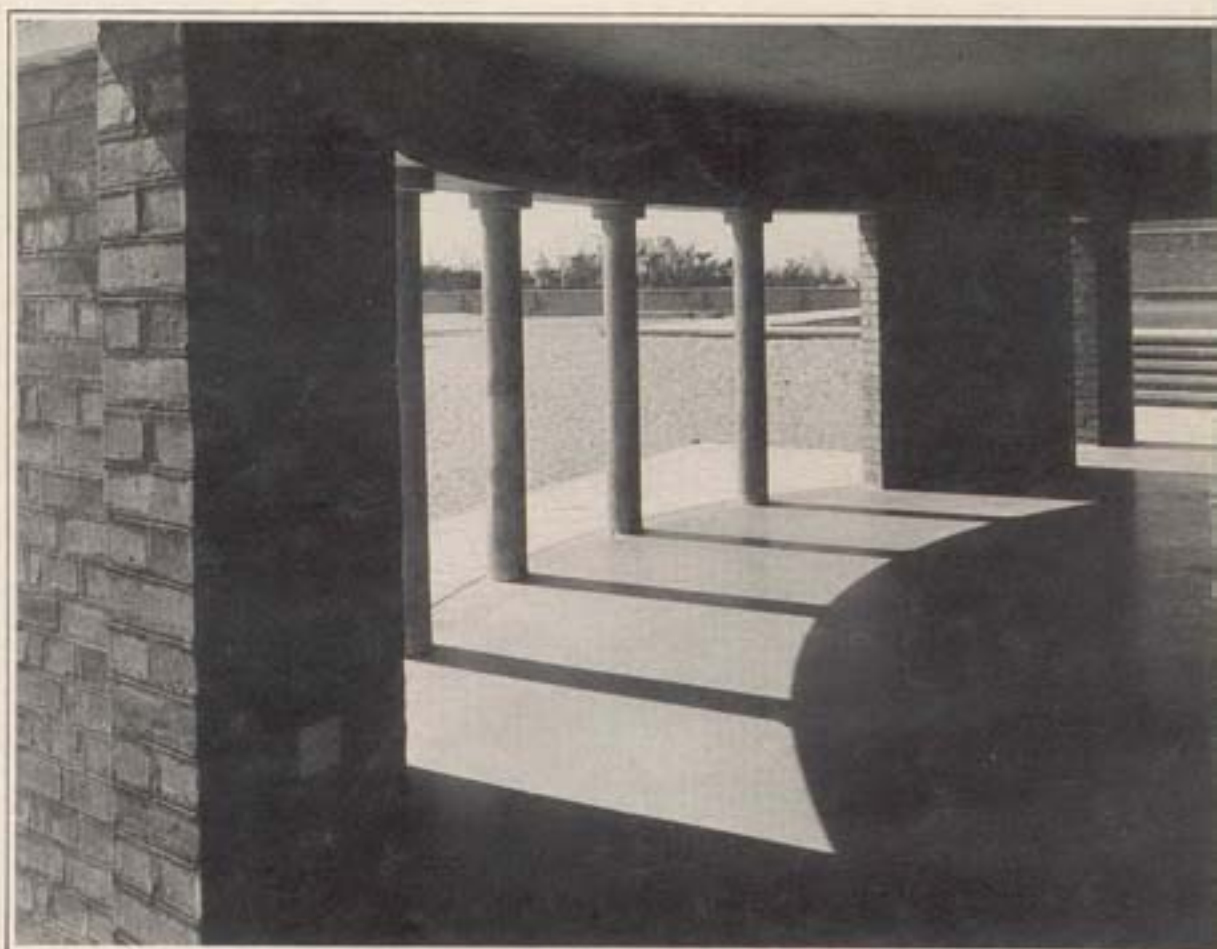


# Indian Architect & **Builder**

JUNE 1992

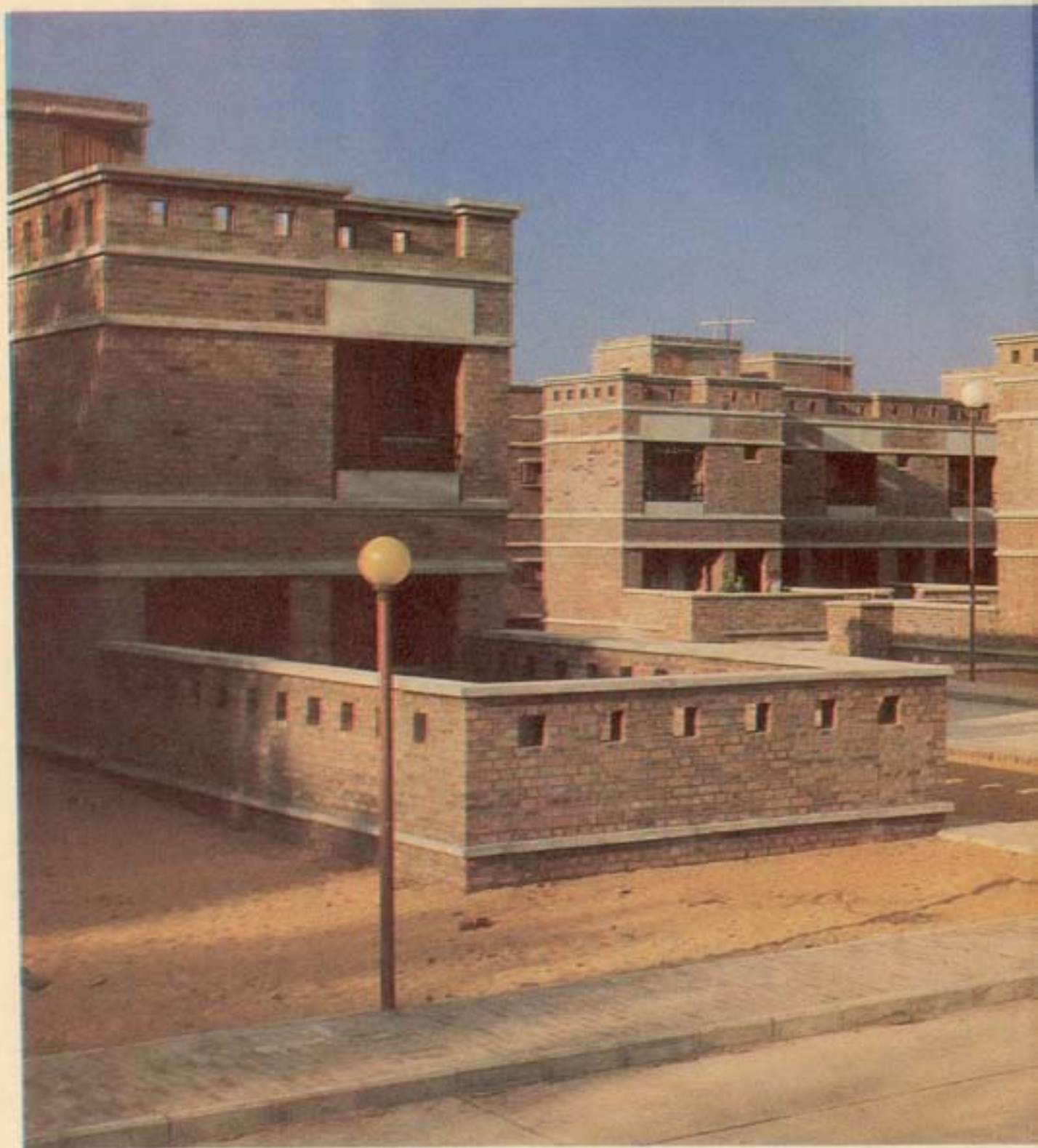
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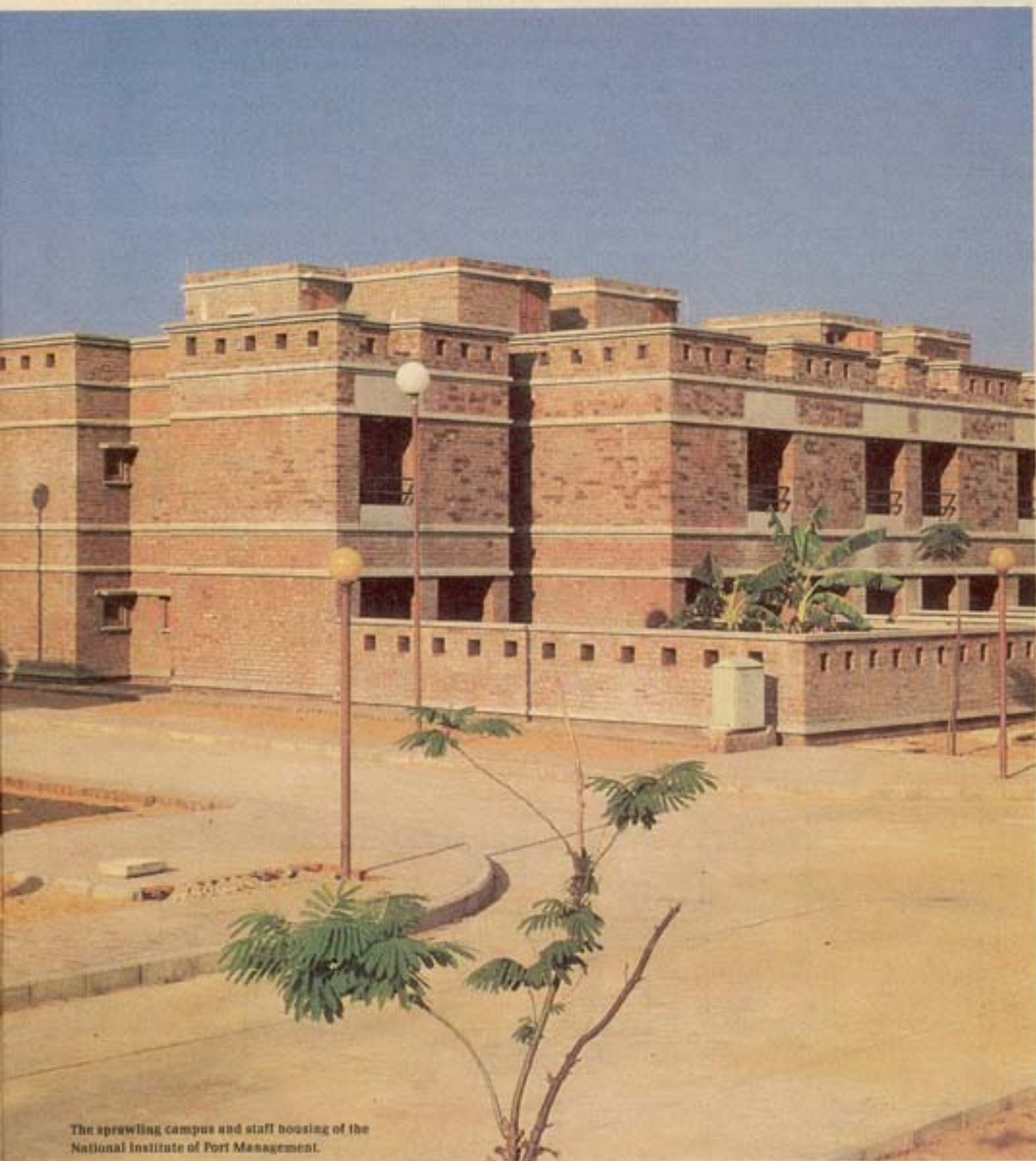
THE NATIONAL INSTITUTE OF PORT MANAGEMENT, MADRAS  
HASMUKH PATEL • BIMAL PATEL

HOW BRIDGES CARRY LOADS

AOYAMA TECHNICAL COLLEGE, JAPAN  
MAKOTO SEI WATANABE



## **“Reserve and rationale structures architecture”**



The sprawling campus and staff housing of the National Institute of Port Management.

## Architect Bimal Patel talks to Sarayu Ahuja about his work, and his influences

The National Institute of Port Management  
Architects: Hasmukh C Patel, Ahmedabad

**T**he National Institute of Port Management (NIPM) educates personnel to manage the ports of India and conducts research to further improve their functioning. It also runs courses, sponsored by international development