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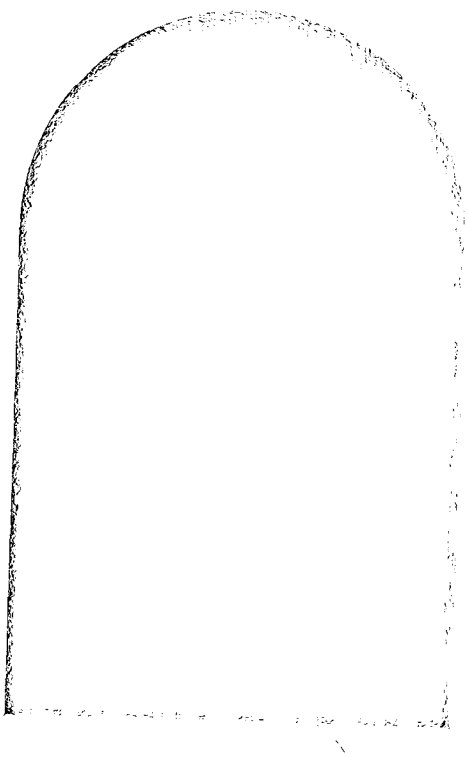
MIMAR 2 · 1981



MIMAR: Master Builder/Architect.
ARCHITECTURE IN DEVELOPMENT: Design alternatives unifying building and culture.
MIMAR: A quarterly international architectural magazine exploring environments in the developing countries.

MIMAR® is published quarterly by Concept Media (Singapore) Pte Ltd whose registered office is:-
Suite 1718, 17th Floor, International Plaza,
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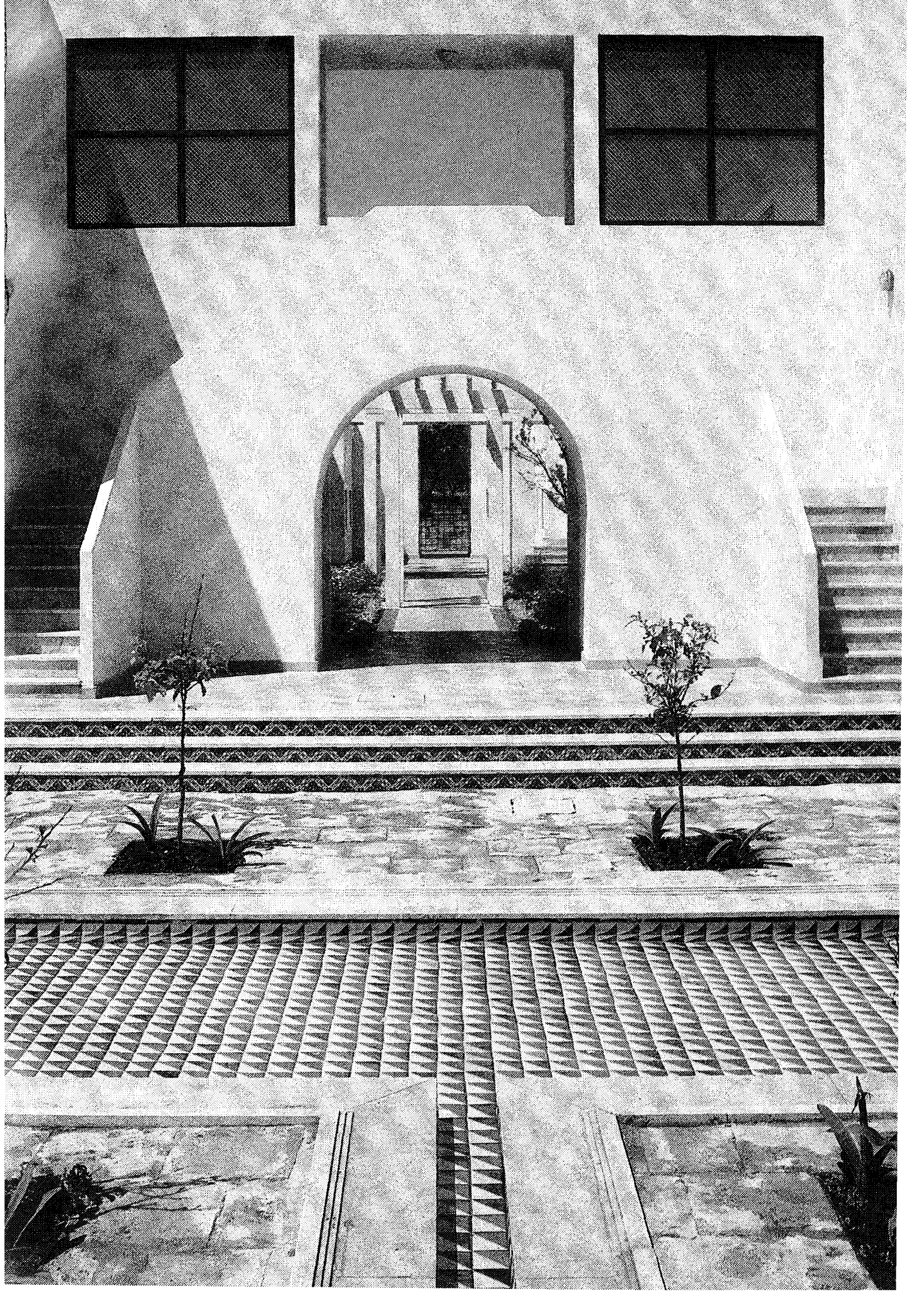
MC (P) No 107/6/81

Printed by Eurasia Press, Singapore

ISSN 0129-8372

Right: Apartment Hotel, Sousse, Tunisia. Successive courtyards viewed along the main longitudinal axis — rather like mirror reflections, but varied from image to image.
Photo: Serge Santelli
Back Cover: Kuwait Tower. Detail of sphere covered with enamelled plates of steel painted in a colour scheme of blues, greens and greys.
Photo: Huda Al-Bahar



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MIMAR 2 — October — December, 1981

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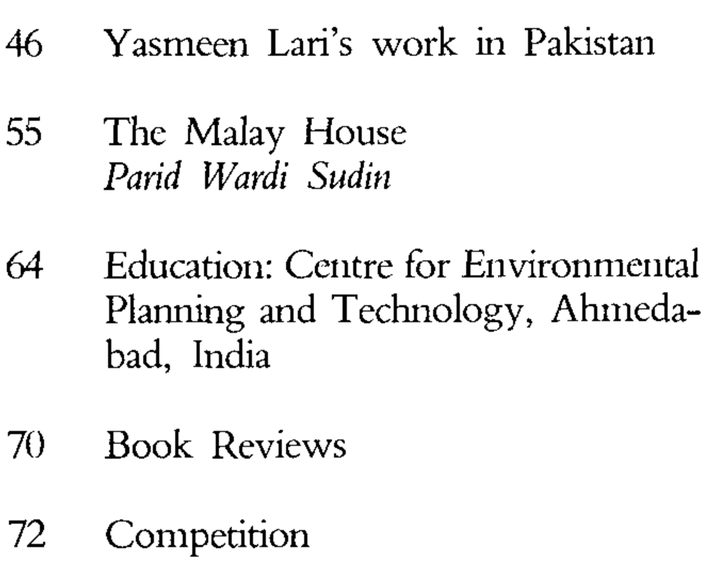
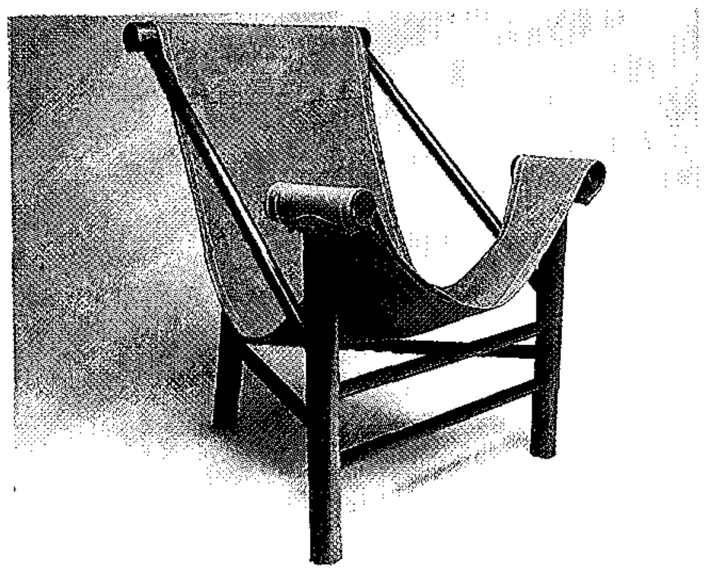


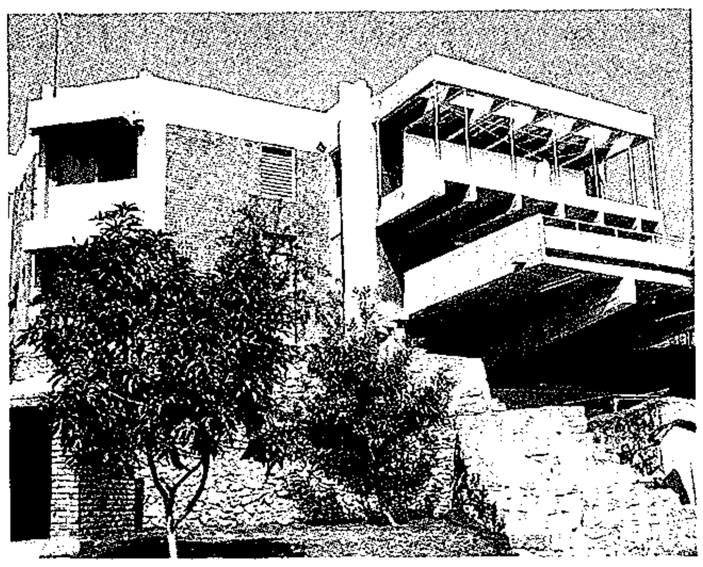
A presentation featuring a just completed hotel which attempts to create a new Tunisian architecture designed by the architect, Serge Santelli.

28 Lina Bo-Bardi's work in Brazil



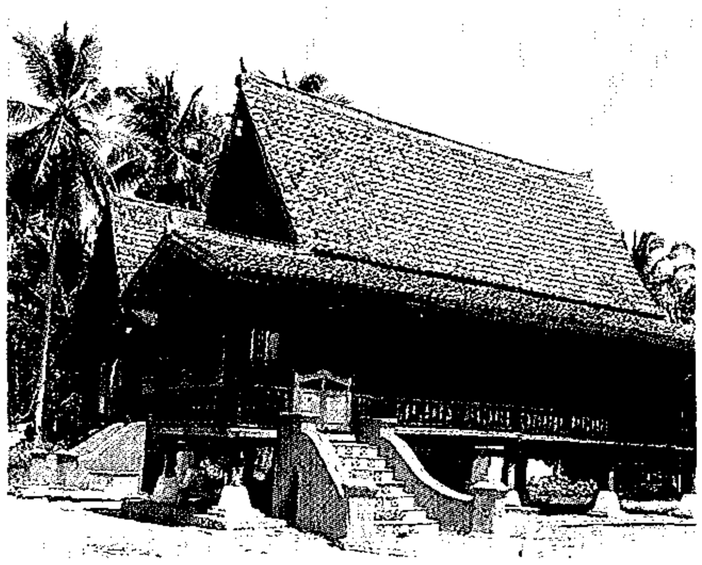
An Italian architect's work including the renovation and restoration of a factory into a museum, and her furniture designs.

46 Yasmeen Lari's work in Pakistan



A Pakistani architect's designs which include low and middle income housing, army barracks, hotel and mosque.

55 The Malay House



Identifying traditional domestic architectures in the Malay Archipelago

Overleaf: Cartoon drawn by Robert Leonard Miller, an architect who contributes frequently to architectural journals He currently works for a public relations firm in Washington, D C.

CUSTOM
TRADITION
RLM

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AGA KHAN AWARDS

Seminar in Beijing, China

At the invitation of the Architectural Society of the People's Republic of China, the Aga Khan Award for Architecture is holding a seminar from the 19th to 30th October 1981 on the theme "Changing Rural Habitat". The meetings will be attended by architects, planners, anthropologists, economists, scholars and researchers, as well as representatives of international development agencies. These individuals, drawn largely from Africa and Asia will encounter their Chinese counterparts to discuss issues of building technology, energy resources, rural typologies and investment strategies.

This gathering, which is the first in a new series of regional meetings leading up to the 1983 Award for Architecture, is being held in a country that is 80 percent rural in character. The problems facing China in the realm of housing, institutional buildings and small-scale industry are shared by many other nations of the Third World. Moreover, China has large numbers of ethnic and religious minorities, including a sizeable Muslim population, whose traditions, life-styles and expectations have undoubtedly influenced the solutions adopted. It was therefore decided that a field trip in the company of the Chinese participants to several rural areas would be extremely useful. The trip will include the cities of Xian, in Shensi province; Urumchi, Turfan and Kashgar, in Sinkiang province.

The format and contents of the seminar itself are based upon a series of individual case-studies, presented where possible by two persons, both a well-informed outsider with a certain critical distance of and someone who actually had a hand in achieving a given project. After a keynote speech by the renowned writer Han Suyin, cases emanating from Senegal, Pakistan, North Yemen, Indonesia, Algeria and Egypt will be analysed. A special session will deal only with specific technologies, such as mud-brick construction in earthquake regions and the building of methane gas energy pits. General background papers have been prepared by noted authorities on Islam in rural areas, dwelling types and development theory.

In keeping with the tradition laid down by the five previous seminars sponsored by the Aga Khan Award for Architecture, the proceedings of the seminar in China willl be edited and published in 1982 by the Award's office in Geneva, Switzerland.

For information, please write to the Aga Khan Award for Architecture, 32 Chemin de Créts, Grand Saconnex 1218, Geneva, Switzerland.

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Inside MIMAR·3

January · 1982

Thematic feature

A special issue on the People's Republic of China. A look at contemporary architecture and its practice with a brief historical perspective, including articles on:

- Rural underground houses of the Loess region
- The Great Mosque of Xian (a plea for restoration)

Special feature

- The start of a series of articles on "Arab architecture" by Prof Udo Kulterman
- Mosques in Mali by Jean-Louis Bourgeois
- History column: A building of the Shirazi group of the 14th century, by Renata Holod

Plus MIMAR's regular sections and more ...

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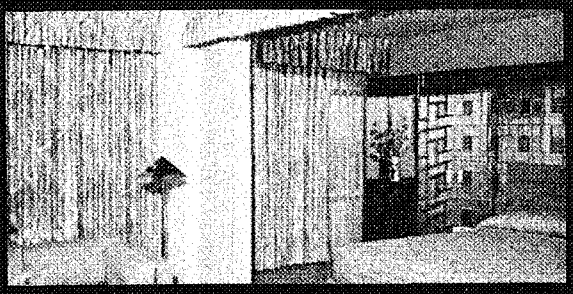

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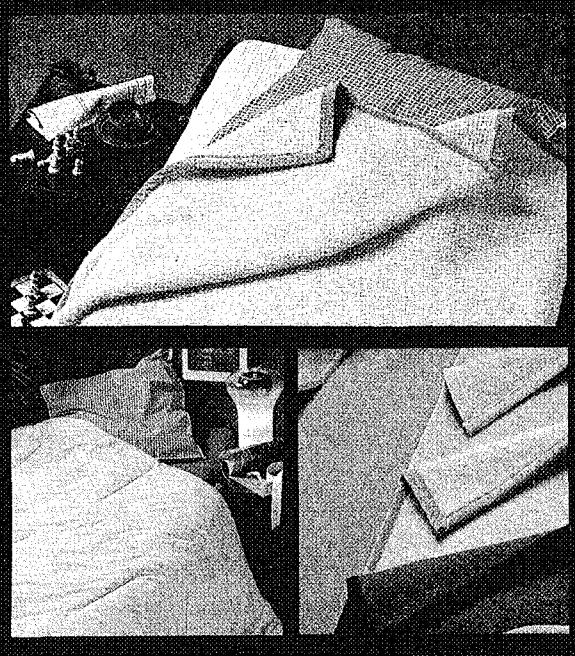

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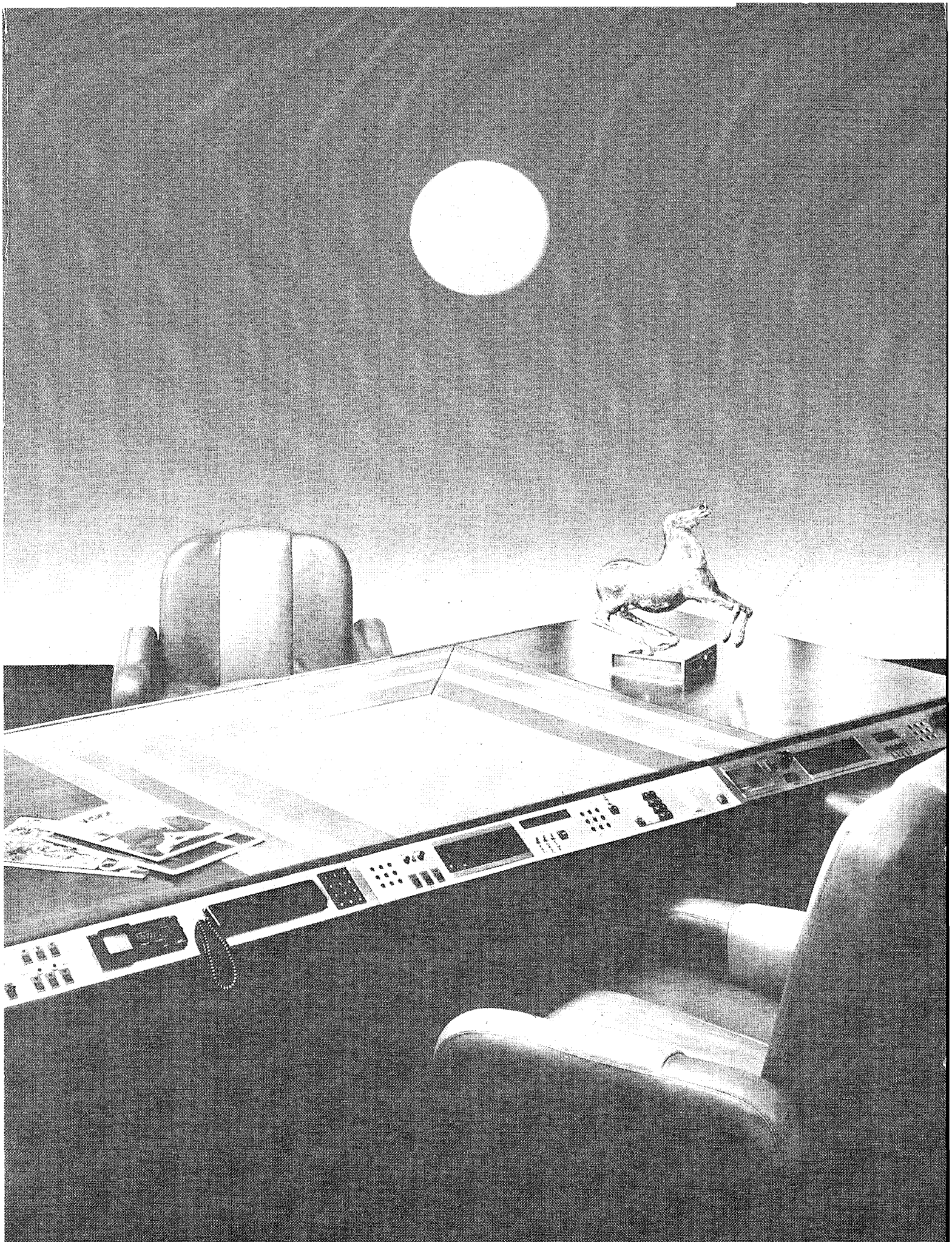

SOFTHARD, des. Luciano Consigli, una serie di 55 elementi componibili per personalizzare il posto di comando del vostro ufficio direzionale.

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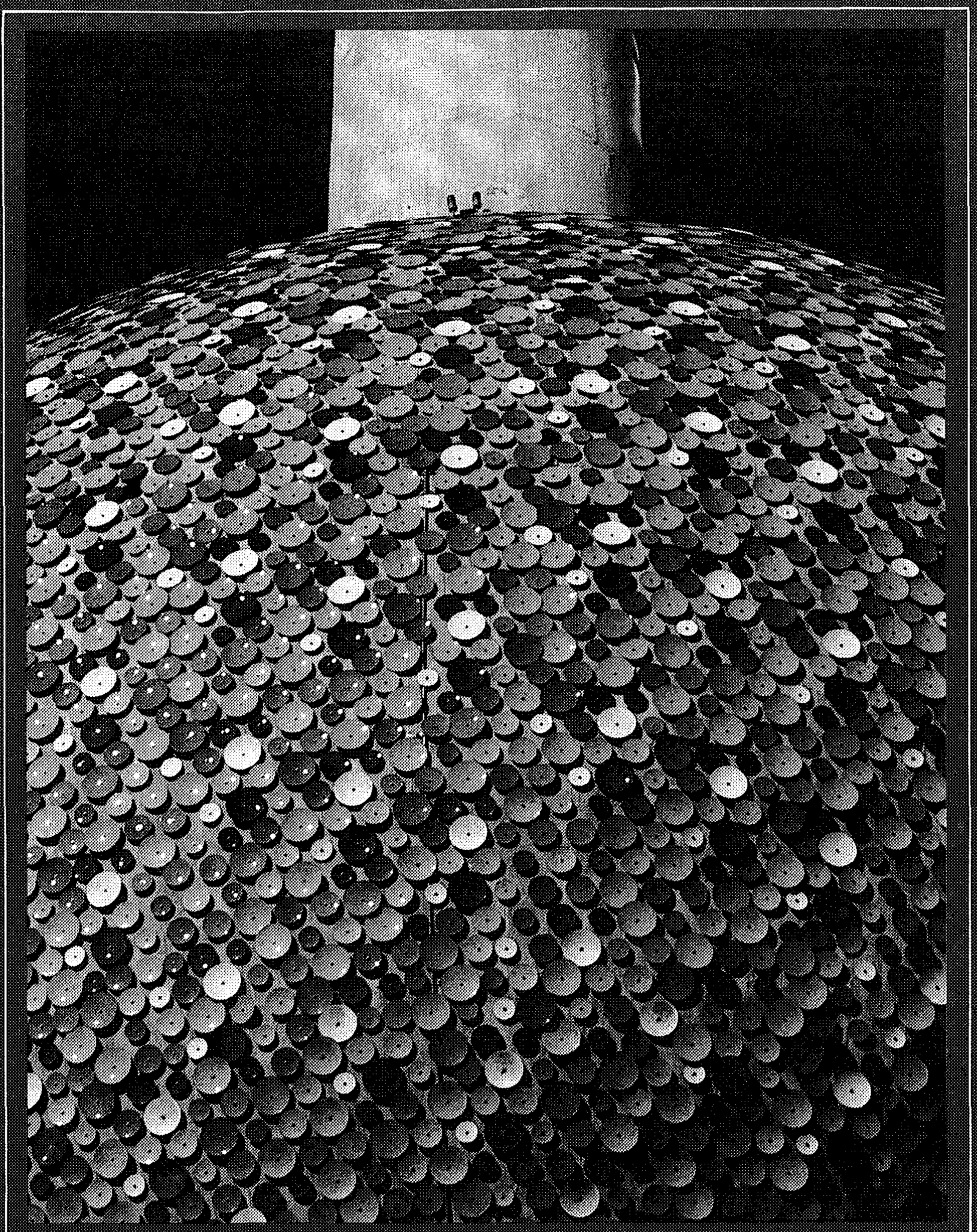

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- Education — beginning a new column on Schools of Architecture

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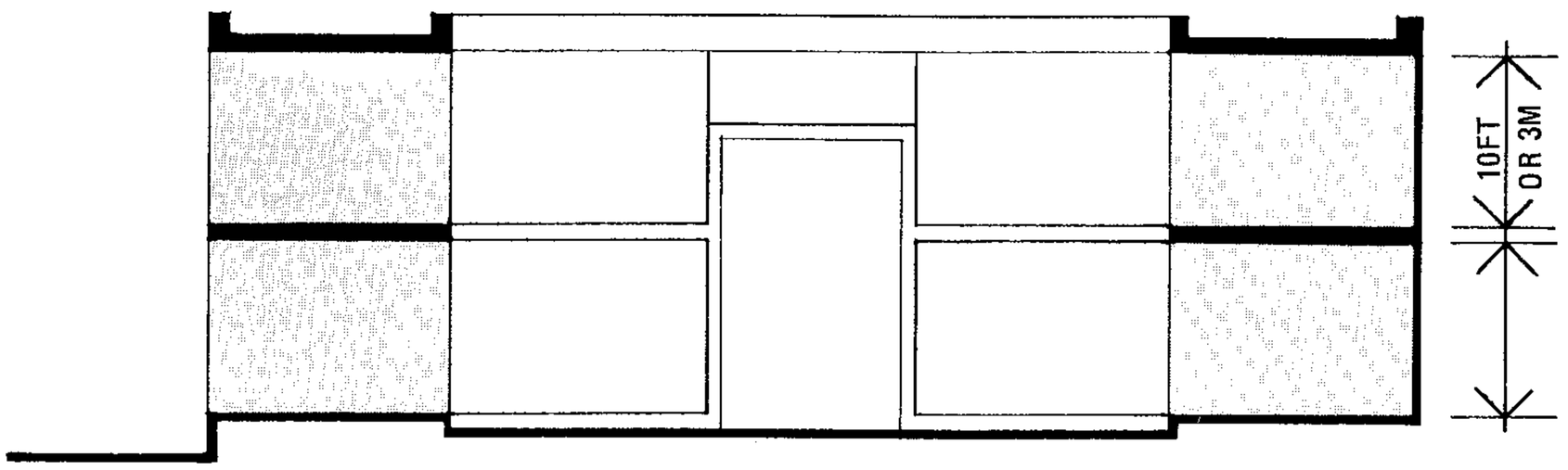
MIMAR COMPETITION

The Design Problem

Water has always played an important role in architecture, from the Muslim gardens of Alhambra to I M. Pei's Christian Science Monitor building complex in Boston. In our first competition we pose the problem of designing for water crossing the courtyard of a house The house is located in any urban area of semi-arid climatic zone

The competition is for the design of getting water from point (A) to point (B), in the diagram below, using any design element you see fit Only the dimensions and main entry points to the house are given You may visualise whatever layout of rooms or architectural style for the house that you desire We are not concerned with the design of the house however, but with how water traverses the courtyard Any design elements you wish to use, such as channels, pools, fountains, sculptures, etc, are permissable.

We look forward to seeing the variety of approaches and solutions to the problem



MIMAR COMPETITION

Eligibility

This design competition is open to all readers under the age of 35. Simply fill in the Registration Form, cut it out and post it *now* to:

MIMAR
Suite 1718, 17th Floor,
International Plaza,
10 Anson Road
Singapore 0207

(For more forms please write to MIMAR giving your name and address or print the required information on plain paper)

Submissions

You may submit any kind of drawings you think suitable to explain your scheme.

The drawings should be on no more than 3 sheets of either an A4 (297mm x 210mm) or A3 (420mm x 297mm) size.

The *last date* for entries to reach Singapore is 15th February 1982.

Jury

The Jury will include members of MIMAR's Board of Advisors and others to be announced in our next issue.

The Jury reserves the right to divide the prize-money or not to make any awards, as it sees fit. The Jury's decisions are final.

Results

The results will be published, with Jury comments, in the July 1982 issue of MIMAR.

Only the winners will be notified.

The first MIMAR design competition for younger designers.

Project: To design for water crossing the courtyard of an urban house.

The WINNER will receive Singapore $1000 (US$500).

The winning and commended projects will be published in MIMAR, July 1982.

Closing date: 15th February 1982.

MIMAR COMPETITION Registration Form

Please register me (free of charge) as a participant for the Competition I agree to abide by the rules and my entry will reach MIMAR in Singapore by 15th February 1982 I certify that I will be 35 years old or less on 15th February 1982.

Name _____

Address _____

_____

Date _____ Signature _____

Code M1

BOOKS

Le Maroc et l'Artisanat Traditionnel Islamique dans l'Architecture

By Andre Paccard
Editions Atelier 74, Saint-Jorioz, France
1979
Two volumes, hardbound, text in French
Reviewed by Shirine Niroumand Rad

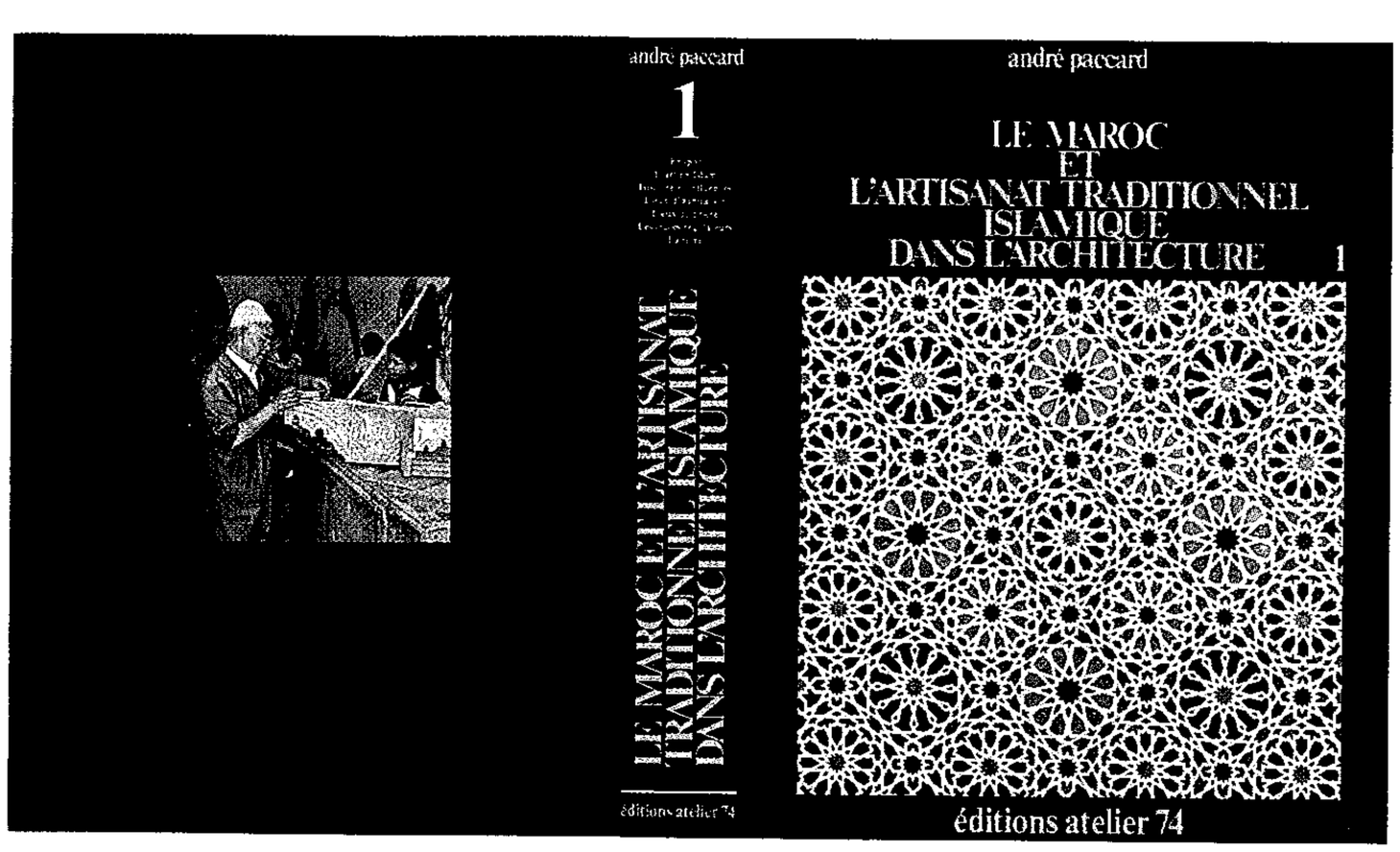
Le Maroc et l'Artisanat Traditionnel Islamique dans l'Architecture is a compilation of documents which treats the decoration of Islamic architecture in Morocco through a series of photographs and above all execution drawings by *maallem,* or masters of traditional art. The drawings themselves and appended diagrams illustrate the geometry underlying their production, the technical vocabulary employed to describe the work, as well as photographs depicting different phases of execution.

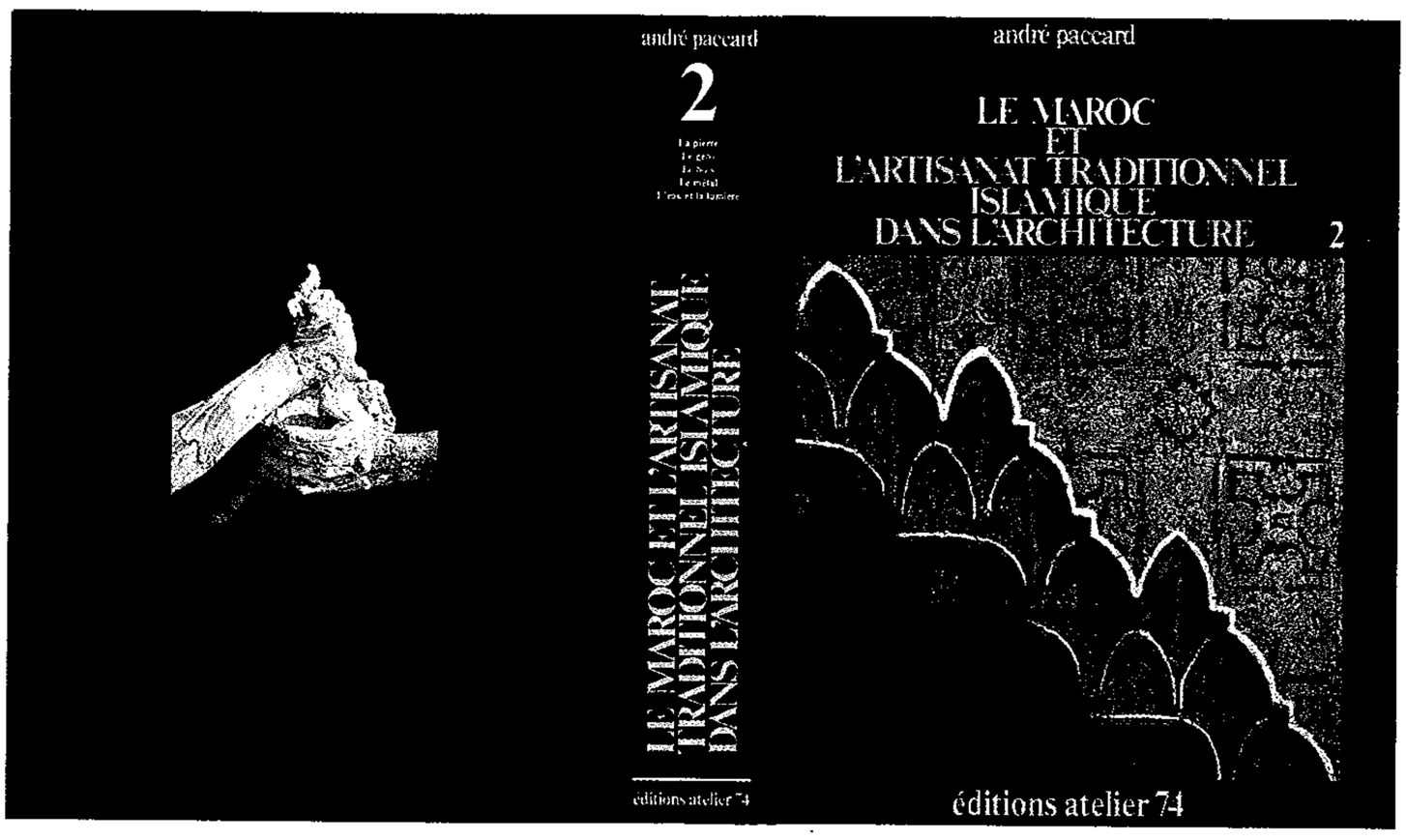
This book is based essentially on the decoration as the principal element of Islamic architecture — according to the author himself — without taking account of the volumetry of the buildings under study. In reality, the decoration is only one element of such architecture, one which from its inception corresponds to specific architectural forms, determined over time by tradition. Craftsmen worked in the past according to these architectural forms which defined the coordinates of their geometric designs. This intimate relationship between the designs conceived for surface decoration and architectural forms no longer persists in modern 20th century buildings — a fact clearly portrayed in the disastrous examples put forth in Paccard's two volumes.

Aside from this important, not to say crucial, correlation between buildings and their décor, which has not been adequately acknowledged, the books are composed primarily of photographs (of astonishing beauty in many cases), series of which demonstrate visually both the steps necessary in preparing basic materials *and* techniques for actual execution. These images do not however, nor does the text, offer the reader the opportunity to gain profound insights into any of the basic crafts: wood, tile-making, plasterwork, etc. The *maallems* did allow the author to photograph pages from their sketchbooks (those showing patterns for assembling *mouqarnas* are among the most beautiful), but they did not divulge all the intermediary steps to achieving a given work

Given the fact that the photographs are consistently presented by the author as fragments, as objects in their own right, it is nearly impossible to imagine the context, or find the parallels that would permit the reader to make qualitative comparisons and judgments. This is particularly frustrating in the case of restoration of buildings where neither the localisation of the re-working is indicated, nor the extent of the restoration nor the relationship between ancient and modern workmanship.

Le Maroc et l'Artisanat .. is far from being a dictionary of traditional Islamic craftsmanship. However, it is a first step in this direction, amply and luxuriously presented. Its undisputable merit is in assembling photographs of a variety of techniques still in use today, even though many modern examples of work illustrated confirm an old adage in Farsi that "the craftsman has lost his eye"





Riyadh, International Competitions

Riyadh, International Competitions
l'Equerre-UIA, France 1981
123 pages
Reviewed by Shirine Niroumand Rad

A new series of bilingual (English and French) publications on architectural competitions has been inaugurated by the French publisher L'Equerre The first one dealing with an international competition for the future Ministry of Foreign Affairs of Saudi Arabia in Riyadh appeared earlier this year It is jointly published by the U.I.A. (Union International Des Architects) and L'Equerre, which is altogether logical since the U.I.A. was originally contacted to organise the competition itself.

The actual text of the book is composed of a brief description of the programme given to invited participating architects, followed by individual statements from the latter explaining their approach to the problem. Some brief editorial comments by Professor Laban Wingert attempts to help the reader to digest the highly diverse, often very idiosyncratic, architectural propositions for the Ministry.

Among those represented are the Lebanese/Parisian Pierre El Khoury, the Japanese Arata Isozaki, and Spaniard Ricardo Bofill. The winning project of the second phase of the competition by Danish architect Henning Larsen is presented through plans and drawings. It is a composition of three buildings, squarish in plan, connected and forming two sides of a triangle; the entry to the complex is located along the third side (or hypotenus) of the triangular arrangement. The plan makes available numerous interior courtyards, as well as allowing for potential additions to the Ministry (as required in the brief) on the periphery.

In summary, the Riyadh publication offers a modest sampling of various contemporary architectural tendencies in the western world as they come to bear on a complicated governmental programme for an oil-rich middle eastern country. Unfortunately, reasonable quality of the publication itself is not matched by the architectural quality of most of the entries It remains to hope that subsequent books in the series will be more inspiring.

Shirine Niroumand Rad is an Iranian post graduate architectural student studying in Paris.

11 projets pour le siège du Ministère des Affaires étrangères d'Arabie Saoudite
11 entries for the Headquarters of the Ministry of Foreign Affairs of Saudi Arabia

Trevor Dannatt
Arata Isozaki
Piano, Rice and Zbinden
Otto Frei
Roger Taillibert
Robert Fairburn
Vedat Dalokay
Pierre El Khoury
Suter and Suter
Taller de Arquitectura, Ricardo Bofill
Henning Larsen

Other books of interest ...

Architecture in the Seventies
Udo Kultermann
The Architectural Press, London, 1980
149 pages, hardbound, S$111.65

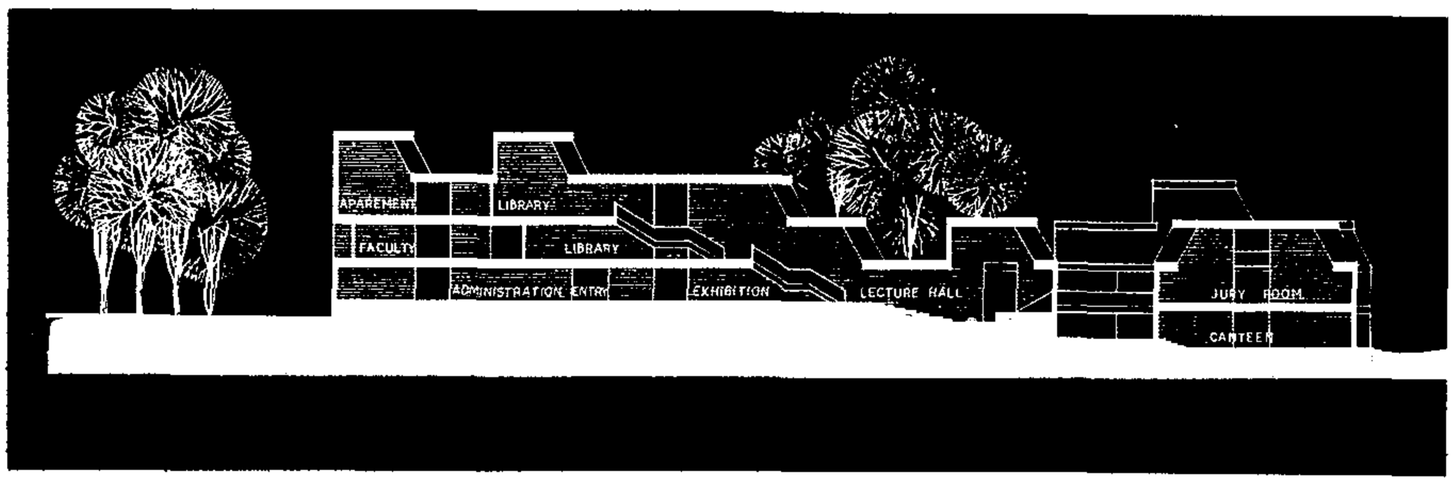
Singapore Property Market in the 80's
Philip Motha
Select Books Pte Ltd, Singapore, 1981
159 pages, hardbound, S$36.00

This presentation is the first in a series of articles devoted to architectural schools in the developing world, their curricula, their professors and student body composition, their physical plants. While MIMAR's Education column will also be open in the future to other types of articles (theoretical, philosophical, student diploma projects of special interest, etc.), the issues raised by professional training in non-Western societies, be they Muslim or not, represent particular ideological choices which are worthwhile sharing among the societies concerned. It is our hope that schools will come forward voluntarily without our solicitation, to take the opportunity here afforded students and professors alike to clarify their own approaches, reactions, and ultimate objectives In future issues of MIMAR, the older, more established schools such as those in Cairo, Istanbul, or Baghdad could be usefully compared with newer faculties such as those in Jedda, Fez and Dakar. Finally, as this issue appears at the beginning of most academic years, we wish to announce our desire to publish regularly in MIMAR a list of topics of current diploma research and subjects of recently completed architectural and urban-planning thesis. These can be forwarded to us individually, or as in the case of CEPT (see below), by the school administration.

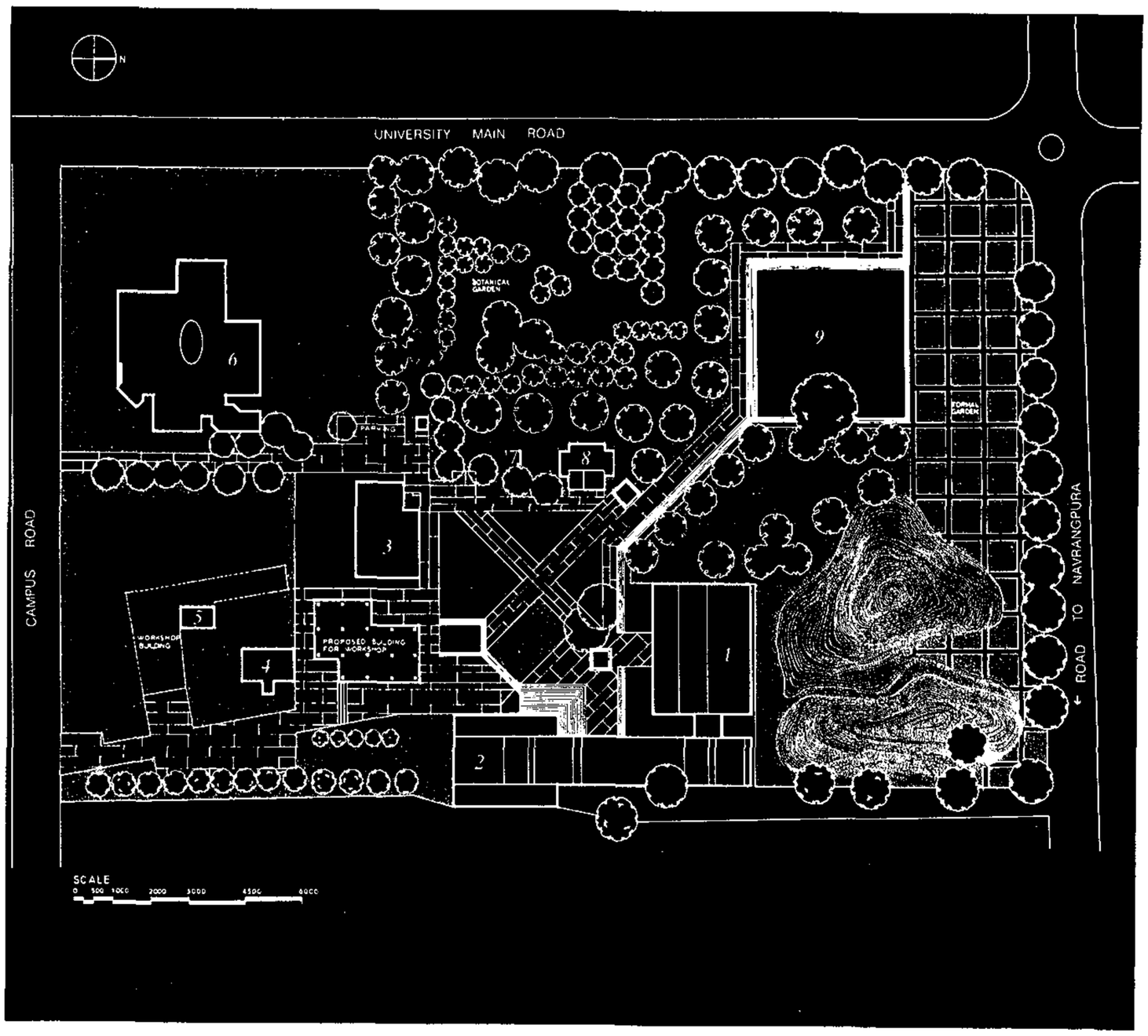
The Editors

CEPT: Centre for Environmental Planning and Technology, Ahmedabad, India

In its present form, the CEPT is composed of three schools: School of Architecture (5-year course), School of Planning (2-year post-graduate course), and the School of Advanced Study in Structural Engineering. A Visual Arts Centre with its own physical plant has recently been opened. The history of the Centre's gradual development since its inception in 1967 is both unique and instructive, illustrating a dynamic which, through the vicissitudes of time and India's recent political and economic history, has never ceased to reassess educational policy by self-criticism and clarify future professional needs. A driving force behind the continued progress of the CEPT, but by no means the only one, has been Balkrishna Doshi, fifty-four year old architect/planner and educator. For ten years Director of the School of Architecture until he became Director of the new School of Planning in 1972, Doshi's vision and devotion has left (and continues to leave) an indelible imprint on CEPT's graduates. He and his office, Vastu Shilpa, designed CEPT's buildings which were constructed between 1967 and the present. Doshi, from whom MIMAR obtained a statement concerning his own approach to design and education, pushed forward the frontiers of professional training by creating in 1976 a Study Cell within the School of Planning, a consultative agency drawing on the faculty and student body



Section through exhibition, jury, looking west.



Site plan

Above: View of north facade, windows to design studio
Right: Detail of exterior, Visual Arts Centre.
Left: Site plan.

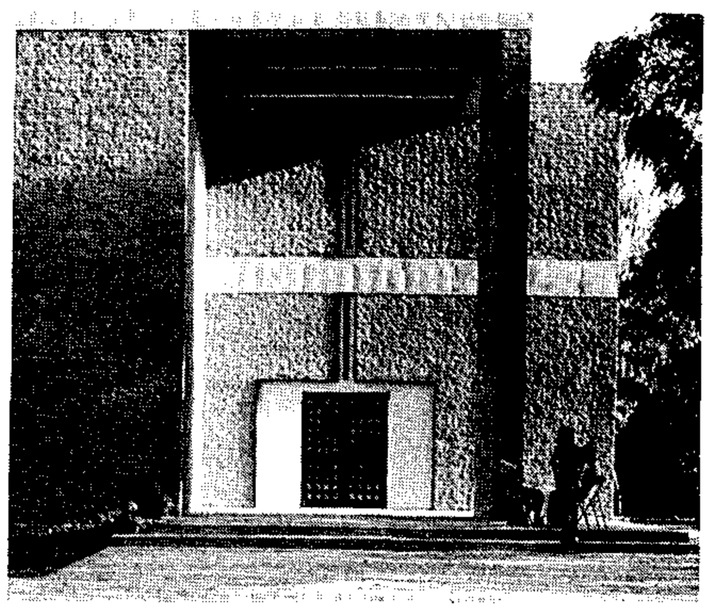
1 *School of Architecture*
2. *School of Planning*
3 *Visual Arts Centre*
4 *Workshop*
5 *Dispensary*
6. *Community Science Centre*
7 *Store*
8. *Canteen*
9 *Pond*

to ensure participation by CEPT in planning and development activity throughout India

History and Evolution of CEPT

The Ahmedabad Education Society, which was founded in 1935, a non-profit private body whose governing board is made up of local, regional and national figures, sponsored the creation of the School of Architecture in 1962

Initially the main objective was to develop a cadre of architects who could take up the task of architecture with competence within the existing context However, the School's founders were dissatisfied with the contemporary situation. Most architectural practice was concentrated in urban areas. The major occupation of architects was to serve the needs of the developers and to build a few institutional and public buildings in isolated areas A concern for the surrounding environment usually went unexpressed due to a lack of initiative, foresightedness and self-imposed limitations as designers for a particular task.



As a result problems concerning the needs of the community in the urban areas remained unsolved and the effectiveness of the architect as a participating professional member of a community was hardly felt.

In the rural areas, due to a total lack of the architects' participation the problems were usually handled by the others and as a result the environment was evolving without any cohesion.

The cause of this total failure to participate at urban, rural and developmental levels was rooted, it was felt, in the professional educational system. If education could stimulate an awareness of these failings, at least the graduates would have participated in acts of the community. This was not happening at the time due to India's educational policies, based on unrelated and vague notions of what constituted the task of the architect.

Within four years of its creation, those responsible for the School of Architecture realised that the subject of architecture cannot be taught in isolation, and that for study to be meaningful it needed to be tied to other branches dealing with the technological aspects, for example construction, materials, as well as climate and the social dimensions. It was felt that contractors must be involved so that the implementation part of building could be executed in conformity with the ideas of the architects A School of Building Construction was proposed in order to bridge a gap between the designs developed by the architects and the involvement of those who execute. An advantage of this linkage would be that the architect could learn about new techniques in actual construction. A laboratory for testing building materials, enabling students in architecture to keep in touch with the new materials was proposed. This idea of a School of Building Science and Technology, as it is now called, is only now coming to fruition and is projected for the near future.

A third idea which was to provide a cornerstone for more diversified training was the establishment of a School of Planning, achieved in 1972 thereby forming the core of the CEPT The School, financed by the Central Government, the State of Gujarat and the Ahmedabad Education Society, received funds from the Ford Foundation for non-recurring expenditures such as books and new buildings. The curriculum focussed on human settlements as an area of action from the beginning, but was primarily concerned with social and economic development. Unlike schools of Town and Country Planning it is not limited in scope to physical planning and its students are drawn from Economics, Sociology, Geography, Anthropology, diverse fields of Engineering as well as from Architecture.

Curricula

The programme at Ahmedabad's School of Architecture presently lasts for a

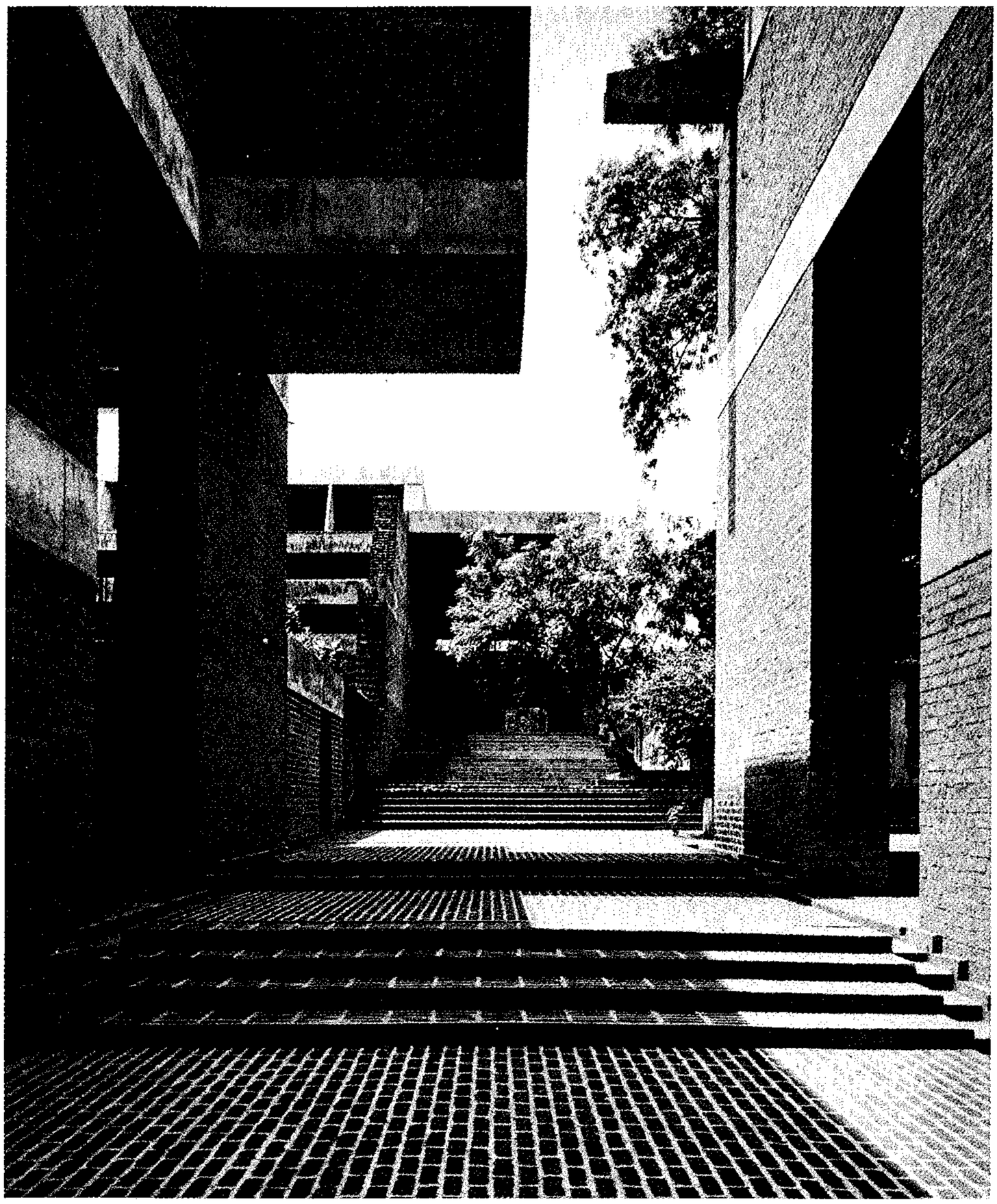
duration of ten semesters, or a total of five academic years, including six months of practical training during the 4th year and six months of thesis in the 5th year. This period is divided into two Stages. Stage 1, which is the first two years, emphasises the learning of basic tools and techniques in Architectural Design. On finishing Stage 1, a student becomes eligible for Stage 2 if he or she wishes to continue study or can seek employment as an architectural assistant Stage 2 is three years (or six semesters), during which a student is offered the choice of specialising in a preferred area: architectural design, housing, urban and community design, or landscape architecture.

In the design studio, attempt is made to understand the circumstances which provoke the creation of essential elements and then to evolve a correlated pattern for making an object a unified entity with the help of other disciplines. In order to evaluate properly the circumstantial impact within and without, inspiration is drawn from the attitudes rooted in a particular philosophy or "way of life".

History (in all the various disciplines) is discussed and studied in order to understand ways of living throughout the centuries from an evolutionary point of view. Analysis of the environment as a whole, as well as it being a whole composed of many parts, is continuously made to draw meaningful conclusions.

Since different disciplines operate to varying degrees in the design process, case studies formulated as studio problems with differing magnitudes, reveal to students measurable facts more than they do the "unmeasurables", those things spoken of usually as "aesthetic considerations" or "beauty". The attempt to eliminate initially the aesthetic emphasis is born of the conviction that any object which represents the utmost economy is all dimensions yet converts itself into a positive, dynamic entity, already possesses the so-called aesthetic quality. The measurable areas occupy a major part of design and therefore precise information on the task that an object should perform is demanded of students in studio work.

However, in order to develop a philosophical attitude amongst the students, it is planned that problems which demand greater philosophical understanding should be tackled at senior levels, while problems which teach discipline in techniques of handling tools and simpler relationships between elements should be taught in the earlier years of the course



Above The passageway linking the schools, seen from the north side.
Right A design studio

The course curriculum in the two-year post graduate programme of the School of Planning has two broad areas within it: the information and the application of theories, concepts, case studies; tools and techniques in various disciplines relevent to planning are offered The application of these in a real problem area in the country is attempted in the planning laboratory which undertakes actual projects A hierarchy of projects has been introduced right from the very inception wherein the understanding of the settlement components is emphasised first, moving gradually into integrated community planning in rural and urban areas, then to area planning and finally to regional planning A Special Project programme allows students at the end of the regular teaching semester before graduation to take up individually a research topic during fifteen weeks.

Study Cell

It was realised that to enrich significantly

the academic programmes' content in the Schools under the CEPT, inputs and feedbacks from real life problems and the efforts to solve them are very essential. The faculty members offering various courses to the students, it was felt, would be in a better position to substantiate conceptual and theoretical bases relating to planning process with the help of the experiences in reality One other important objective was to raise financial resources to enable CEPT to develop and diversify activities The Study Cell intended to attract governmental planning and development agencies for the purpose of utilising the expertise available at CEPT

Completed projects include, for example, an Integrated Environmental Improvement Plan for Tribal Talukas in the Panchmahals District, Gujarat State (1977-78). The planned solutions here identified an optimum pattern of land utilisation at settlement levels, keeping in view the socio-cultural and economic aspirations of the tribal population, with emphasis on productive employment generation Other projects include Block Level Planning in Kutch and Amreli, Modernisation of Existing Medium Irrigation Projects in Gujarat, and a film on the city of Jaisalmer, Its Architecture and Environment, sponsored by UNESCO

My Approach To Design: A Message for Students

by B.V. Doshi

Educational background affects one's interpretation of his environment. It affects the individual's performances and decision-making process. When one is educated abroad, as I was, and has to practice in his own country — which has a long tradition and diversified needs — he is bound to be confronted with new situations and challenges.

I learnt from Le Corbusier to observe and react to climate, to tradition, to function, to structure, to economy and to the landscape around me. To an extent, I also understood how to build buildings and create spaces and forms. However, I have in the last two decades, gradually discovered that the buildings that I have designed somehow have a foreign look. They appear not to have their roots in the soil. With the experience of my work over the years and observation, I am trying to understand a little more about my people, their tradition and social customs and the philosophy of life.

Study what's already yours

The best way to know one's own culture is to study its existing settlements, their way of life, crafts and the arts. These give insights into many problems. One observes the heat and cold, the sunshine and the moonlight, the starry heavens above, and the directions of the wind. All those things that mould the life of the people.

