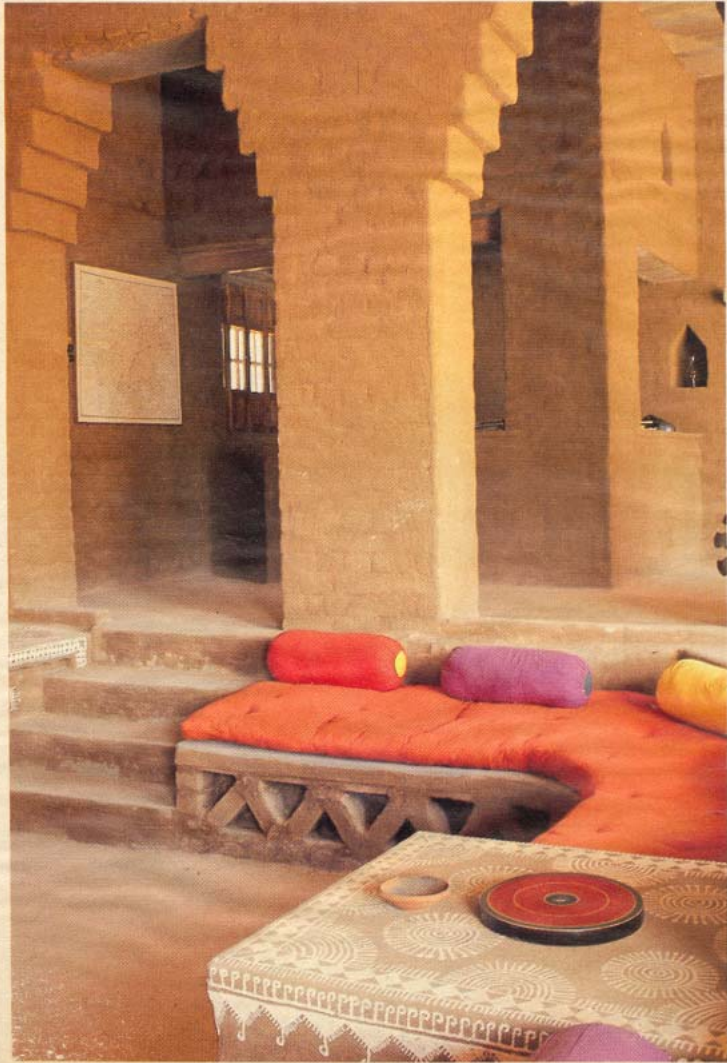
Expressing a continuity in the desert  
Facing page: A commercial need expressed in a regional context