agencies, for students from other Third World countries. The NIPM campus is located at Utthandi, about 30km from Madras, on the coastal highway to Mahabalipuram. The site is around 100m wide and stretches for about 750m between the highway and the sea. It has a nominal slope of about 2m towards the sea. Conceived and designed in 1986, the campus was completed in 1990.

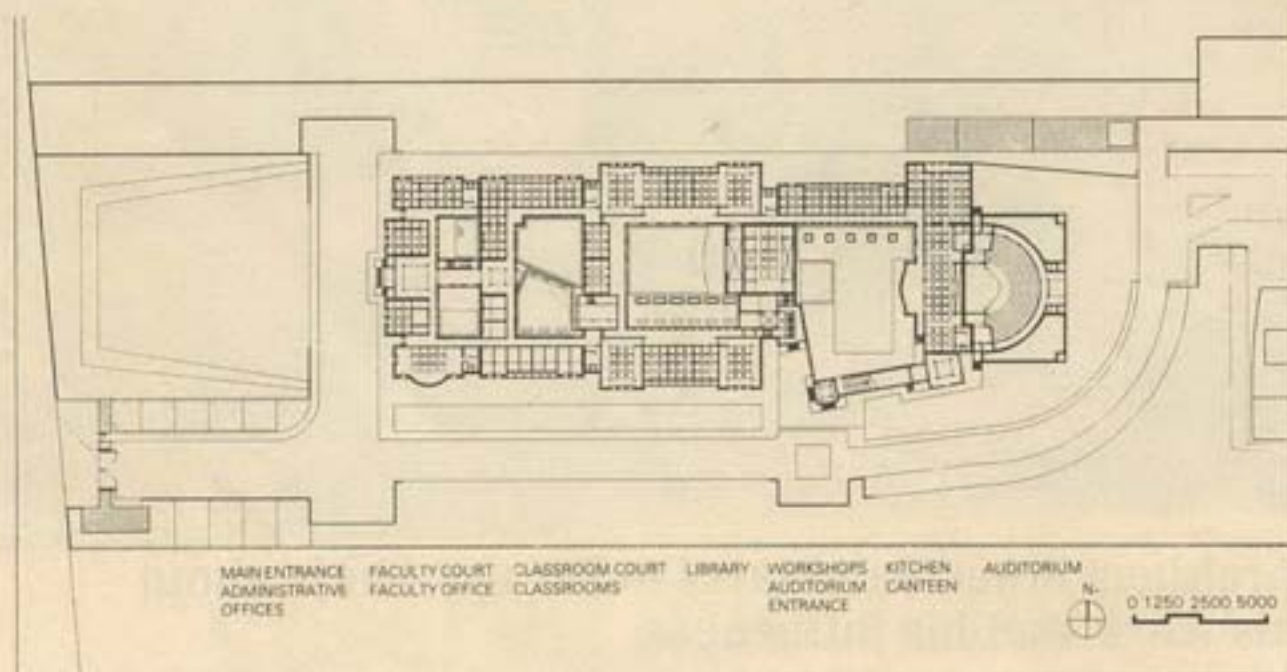
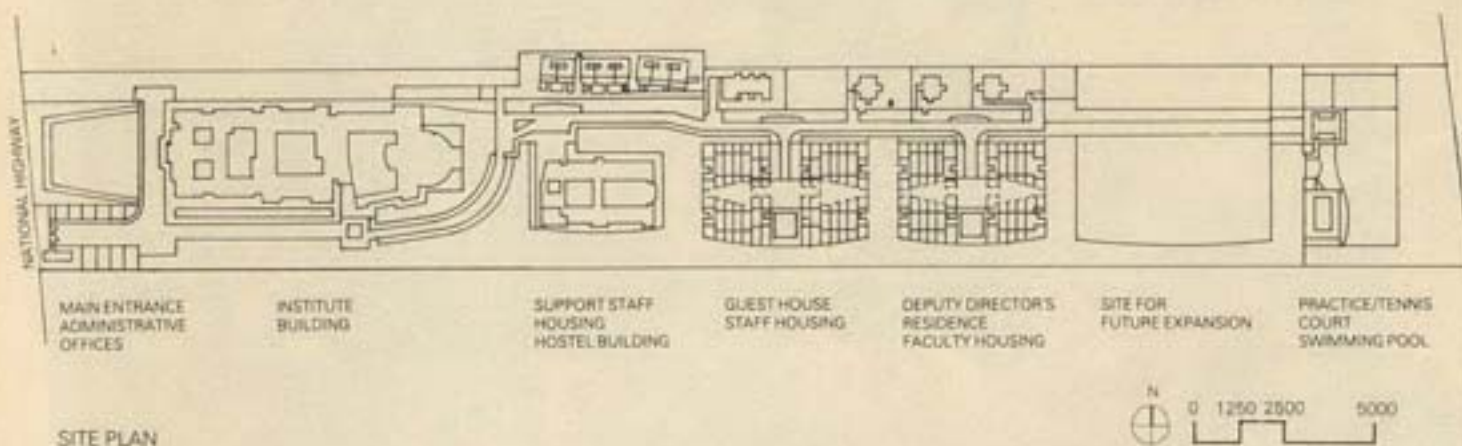
The design brief was specific and quantitative – offices for administrative and teaching staff, class rooms, laboratories, computer facilities, a library, a 40-bedroom hostel, a 10-room guest house, faculty and staff housing, and a club house with a swimming pool. Since the site was located away from the city, infra-structural requirements included electrical transformers, electricity generating equipment, water supply arrangements, and a sewage treatment plant.