One understands the subtle significance of the porches, verandahs, staircases, open spaces, balconies, terraces, carvings etc., which constitute the form and the character of their indigenous architecture. They show the relations of classes and communities in their depth, their mutual actions and reactions. In short the whole web of life. One understands finally the connections with general economy and the use of energy.

The study of existing buildings from hutments to mansions, from a workman's house to a market place, one sees the technical insight of the old in keeping the

buildings cool, getting cross ventilation, providing direct and indirect natural light and protection from say the sun, the rain or the dust. Economy, of course, played an important role and affected the major aspects of design such as choice of materials, method of construction and the ultimate expression In short one often found the simplest and direct ways of building a total eco-system that gave architecture its due place or reverance.

To this, I often felt that we can perhaps add new ideas based on new technology, new spatial understanding, perhaps a new function and a new aesthetic For example, we could add an efficient lighting system within to make the building more suitable for frequent use in different seasons and at different times. Provide varieties of space for specific or general functions, or even make the building an extension of the outside space. We can try and reorganise functional and service elements within and outside the house, to make them more efficient, save energy and even give it a new orientation.

> "... institutions are the primary elements of an environment. When one is to design ... it is necessary as a first act to study the interaction between the individual and the community, and to provide for spaces and the institutions of the community."

Buildings that survive in time have more than material utility. They indicate several levels of associations and meanings compared with present-day functional structures, with their craving for modernity.

Besides, these new buildings often do not satisfy the expectations of the users; even after completion the users change parts of the buildings as they do not feel at home with, either the structures or the spaces or the form. Some of the buildings go through innumerable changes It is then that the question is asked: what is appropriate? What kind of buildings should we build? At this juncture one begins to feel the limitations of one's education and has to learn many new ways of doing things.

Buildings that grow

Buildings in India must provide the potential for growth because of fluctuating economical situations and changing social conditions. For example, very often projects start with large requirements but due to economic constraints or changes in the situation, they have to be built partially, or sometimes doubled during construction. I have observed that the concept of growth leads to better efficiency and economy Another important criteria is the provision for changes in the design or modifications of functions. This is required due to either up-grading or downgrading of the functional conditions, be it housing, offices or public buildings.

However, to make the growth concept acceptable, it is necessary to know the needs of a society; without these it is difficult to create a suitable environment and allow for future growth or change

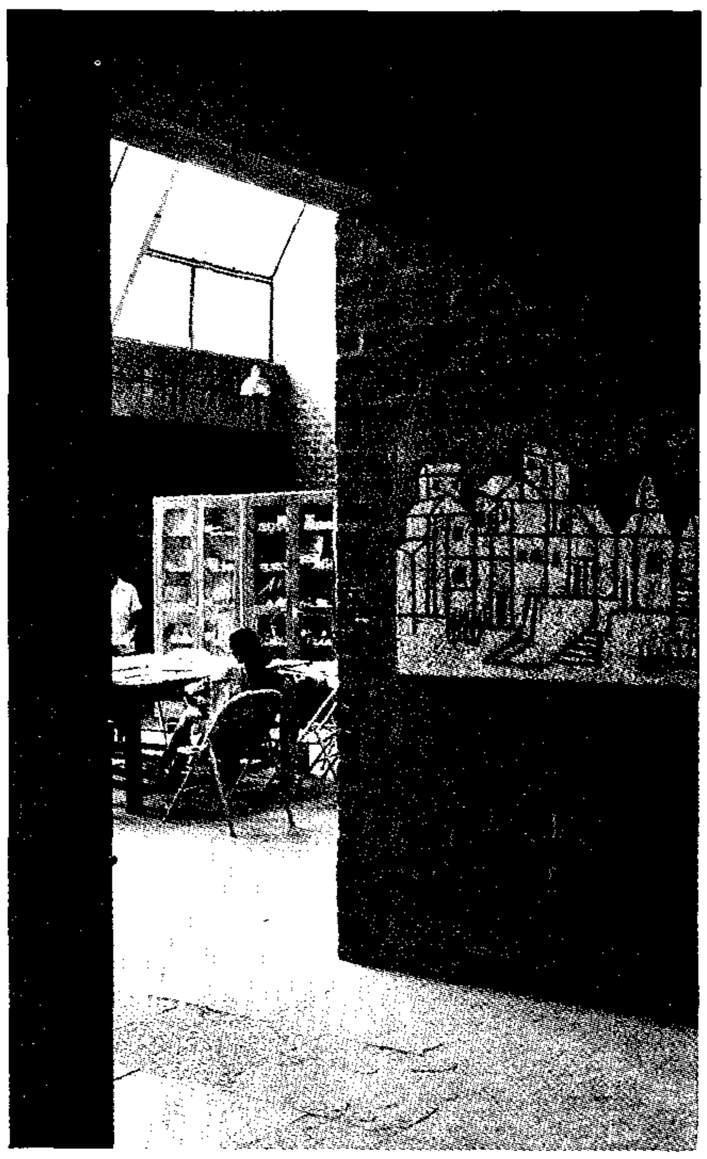
This leads me to say that all design considerations should be based on community considerations rather than individual ones

In the process of creating built environments there are not only measurables but also immeasurables which affect design. Here the tradition of a culture becomes very important, without whose support the buildings do not become appropriate

Therefore, unless the socio-cultural-tradition is understood it is difficult to locate or design streets or places or extensions to buildings or the buildings themselves The forms of the built environment cannot become a fabric and cannot be used if designed otherwise It is necessary to speak about cultural environment rather than a building or a technology or an economy. A house in Ahmedabad or in Jaisalmer or in Udaipur has centuries of tradition behind it. This tradition has given the house or its form many factors which tie the generations together.

Institutions are the key element

One notices within communities that there have always been several types of institutions which have varying permanency in relation to the scale of their operations

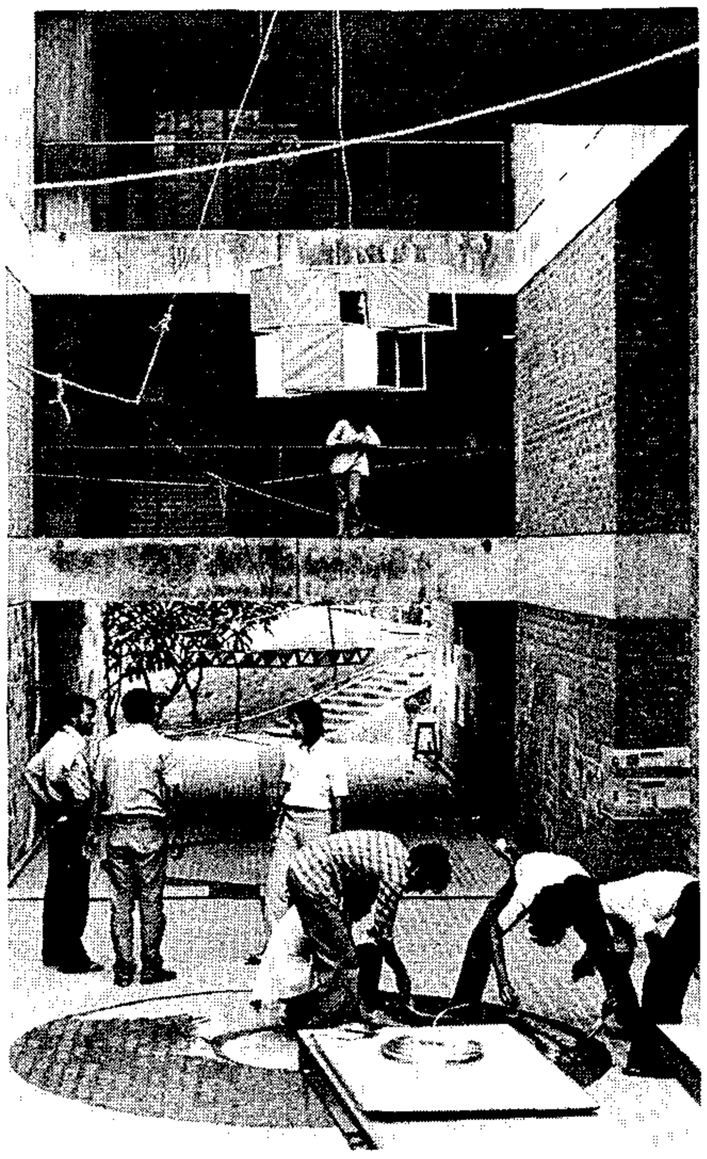


The library

For example, institutions arising in a community are more permanent than those of the cluster and those of the cluster are more important than those of the family and those of the family are more important than the individual It is therefore, essential to study the institutions and their hierarchies which operate and generate various activities and establish cluster form Design cannot be an external physical component

I believe that the institutions are the primary elements of an environment When one is to design either a building or a settlement, it is necessary as a first act to study the interaction between the individual and the community, and to provide for community spaces and the institutions of the community

Let me take an example of social institutions, a well and a water tap. To fetch water from a well involves a lot of labour, while in a tap water is easily accessible. But in the case of the latter, the wastage of water is much more than that in the case of a well. In consequence it allows mosquitoes to breed and make the place dirty, which can only be remedied by subsequently installing in a drainage system In the case of the



Students developing school environment.

village well as it involves physical labour there will be little scope for wastage of water. But what is important in the well in addition is of a meeting place for women. In fact it is a sort of club for them in the morning and evening i.e, it becomes a social institution.

Or take a temple in a village or town. When a temple is established it brings people from all walks of life together for workshop and social diversions. Here you have music and dance and many elaborate ceremonial rituals. Here you have folk plays in honour of the diety. Thus a temple becomes a place for spiritual inspiration and aesthetic satisfaction. In addition the deity often becomes a guide, a friend and a philosopher to the ordinary folk. It is this type of socio-religious tradition in India that has given colour to Indian culture.

From these two simple examples and many others, one can see how total human energy was expressed naturally and spiritually and gave a unique awareness to the people.

Through this awareness man not only sees his place in the world as worker but as an enjoyer of life.

List of Diploma Topics, School of Architecture, Ahmedabad, 1980-81

The names of the students and their respective diploma topics are listed below.

Desai Punita
A Study of Tribal Settlement and Shelters — In Change

Shah Snehal C
Migrant Squatters and its Quality in Urban Environment

Bhansali Sunil H
Upgrading Squatter Settlements: Case Study — Bombay

Gandevikar Y.V
Housing for Middle Income Group (Comparative Study of working of Different Agencies)

Anjali Balachandran
An Approach to Critical Architectural Appreciation

Dave Bharat K
Ideological Roots of Movement in Architecture

Desai Mahesh T
Courtyard as an Element of Built Form: Case Study of Bundi

Patel Prema K
A Study of Settlements, Houses of the Mer Community in Past and Present Context

Shetty Rajmohan
An Inquiry into the Aspects of Rationale in Architecture, substantiated with an Analysis of the works of Alvar Aalto

Mehta Barjor E
Urban Housing: Objective Realities for the Poor

Mehta Hemant
Recreational Spaces — A Case Study of Baroda City

Pramod Balakrishna
Social Aspects of Mass Housing

Desai Janak
Development in Structural Spanning

Suthar Navin K
Townscape Study of Religious Towns of Gujarat (Visual Aspects)

Vinod Kumar
Ideals and Education in Architecture

Joshi Sharadbala B
Recreational Urban Open Spaces

List of Thesis Topics School of Planning — 1977-80

The names of the students and their respective thesis topics are listed below.

Balachandran B N
Rural Energy Systems, Problems and Prospects

Chavda Rajnikant
Housing Situation in Rural Gujarat

Dhanabal V
Block Level Planning — Integrated Rural Development

Gandhi Hiren
Habitat Mobility for the Urban Poor

Nanda Kumar
Morphology of Indian Cities

Sharma Loknath
Health Care Services in: A Tribal Taluka: An Evaluation

Sharma S Narayan
Parking Requirements for different Land-uses in Ahmedabad City

Taj S M
Poverty in Plenty — A Case Study of West Godavari District

Thayalan K
Agricultural Growth Strategy: A Case Study of Surendranagar District

A.P.R. Vittal Babu
Aerial Photography and Urban Planning

Arun Chaturvedi
Udaipur City — Built-up area

Ravindra Joshi
Tourism Planning for Ukai

Kaushik S Mehta
Small Scale Industry in Rajkot

Padmesh R
Lowry Model

Bharat Parekh
Rural Housing

Pragnesh Parikh
Perception of Physical Environment

Rashmi Vasisth
Non-Formal Education and T.V.

Sivanandam M
Education and Scheduled Tribe

Sudhakar Reddy
Fiscal Anatomy for Hyderabad

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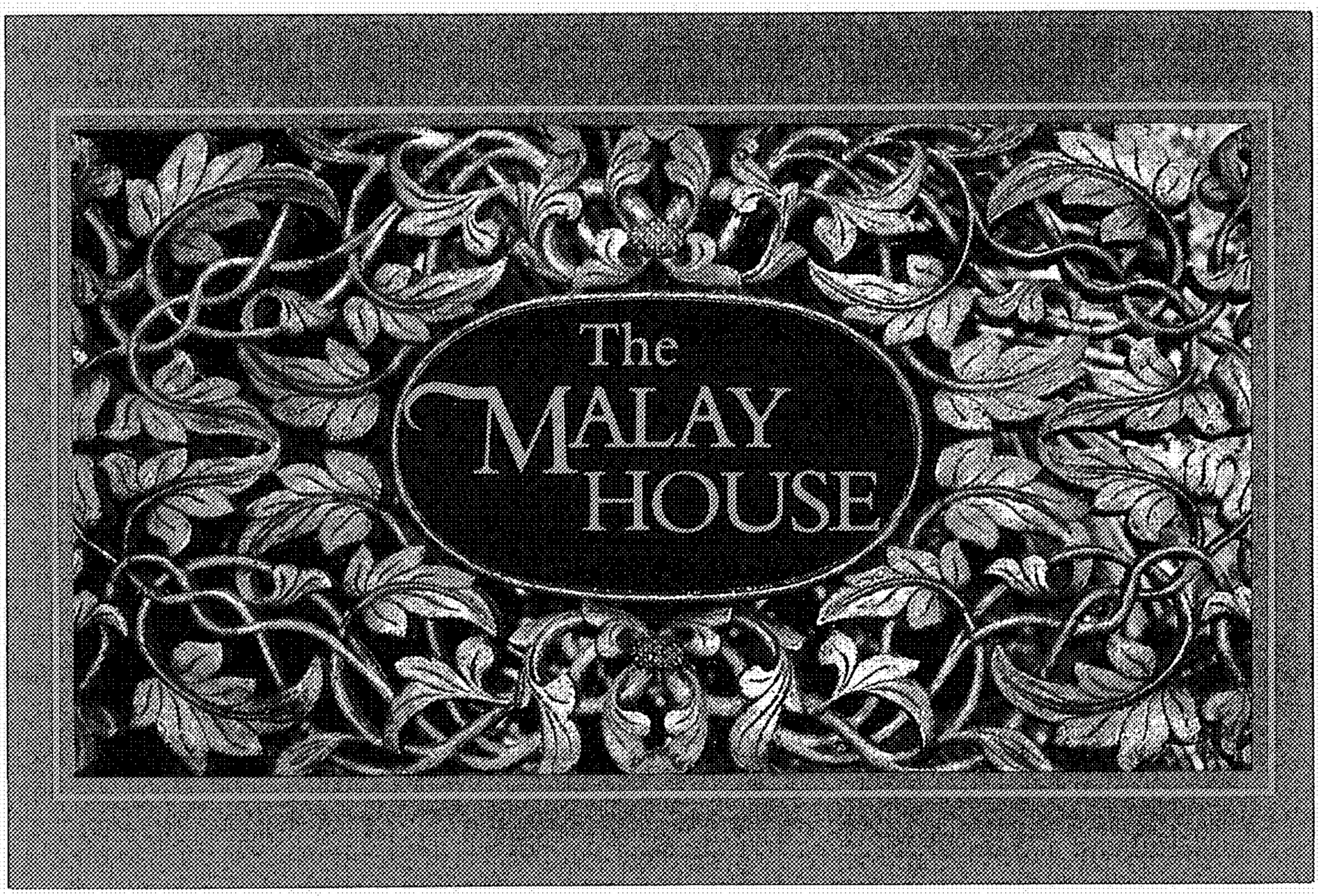


'The Malay House' has been specially written for MIMAR by Professor Wardi, who until recently was Dean of the School of Architecture at the Universiti Technologi Malaysia in Kuala Lumpur Besides teaching Professor Wardi is involved in research on low-cost building techniques for mass rural applications. The drawings and photographs of the four regional houses are taken from unpublished studies by Jabatan Senibina, carried out between 1976 and 1980. The work has been printed with permission from the University Technologi Malaysia and is their copyright. All other photographs are by Parid Wardi Sudin.

The population of Malaysia is not one homogeneous group but made up of Malays from various islands of the Malay Archipelago This diversity of population is the consequence of a continuing regional movement of people, dating back to the time of the Malacca Sultanate in the 15th century The rise and fall of regional powers, the coming of European colonialists, the ever present inter-island trade and Malaysia's favourable position on the ancient trade route to China, have contributed to the constant movement of people, from the region and beyond, into the Peninsular. In the process, various groups, including non Malays have settled in the country and helped to introduce a variety of regional domestic architecture. Although it has been suggested that the Malays of the region share common cultural roots, each group however has developed independently, producing its own cultural and architectural identity and form.

Over time, the confrontation of the various immigrant cultures, among themselves and with the local cultures, has served to dull the sharp distinction between the various regional and local architectures. The process, and extent to which these changes have taken place, is difficult to trace for lack of continuity of evidence. Since the most common building material used is timber, examples of early houses no longer exist. Even the major surviving examples which are less than 100 years old are difficult to study because they have either been modified, vandalised or are in a serious state of disrepair.

The process of cultural interaction has not produced a single architectural style. While a common cultural base can be identified, strong regional, cultural and architectural form and character persists.

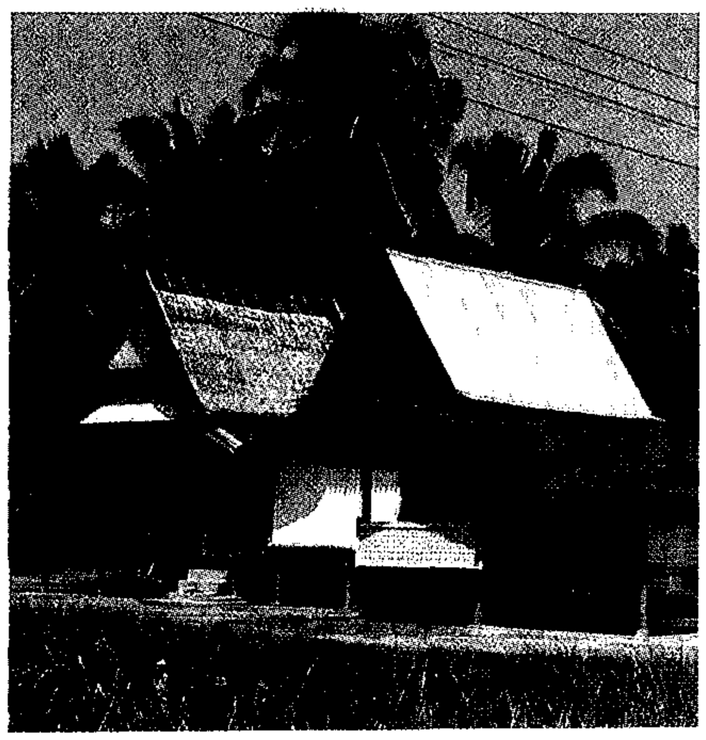
Thus there exist today, a variety of Malay domestic architectures, traceable to

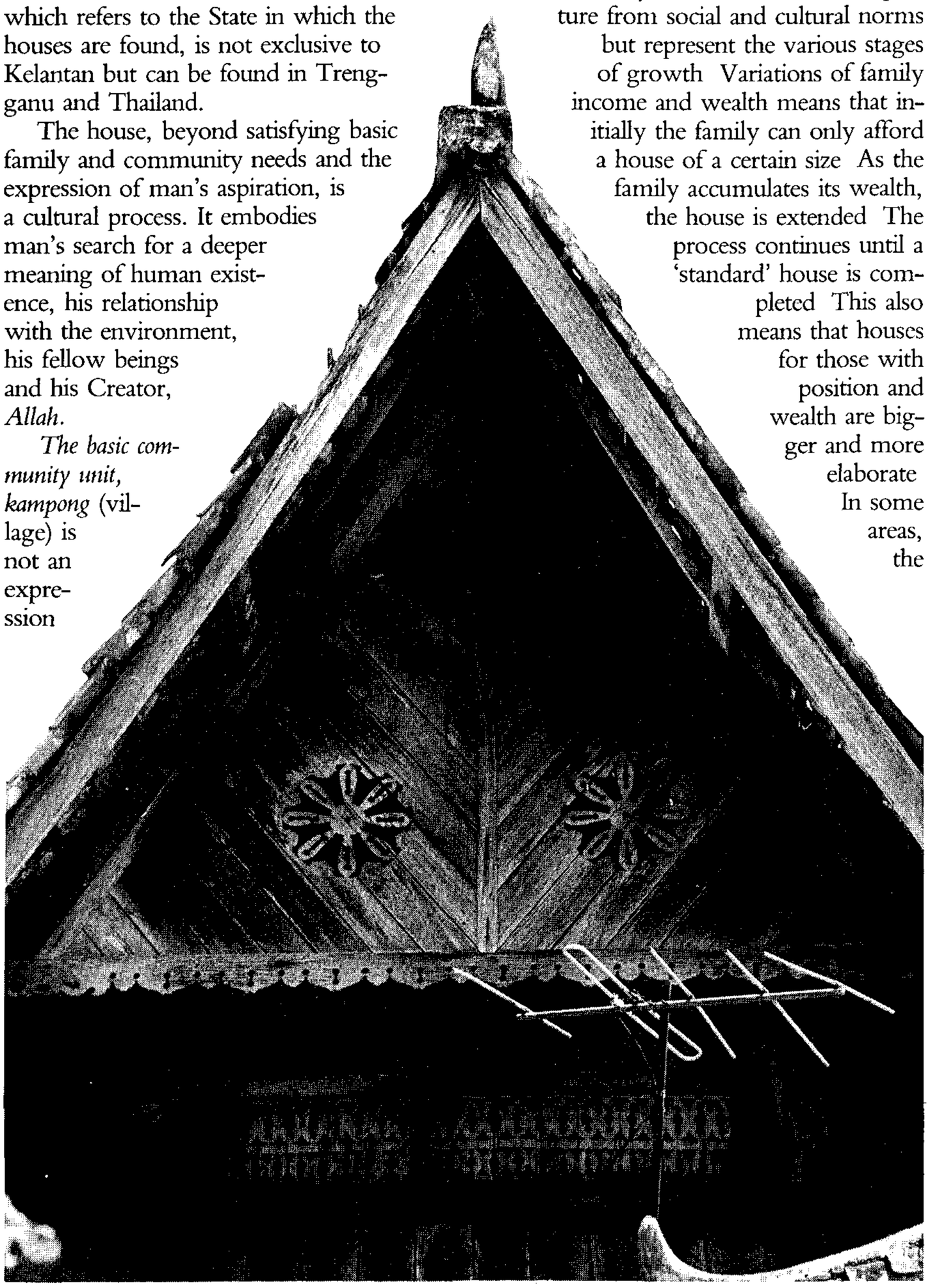
their distant origin in the various islands of the Archipelago, but different in many ways from their original styles It is possible to identify several types of domestic architecture such as the *Kedah* house, the *Banjarese* house, the *Bugis* house, the *Minangkabau* house, the *Kelantan* or Thai house, the *Perak* and *Pahang* house, etc. (Research by the Universiti Technologi Malaysia on traditional architecture through the process of measured drawings have produced yet more variations of house form than is commonly known Classification of the various house types is yet to be undertaken) The distribution and location of the various house types usually relate to the original area in which the people settle and the names are usually referred to by either the name of the people or the State in which they are most commonly found The *Minangkabau* house refers to the people and they are found almost exclusively in Negeri Sembilan. However the *Kelantan* house which refers to the State in which the houses are found, is not exclusive to Kelantan but can be found in Trengganu and Thailand.

The house, beyond satisfying basic family and community needs and the expression of man's aspiration, is a cultural process. It embodies man's search for a deeper meaning of human existence, his relationship with the environment, his fellow beings and his Creator, *Allah.*

The basic community unit, kampong (village) is not an expression of geographical locality, but of human relationship determined by such factors as kinship, common livelihood and mosque congregation. Often the physical size of a *kampong* is determined by the hearing distance of the mosque *gendang* (drum), which traditionally summons people for prayer The kampong, guided by a council of elders, represents an integrated social unit bonded by kinship and the sharing of common facilities, problems and hopes Community participation extends beyond participation in the rites of passage It includes mutual economic aid and house construction Often the boundary between individual, family and community responsibility is difficult to identify

Thus the design and construction of the house is determined by the dictates of society and customs, rather than individualistic wishes Although the houses in any given kampong seem to vary in form they do not constitute a departure from social and cultural norms but represent the various stages of growth Variations of family income and wealth means that initially the family can only afford a house of a certain size As the family accumulates its wealth, the house is extended The process continues until a 'standard' house is completed This also means that houses for those with position and wealth are bigger and more elaborate In some areas, the process is entrenched as a custom, thus reinforcing the relationship between status and house style





Conceptually the house extends beyond the physical structure to include the whole of the immediate environment Often the concept of house and village is freely interchanged The expression *'Pulang ke Kampong'* which means 'to return to the village', is often used instead of returning home to denote the oneness of the concept of house and village

Although in recent times the location of a house is determined by legal land ownership, the house site and its orientation is still carefully selected in order that they are in the hilly rather than wet location, that the house faces the morning sun and orientated towards the *Qiblat* in Mecca.

The process of house construction depends on the owner's wealth Rich families engage the *tukang,* (master craftsman) while poor families build through the process of community self help — *gotong royong* However through the institution of the site selection ceremony, house erection ceremony and house warming ceremony the whole community is involved, irrespective of who builds

Although each regional house type has its own distinctive character, they all share several common features Without exception, they are all on stilts and have pitched roofs They are all open plan, regulated by construction modules and have several levels They use similar building materials and the construction system allows for the additions and the recycling of components.

The logic of building on stilts has more to do with health, comfort, aesthetics and understanding the building material rather than the oversimplistic reason to avoid

Top Malacca house. note traditional thatched roof and new roof of sheet metal.
Left· Malacca house, gable end view. The decorative carvings provide ventilation to the loteng (attic)

Malacca House

flood The people, through their architecture, crafts, games, pastimes and boat-building activities have shown a wealth of creative potential

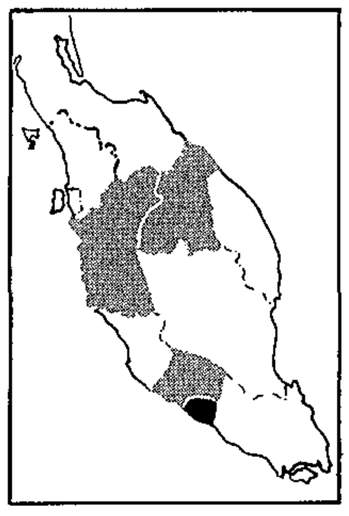
In some settlements annual flooding does occur, but the numbers are few If floods are the strong reason for building on stilts, it is strange to see the Chinese, who for a long time have lived side by side with the Malays subjected to the same floods, continue to build their houses on the ground

The pitch roof is logical in hot wet climatic conditions The steep pitch, permits rapid removal of rain water and creates a high sloping ceiling ideal for inducing air movement, ventilation and the escape of hot air — hence comfort

Two elements which typify the Malay house is the open layout and the use of levels Often the house has only one room, apart from the separation between the *rumah ibu* (main house) and the *rumah dapor* (kitchen section) While spaces are assigned specific functions and status by their location and levels, these are not totally fixed, but are dependent on the occasion. So while women are assigned to the *rumah dapor* (kitchen section), they are not forbidden in the main house However during religious and social functions such designations are observed and the women congregate in the *rumah dapor* and the men in the *rumah ibu*. The function of spaces therefore changes with activities. The eating space may at night be converted for sleeping by the introduction of sleeping mat, pillow and mosquito net Thus the layout of the house responds to a continually changing use of space.

The common building materials used are timber for the structure, floor and walls, and *nipah, rumbia* (sago) or *bertam* thatch for the roofs. Till today the preferred wood is *chengal,* but this is costly and difficult to get So alternatives such as *merbau* are used In poorer families round timber is often used for posts and beams and split areca nut trunk used for flooring In areas such as Perlis where *bertam* and *bamboo* are plentiful the walls are woven from these materials *Rumbia* and *nipah* leaves folded into two around split bamboo or spilt areca nut trunks, form the basic roofing materials; and at times walling material of houses adjacent to low lying areas Near coastal waters *nipah* is extensively used, further in-land it is *rumbia Bertam* is a hill plant and can be woven into roof thatch by itself

While the material evidence collected from current studies on the Malay domestic architecture points to a rich cultural heritage and interrelatedness of Architecture to the cultural process is yet to be fully understood Many theories and speculations exists but the hypothesis is yet to be tested Meanwhile the knowledge, as only the *tukangs* know, is being rapidly lost

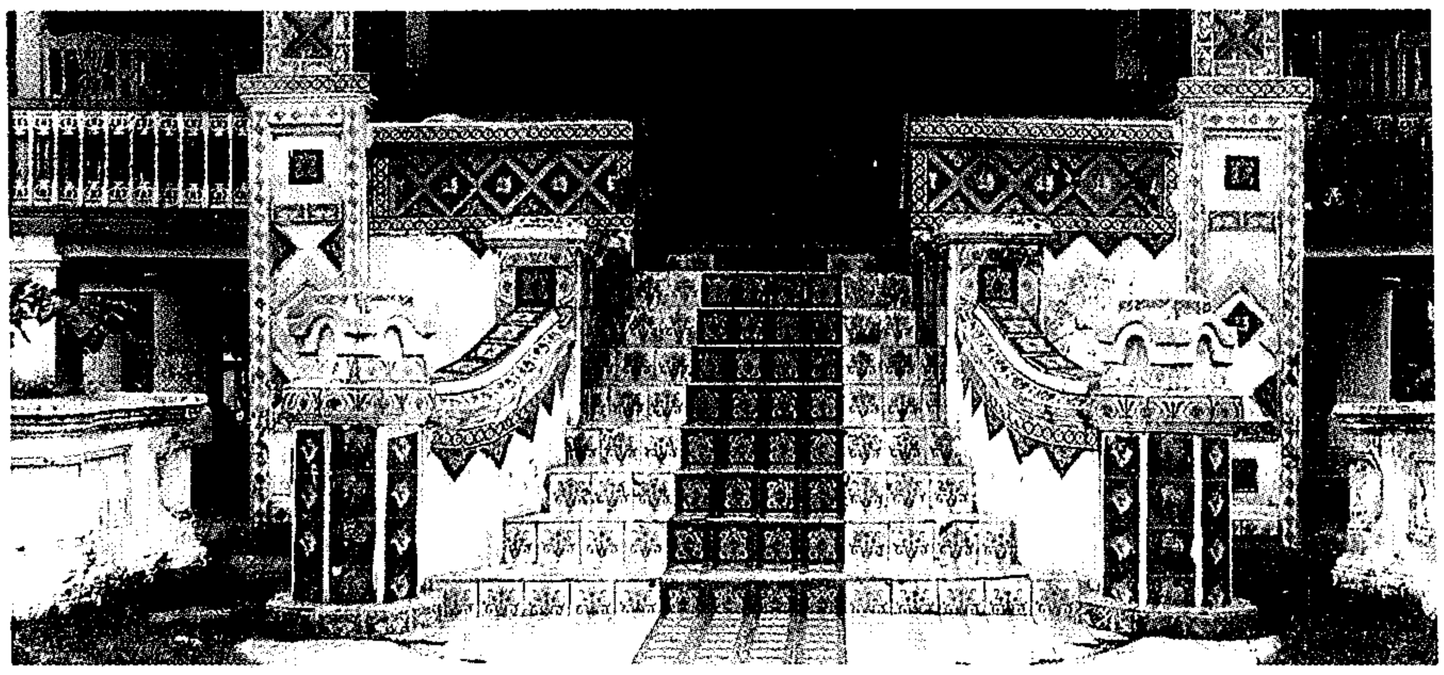


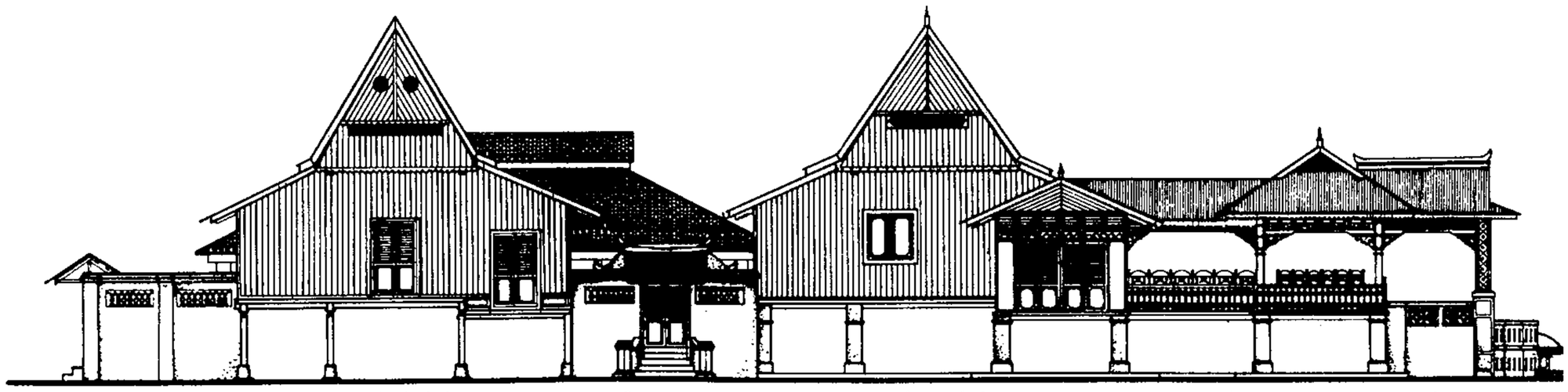
The house, located at Permatang Serai Road, Merlimau, Melaka, was built by Penghulu Mohd Natar's father Haji Abdul Ghani bin Abdul Majid in 1894 at a cost of $33,000 ringgit (approx US$15,000) Four *tukang* (master builders) were responsible for the construction Manaf Bopeng from Merlimau was the carpenter for the house structure, Mahmud Kelantan from Kelantan executed all the decorated wood carving, Sahal bin Junit painted all the decorations and carvings and Pendek Pendekar acted as general carpenter In 1925 when the house was modified by Penghulu Abdul Ghani, the same *tukang* were asked to do the work.

The design is based on old Malacca traditional houses and shows considerable Chinese influence Traditionally, Malacca houses reflect the owners status Ordinary the Malacca house contains a short *anjung,* and a *rumah induk* (main house) with one or two rooms, a *loteng* (attic) and a *rumah dapor* (kitchen) at the rear For the middle group, the house consists of two houses, *rumah induk* and *rumah belakang,* which extends to the rear, and an *anjung* which contains a *serambi* Houses for *Demang* (Regional Heads), *Penghulu* (local head) and *Tok Sidang* (village head) usually have two or three houses, extending to the rear, *rumah dapor,* a long *anjung* and a large *serambi* to accommodate a large gathering A feature common to all Malacca houses and Minangkabau houses of Negeri Sembilan is the inclusion of an attic within the roof space. Both sides of the roof gable are closed by *timba layar* The houses usually follow a proportion of ½:1:1 between the raised portion on stilts, the main body of the house, and the roof respectively The act of only slightly raising the house on stilts, apart from the obvious practical advantages of avoiding water penetration and damage to the timber, makes the house aesthetically much more pleasing Malacca architecture generally reveals a considerable Chinese influence, from as early as the 14th century. In the case of Penghulu Mohd Natar's house, the extent of this influence is more than usual on account of his business partnership with a Chinese businessman, Pua Beng, who commission several Chinese workers to modify the main staircase and the gateway to the *jemuran*. Further, two of the original *tukangs,* Mahmud Kelantan and Manaf Bopeng, learned their craft from a Chinese carpenter Consequently the main staircase was decorated with richly coloured glazed tiles often found in Chinese architecture The roof to the gateway used Chinese tiles and has a *sulur bayung* at the end of the roof ridge The colours of the interiors, decorative fences and wood carvings were also bold and vivid, of red and gold

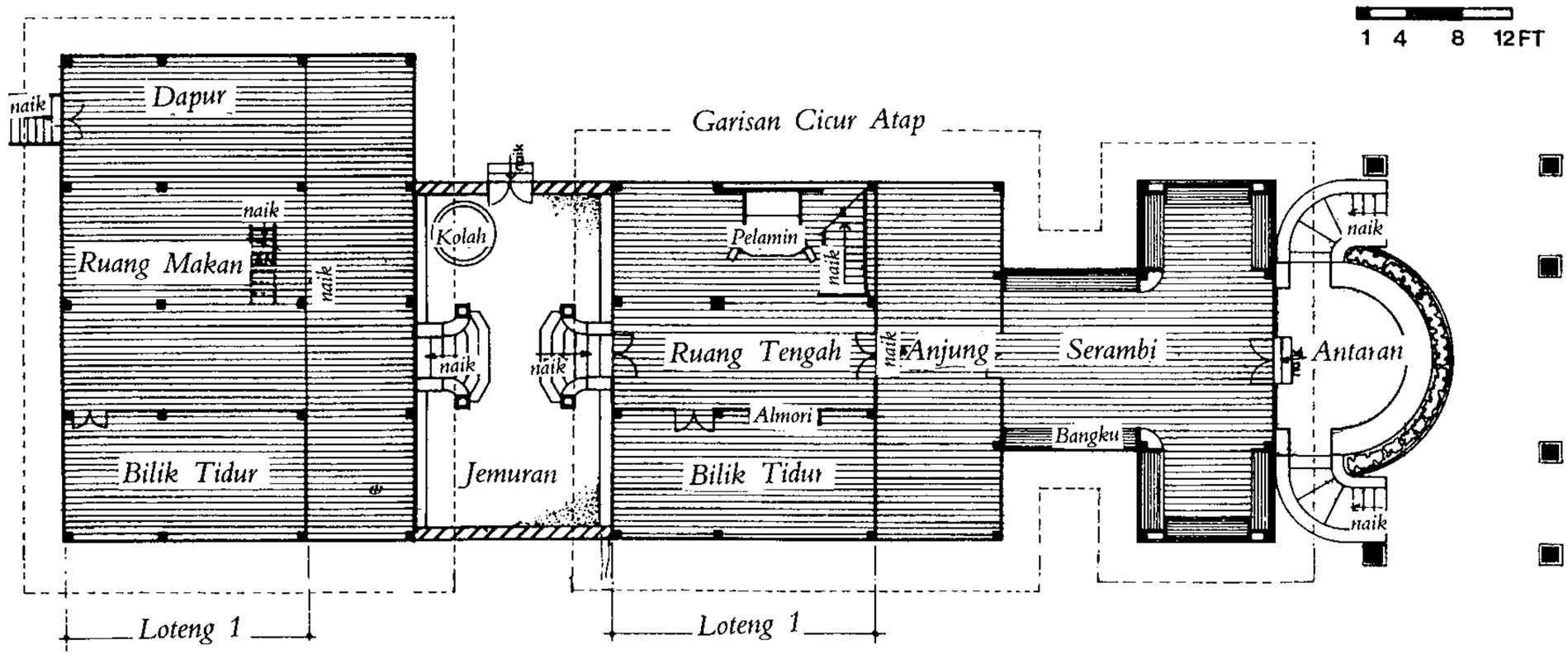
Above. A typical Malacca house seen from the front showing a spacious halaman (lawn), elaborate tangga (stairs) and anjung (reception area). The entrance stairs in concrete replace the traditional timber steps. This is a recent development which has been influenced by Chinese architecture both in terms of form and colour.
Left. A typical Malacca House in Jasin Road, Malacca.

Right: The main curved-form staircase is richly decorated with ceramic tiles.
Below: The main entrance to the right of the photograph shows the elaborate staircase. This part of the house which forms an informal reception area — the serambi — is completely open. The central section shows the main house area — the rumah induk — and in the rear the kitchen and dining buildings separated by a courtyard. The full height windows of the main house are louvred and often kept open during the evenings.
Note: Plan below is of the original house, the present staircase has been changed.



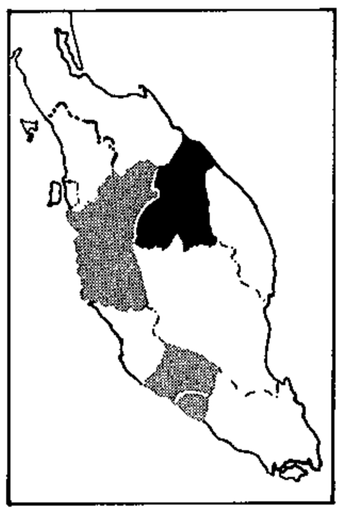


Side elevation

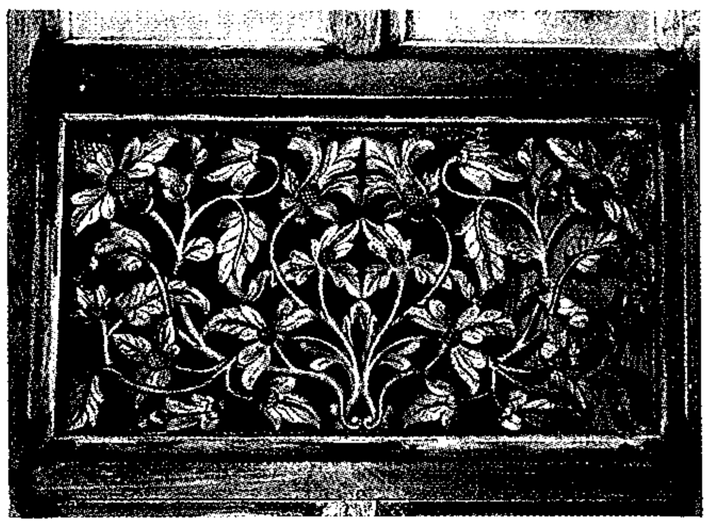


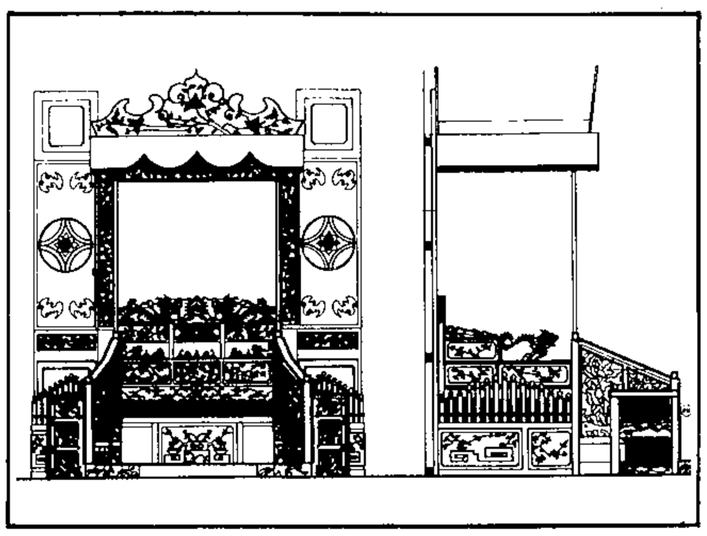
Plan (Before 1925)

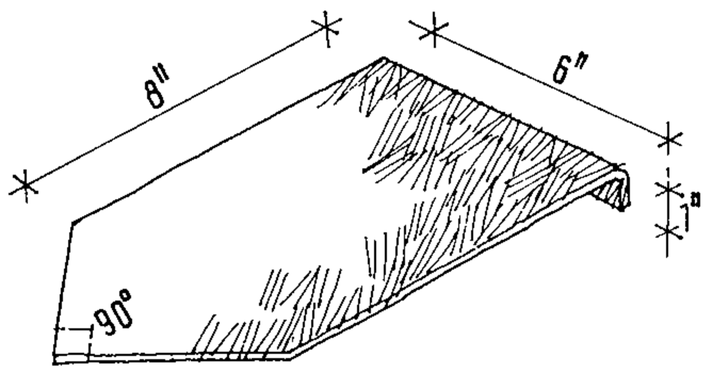
Kelantan House



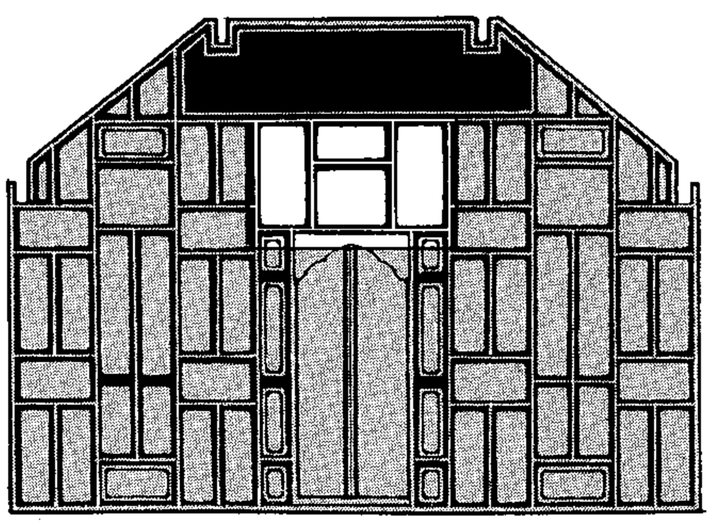
While most major architectural examples are often associated with aristocracy, the Malay house of Pulau Panjang, belonging to Tuan Haji Nik Salleh, is a commoner's house, built by ordinary people. It is also one of the oldest example of traditional architecture in Malaysia The owner, a man of great pioneering spirit and exceptional ability, commissioned two local *tukang,* from Pulau Panjang to build the house for himself and his family The original house consists of seven units, of three building types A *rumah tiang dua belas* (twelve pillared) consisting of *rumah ibu, rumah tepi sungai* and *ruang lahar,* a *rumah bujang* consisting of *rumah dapor* and two *rumah bujang,* and a *rumah perabung lima* consists of *rumah selasar*

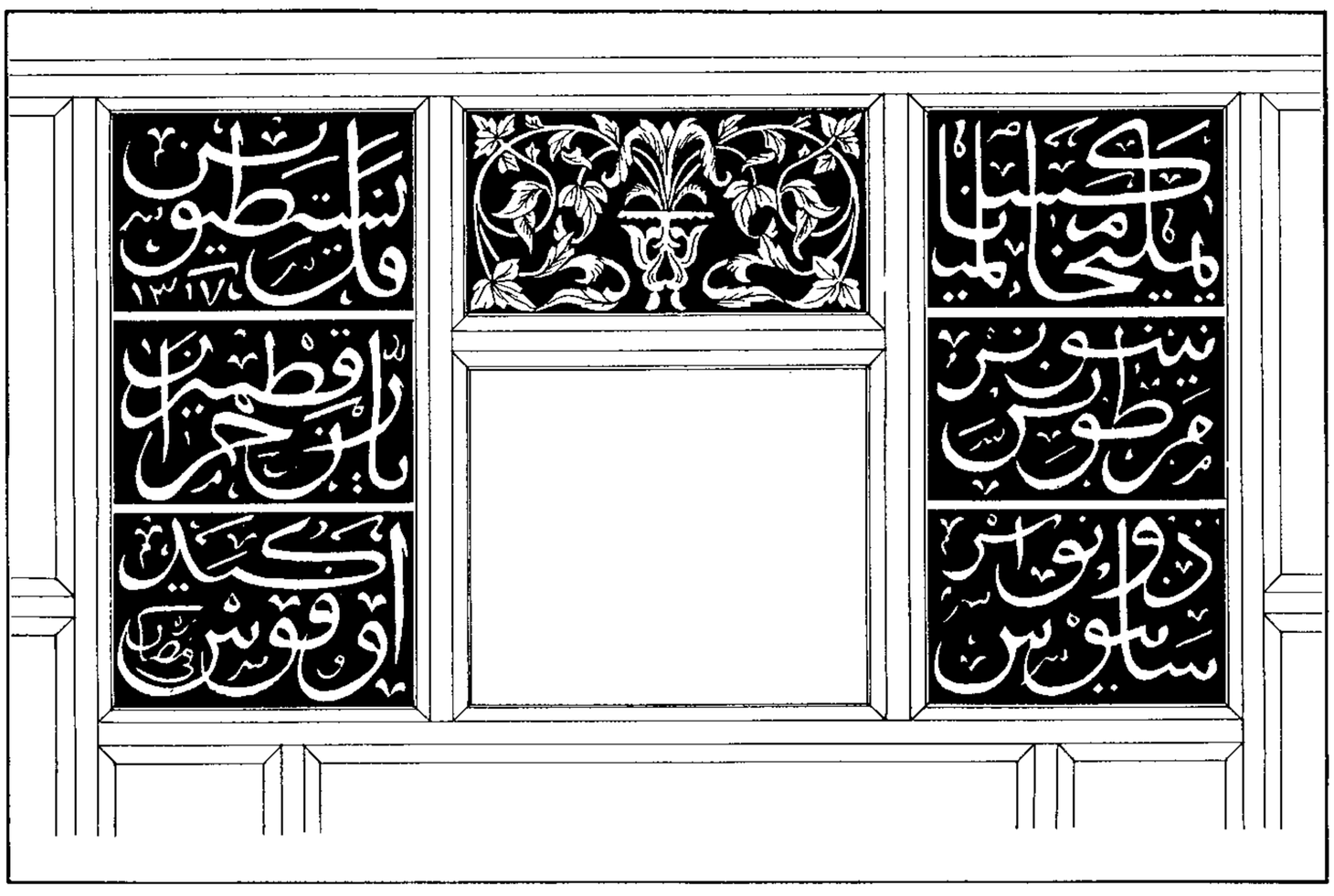




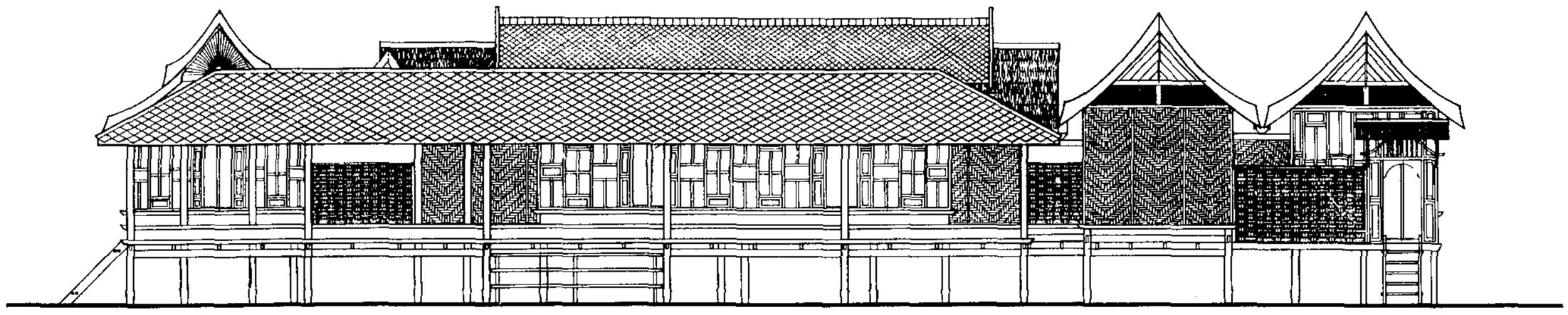


Top· Typical details of wood carving above the doorways.
Left· Roof tile found exclusively in Kelantan and Trengganu The tile originates in Thailand.
Left, below: Typical system of Kelantan House wall panel.
Below: Detail of relief panel and khat painted in Air Perada Emas (gold colour) on a red background.