## Desert Camp

Mandawa

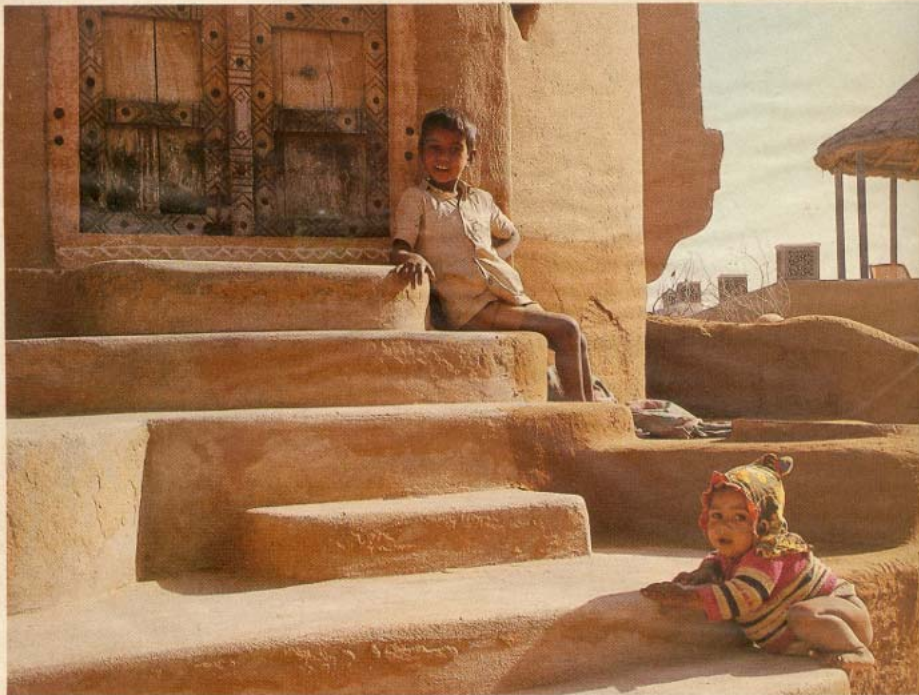






The warmth of the cowdung plaster contrasts with the vibrant colours of ethnicity  
 Left: Ritualising culture - the charkha ornaments the room  
 Facing page: A re-creation of a vernacular past





Reinforcing the image of a threshold on a village street  
Right: the spaces interwoven with pathways and transitional open spaces, so like a village

ator, promoting interpersonal interaction and forging strong links between the tourists and the environment. To preserve the traditional building styles and techniques, and encourage the active participation of local craftsmen, no contractor was appointed. Mud was the medium. "When you work with mud and hand-plaster the walls, it is like forming an external skin. It is as if every bit of the building embodies the human spirit. The cyclic care of the building becomes an act of living."

The principal circulatory path in the administrative zone is a long corridor that extends along the length of the building, allowing pedestrian traffic. The low chairs and *chowkis* invite passersby to pause, rest and

view. The spaces at Desert Camp, broadly classified as residential, public and administrative, are interwoven by pathways and transitional open spaces. The complex is organised around a descending scale of spaces – from a large forecourt to a village street, to the semi-private courtyard and, finally, into the private suite. The client plans to enliven the forecourt with the work of local craftsmen and artists, adding colour and character.

Traditionally Indian in character, the spaces of the cluster follow their own dynamics; the hierarchially-ordered spatial sequence, plans and architectural elements of the clusters, based on the house forms of the weaver, potter and farmer. The suites are designed to be accommodated in a cluster of buildings which constitute one house, grouped around one courtyard. They

then come together to form the main village streets. Elements like the *Jharokha* and niche-like windows overlooking the main path, reinforce its image as an arterial village street.

The main street widens to create a large public courtyard, where the Bijli Mata Ka Mandir is provided along with the proverbial community tree which forms the focus of this community space. The *mandir* is, essentially, the junction box with electrical outlets to the individual suites, the architect's fascination for the analogy between the local village shrine and dedication of electricity – light, a contemporary equivalent of God.

In accordance with the social norms and living patterns of a typical Indian village, the suites of the weaver, farmer and potter are clustered separately. The silo, or *obri*, and grinding stone on the *atla*, symbolise the farmer's suite, the *charkha*, the weaver's, and the pot wall, the potter's cluster. There is subtle hierarchy in the spatial organisation as one progresses from the public village street to the semi-private courtyard and the private suite. The hot dry climate necessitates introverted planning, with the suites focussing on enclosed courtyards. A low parapet wall, the pot wall in the potter's cluster, define the enclosed semi-private courtyards.

The curvilinear pot wall is one of the most interesting features of the cluster; its sculptural qualities revealed to advantage in the play of natural light and shade. The fluid lines of the multi-level *atlas* determine the courtyard form – the stepped-up plinths serve as transition spaces from outside to in, heightening the sense of arrival. Built-in seating and niches decorated in traditional Rajasthani style, enhance the courtyard's informality. Tourists often squat at their doorsteps, lounge with a drink, sunbathe and swap stories of their travels. The close proximity of the suites negates seclusion and privacy.

Revathy 'conceived the act of living in these suites as an occasion, and wanted to explore how people can respond to the manipulating of space! When on a holiday, people pamper themselves and luxuriate in the timelessness of space. Not having to meet deadlines and wage a constant battle against the fast pace of life, people can

afford to relax, and the act of living... bathing, sleeping, dressing... becomes an event. Each event expresses itself, and all these events strung together, form the totality.'