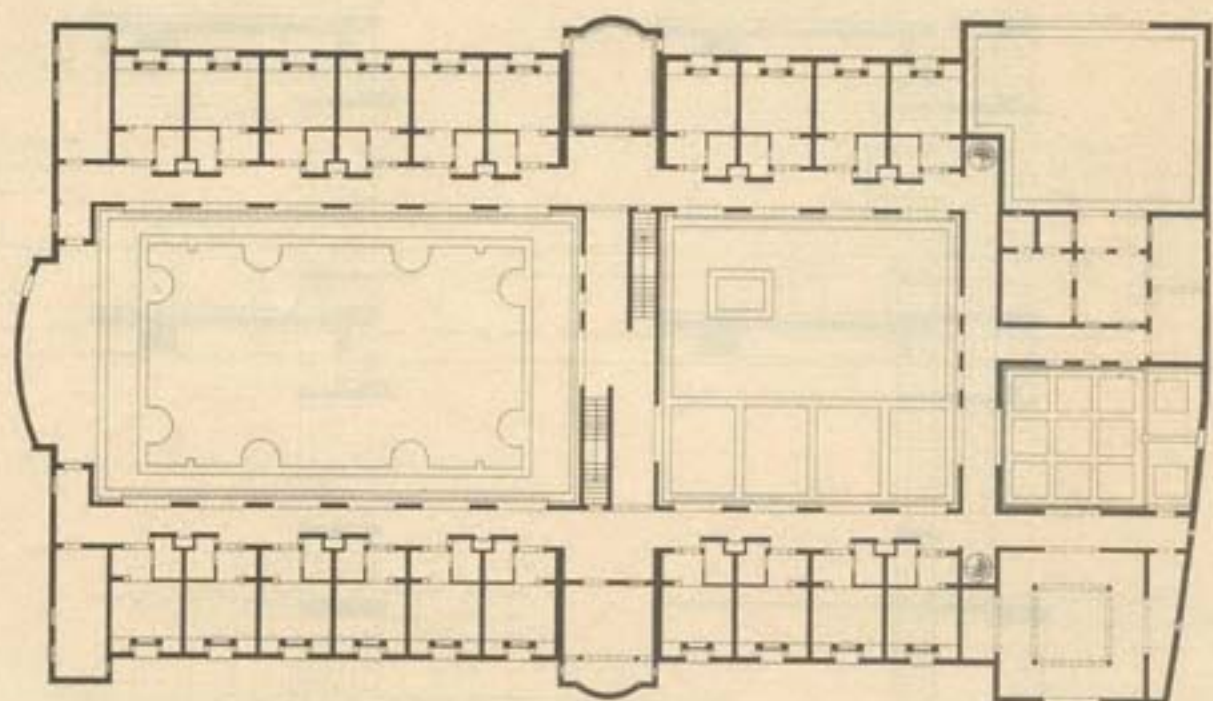
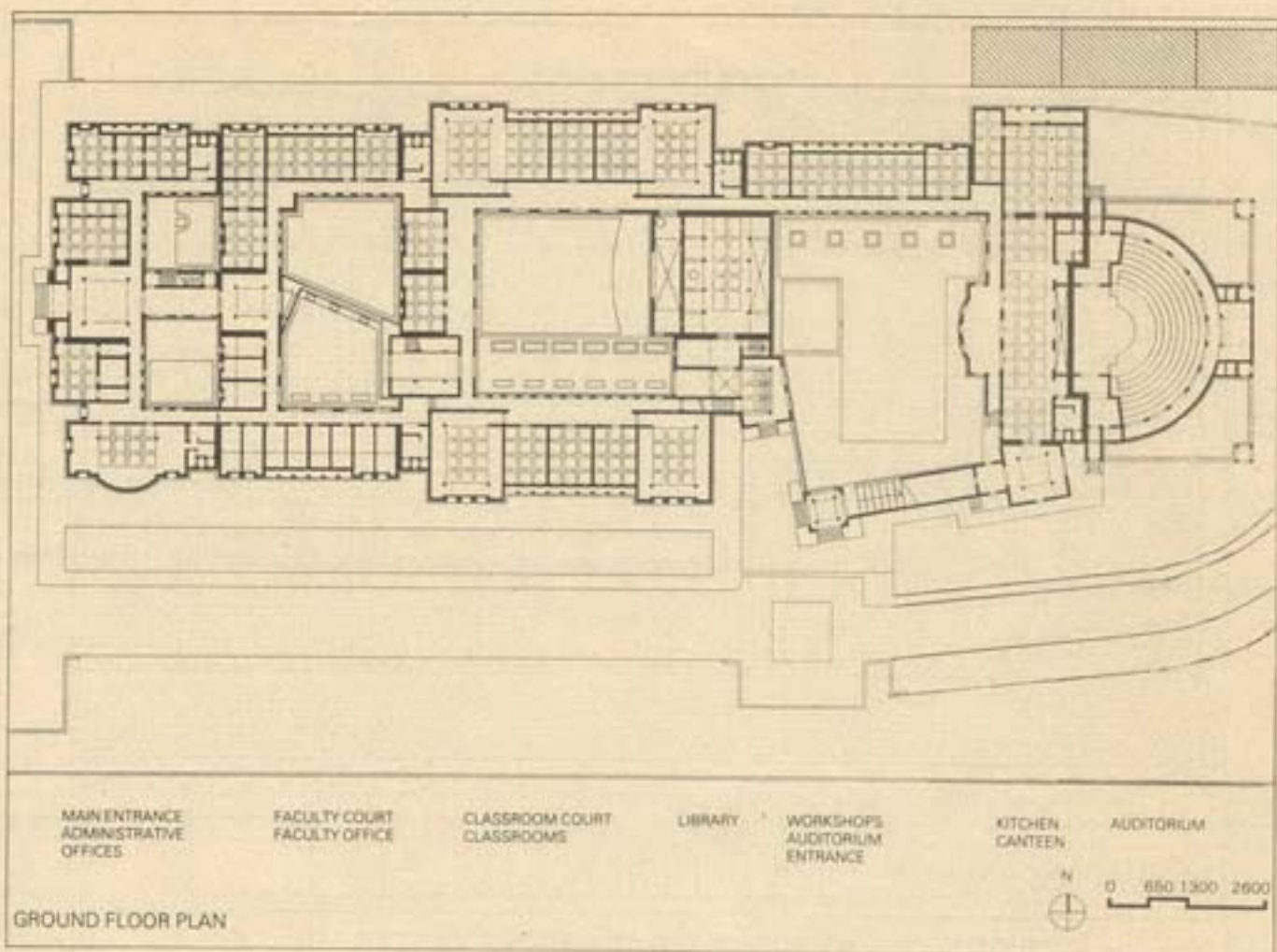
The clients (NIPM) were not particular about the style of the building. This I realised was often the case with