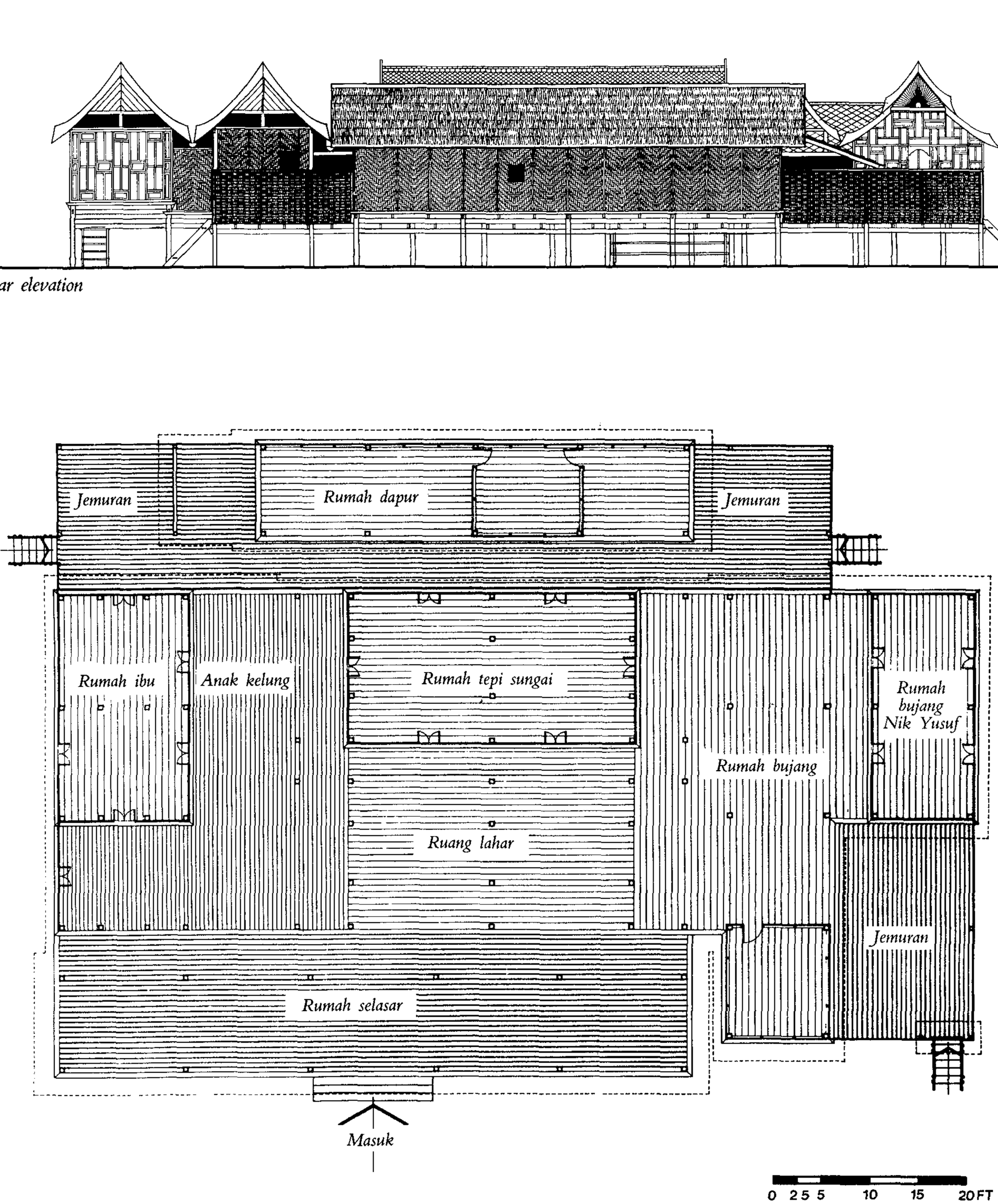


During a wedding the bride and groom would sit at the pelamin and be blessed by members of the family The pelamin shows remarkable Chinese influence in its decorative motifs and colours
Top: The pelamin with the tiang seri in the foreground
Above The tiang seri is a ceremonial pillar and is the most important column in the house



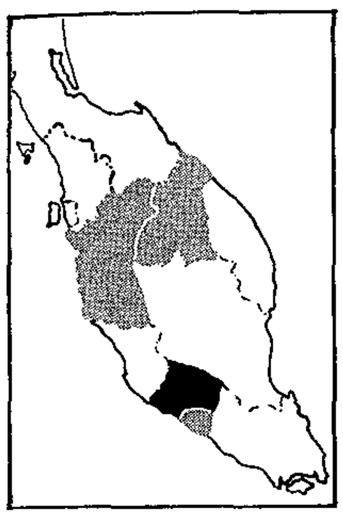
Front elevation (East)

Rear elevation

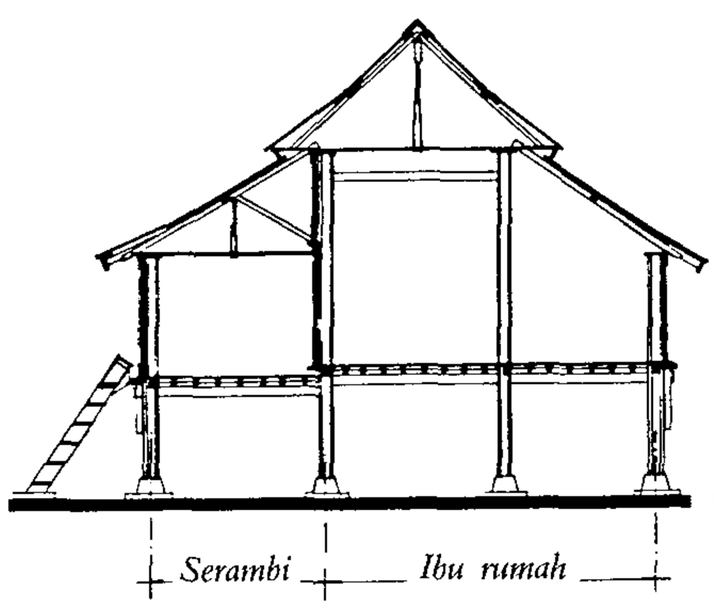


Plan

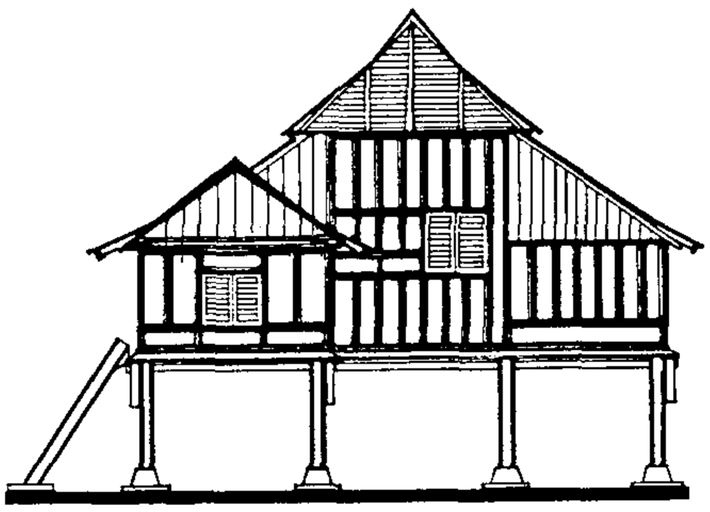
Minangkabau House



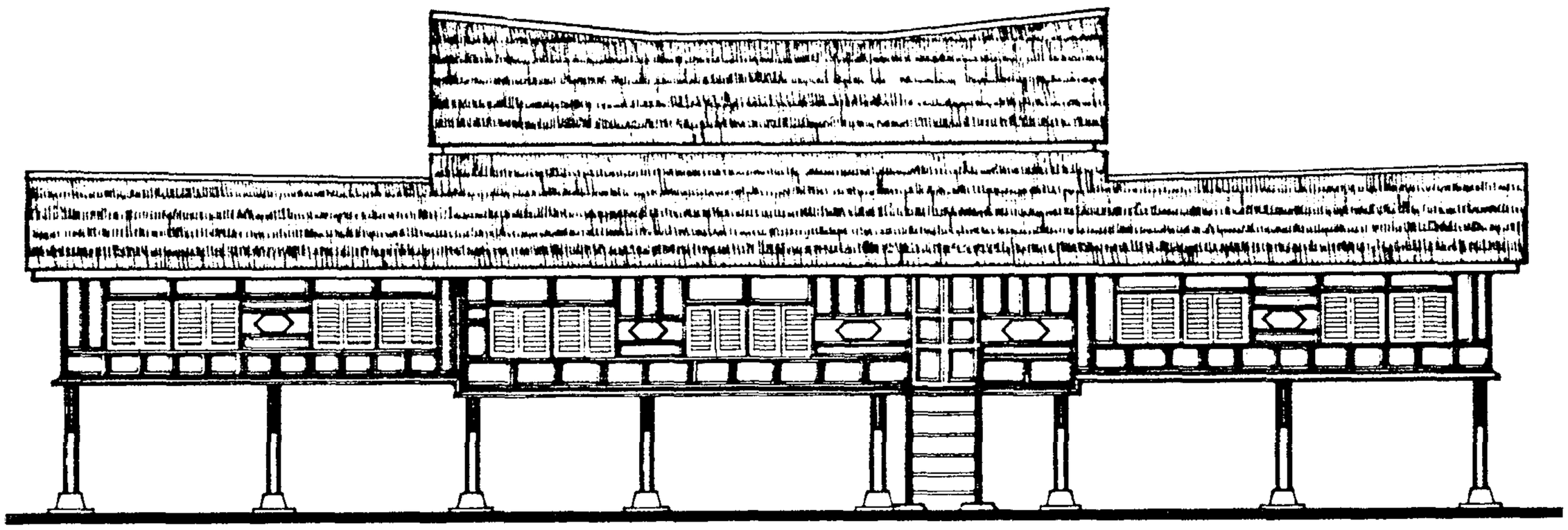
The Minangkabau house which originates from Sumatra is found mainly in Negeri Sembilan Two of the best known examples are the *Istana Ampang Tinggi* and *Model Rumah Melayu,* both in Seremban, Negeri Sembilan. The house has a basic rectangular form and supports a curved roof. The ridge is lowest in the middle and slopes upwards at the ends. The gable end, which projects well beyond the gable end wall, slopes inwards. Unlike the Kedah house the Minangkabau house have no *rumah tangga* Entry is direct into the main house



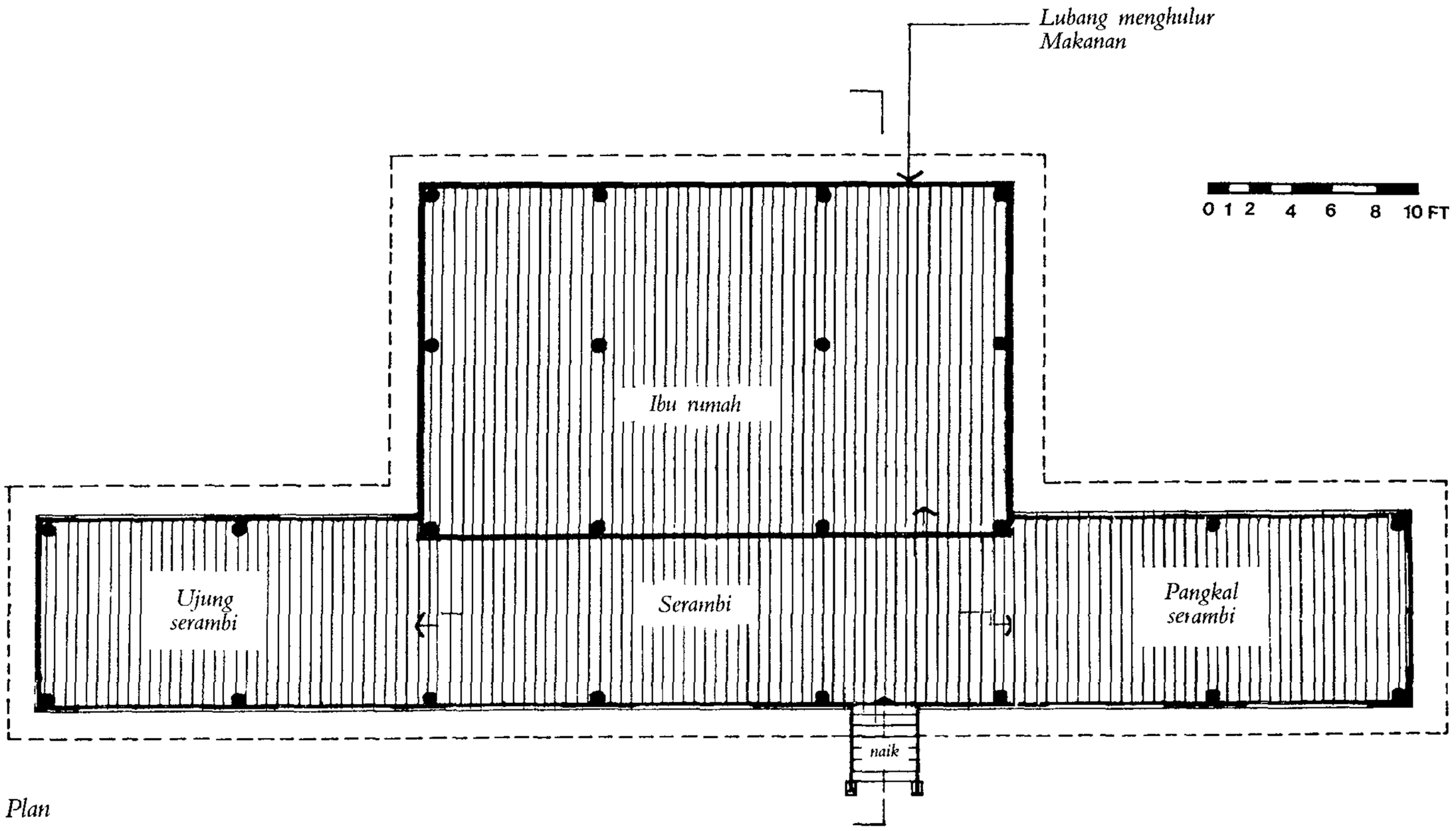
Section



Side elevation

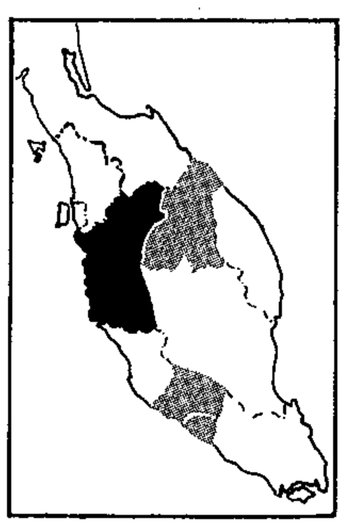


Front elevation



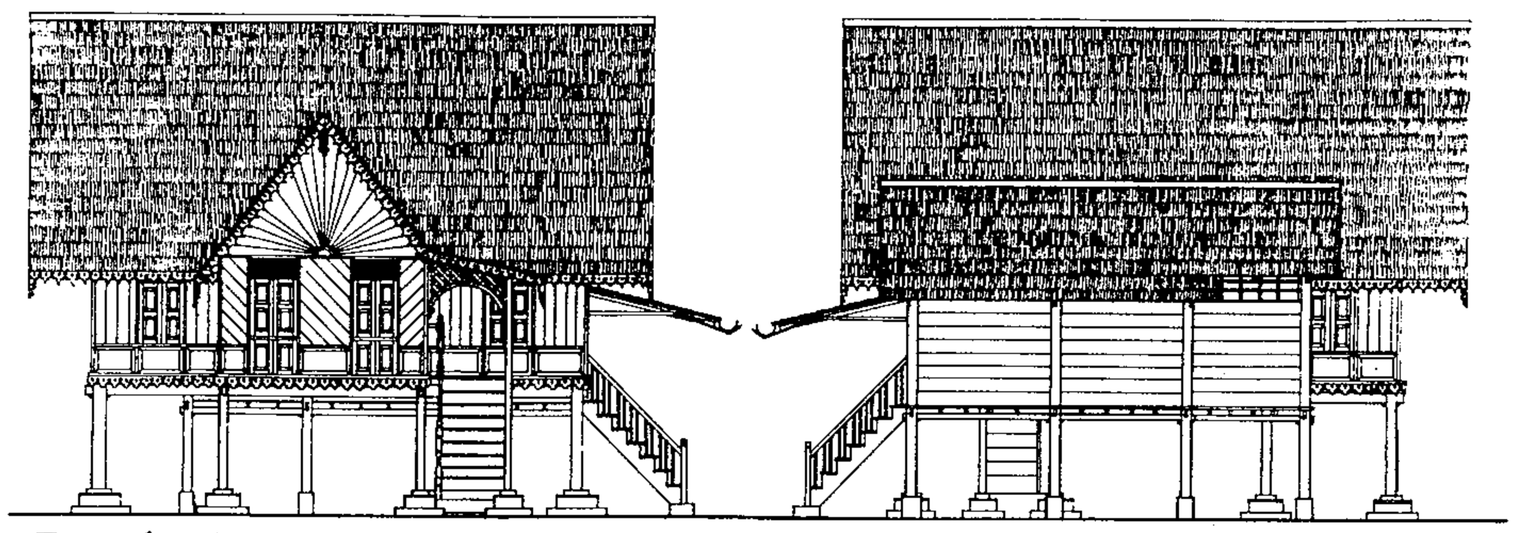
Plan

Perak House



One variation of the *Perak* house, found mainly in the Northern States of Kedah, Perlis, Penang and north Perak, is characterised by their use of the *bumbong lima* roof and the *anjung* which projects at the front of the house The *anjung* is a formal guest area and reflects the wealth of the family. Poor families may not have an *anjung* to their houses Richer families may have two *anjung* called *anjung dua beradek* or three *anjung* called *anjung tiga beradek*.

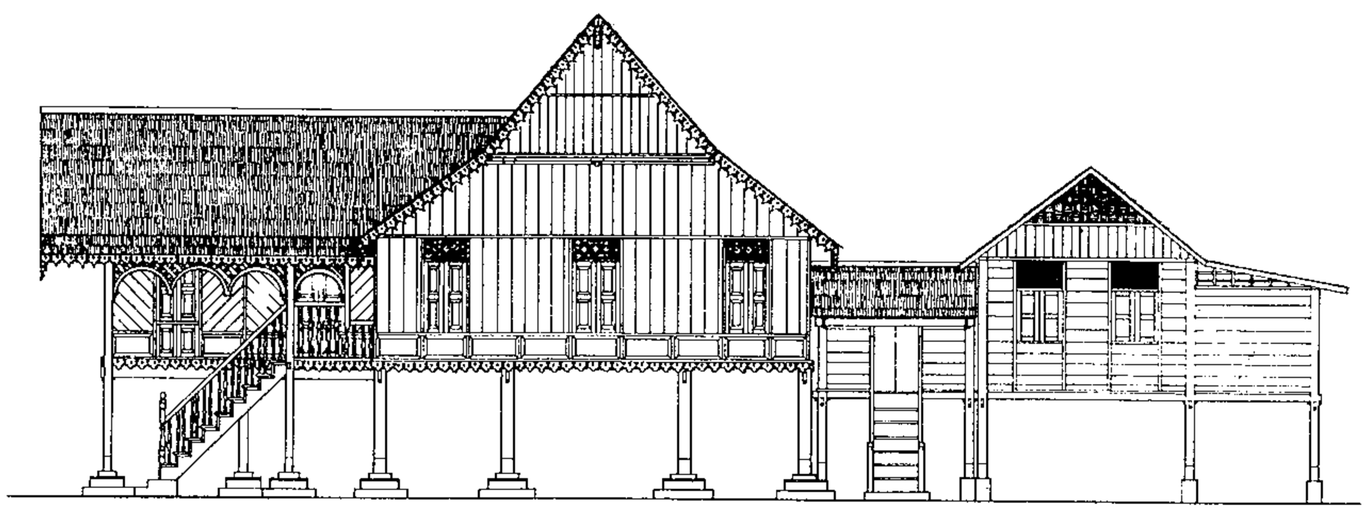
The house consists of three main structure, *rumah dapor* (kitchen), *rumah ibu* (main house) and *anjung*, often constructed in that order too. Poor families would initially construct the *rumah dapor* to serve all family needs. As the family's circumstances improved, the *rumah ibu*, and sometimes the *anjung* is added. Otherwise the *anjung* is added as a third stage, this being of better material, constructional standard, and finish An intermediate structure, located midway between the *anjung* level and ground level, is the *rumah tangga*. This is usually only partially enclosed and serves at the main entrance and place for informal discussion.



Front elevation

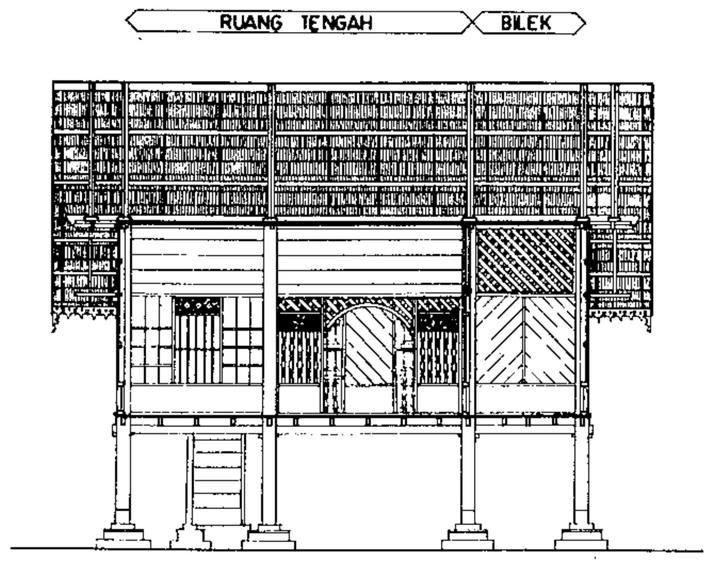
Rear elevation

Top, right: Perak House at Kuala Kangsar. The house is typical of the houses where the anjung protrudes predominantly from the rumah ibu (main house) and the rumah tangga at the side. The jendela (long vertical window) provides excellent ventilation The traditional roof tile has been replaced with iron sheeting
Opposite, bottom A more recent but less typical Perak House. While retaining the basic Perak house form it does not have a rumah tangga. The ground floor enclosures are not typical and the windows do not reach the floor, due to economic reasons, but meets a woven matting curtain wall.

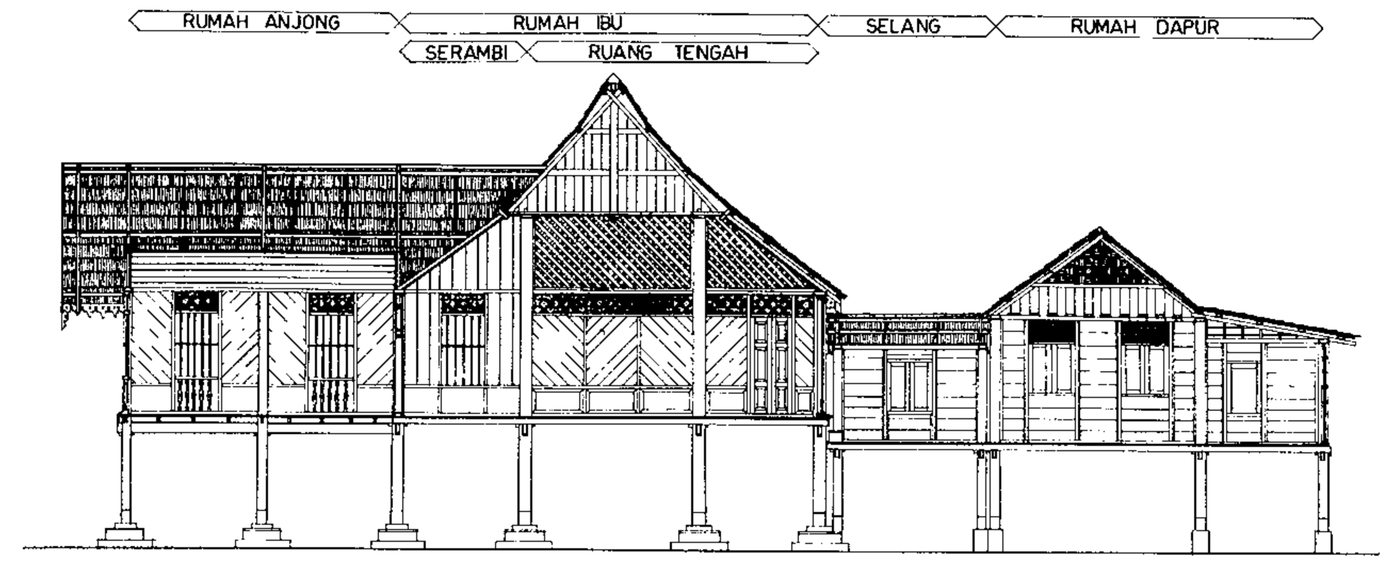


Side elevation

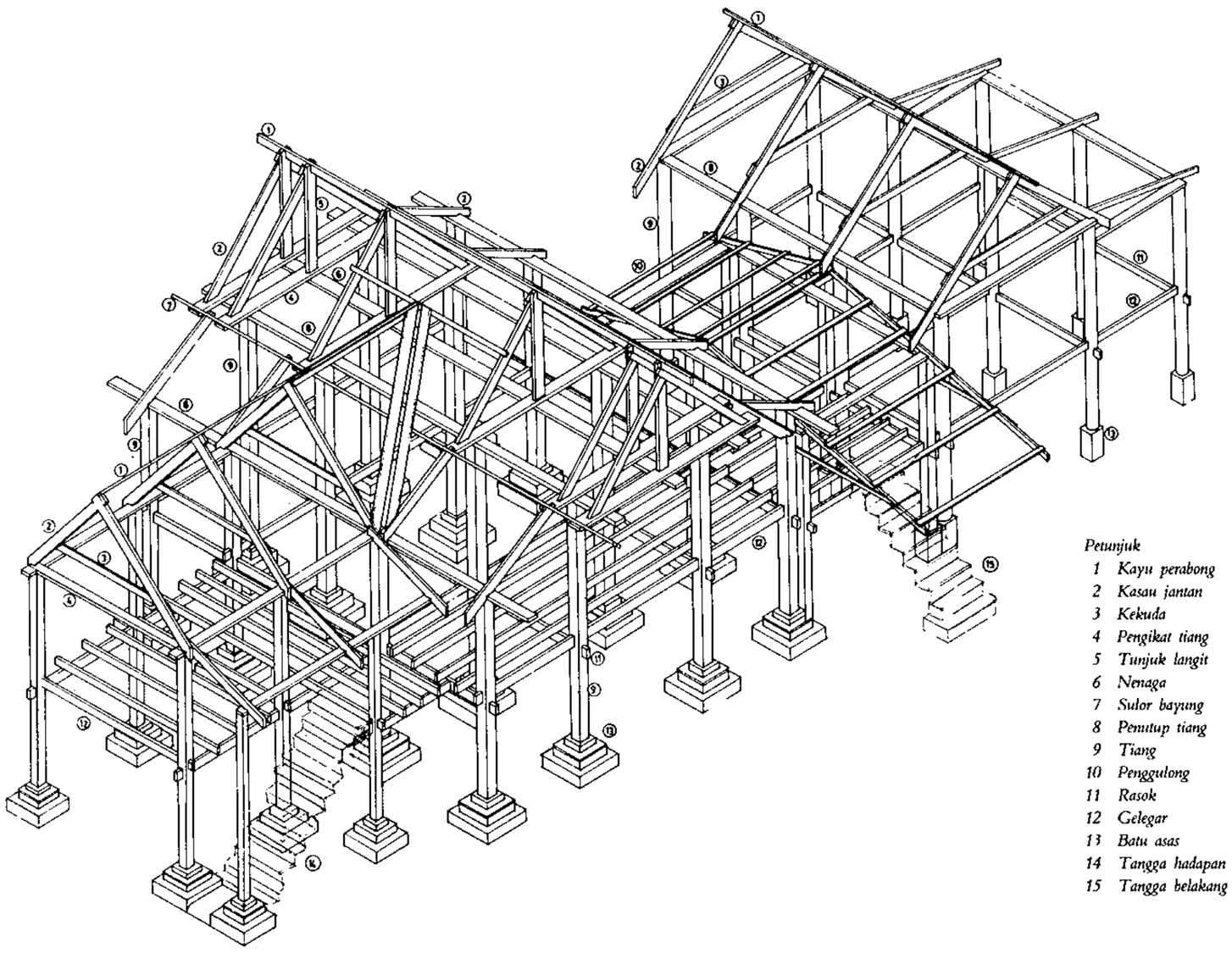
0 1 3 6FT



Section BB

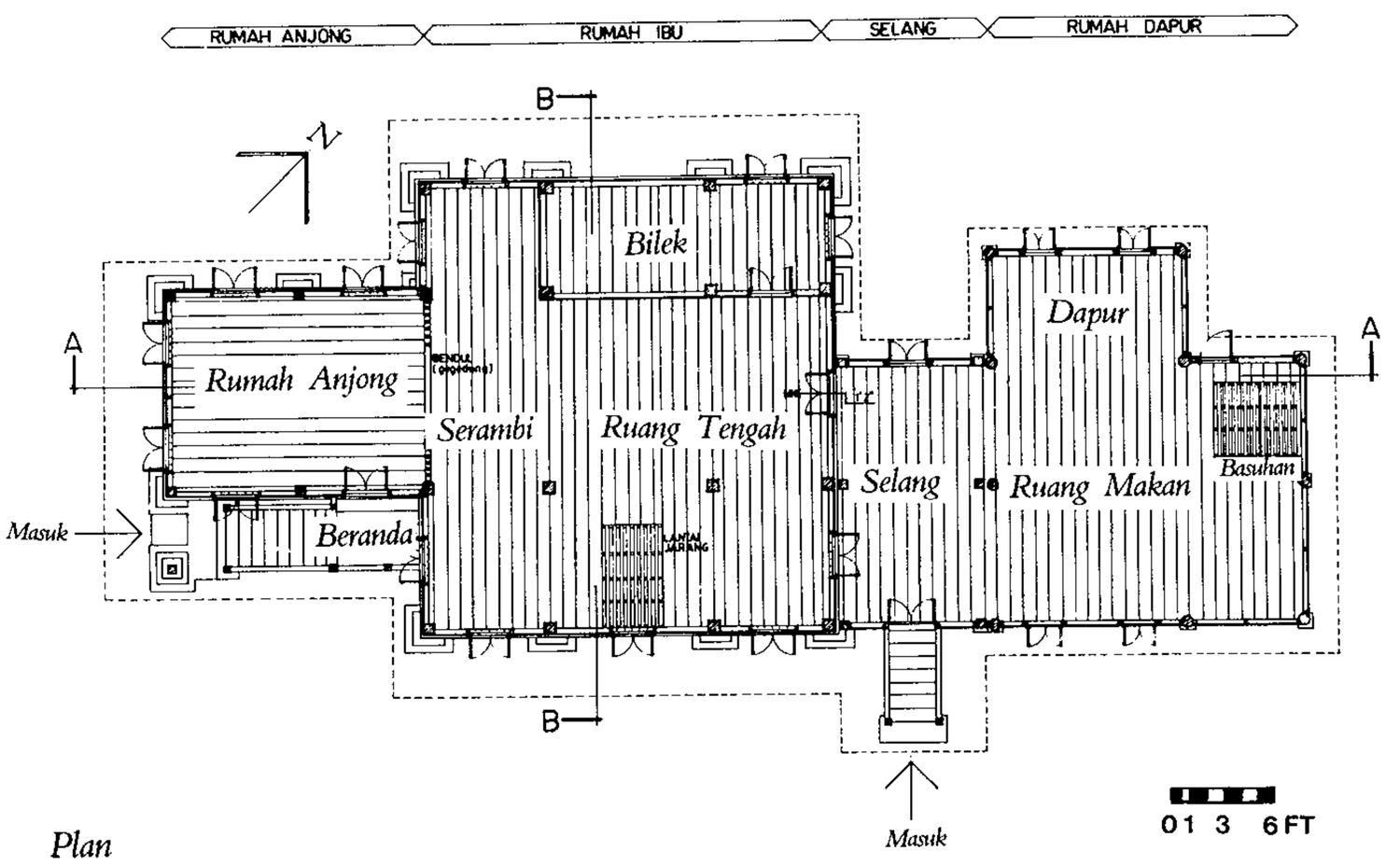


Section AA



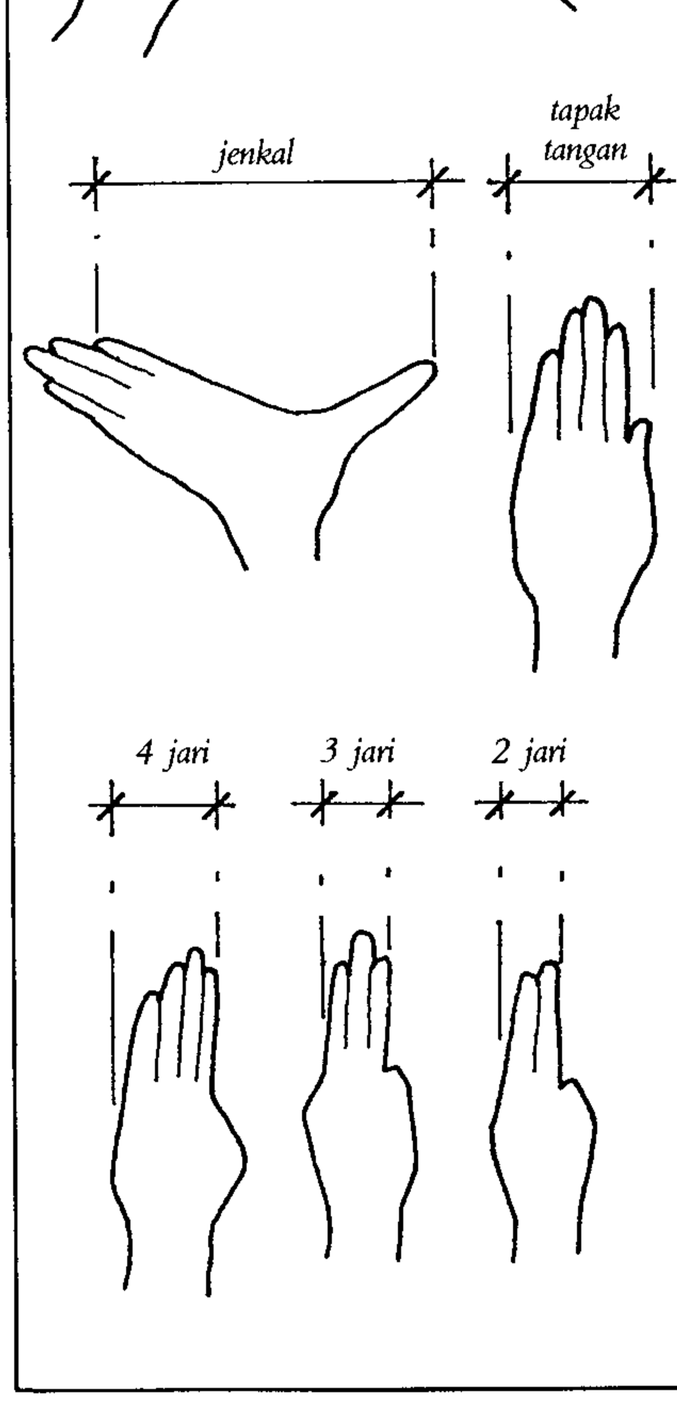
Petunjuk
1 Kayu perabong
2 Kasau jantan
3 Kekuda
4 Pengikat tiang
5 Tunjuk langit
6 Nenaga
7 Sulor bayung
8 Penutup tiang
9 Tiang
10 Penggulong
11 Rasok
12 Gelegar
13 Batu asas
14 Tangga hadapan
15 Tangga belakang

Axonometric of structure



Plan

System of measurements



Glossary

Anjung/serambi: Formal/informal reception areas.
Beranda: Verandah
Bilek tidur: Bedroom
Halaman: Lawn
Jemuran: Open area between kitchen and main building
Jendela: Window
Loteng: Attic
Pelamin. Bridal dais
Ruang makan· Dining room
Ruang tengah: Centre room
Rumah dapur: Kitchen
Rumah ibu/rumah induk: Main house

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Yasmeen Lari

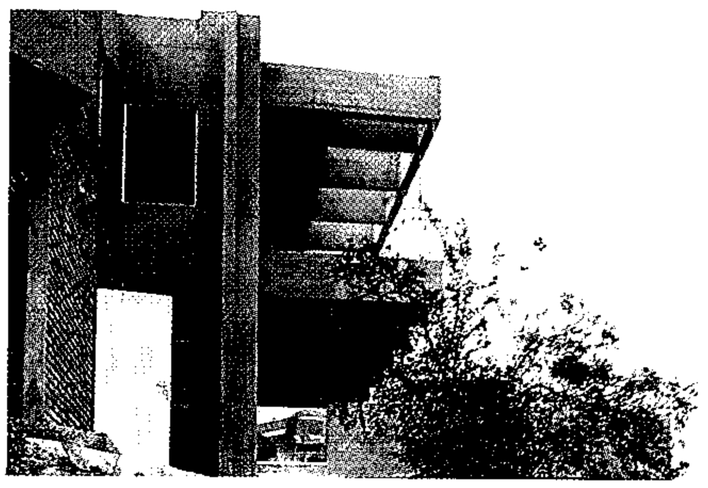
Lari House, Karachi

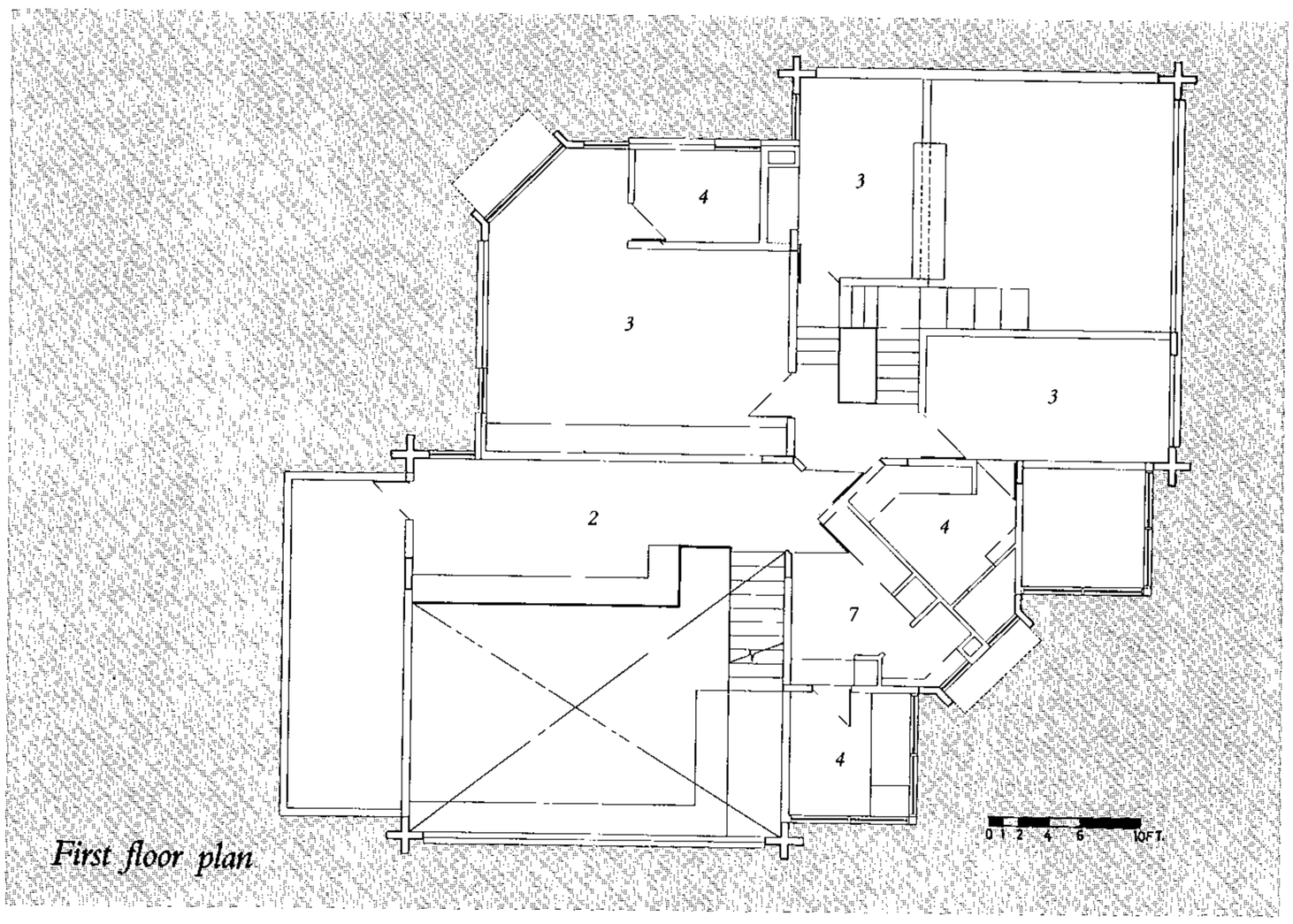
Lari House, Karachi, Pakistan (1973)

The site which is approximately 1505 square metres has a drop of sixteen feet (5 metres) across it The house sits at the edge of the drop and has a twenty foot (6 metres) cantilevered verandah which gives a dramatic view of the garden below The house is a reinforced concrete framed structure with brick facing

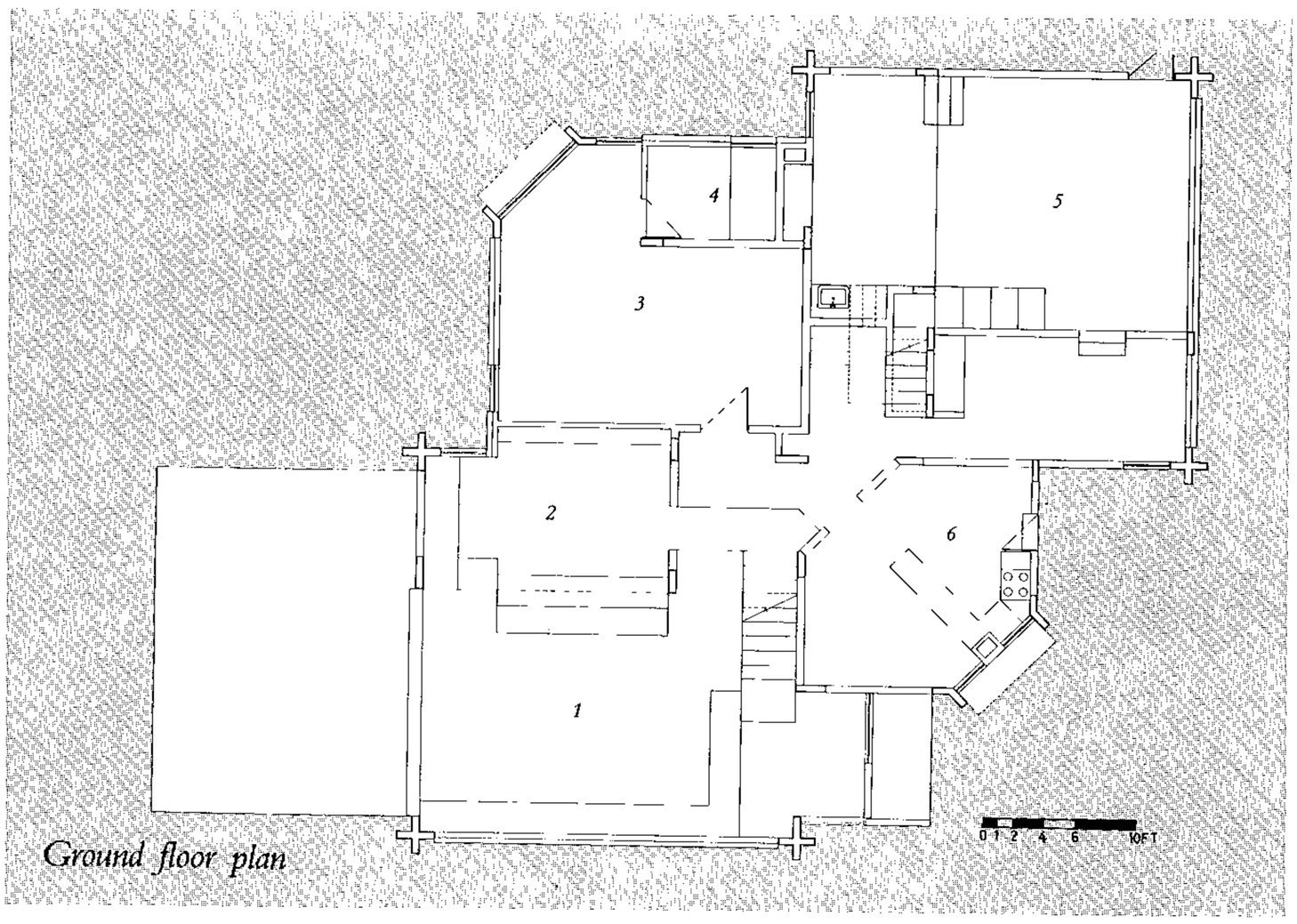
The structure is based on a four foot (1 2 metres) grid with exposed beams supporting pyramids of asbestos cement. Some of these have openings which act as wind catchers, which is a traditional element that is used in this region to encourage air circulation.

The internal layout itself is based on an open plan, except for the bedrooms The overall design allows for a continuous flow of breeze throughout



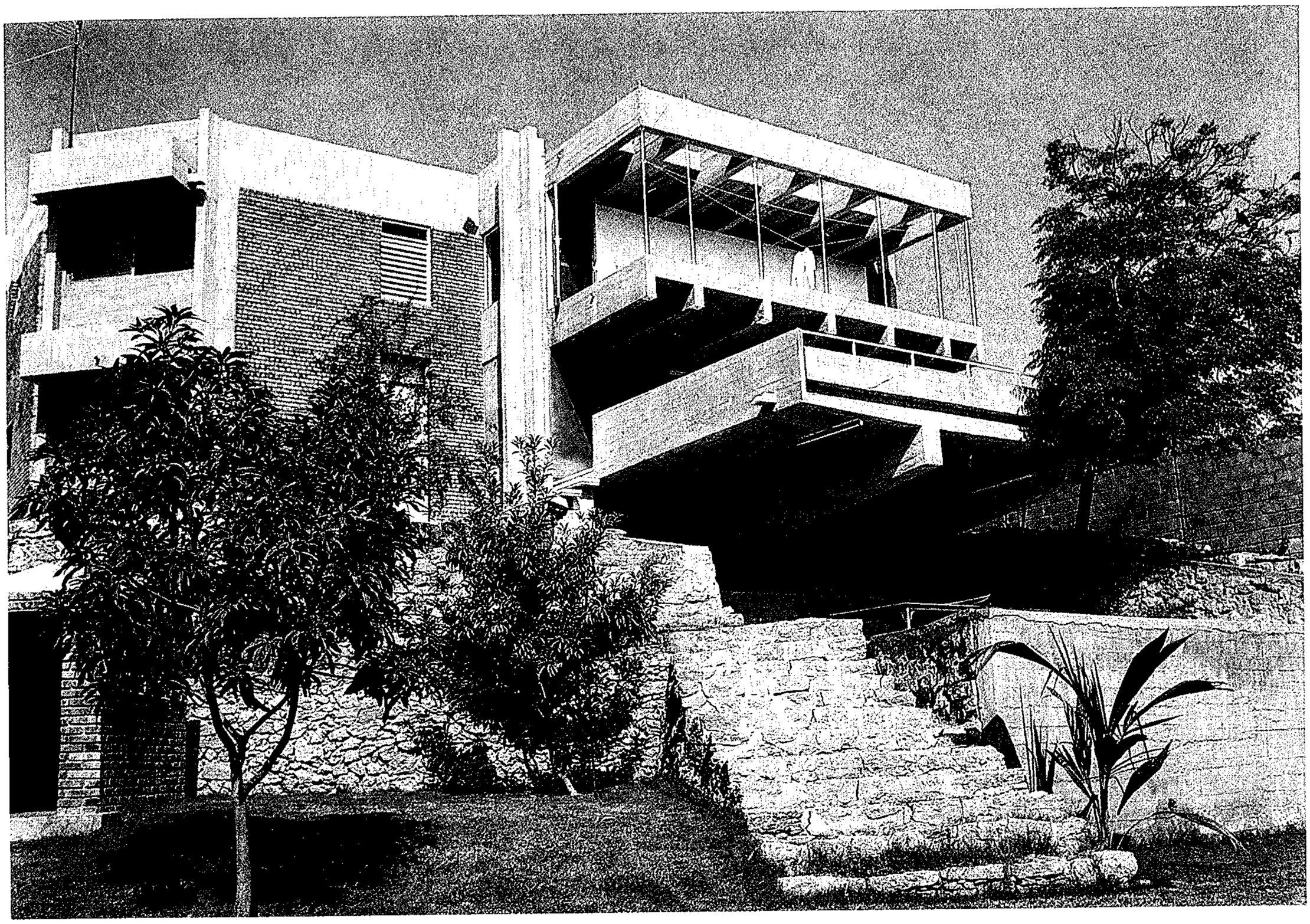


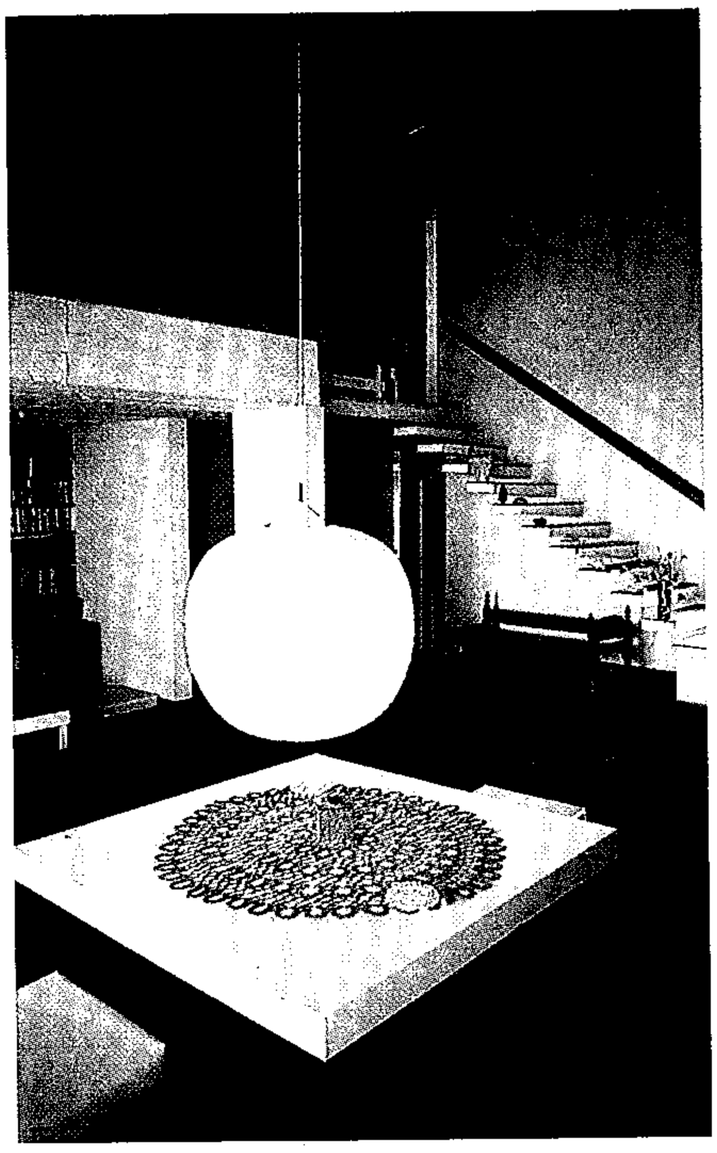
First floor plan

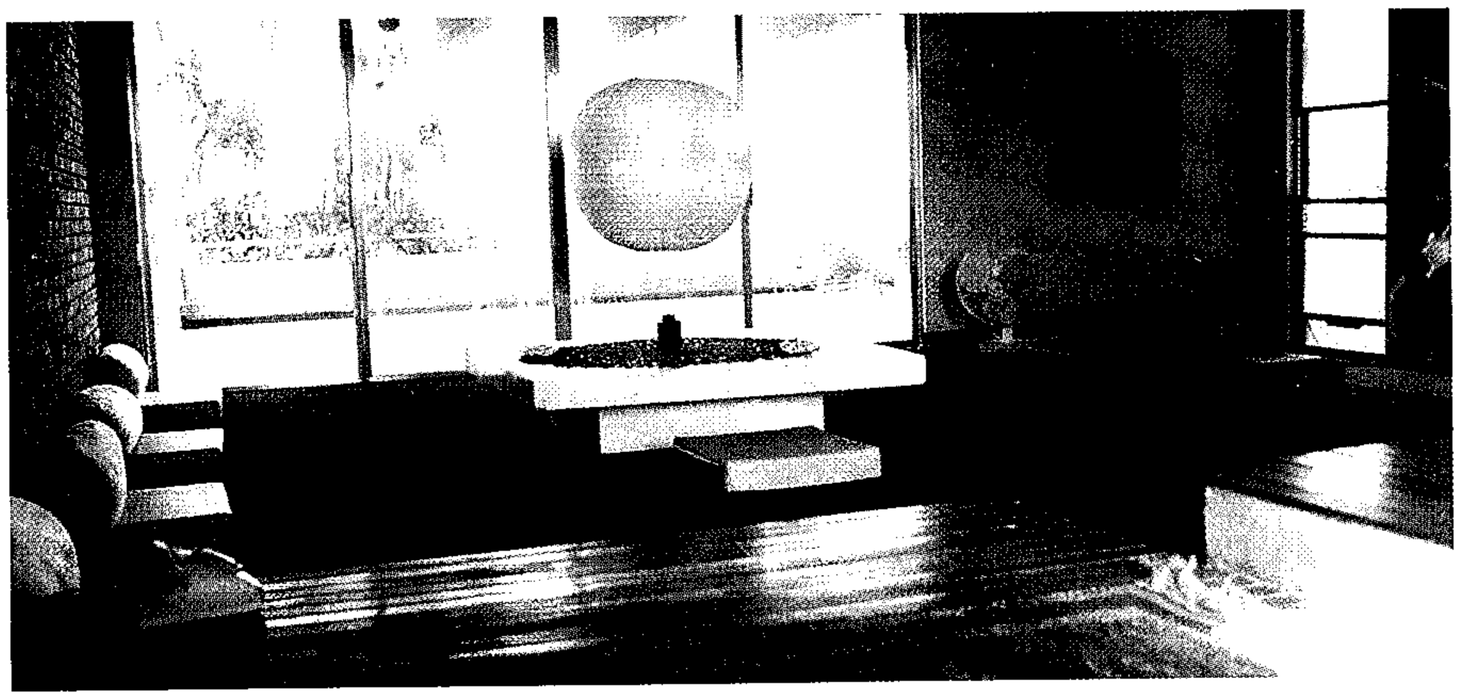


Ground floor plan

Text compiled by MIMAR's editors
Drawings and photographs courtesy of Lari Associates







Left: Plans

1 *Drawing/dining*
2 *Study*
3. *Bedroom*
4 *Bath*
5 *Children area*
6 *Kitchen*
7. *Laundry area*

Photographs by S Lari

Yasmeen Lari

Khan House, Karachi

Khan House, Karachi, Pakistan (1969).

The Khan House, located in the Defence Officers Housing Society; an upper-income residential area of Karachi, was Yasmeen Lari's second house (the first being for her brother). It is for Mr Naser-Ud-Deen Khan, a company executive The house is on a square corner plot of approximately 1000 square yards (836 13 square metres) and has a covered area of around 3,000 square feet (278.7 square metres). At that time it was common for houses to be twice that size

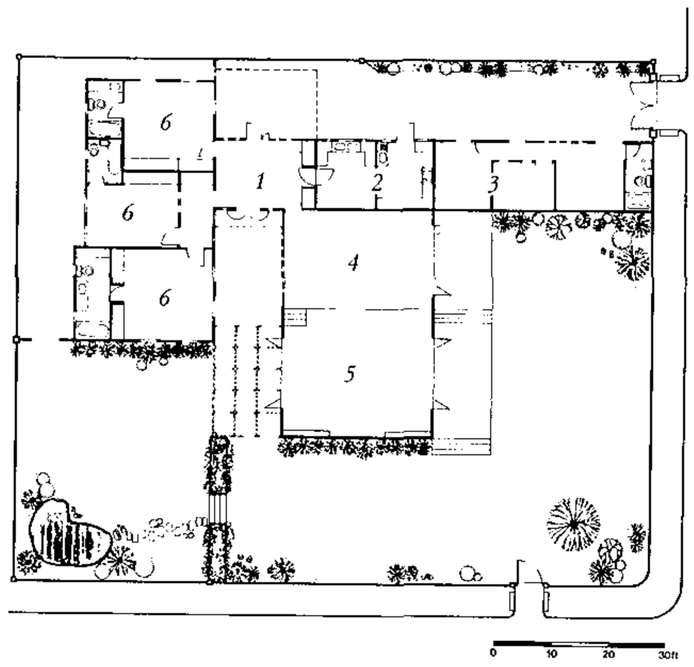
The three bedroom dwelling was designed dividing family and entertainment areas. The large open dining and living area, defined by a change of levels, is covered by a ribbed roof designed by the structural engineer Mr B I Sheikh

The house reminiscent of desert architecture, with its lime white-washed plastered walls, its intimate internal courtyard surrounded on three sides by the building, and its split-level floors and gardens provide the house with a pleasing simplicity and sophistication

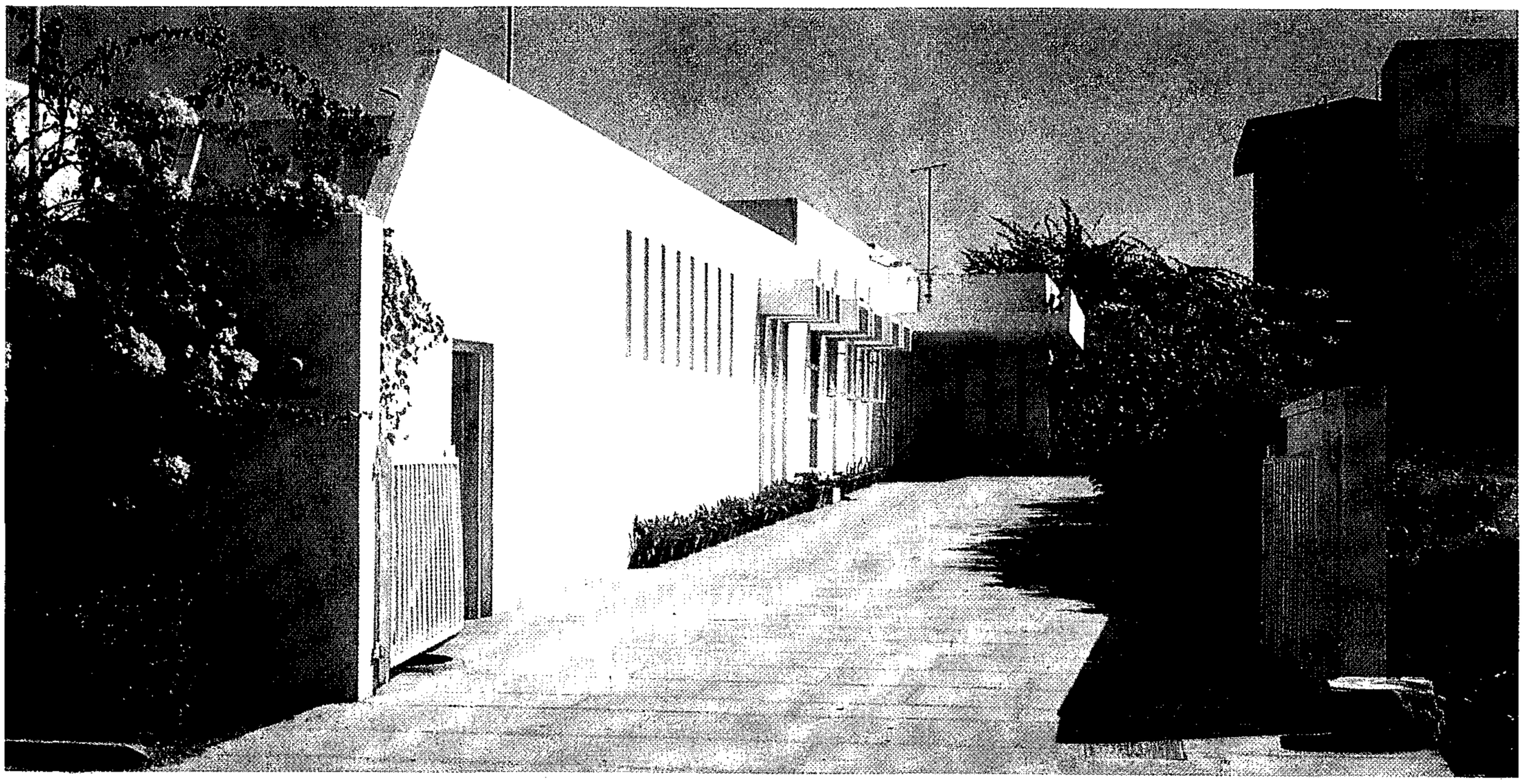
Right: Floor plan

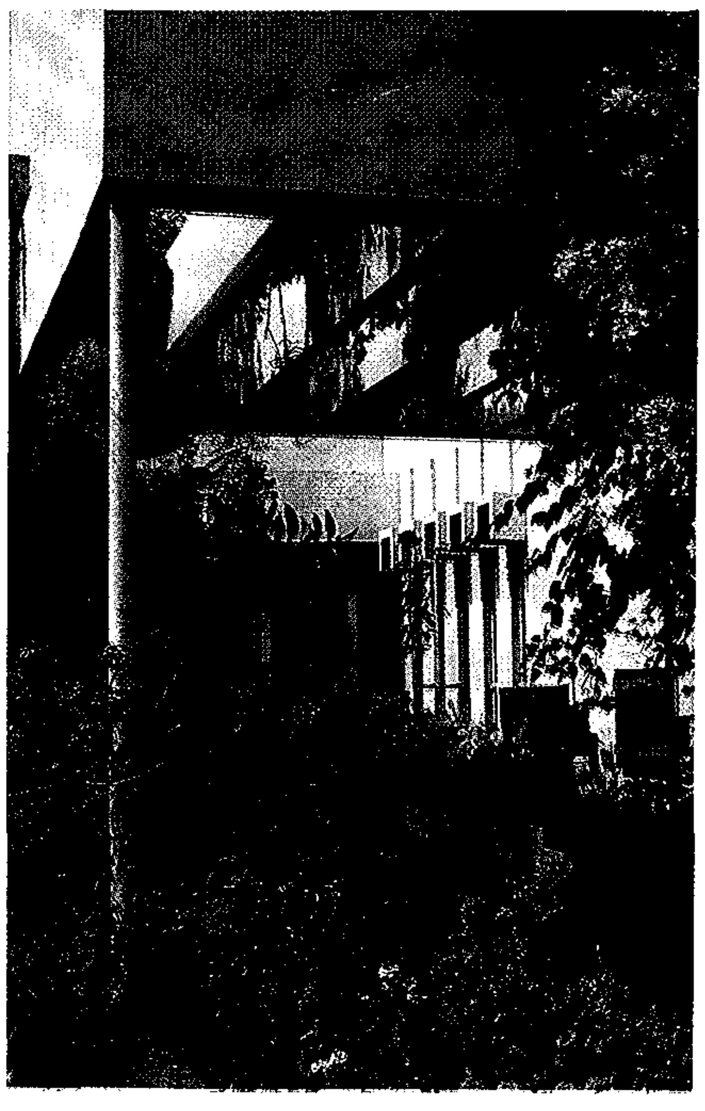
1 *Entrance hall*
2. *Kitchen*
3. *Staff rooms*
4 *Dining*
5. *Living room*
6. *Bedrooms*

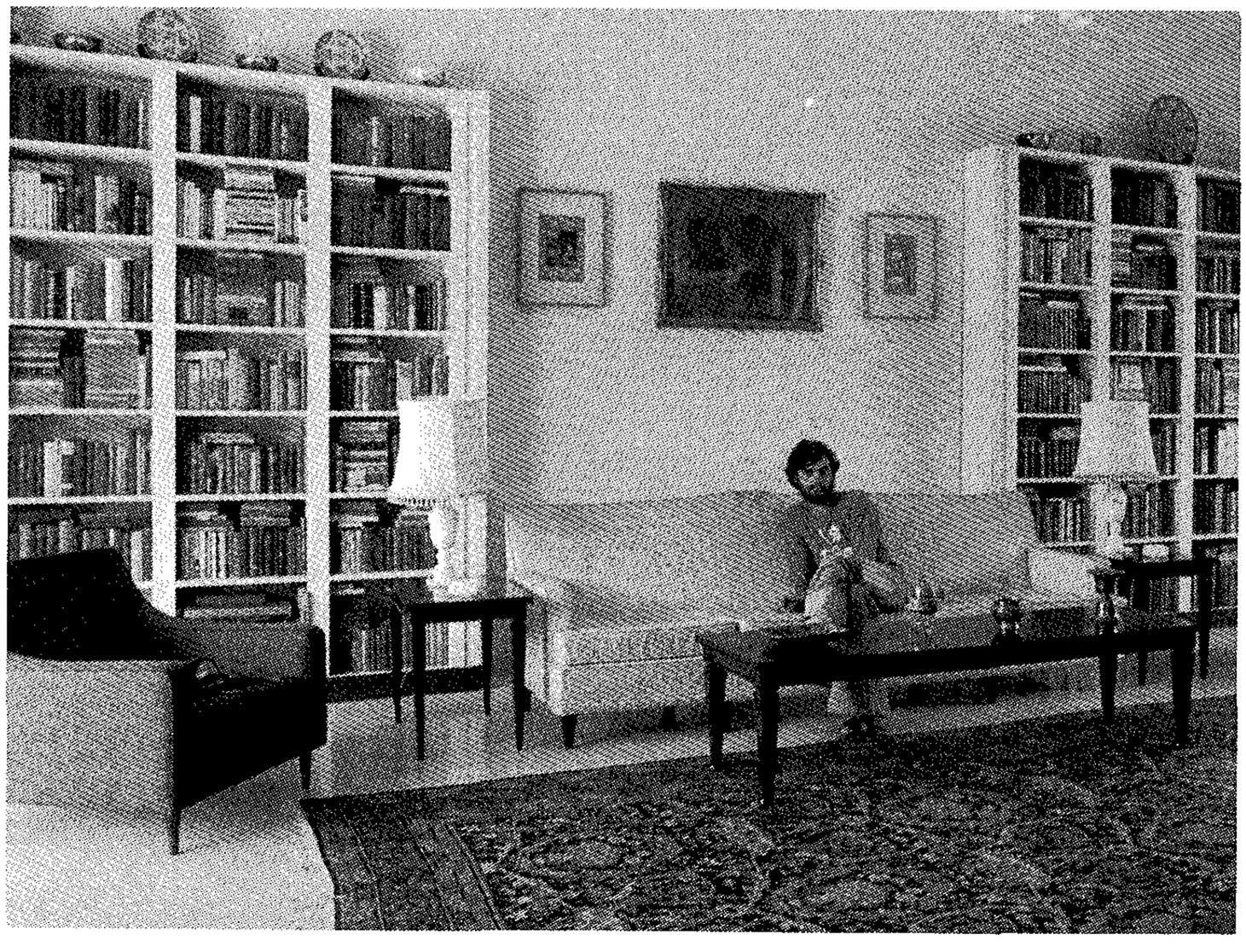
Photographs. M N Khan



Plan







Yasmeen Lari

Army Barracks, Bahawalpur

Army Barracks for sixty men (July 1981).