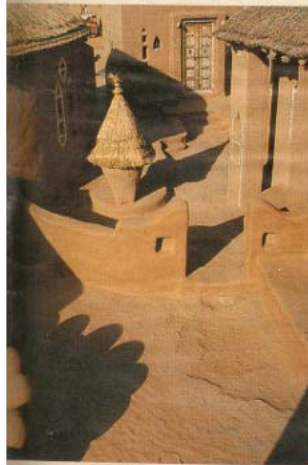
The ornamental detailing of the door posts, towel racks, door frames, *Jharokhas*, around the mirrors of the dresser, and vibrantly-coloured bedsheets and cushions, enhance character. The warmth imparted by the cowdung plaster and the bright contrasting colours of the upholstery, further enhance the visual comfort of the voyeur in the administrative block – make the tourist more comfortable despite its rigid character.

The architect resisted lavishness, and stuck, instead, to the bare essentials as infrastructural facilities had to be provided in the remote town. The resort's functioning, however, is in no way impaired. Unlike most tourist resorts, which draw their manpower resources from urban areas, Desert Camp solely employs the local populace – from building itself to its running and maintenance. It has also generated additional income – from formal camel rides, tourist guides and, perhaps, the most important, handicraft shops. It now stands not only as a unique tourist resort which enhances the culture and heritage of the region, but injects new economic vitality in the socio-economic stream.

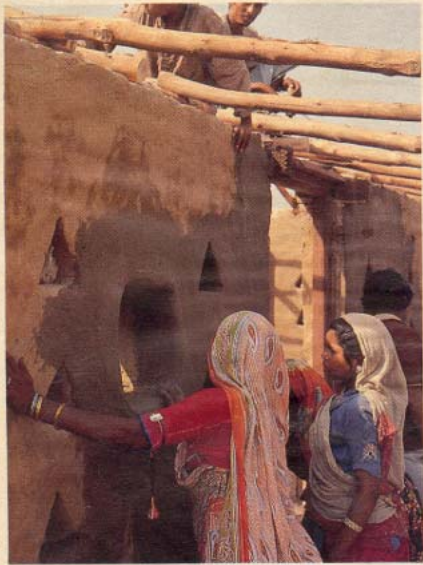
Architects Vasant and Revathi Kamath justify their recreation of vernacular architecture: 'In the past, every village had its own skilled labourers and masons who were integrated into the socio-ecological web of the community. They were guided by age-old traditions that do not exist any more, in most societies. We should reintroduce human scale, human needs and human tradition, until a new tradition is established.' Revathi Kamath has evolved an architecture with a strong human reference, where every labourer, skilled or unskilled, made his very personal contribution in building and helped evolve it. The local populace can relate with it almost as well as they relate with their own homes; the users are quite content.

Client: Raja Kesari Singh Mandawa  
Architects: Vasant Kamath and Revathi Kamath  
Builders: The architects

Text: Student group, LSR college of architecture, Bombay  
Photographs: Chintamani Bhagat







Village women decorating the walls – old and new – their skill in continuum in the rural and urban environments



## Architects Revathi and Vasant Kamath expound their design philosophy to Sarayu Ahuja

**One does not question mud architecture as it has emerged from our past. It is an option we seek to propagate. It lies somewhere between invention and discovery – a re-invention. How relevant is it? To the people? To the environment? To the architects?**

We were always interested in low-cost architecture – an architecture relevant to, say, 75 percent of our population, below the poverty line. The standard-of-living, the misallocation of resources, and the under utilisation of natural materials, concerned us.

We started building for the community, with our hands. Architecture for the poor is not just working for the poor, but also providing employment. While large construction agencies exploit the workers, we wished to work with them, because of them. We worked on low-cost housing.

**Low-cost is such a relative term! Often, the attempt is to merely make things cheaper by switching materials, saving on finishes, time, quality and space. We need holistic solutions; not *ad hoc* decisions on an inventory of materials and current prices, is it not?**

The way we tackled it was – to primarily minimise the use of cement. We carried out experiments with the structural elements – the flooring, roof, walls, openings. We also explored a variety of materials and forms – mud, sand, brick, and structures like arches and domes. The attempt was always to minimise cement and eliminate the use of reinforced cement concrete (RCC) as far as possible. We also studied construction techniques; particularly, traditional methods. The idea was to use traditional methods and materials innovatively, and so formulate a relevant and acceptable architectural language.

