Indian Architect & Builder

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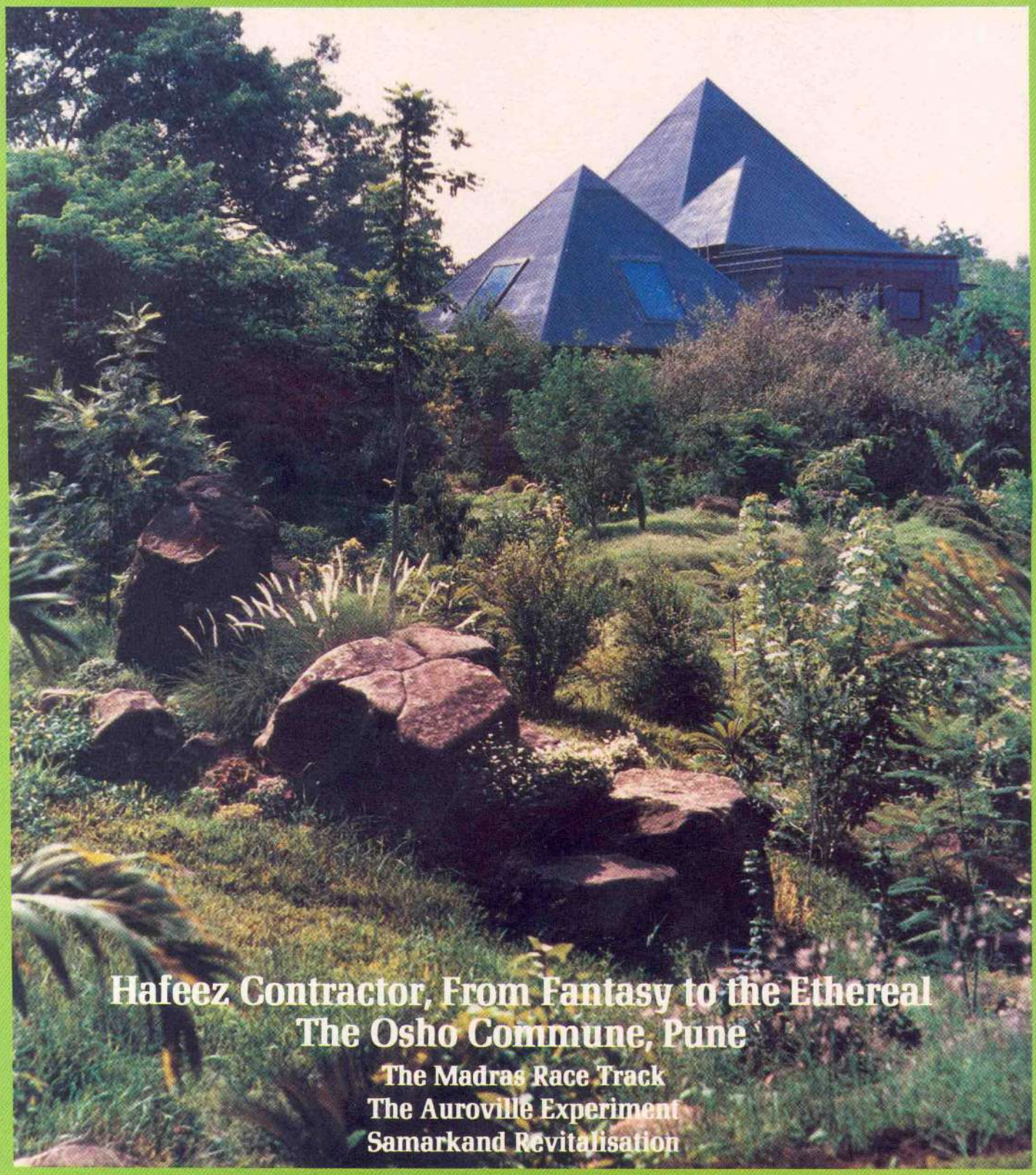
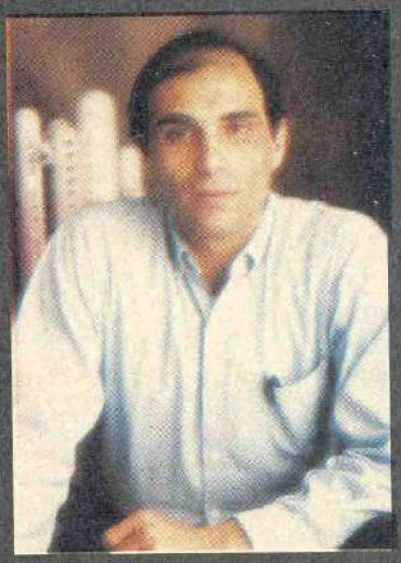


Hafeez Contractor, From Fantasy to the Ethereal
The Osho Commune, Pune

The Madras Race Track
The Auroville Experiment
Samarkand Revitalisation

Model of Nahar Builder's 60 lakh sq ft housing complex, Chandivali
Co-architects: K G Kapadia & Co
Structural consultant: Mahimtura Consultants Pvt Ltd
Hadker Prabhu Associates
Facing page: Model of Bhosle Shinde Aracade, Pune
Local architects: Pandit Joshi and Associates
Structural consultants: Y S Sane, Pune

"I am willing to change if you give me a good reason"

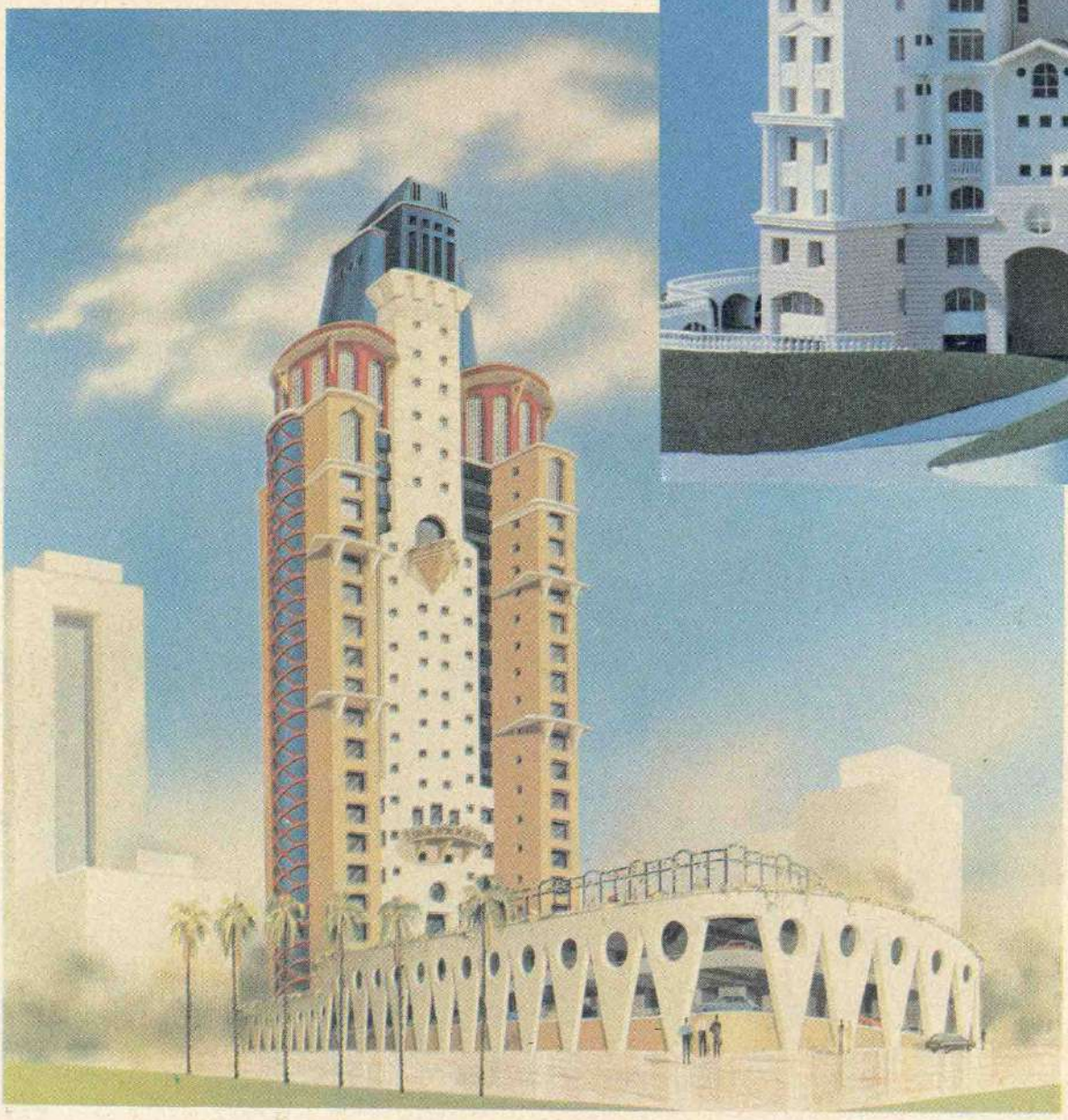


Hafeez Contractor
in conversation with Rajul Shah

With no particular theory or tradition to hold him back, Hafeez Contractor, bulldozes across the urban skyline with his dream machine, building fantasies dramatically changing the city's skyline.

He succeeds with a double edged weapon –speed and competition. He is known to submit a presentation in less than 12 hours and would rather work for nothing than lose a job. The easy rapport he establishes with the user, the clients comes naturally to him.

His architecture contains an ever increasing vocabulary of re-created idioms, endorsed by people, xeroxed by other architects, aspired by builders in many cities. To them, his coloured pediments, neo-classic columns and voluptuous balconies mean just one thing – success in the real world.



Tata housing project, Prabhadevi
Associate architect: Hiten Negandhi
Structural consultant: Sterling Engineering Pvt Ltd Consultancy Services Pvt Ltd
Above: Model by Hiranandani Builders, Powai
Associate architect: Hiten Negandhi
Structural consultants: Mahimtura Consultants Pvt Ltd

Your popularity as an architect is attributed to elevational treatment. How do you feel about this?