Area: 6000 square feet (557 4 square metres)
Construction. Vault and dome
Materials: Walls — locally manufactured sun-dried earth brick with foundations of brick, with a damp-proof course of bitumen. Roof — covered with a lime plaster; floors — cement concrete poured in place; inside finish — mud plaster mixed with straw. (This process has been well recorded by the British during the colonial era) This plastering took 3 days

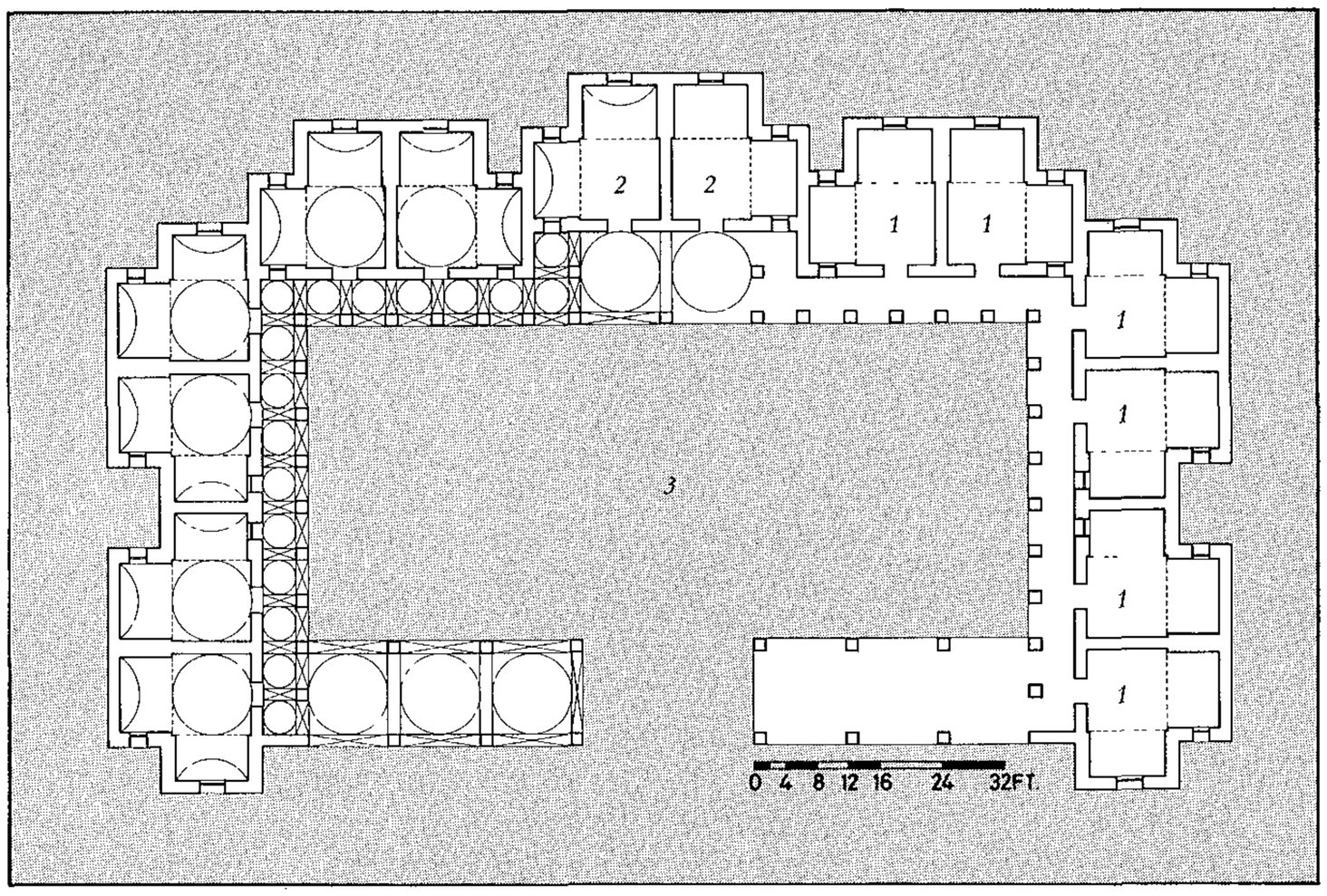
Quite often I initiate projects For example, a year or so ago I talked to the President of Pakistan about appropriate buildings in mud He was supportive and as a prototype with the help of local builders constructed a two-room mud building It was a learning process for all of us In the beginning the masons refused to work without shuttering! They regarded this as a retrogressive step and below their dignity! I had to persuade them, cojole them into building this way with promises that this prototype could lead to more work and even some publicity This building system was used for the subsequent sixty-man barracks The masons were given the drawings but were allowed to alter the methods of construction to best suit themselves This way of working proved to be productive

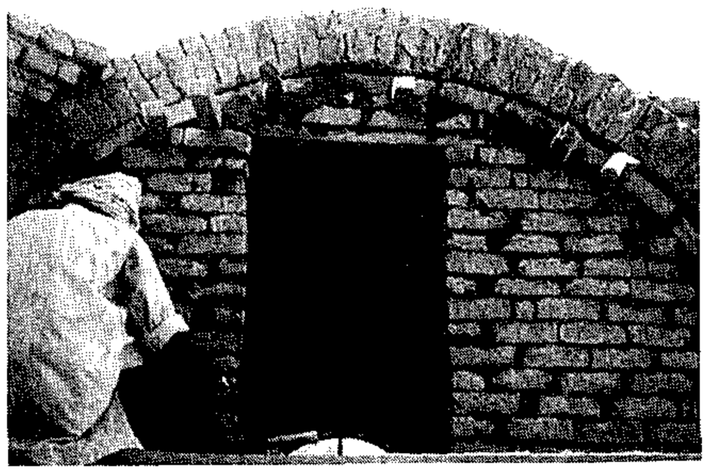
I then showed the building to several high ranking officers in the army who were also supportive but somewhat reluctant to change usual army procedures for building through letting out contracts Luckily with their support I was able to convince them that this method of building, especially for remote rural areas, would ease their building problems as soldiers themselves could easily construct such buildings rather than having to import both materials and labour.

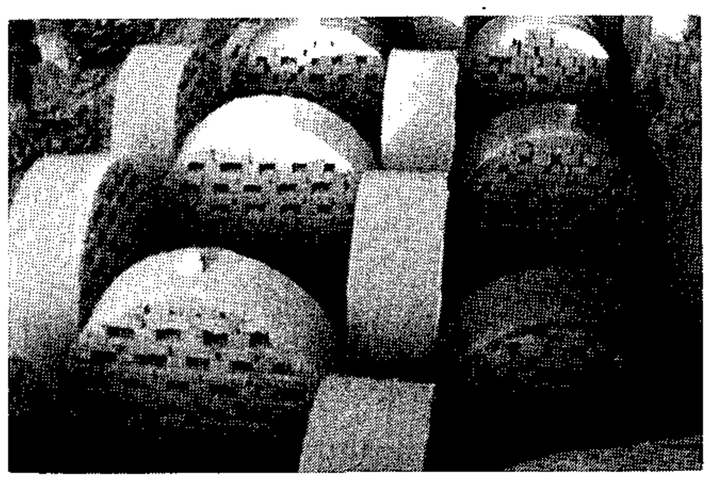
In March 1981 the go-ahead was given and work started. By early July the troops moved into the 6000 square feet vault and dome building The total project took only four months to complete, whereas a similar standard army building would take at least twice that long! The cost was about 55% of 'normal' building costs

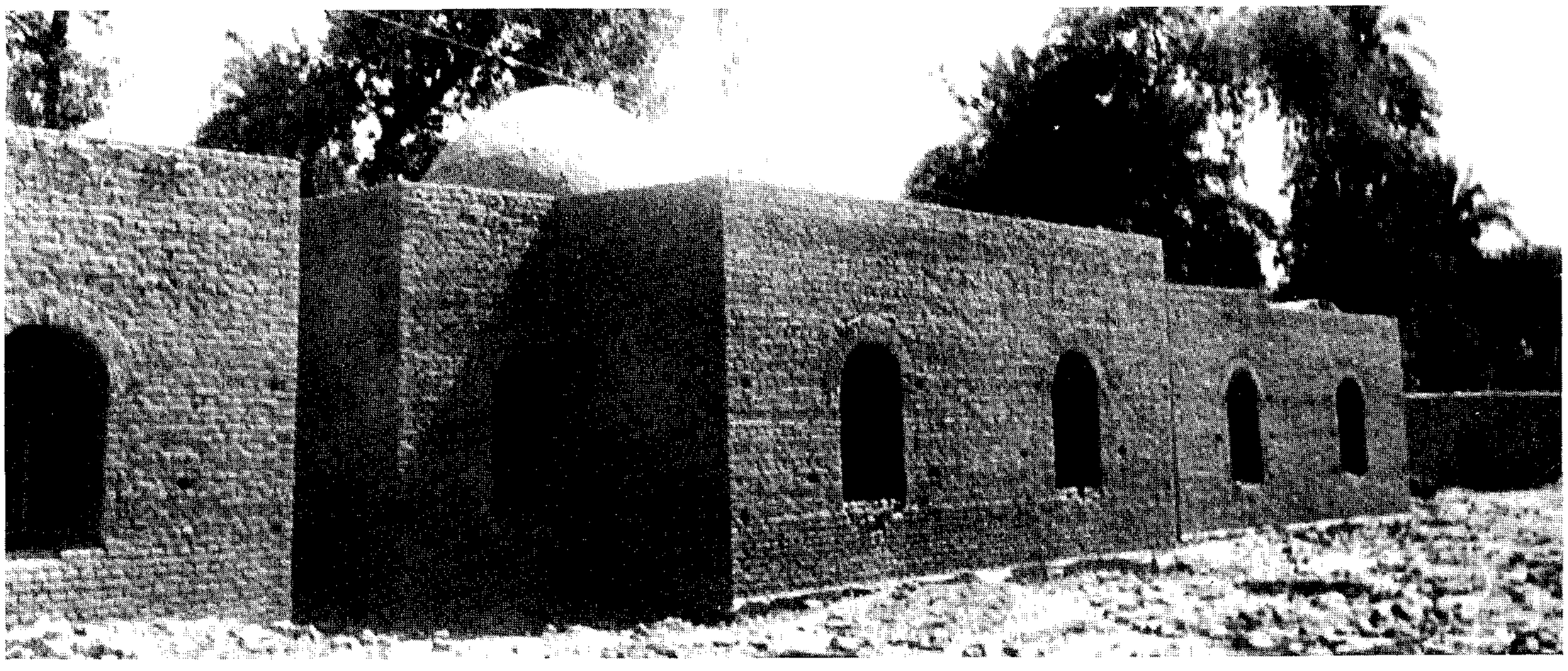
I see myself as an activist where I try to mobilise a patron, get a project going and hope that others will follow up on it — which they will if the work is successful. Strangely enough my problems were not created by the army bureaucracy but by the core of professionals! The army engineer found this approach unorthordox and regarded it with great suspicion I was thus very careful to see that the project was real and did what it set out to do — otherwise it would have just been another isolated experiment There is hope that this building would lead to other similar projects

Below, left· Plan
1 Rooms
2 N C.O's rooms
3. Courtyard
Below: Vault construction









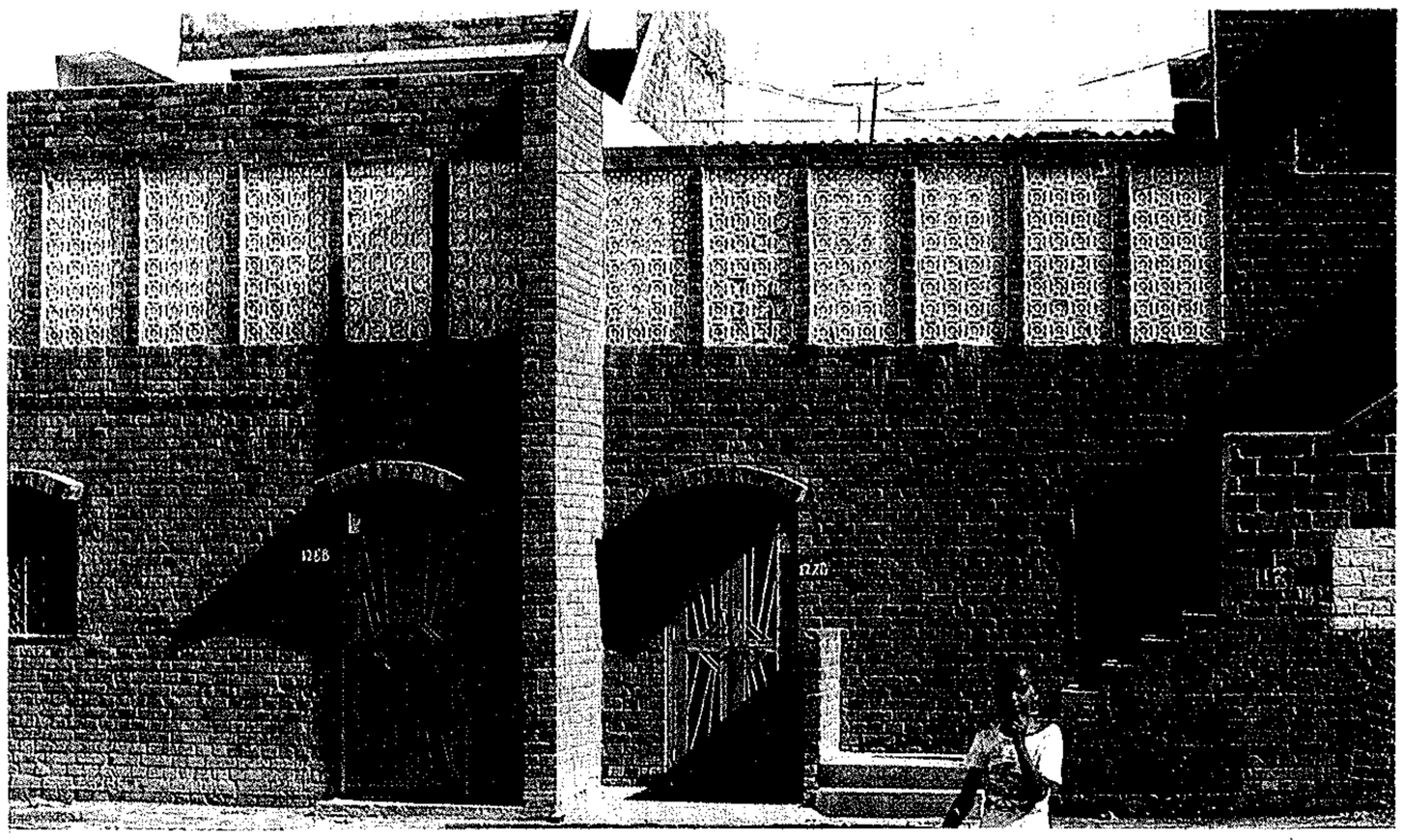
Yasmeen Lari

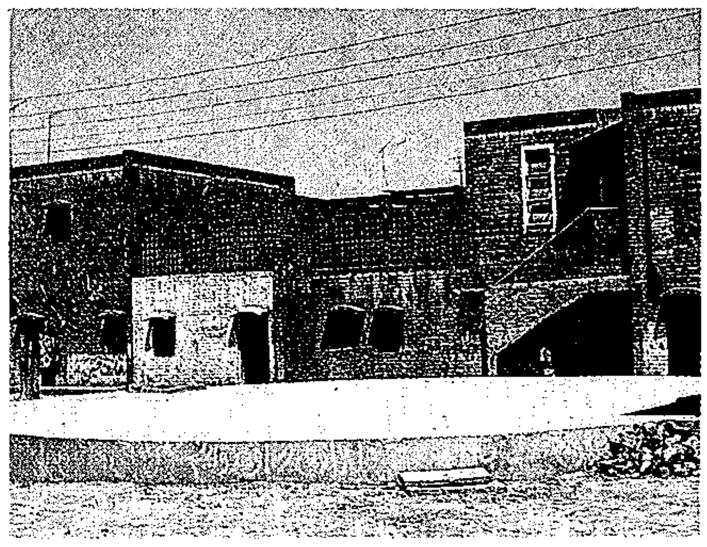
Angoori Bagh Housing, Lahore

Angoori Bagh Housing, Lahore, Pakistan (1977).

Number of units 787
Cost: Rs 14,586,344 ($US 1,459,000)
Approximate cost per square foot: $US 3.00

This project was part of an ambitious scheme by the Government to provide housing for the low and middle income groups. Five multiple housing schemes in all were designed by Lari Associates, consisting of approximately 6000 dwelling units varying from one-room flats to two-bedroom rowhouses. Because of a lack of funding, the project was only partially built.





Above: Angoori Bagh Housing from different viewpoints
Photographs M. Hassan Copyright Aga Khan Awards

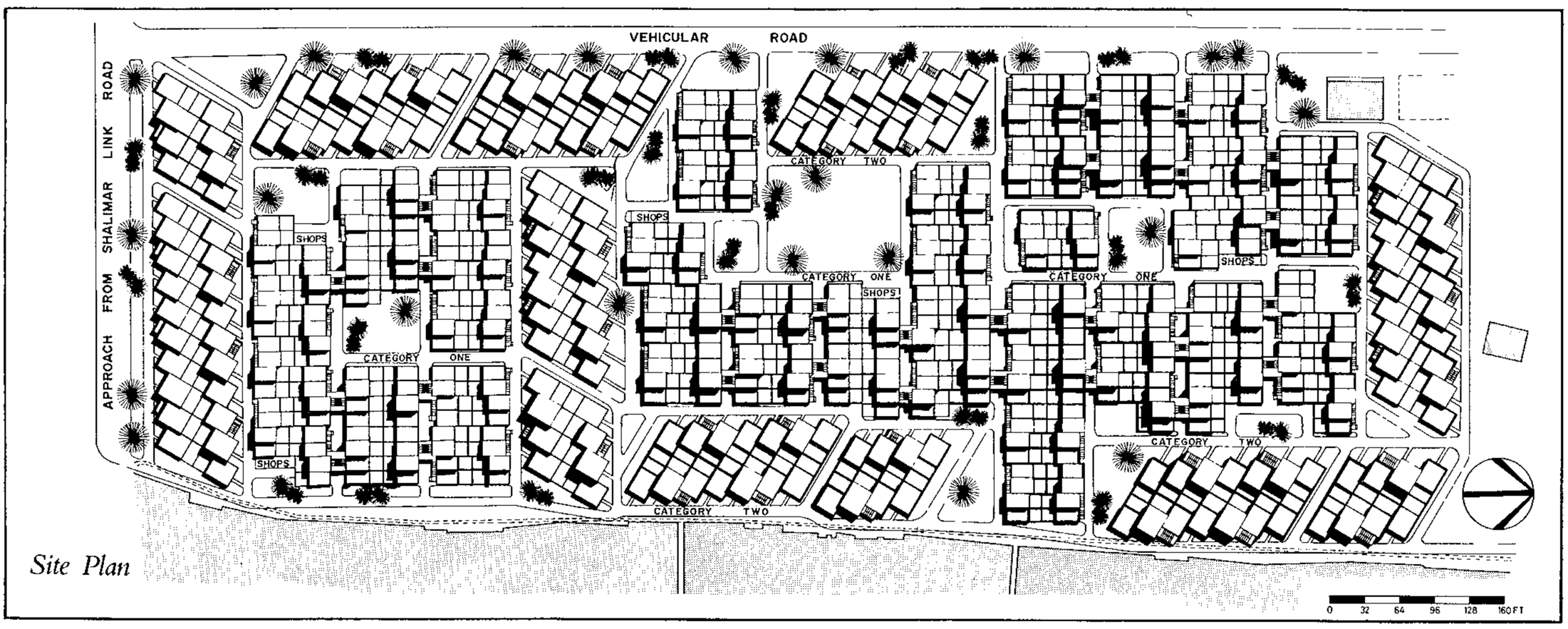
The site, which covers 470,000 square feet (43,663 square metres), is set off on two sides by vehicular roads, and on a third by a canal separating it from Katchi Abadi, a squatter settlement for whose residents the new housing was originally intended

Immediately following the Punjab government decision to build the new units, the community became involved in formulating the brief with Mrs Lari, the architect After preliminary designs had been drawn up, a general meeting was held in the Shalimar Gardens of Lahore, attended by the political leadership construction company representatives, the architects, the liaison group and some 2000 members of the community itself Models, sketches and other visual and graphic materials were presented and a thorough airing of ideas by future users brought about alterations in the original conception

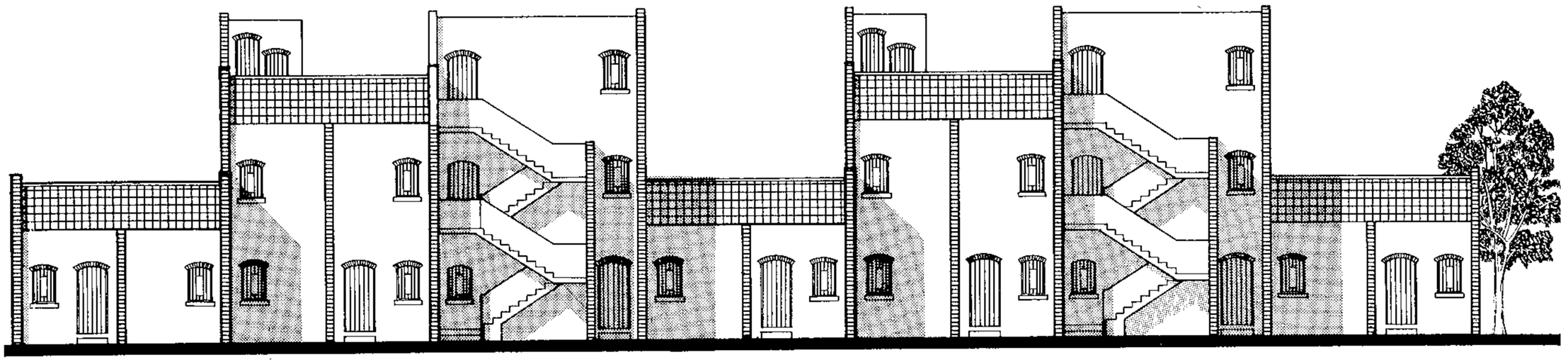
The project was designed with a minimum square footage for each unit (300–400 square feet) They are arranged back-to-back with simple cross wall construction, using the cheapest local brick. The cluster grouping (14 units) minimises construction while providing maximum protection from the intense summer sunlight The verandas and courtyards provide cross ventilation and increase the small floor area. They are enclosed with brick grills *(djallis)* to ensure privacy, allow ventilation and filter sunlight The floor slabs and roofs are reinforced concrete, poured in place Timber frames hold glass windows All materials are produced locally except steel, which is imported and rolled in Pakistan.

"In Lahore," says Mrs Lari, "people are adverse to living in flats as they have always lived close to the ground. We explained to them that in order to accommodate all the families it was essential to go higher When we explained the design, with the help of models and drawings, how each housing unit even at the second floor would have a courtyard, they agreed to the design.

"Lahore is a historical city and boasts some of the finest Moghul architecture The old city is full of our cultural heritage It was important therefore to design a development which would blend with the environment and be in continuity with our traditions In designing this scheme I consciously tried to forget most of the lessons I had leaarned in the West — both design principles and planning standards.



Site Plan

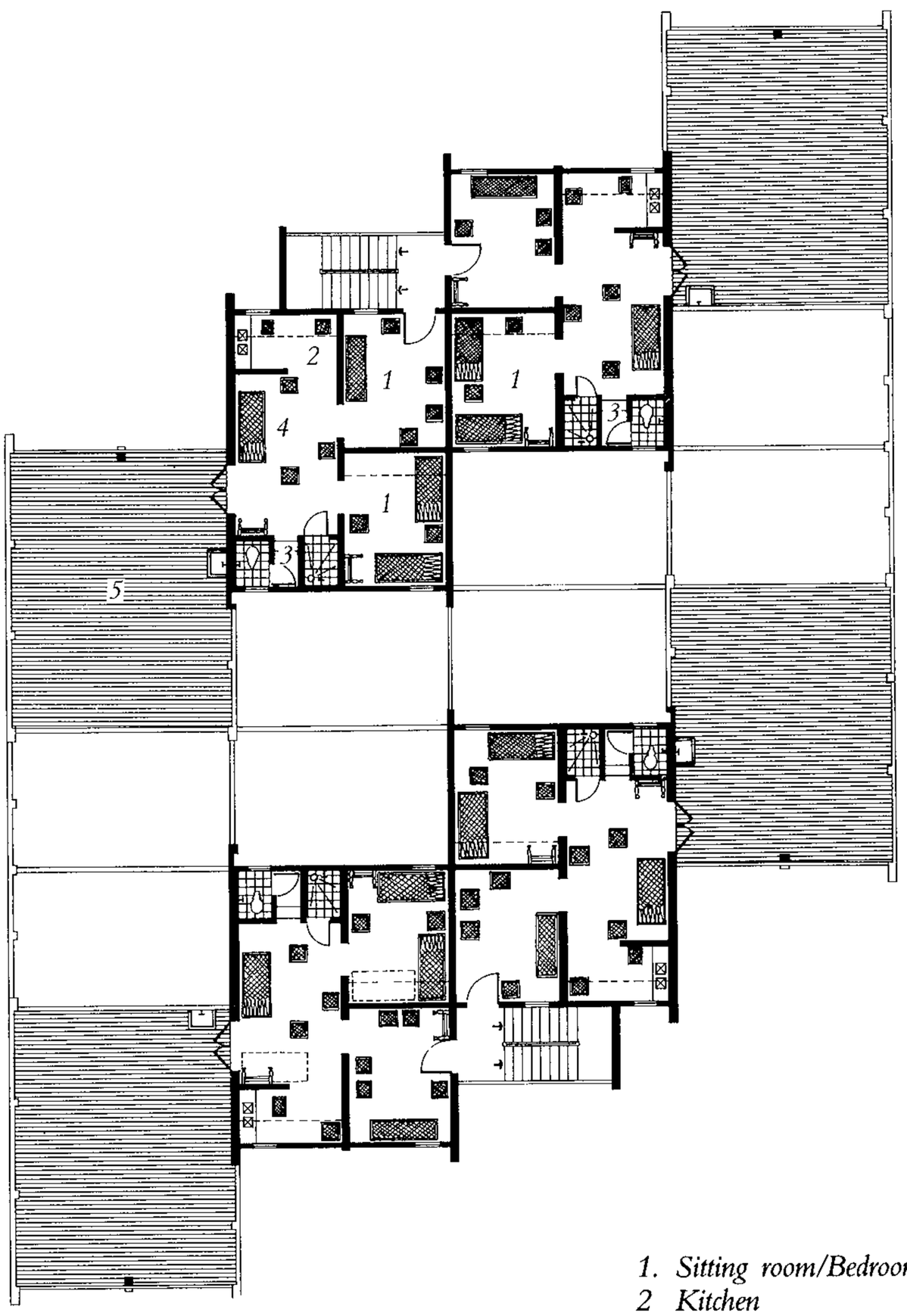


Extended elevation

"I have tried to create an environment reminiscent of our old and historical cities of Lahore and Peshawar, an environment of human scale which would relate well to the life-style of our people, both socially and climatically. Also incorporated in the design are the lessons I learned from working in slums among the people living at subsistence level For example, narrow pedestrian streets are multi-purpose as children's playground, a place for socialising, where people may take their *charpoys* (string beds), a vendor's selling place or whatever Above all they must be spaces for human interaction

"I find the five-storey walk up or multi-storey apartment block totally unsuitable for the urban poor because of the confined space and the way they separate people from the ground and from one another Our approach at Angoori Bagh is more applicable to the housing problems of the poor in developing countries than is the Western type apartment block."

The units were constructed with 70% unskilled labour They were intended for low-income occupants who earned approximately Rs. 300 (or $US30) per month. When the project was completed in 1975 the selling prices, including the land, were set at Rs 10,000 for Category I (350 square feet) and Rs 13,000 for Category II (520 square feet). In 1977 after the units had been vacant for two years, it was decided that the market value was Rs. 28,000 and Rs. 35,000 respectively. Ironically, it seems that the units were allotted to users just before elections for an advance payment of Rs. 5000. Once the people had moved into the units they refused to pay anything more. However, the actual residents are not primarily the poorest classes, but are from the upper middle class income group. The failure on the government's part to recover a larger proportion of actual costs precluded the financing of the later phases of the project, including the social and commercial facilities



First floor plan

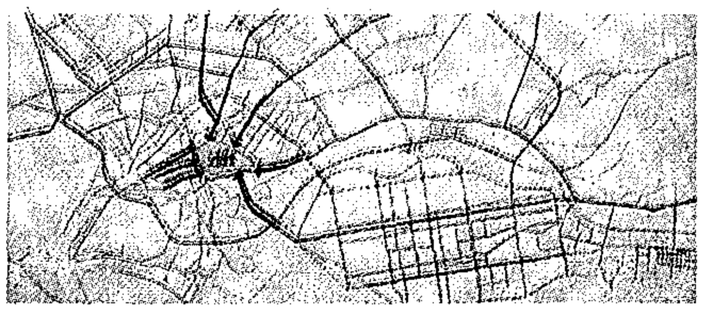
1. *Sitting room/Bedroom*
2. *Kitchen*
3. *Bath/Shower areas*
4. *Verandahs*
5. *Open courtyard*

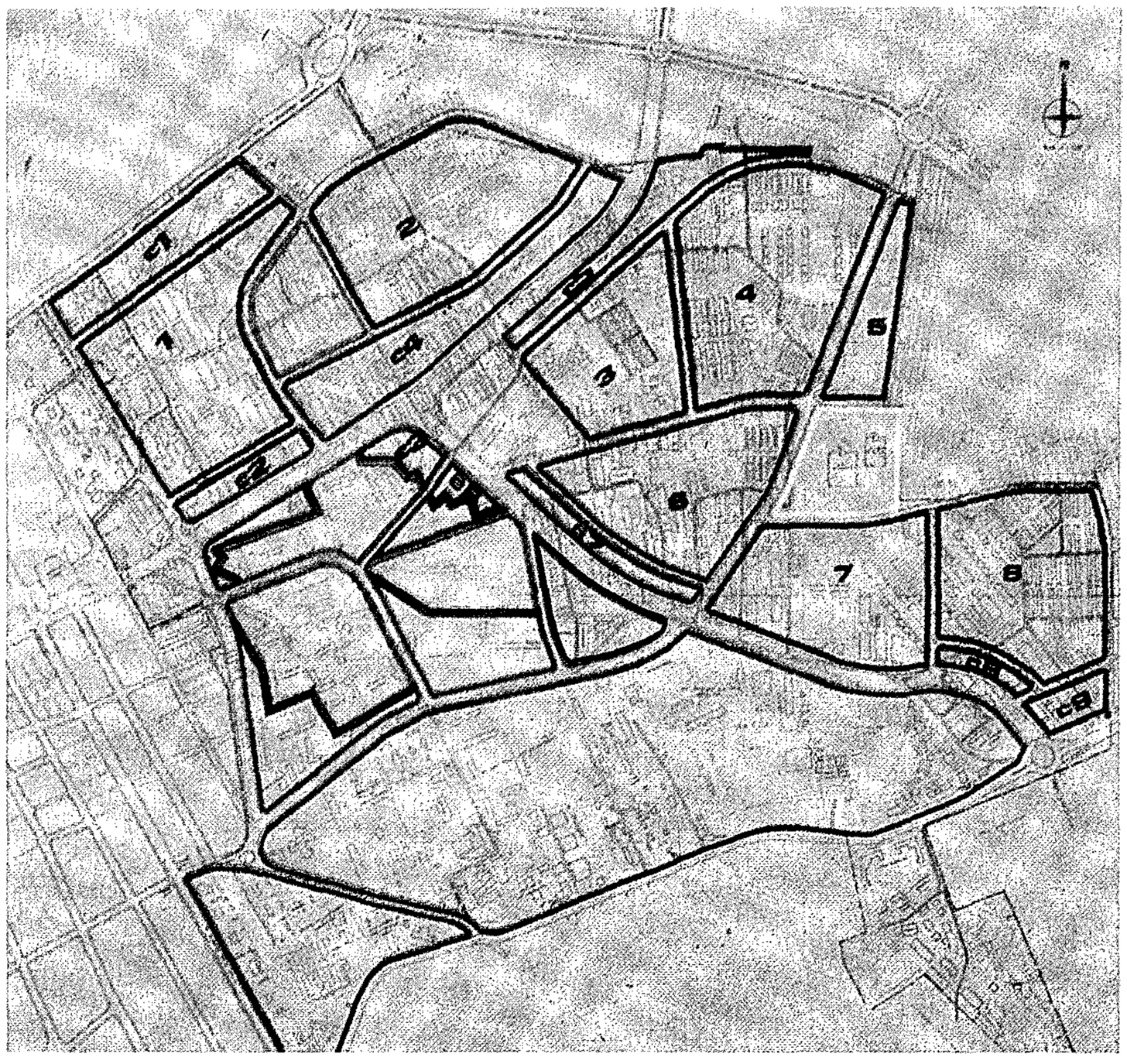
Yasmeen Lari

Lines Redevelopment, Karachi

Jacob Lines Redevelopment, Karachi, Pakistan

The Jacob Lines area is located in the heart of the city of Karachi. It is a residential neighbourhood, still predominantly occupied by squatters, some of whom have lived in the area for over twenty-five years. The area covers 650 acres (263 hectares) and houses approximately 16,500 families, of which 12,000 live in juggies (make-shift housing) and 3,500 are the families of armed-forces personnel. The land belongs to the armed forces and is administered by them. Over the years the area has become run-down due to overcrowding and inadequate services. The present military government decided to redevelop the Lines area, upgrading it but attempting to provide housing for most of the present inhabitants.



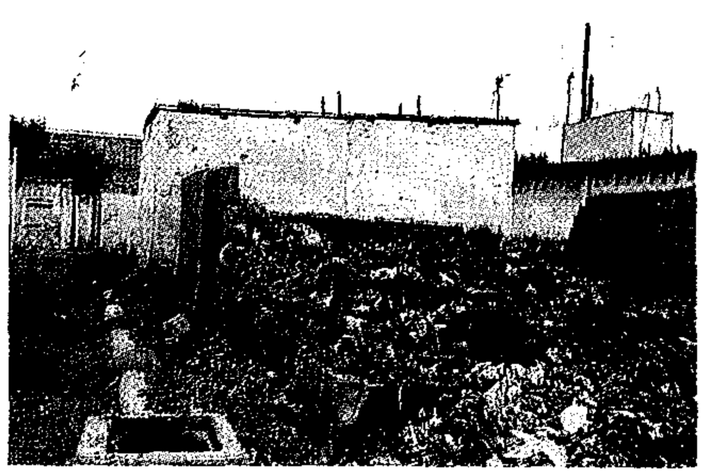


Above: Jacob Lines redevelopment area: strategically located in the heart of Karachi is prime income-generating land.
Right: Present land use map. (For the key refer to the chart below).

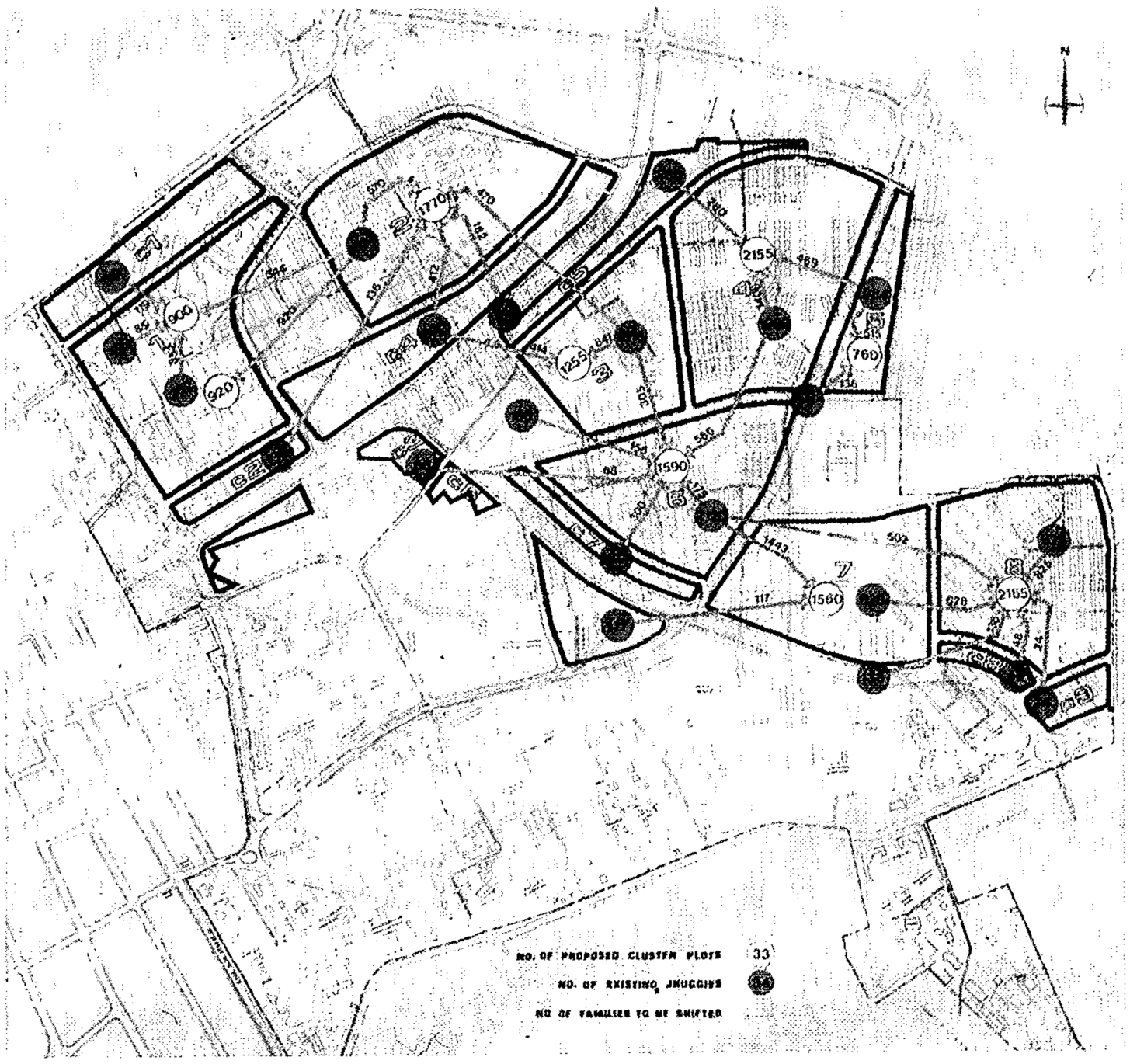
	Acres							Acres
Total Area	**661.5**	■ Housing						226.8
■ Military Land	190.5		Total Area	Amenities Area	High rise Units	Walk-up Units	Cluster Plot	Total Units
■ Existing Institutions	57.4	Sector 1	37.1	5.7	576	182	1 820	2 578
		2	32.3	3.0	432	70	1 770	2 272
Roads	79.4	3	21.9	0.7	432	70	1 255	1 757
		4	35.6	1.4	432	70	2 155	2 657
Bus Terminus	10.6	5	10.1	0.1	—	—	760	760
		6	27.8	1.3	432	84	1 590	2 106
■ Bazaar	2.5	7	27.4	0.8	432	98	1 560	2 090
		8	34.6	1.0	432	98	2 165	2 695
■ Mixed-Use Commercial Development Cite C1 — C9	61.7	Total	226.8	14.0	3 168	672	13 075	16 915
		▒ Reservoir						12.2
■ Health/Education Site	8.9	▒ N.C. Flats						11.7

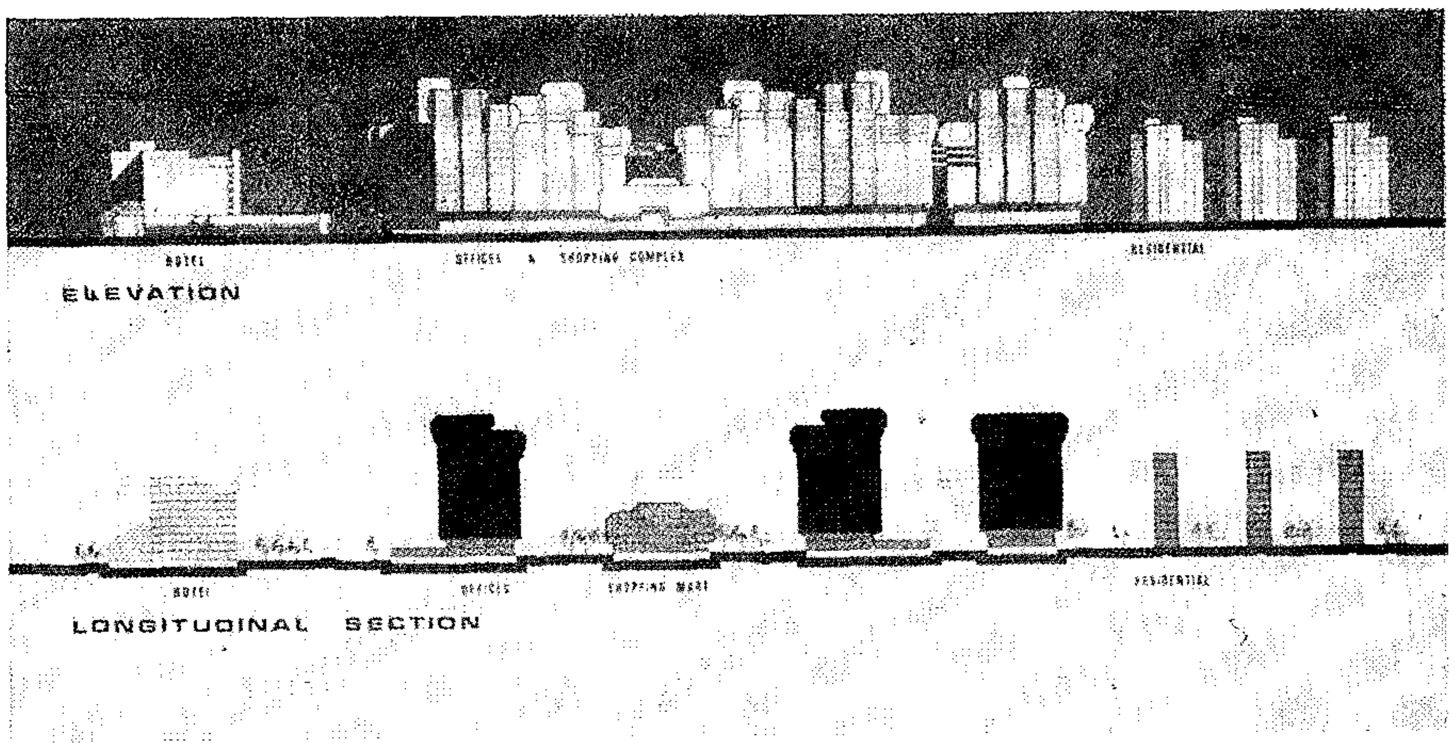
After consulting the councillors and representatives of the Lines area, Yasmeen Lari recommended that the only viable approach to redevelopment was to improve it on a self-financing basis. The land would be pooled and equitably divided, the infrastructure laid in the main streets and certain areas designed by her planning team. In late 1980 the government agreed to her proposal and twenty-six acres have already been cleared and its inhabitants allocated temporary land on the outskirts of the city with the option to return at the completion of this phase of the work. Each plot will have 45 square yards, permitting the construction of two rooms, a kitchen area and a garden or courtyard.

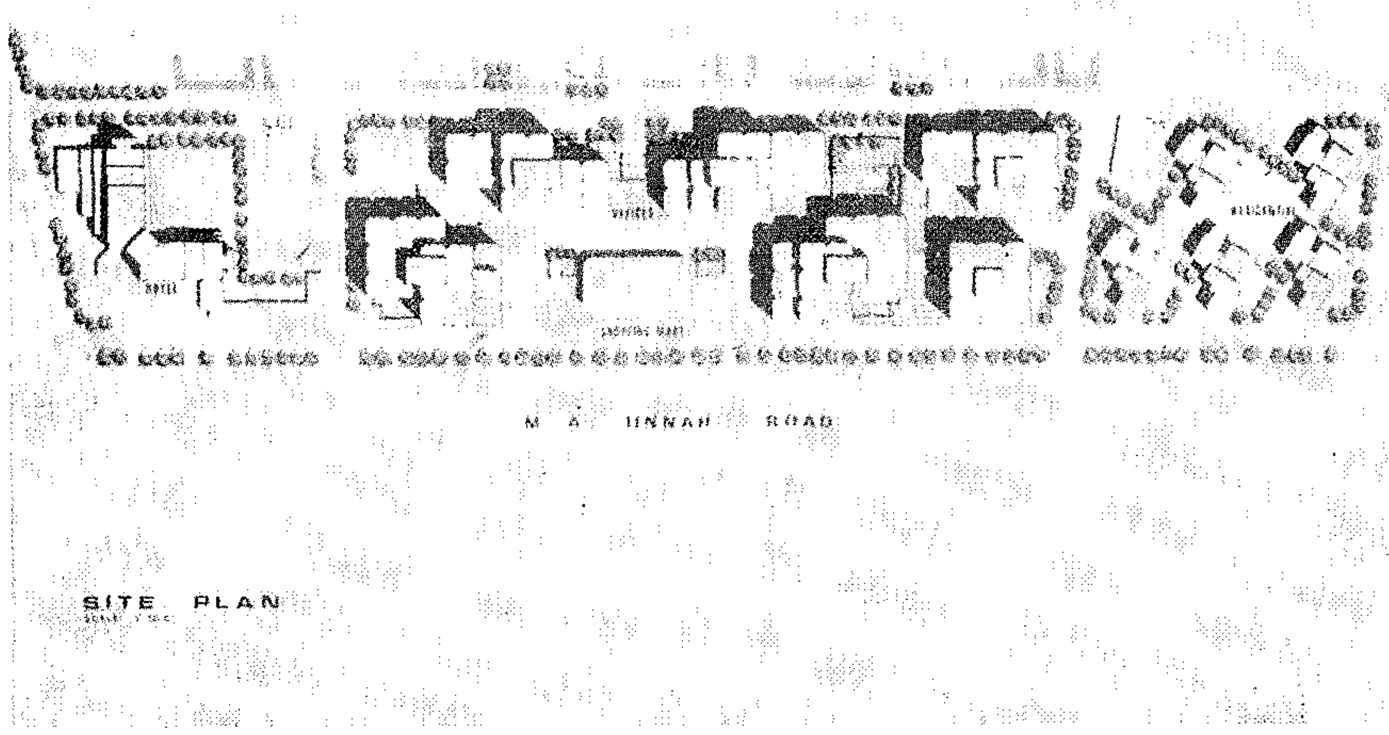
A majority of the Jacob Lines area inhabitants live in housing constructed with recycled materials. Small businesses line the vehicular roads.



The old sewage and water systems are severely inadequate and there is no garbage collection by the city. This, coupled with the fact that the inhabitants are squatters (and therefore unimportant to the authorities) causes the environment to detoriate rapidly.







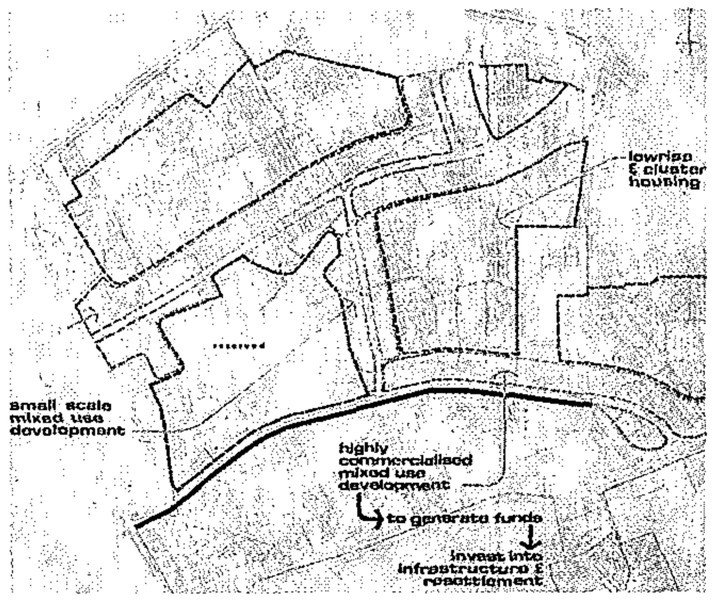
The second phase of the operation will be to rebuild neighbourhoods with the involvement of the people without having to uproot them. As Lari says "It is neither just, nor a solution to uproot poor people. Given a chance and a boost they can improve their own environment. But planners must stop being remote from the people and slum upgrading should be carried out with the involvement of the people themselves and with the minimum of government subsidies. The communities must play a role in the decision-making and implementation of the project."

It will be interesting to observe whether Yasmeen Lari will be able to run the project in the way she envisages it. Earmarking land for commercial activities and the attempt to 'allocate' land fairly, will unleash market forces and politicking amongst the wealthier population. However, this project, unlike most low-income urban redevelopment schemes in Pakistan, has the potential of being realised in the manner it has been conceived, as both the management/phasing and financial components have been realistically planned.

Top, left: The diagram shows how the resettlement of the population has been planned. The densities will remain close to the present ones, and on an average, around 15 to 20 percent of the people will be forced to move out of the area to alternative (less desirable) land which will be provided by the government.

Existing Population	**16 532**
Juggies	12 966
Barracks	3 566

Left: Plan and elevations of a mixed-use commercial area within the redevelopment area The urban profile will change considerably with the introduction of high-rise buildings.
Below: The strategy of redevelopment calls for the use of land on the main vehicular roads for commercial income generating activities. Some of this revenue will be used to subsidise housing in other parts of the area. The redevelopment is to be carried out in phases to allow for resettling existing populations in their original locations.



Yasmeen Lari

Taj Mahal Hotel, Karachi

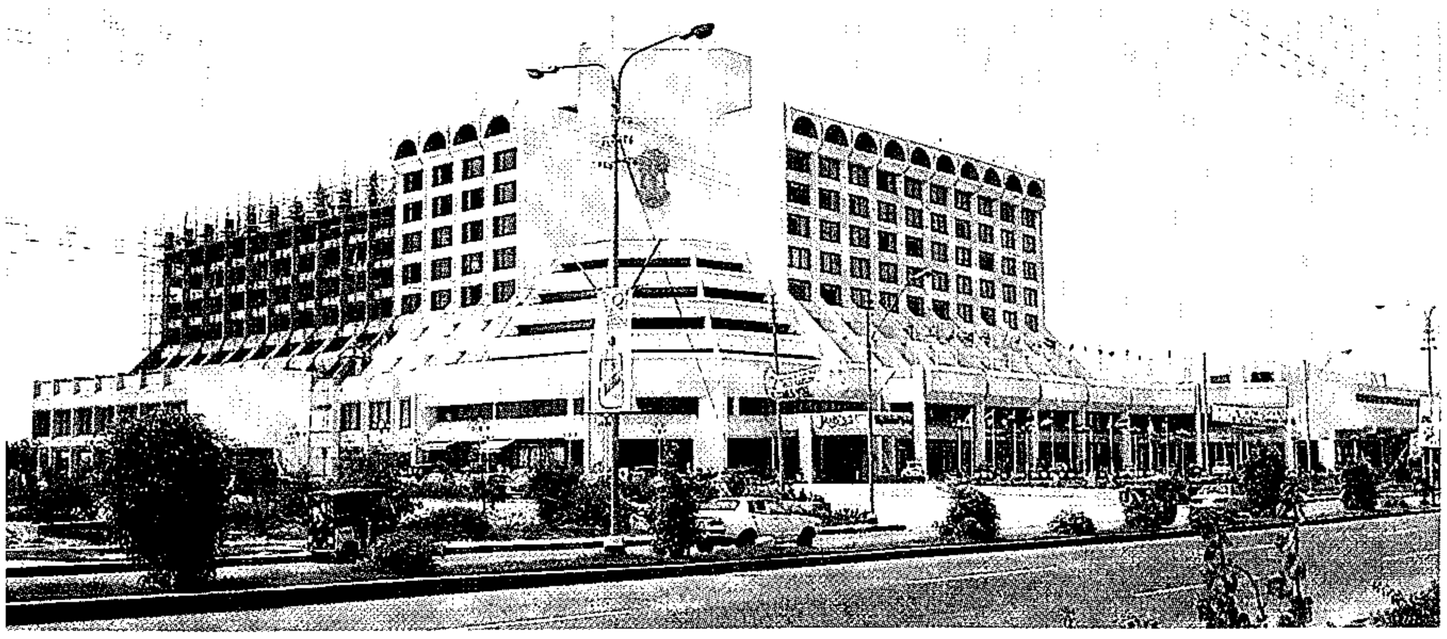
Taj Mahal Hotel, Karachi, Pakistan (1981).

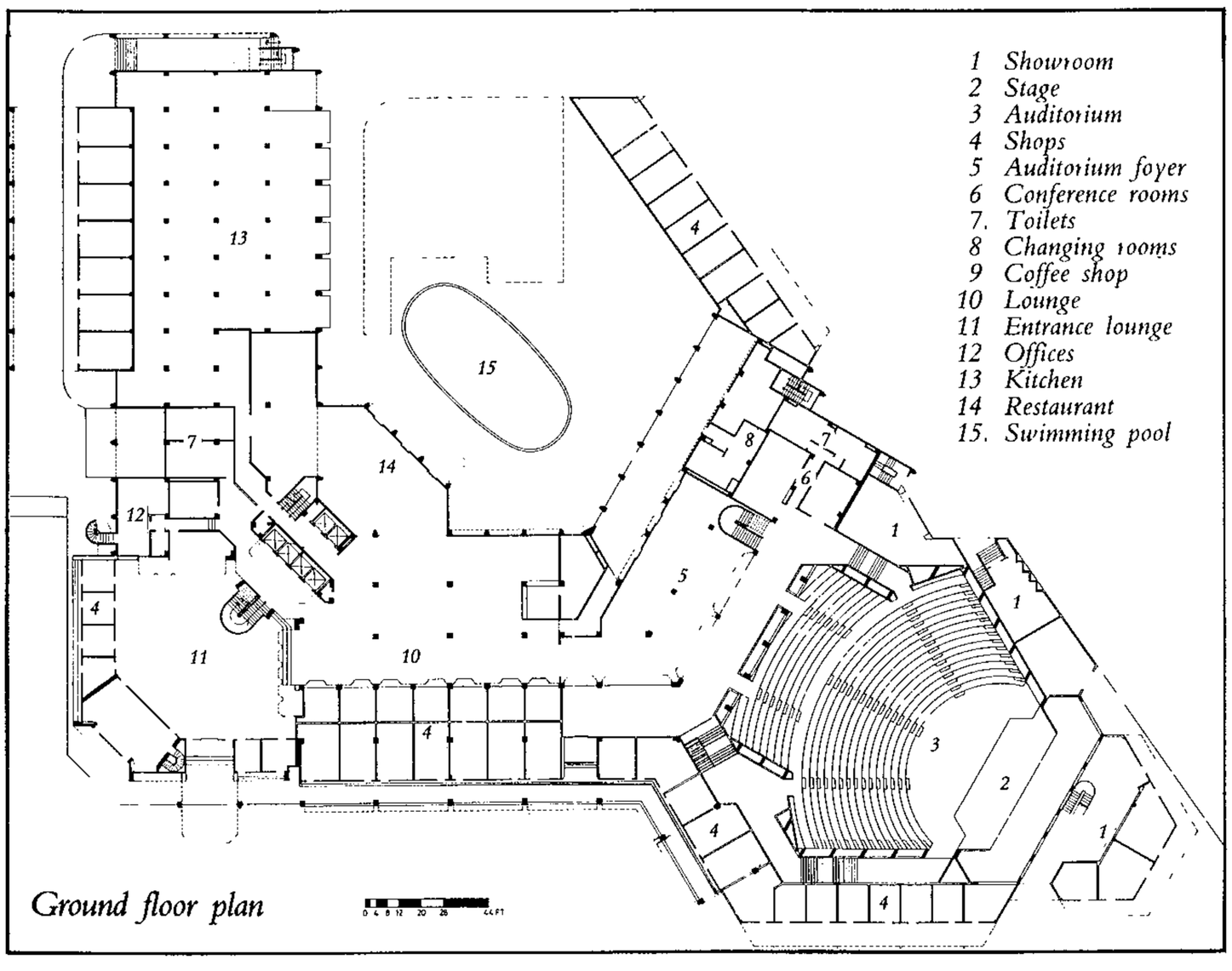
The Taj Mahal Hotel in Karachi is an example of 'instant architecture' It took only twenty-three months after the word go, to become operational It comprises 450 bedrooms, banqueting hall and restaurants, auditorium, pools and a shopping arcade.

The site is close to the commercial centre of the city, at the junction of two important roads. The owner, a private developer, paid a very high price for this prime land, and was interested in maximum land utilisation for greatest financial return and project completion in the shortest possible time. Construction started only six weeks after Lari was appointed as architect. Building approvals were expedited by making special presentations to the Cantonment Board (which controls planning for this plot of land) explaining the concept and aims of the project and its design features

The Taj Mahal is not a 'five star' hotel but has most of the comforts and services expected of a business quality hotel It is fully air-conditioned There is a 1,600 seat auditorium with facilities for simultaneous translation in five languages. The banqueting hall seats over 400 people and there are two other restaurants and a coffee shop The showrooms and shops, which were incorporated into the design to generate funds, are serviced by an underground car park

It is noteworthy that this building cost around US$12 million in comparison to the Sheraton Hotel which is under construction in Karachi at a budgeted cost of around US$90 million Internationally owned ventures, with foreign consultants, inevitably take longer and cost more There is a common assumption that the expertise for large projects of this nature does not exist within Pakistan, which may be the case in a few specialised facilities If a local architect was appointed and acted as coordinator, with a brief to draw upon both foreign and local expertise, projects might run more smoothly and the local profession be given a chance to develop its skills For this reason alone the Taj Mahal Hotel, with its shortcomings, is an important project for the development of architecture in Pakistan





Profile

Yasmeen Lari

MIMAR presents a Pakistani architect's thoughts on issues related to Islamic architecture and the search for new appropriate models for developing countries.

Yasmeen Lari has been in private practice in Karachi since the mid-1960's She was trained in England at the Oxford Polytechnique and returned to Pakistan to "unlearn and relearn" the realities of architectural practice in the country. She has been involved in the design of a broad range of building types; from tourism development schemes of single hotels to waterside resorts; and a number of urban and rural planning projects. Her work covers both the private and public sectors and she has been a consultant to international agencies such as the World Bank. She has always been an outspoken critic of architecture and its practice in Pakistan

In 1980 she was elected president of the Architects Institute of Pakistan and in 1981 became an advisor to the government on the formulation of a new Housing Policy for the country

MIMAR's Hasan-Uddin Khan has known Lari for over ten years, and here presents some of her ideas from writings and conversations.

MIMAR: In the past few years, Islamic ideology has become important in the government's thinking in Pakistan How do you feel Islam could or should effect the country's architecture?

Lari: Many aspects of the Islamic heritage are important for us. Islam teaches humility, which could be reflected in our buildings — for instance they can be kept low to denote a rejection of ostentation Secular and religious life is not separated in Islam and buildings for trade and travel have their parallels in religious architecture The same plan can be used for a number of different functions To paraphrase Professor Grabar, "the main concern of Islamic architecture did not lie in the maintenance of certain forms, but the expression of certain activities" Islam suggests interiority as a concept The outward form of a building is not considered important The buildings are self-efacing, and the exterior gives no indication of the importance of the building nor of its interior spatial organisation. Even an important monument like the congregational mosque is usually obscured by buildings of secondary importance such as the bazaar. The grandeur and beauty of a building is revealed only when you enter its portals. The inward-looking character, the focus on enclosed space and the element of surprise are used in buildings, in gardens and as an important feature of city design. These aspects are still visible today in the medinas of ancient towns like Lahore and Peshawar.

Islam discourages excessive expenditure on buildings and encourages the judicious use of resources For both hot-dry and hot-humid climates, architecture was used as a means of tempering the environment. Excessive stress on standards and exorbitant expenditure in order to create political and status symbols in the race for modernity must be resisted.

I believe that the lessons Islam teaches us can be of importance, if we do not interpret them stylistically or blindly.

MIMAR: One has had to contend with a break with the past Muslim heritage of Pakistan and the adoption of Western models. How, in your view, has this effected the image of an indigenous Islamic architecture?

Lari: Independence did not lead to a qualitative break from the colonial social and organisational systems. Our present is only a quantitative and superficial variation on the colonial past. Its ideology alien to our culture and its architecture a rather interesting imposition on our own

"Can we architects working in the Third World afford to consider projects in isolation? ... the issues are more serious than the design of aesthetically pleasing or even good buildings."

The majority of Westerners have acquired their perceptions of Islamic architecture from buildings like the Brighton Pavillon, films on the Arabian Nights and other "popular" interpretations of Muslim culture. The perceptions, of even our own Western-educated elite, are heavily coloured by the Western media; they are lacking in any but a superficial knowledge of our Islamic heritage It is not surprising then, that our cities are dotted with buildings designed by both foreign and local architects which can at best be called 'instant Islamic'. Their image is created by the mere application of certain elements of the facades. In other respects they are poor imitations of buildings found all over the Western world

MIMAR: I know that you are a strong advocate of developing indigenous expertise But don't you think that architects from other countries may have a contribution to make in local architectures?