institutional clients. To give them an idea of the kind of building we would be designing for them, we showed them slides of a number of our earlier projects – these included both my father's projects as well as my project in Ahmedabad, the Entrepreneurship Development Institute of India (EDI).

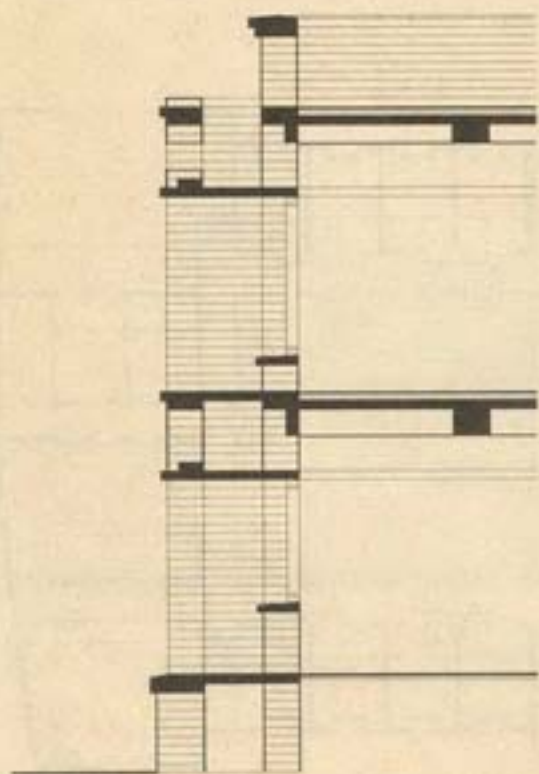
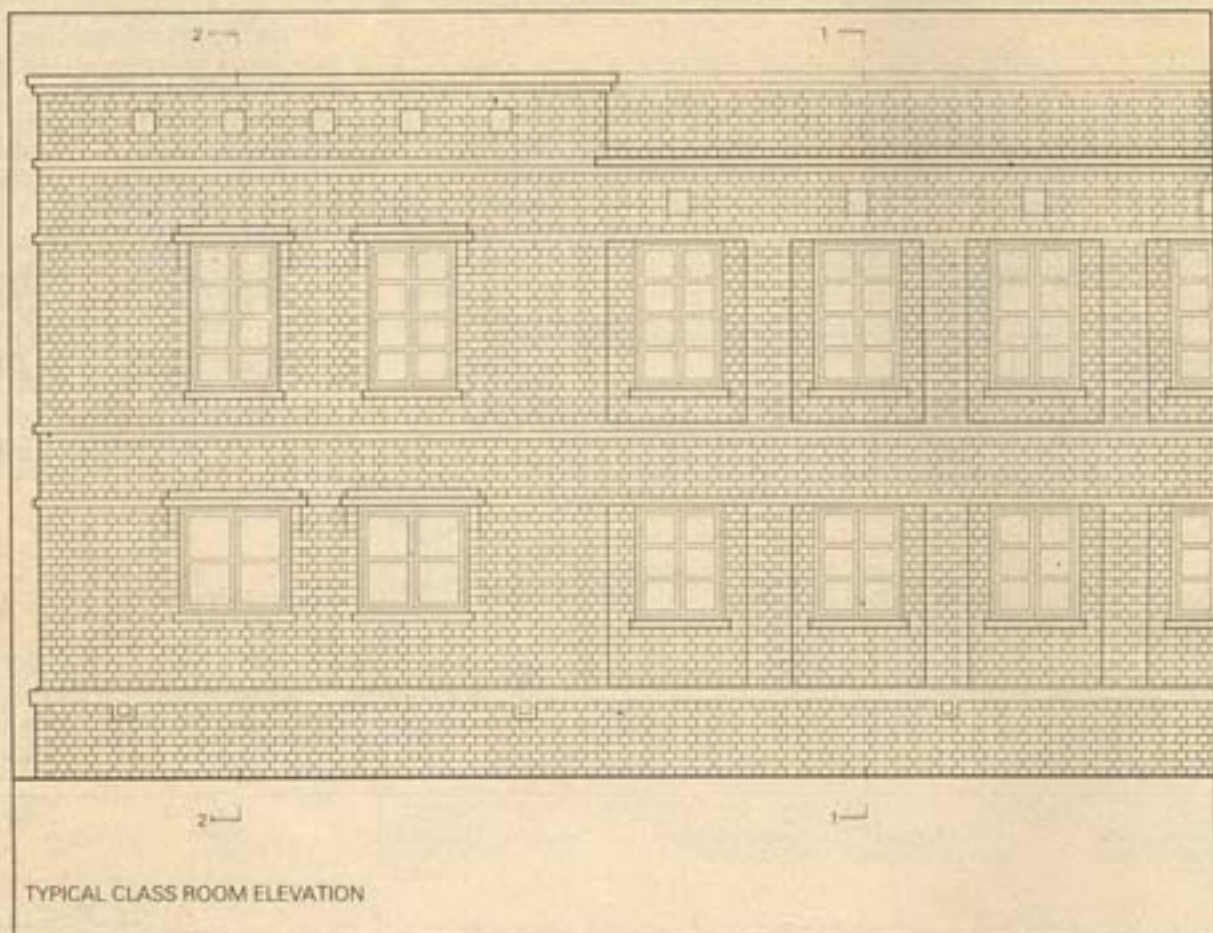
### The key conceptual ideas

Succession of places, each with an identity of its own defined by the nature of facilities, would form the campus. The unifying feature of the design would be the vocabulary of construction. It was also very import-