While people expected certain norms to be followed, I did what I liked! If this was accepted, I was lucky, and felt happy about it. It's not that I went out to study the aesthetic tastes of the buyers – to me architecture is much more than only plans. This does not mean that I do not do good plans. But with plans there is always a question mark – it may not suit everybody.

An elevation is something else. I have reasons for what I do, genuine reasons. If I were to design a sprawling house on a five-acre plot, I would do it differently – perhaps it would be more sculptural.

Bombay has very closed spaces, from the streets you can see only facades. Where there is no space and you are fighting for open space by inches, there can be no form. Many architects in Bombay had the audacity to say, that they would not dream of practicing in Bombay, which is wrong. I make the most of any circumstance. When I started in the early 80's, what was most needed in Bombay was packaging and as far as I was concerned, this was architecture.

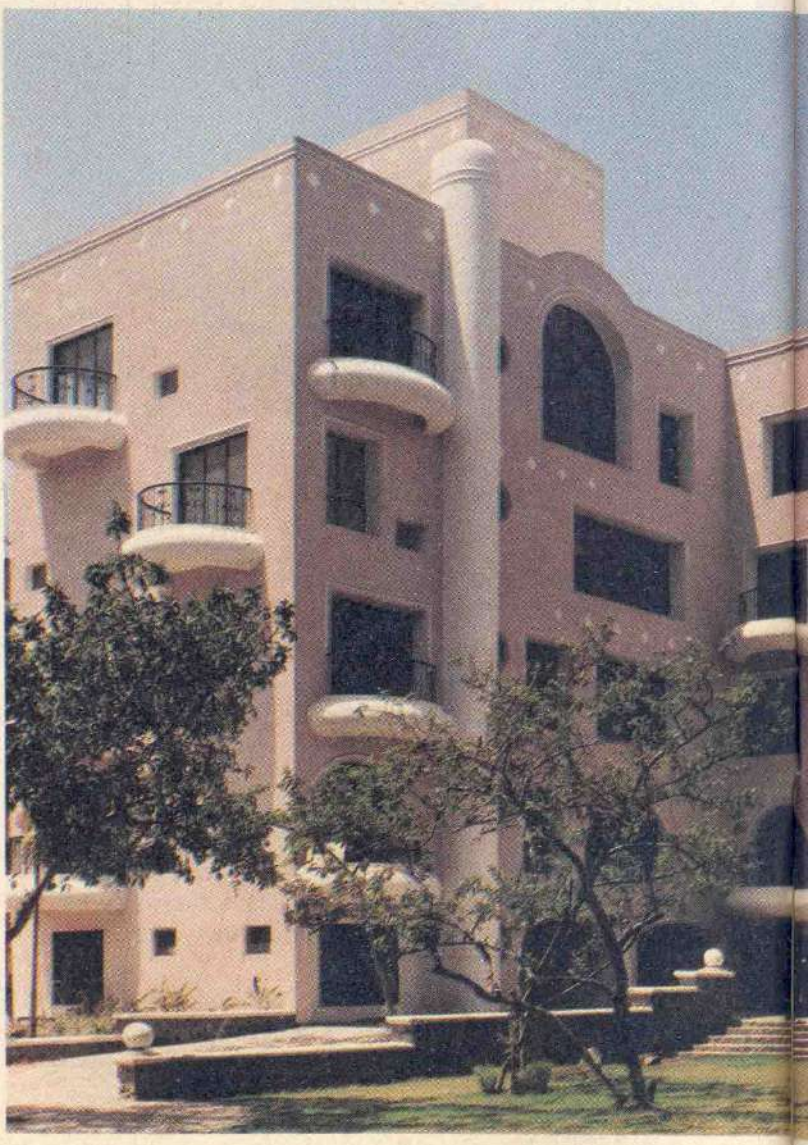
Other architects, in different circumstances, are also using packaging, though differently. They have their ways of justifying this. I like what I do. At any given time, my work is a combination of several styles. I might do a classical building in the morning, a post-modern in the afternoon, an ethnic interior in the evening.

If I see a facade that is a blank wall, I may start to decorate it with beads – people tell me I have made a pattern for a sari but what's wrong with it? It looks nice! The users are happy with it. They call it a five-star look and the term 'five star' is now a connotation for anything that is done well.

When I get a new project, sometimes I erase from my mind everything I have done before and say to myself – let me try and create something new, this time.

Though at the back of my mind, I know I am creating for

Row houses in Konark Nagar, Karia Builders, Pune
Structural consultants: Y S Sane, Bombay
Konark Enclave, Karia Builders, Pune
Associate architect: Vivek Varma
Structural consultants: Y S Sane, Bombay
Below and facing page: Konark Enclave, Karia Builders, Pune
Structural consultants: Y S Sane, Bombay



the common man – the masses, yet I am not inflicting any theory on the poor guy! I do not have any theories, nor do I propogate any theories. If I see something nice, it inspires me and I may do something that is totally different. I may have seen a calender picture – it triggers a design that people love. Everyone dreams of the kind of house he wants, the kind of life he wants – I cater to this – and he is in love with me for life. Instead of making stern square things, I bend a curve, a balcony – so what?

Your approach to design in some buildings is totally different. It is difficult to believe that the same person has created them.

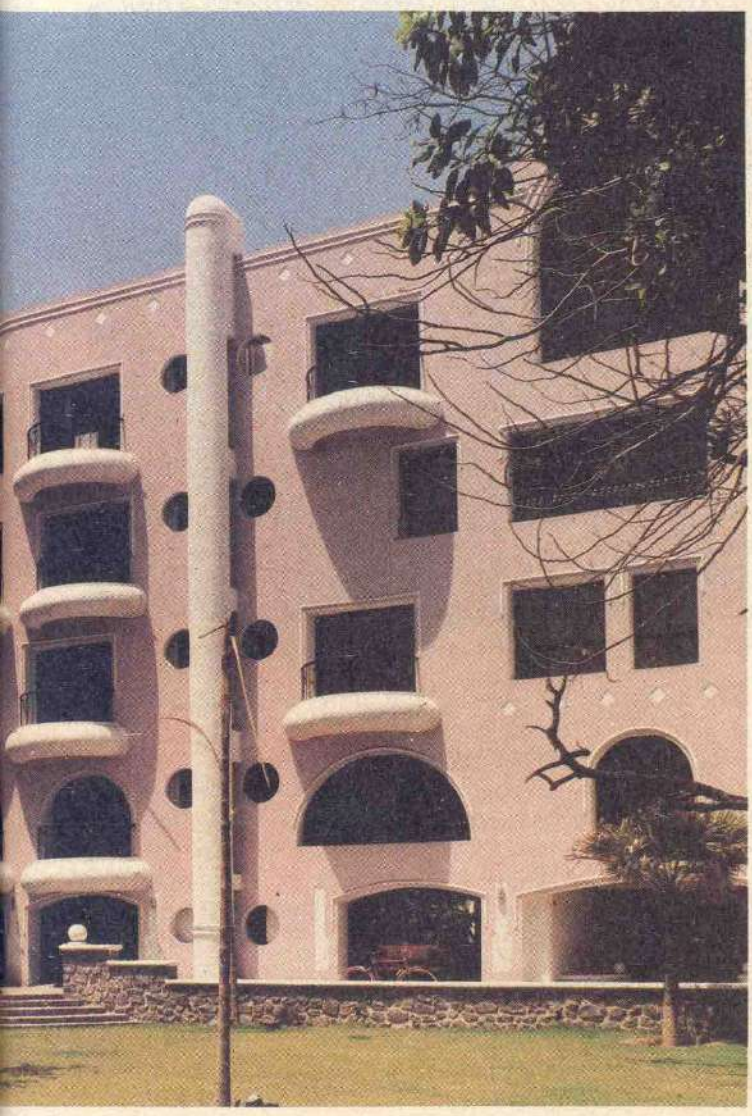
Yes, there is a certain refinement over the years, you may not see it in the first few projects, but it is evident after a couple of projects.

It's like this, though I am serving the same dishes: bedroom, hall and kitchen, I have cooked them differently. Previously, it was dished out in the same boring way, I have served *dal* and *chawal* in varied flavours. I am known for my residential projects because they are different.

Designing corporate projects is like taking a walk in the park – one step here or there will make no difference. But a builder's project is like walking 60ft above the ground on a tight rope. One wrong step and you are dead.

Your buildings have influenced many architects, in Bombay especially in the suburbs, in Pune, and several other cities. If the whole city had such elevational

> Architecture is not just making buildings, I have to take care of the business angle as well



facades, don't you think it would be very overbearing? Should there not be some order?

If someone imitates me, I am happy. Another architect imitates me in a totally different way, but if that is how he perceives my buildings – fine! If the entire city were to be designed with my kind of architecture people will stop going to Disneyland. The purpose is to make the densely built structure of our cities – a happy environment. You see, everything comes to architecture last – any movement comes first into writing, then painting, drawing, clothes, jewellery, interiors and only then into architecture.

If you have to create something new, it is easier to do it in a 2" x 2" frame – rather than a 200ft x 200ft – here, the risk is greater. It costs a hell of a lot of money. You have to wait for the right time to make the right move.

Today the real estate market is very different from that of the 60's and 70's. It is the buyer's market now. How do you respond as an architect to this shift?