Lari: Perhaps But the Pakistani experience in this respect has been negative For example, Edward Durrell Stone did some very important buildings in the country, and was the first to create this "instant Islamic". I remember being in the offices of the Capital Development Authority when a building model was supplied along with models of different kinds of domes, so that the chairman could choose the one he wanted! May be that is why I think it is so important that local architects be involved when these things are being done. We don't have many good architects in Pakistan, but unless they are allowed to become involved in the major projects in their own cities, how are they going to get better?

There is a Western model that we tend to adopt, and this is the time to rethink and redefine our needs — only then can we create something new, different and appropriate to our culture.

MIMAR: Perhaps I can try to get you to define the kinds of appropriate models you think should be developed

Lari: The crucial problem for the people in the Third World is simply survival. Nonetheless we tend to build structures which are expensive, which depend on technology we do not possess and for which the maintenance is beyond our means The buildings conserve vast amounts of energy and are a drain on city resources rather than contributing to the environment The buildings for the privileged few absorb such a large proportion of national wealth that not enough is available to the general public.

Can we architects working in the Third World afford to consider such projects in isolation? Can we close our eyes to the fact that the issues are more serious than merely the design of aesthetically pleasing or even good buildings? One may enjoy planning such edifices, but to the common person they are unreal, totally unrelated to his problems and able to do nothing for his spiritual or physical well-being. What then is relevant and appropriate? What should be the scale of expenditure on such buildings? Should the designs reflect concern for a resource-conserving future? In this context we would do well to remember that Islam encourages the judicious use of resources and discourages excessive expenditure on buildings.

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Pravina Mehta

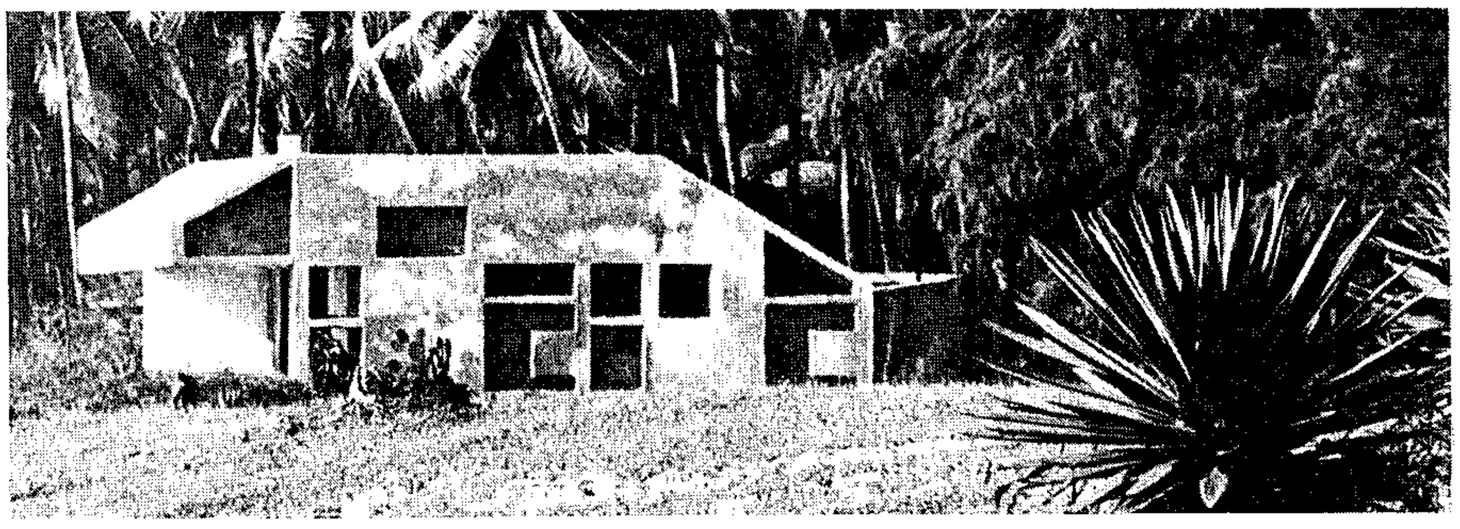
Architect Pravina Mehta's interests are wide and varied: from design to politics (for which she was imprisoned in 1942), to traditional dance and Indian art.

She obtained her bachelor's degree in Architecture from the Illinois Institute of Design and also holds a master's degree in Planning from the University of Chicago She worked for two years in Washington D.C and then returned to practice in India She has designed single family houses, high-rise apartments, factories and restaurants She worked on the First New Bombay Plan (with Shirish Patel and Charles Correa) to have it adopted by the Government in 1971

Pravina Mehta strongly feels that there should be "a common concern for today" among professional planners, and says that "a society which is committed to egalitarian values and to social justice should not allow gross inequalities to emerge in the housing facilities for the different sections of the population" She is outspoken In a male-dominated profession, she feels that she very seldom comes up against prejudice, and sums up her attitude by saying that "when a woman is truly committed to her career, when there is an inner compulsion, then she ceases to regard herself as a woman but only acts as a professional."

Bombay is a city she feels concern about. "There is much to be done to improve Bombay, but this can only be achieved," stresses Pravina, "when there is co-ordination between city-planners, the public and social-scientists Architects must interact closely with social-scientists in the location of housing for lower income groups In an environment where resentment exists due to growing disparities, the location and distribution of housing becomes an important factor in urban planning In Bombay, where diverse groups co-exist, housing, sanitation, water supply and other facilities are not the only problems There are social and psychological issues as well The problems created by diversity should not be solved by destroying it, but by giving scope for the various life-styles our culture is capable of yielding." She heads a research unit which is involved in these issues

Pravina Metha's main preoccupation is with the re-establishment of the link between architecture and the other arts She feels that this interaction is missing in contemporary Indian building, and that "we should seek inspiration from our own rich heritage The rhythms one finds in our traditional dance forms can be translated into the language of concrete and mortar "



Credits. Text by MIMAR's editors. Patel House photographs courtesy of Associated Architects, Bombay. Factory photographs: Stella Snead

Pravina Mehta

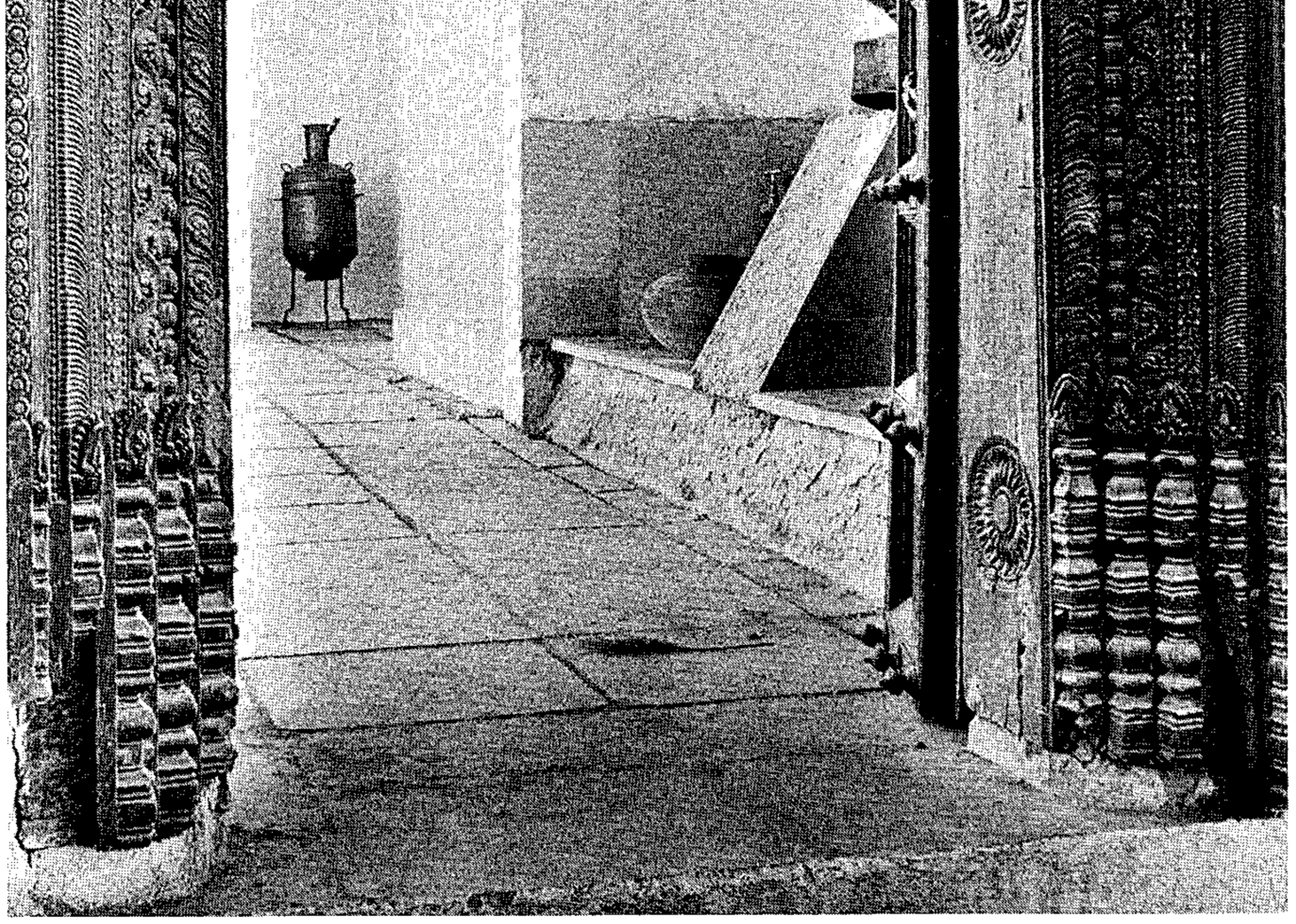
Patel House, Kihim

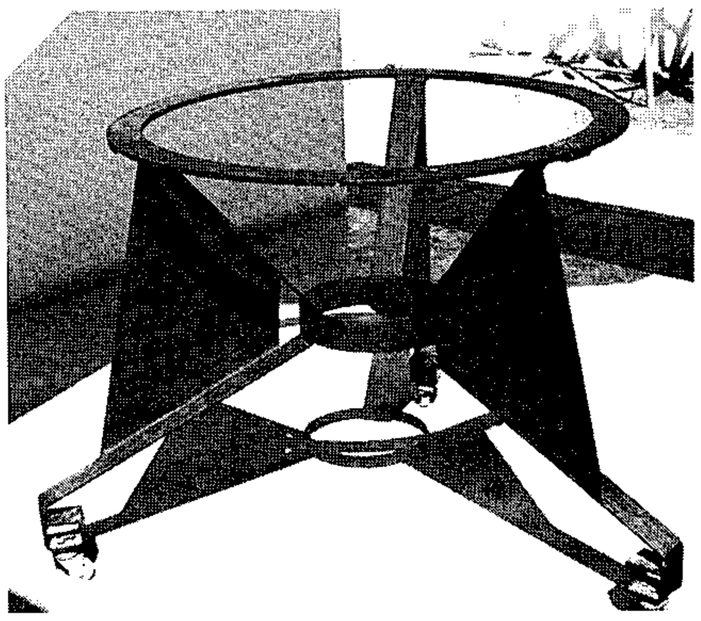
Uma Patel House, Kihim, Colaba, Maharashtra, India (1962).

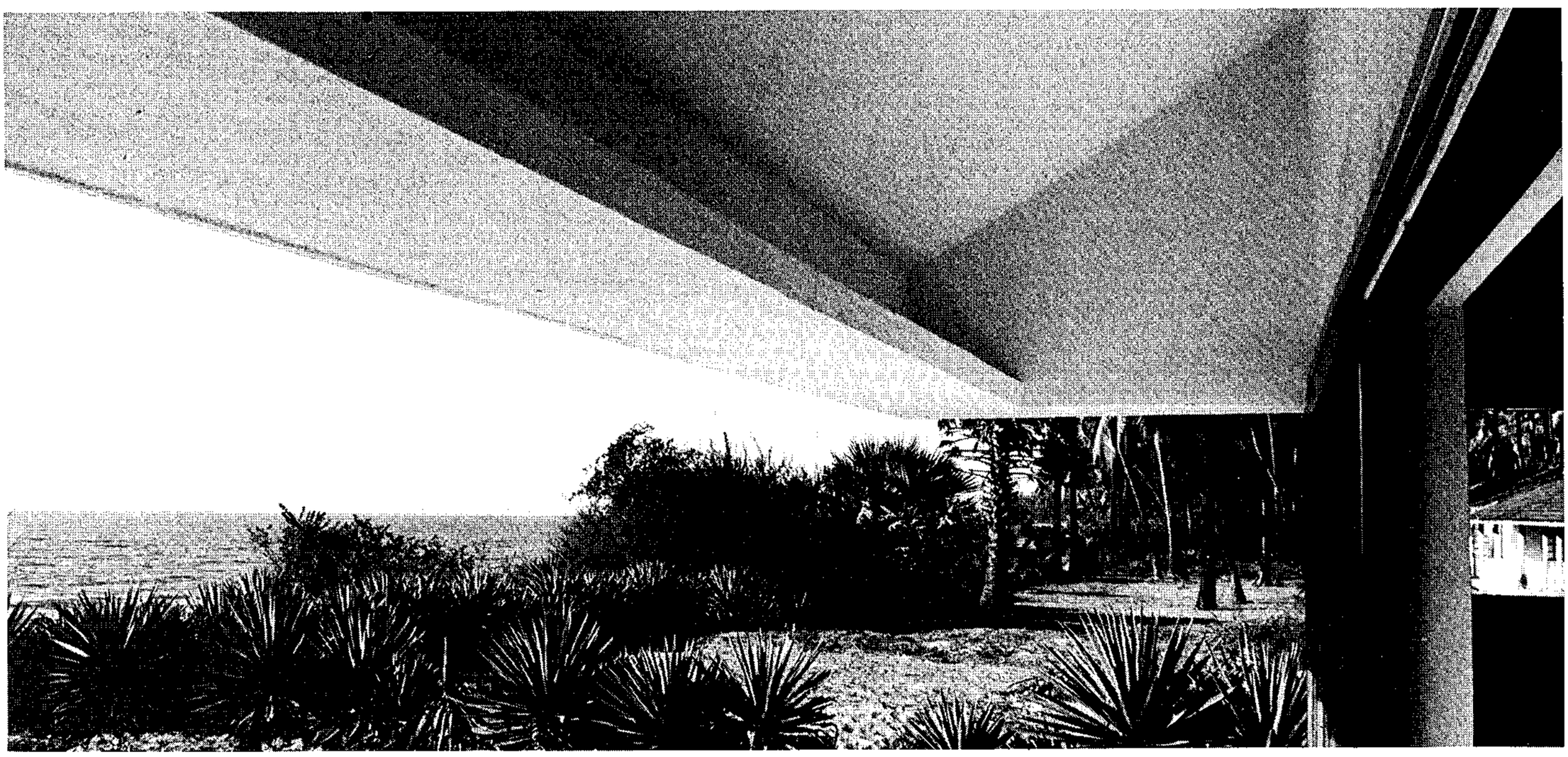
The house is used as a weekend and vacation home. Its facade, facing the sea, has a cantilevered awning over a verandah, to provide both view and shade The other facades have deeply recessed windows on the outside. The counter recesses formed inside are used for storage and are integrated with the built-in furniture On the fourth side is the courtyard which is entered through a traditional carved wooden door leading to the rear verandah. Inside the walled courtyard is the utility area and a staircase which leads to the terrace at the top of the building

This house reveals Le Corbusier's influence on this Indian architect's work Built almost twenty years ago it retains its originality.

Left, below: Exterior view
Left, bottom: Interior of dining room.
Below: Table stand in the courtyard.
Right. Courtyard entered through a carved wooden door
Bottom· Concrete canopy





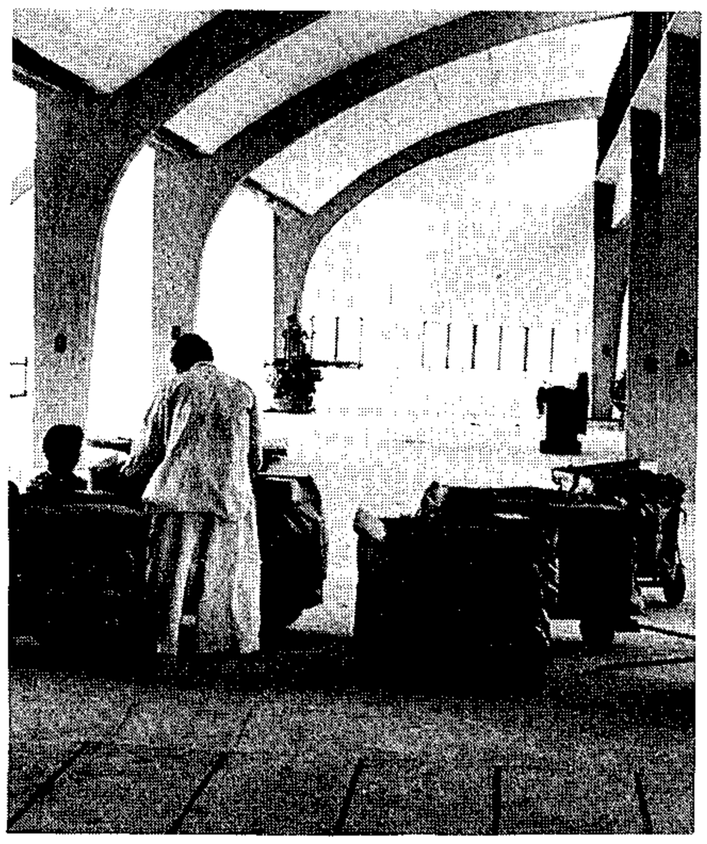


Pravina Mehta

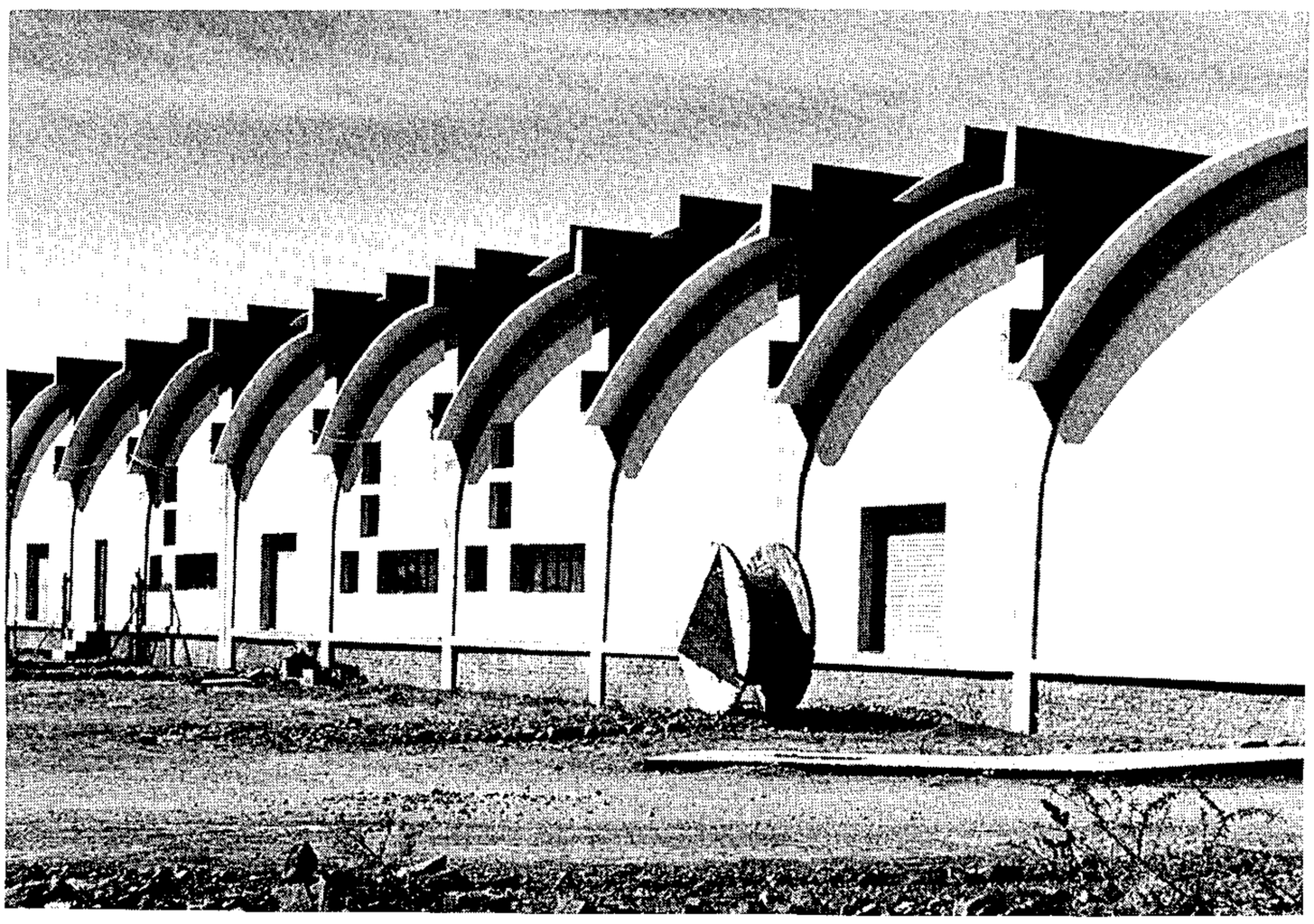
Factory, Chinchwad

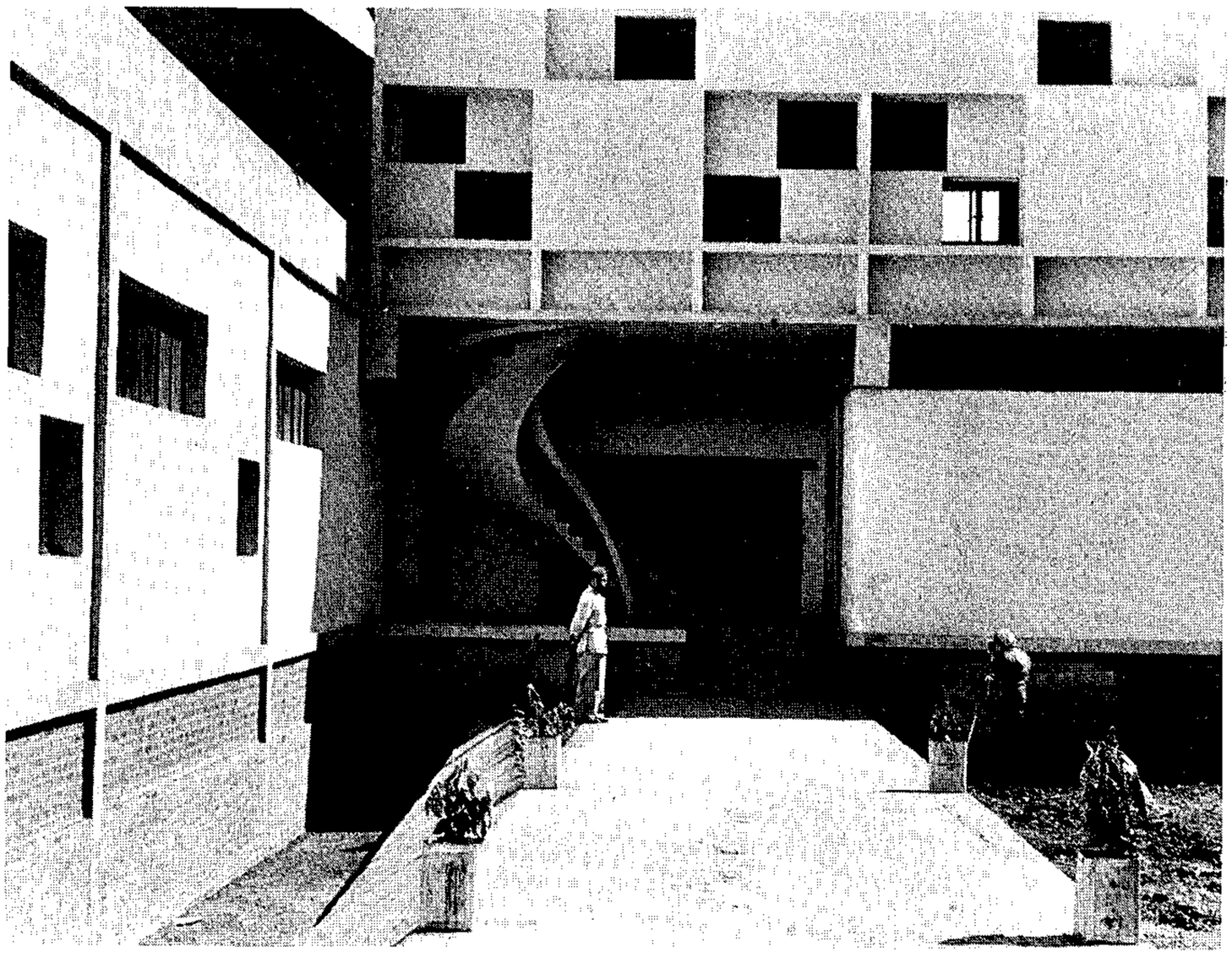
Factory Chinchwad, Maharashtra, India (1962).

The J.B. Advani Oerlikon Electrodes Factory was built using standardised components and modules It was an inexpensive structure which used simple labour intensive construction, fabricating its elements on site. Its functional requirements of lighting and ventilation are met by a rhythmic arrangement and positioning of windows in an attempt to avoid monotony and repetition



Right: Ribbed columnar structure carries standard sized concrete roofing elements.
Below: Side elevation.
Bottom: Main entrance with spiral staircase to offices above





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Malene Bjørn

Kuwait Tower

The Kuwait Tower is the culmination in the development of the architect Malene Bjørn who was born in 1914 in Copenhagen and who has had world wide experience as a designer in Scandinavia, France, Italy, India and the United States and is the Director of her own firm, Bjørn and Bjørn In her Kuwait Tower Malene Bjørn has provided a symbol not only for the emerging urban environment of Kuwait, but for the Middle East in general This work, which was given the prestigious Aga Khan Award for Architecture in 1980, is proof that architecture can transcend technology when the designer takes into consideration that his task is to serve human beings in the widest possible terms.

Technology in technologically necessary structures receive an additional meaning in the Middle East in the 'Kuwait Tower' by the Danish architect Malene Bjørn Signifying a changing value system, this structure has rightfully been accepted as a symbol for the city of Kuwait The elementary necessity of water is here contained in a sculptural and architectural structure which connects the ancient traditions and the contemporary requirements into an organic whole. Water as the element of survival for the desert community has been rearticulated on the basis of a modern technological civilisation without being restricted to a mere mechanical solution

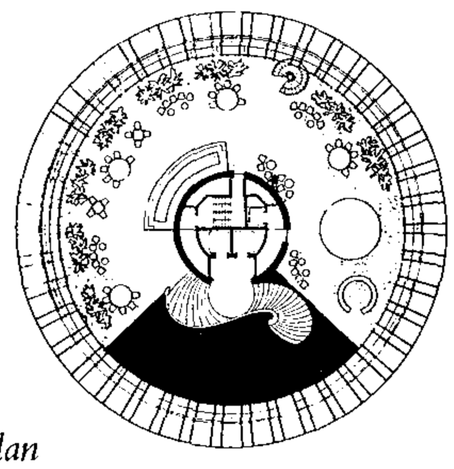
Inaugurated on February 26, 1977 the three-part structure is located on the waterfront near the harbour of Kuwait City on the prominent site of a small peninsula in the northern part of the central city It was the personal wish of the Amir H.H Sheikh Jaber Al Ahmed to give special significance to the Kuwait Tower The tallest of the

Text by Udo Kultermann, architectural historian and Professor of Architecture at Washington University in St Louis, Missouri. Photographs and drawings courtesy of Malene Bjørn Interior photograph by Huda Al-Bahar.

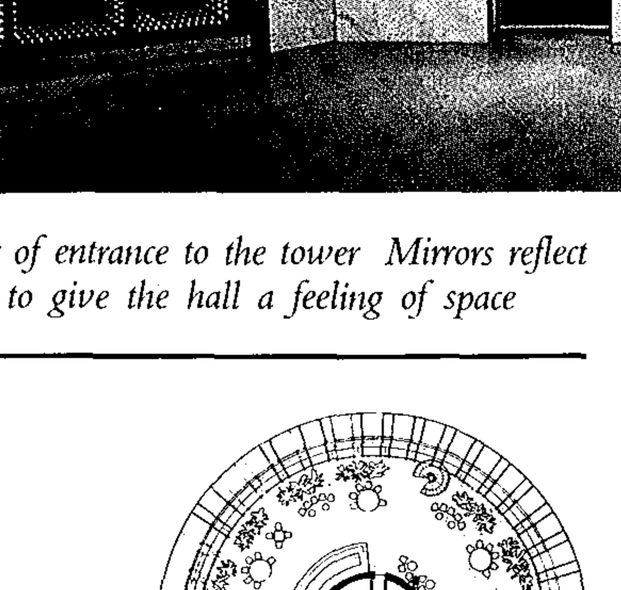
three towers is 180 metres high and consists of a concrete shaft and two spheres The bottom half of the lower sphere contains a water reservoir with a capacity of 4500m³, and the upper half of the sphere contains a restaurant for 90 guests, a banqueting hall and an indoor garden The water reaches a level of 75 metres above ground, but the architect went beyond the height of the necessary technical requirements to create facilities for recreation and entertainment What could have been a mere technical structure was created into something beyond, opening new perspectives into a humanistic approach toward technology in general The upper sphere of the main tower, which can be reached by an elevator, contains a rotating cafeteria for 70 guests and a viewing terrace and provides changing views of the urban environment of Kuwait City and the Arabian Gulf. With a height of 185 metres, this tower is one of the tallest buildings in the Middle East

Adjacent to the main tower is a second smaller tower which is 140 metres high and has only one sphere which contains a second water reservoir with a capacity of 4500m³ There are no facilities for recreation in this tower The third and smallest tower contains only the lighting system that illuminates the two larger towers at night The outer skin of the spheres of the two larger towers are covered with enamelled plates of steel painted in a colour scheme of blues, greens and greys in harmony with the traditional ornamental forms of the Gulf architecture of the past, creating a brilliant impression in daylight and a light spectacle at night.

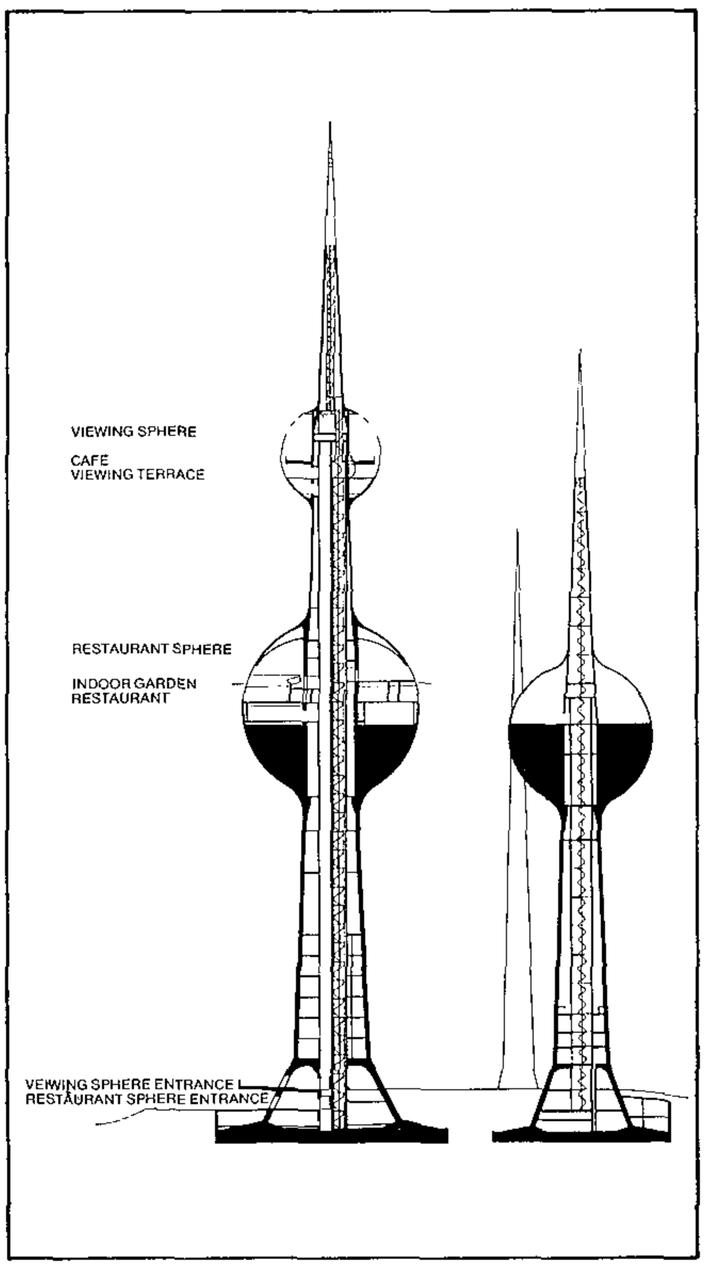
Interior of entrance to the tower Mirrors reflect images to give the hall a feeling of space



Indoor garden plan



The lower sphere section



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Fawizah Kamal

Student Hostel, Penang

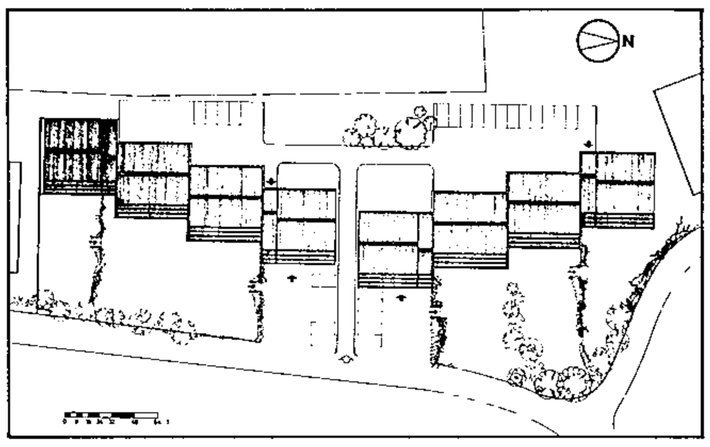
This 4 storey hostel, staggered both in plan and section, is situated on a gently sloping site with vast landscaped areas and car parks not only for hostel residents but also for hostel staff and visitors Designed with a split level effect, it gives optimum view of the whole visible surrounding area and provides maximum ventilation and sun shading.

The hostel which comprises two blocks (one for males and one for females) can accommodate a total of 350 students.

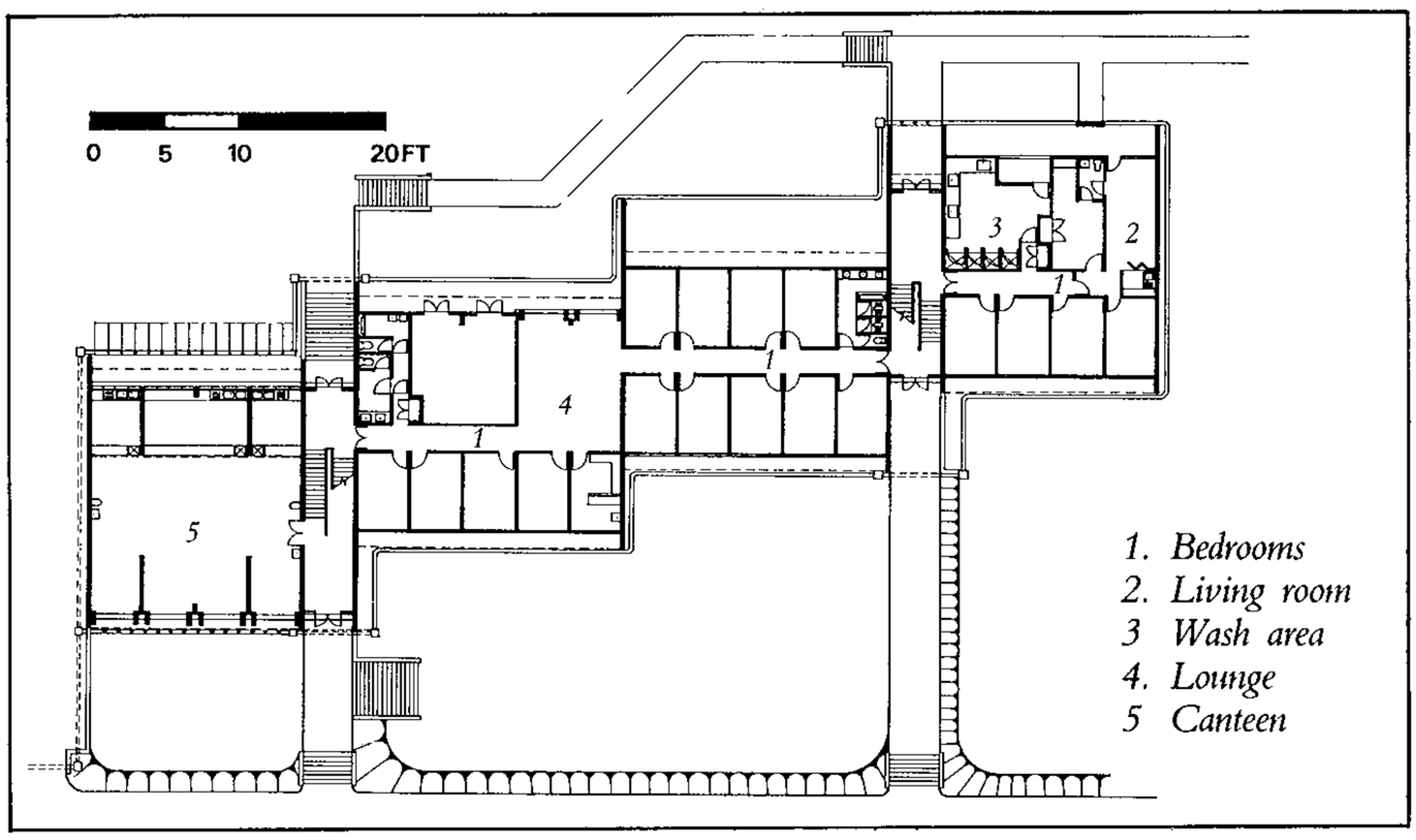
It consists of bedrooms, wash rooms, kitchenette, multi-purpose hall, canteen, common lounge and prayer rooms.

The structure is a reinforced concrete frame with brick infill partitions The floor is of cement, rendered to a smooth trowel finish. Staircases are of reinforced concrete structure finished with mosaic nosing tiles complete with lacquered timber handrails. The roof of timber trusses are covered with tiles, insulated for proper heat control The exterior walls are of white semi-glazed mosaic tiles

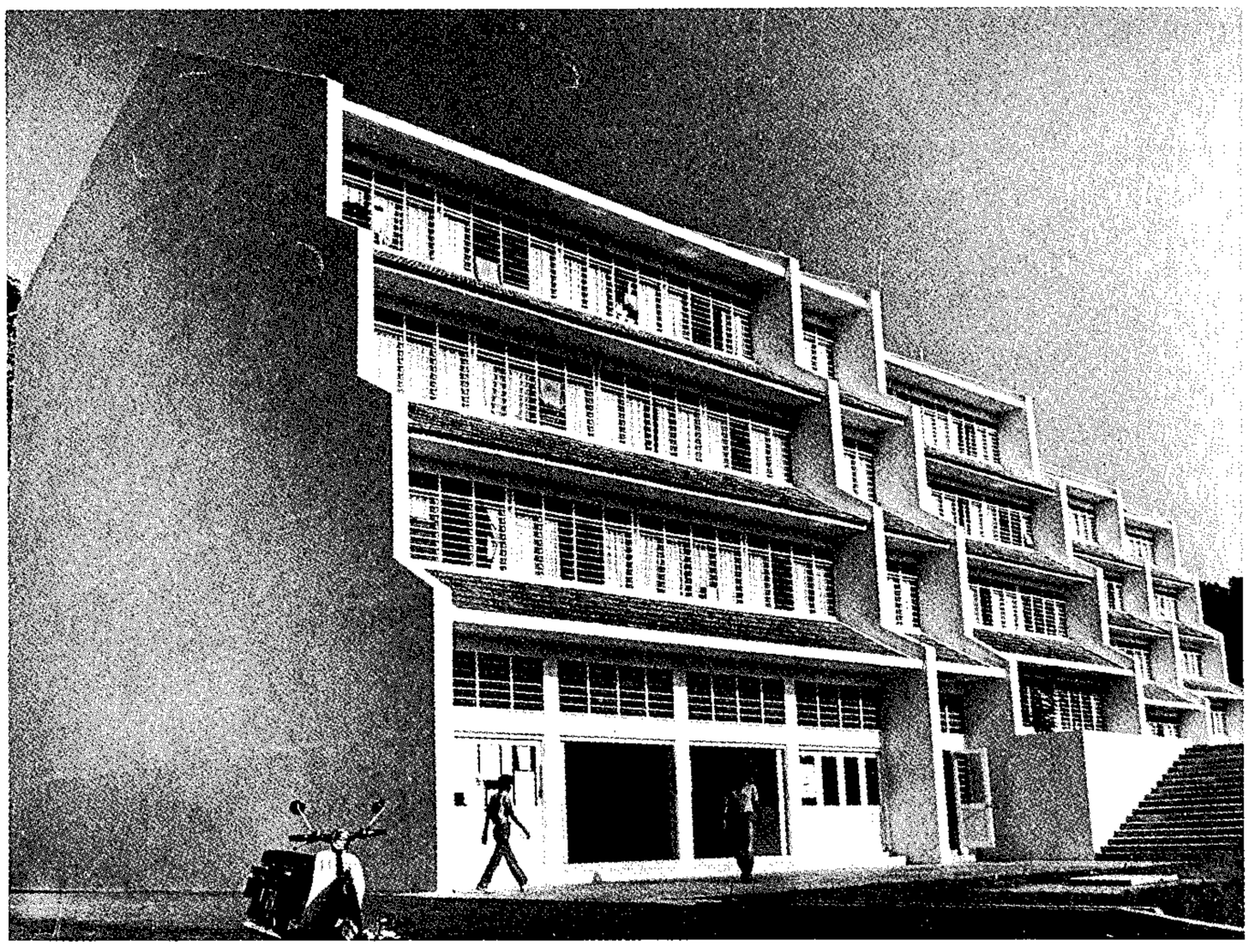
The total cost (inclusive of built-in furniture for students) is approximately 3.3 million ringgit (US$1.6 million). Construction is expected to take thirteen months with completion by the end of 1981



Site plan



Ground floor plan



Text, photographs and drawings courtesy of Akitek Fawizah.

Fawizah Kamal

Balai Islam, Penang

The Balai Islam (Islamic Centre) is located to the south-west of the campus, close to a nearby settlement This site was considered ideal to encourage the Muslims outside the campus to visit the Centre, especially for Friday prayers

It was important to design a building which reflected Islamic architecture in the context of Malaysia. The form of long sloping roofs on different levels for the mosque is taken from traditional mosques in Malaysia This has been adapted and developed to produce a form which gives a symbolic meaning to the buildings and enables the Centre to be naturally cooled and thus maintaining a comfortable environment The same treatment is given to the series of smaller pavilions which are grouped along covered walkways Each pavilion has its own particular accommodation and function.

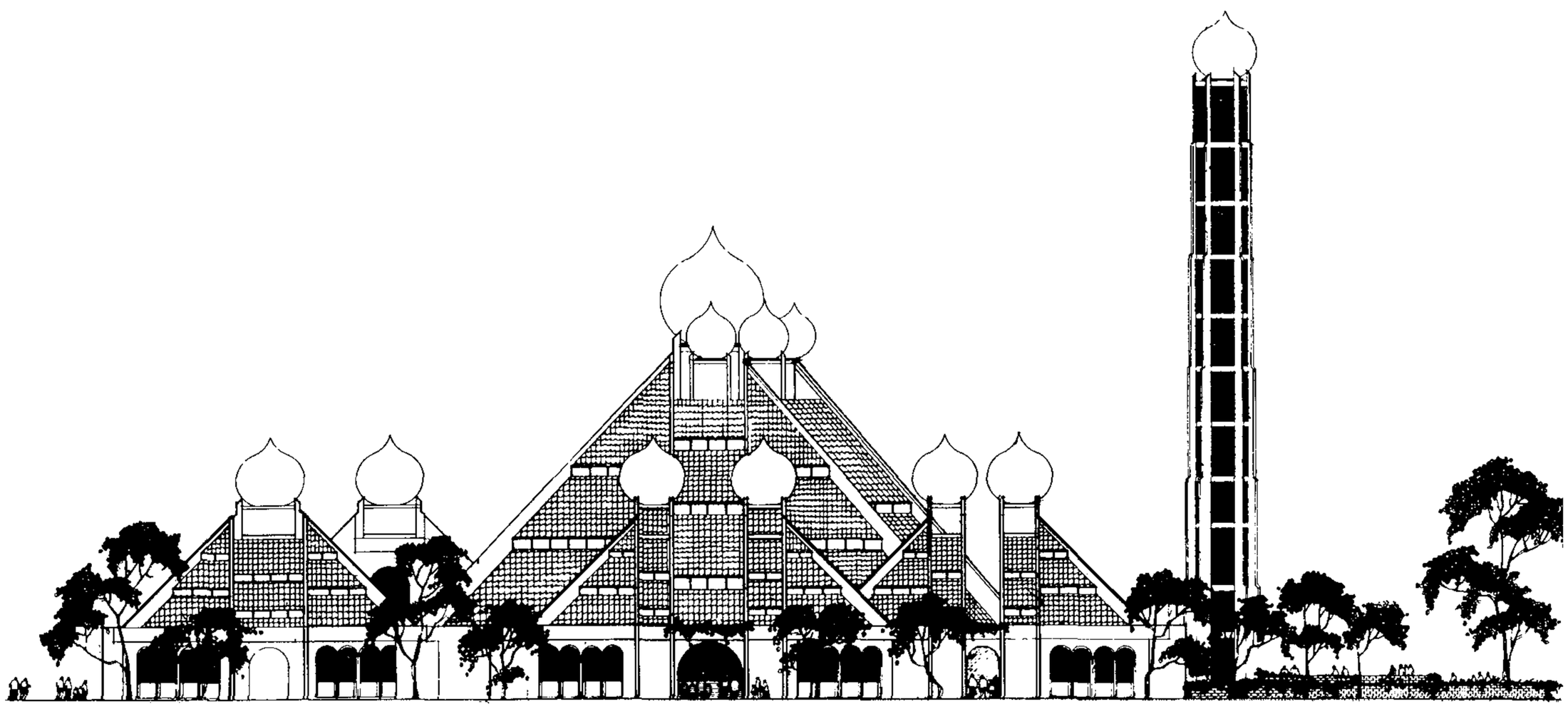
The Balai Islam has a 150-foot (45 72 metres) tall minaret, to provide a readily recognisable element, integrated into the overall design

The complex uses calligraphic panels for the interiors and will be furnished with comfortable and soft furnishing, hopefully making it a serene, and yet uplifting place for prayer and meditation The whole project is presently under construction and is expected to be completed within the next year

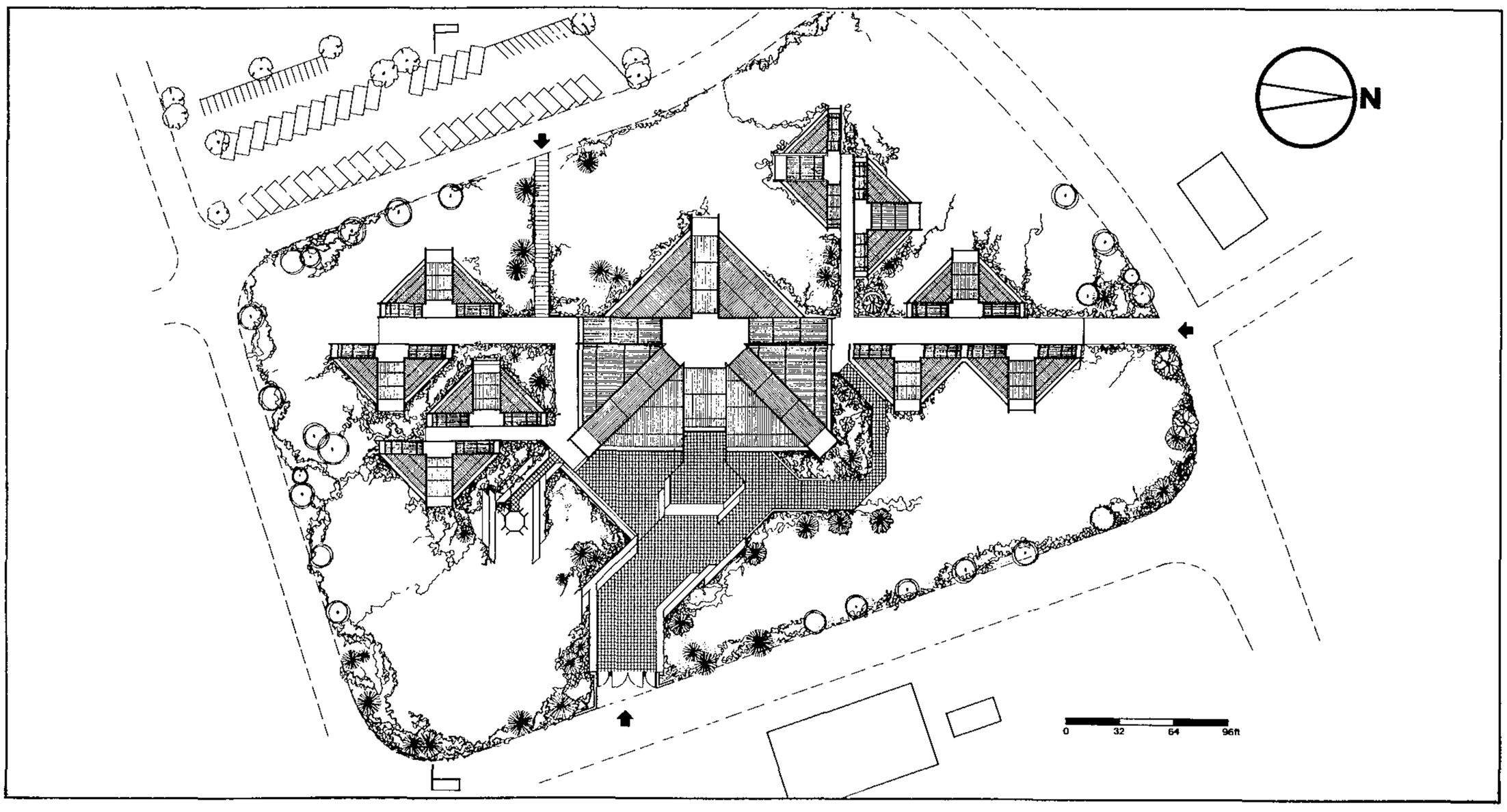
Balai Islam is to be a centre for Islamic teaching, learning and spiritual development for both the campus and the surrounding community

It will:

1 provide a training centre and spiritual guidance for students who will become future leaders of the country
2. encourage the campus society, including non-muslims, to be aware of the principles and activities of Islam
3 provide a meeting centre for congrega-



Sectional elevation



Site plan

tion prayers, religious teaching, and seminars.

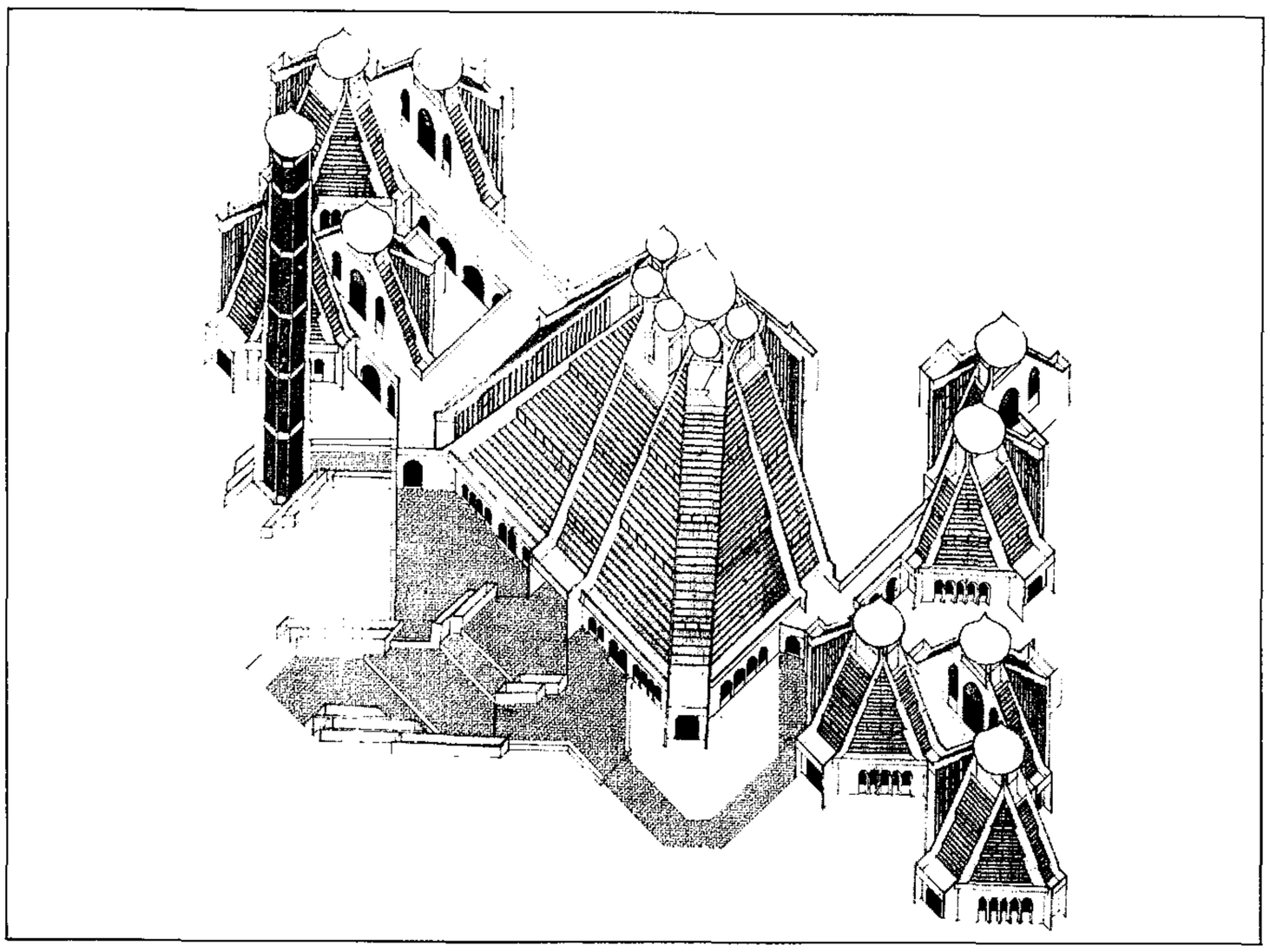
4 be a motivating factor and a symbol of Islamic activities in the region

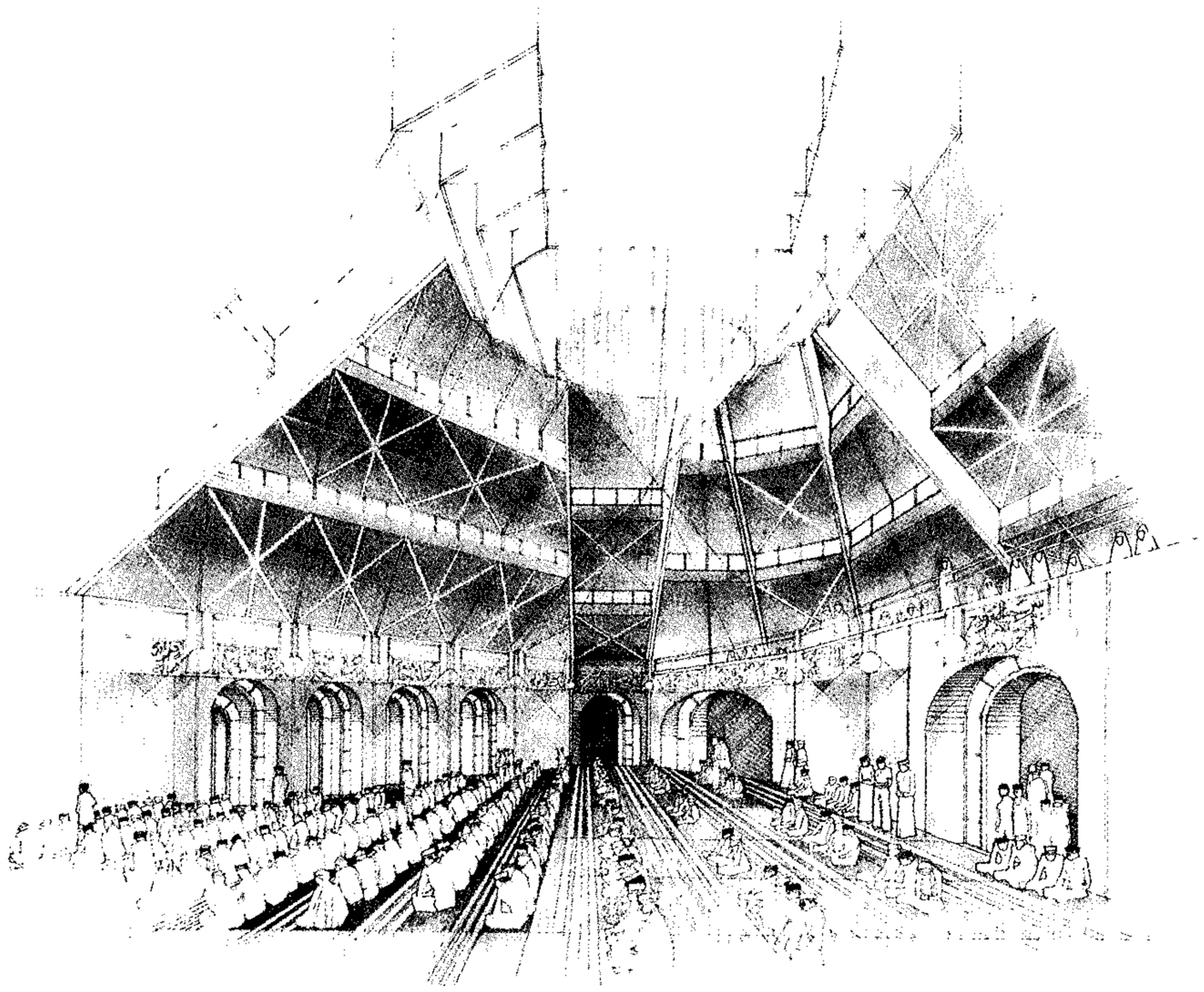
5 act as a centre for books, pamphlets and documents relating to Islamic studies

The main block of the complex consists of a Prayer hall which can accommodate 1,200 men and 800 women (male on ground floor and female on mezzanine floor), an Ablution area and shoe storage facilities Total area of the ground floor is 18,000 square feet (1672 2 square metres) and the first floor is 7,000 square feet (650 3 square metres)

There are another six blocks of 1,200 square feet (111 48 square metres) each Block B has a small prayer hall and ablution area for the deceased *(tempat sembahyang mayat)* Block C consists of a food preparation area, rest room/lounge and Imam's room Seminar rooms are housed in blocks E and F The library which is to be found in block G has an additional area of 300 square feet (27.87 square metres) on the first floor Connected to this is the main seminar hall housed in block H

The estimated building cost is 2,800,000 ringgit (US$1 41 million) and the duration of work is 19 months





Interior of the main prayer hall.

Profile

Fawizah Kamal

MIMAR profiles a Malaysian architect, currently Dean of the School of Housing, Building and Planning at the Universiti Sains Malaysia in Penang.