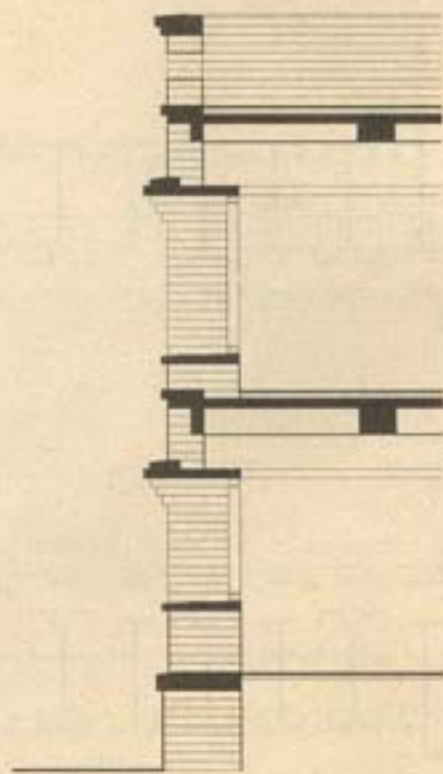




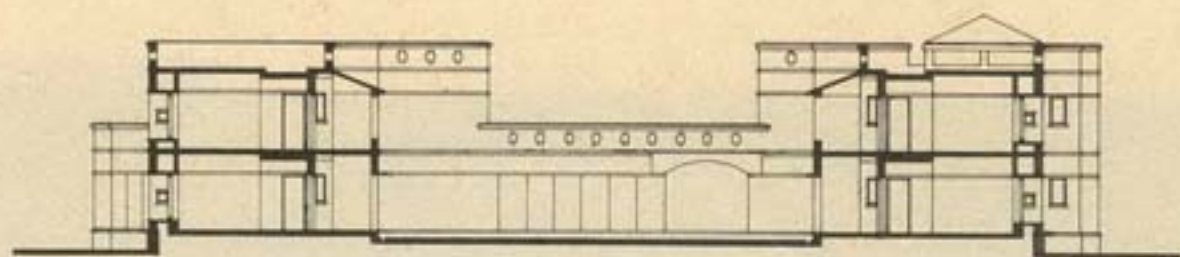
HOSTEL BUILDING



SECTION 1-1

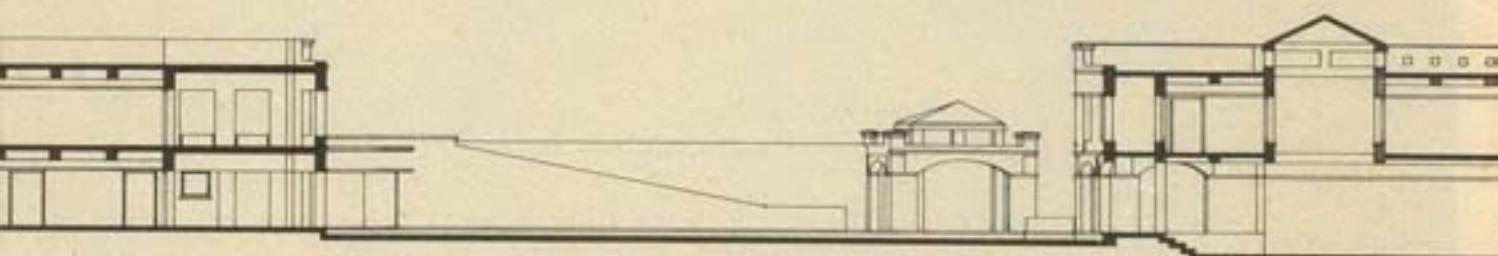


SECTION 2-2



HOSTEL ROOM CORRIDOR COURTYARD CORRIDOR HOSTEL ROOM

SECTION THROUGH HOSTEL COURTYARD

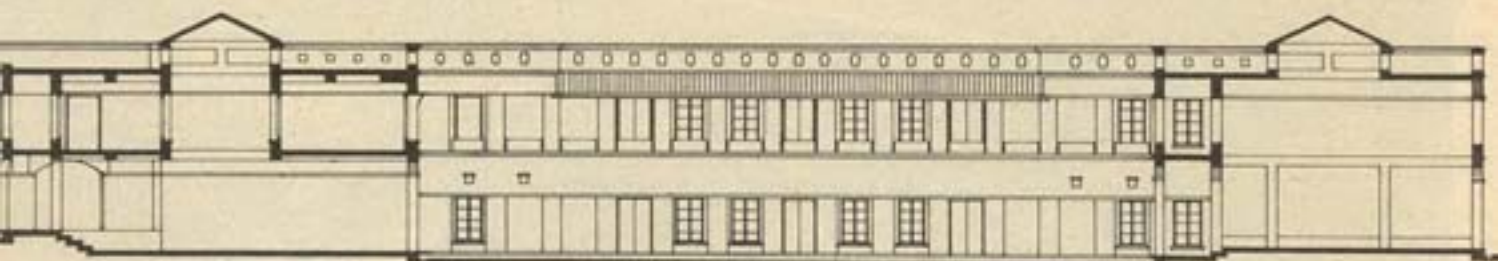


AUDITORIUM FOYER  
CANTEEN

COURTYARD

ENTRANCE TO LIBRARY

SECTION THROUGH AUDITORIUM COURTYARD



FOYER

COURTYARD

FOYER

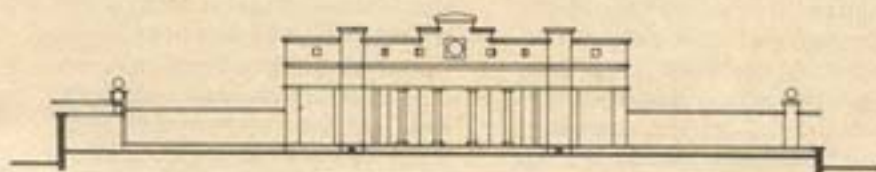
SECTION THROUGH CLASS ROOM COURT



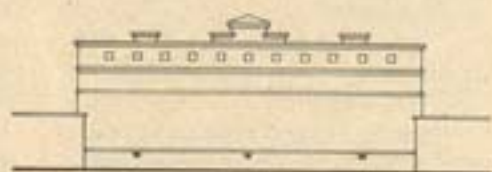
LIBRARY

CANTEEN

SOUTH ELEVATION



EAST ELEVATION CLUB HOUSE



WEST ELEVATION CLUB HOUSE



Above: The auditorium court

Right: Varied views of the faculty courtyard

ant that the architectural vocabulary be strongly rooted in the logic of construction and the nature of the materials used – exposed brickwork and RCC.

#### Low-rise structures

Since the site was sizeable and situated on the coast, it was decided that all structures except the water tank should be low-rise – ground floor plus

one upper floor. This was both possible and necessary because of the size and location of the site. Though it was to be a large building, I wanted to make sure that the scale of the building was not overbearing. Related requirements were grouped into separate buildings, which, taking into account the extent of public interaction, were arranged along the linear site. The administrative and teaching facilities along with the auditorium were placed near

the highway. This building, referred to as the main institution building, formed the core of the campus. The electrical and water supply infrastructure was placed in the centre of the site. This was followed by the hostel, the guest house and the houses. The club house and recreation facilities were located at the far end of the site closer to the beach. A concrete road formed the physical link between all the buildings. In





addition the landscape was designed so as to integrate the entire campus.

**Larger buildings organised around open-to-sky courtyards**

The programme for EDI's campus facilities at Ahmedabad was similar to that of NIPM. Various facilities around the open-to-sky courtyards were organised. As a conceptual decision it was fairly successful – the buildings did not appear as objects

in space, but as elements of place making. This helped create a third kind of space that was neither within the building nor outside it – a space that could be elaborately landscaped, and easily maintained, and which would enrich the interior spaces.