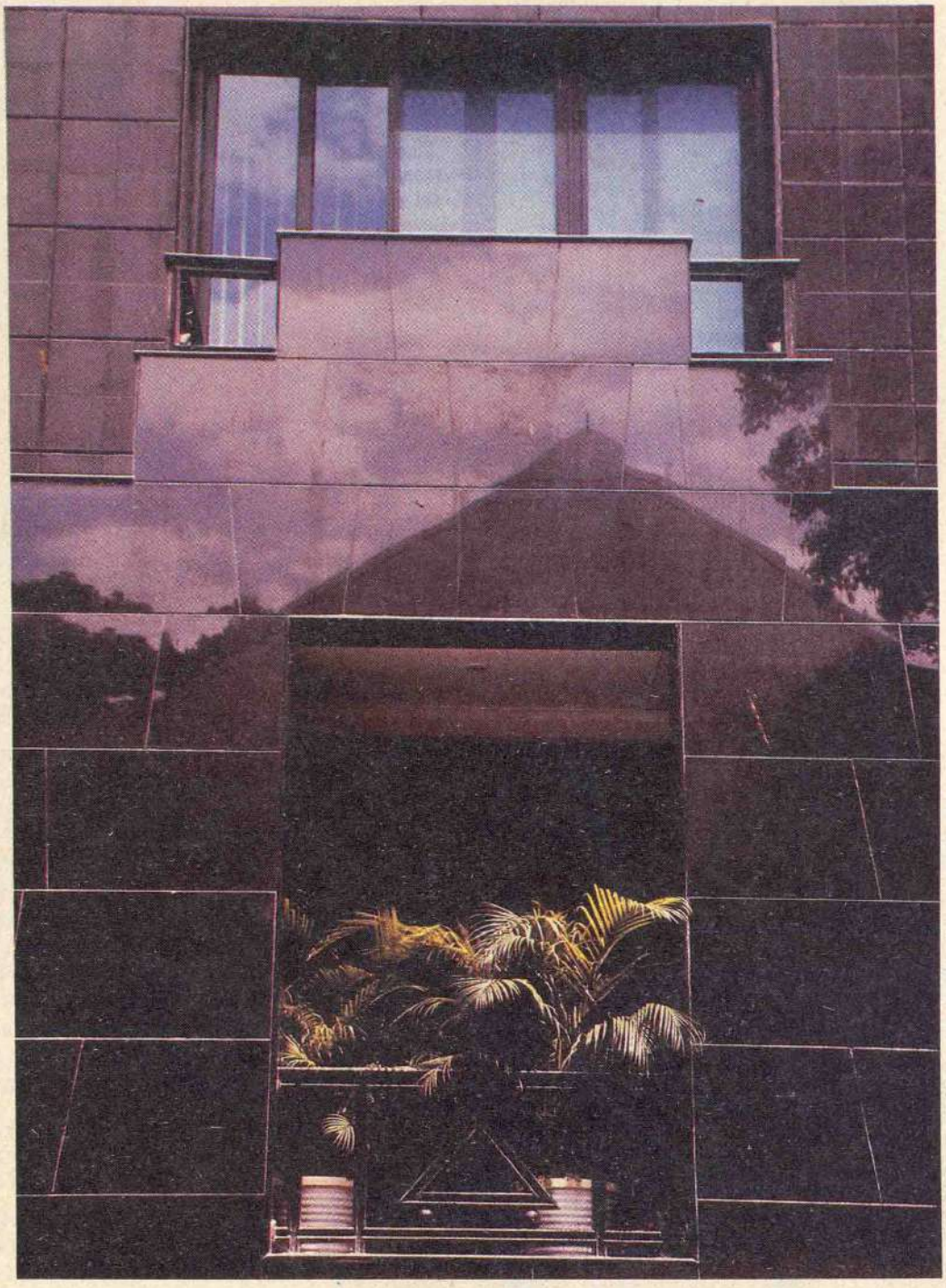
The market of the 60's was entirely a seller's market. I remember a builder who was selling a flat on a hill in Bandra at an exorbitant rate. He explained to the buyer that since it was on a hill he would charge 'hill station' rates adding that he would have to pay a premium for the two inches of sea view.

Today, there are only two types of flats that are selling well in Bombay. The ones that cost Rs1-2 lakhs, for salaried people who can get loans from HDFC and other sources and the ones that cost Rs2-3 crores, for the affluent. The most difficult flats to sell are the ones in the medium range.

The share bazar has drawn away most of the investors and the middlemen. Then there is a statement in Form 37I of the Income Tax department which has driven away the *banias* and traders who formed a majority.

But, we Indians are very versatile. People find ways and means of converting their money, so things should improve. Most builders today demand almost hundred percent of the money in white.

My architecture is not just climate requirements and a theory of architecture – it's more sensitive



Osho Commune International
Facing page: Pyramid seen from the garden
Associate architect: Vivek Varma, Subhash Shah & Associates
Structural consultants: Y S Sane, Pune

It is this atmosphere that I have to relate to. Architecture to me is 'feeling the atmosphere', what it takes to be in the market is to be sensitive to this. It is money, people, the builder, climate, the plot, the laws, and more. My architecture is not just climate requirements and a theory of architecture – it's more sensitive.

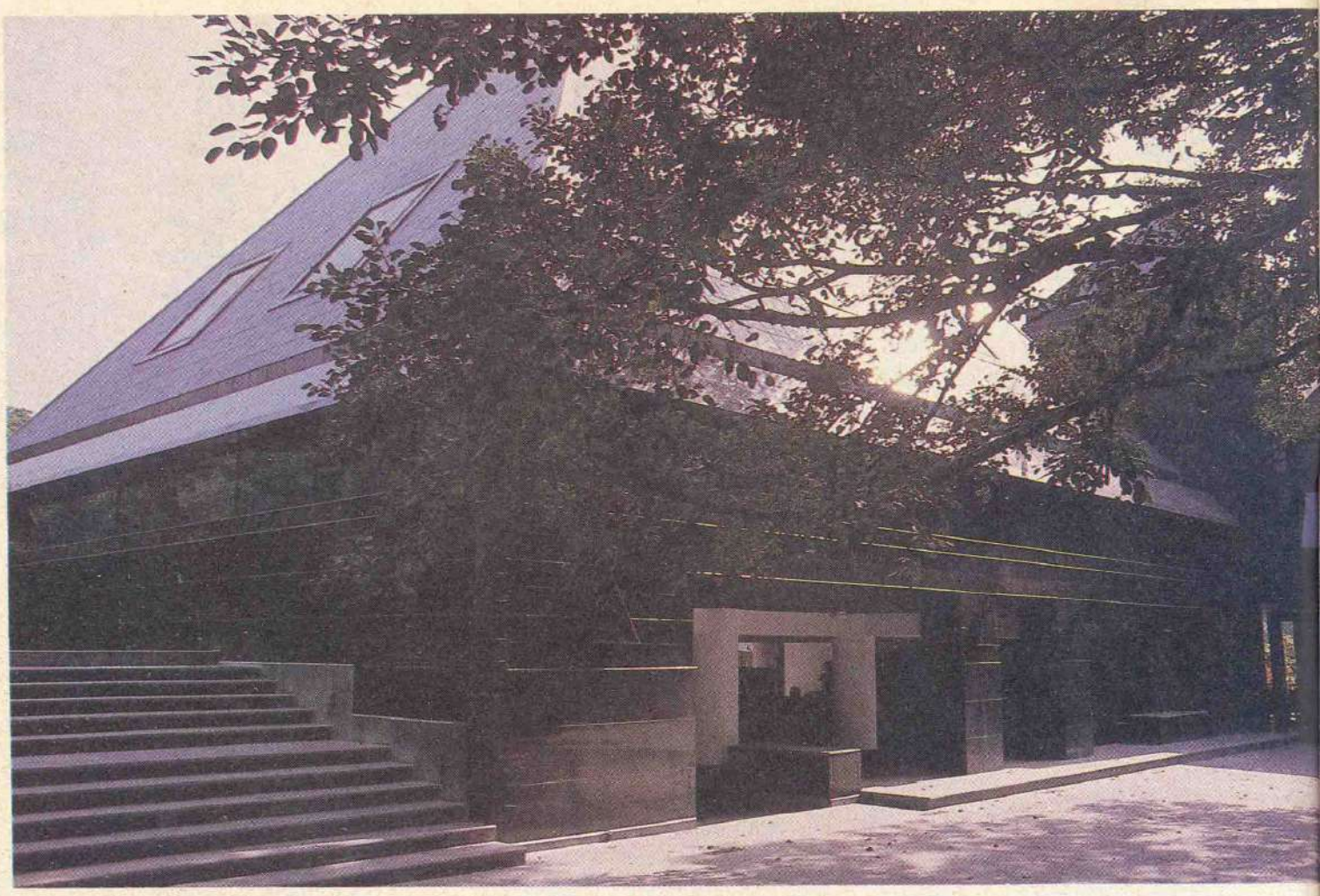
I have a knack for giving a man what he likes. I am not inflicting my ideas on the man. That a *chhajja* must look like this or a column should be just so. If he gives me a good reason, I will accept it and am willing to change.

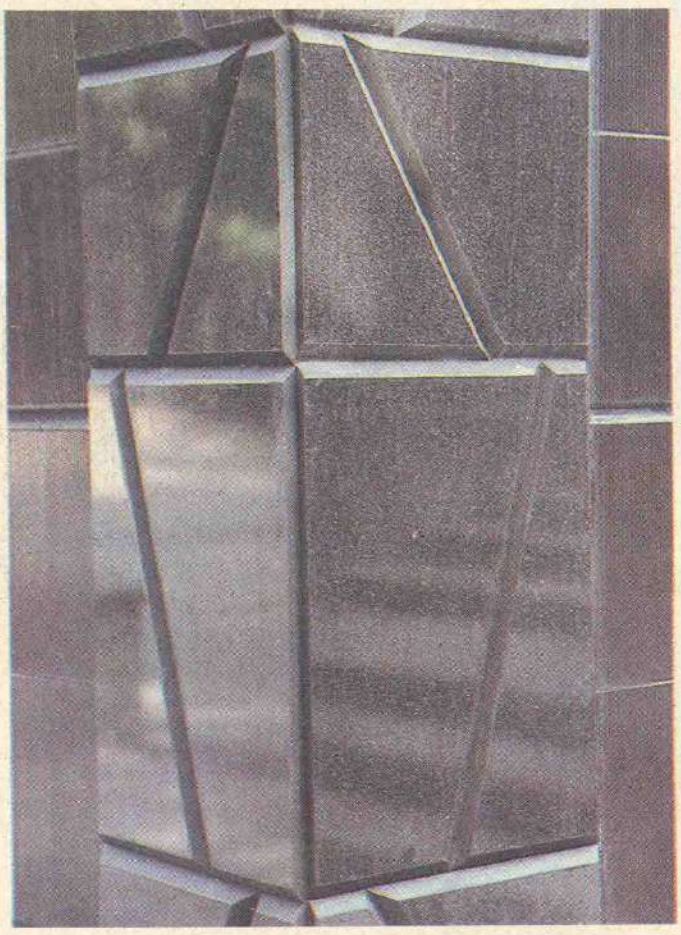
Your buildings for the Osho Commune are fundamentally different from anything you have ever done. What was your brief?