Fawizah bte Haji Kamal's architectural studies began in Kuala Lumpur and were completed in Portsmouth, England, in 1972. In early 1973 Fawizah and husband, John Lucas, also an architect, returned to Malaysia to work for the Urban Development Authority in Kuala Lumpur. The next year, in response to the Malaysian government's 'Third Malaysia Plan' emphasising the restructuring of society and eradication of poverty, she and her husband formed a practice, AKITEK FAWIZAH, to work with the private sector and the government in implementing projects under the Plan In 1978 they opened a branch in Penang That year, Fawizah joined the university as a full-time associate professor, leaving the running of the firm to her husband In June 1979, she was appointed Dean of the school and now is also a member of over a dozen educational committees at the University, the Ministry of Youth and Culture, and the Malaysian Institute of Architects

At present she is involved in the expansion and changes in the school The following transcript is drawn from a number of conversations in Kuala Lumpur and Boston in July and August, 1981, with MIMAR's Hasan-Uddin Khan.

MIMAR: How do you see your role as an architect?

Fawizah: Being a woman, a mother, a wife, a practising architect and an associate professor and Dean at the school it is all very exciting I play these different roles twenty-four hours a day in my capacity as a person contributing to a definite goal of *nation building* I feel I have to play all these roles in a country such as ours They are all part of my whole being and there are no conflict between any of them

As an architect I am most concerned with the notion that architecture is 'culture forming' and that the buildings we build influence the users, thus influencing both society and the nation It is important that our buildings relate to the users' customs, climate, patterns, and images, for the creation of a new Malaysian architecture

MIMAR: In the past few years in Malaysia there appears to be much discussion on an identity for contemporary Malaysian architecture. What is your reaction to the attempt to create this identity?

Fawizah: Malaysia is rich in its cultural heritage and yet the models that our present architecture uses are totally alien We must ensure that our buildings are based on a Malaysian way of life. As you know, our country is made up of a number of ethnic and socio-cultural groups Each has its individuality but they are all Malaysian The Chinese, the Indians, and the Malays give this country a very rich architectural heritage. The language of architecture must absorb all vernaculars and lifestyles, including the Islamic heritage which is prominent in Malay culture, into the creation of contemporary architecture

I try to do this in my own buildings They do not realise the wholistic Malaysian idea fully as any solution is a result of the designer's and client's different views and models of architecture and its realisation I hope that I contribute in generating alternative and appropriate architectural forms that are created by understanding various levels of conscious and unconscious meanings in relation to the goals and aspirations of people, with the view to developing a united harmonious nation

MIMAR: Are you saying that the architectural models used in Malaysia at present are so alien to the indigenous cultures that these models, both intellectual and formalistic, cannot give rise to this new architectural identity?

"Architecture ... communicates to its users and observers an attitude to self-respect and self-being. The more developed and sophisticated our architecture, the more of an impact it will have on our nation."

Fawizah: Yes! I believe that an essentially Western thinking creates a code of practice which will not yield a truly Malaysian architecture I also believe that it is the role of education to change this As Dean, I believe that appropriate models must be generated in tune with Malaysian values and meanings. New approaches and a search for new knowledge is badly needed. I am trying to initiate this in our school For example, by the study of the rich Muslim philosophies, we could produce students who are not only well versed in the international-functional-modern architectural model but are also masters of their own architectural resources and heritage In this way we could develop an architectural identity for our country — and this I feel is terribly exciting

Architecture is a language which communicates to its users and observers an attitude to self-respect and self-being. The more developed and sophisticated our architecture, the more of an impact it will have on our nation

MIMAR: I can understand your emphasis on new directions for architectural education in Malaysia But aren't you going beyond the building profession in this? One cannot do everything and be everyone in the building industry today.

Fawizah: I believe that the starting point in nation building (which you can see is my chief preoccupation), can be from anywhere and from any discipline One cannot separate 'profession' from acting as a responsible human being; no more than I can separate 'woman' and 'architect' It is part of my philosophy, my truth, with many beginnings and endings. Architecture is not just the business of building buildings

There should be a consistent background and theory for creating buildings There really is no 'code of ethics' in building today — by this I am not referring to either professional practice or the law, but I am talking about an assimilation of indigeneous culture into building We are in fact creating a legislative code for such building in Malaysia This code will encourage appropriate building. We can start by instilling such sensitivities into our public buildings, and then perhaps private architects and clients will see new directions and possibilities and create environments with this viewpoint

MIMAR: Is it not dangerous to legislate a building philosophy? If Malay architecture is equated with stylistic interpretations, of say sloping roofs or Islamic domes, this could stifle architecture instead of having the desired effect Clients and governments always find it difficult to visualise legislation in three-dimensional terms, so when they commission or evaluate buildings they fall back on easily perceived visual symbols which are familiar to them

Fawizah: I don't really know why people are so afraid of trying to create directions for physical environments in a country There may be a danger of interpreting the laws in particular ways, but the rules are guidelines which must make clear to both clients and designers how they should be used This legislation will also help us to evaluate our own architecture, using our own rules, and from within our own cultural viewpoint I see all this as a challenge and am determined to arrive at an architecture that would be truly Malaysian in nature and character

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Lina Bo Bardi

Lina Bo Bardi is an expatriate Italian architect whose devotion to Brazil where she has been for 35 years, suggests that the so-called exodus from developing nations to the rich industrialised countries sometimes operates in the opposite direction Her work briefly shown here testifies to her appreciation of Brazilian culture, its rural origins and multi-racial, urbanising population Arriving in a frontier country after the second world war, Mrs. Bardi has witnessed the frenetic growth of Brazil's economic capital of Sao Paulo, while striving herself to attain dual objectives to maintain standards of design excellence in a rapidly industrialising society, and to make Brazilians aware of their own rich heritage

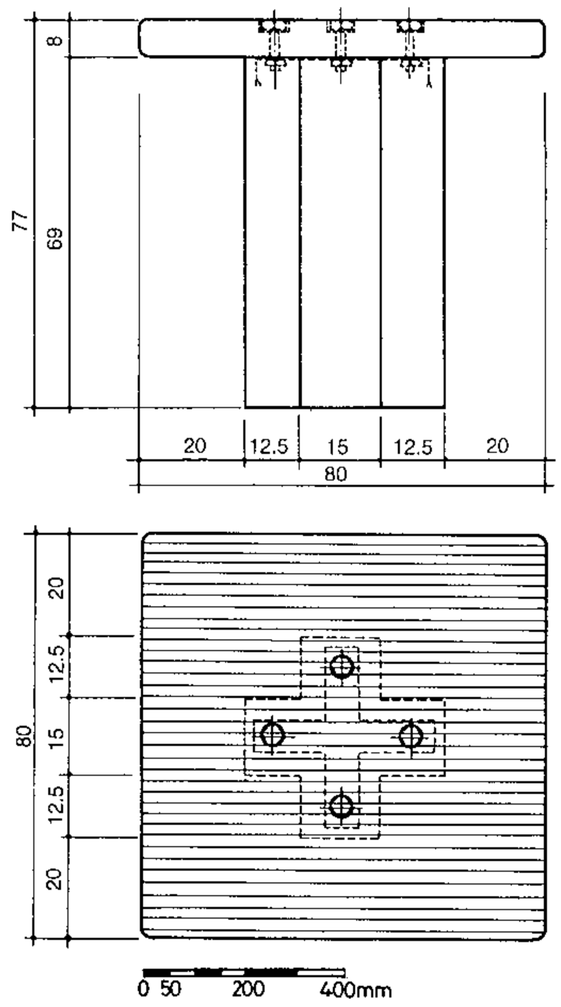
The Museum of Sao Paulo, Assis Chateaubriand, is an architectural tour-de-force, to be compared perhaps in its time to France's Pompidou Museum The building's 80-metre span carries a main exhibition space that is one open expanse wherein paintings from all periods of western art are to be found To visit this permanent collection is to take in almost the whole history of painting at a single glance But more disconcertingly, the objects lose something of their preciousity, their intimacy, their uniqueness as objects, precisely because they stand together on an open plane, without specific frames of reference. There is, on the other hand, a didactical presentation of the paintings through the use of detailed written descriptions on the back of each stand.

Mrs Bardi's astonishing presentation of indigenous Brazilian production, called "Hand of the Brazilian People" was shown briefly in the Museum's temporary galleries Pictures, never before published, illustrate a firm political stand in favour of making people aware of their pre-industrial heritage. Imagery and technology are powerfully displayed in a kind of popular marketplace atmosphere

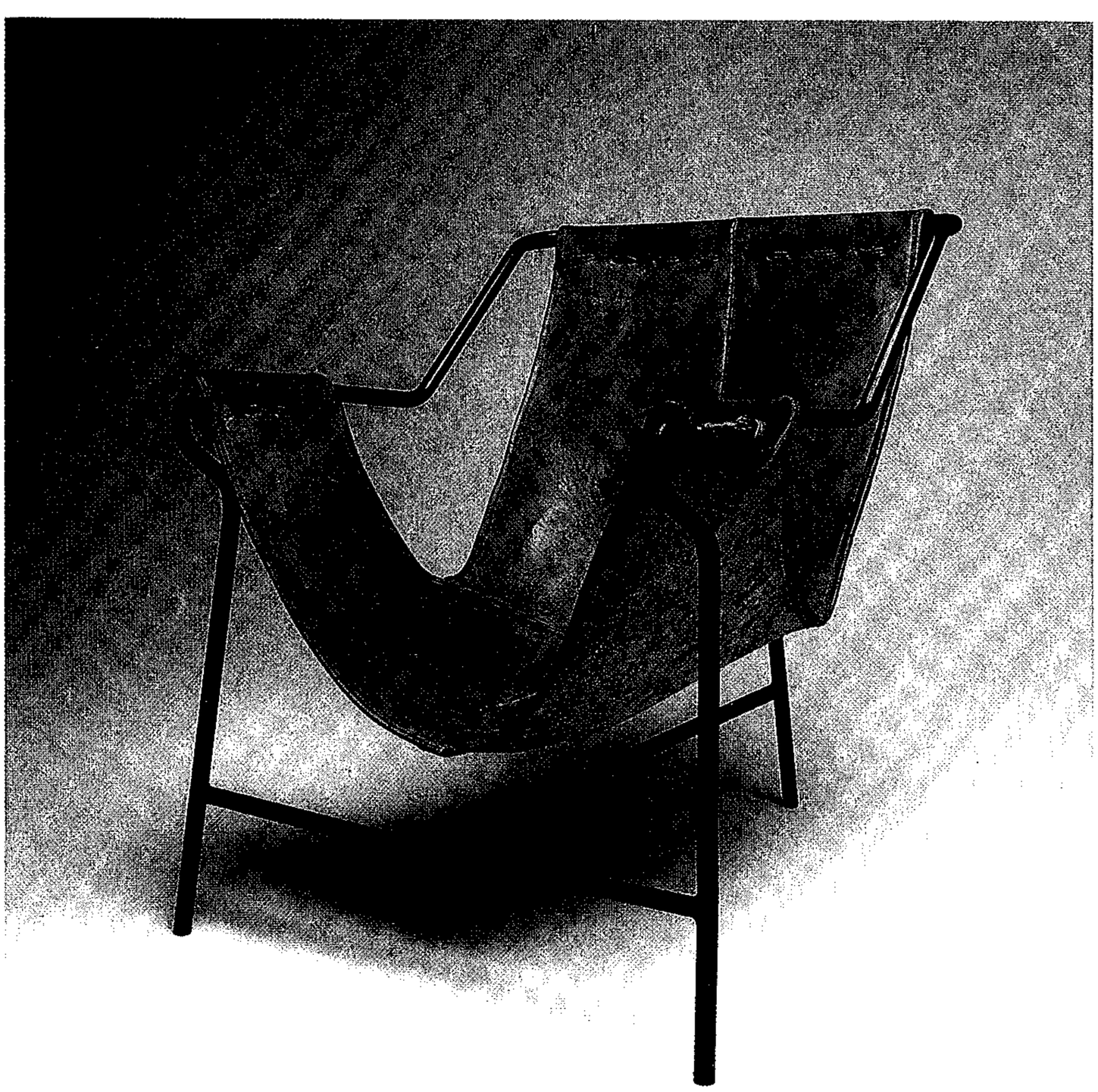
The Cultural and Sports Centre for workers of the S.E S C is again a plea against unwarranted demolition and in favour of creating new spaces, simple, rugged, yet tasteful, for receiving new functions within existing structures The factory sheds with their sloping roofs will harbour craft and recreation zones demarcated much as Aldo Van Eyck once did for exhibit on pavilions in Otterlo and the Milan Triannale Her new four-storey sports building and tower in prestressed concrete stand like 'Rossian' sentinals over the renovated factories In each of the projects one senses an idealism that will not waver in the face of pressures brought on by increased capitalist speculation and imported consumer tastes

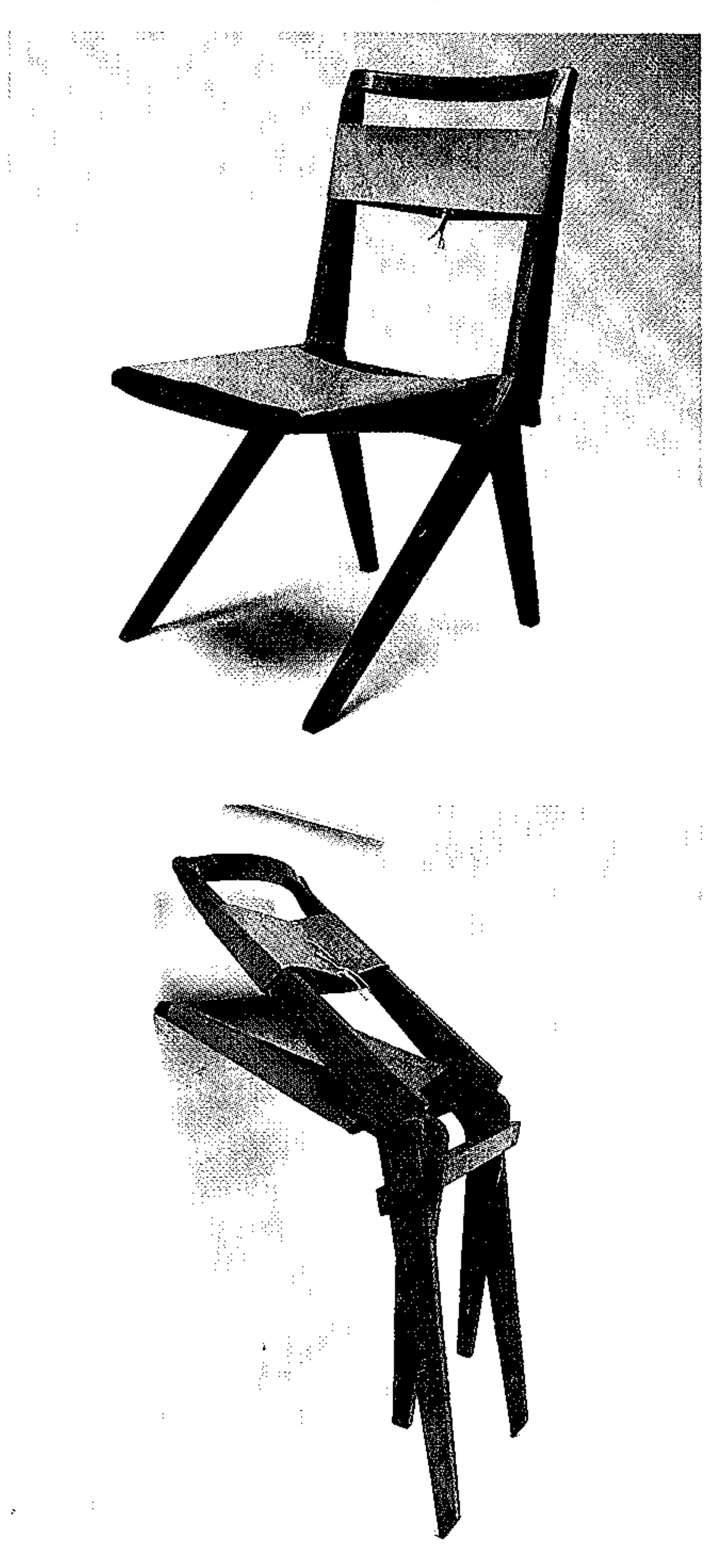
Appreciation based upon conversations with Mr. David Bigelman, Cuban architect in Paris.

Photographs courtesy of Lina Bo Bardi



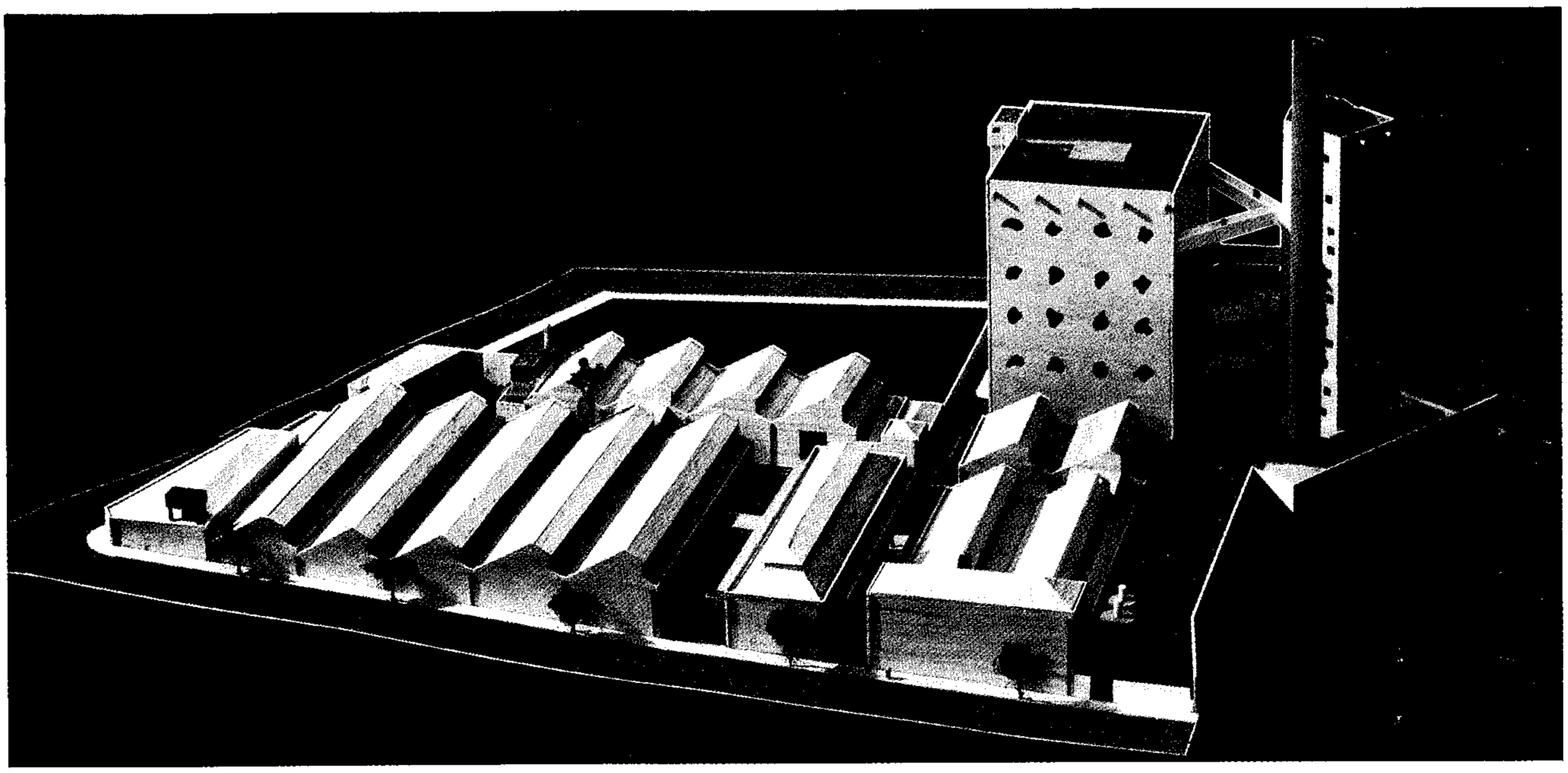
Left Study of a table intended for industrial production, in wood (1981)
Above: Working drawings of table
Below, far left and left Two versions of a three-legged chair One of Brazilian rosewood and canvas, the other of steel and leather (1948).
Below. Folding chairs (1947) Later used in the Auditorium of the Museum of Sao Paulo.





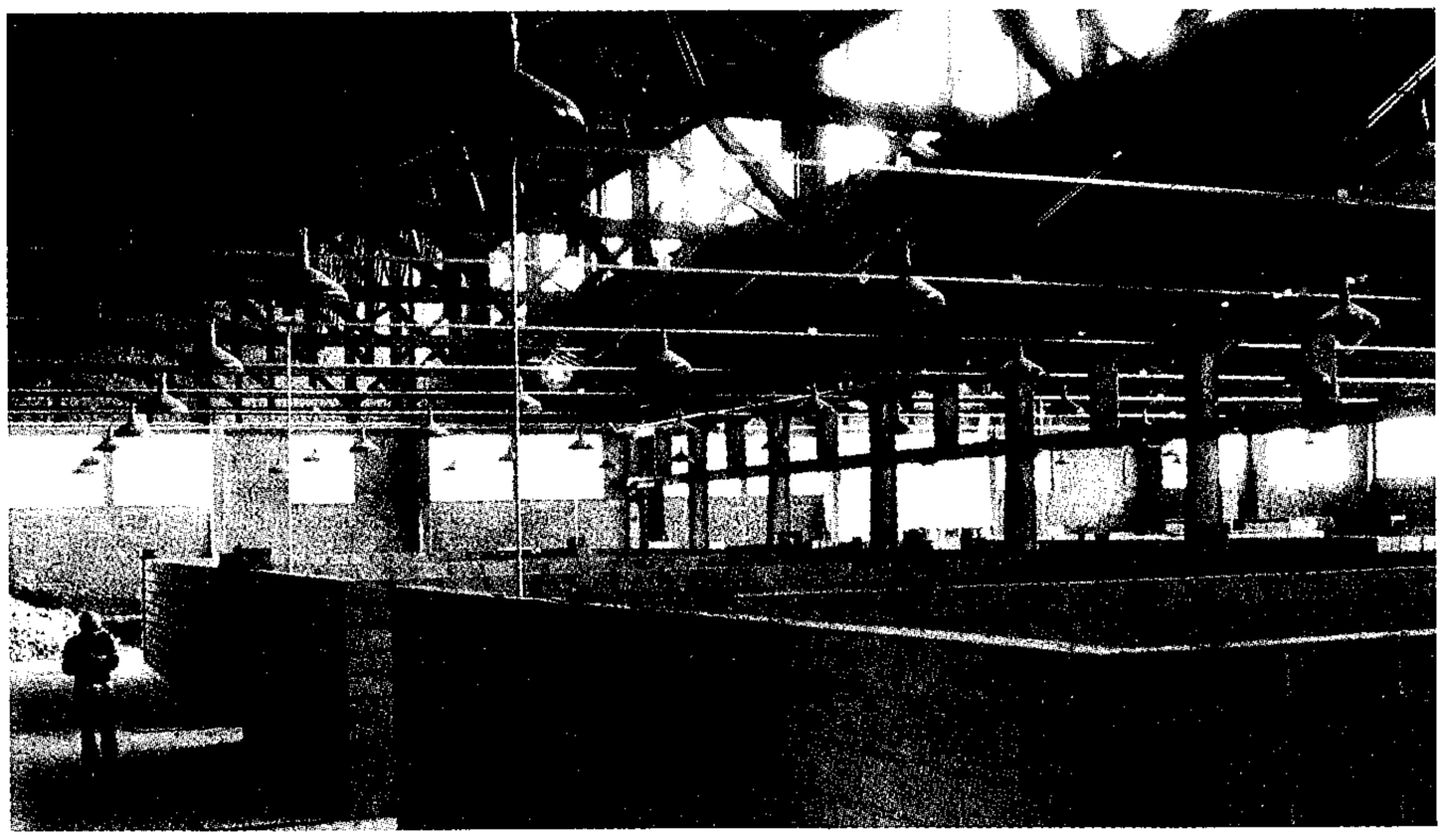
Lina Bo Bardi

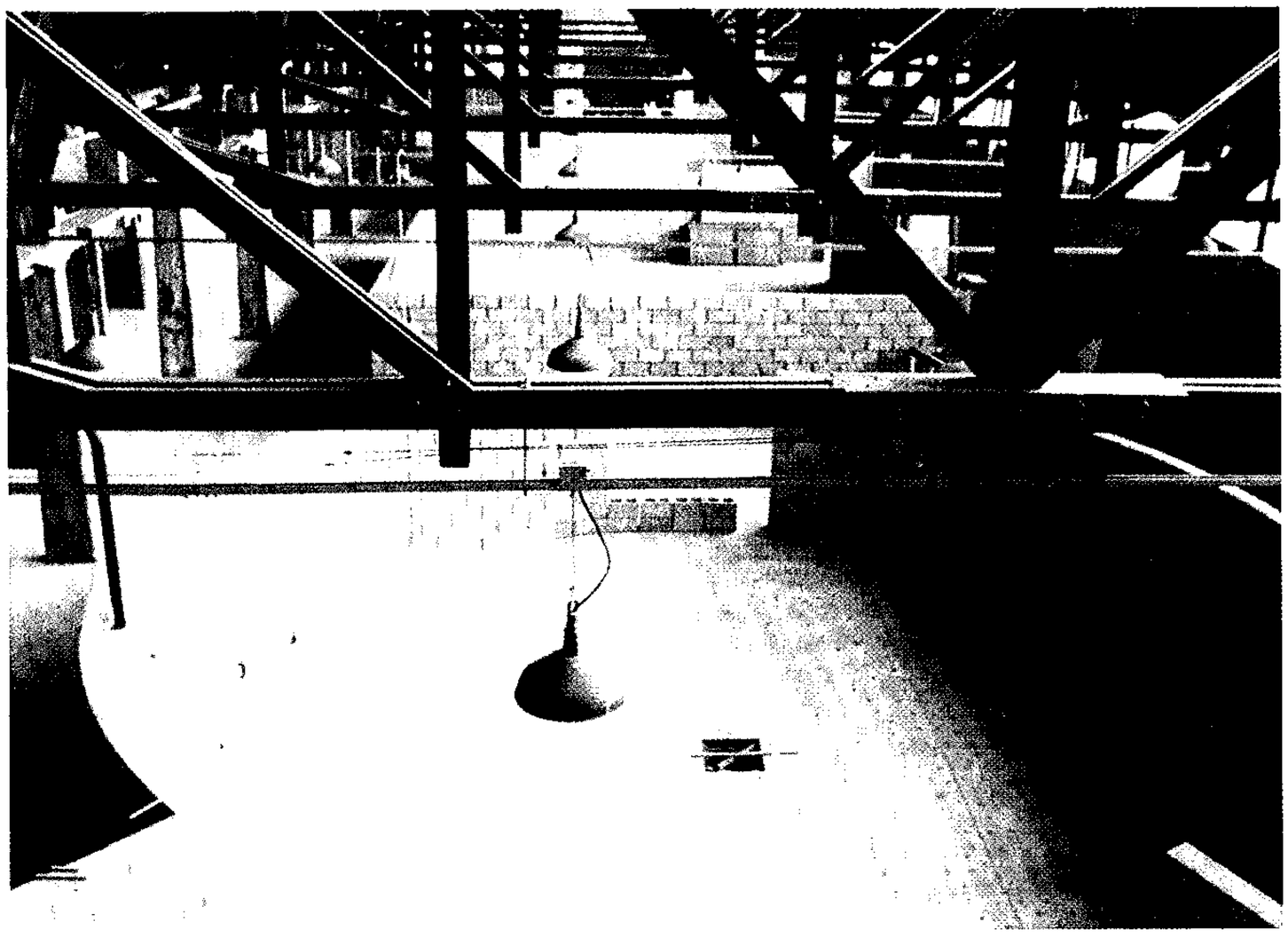
Cultural & Sports Centre, Sao Paulo

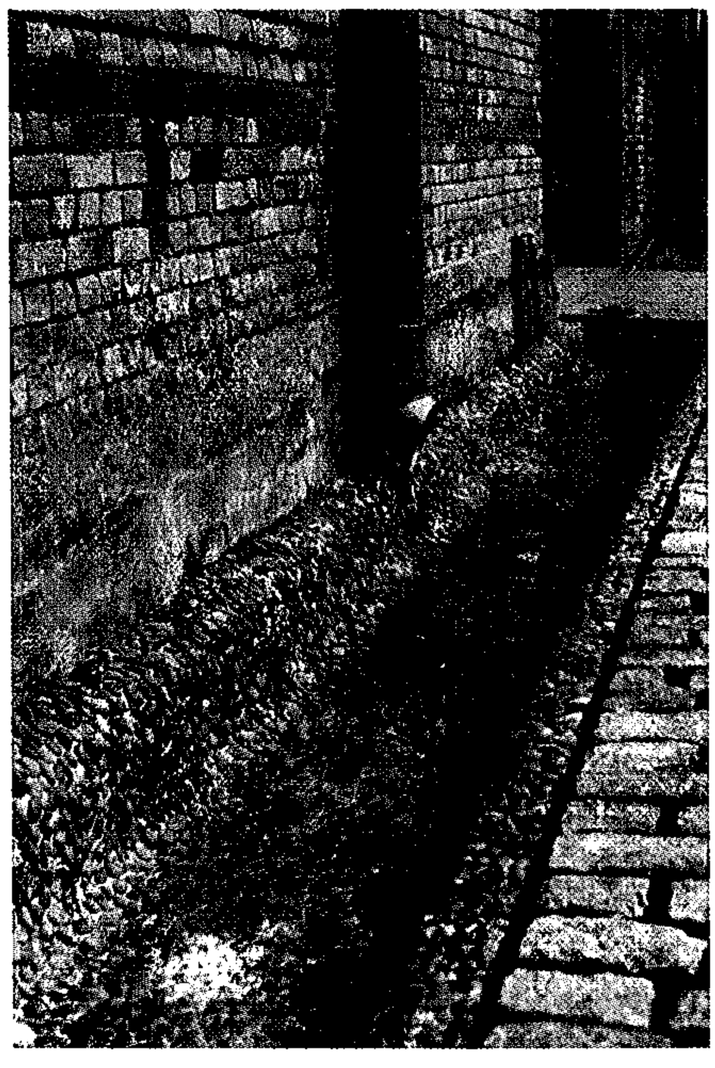


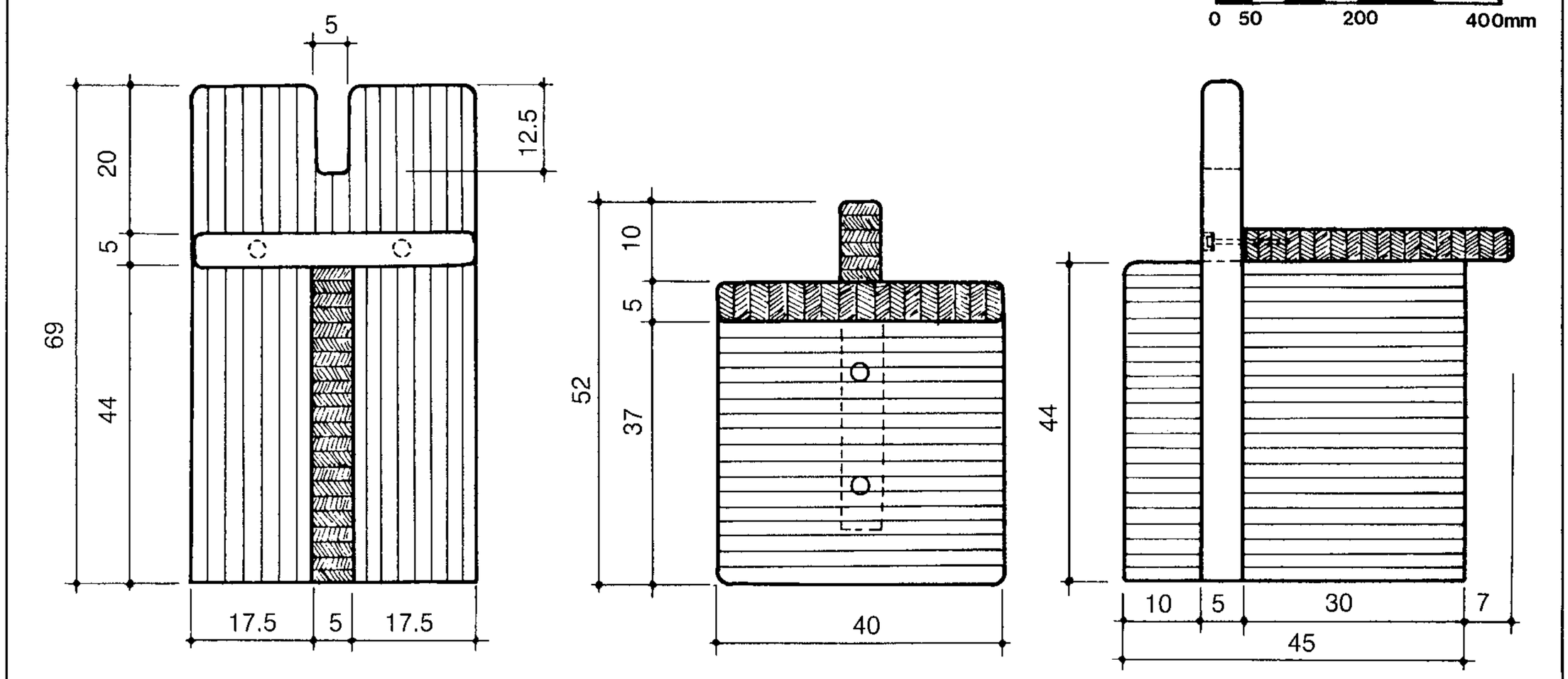
Cultural and Sports Centre, S.E.S.C., Sao Paulo, Brazil (1981).

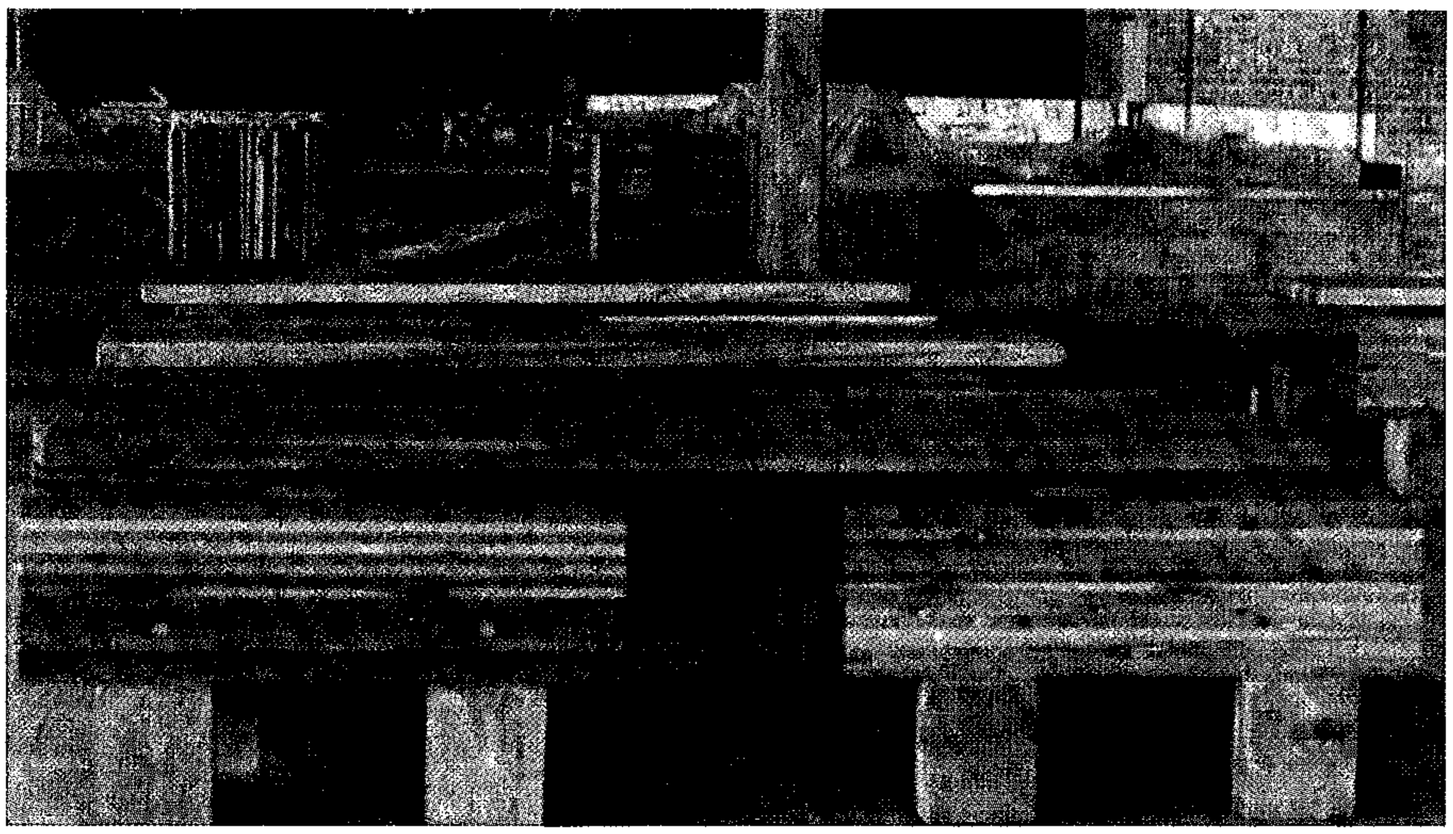
Above: Model — general view of the "Pompeia" factory of the S.E.S.C.Old factory pavilions, tower with sports centre in pre-stressed concrete. Ramps link sports unit with locker tower.
Right: The workshops — engraving, ceramics, weaving, drawing, etc Spaces are created with concrete blocks.
Below: The workshops — view from above.
Below, right: Main street of the factory, and renovation phase. Detail of drainage system.



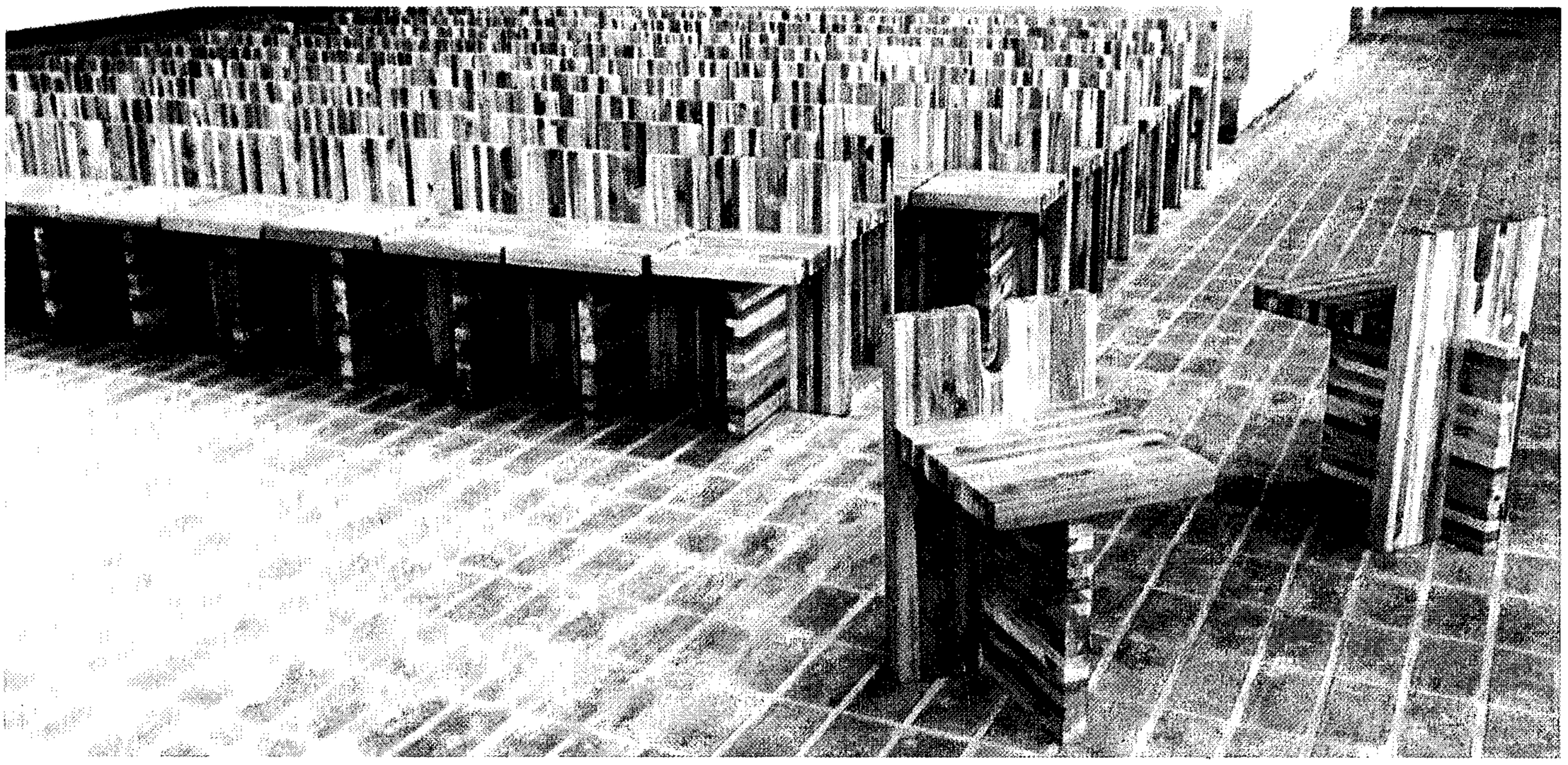








Above: Working drawings of restaurant chairs.
Left: View of the restaurant
Below: Restaurant chairs.

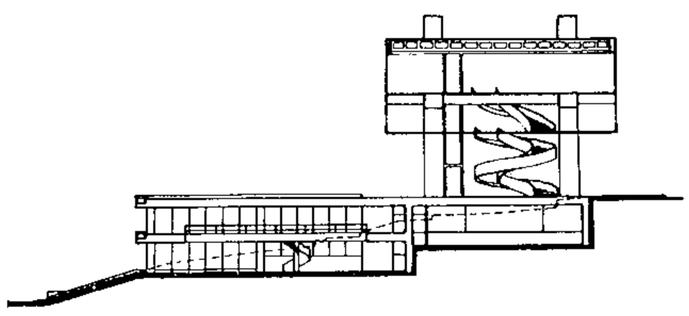


Lina Bo Bardi

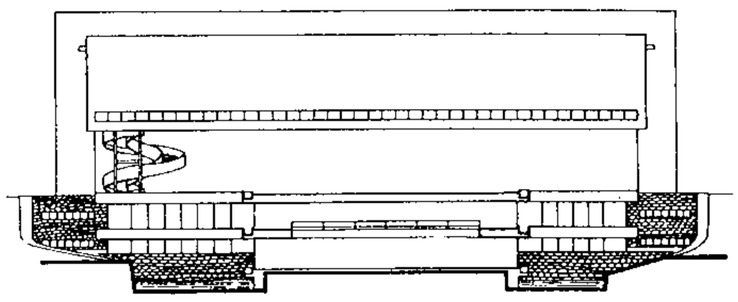
Museum of Art, Sao Paulo

Museum of Art, "Assis Chateaubriand", Sao Paulo, Brazil (1968).
The museum concentrates its exhibits on furniture, objects, utensils, clothes, sacred images and primitive machines of Brazil It illustrates the work of a whole civilisation which is marginal to industrialisation.

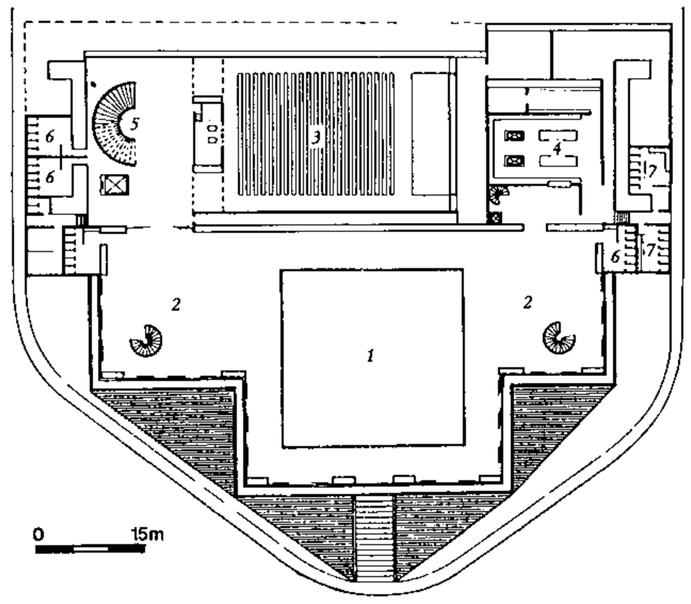
Left: View of the museum from the Avenida Paulista
Left, bottom· General view of the exhibition "Hand of the Brazilian People", shown in the museum's lower galleries in 1969. The mounting of the objects was not inspired by the usual museographic models but from popular markets and fairs Below· Detail of the presentation of the museum's permanent painting collection The old next to the modern, exhibited together in a single space on glass supports Behind each painting is a technical description



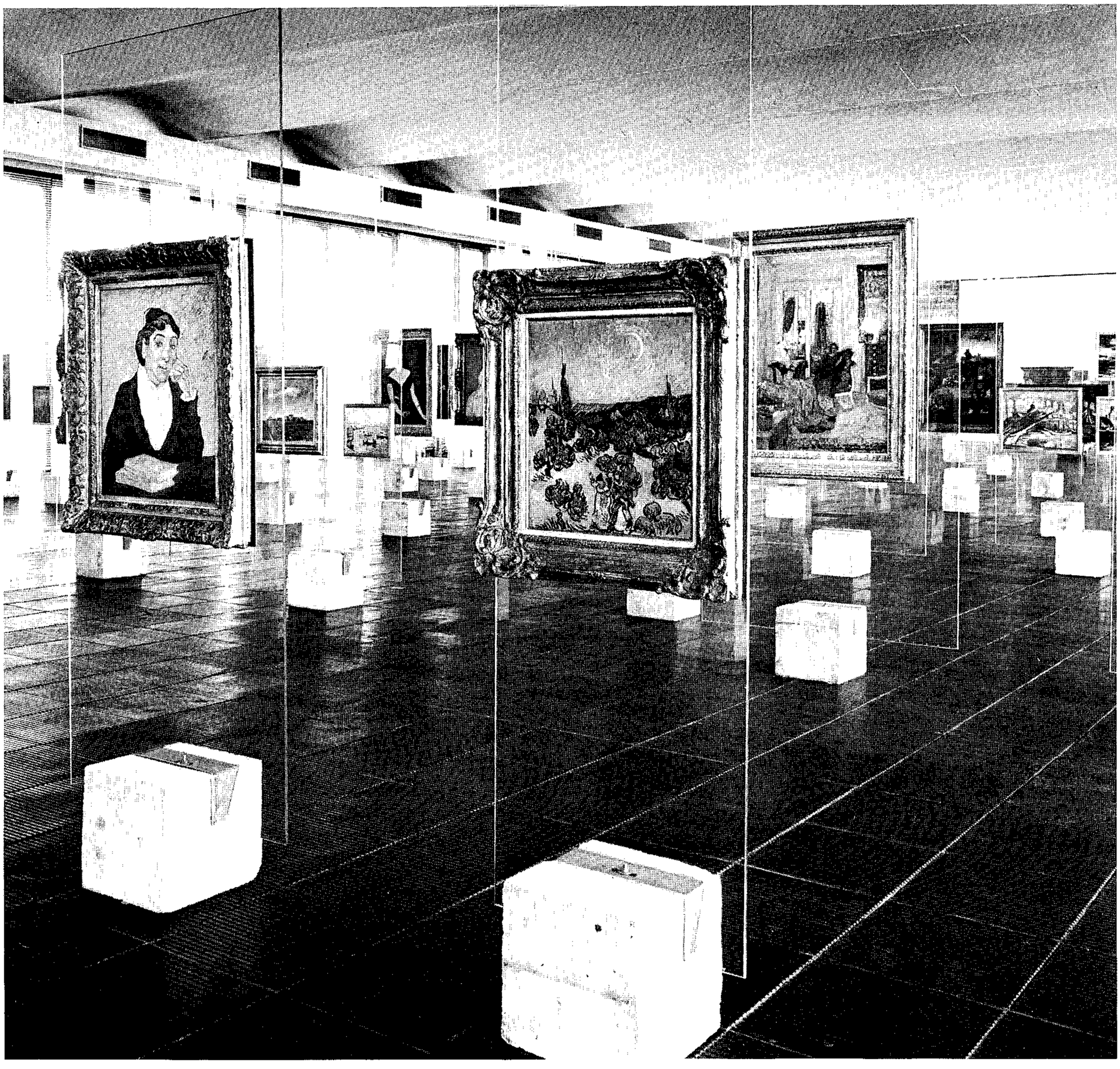
Transversal section



Longitudinal section

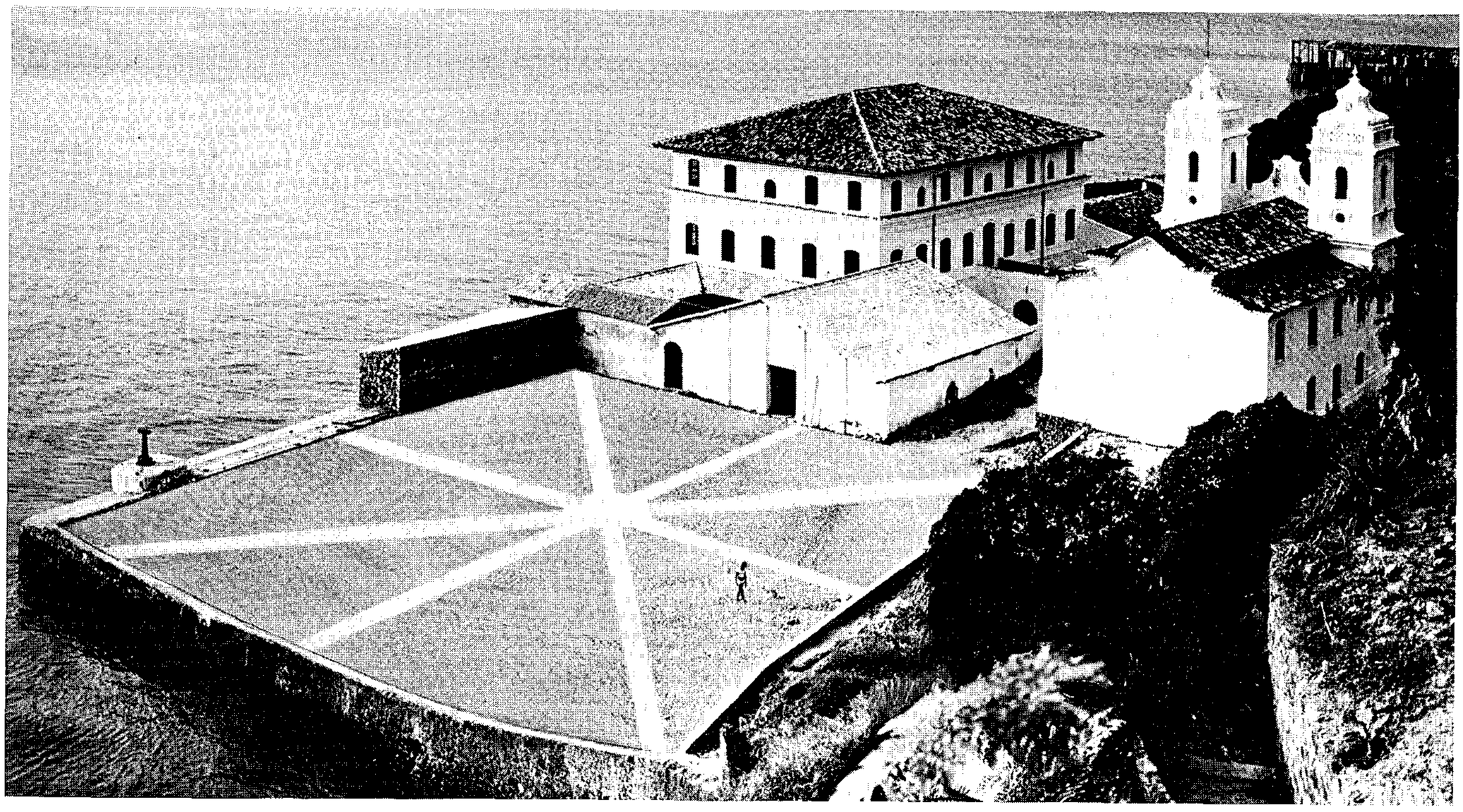


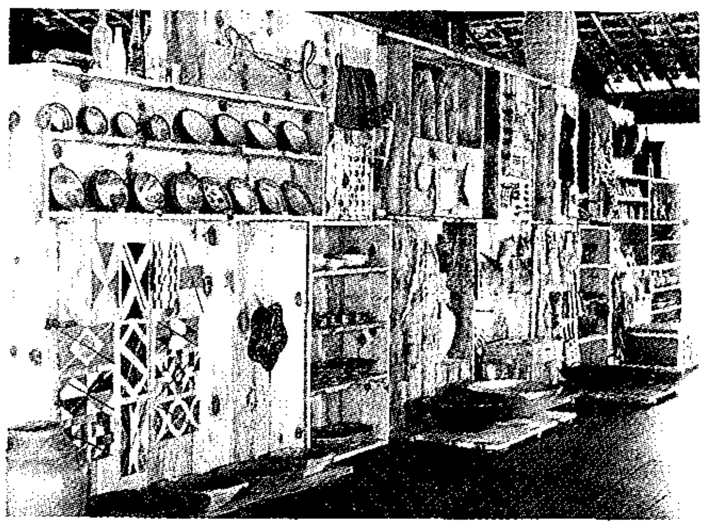
Second level plan
1 *Open space above salon (living room)*
2 *Restaurant*
3. *Auditorium*
4. *Kitchen*
5. *Hall*
6. *Toilet*
7. *Coatroom*

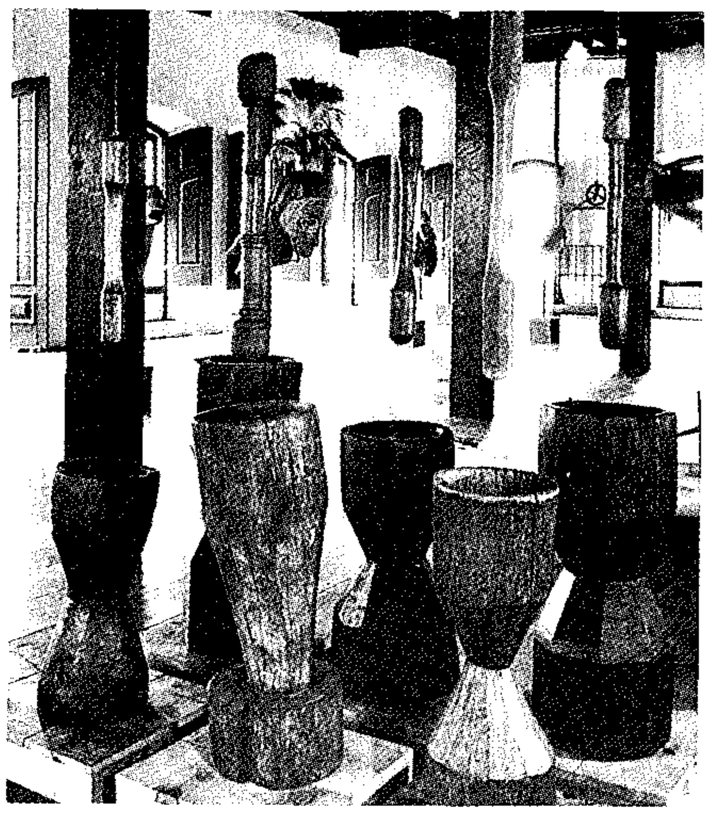


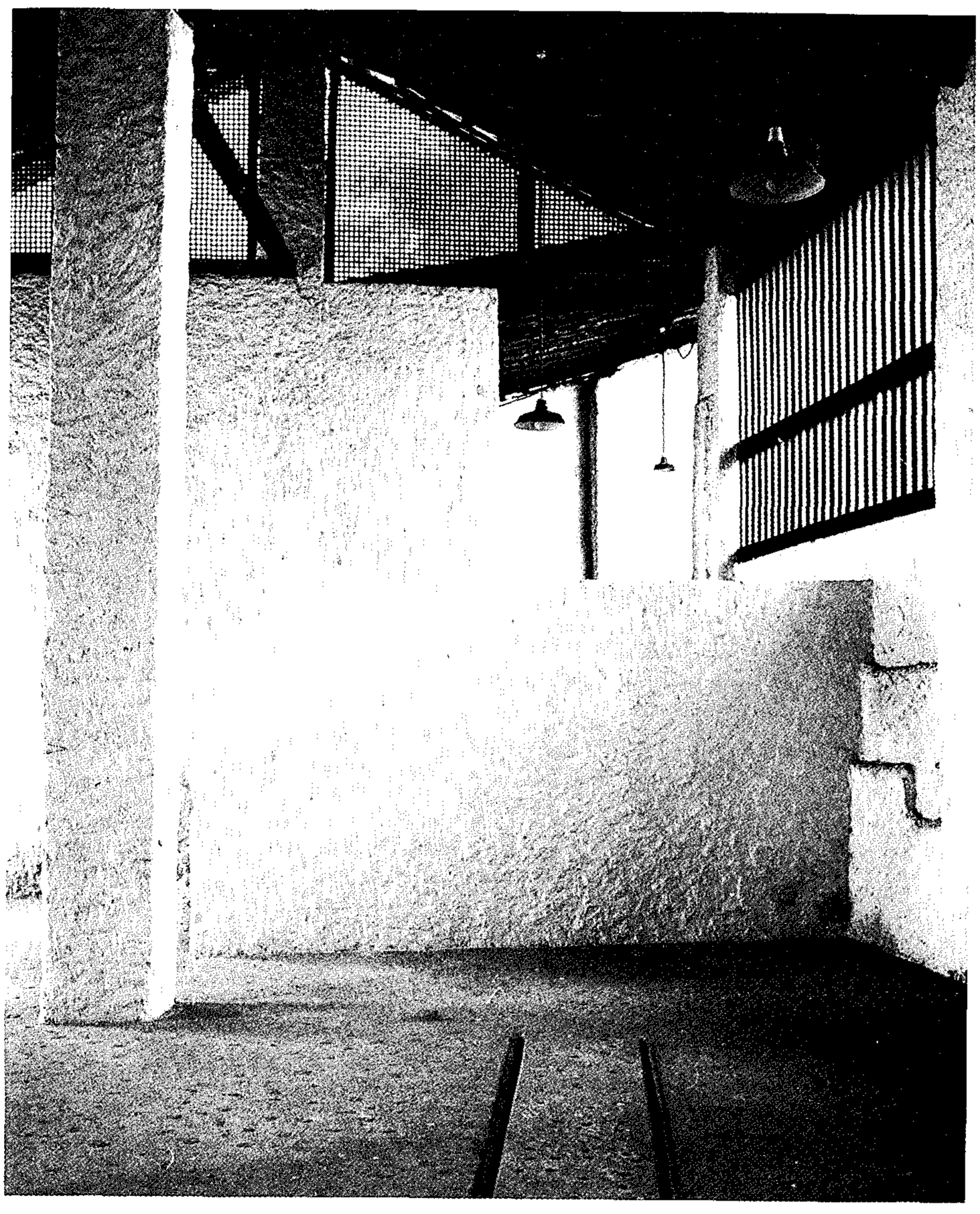
Lina Bo Bardi

Building Complex, Unhão

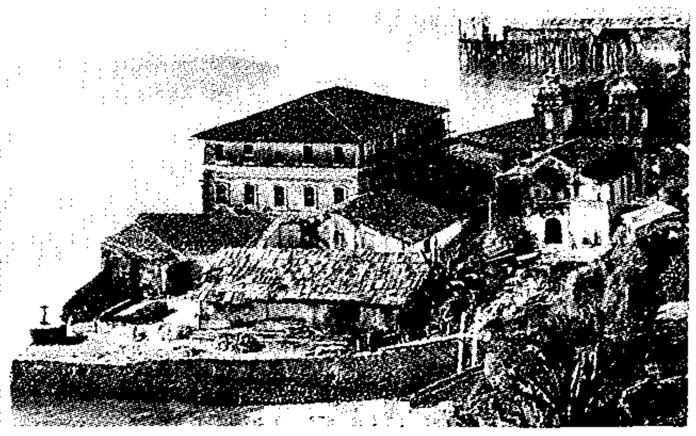


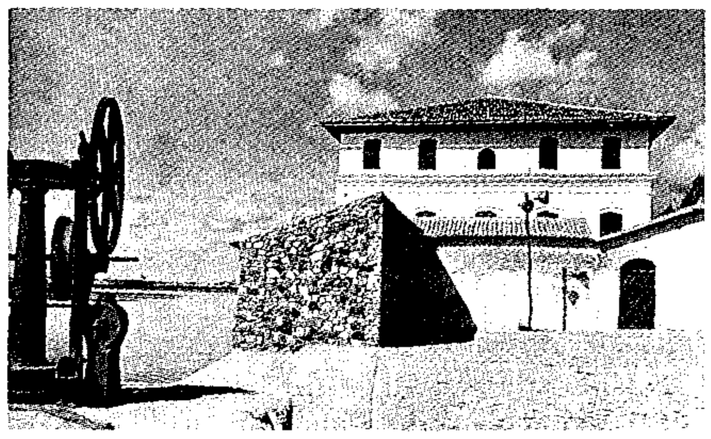






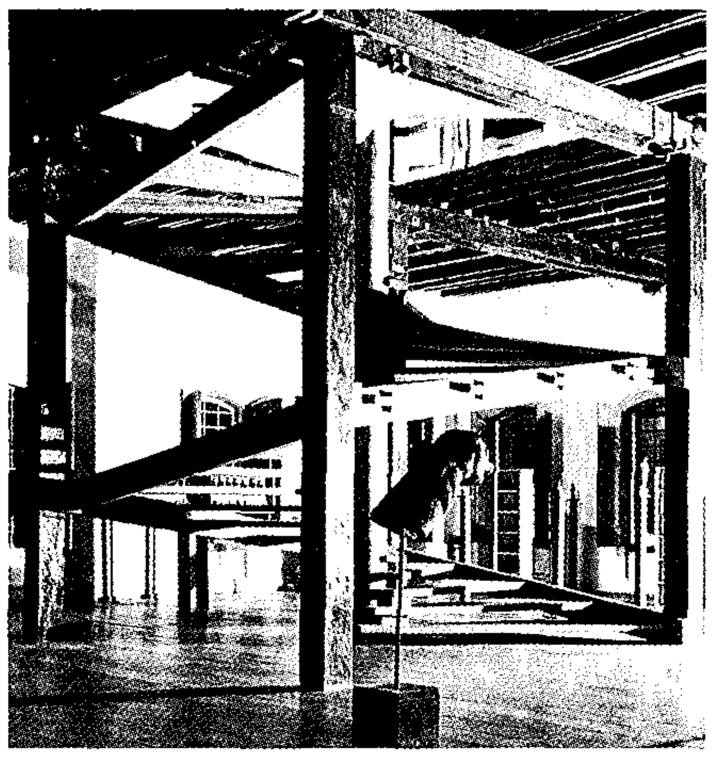
Above Exhibition of typical pestles and mortars from northeastern Brazil.
Top Detail of the exhibition entitled "Artists of the North East" at the time the museum was inaugurated in 1963 Objects of daily use toys, clothes, utensils, instruments, etc. (Photographs of this exhibition have never been published. Mrs Bardi was kind enough to provide them to MIMAR)

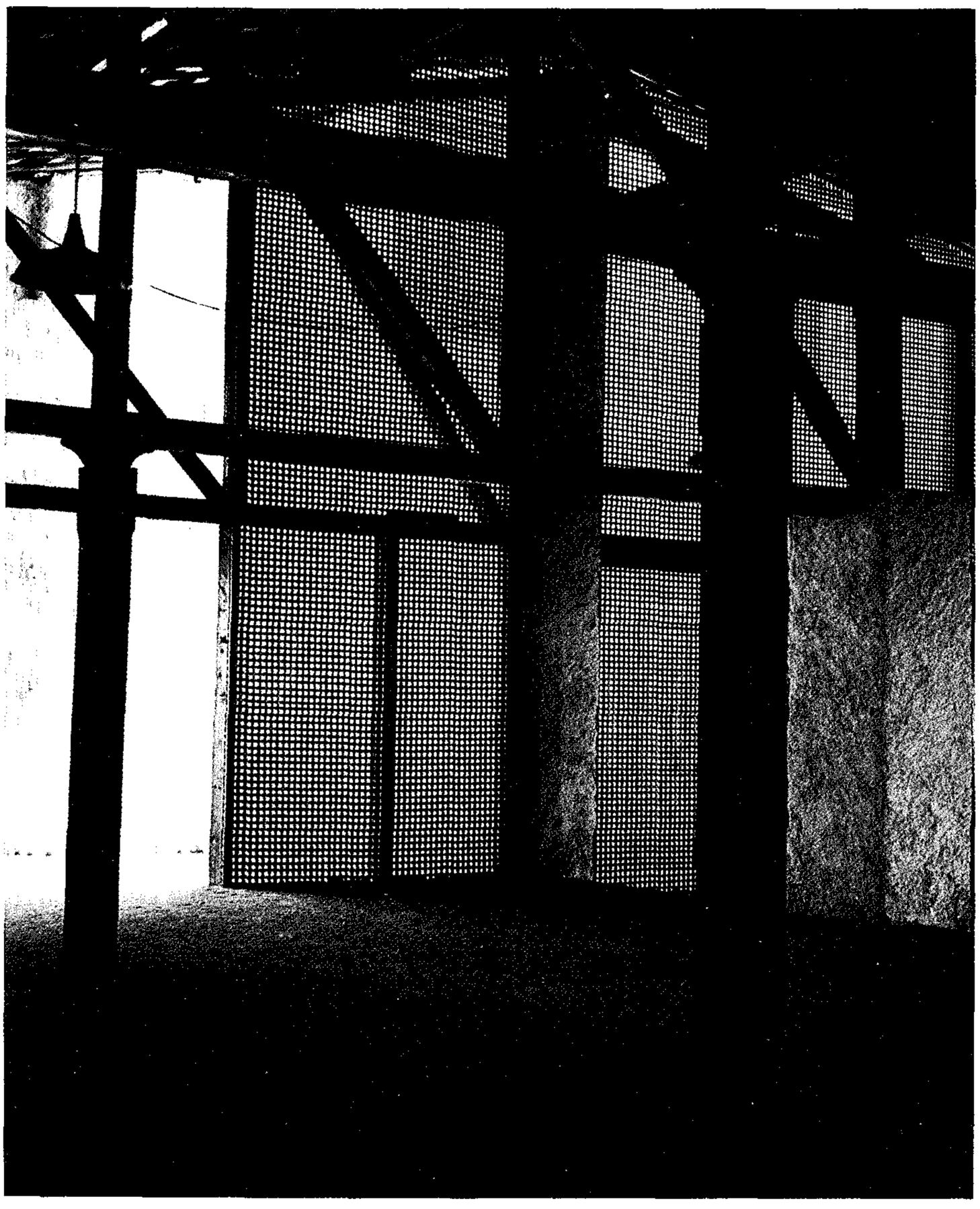




Renovation and transformation of industrial structures into a museum, Unhão (1963).