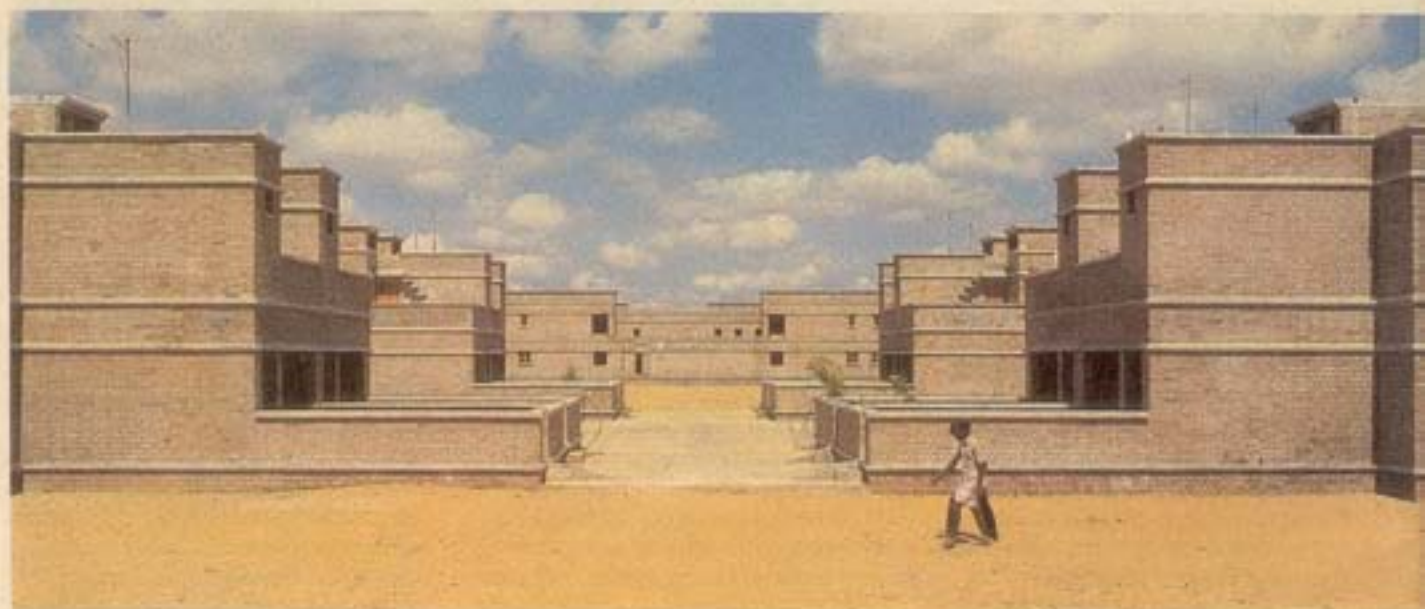
When designing the NIPM campus I once again decided to organise the facilities around open-to-sky courtyards. Within the main institutional

building, related activities were arranged around these courtyards. The building was thus arranged around five courtyards of varying sizes. The first two were surrounded by administrative offices, the fourth by class rooms and the fifth by the canteen and the auditorium. Movement through the building was organised as movement through the courtyards, delineated by double height 'gateway' spaces. Corridors of varying

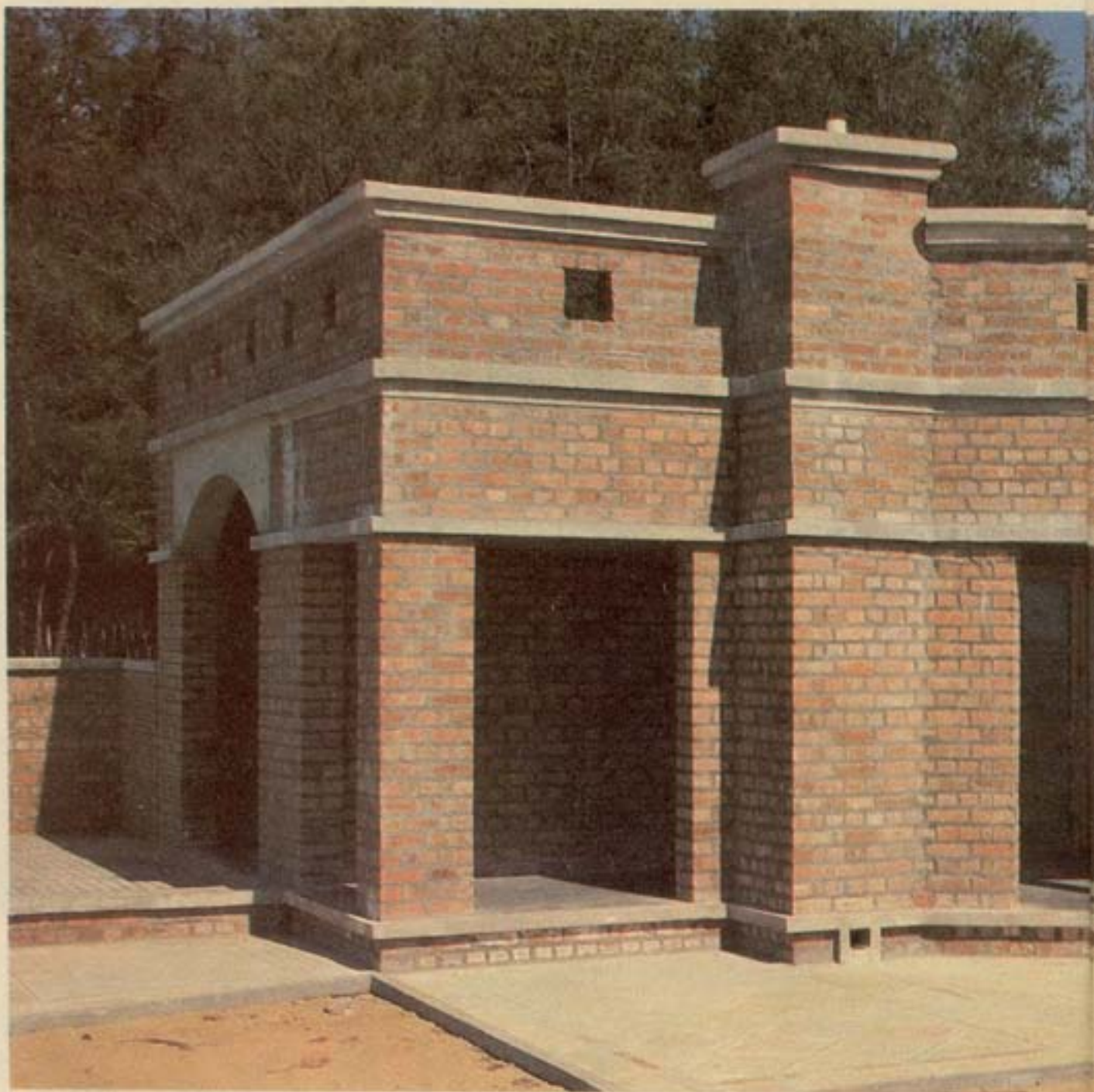
widths and heights surrounded the courtyards. The fifth courtyard could be entered directly from the outside where a ramp, placed at an angle to the rest of the building, led up to the auditorium.

The hostel building also has rooms arranged around three courtyards. Each room consists of study alcoves, sleeping space for two, and an attached toilet. NIPM holds short term courses and students are required to stay in this hostel for upto one month at a time. A small clinic is also located in the hostel.

**Clockwise**  
The hostel building  
The Auditorium ramp  
Open spaces define the faculty and staff housing  
Construction of the auditorium in progress







### **Courtyards – formal and important**

The movement of people through the various courts, the transition of space from one court to another, together with the punctuation of the double-height spaces with arched openings – all these formed important elements.

There is nothing really novel in organising buildings around courtyards

– people have done it since times immemorial and in places with varying weather. In modern times we do not build this way – even when there are possibilities and it is advantageous to do so. Often when people do build courtyard buildings, what they claim are courtyards are residual spaces with no presence of their own. This, I think, is not the case with the NIPM. The

courtyards have been built with care, have considerable importance in the overall organisation of the buildings and thus end up enriching the relatively simple interior spaces.