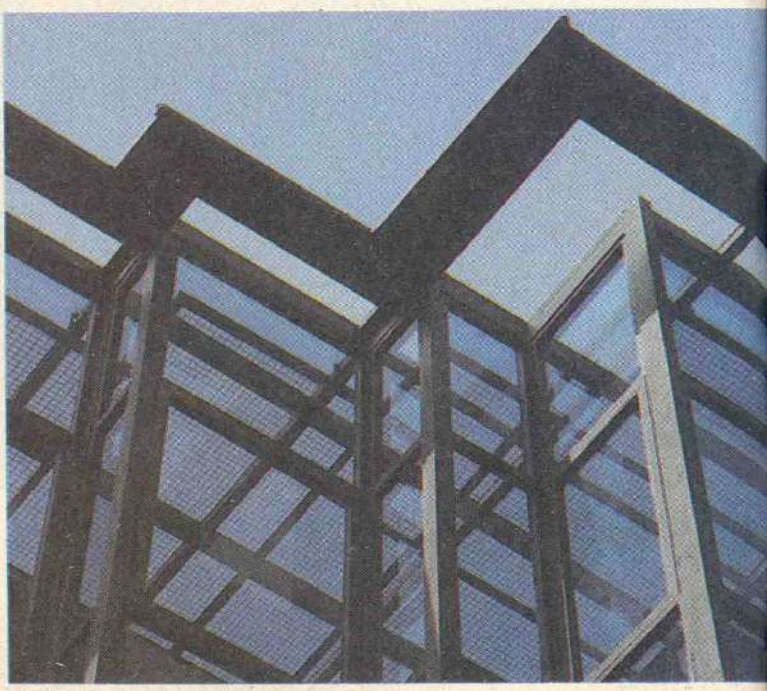
Generally, I meet a person, look at him – his face, his style of dressing and then designing for him becomes easy – when I don't meet him, it becomes very difficult.

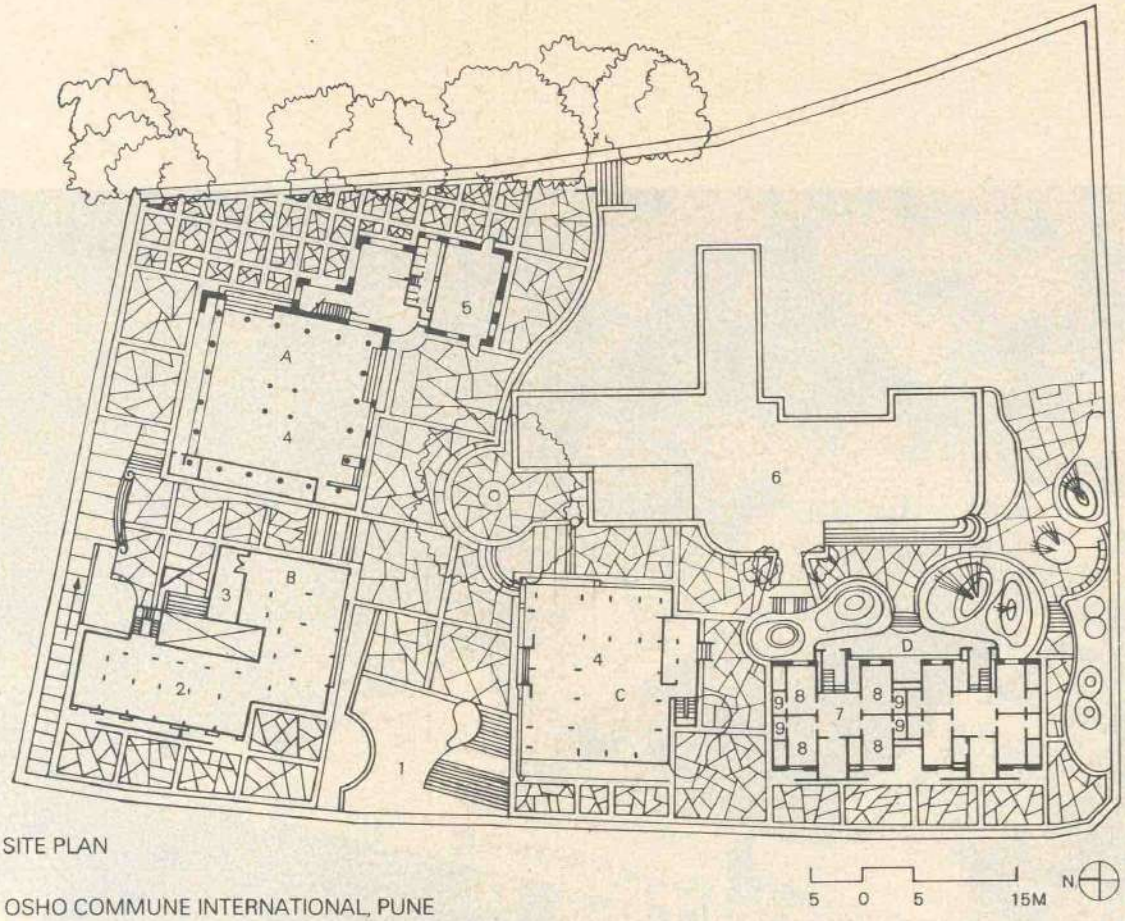
When the ashram approached me, I presented a design – they said it was good and Osho would like it. But when Osho saw it, he rejected it. It was not what he wanted.

I kept submitting alternatives, which Osho kept rejecting. This happened five or six times. I got fed up and wanted to meet him. It was difficult to design something for a person I had not seen. I asked for a brief. Osho sent me a big thick book with a photograph, the size of a postage stamp, on the cover, with instructions, "Osho has asked you to see this photograph, think, and then design our buildings". There was a small slip of paper on which was written:







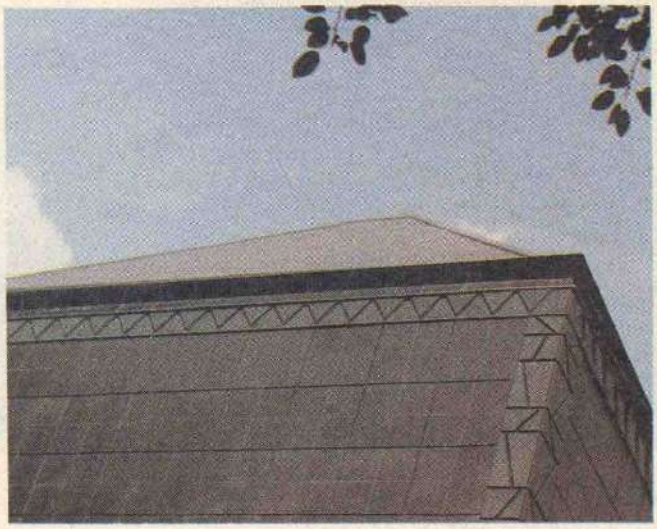


A HALLS
B RESIDENTIAL ROOM
C HALLS
D RESIDENTIAL ROOM

1 ENTRANCE
2 AC PLANTROOM
3 AHU ROOM
4 STILT
5 SERVICE
6 EXISTING BUILDING
7 HALL
8 BEDROOM
9 TOILET

SITE PLAN

OSHO COMMUNE INTERNATIONAL, PUNE



Above: Detail of pyramid
Far left: Detail of building showing use of granite and ceramic tiles
Left: Detail of glazing for the corridors
Facing page above: Polished black granite and ceramic tiles are used as cladding for the pyramids, cuddappah for surfacing the courtyards and basalt for the boundary walls

Black, Black and Black. The photograph was of a barn, shot at sunset. It was very dark, there was just a little bit of a blue halo around the building.

I looked and looked at it and said to myself, what the hell does this guy want? I worked on some more designs and still could not get through to him. Then one day while working on the presentation for another client on a black cardboard, late at night around 3.30 am, I suddenly remembered ed – Black, Black and Black – I saw the barn, and knew that buildings had to be black pyramids.