**And you went looking for artisans well versed in using traditional materials and techniques of construction to express your architectural language?**

Yes. We searched the villages for skilled masons who could work out our ideas. We also searched for the architectural form and tradition of Delhi. In the end, we found many masons had actually known the techniques, but had forgotten them as they were discontinued.

When the contractor is presented with a drawing, he is totally unaware of the traditional construction techniques, and that the masons have the skill as they still remember seeing it in their village. The artisans, of course, are without confidence as their traditional skill is not in demand.

It really is a personal achievement to be able to instill some kind of confidence in the masons. In fact, when they realise you respond to their work, the response you get from them, is tremendous.

**How relevant is low-cost architecture to architects? Is it yet another preoccupation? Yet another experiment? Are we trained enough, as architects, to contribute to it?**

We have realised a highly important aspect of low-cost architecture is to work with local materials and skills. We had to start thinking and imagining all over again, beyond what we were trained in. We had to think of materials and the form resulting from them. We had to use as much material as available on site – mud, stone. This was the spine of the low-cost concept, without which, everything fell through.

**You adhere to Regionalism as a style with local material, skill, tradition. However, the root of Regionalism is based in collective acceptance?**

Where do we belong? If more people like it, then you belong. I belong to a small sphere which belongs to a larger sphere. It is not merely a point of unanimity – it is fundamental. Behind it all, is a common factor – a sense of ecology. Minimising cement, responding to the site and climate, architecture must go beyond. It must strive at achieving sustainability. Its character must suit the ecology.

We designed a school; the site, covered with low mounds. We set the building in the depression surrounded by low mounds – it fitted into the total geological image. There was a crumbling monument closeby which we tried to emphasise visually by ensuring the school did not hide it, making it more symbolic. We used local stone; the span of the building, based on the size of the stone and its strength. We used mud bricks made on the site; the size of the bricks, stone, doors, windows, all determined by the materials available on the site and their characteristics. The design was a total system.

**What about the collective response? Images are fast changing; even in rural areas. There is strong urban influence. To the artisan, it spells progress. The Madhubani painter, the Oriya weaver, improvise their skills with modern images. This, too, is ecological?**

While executing the Mandawa project, the workers, mason and contractor saw this village woman, and wondered *what she was going to do there. They could not accommodate the idea of a woman in the creative realm of architecture – they were only used to women labourers – a totally urban picture! Back in their villages, however, they were used*

to their women decorating their homes, painting the walls and doors, so the idea was *not* new to them. They only need to be reminded.

As far as the woman, herself, is concerned, she is resigned to being in a state of continuum. Her lifestyle has not changed much – the men still occupy a certain status. Their house forms pronounce this is a part of it. Even with television coming in, she is not going to dress like Sridevi!

**It is a good thing tradition has become trendy – urbanised folk now think twice about demolishing their village homes. It is a good thing, too, that public places, like Mandawa, sport traditional looks. People learn to consume the traditional environment. Only, it surely should not just be another ambience-provider like our five-star restaurants?**

Mandawa is our kind of architecture – a total process; not just an image creation. We don't go looking for jobs as we practise a certain kind of architecture. Those who understand it and have a project relevant to our thinking, approach us, and we are able to work together as our expectations are similar.

Mandawa was a thoroughly rural exercise – using rural material, technology, images and artists. It is a method of keeping the tradition going – the wall paintings, the *lepai*, are all inspired from the Sekhavati. Many rural women there are involved in keeping the tradition of art and craft going as they decorate their walls and floors.

We asked the *same* women to dress up the walls at Mandawa, continuing the tradition, giving employment and instilling pride in the artisans. A continuous process of improvisation was also started. At first, something was painted on the walls, and a few months later, they added a camel.

So, something gets erased, something gets added, in an ongoing process full of life.

**Improvisation, addition, spontaneity, fresh response... all these structure the idea of Regionalism. Does your work exhibit it, using the best of both worlds, old and new? Arriving at a language which belongs, and is yet a mark of progress?**

The church in Kohima is like that, yet a different kind of Regionalism – not just another Delhi form plonked on an alien site. Its forms are organic; not vulgarly contrived.

Symbols, sentiments, ritual... all play a part. The church is for the community as well as representative of the House of God. So, there are two traditions – one, the evolution of church architecture itself; the other, the traditional vocabulary of the Nagas.