### **A recognisable architectural vocabulary**

The architectural vocabulary of the building should be recognisable,



The club house

an image shared in our collective memory, and yet it should defy very easy placement or maybe I should say consumption. It should assert its contemporaneity, that it is a creative reworking of things that we know how to do. While this last point was most important in my mind, I think that I was the most unsuccessful in doing this. A large cement company –

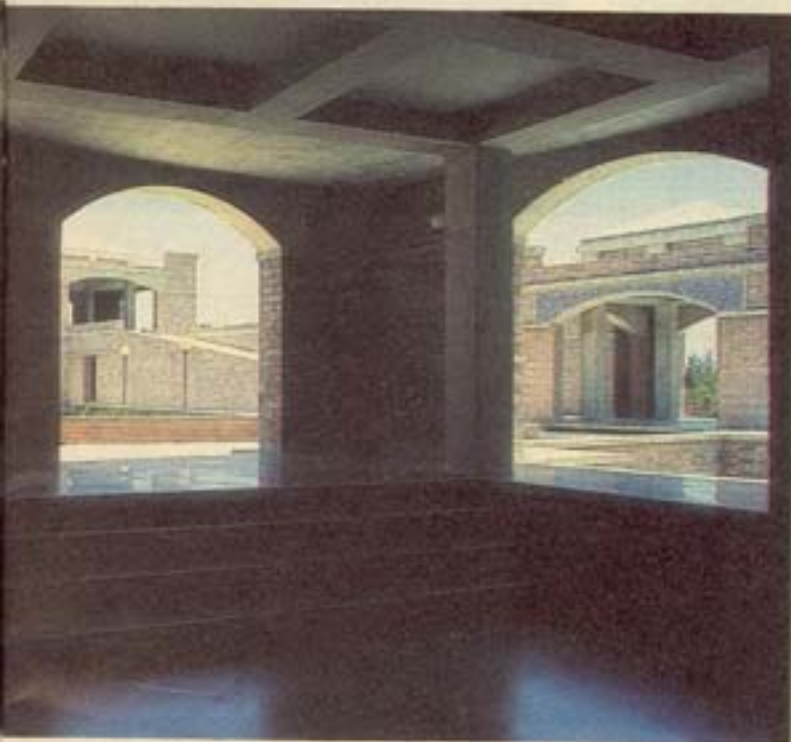
without my knowledge used an image of the building in its advertisements. Maybe I erred on the side of making the building too easy to consume, feeling nostalgia.

I head – with my father – a firm that has strong design traditions – established in large measure by HCP, and representative of the what one might call 'Ahmedabad Modernism' (it is

a little different from what was going on all over India during that time) – forged in the sixties and early seventies by Doshi, Raje, Correa, HCP, and others. It is not easy to escape this tradition. In any case, I think that there



Clockwise from above:  
 The corridor in the hostel  
 The hostel courtyard seen through an arch  
 Angular shadows on the 'grass and stone' courtyard.  
 The auditorium court flanked by arches



is much to admire in this tradition and have no compunction in saying that I have picked up some very important attitudes from there: austerity in the use of materials and choice building elements (not too many types of materials in one building); paying a lot of attention to details and simple detailing (the key to getting good workmanship); clarity of structure (the structural drawing should be judged by similar aesthetic standards as the plan itself) a questioning of and creative reinterpretation of building elements; and so on. However the building might look, eventually, these attitudes are the key to striking a balance between form and content – the quintessential problem in all the arts.

The NIPM building, I think, has the HCP stamp so to say – in which



case it has the stamp of 'Ahmedabad Modernism' as well and owes much to a number of other modern architects. I look carefully at many Ahmedabad architects' works for inspiration and guidance.

I think it is also apparent that NIPM is not an HCP building – the vocabulary of construction, spaces and building elements is very difficult; the wall section itself is considerably more articulated; the courtyards are formal elements in the plan, staircases are

placed between walls, columns are relatively massive, there is no use of cantilevers, and so on.

How do I justify these departures? Well, I am not HCP. In any case, I think that the vocabulary of the Modernists was a bit like trying to play a guitar without four of the strings. I have just managed to add one or two more strings. One can do lot more, as a lot of architects are trying to do today – with buildings that shout their painted facades or otherwise – but there

should be some reserve and rationale if it is to be done meaningfully – but then, with the onslaught of 'Bombay' type architects (I have the developer architects in mind) 'reserve' and 'rationale' have become dirty words – even here in Ahmedabad!

The primary building materials used for the campus are wire-cut bricks and reinforced cement concrete. Using exposed brickwork imposes a very demanding discipline on the designer – and being disciplined, constrained by





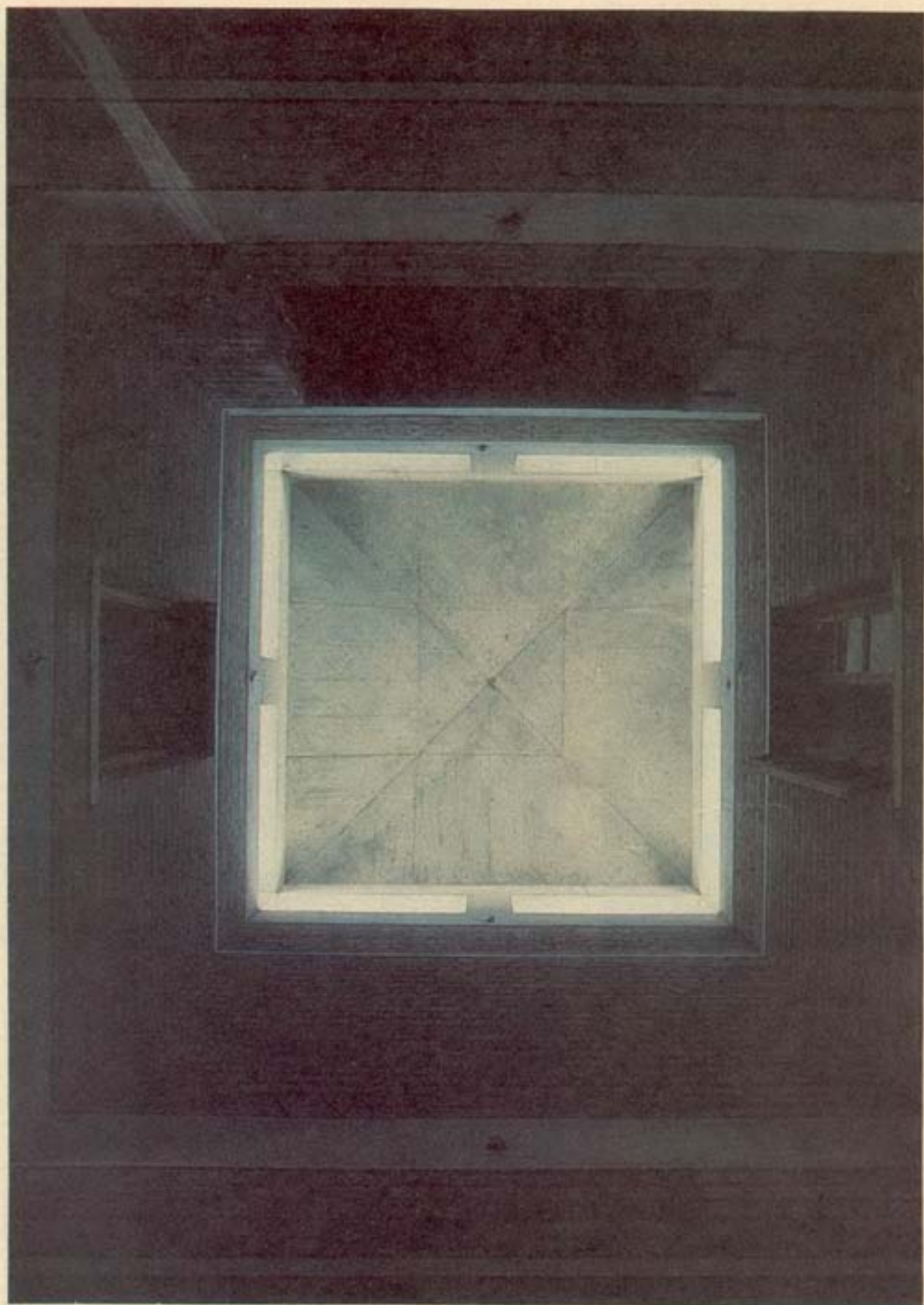
**Left:** The classroom courtyard under construction.  
**Below:** Simplicity, the essence of the hostel room