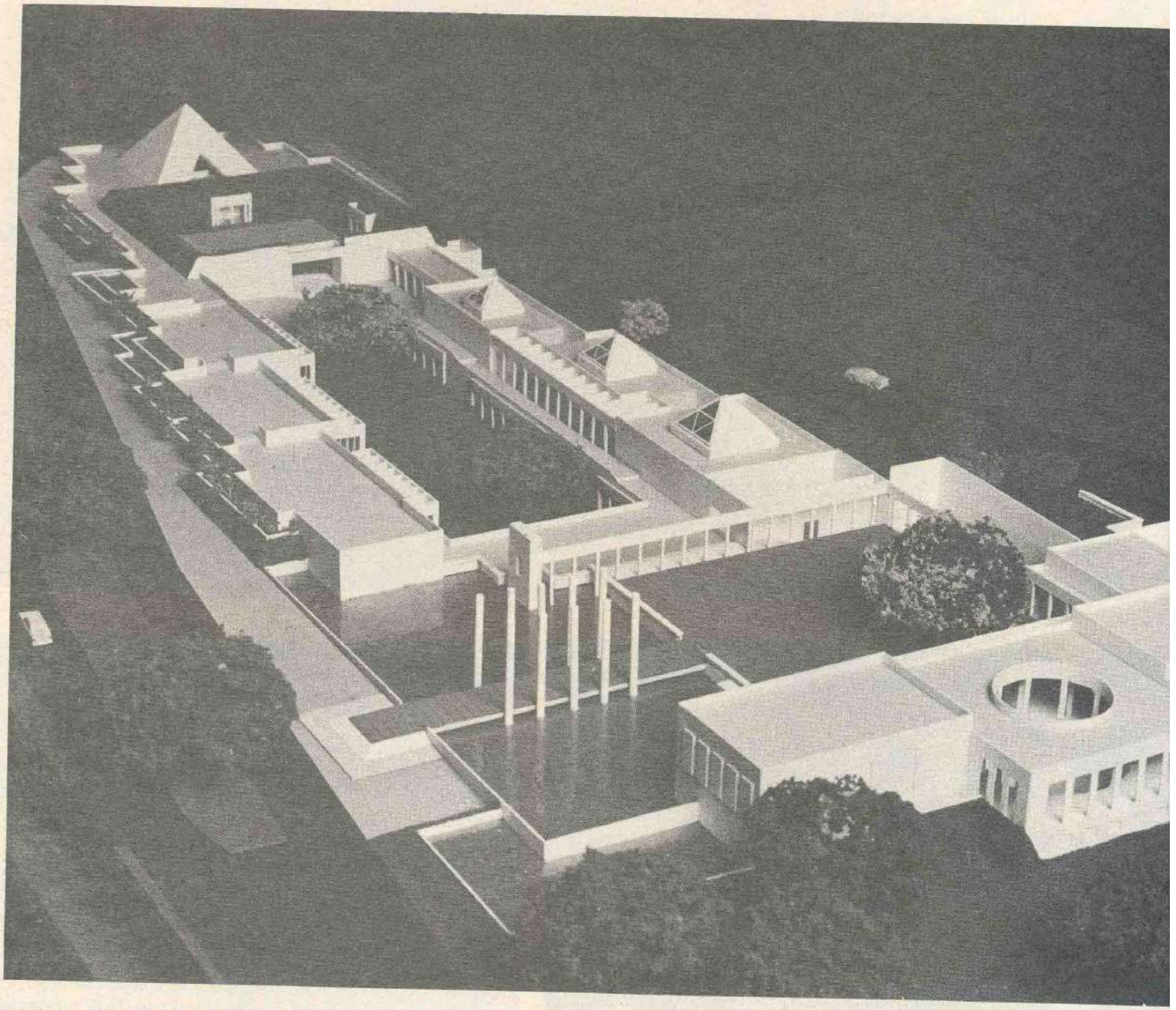
So I presented the design in black, on a black board, with black paper, black lines and some yellow and I sent it to him, at about 11 o'clock. At 2 o'clock came a message Osho loves you and wants to meet you'.

When I went to see him, he was not well and, I couldn't see him. Later when he called me I could not go. This happened four or five times. The building work started – but it was unfortunate that I never met Osho. He was a great guy – and had some great ideas about architecture.

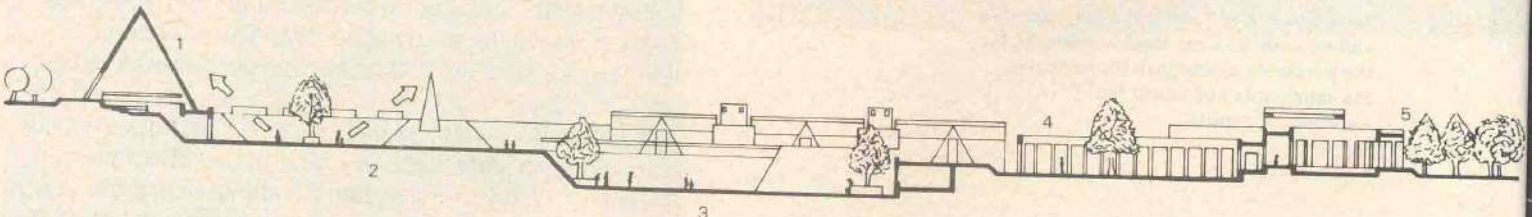
Why are the pyramids black?

Because black embodies all the colours, harnesses cosmic energies and is the most stable form. The blue tinted window, signifies the first colour one percieves on enlightenment – the halo of life.

Architecture is not just making buildings, I have to take care of the business angle as well. Another client wanted to construct a revolving restaurant above a shopping centre. I knew that if he did this he would be insolvent. I convinced him to accept a more alluring alternative, by including

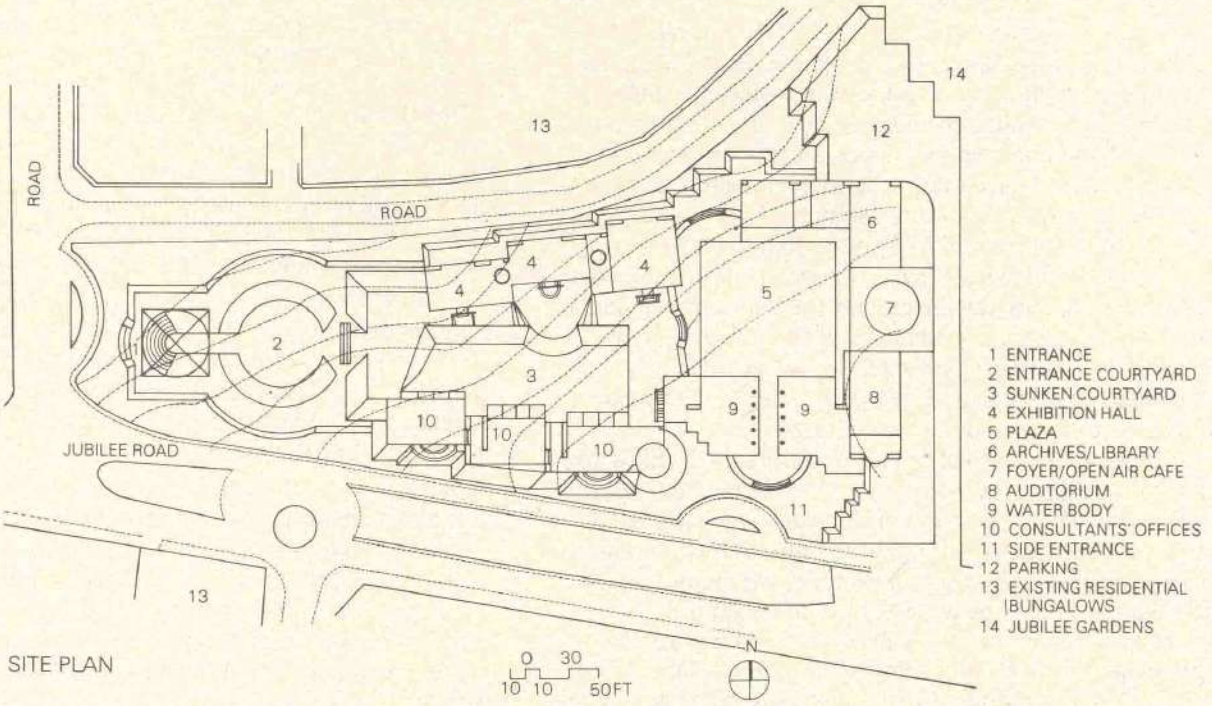


Facing page and above: Model of Russi Modi Centre for excellence, Jamshedpur
Associate architect: Sunil Gambani
Structural consultant: Y S Sane, Pune



SECTION

1 ENTRANCE
2 ENTRANCE COURTYARD
3 SUNKEN GARDEN
4 PLAZA
5 JUBILEE GARDENS



1 ENTRANCE
2 ENTRANCE COURTYARD
3 SUNKEN COURTYARD
4 EXHIBITION HALL
5 PLAZA
6 ARCHIVES/LIBRARY
7 FOYER/OPEN AIR CAFE
8 AUDITORIUM
9 WATER BODY
10 CONSULTANTS' OFFICES
11 SIDE ENTRANCE
12 PARKING
13 EXISTING RESIDENTIAL BUNGALOWS
14 JUBILEE GARDENS

SITE PLAN

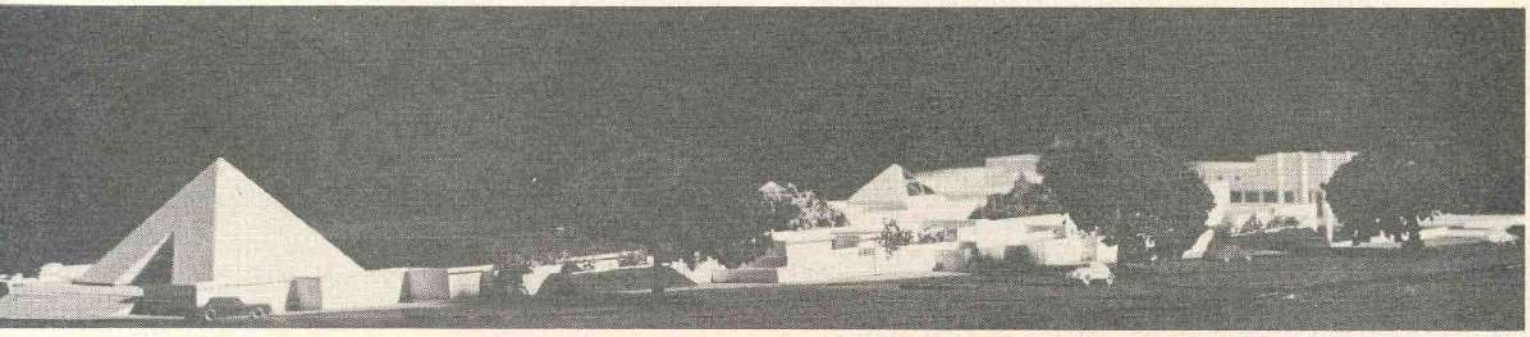
RUSSI MODI CENTRE FOR EXCELLENCE, JAMSHEDPUR

a banquet hall in the structure so he could earn more revenue.