Above: Building complex, Unhão, before renovation
Left Building complex after renovation, 1963
Above, right. Detail of main building and plaza facing the sea
Right. The stairs of the central hall, of yellow Ipe wood, leans on old Brazilian rosewood
Below and below, left Details of the 19th century industrial pavilions Interior views The Decauville wooden trusses were preserved. The floor is concrete with small pebbles and shells Walls are rough stuccoed and the grillwork is of Ipe wood





Women in Design

MIMAR is concerned with the professional capabilities of women and men who are trying to guage standards of good design. To raise questions about the role of women as professionals, be it in architecture and design or in any other field, is to segregate them, to set them apart. Most of those I have talked to, except the most militant feminists, in fact object to being made the focus of special studies, as though they were some kind of curious beast. The main issue we all have to face is that of women's role in the system of production, *whatever that system may be,* across the spectrum of developing societies.

From an ideological point of view, a certain number of social, economic, and religious constraints have historically governed women's insertion (or lack thereof) in the productive system. Certain norms determined their movements in public, inhibiting them from participation in activities outside the home This is still the case in many Hindu and Muslim societies, where for example *purdah* (or woman's so-called 'public invisability') still prevails

The domestic orientation of women, even if they were allowed or required to work in the fields, made it subsequently easier for male-dominated societies to relegate women to marginal or unstable types of work as division of labour became more complex. Prevailing moral codes, legal systems that govern property and inheritance, and economic requirements of family-based production structure society in such a way that women have relatively few opportunities to employ their economic power individually or collectively (as women)

The expectation in most developing societies of the third world is that women will ultimately return to take their normal place in the home even if they have been fortunate enough to have had parents willing to pay for a higher education. Architectural graduates in most such societies have proved to be no exception Often women graduates will work in an architectural office right after school and then abandon their position upon marriage

S E.S C Complex, Sao Paulo, Brazil. Factory renovation into cultural centre and water tower for sports centre under construction. Lina Bo Bardi, architect.

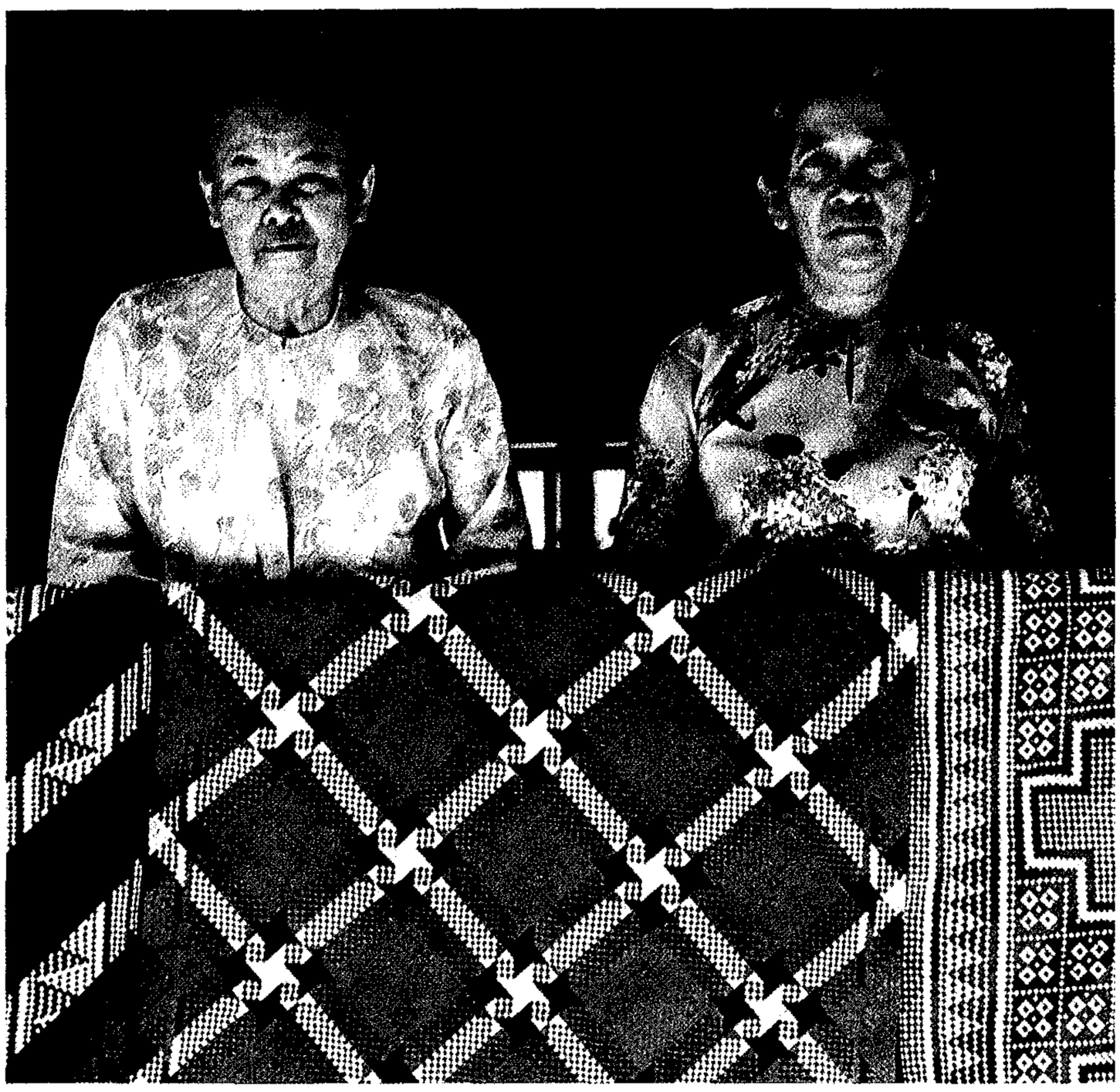
It is worth noting that in certain realms of design which were customarily in the hands of men, women have over recent decades demonstrated particular capabilities: for example in domestic and interior design in general These, one could hypothesise, are briefs whose direct relationship to family life call forth specific female aptitudes. This argument does not imply the inverse, that women are inept at other tasks. On the contrary. Apart from the fact that existing social systems continue to ensure that males predominate as clients for instance, there is no reason why females should not also be regularly entrusted with complex projects such as high-rise buildings, hospitals, banks or religious institutions

Our examples selected for MIMAR 2 are presented not so much because they were done by women architect-builders, but because they represent a breadth and coherence of approach to the problems confronted in their given context (Pakistan, Brazil, etc): Bardi's commitment to preservation, readaptation of old structures to new functions (eg. Museum in Unhao or the Cultural Centre in Sao Paulo), and to integration of modern materials into older, existing frameworks is exemplary. Yasmeen Lari, in her Angoori Bagh housing, Lahore, and Lines Development in Karachi illustrates some these same culturalist values, at the same time she deals with the complex yet urgent issue of providing housing for the poor.

Comparing the architects' work is neither haphazard nor gratuitous, nor is it intended to segregate them into a 'feminine ghetto'. Bardi encourages, by her furniture designs, the development of the laminated wood industry (much as Aalto once did in Finland) in a society probably eager for more "modern" materials like chrome and plastic Lari has built an officers' mess in mud-brick, quite a feat when you consider that the client was the military. Their works stand as personal (or team, in some cases) statements, whose sensitivity reflects conscious interchanges between tradition and modernity.

Brian Brace Taylor

Zainab: Maker of Screw-Pine Mats



Above: Zainab and Fatimah with their pandan floor mats
Opposite: Stripping thorns from a mengkuang leaf

The wild screw-pine shrub, with its brilliant orange fruit and narrow leaves, has for centuries marked a natural border between land and beach along the sandy coast of South Trengganu, while its dissimilar twin, with broader, longer leaves which may measure fifteen feet, grew a short distance inland, on the edge of fishing villages and rice fields.

Botanists group both plants under a single Latin name, *Pandanus Tectoris* Trengganu Malays call the narrow, softer leaved shrub *pandan* and the longer, coarse leaved variety *mengkuang*.

These leaves, which can be found throughout the tropics, from Mauritius and Malaysia to the islands of Polynesia, possess a built-in defence against grazing animals They are provided with strong spikes along the midriff, curved forward in one direction, and backward in another, and though they are not normally edible by man they have a number of other uses, notably for the making of plaited floor mats.

Sixty-five years ago when Zainab binti Mat Daham was born at Paka, every woman and girl in her village spent part of every day plaiting floor mats from either *pandan* or *mengkuang*. Before Zainab was old enough to be married she wove the finest and the most decorative mats in the neighbourhood

It was a coincidence that a young British official, seconded for administrative service in South Trengganu, visited Paka forty-five years ago, when she was twenty, and stopped at her father's house to ask for a drink of coconut water. The house stood beside a sandy foot track — the only overland route leading to the state capital seventy miles further north

It was a coincidence that a *pandan* mat which Zainab had just completed was lying rolled up on the verandah where visitors were entertained.

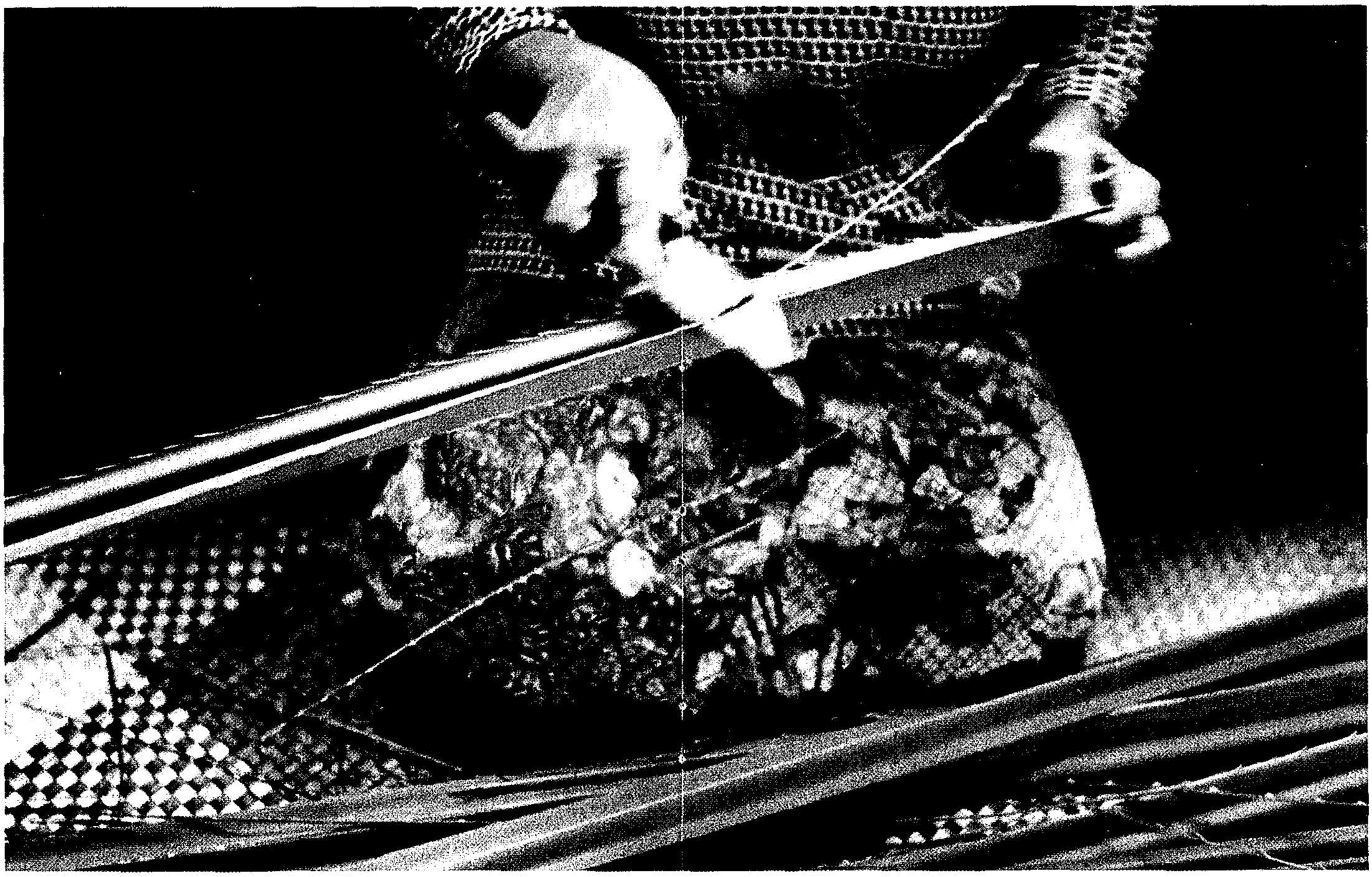
It was a coincidence that the young official was looking for handicrafts to send to an exhibition in Kuala Lumpur. While a *macacus* monkey climbed a sixty-foot palm tree and plucked a fresh green coconut, two of Zainab's mats were inspected, recognised to be of a quality unknown on the West Coast, and purchased A few weeks later one of these mats won the first prize at the Malayan Agri-Horticultural Exhibition, and her reputation was established

In the years that followed, Zainab continued to win the first prize for mats until the competition was discontinued in the 1960's.

The method of mat making has not changed in her lifetime.

When Zainab wishes to begin work on a new mat she goes to the edge of the beach and cuts several hundred long narrow leaves as close as possible to the main stem of a number of *pandan* plants. This may take some time because the plants are not nearly so numerous as they were when she was a girl. Returning to her house she removes the thorny midriff from each leaf This she used to do with a single strong strand of coconut fibre, held taut and pulled the length of the leaf, but now she slices off the torns with a knife While doing so she splits the leaf lengthwise into two halves and then cuts them into narrow strips about one-eighth of an inch wide. The cutting is done with a small implement called *jangka* fitted with two, four, or even ten knife blades, half an inch long, set in a short wooden or bamboo holder. The distance between the blades determines the width of the strips of *pandan* or *mengkuang* The latter are cut wider.

The *pandan* leaves are still stiff, even after they are cut into lengths; to make them supple the narrow strips are pulled several times from end to end over the rounded handle of the *jangka*. They are then placed in a tank of water to soak for two days, to banish any substance which might attract ants or other insects The water is changed each morning. The strips are then spread out in the sun to dry; they must be bleached white before they can be dyed.



Zainab has always paid particular attention to the dyeing process. Vegetable dyes have long since ceased to be available, and she has used the best chemical dyes ever since the young official ordered them for her from Singapore forty-five years ago She does not blend the colours, but uses red, blue, green, yellow, black, and brown, with red predominating. For each colour, she dyes about two hundred strips of *pandan* at a time The dye is stirred into boiling water and the strips are immersed for an hour. Another colour is then put into fresh boiling water, after which the coloured *pandan* strips are spread out to dry for about twenty-four hours, but they must not be exposed to direct sunlight

Mats are not woven on frames or looms, they are plaited, and Zainab sits on her plank floor surrounded by little heaps of dry, dyed lengths of screw-pine She starts at the centre of the mat The warp and the woof are not parallel with the sides of the mat as in silk weaving, but run at an angle of forty-five degrees Strips of *pandan* are usually about four feet long; *mengkuang* strips may extend to ten feet

The length of the strip which she is using governs the width of the mat, and four-foot strips of *pandan* will only provide a mat thirty-two inches wide The remainder is used for tucking in the ends to provide a strong, neat edge Ten-foot lengths of *mengkuang* strips will produce a mat six feet ten inches wide.

The patterns which are used to decorate *pandan* mats are much more elaborate and attractive than those usually to be seen in *mengkuang* mats There are special Malay words for the patterns which are woven into *pandan* and *mengkuang* Zainab did not inherit her talent from her mother but she was consumed, as a girl, with a determination to learn how to weave the intricate *pandan* designs, which were called *kelarai,* and at the height of her skill she could make forty different patterns Designs used for *mengkuang* mats are much simpler and are called *ragi* in Malay They are checkerboard patterns in which several colours may be used, but always to create squares, rectangles, or diagonal bands

In Zainab's youth *mengkuang* was the cinderella of the screw-pine family: it was used for making mats, but only the coarse, thick, undyed variety Wild, seashore *pandan* supplied the finest mats, and scented *pandan (pandan wangi)* with narrow leaves thirty inches long was chopped into small pieces and mixed with flower petals to make Malay potpourri for use at weddings. This leaf was often cultivated in villages But in recent years the status and the use of *mengkuang* have changed Wild *pandan* has become scarce, while *mengkuang,* on the other hand, has become domesticated: shoots from large wild clumps have been planted on village waste-land and texture has greatly improved in its new environment As a result *mengkuang* is now cut into thinner strips and dyed to make soft, brightly coloured floor mats which have the advantage of greater width and length over a *pandan* mat

Left. Plaiting a mengkuang floor mat

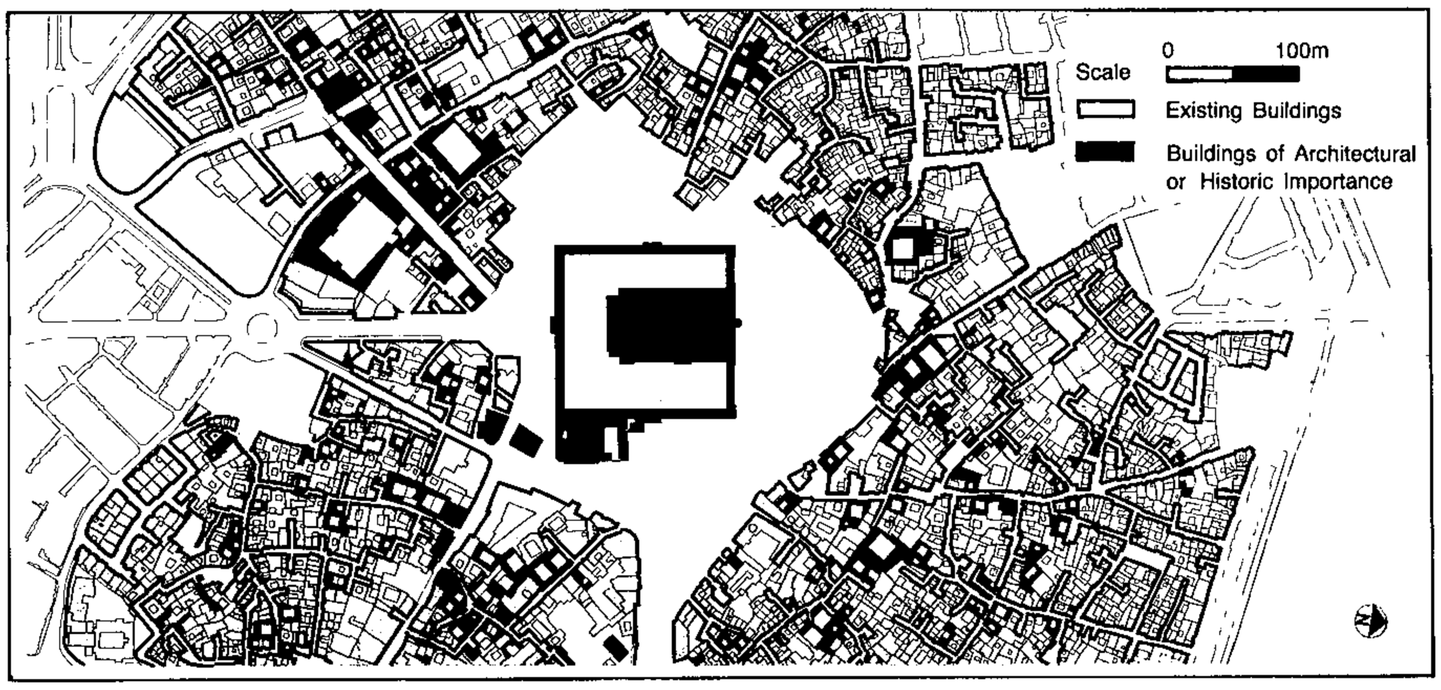
Acknowledgement: "Zainab: Maker of Screw-Pine Mats" was extracted from the book "Living Crafts of Malaysia" written by Tan Sri Dato Mubin Sheppard. Photographs. Harri Peccinotti The editors thank Mobil Oil Malaysia Sendirian Berhad for granting permission to reproduce this article

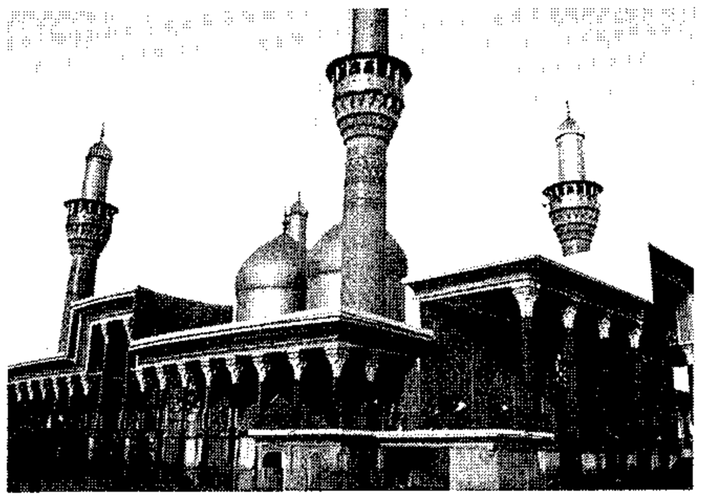
Baghdad: Redevelopment of Al-Kadhimiyeh

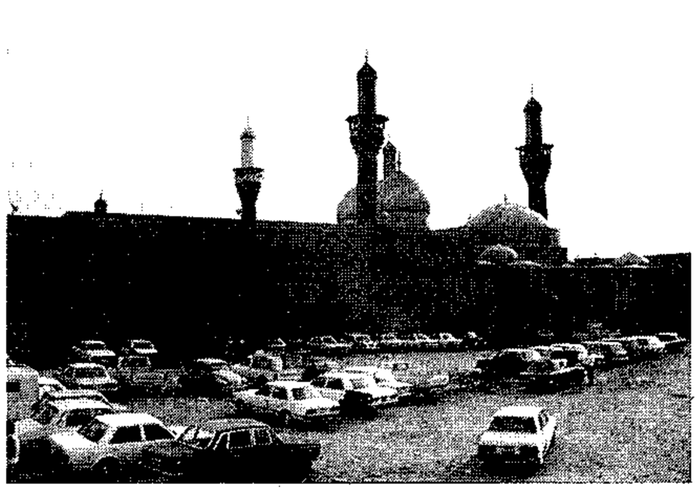
Al-Kadhimiyeh is virtually a complete small town on the fringe of Baghdad, which has absorbed many of the destructive commercial pressures. Two events in recent times have disturbed this area: the cutting of two major roads radially towards the Shrine and the demolition of those buildings which were once built up to the Shrine on all sides Both events were unsympathetic to the urban character of the place. The present problem is to re-establish the integrity of the area as an urban complex, providing adequate facilities for servicing, and scope for growth in prosperity. Kadhimiyeh remains one of the finest examples of a complete small concentric Islamic town, and hence its conservation and redevelopment are of importance.

Earlier this year the planners, an association of 'The Architectural and Planning Partnership' of the United Kingdom, and Mahmood al-Ali and Partners of Iraq, produced a number of recommendations to the government. The following is a summary of their approach.

1. To make a conservation policy meaningful and effective in the long term it is essential that there be self-supporting economic activity We recommend a mixture of uses in the immediate environs of the mosque: housing, shopping, small trading and manufacturing, professional offices, social activities, moderately-sized hotels and places where street trading can be carried on
2. A fundamental objective of this work is the conservation of the historic buildings of the area Their integration into the new Medina is of crucial importance, and their arrangement and layout will dominate and determine the ultimate street pattern.
3 The street as a social meeting space is important. The narrow street has persisted in the Arab city because, with its modest opening to the sky, it remains relatively cool in summer Nevertheless the narrow street is unacceptable in terms of traffic engineering Equally it is unacceptable that the inhabitants should be denied the benefit of the motor car. Car parking spaces will be available within easy walking distance of all dwellings and areas of social or commercial activity.
4. To conserve and renovate is not, in itself, enough. Part of our proposals will be concerned with encouraging the local people to participate in the redevelopment by improving their properties and so to keep alive the spirit of the local community.
5. A strict planning control is necessary and







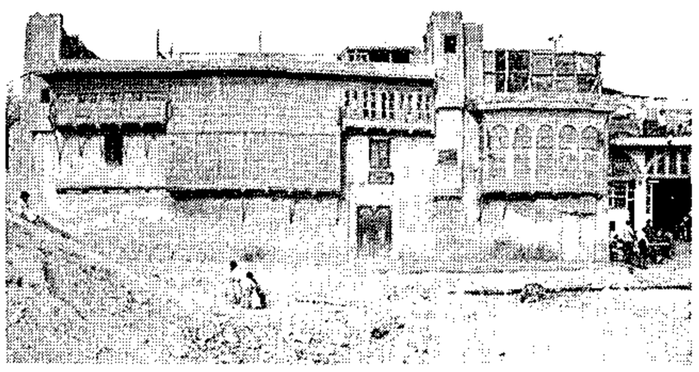
Top: Kadhimiyeh is basically a circular township covering some 60 hectares and of a radius of about half a kilometre. At its centre, the Mosque of Kadhimain dominates its dense urban fabric and influences its functional as well as its socio-religious composition. The area houses some 28,000 people with an average density of 500 inhabitants per hectare

The area around the Mosque has already been demolished The planners propose to rebuild back up to the mosque to try and recapture the spirit of tradition Plan. Courtesy of The Architectural and Planning Partnership.

Above: The Mosque of Kadhimain derives its name from the tomb of Imam Musa al-Kadhim (d. 799) a distinguished scholar and religious authority By the late Abbasid period the area evolved into a small walled township.

The Mosque is one of the most important monuments in Iraq Most of its present form and structure goes back to the early 16th Century when it was completely rebuilt. The complex is roughly a square area of about 140m sides. The outer 12m high wall is pierced by 10 portals and contains some 80 rooms The tomb building is 40 x 50 m, consisting of the inner sanctum surmounted by two gilded domes; and the outer flat-roofed colonnaded porticos. The corners are expressed by four 40m high minarets

Above. In the last thirty years new streets and new commercial development have penetrated into the area. The roads as well as the recent clearance of the areas immediately surrounding the Mosque, not only destroyed more than 9 hectares of some of the most architecturally interesting parts of the area's core, but also brought an inevitable array of modern multi-storey blocks that are unsightly and unsympathetic to the overall historic character of the town. Photo credits: H U. Khan.



One of the houses designated to be preserved, saved from the bulldozers just in time

rules must be legislated. The legislation will aim at encouraging local individual initiatives yet will also include clauses which will allow the City to intervene if necessary.

Update

At least the destruction has ceased The planning team, headed by John Warren, is trying its best to conserve some of the buildings which are about to collapse. The government has instituted emergency action to implement the proposals and carry out studies that are required to further develop the programme for the area. MIMAR is watching the progress with interest and will report on the situation again in the future

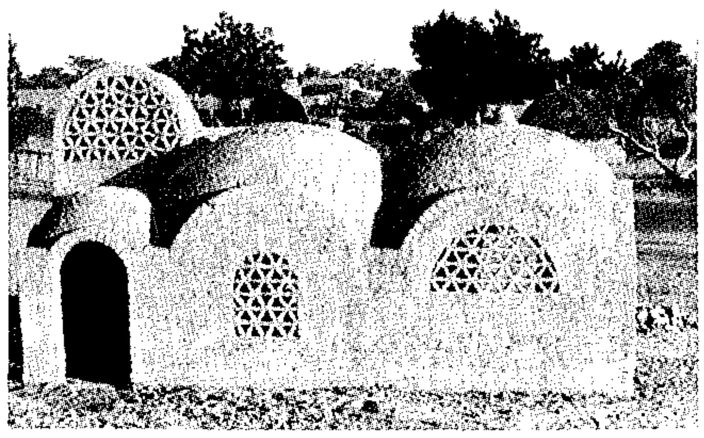
Chikal: Vault Technology Introduced

The Development Workshop, an organisation involved in indigenous rural and urban development, has been working in Chikal, Niger since November 1980, implementing a builder's training project to introduce improved mud-brick vault technology into the region. The project was initiated at the request of the Niger Institute for the Study and Application of Integrated Development

The rural buildings of the area, are traditionally constructed of mud-brick walls and floors, with thatched roofs. The thatch is becoming a scarce resource and has the disadvantage of being both flamable and liable to harbour vermin It also needs to be replaced regularly The improved mud-brick vault technology overcame these problems while remaining afordable, local resource based and easily assimilable into low income communities

Workshop member, Allan Cain, trained four rural builders who had no previous experience and with the help of six workers constructed a small literacy centre using the new technology The speed with which Cairo taught the builders — a mere two weeks — demonstrates that this approach expanded into a regional, or even national, training programme, builders across the country could be quickly trained in the technique.

The Niger project is the third Development Workshop training programme it has undertaken in the Third World since 1973 The Workshop is currently consultant to the Angolan Government on local resource based construction and is setting up an 'Institute for Popular Housing'

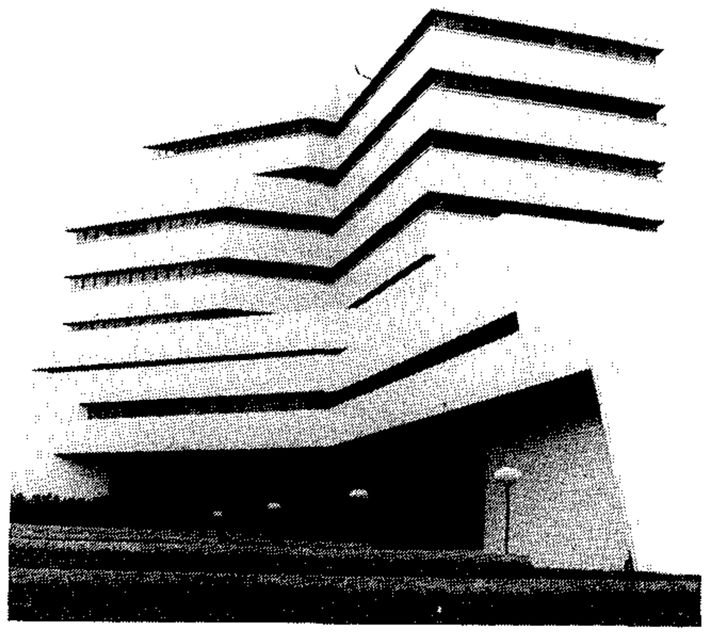


The recently constructed Literacy Centre was built in three weeks by locally trained builders. It covers an area 5m x 10m and uses mud-brick vault technology. The taller vault at the left, behind the entrance, is a wind-catcher. Photo. Allan Cain/Development Workshop.

Jakarta: The ASEAN Secretariat Building

The ASEAN (Association of South-East Asian Nations) Secretariat building was opened by President Suharto of Indonesia in June this year.

The building, constructed in four stages over a three-year period, was financed by the Indonesian Government The building costs escalated greatly from the original estimates so that the final costs came to be



Rp 6 billion (approximately US$9 6 million)

The ten storey structure is the creation of Suyudi of PT Gubah Laras, which designs many of Indonesia's embassies abroad The building was designed and constructed before the present law limiting government buildings to eight storeys

The total covered area is 13,815 square metres which includes a large basement The building uses a conventional column and beam structure and most materials are from within Indonesia, except for glass (imported from Japan), the toilet fixtures and the wall paper The construction company was rather proud that it was able to use a twenty year old crane to carry out the work

The office has all the conveniences associated with 'modern' building There is a large conference room set up for a four-language interpreter system The building is fully centrally air-conditioned but has pivoted windows, openable in case of a power failure There is also a back-up electricity generator. The water is stored in two tanks and is pressure circulated There is even the usual piped music which can however be controlled in each office

This building is the largest and one of the most modern to be constructed by the Department of Foreign Affairs and is styled after many European buildings. At present it is very under-utilised, but perhaps as the ASEAN countries expand their common activities it will be more fully occupied It is a pity that the building is only a symbol of "modernity" and the cooperation between countries but bears no relation to the regional architecture of ASEAN.

New Delhi: 1982 Asian Games Complex Update

The Asian Games are to be held at New Delhi in November 1982 Although there are going to be over a dozen venues scattered all over the city, the three major new sports structures being built for the games are:

- The main stadium at Lodi Road to hold athletic and football events with a spectator capacity of 75,000;
- An air-conditioned indoor stadium near Indraprastha Estate which will hold gymnastics, basketball, volleyball and wrestling, with a spectator capacity of 25,000;
- An indoor air-conditioned swimming pool at the Talkatora Garden, New Delhi, with a spectator capacity of 6,000.

While the main stadium is being designed by government architects of the Central Public Works Department, architectural competitions were held for the other two projects, attracting a large number of entries from all over India.

The contract for the indoor stadium was awarded to Sharat Das and Design Consortium with Kamal Hadkar as Structural Consultant Their design was considered to be the most feasible to be built in the short time available For the indoor swimming pool, the contract plus the first prize of Rs 50,000 (US$6,500) was awarded to Satish Grover, with Prof K A Patel as Structural Consultant All three projects are in various stages of construction and are expected to be completed by May, 1982

This is India's first experience with such large span structures, so it is even more creditable that the construction is being carried out entirely with indigenous technology and know-how Only certain technical inputs such as colour T V , lighting and scoreboards will be imported

Indoor Stadium

The indoor stadium in fact forms a part of a large sports complex that includes a cycle velodrome, administrative and players blocks, public plazas, open air theatre and other recreational areas The over-riding concern in the design of the stadium has been the need for evolving a structural system that can be executed in the available time of just over 15 months, quite short for the construction of such an ambitious project.

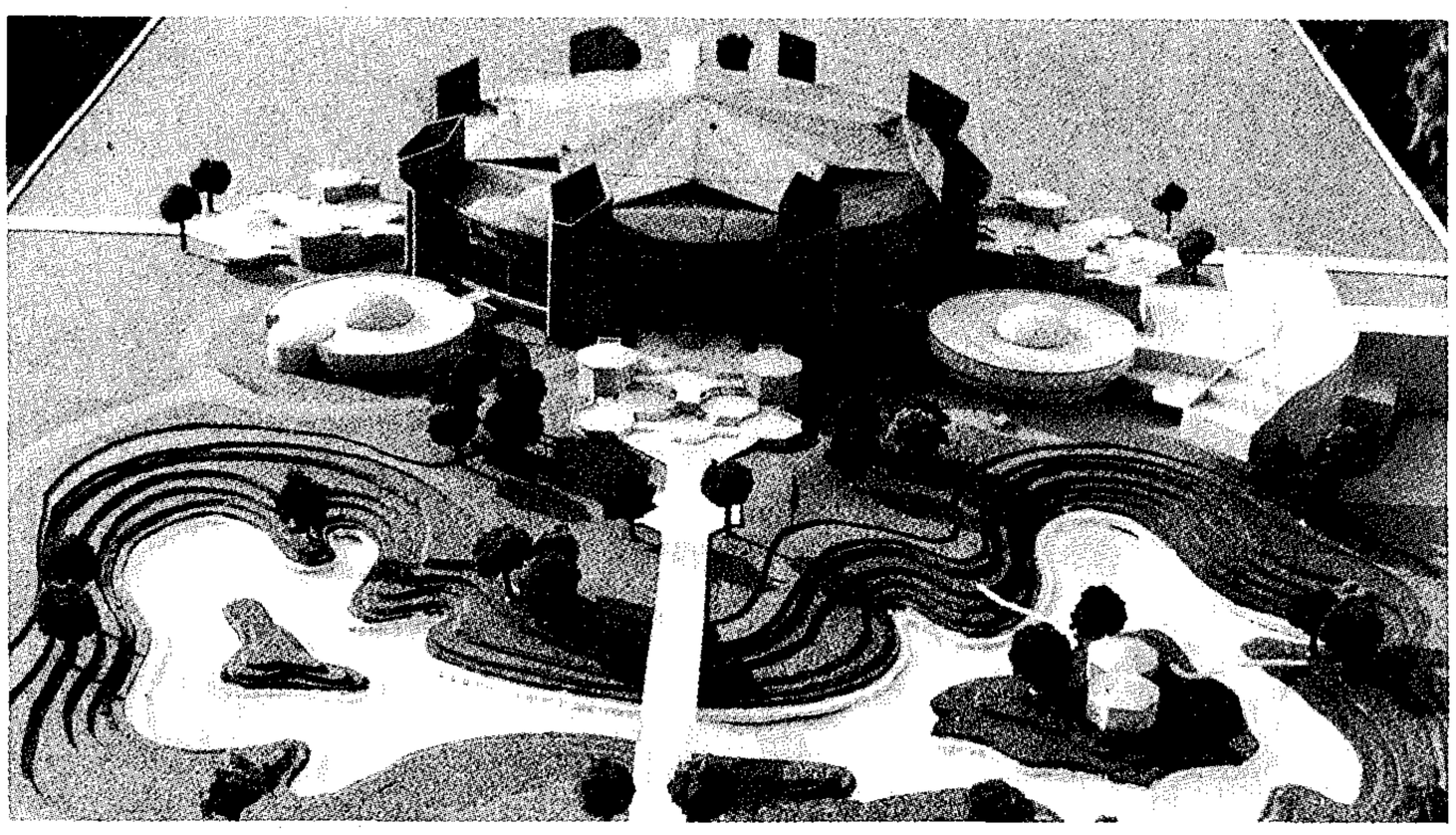
The star-shaped roof in two planes over the circular 155 metre diameter stadium is supported on eight self-supporting, slip-formed, fluted, exposed concrete pylons which also double as service ducts The 43 metre tall pylons are presently used as rigging masts on which simple guy derricks have been erected to lift the fabricated trusses, purlins, etc The octagonal roof itself is formed by a complex system of steel truss triangulation and is covered with light-weight aluminium decking The structural concept is reminiscent in some ways of the system of intersecting arches used in famous Gol Gumbaz at Bijapur, which is crowned by one of the largest domes of the 16th century The seating tiers, concourse, and other ancillary features are precast and in-situ reinforced concrete work. The entire stadium is centrally air-conditioned A large sliding-folding acoustic partition will be installed across the centre of the arena to permit two events to be held simultaneously. When complete, the stadium laid out on the banks of Yamuna will greatly enhance the thus-far neglected riverfront.

Indoor Swimming Pool

The essential requirements of the indoor swimming pool are a championship pool (50m x 26m x 2m deep), a diving pool (25m x 25m x 5m deep) and a warm-up pool (50m x 11m x 2m deep) The championship and diving pools are placed along the north-south axis On both sides of these are identical seating tiers built over concrete parabolic arches The warm-up pool is out of the way under the arches of the western stands while all the mechanical areas are concealed under the eastern stands The main elliptical arena (120m x 102m major axes) is covered with a conical steel shell roof of rectangular modules bolted and welded to each other, strengthened with a lattice work of evenly-spaced girders The sloping roof is clad with ridges of aluminium and precast reinforced concrete valley units in two different colours The roof rests on an inclined prestressed reinforced concrete ring beam which is supported by 88 reinforced columns at 4m centres All ancillary structures are in reinforced concrete and are finished in a combination of natural materials like stone, slate, and aggregate plaster, along with ceramic and other tiles. The entire stadium is centrally air-conditioned The water in the pools will be maintained at 28°C through a series of oil-fired boilers. It would have been interesting if the architects could have used solar heating, at least partially, which would have reduced running costs

Satish Grover
August 1981

Satish Grover is an architect and professor at the School of Planning and Architecture, Delhi. He is the author of two books: The Architecture of India — Buddhist and Hindu, and The Architecture of India — Islamic.



Rome: Iccrom

We are pleased to announce that the XI General Assembly of ICCROM has nominated Professor Cevat Erder as our new Director

Prof. Erder, a classical archaeologist, played a major role in establishing the Department for the Restoration and Preservation of Historic Monuments at Middle East Technical University, Ankara. During his time at M E.T U., he served as Chairman of the Restoration Department (1964–73) and Dean of the Faculty of Architecture (1977-79)

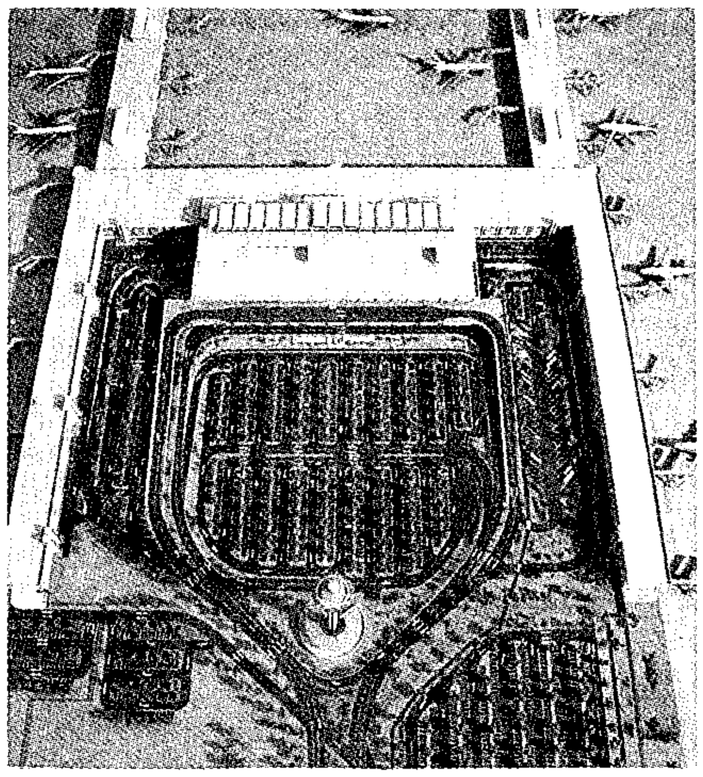
Cevat Erder has also been very active in international conservation work as President of the Turkish National Committee of ICOMOS, as a consultant for Unesco and the Council of Europe, as a founding member of the International Committee for Architectural Photogrammetry (CIPA), and as a visiting lecturer at ICCROM. He has presented papers at numerous international meetings, and has published several books and articles

Prof. Erder assumed his duties as Director of ICCROM on July 4, 1981

Singapore: New International Airport

The opening of the first phase of Singapore's Changi International Airport in July this year underscores the Southeast Asian City-State's vital role as a crossroads of East and West as well as its growing importance as a regional communications centre. The airport, which ranks with Tokyo's Narita as Asia's largest, is set on a 1663 hectare site at Changi, the eastern most tip of the 250 square mile island Half the airport is on land where once there was sea Hills were mown down, swamps filled, graves exhumed, buildings demolished and millions of cubic metres of earth and sand pumped by conveyor belt or delivered by truck to the sea.

From the land — like the preverbial phoenix rising from the ashes — has emerged Changi, Phase I: a 4,000 metre runway, a 17 storey control tower, a passenger terminal building that can handle 10 million passengers a year, a cargo complex and flight kitchen and a column free hangar for three jumbo jets — the widest clear span column free hangar in the world, the size of seven football pitches — and other ancillary buildings



Aerial view of the Passenger Terminal Building together with the Control Tower, Car Parks and Aircraft Parking Aprons

Designed and built under the supervision of the Department of Public Works by a team of ten architects in conjunction with 20 other departments and organisations, the final cost of the Herculean project of just under $1 billion Singapore dollars, (approximately half a billion US dollars) was within the original approved cost The careful planning, coordination and control also ensured that the airport opened on schedule. Speed was of the essence since the existing facilities at Paya Lebar International Airport, not far from the Changi site, were terribly overstretched

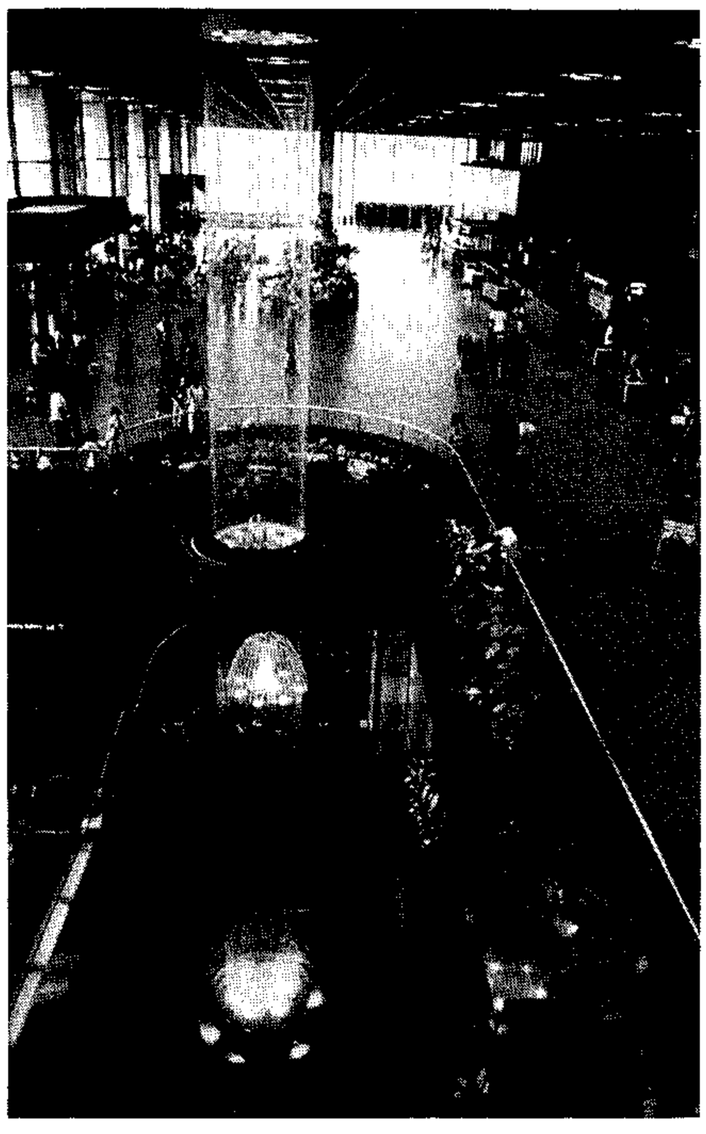
In terms of design, Changi conforms to the accepted, standard "European style" concept A Singapore theme, "The Garden City" is carried out in the interior decoration and landscaping of the site.

The layout of the S$300 million (US$150 million) passenger terminal building is designed to ensure simplicity of operation, flexibility to adapt to likely changes in future requirements and maximum convenience for visitors and passengers

Constructed mainly of prestressed precast concrete, it has a floor area of 220,000 square metres The central portion of the building is five storeys high and it is connected by intermediate buildings to two parallel finger piers, each about half a kilometre long, together forming an 'H' shape configuration

The exterior of the building is simple. Tinted glass panes and aluminium sunscreens add interest while reflecting away some 70 percent of the sun's heat The airconditioning is centrally controlled and automatically adjusted

Efficient and fast clearance of passengers and baggage is achieved by bringing the optimum number of aircraft as close to the terminal as possible The aircraft can nose in and park at right angles to the building at the 22 passenger bridges which connect to large, comfortable rooms for waiting passengers To reduce the walking distances and travel time of passengers, moving sidewalks — travellators — have been installed for easier transportation along the four kilometres of corridors Since the building is very deep, to avoid monotony, internal void areas are so placed for double and triple volume internal voids and landscaped with



Interior of the main terminal building showing one of the fountains.

fountains, aquariums and orchids and plants

To cope with the anticipated heavy traffic — 10 million passenger movements annually or 5,000 passengers and 10,000 well wishers at peak hours — traffic flow into the building is segregated into four levels of entry to minimise congestion

ing from posh continental to Chinese to two fast-food joints, and thirty shops, including a supermarket and several small boutiques

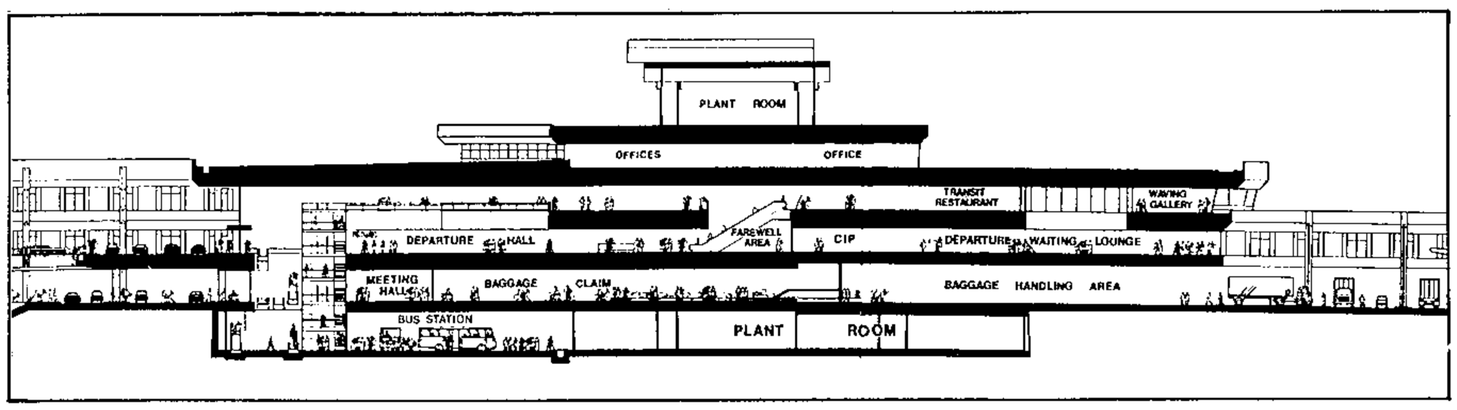
The amenities in the building have been imported from all over tthe world: Italian chairs, 600 Japanese clocks, West German baggage trolleys, Canadian phone booths

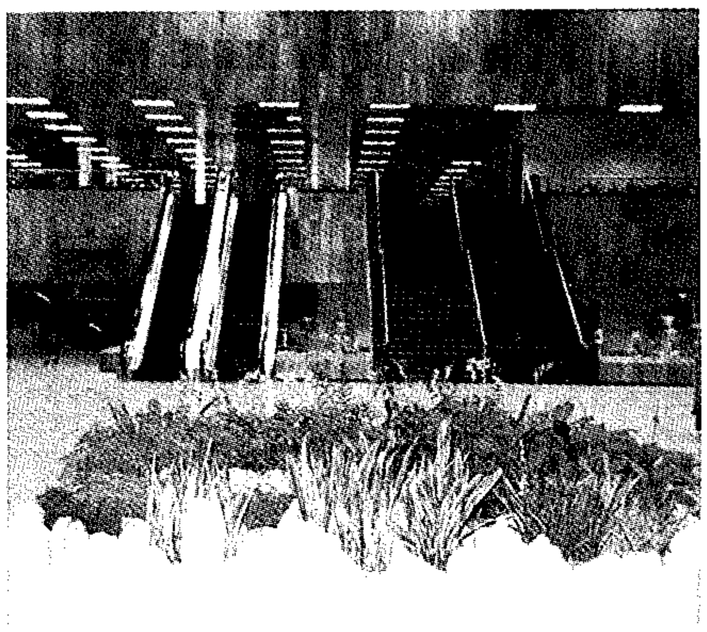
against this as it would cover the facade of the terminal and create a feeling of congestion Instead, the architects and planners placed the Air Traffic Control Tower in front of the open carpark as a focal point, moving it from its original position on top of the administration block

The 78 metre tower, one of the highest in the world, consists of a low rise building encircling the base which accommodates the supporting facilities for the operation of the control tower; a cylindrical shaft with staircase, service ducts, lifts and a column of windows running vertically down the sides to provide natural lighting for the core; and a three storey, 16-sided glass structure. On the top floor is the actual control cabin, the equipment room is in the middle and the emergency operations room, which doubles as a VIP viewing gallery, is on the lower floor The structure is capped by a white fiberglass bubble dome that houses the airfield radar. Special consideration was given to the location and height of the control cabin to provide maximum visability of the entire airport complex

The airport is linked to the city and the Pan Island Expressway by the recently opened East Coast Parkway. The Expressway has been planted with trees to form a cool green tunnel that opens up to highlight the control tower and passenger terminal building The airport grounds themselves have been landscaped with flowering shrubs and trees that, when matured, will give an almost garden-like atmosphere to the airport.

But there is more to come By 1983 Changi will have a second runway built on reclaimed land, and by 1985 another passenger terminal building, already in its preliminary planning stage, which will be built to cope with the estimated 16 5 million passengers of 1987





Public buses and chartered coaches collect passengers at the basement level; private cars have a separate pick up point at sunken car park level; taxis approach at the ground floor level arrival hall; and vehicles drop departing passengers and wellwishers at the first floor departure hall level Departing passengers enter/or ascend to the spacious vestibule by lifts, staircases or inclined travellators where there are 108 check-in counters Wellwishers can proceed to the second floor viewing gallery

Enter the terminal and you hear the sound of water cascading down, sprouting up and swirling around Fountains, miniature waterfalls, orchids, smaller full grown trees, potted plants and a mix of warm earth colours — beige brown with touches of orange, red and green — create a garden city environment throughout the building There are ramps, toilets and telephones for the disabled traveller, nursery rooms for parents with infants, eight restaurants rang-

Top Sectional view of the Main Passenger Terminal Building
Above, left Interior view.
Above The control tower

and English toilet hand dryers.