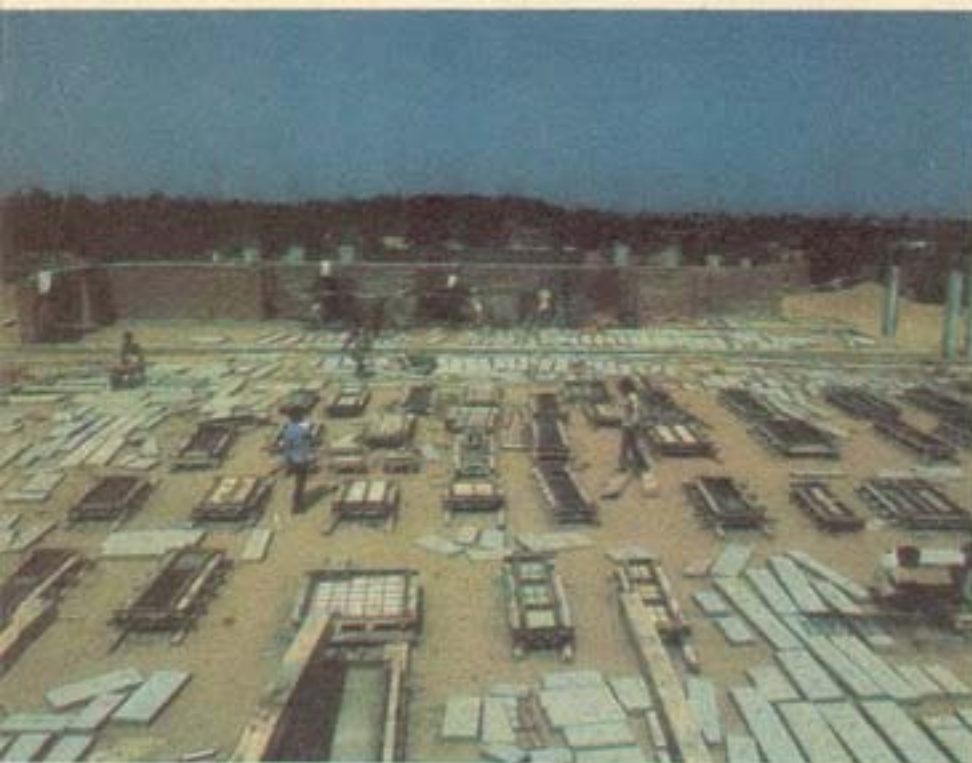
they are well regulated and every building element is considered carefully and in keeping with the logic of construction. It also enriches the texture of the walls in a meaningful fashion. The contractor also has to be on his toes while constructing the building – there is no opportunity to cover up mistakes at a later date. Madras has many exposed brick buildings from the colonial period and



meaningful rules, is the very basis of creativity. Using exposed brick and concrete also ensures a certain degree of austerity (though this is not the only way of doing so) – obviously a lot of architects and clients simply do not understand this word today. It seems to be a widely held belief that being free and creative implies not following rules. The result is a total imbalance between form and content.

Dimensions for designer exposed brickwork are not chosen arbitrarily.





Above: The pre-casting yard  
Facing page: The skylight. The library entrance

the use of exposed brick is not particularly foreign. However, it was found that no skilled labour was available to carry out such work during the period of construction. It was difficult for the contractors to get skilled craftsmen but we solved the problem by training a team of craftsmen from there at sites in Ahmedabad. Wire-cut bricks were available in Madras from a government run plant. The supply being limited to one factory was a bit of a problem but it was not insurmountable. All exterior surfaces are exposed while most of the interior surfaces are plastered and painted. The exterior surfaces have been treated with transparent, silicone based, water-repellant paint. Stone and ceramic tiles are used as flooring materials. Stone is used extensively for landscaping the open-to-sky courtyards.

Since exposed brick masonry and RCC have been used, the 'architecture' is not different from the 'structure'. Architecture and structure are synonymous. One doesn't begin when the other ends.

Even if exposed brick and concrete is not used it is not possible that

a balance between form and content can be achieved when the 'structure' does one thing and the 'architecture' can even be thought of as a separate entity – one gets its identity from the other. That, in the modern age we keep trying to do so, testifies to the craziness of our times. Style and substance', form and function', all, are dialectically related entities in a beautiful, whole, or aesthetic object. When they veer far apart one gets lopsided, distorted, unbalanced objects.

The structural system used in most parts of the campus consists of load bearing brick walls and reinforced cement concrete slabs. In a few instances where larger spans were required a combination of load bearing walls and concrete columns have been used. In such cases the columns are independent from the walls. The auditorium roof consists of a semi-circular space frame made from tubular steel and a thin concrete slab.

The dimensions of all structures are based on a modular system. The basic unit of dimension is the size of the wire-cut brick used for the project. This made it possible to leave the brick

exposed. The concrete bands projecting from the surface of the walls were pre-cast on site. The pre-cast units were placed on the walls as the brick-work proceeded, saving considerable amount of time in construction.

The disadvantages of using exposed brickwork were obvious when rules – the modular – are too simplistic; when they are not creatively broken; when they become a crutch to avoid thinking about the uniqueness and particularity of individual elements; when they obliterate the identity of particulars. Once again it is a question of balance: between generalisations and particulars; order and deviation; the dictates of reason and the rabble of particulars. A modular system becomes disadvantageous when particulars are ruthlessly subdued by the authority of reason. It is as true in art as in life. There is a lot to learn from the colonial buildings if one is building large modern institutions.

In retrospect it seems to me that I knew too well what I wanted to build, there was not enough invention and energy. That is why my earlier project, the Entrepreneurship Development Institute at Ahmedabad is much dearer to me. There are lots of places where I see missed opportunities, for instance, the terraces are made no creative use of. Besides this, in lots of places, my naivete as a designer are clearly apparent to me – when I start thinking about this the list seems endless. I hope to improve is all I can say. Then of course there are a lot of smaller, more particular problems – as with any large building – leakages, malfunctions. Though buildings are not assembly line products, and though designs can never be fully debugged, these have to be taken seriously and a lot more hard work should go into avoiding as many problems as possible.

**Clients:** The National Institute of Port Management  
**Architects:** Hasmukh C. Patel, Ahmedabad  
**Principal designers:** Bimal Patel  
**Design team:** Bimal Patel, Hasmukh Patel, Jayant Gadharia, Alka Badhani, Parsottam Mistry  
**Project execution team:** Hasmukh Patel, Kamlesh Desai, Ranoo Shah  
**Structural design:** Vakil Mehta Sheth, Ahmedabad  
**Service design:** S K Murthy, Bombay  
**Prime contractors:** Larsen and Toubro, Madras

Photographs the architect □