Your design for the Russi Modi complex seems to be the kind of design that would instantly receive peer approval. How was the design evolved?

Adjacent to Jubilee gardens, there is a very large green space. The building is designed as a formal gate to the Jubilee gardens, at the same time, as it is surrounded on the other three sides by low residential buildings, I felt that when a person is inside the complex, the buildings should be blanked off, yet they must feel the presence of the buildings on the site and its spaces. A concept was derived whereby you enter the entrance pyramid and go underground. Suddenly your vision extends to the many courtyards at varying levels from where different functions happen.

> If the entire city were to be designed with my kind of architecture, people will stop going to Disneyland



Is it true that you charge less fees than what is stipulated?

It is better to quote less rather than take kickbacks from contractors or the clients. The corporate sector should be patrons of architecture. If you look at history, our buldings, and cities were initiated and built by kings – they recognised talent and nurtured excellence. Today, the corporate sector is much worse than a commercial builder of the 60's.

Their time scale for taking decisions is so extended you lose sight of the context. They have no way of evaluating talent. They will ask for five or six architects to quote their percentage of fees, the lowest gets the job! Once I quoted for such an organisation, I submitted a bill of 5 percent for an excellent design; 4 percent for a very good design; 3 percent for an okay design; 2 percent for a substandard design and 1 percent for a lousy design.

The person concerned called back and said "Is this a joke?" I said, "no! If I quote 5 percent for an excellent building you will reject my bid in favour of someone who has quoted 1 percent for a lousy job." I have to fight this rather than sit in my office and twiddle my thumbs. I will quote less and get the job, I might even work free – if I want to.

You have to work within the system. When I get a job, I may quote half the fees, depending on their financial constraint. May be one day I will be recognised and get my due.

The government has double standards for everything. They make laws but do not observe them. Now, for instance, in Bombay, new office buildings are not allowed to be built for commercial/official/private purposes, but this is not applicable for the government buildings, they can be constructed anywhere.

The worse thing that has happened to architecture in India is the accounts department with its auditors. They are the ones responsible for the kind of buildings that come up today.

If an enlightened director wants to appoint an architect on merit, he is clamped down by the auditors.

Unless you have patrons, how can there be architecture? In the 44 years of Independence, how many buildings can we boast of? The government is incapable of even maintaining the buildings handed down by the British. Look at the way airconditioners are fitted in the windows, and weeds are allowed to grow all over the building. They will not even paint a rusting *chhajja*, or repair a drain pipe.

Don you think it is essential to look back at tradition?

You ask me, what is Indian? No one in the world builds the way we build. What is Indian about you or me? We are all influenced in our dress and life style. The only thing Indian is your mind.

Construction costs are rising at a much higher pace than sale prices. This is because you are selling today and building tomorrow. In most other business, 15 percent is considered a good profit; not so in building – everybody wants a 100 percent profit – because there is such an enormous risk! It is like smuggling – where even a 500 percent profit may not cover all risks. How can good buildings be built?

Considering all these factors, what do you think should be done?

First of all, since the banks will not lend a mortgage, the builder collects money from investors. If you are successful you can acquire a plot, then your grandfather, the tenant will squeeze you dry. Then the great-grandfather's approval – the land ceiling approval is required. For For that; you *'lagao ferra attas'* to the Sachivalaya. Then the guy may get transferred. Then the municipal approval. If he is lucky all this will take the builder eight to nine months, and the building has already cost him a couple of crores. The interest quantum mounts.

He starts construction and then he has to deal with the construction mafia. It is virtually going on all over India.

In Jamshedpur, one of our contractors was kidnapped and ransom demanded. In Mulund, a client was threatened. There is also a particular *goonda* who can force you to buy your building material only from him. By this time the builder has had high blood pressure, a heart attack, everything. Half his life has gone.

Now, if after all this, you tell the builder 'Let's make a fantastic building' he will ask you to go to hell, 'forget a good building – just let's finish it!' How can he work on a 10 percent profit margin? The cost is inflated because of all this delay. You are paying for all those additional costs! The building procedure has to be streamlined. It is time for people to oppose this. Why should a building cost so much?

Why should an office space in Bombay cost Rs7000 per square foot? Are you paying for high quality? or scarcity?

The government and people should thank the builders. The kind of houses the government builds cost more and are lousy. You are paying for the salaries – right from the bureaucrats down to the peon. They have no incentive to work – if the government helps the builders, the costs will come down. The land ceiling has not helped anyone to reduce costs. It should be abolished. Cities should be planned by a corporation, something like the Pre-independence Improvement Trust, a body made up of enlightened administrators, writers, architects, planners, who will draw up the master-plans. This should be handed over to a completely independent body to execute. The planning, visualising must be separated from implementation as they require completely different inputs.

Builders should be allowed to mortgage their property for bank loans. Why is it that abroad a 60-storeyed building takes one and half years to complete whereas here, we can only do a six-storeyed building?

You have been a champion for highrise, high-density development. Should there not be a limit? How much you can exploit the land?

Where will all the people live? I see that in the very near future we will have floating cities. Can you build houses high up in the sky? You cannot grow trees in the sky.

Today, how far does a man have to go to reach a green space, how far does he have to go to a garden? Farmland is being swallowed up by the cities. Where will we grow our food?

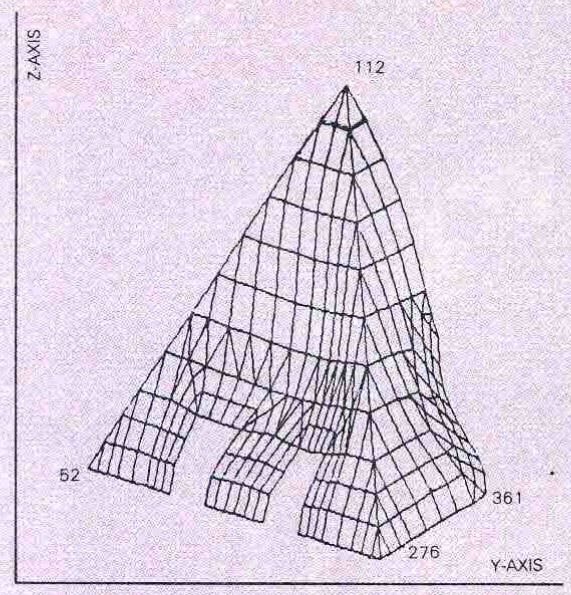
Probably in conveyer belts and rollers in the sky!

I fully accept that if I were to do a building – 5 storeys would be comfortable. The question is how much green area do we have?

Photographs courtesy the architect and the Osho Commune

Structural design of pyramid, Osho Commune

Y S Sane
Structural Consultants Pvt Ltd



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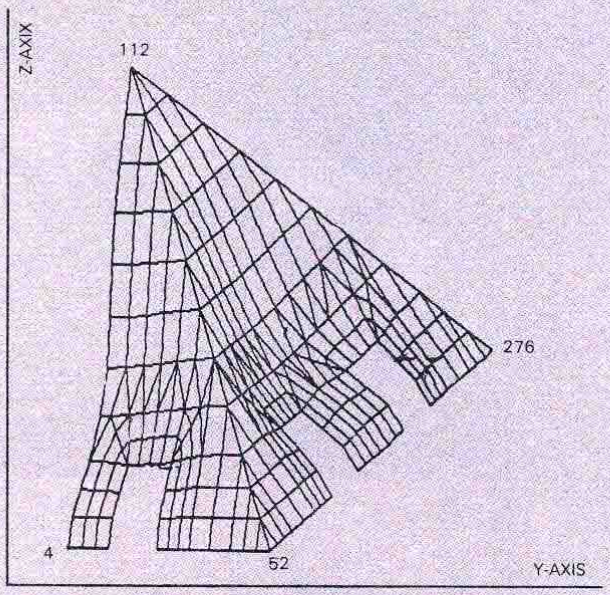

DEFLECTED SHAPE-REGIONS 1, 2 & 4
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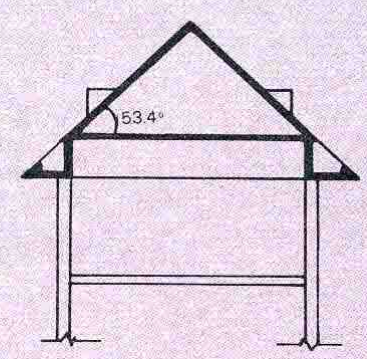
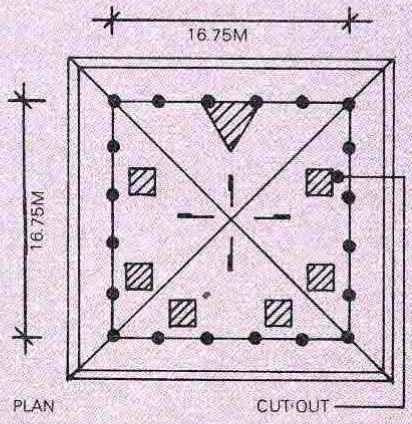


SECTION

Each pyramid was conceived as a shell element resting on peripheral beams (elevation level of these beams apprx. +7.2m from ground level) in turn resting on RCC columns. The basic plan dimensions of 16.75m x 16.75m was considered. The pyramid angle was at 53.4 degrees with the horizontal. There were six rectangular openings of size 2m (width) x 1.57m (height) and one triangular opening with a base dimensions of 5.3m and height of 3.31m.

The finite element method was used to analyse the structure. The pyramid was discretised into various shaped shell elements and the stiffness matrix was assembled combining beam elements and shell elements. Elements around openings were formed in such a manner so as to give a correct picture of stress concentrations around openings.



STRUCTURAL DESIGN OF PYRAMID

The structure was designed for the following load cases: Dead load + live load, dead load + live load + wind load, dead load + live load + seismic load.

The final computer analysis was completed with a shell thickness of 150mm – M20 grade concrete. Deflection pattern was obtained to verify the expected behaviour of the structure. The deflections were checked and were found to be of very small order. The detailed stress contours for membrane stresses, flexurel stresses and torsional moments were obtained.