Of course, one does not *pick up* forms and elements and express them *in toto* in regional architecture, recycling it in the name of tradition! It must evolve, together with the various constraints of the programme. Here, the scale is different – a high-tech building – yet it means something to the people. They feel it; they understand it. It is a part of their very culture – it participates in the total environment.

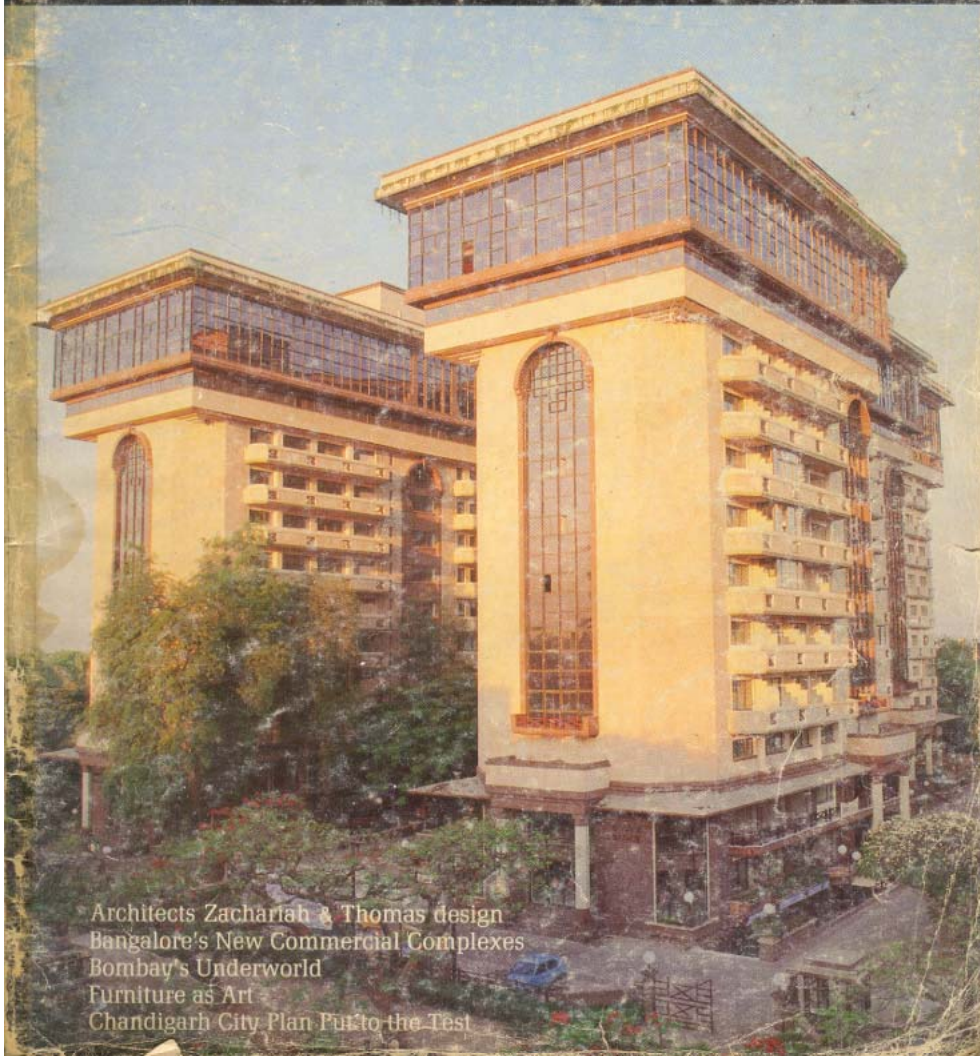
Similarly, Hindustan Petroleum's Management Development Institute in Pune. The image required by the client, our response to the site, the tradition of Poona, all these led to its design – an amalgamation of the old and new, technically, materially *and* symbolically. □



# Indian Architect & Builder

AUGUST 1991

Rs20



Architects Zachariah & Thomas design  
Bangalore's New Commercial Complexes  
Bombay's Underworld  
Furniture as Art  
Chandigarh City Plan Put to the Test