Near the edges of the openings, stiffener RCC beams within shell thickness were provided to take care of suddenjump in stress values. The ridge line of the pyramids were provided and stiffened with MS channels.

Commingling

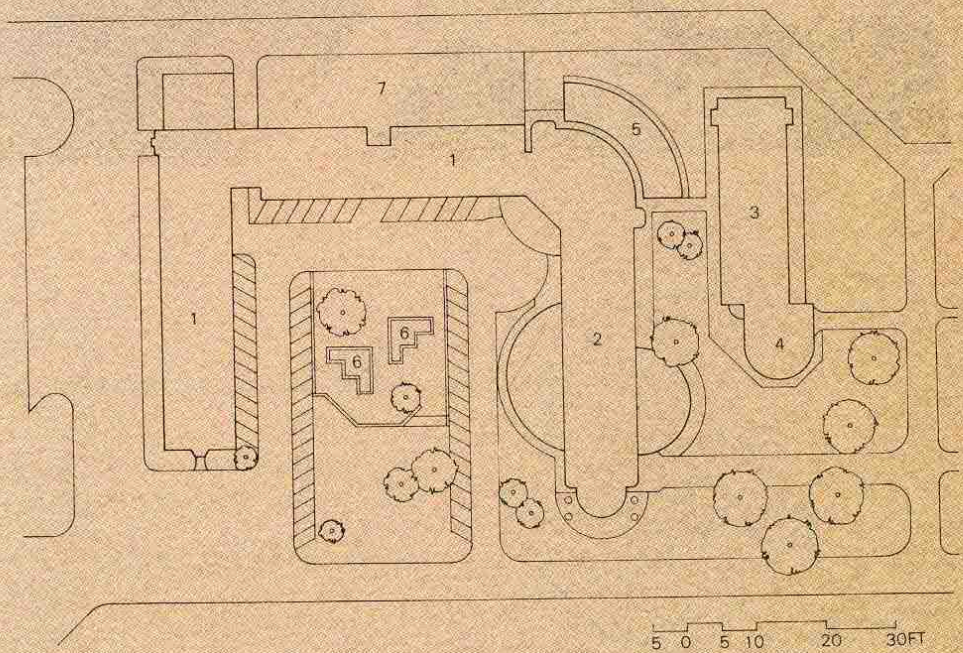
The atrium forms an element of focus between the old and the new. Extension to the administration building for the Bharat Petroleum Refinery Division, Mahul, Bombay, designed by architect Hafeez Contractor.

Rachana Amin
Architect, Bombay

When architect Hafeez Contractor was appointed to redesign the South Wing of the existing administration building at the BPCL (R), the client's brief was very simple – the total area for the additional office space should be about 70,000²ft The dining and kitchen areas were to be preferably on the ground floor and the elevation of the building was to be the same as that of the existing building.

The thought of designing the building similar to the existing one was not at all attractive. Design proposals for something different were presented. The site context defined the outer envelope of the building. It was essential to segregate the existing building facade from that of the new building. To enable this an atrium was provided

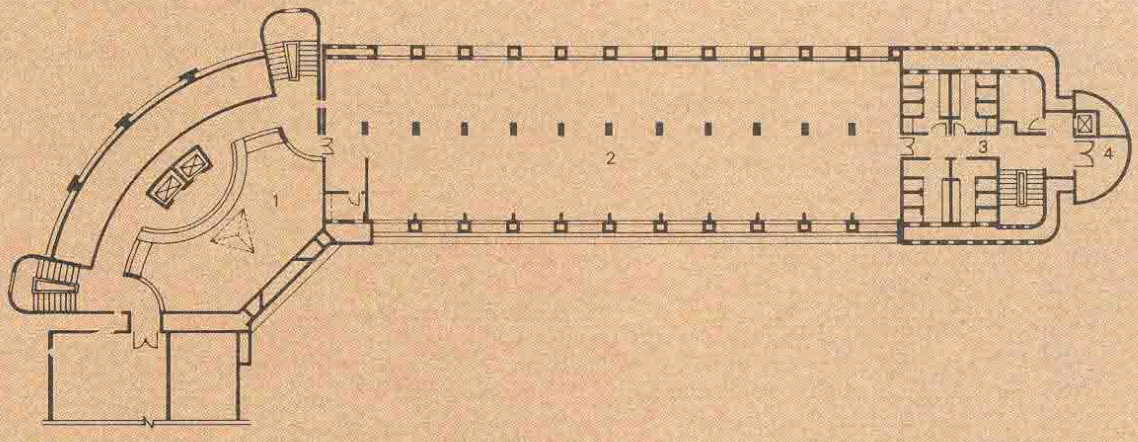
The BPCL office building. The central atrium – a conjunction between the old and the new offices Left: The entrance looks out to the old building



1 ADMINISTRATION BUILDING-EXISTING
2 ADMINISTRATION BUILDING-EXTENSION
3 MEDICAL CENTRE
4 CRECHE
5 ELECTRIC SUB-STATION
6 WATER POOL
7 CYCLE PARKING

SITE PLAN

BPCL-EXTENSION TO ADMINISTRATION BUILDING



1 ATRIUM
2 OFFICE
3 TOILET
4 AHU ROOM

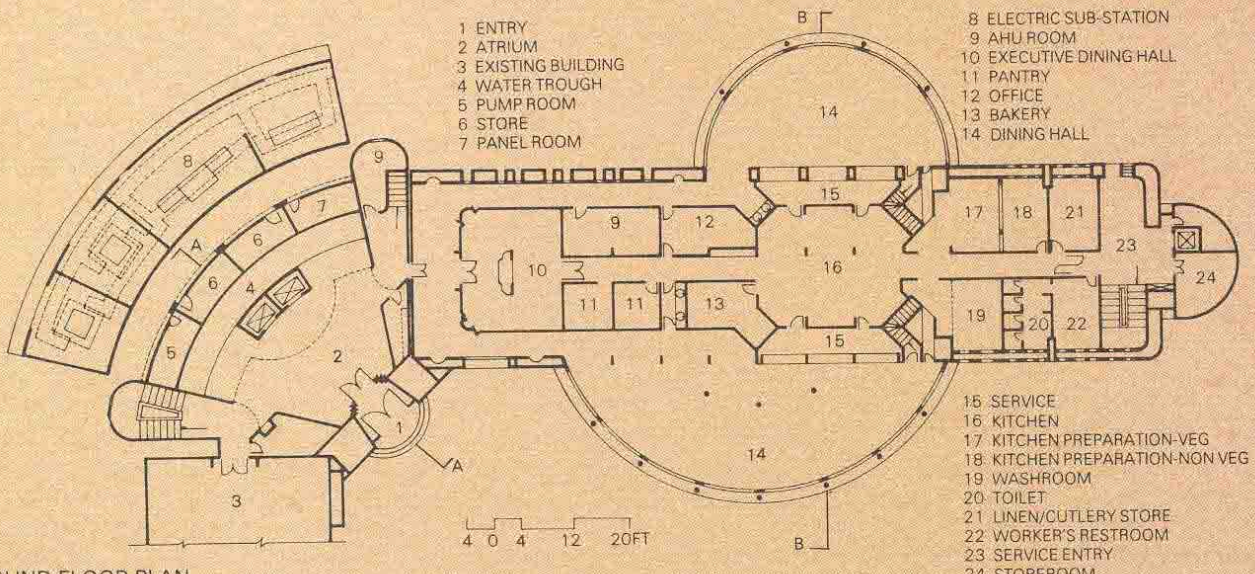
TYPICAL FLOOR PLAN

which would give the whole building complex a heart and a focus. A sloping wall in solid concrete became the entrance wall and front facade. A conical vault puncturing this wall forms the entrance to the atrium. This atrium also presented all the challenges of normal window and roof design. It was decided to do away with any windows that would open to the exteriors – only a triangular pyramidal roof light would be used to allow diffused lighting into this space. All other lighting would be through artificial lights.

Locating the elevators within the atrium was an integral part of planning the circulation pattern of the building for two reasons. First, these elevators had to serve not only the new South wing but also the existing East wing. Secondly, being within the refinery premises, it had to serve as a quick means of escape in case of a fire. For this purpose the single elevator point offered better service and economy.

The entrance in the atrium lobby with the elevators in the foreground and the waterfall spanning the entire rear wall at once appeals to the mind and the senses – it puts one at the centre of things – allowing people to move into and through the building amidst a natural staged ambience. It constitutes a lobby and circulation space with an access to all parts of the building, creating vistas and accessibility, enabling the upper levels to work as extensions of the ground level. The space thus becomes stimulating through activity and visual

The sky light in the atrium
Facing page: The atrium that connects the old and the new wings



GROUND FLOOR PLAN

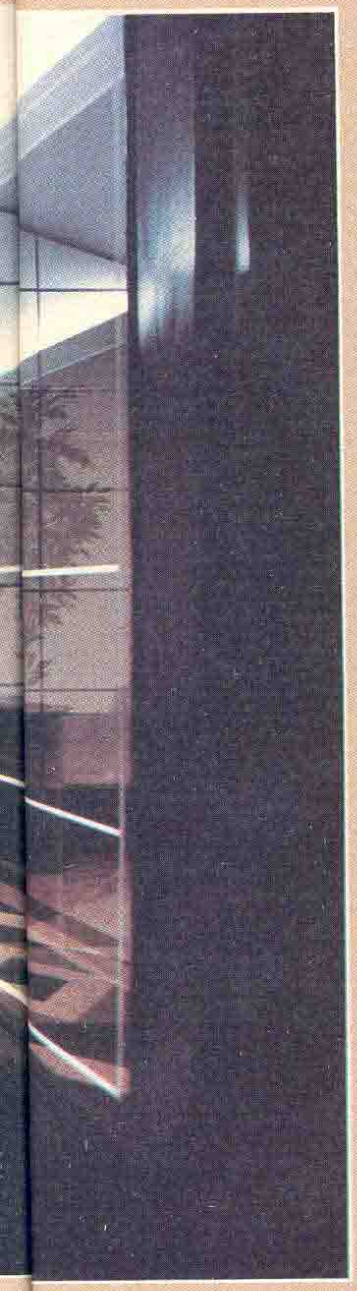
connections without becoming an empty and a awesome volume.

Within the atrium, the climate is passively controlled and regulated by the configuration of the envelope and the inner fabric. For this, the air handling concept considered seperated the ventilation of occupied spaces and the atrium.

Inspite of the difficult technicalities in working out the equal distribution of the air conditioning supply, after a trial-and-error method, finally, a system which cleverly hid all ugly ducts and boxing and was aesthetically pleasing, was implemented.

The basic problem was that during the construction of the two sloping walls – the entrance wall and the waterfall wall (75ft in height from ground level) had only RCC buttresses supporting them. They are connected at the plinth and terrace level with beams. The other problem is that of maintenance, because of the sheer size of the space. These problems have been overcome by systematic planning and well laid out plans for working.

Atrium buildings appear expensive compared to conventional designs. Here it is cost effective and successful due to its added attraction – an atrium lobby proving beyond doubt that atrium buildings offer larger, more efficient floors than their tower equivalents. Beyond the atrium, leading from it are the dining halls and the kitchen facilities. A central kitchen with forced ventilation and exhaust systems allows the two large dining halls to overlook the landscaped gardens. The dining halls are semicircular in shape unlike the conventional rectangular shape. This shape enhances interaction between persons. The dining halls are connected by an underground tunnel facilitating movement from one hall to another.



A Graphic window looking onto staff dining room
Left : Entrance to the executive dining area

The kitchen, in the centre of the building, has no windows opening to the outside. The lighting and ventilation is artificial. Large fresh air fans draw air from the outside which is circulated through the ducting. The exhaust system is through a suction process from hoods and a chimney at the terrace level. The exclusive dining hall is a blend of the old and the modern – granite flooring in an old world pattern combined with ethnic artefacts and modern furniture.

The offices on the upper floors are basically planned as open offices, with cabins only for the very senior executives. Straight lines are followed as far as possible and the whole statement is one of simplicity and clean lines. Compared to the atrium and the ground floor, where the emphasis is on arches and semicircular arrangement, the upper floors are a sharp contrast to the atrium and ground floor with their straight rectangular lines and forms.

The fourth floor houses cabins for the Director, Chairman and the General Managers – the central corridor with widened crush spaces opens into a small lobby on either side forming an access to the cabins of the executives. As on the floors below, the stress here is on straight angular lines in both the furniture as well as the panelling design. Soothing colours are adopted for the fabrics to offset the black lines of the furniture and columns. Here, too ethnic artefacts are placed alongwith modern items associated with the latest trends in office automation.

Electrical services

For purposes of lighting as well as power supply all office floors are divided longitudinally into two zones. Electrical ducts at each end of

The semi-circular staff dining rooms look out onto the garden

the building feed these zones. G.I. conduits are used at the ceiling level, for lighting, as no plastic material could be used in the refinery.
The power points, telephone points, computer cabling to each individual areas are through G.I. traps which run along the floors, providing easy accessibility for servicing. The kitchen and air conditioning load is totally segregated by direct feeders to the kitchen.

Plumbing and sanitation

The toilets and pantry are all clubbed at one end of the building and the pipes run in the special ducts provided so that the facade of the building remains clean. Diverting the drainage lines of the existing building toilets at the point where it connects with the new building was a problem. However, a continuous channel was provided instead of individual IC's connecting the drainage lines to the existing drainage line.

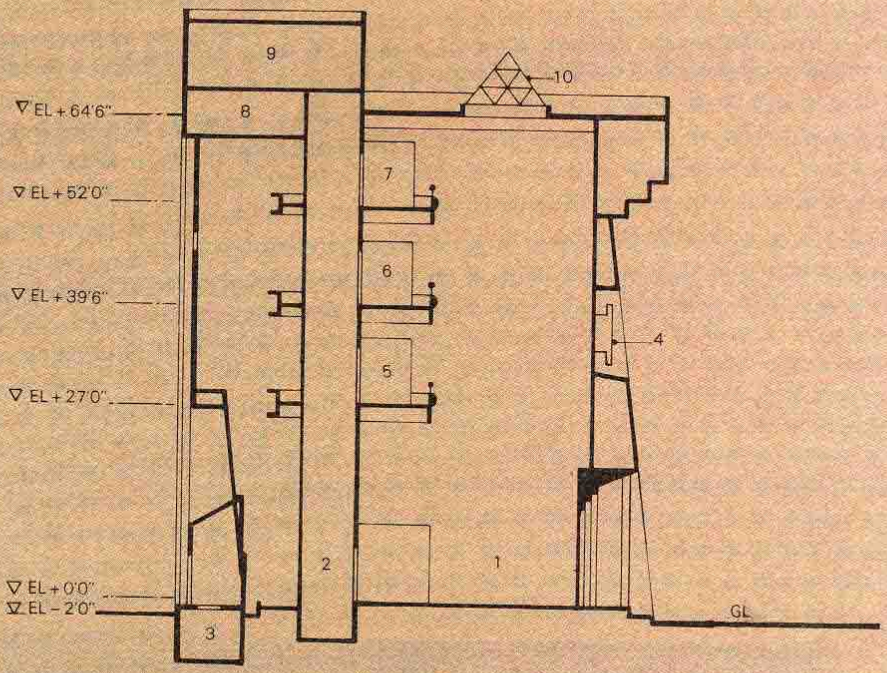
In the central kitchen the drainage was taken below the flooring using L.A. class pipes with IC's and *nahni* traps, wherever required. Water supply lines for both hot and cold water were also taken in the floor and chased up the wall at the point required.

Airconditioning

A chilled water system is used, with the main plant room in the basement and cooling towers on the terrace. All condensor water piping, and cabling runs through the duct behind the service elevators – right from the basement to the fourth floor. Each floor has an AHU room. The main duct passes through the corridor between the toilets, from there it branches into and then enters the box above the windows created by the drop RCC pardis, thus the ceiling height throughout the open office is maintained.

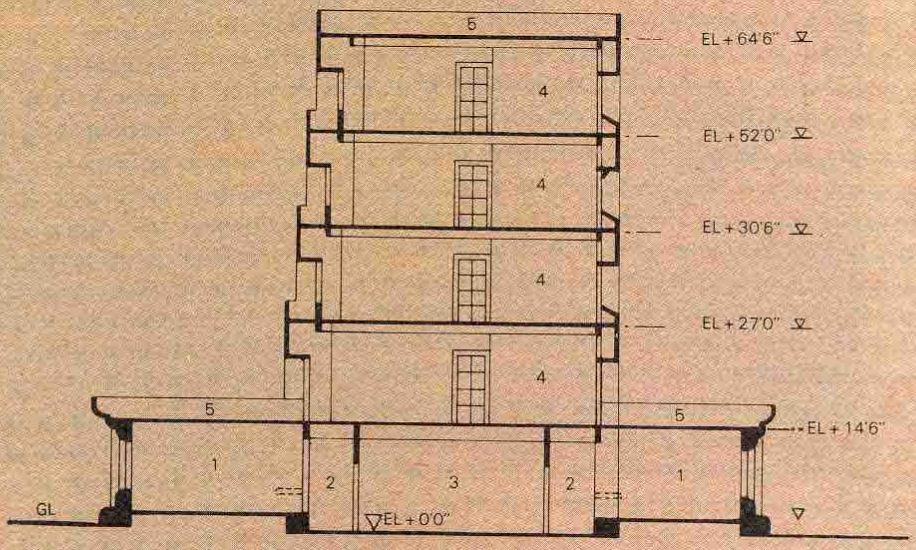
Break up of cost

Civil and plumbing work	Rs120 lakhs
Electrical work (including substation)	Rs 90 lakhs
Interiors	Rs200 lakhs
Air conditioning	Rs 60 lakhs
Cement and steel	Rs 30 lakhs
Direct procurement of electrical trans-	Rs 30 lakhs



1 ATRIUM
2 LIFT SHAFT
3 SUCTION TANK FOR WATERFALL
4 LOGO
5 SECOND FLOOR
6 THIRD FLOOR
7 FOURTH FLOOR
8 OH WATER TANK FOR WATERFALL
9 LIFT MACHINE ROOM
10 SKYLIGHT

SECTION A-A



1 DINING HALL
2 SERVICE
3 KITCHEN
4 OFFICE
5 TERRACE

SECTION B-B

formers/light fixtures/etc	
Direct procurement of chairs/filing cabinets/etc. from Godrej	Rs 30 lakhs
Artefacts/paintings/ etc.	Rs 6 lakhs
Kitchen equipments	Rs 25 lakhs
Kitchen exhaust & ventilation system	Rs 5 lakhs
Elevators	Rs 20 lakhs

Date of commencement of project: April 1988
Date completion of project: August 1991
Clients: Bharat Petroleum Corporation Ltd, Refinery Division
Associate architect: Rachana Amin
Structural consultant: Sterling Engineering, Consultancy Services Pvt Ltd, Dimensions Consultants
Electrical consultant: K S Shroff
Service consultants: Plants and Piping
Kitchen consultants: Techno Group
Civil contractors: B J Mistry Pvt Ltd
Main building substation: Civil Engineering Associates
Electrical contractors: Pioneer Electricals
Interior contractors: Jayant K Furnishers
Air conditioning: Voltas Ltd
Space frame contractor: Construction Catalysers, Pune

Suppliers:
Electrical fixtures: Phillips India, Terra trading, Classic Luminares, Jigtiani Bros,
Artefacts & paintings: Popli and Songs, D Popli, A K Essajee, Etcetra, Nisha Mehta, Gallery Chemould
Fabrics: Shyam Ahuja, A to Z, Dadar
Carpets: India Carpets Ltd, A to Z, Dadar

Photographs: Noshir Gobhai