The theme of Singapore as a multicultural society will be introduced as a variation on the garden city theme Murals and other works of art from Southeast Asian countries will grace the bare marble walls before the year is out

In front of the Terminal building is an open carpark Original plans called for a multi-storey carpark similar to that at London's Heathrow But planners decided

Gretchen Mahbubani
Singapore, September 1981

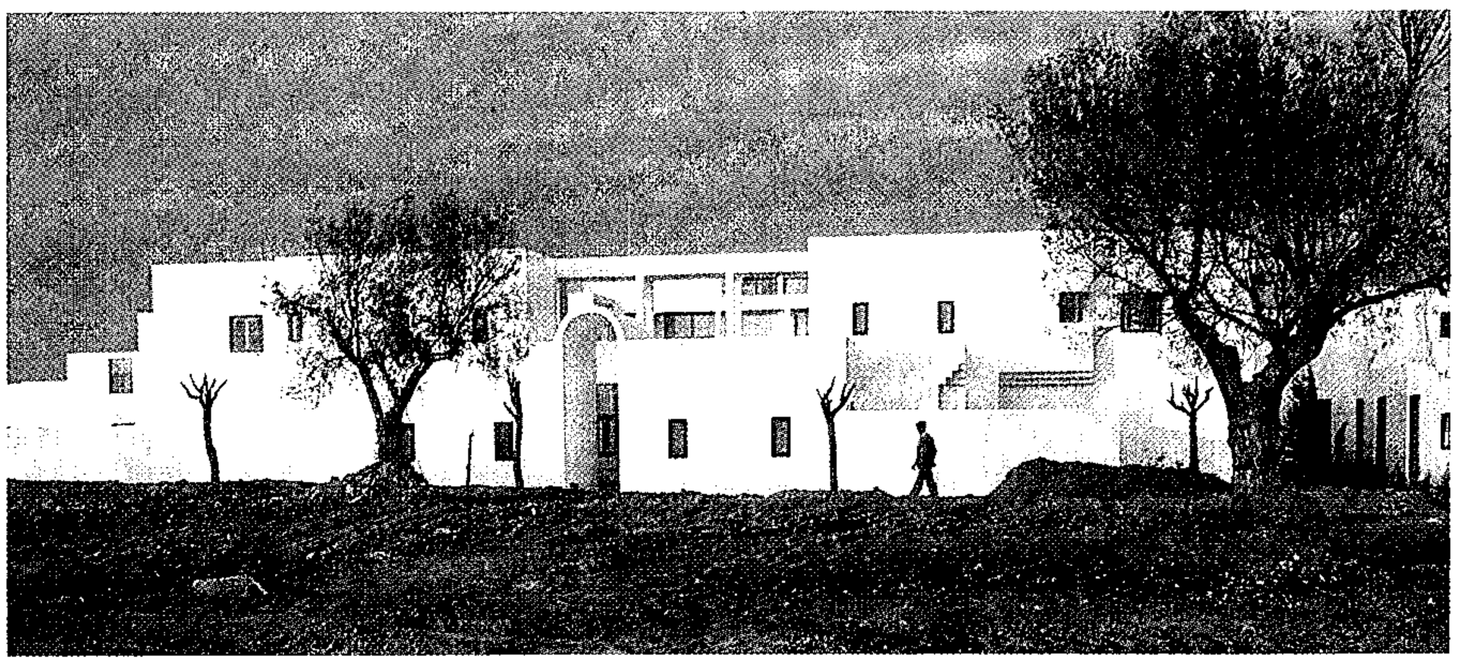
Mrs. Mahbubani is a journalist with the Straits Times She has in the past few years written a great deal about architecture and conservation and is a strong advocate of the latter

Photographs and drawings reproduced for this item courtesy of Changi Airport Development Division, Public Works Department, Singapore.

Building Study

Apartment-Hotel, Sousse, Tunisia

Architect: Serge Santelli
Client: Tuniso-Kuwaitian Development Consortium
Completed: June 1981
Description: The complex contains 110 apartments and some communal services (restaurant, bar, reception). This relatively inexpensive development was built as part of the tourist development plan of the city. The conception of these units was essentially inspired by traditional Tunisian spatial typology and avoids references to a "Moorish style" which is popular among those architects in search of "architectural authenticity".



Above: The complex exterior reveals an intricate massing of buildings which turn their backs to the outside. The scale is almost domestic.
Below: Location map of Tunisia
Right: Courtyard (labelled 'B' in the plan) surrounded by double-storeyed buildings The built-in niches for seating and the changing shadows give the space animation, yet a feeling of tranquility, which will be further enhanced when the trees grow taller

The hotel is arranged around courtyards and patios *(wast-al-dar)*, basic elements of any Arabo-Islamic architectural typology. Introverted in their organisation around interior spaces, apartments are situated overlooking 13 courtyards and 3 small plazas, one of which is devoted to the reception areas for clients, and access to the restaurant and salons.

Courtyards are simple, clear and regular in form (square or rectangular), and are either paved or planted They are organised along a main longitudinal axis, attached to which is a secondary network that creates passages and sequences of spaces recalling courtyards and gardens of Arab palaces. Their architecture is rational and straightforward: pillars and rectangular porticos, small windows closed with *mushrabiyas* (wooden screens), but avoiding any picturesque or folkloric forms which smack off a false vernacular.

Facades are decorated with bands of traditional ceramic tiles from Nabuel (Tunisia), framing windows that open onto the courtyards, thereby creating a decor reminiscent of older houses. Certain courtyards are surrounded by arcades on all four sides, similar to the architecture of local fondouks.

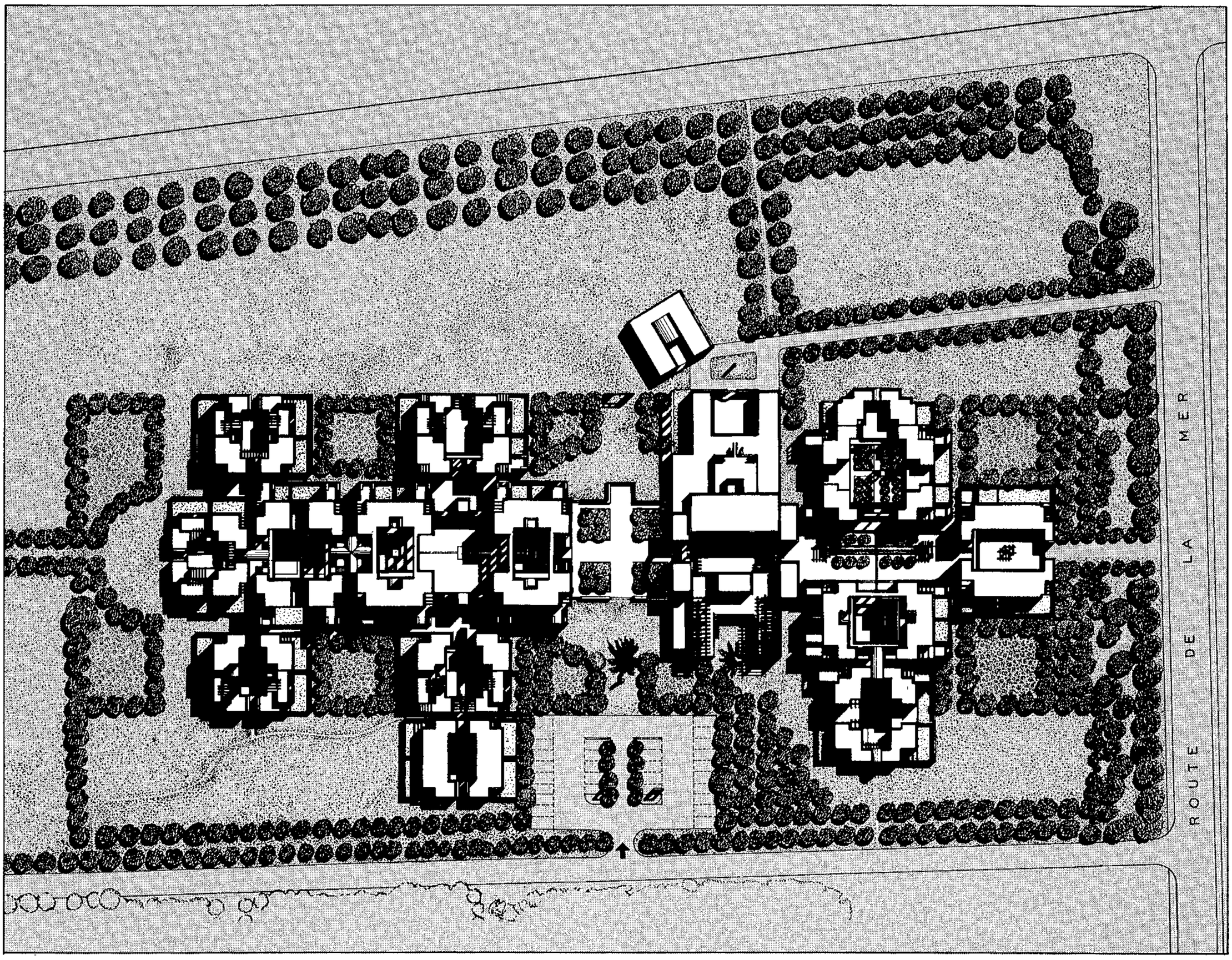
The courtyards are either paved with marble or Haffouz stone or planted with orange trees and jasmin, thereby recreating an atmosphere of traditional Arab gardens. A small channel for water links a square basin in one courtyard with a long basin of water in one of the plazas along the major axis The latter basin has a fountain, covered by a pergola, at either end.

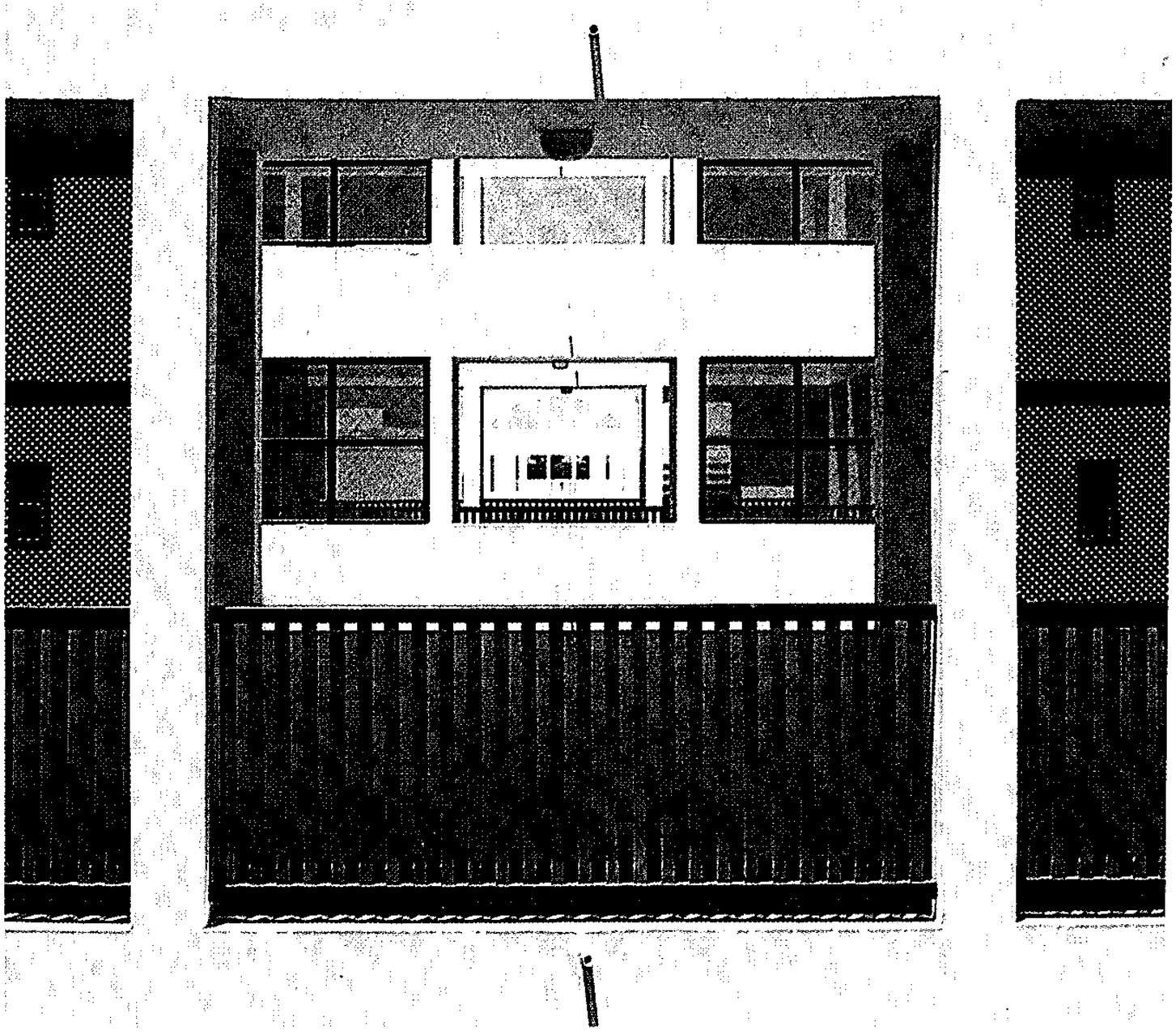
The whole forms a series of courtyards and cool, shadowed gardens whose atmosphere makes specific reference to interior spaces of traditional Tunisian houses The formal simplicity of this interior architecture and its cool, colourful ambience contrasts sharply with higher picturesque aspects of exterior volumes, where complex silhouettes recall the well-known images of unspecified Mediterranean villages

The apartments are entered by the courtyards. A single T-shaped room, traditionally found in large Tunisian houses, is the main living space of the apartment, which at ground level opens onto a private enclosed garden On the upper floor, apartments (except for the studios) have private exterior terraces protected by walls from sun, and cannot be viewed from the outside.

Floors are covered with white and blue

Text, photographs and drawings were produced exclusively for MIMAR by the building's architect, Serge Santelli





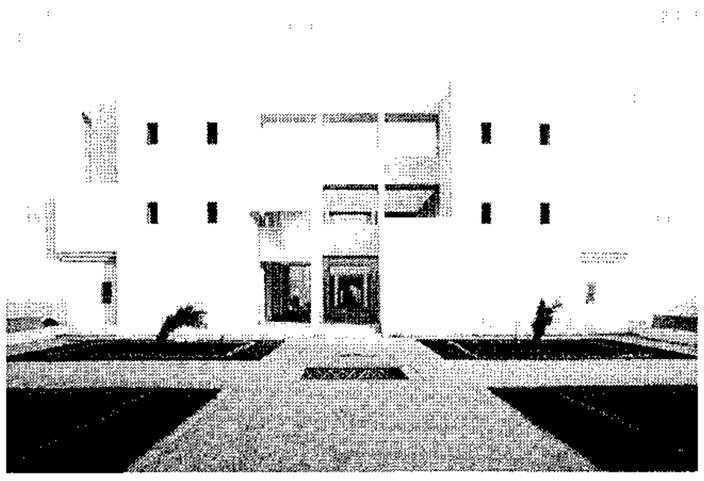
ceramic tiles manufactured in Tunis. Walls of the bathrooms and toilets have tiles from Nabeul, the patterns of which are emphasised with black strips forming a framework. Doors and windows are of wood, painted in green. Windows are protected by *mushrabiyas* outside, while inside they have solid shutters, identical to local usage.

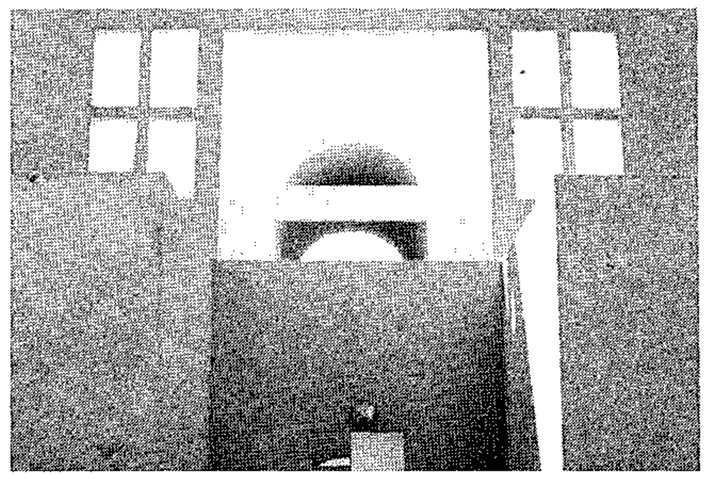
The fascination with modern techniques is so strong in Tunisia that the building contractor was able to persuade the client to select a system of poured-in-place concrete construction. This was justified by the builder on economic grounds. However, the work was so poorly executed that the concrete had to be

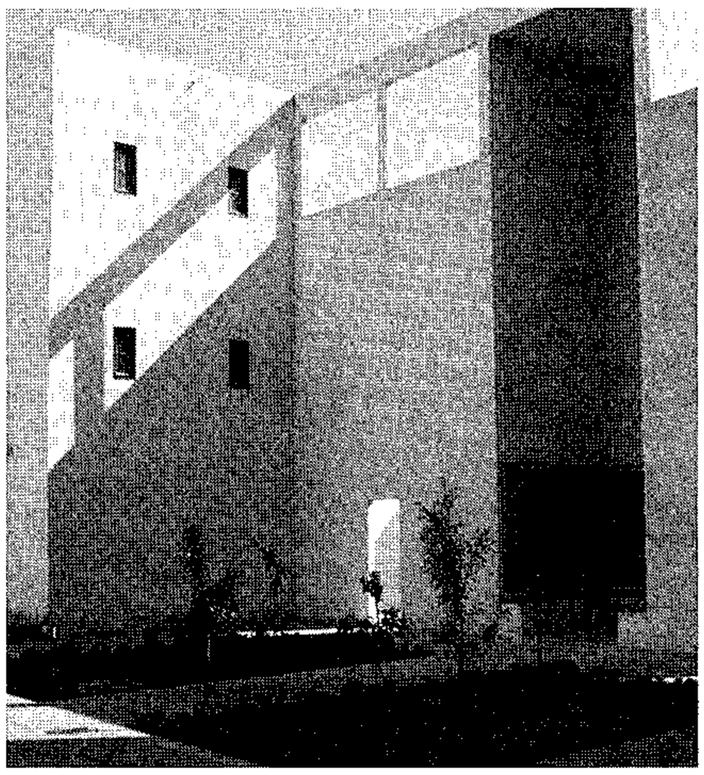
Top: Site Plan. The hotel is planned around a series of courtyards and a lengthy longitudinal spine. The main entrance is in the centre of the complex. This MIMAR presentation covers the right half of the development to illustrate the typical elements and variations found in the plan
Left· Successive courtyards viewed along the main longitudinal axis — rather like mirror reflections, but varied from image to image

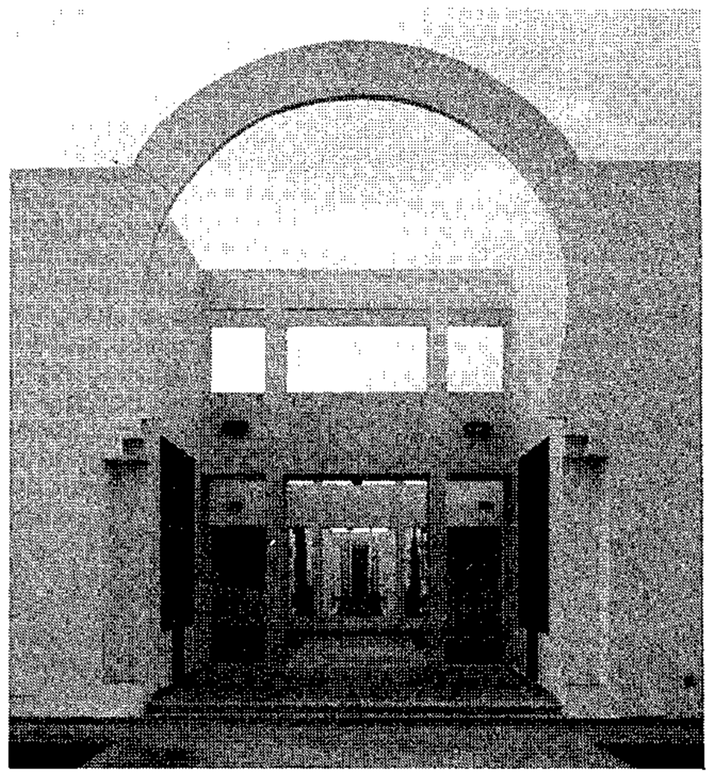
systematically broken, re-aligned, and re-paired with a coating in order to mask numerous imperfections after the form-work was dismantled.

This technique, unfortunately, did not allow any reduction of construction time or cost — quite the contrary. It did however, allow the client to realise his error and the architect to confirm his belief that traditional construction techniques, utilising the capacities of qualified local labour is better by far than all the technological progress made to date. Application of traditional means is cheaper in the long run, and faster.

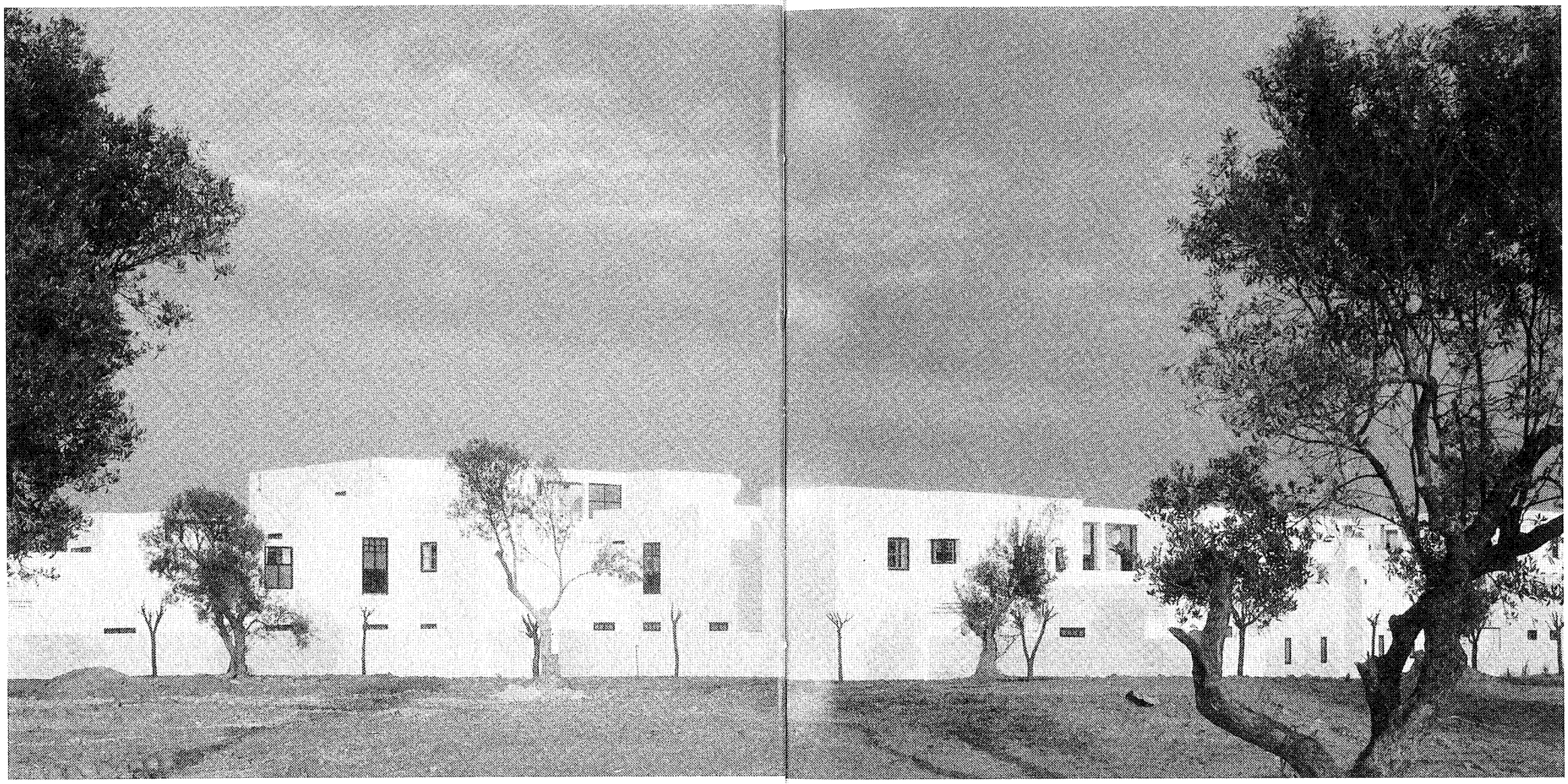




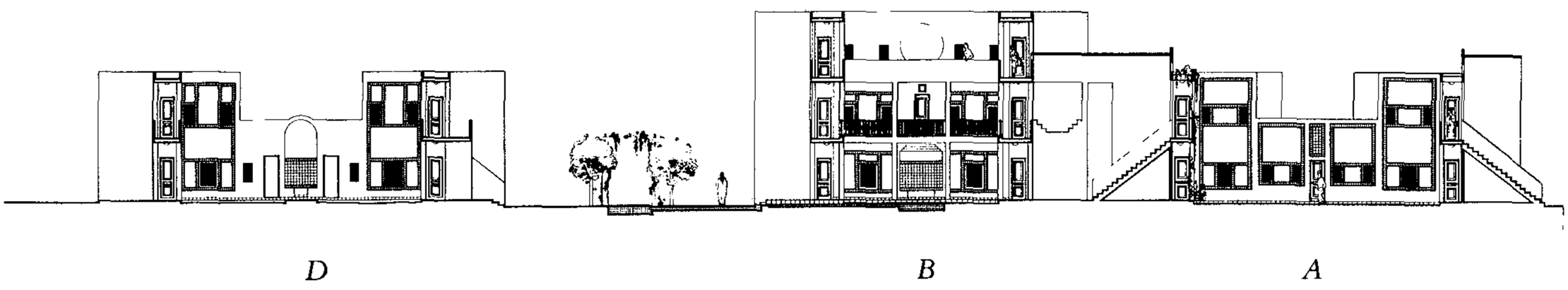




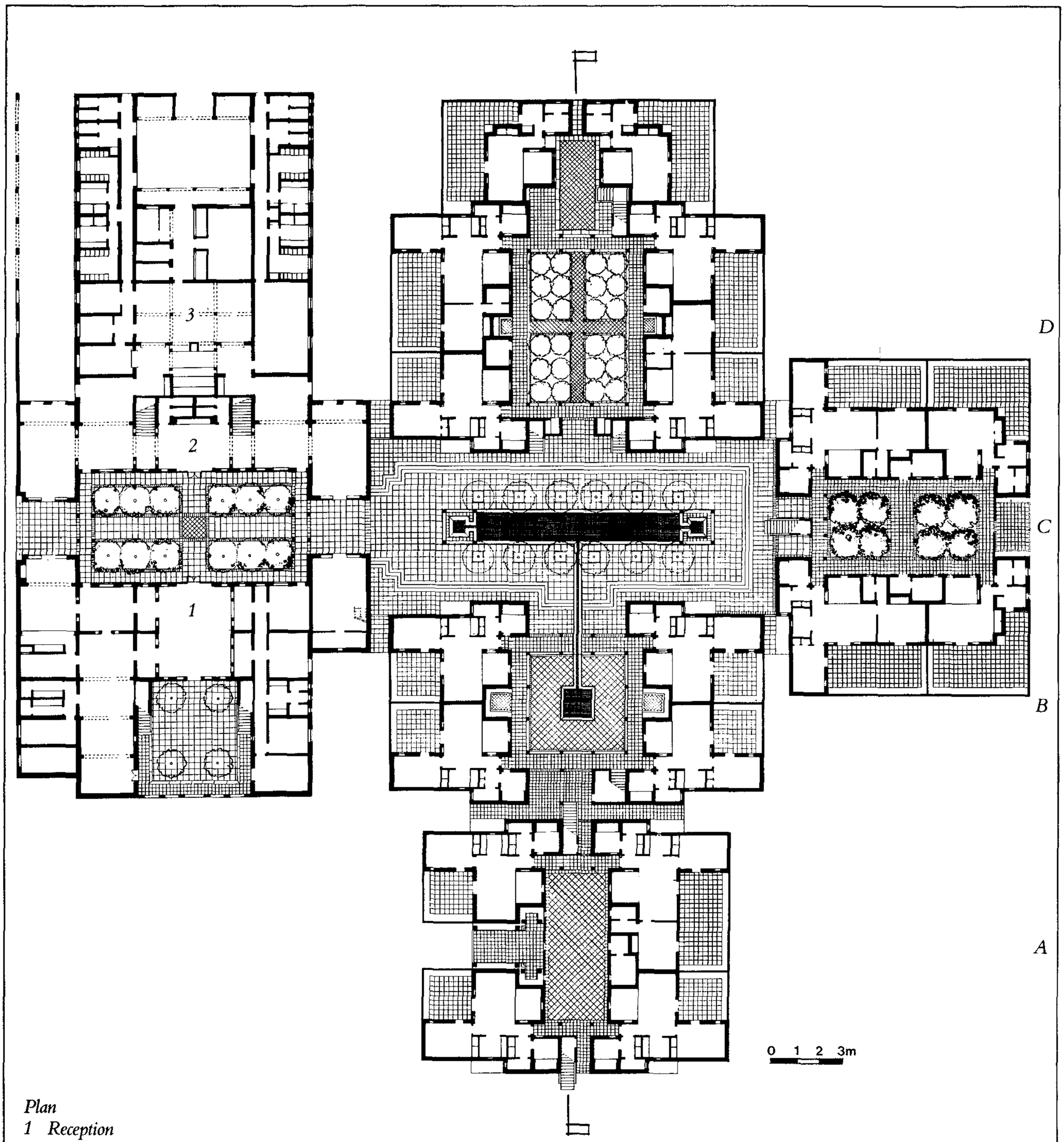
Top: The central court.
Right, top: View of the two-storey apartments.
Far right, top: Silhouette details of the courtyard perimeter against the sky accentuate the vertical geometry of the spaces.
Right: A large courtyard with a kubus or iwān (niche) forming a small open seating area The high wall forms a barrier and gives the internal open space both privacy and visual continuity
Far right: The entrance to the reception court is defined by a contemporary archway The walls at the entrance are splayed at the corners at ground level to accentuate the entrance and avoid sharp corners in an area of heavy pedestrian use.



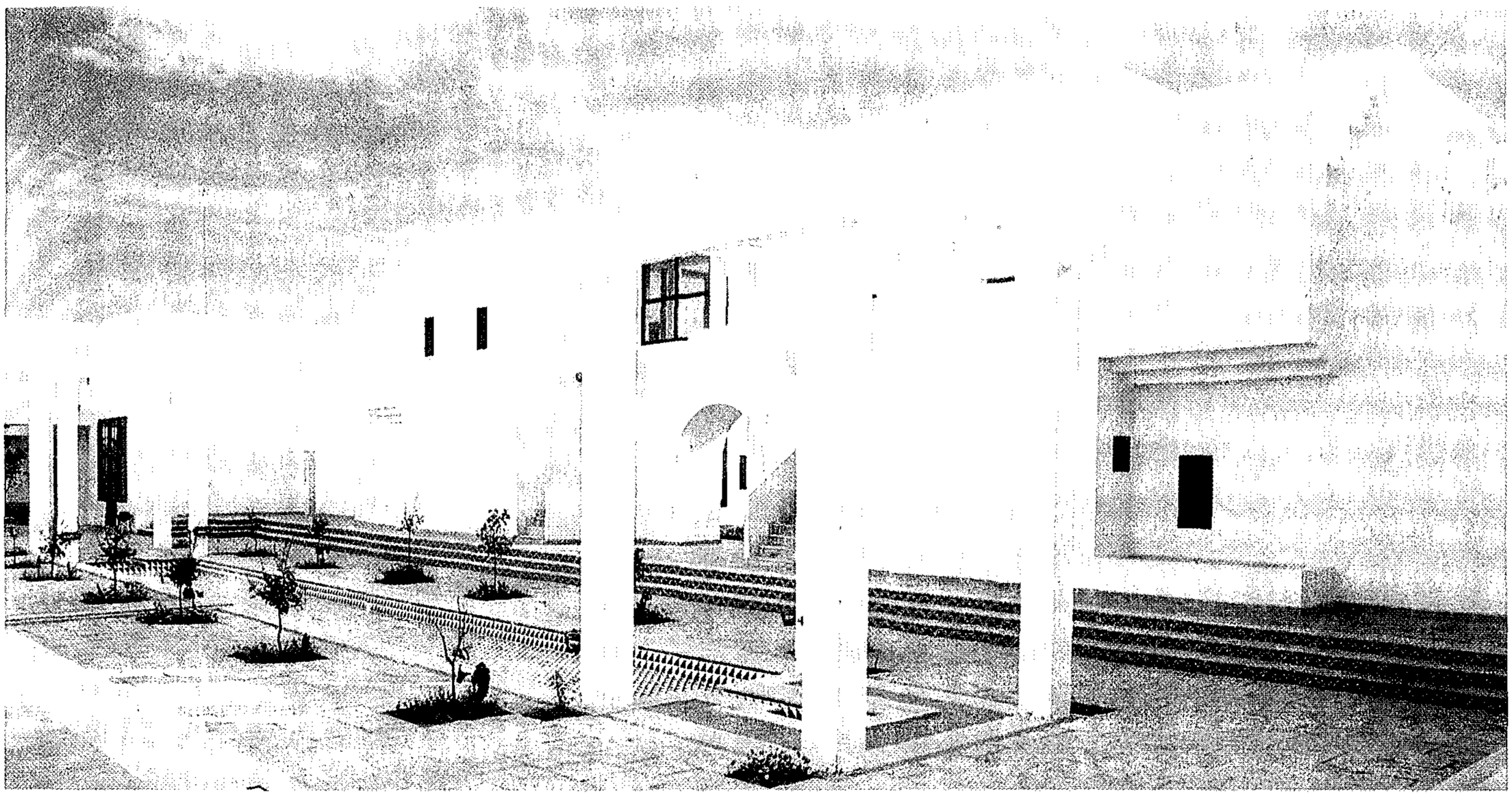
The dramatic white exterior, typically Tunisian, serves to set the structure off against the harsh landscape.

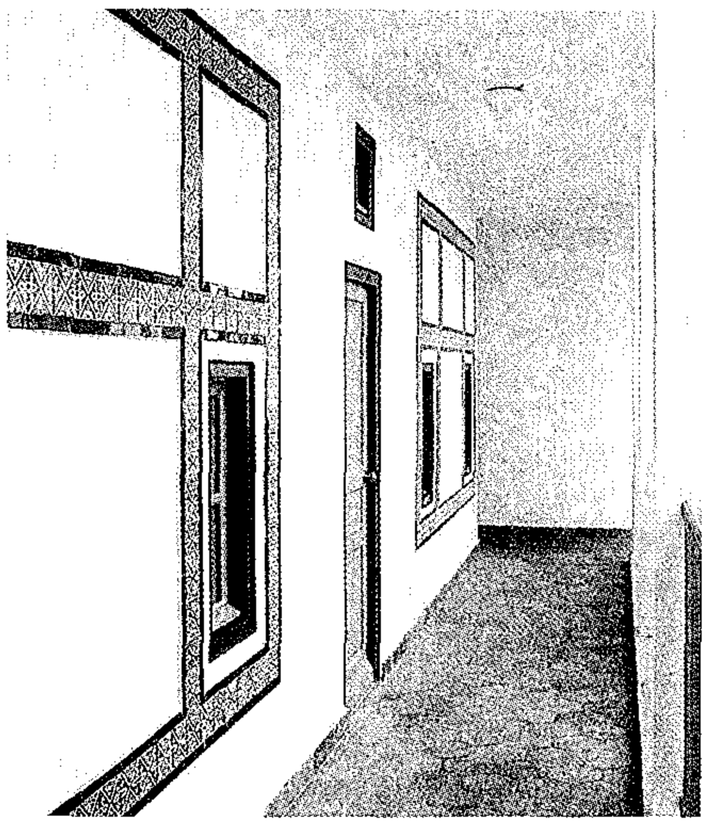


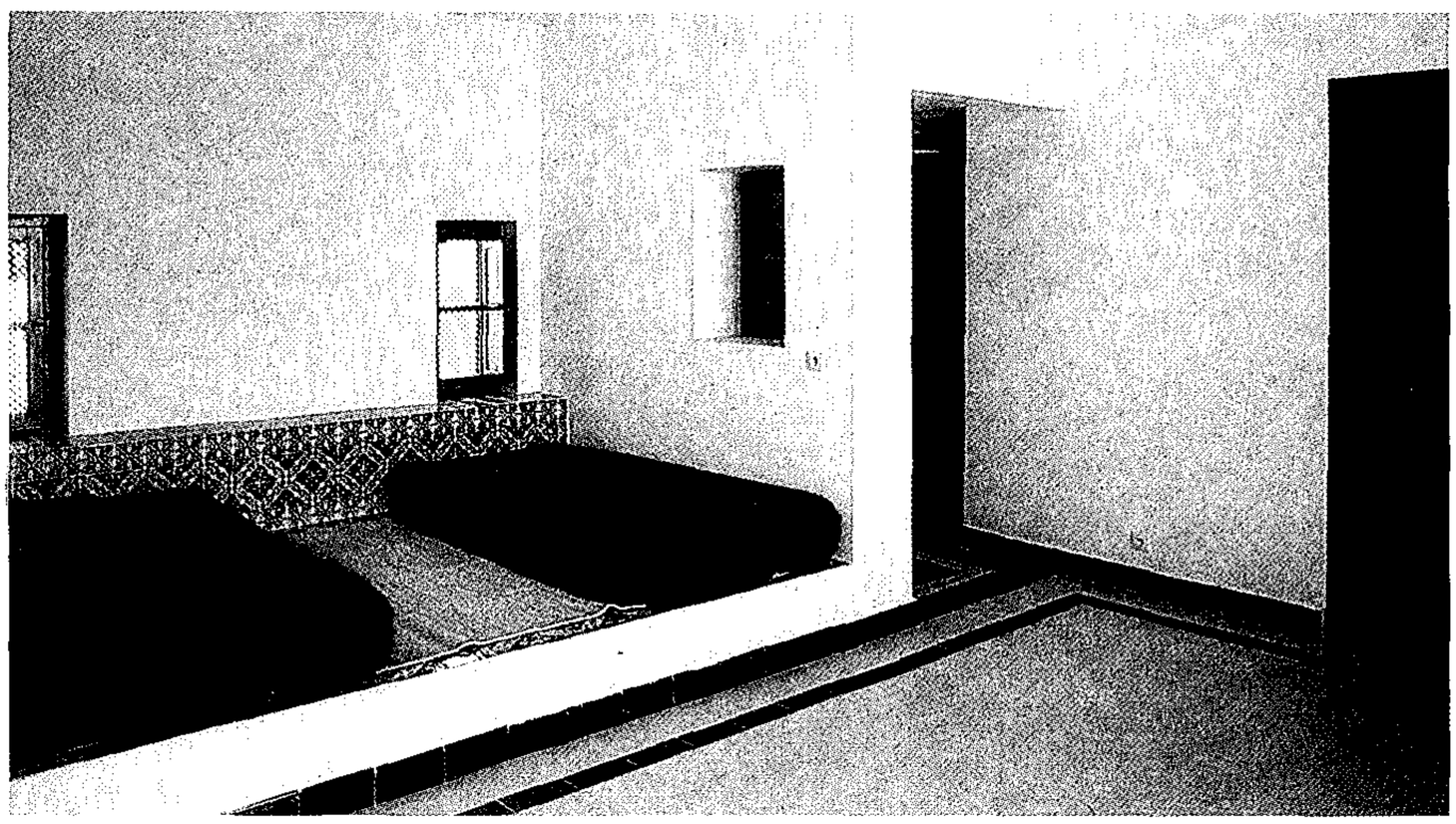
Section



Plan
1 Reception
2. Restaurant
3. Kitchen

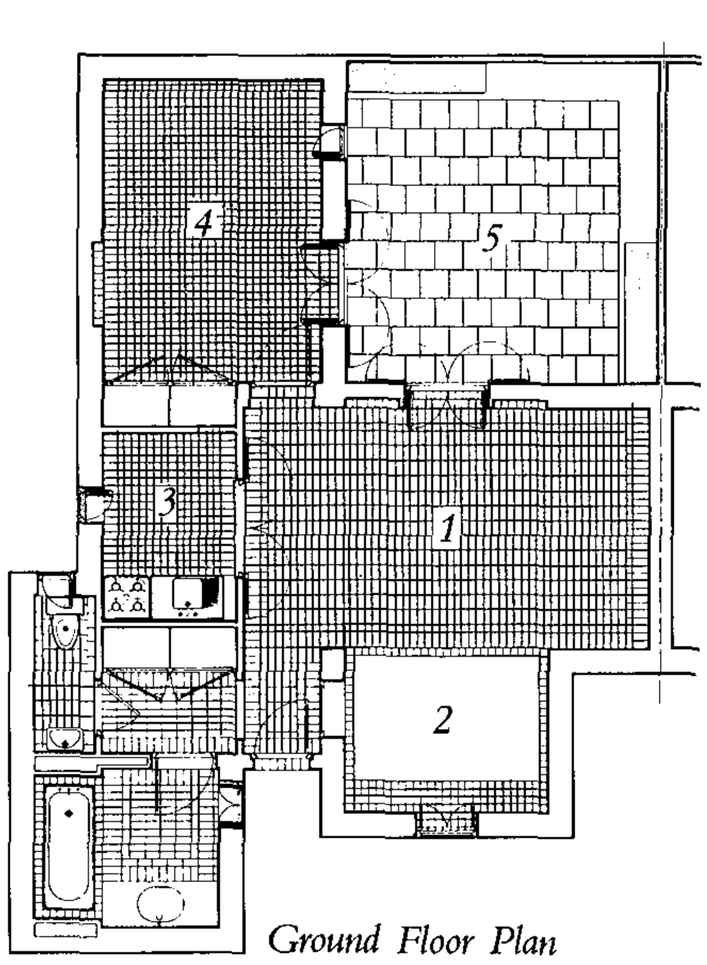




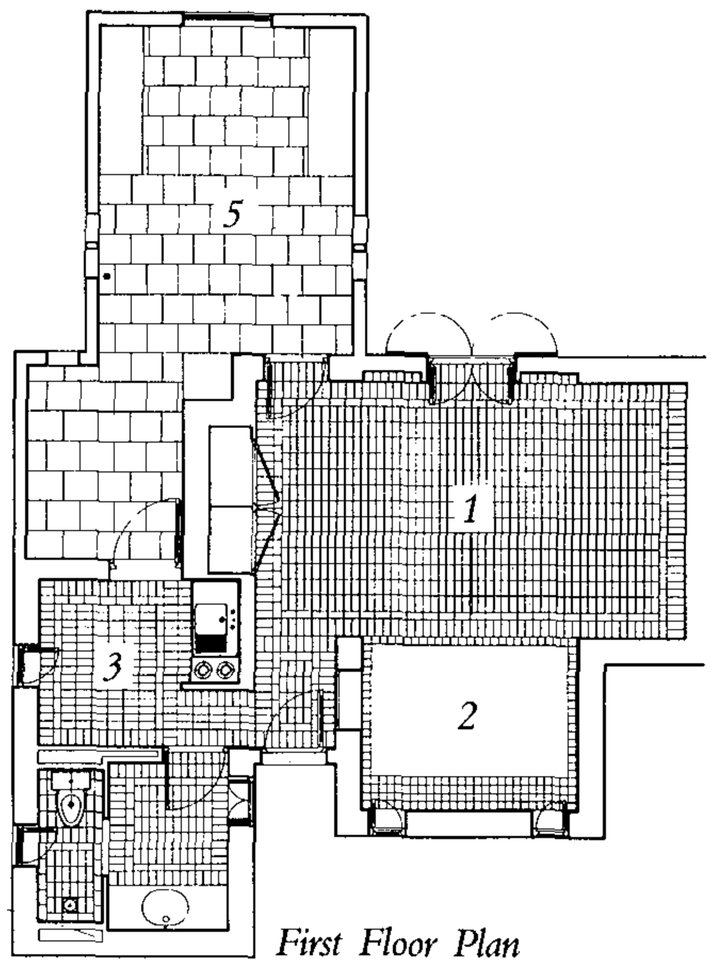


Left, top: Section through the courtyards shows the interiors and design of the facade tiling.
Left: Plan showing the entrance (left) off the entry court into the reception and dining areas through to the longitudinal spine with its long pool and the more private courtyards around which are grouped the apartments. (Note: The apartment plans on the opposite page are of the cross-hatched units.)
Top: The central longitudinal court with its pool and pergolas at either end
Above: Access gallery to the apartments.
Right, top. The interior of an apartment showing the living room with its sleeping alcove. (Note: the interior decor was not done by the architect.)
Right: Typical apartments. The ground floor apartment has an additional bedroom; the smaller studios are on the first floor. Both apartments have private open courtyards.

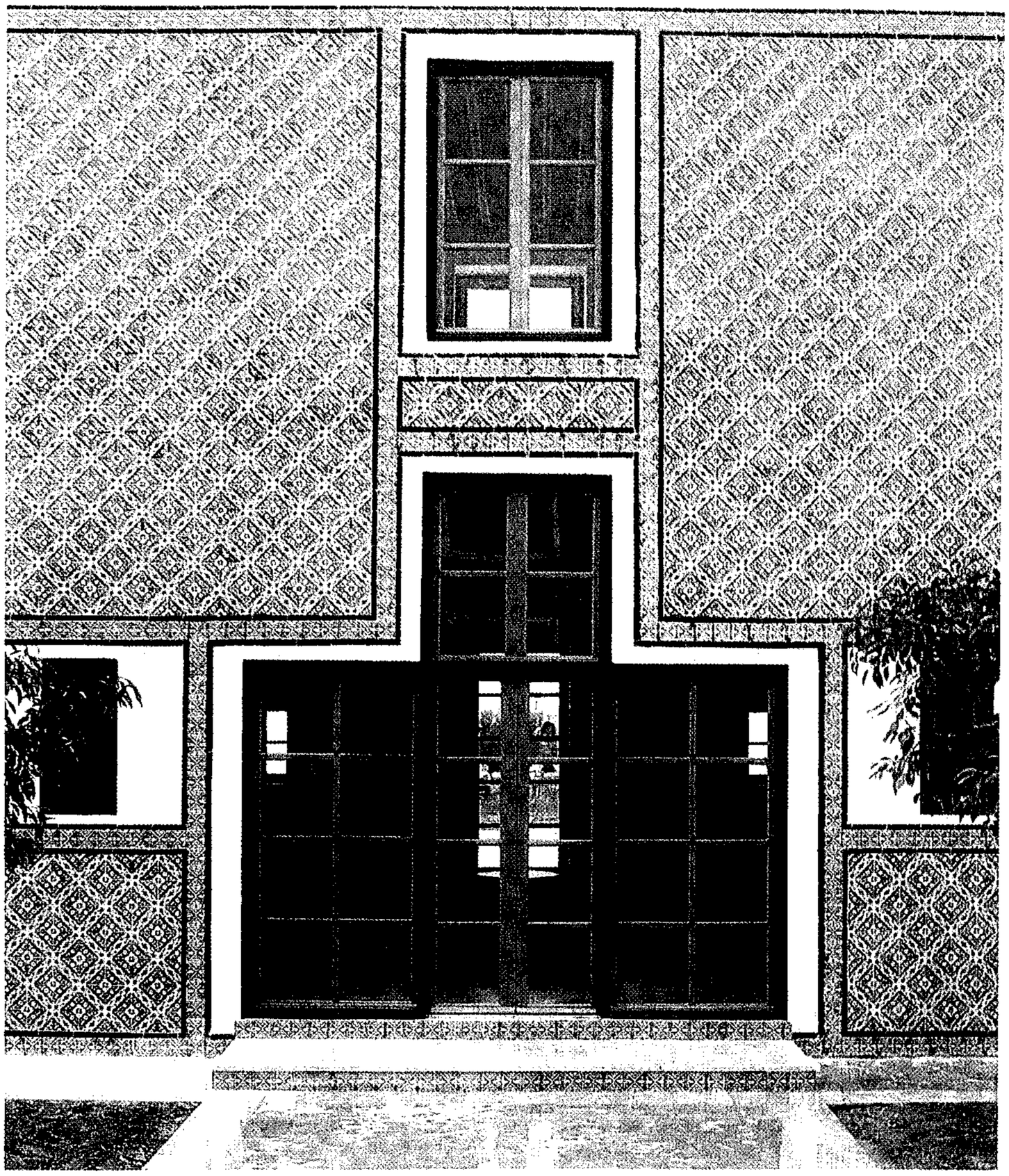
1 Living area
2. Sleeping Alcove
3. Kitchen
4 Bedroom (ground floor only)
5. Private courtyard



Ground Floor Plan



First Floor Plan



On the Apartment-Hotel
"... confused and picturesque."

The summer residences (apartment-hotel) constructed in the new tourist complex at Port el-Kantaoui, Sousse, Tunisia, have been rejected here This hotel is different from other hotels along the coast up to now insofar as the "international style" and picturesque style, appreciated so much by developers and their architects

Similar to traditional Arab Muslim typology, this hotel is carefully ordered and composed around interior spaces, such as courts and gardens, onto which the apartments open This arrangement is obtained perhaps to the detriment of exterior facades, where the aspect is rather confused and 'picturesque'

The spatial models of Arab Muslim architecture were the explicit reference for the architect, who was able to integrate diverse elements from the history of Tunisian architecture, such as those of Andalusian origin or from Cairo. Allusions to classical architecture are also present, with certain spaces or details recalling Piranesi's architecture, or that of Louis Kahn or Carlo Scarpa

The architect's view of history is new and eclectic, disrespectful and critical, which lets him introduce innovative, resolutely modern elements freely into older typologies

The user who is accustomed to consuming quaint, local sorts of folklore while on vacation here finds himself confronted by a different and unhabitual situation which both baffles and seduces him At a time when communication between Arab countries and the West is developing enormously, this project anticipates a genuine architecture of the Arab world

Tarek Ben Miled
Tunis

Profile

Serge Santelli

A conversation on the current state of architecture in Tunisia with the architect of this issue's building study. *Serge Santelli, born in 1944 in Paris, was educated in France and the United States, where he received a Master of Architecture and City Planning from the University of Pennsylvania in 1970 After his studies in the atelier of Louis Kahn, he was an assistant professor at the Institut Technologique d'Art in Tunis, Tunisia. His works include a private dwelling in Tunis, a tourist complex in Tabarka (1972) and several renovations in France. He is presently involved in a housing project of 130 units in Reims.*

Organiser of a seminar in Mahdia, Tunisia in 1979, on "Arab Architecture and the Structure of Medinas in the Maghreb", he continues his research into popular housing typologies.

MIMAR's editors conversed with Santelli several times in June 1981 at his fourth floor studio in Paris, amidst his fine collection of old North African mirror paintings, piles of books and half-finished architectural drawings. What follows is a small part of the discussions.

MIMAR: Can you comment on the influence of foreign architecture on local habitats?

Santelli: Architectural production in the Maghreb has been dominated for decades by European influences. This has included the direct importation of architectural models and foreign techniques into these countries, particularly Tunisia. This has had the effect of stifling original development of a popular architecture rooted in the urban and architectural traditions of Arab Muslim society

Many recently-built edifices, such as apartment houses, towers and industrial and domestic constructions, have disfigured Tunisian sites and cities just as they have done in Europe.

This cultural and technological domination has resulted in the abandoning of traditional dwellings in favour of more modern structures, better suited to European lifestyles.

MIMAR: Surely the Tunisians are aware of this Aren't they doing anything to keep some of their traditional architecture? For instance, are the *medinas* (or old city centres) being preserved?

Santelli: Not much is being done, although in all fairness there is some awareness of the problem now. But the extraordinary rich architectural heritage has been forsaken. The physical structures of *medinas,* inhabited since Independence principally by rural immigrants, continue to deteriorate, causing grave problems for preservation. Occupied by the poorest social classes, the architecture of the *medina* is slowly disappearing because of lack of maintenance and of an overall government policy of rehabilitation, which means razing and rebuilding. Only a few historic monuments of exceptional quality, such as palaces or mosques, escape this fate and are restored, as benefitting from another government policy for "museographic" rehabilitation to enhance tourism

New zones of modern dwellings (high-rise and individual houses) have developed very rapidly on the periphery of large cities. Tunisians very often prefer functional and technical aspects of modern spaces in contemporary urban settings to the traditional forms of the *medina,* whose structures seem archaic and outdated Unfortunately, the language of Modernity and Progress is too often destructive.

"... new Tunisian architecture perpetuates attitudes from the colonial era, when Moorish facades were put on buildings for imported typologies to be more easily integrated with the indigenous culture of the conquered country."

MIMAR: Are many Tunisian architects trained abroad? If this is so this must have a bearing on the use of alien architectural vocabularies. Of course, you are an example of this — the Western-trained architect designing for a "developing" country

Santelli: Most Tunisian architects were trained in Europe, or in schools whose teaching is based upon European schools. Once they are in practice they find themselves having to conform to administrative regulations of colonial origin. In addition, as they are fascinated by imported techniques and new forms, these architects produce architecture that is totally foreign to traditional typologies and unsuitable to the particular life-style of most of the local population

I think that I am also subject to this. But I study carefully local conditions and I believe that I have an inbuilt empathy with the country, its people and its architecture I hope that I am sensitive to both needs and environments when I design.

MIMAR: Judging from your work we would certainly say that you are. In our view you are one of the few architects who have been successful in interpreting a local architectural idiom and creatively transforming it in an interesting manner. To return to our conversation; aren't people trying to create a new design vocabulary in Tunisia?

Santelli: Within a political framework which has lately encouraged a search for national identity, architects in the Maghreb have felt inclined to adapt their production to an Arab Muslim esthetic in order to satisfy a perceived need on the part of the population to return to their sources. In Tunisia their language has become "Tunisified": arcades, cupolas, columns and capials of carved stone, coloured tiles and multiple irregularities of form for purely picturesque effects now cover the facades of new constructions.

This language operates as a cosmetic decoration within spatial configurations that remain essentially European.

Such "new" Tunisian architecture in fact perpetuates architectural attitudes from the colonial era, when Moorish facades were put on buildings in order for imported typologies to be more easily integrated with the indigenous culture of the conquered country.

Modern Tunisian architecture remains essentially Western in conception, with Moorish decoration on facades serving only to give an "Islamic" touch to what is nevertheless still a shallow, ridiculous reproduction of the Internationa Style. Moreover, this new type of habitat raises all sorts of contradictions in the way people actually live, often continuing traditional modes It inevitably reveals a conflict between the way the architect conceives spaces, and the way they are actually inhabited by the users. Even though the *medinas* have been abandoned as "modern" their decorative vocabulary nonetheless serves as a reservoir of forms for architects who come back in search of ornamental elements for their Moorish styles .

MIMAR: You are in fact saying that there is no real move towards establishing a contemporary indigenous architecture.

Santelli: That is true. In actuality, the Islamic architecture of Tunisia is being reduced to a limited number of signs of "Arabness", closer to tourist folklore than to the fundamental principles that permeate Arab Muslim architectural space.

FEEDBACK

FEEDBACK features readers' letters to the editors, comments, criticisms and ideas for information exchange Please address all such correspondence to: MIMAR Feedback, Suite 1718, 17 Floor, International Plaza, 10 Anson Road, Singapore 0207. Letters may be shortened for reasons of clarity or space.

I was pleased to see your *profiles* on the architects in your first issue. Interviews of this type give life to the ideas behind buildings and bring to our attention architects of the Third World Too long have we been dominated by architectural personalities from the West — its time that our architects get recognition Give us more of this feature

Patel Singh
Civil Servant, Calcutta

Just received MIMAR on my return from the States — very good, only your address is impossibly long.

Cover brilliant.

Palace itself very good as palaces go (which has been terrible since Buckingham).

Articles a good balance between this and that.

I think I may have to subscribe soon. Send me the second (as the first is always good).
Of course I agree with every one of your opinions on all important issues, but can you make the arguments take root?

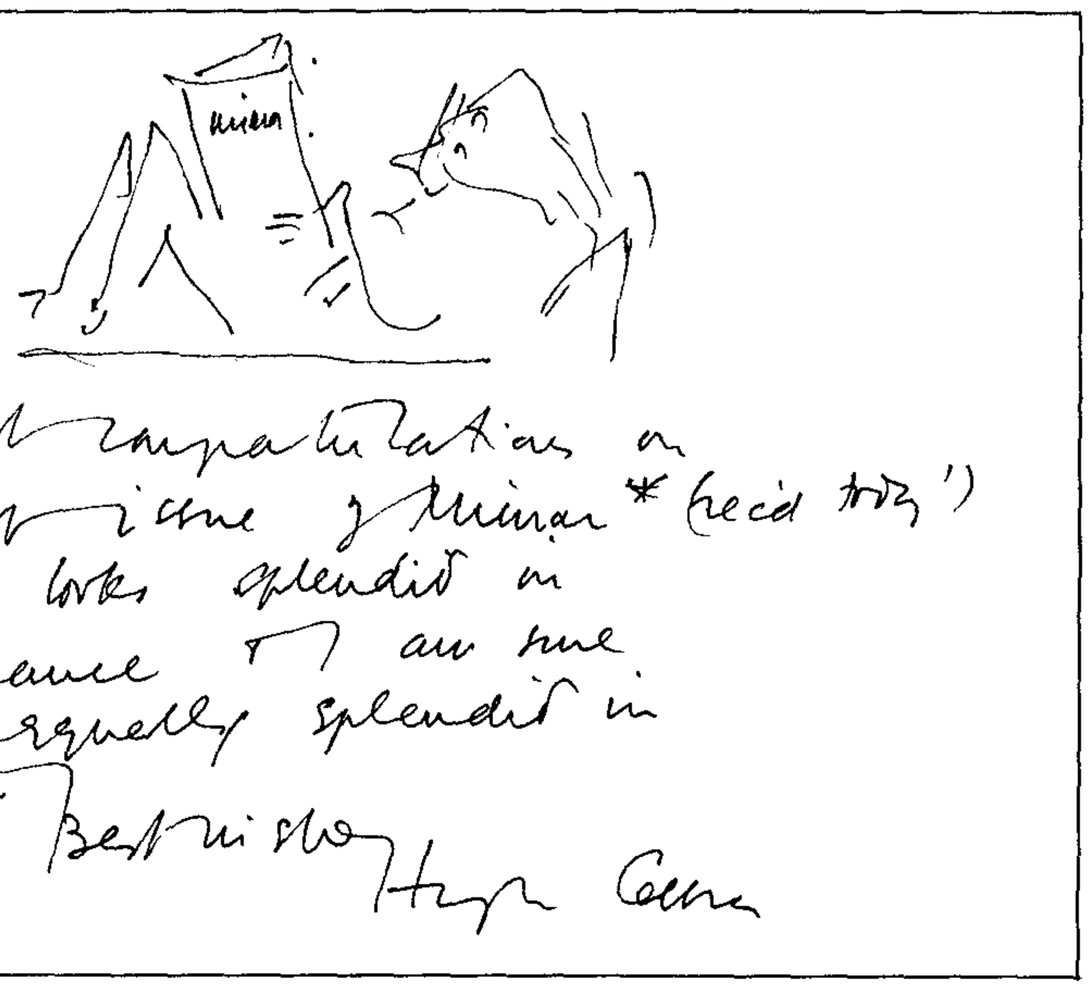
Best wishes
Charles Jencks

Charles Jencks is the well-known author of many architectural books.

Je vous félicite pour le grand travail que vous réalisez dans la recherche architecturale sous l'égide de Son Altesse AGA-KHAN.

La publication d'une revue à ce sujet ne peut qu'accroître notre patrimoine architecturale islamique et a le mérite de faire connaître de par le monde les réalisations et travaux accomplis dans ce domaine.

H.E. Abbes El Fassi, Le Ministre de L'Habitat et de L'Amenagement di Territoire.



Warmest congratulations on the first issue of MIMAR (rec'd today!) which looks splendid in appearance and I am sure will be equally splendid in content

Best wishes
Hugh Casson

Sir Hugh Casson is the president of the Royal Academy of Arts.

Warm congratulations on getting MIMAR out and getting it out so successfully I am prompted nevertheless on giving you a detailed personal criticism .

To start with a very general point: any architectural journal must contain either information or arguments, or preferably both You either bombard your readers with lots and lots of superb illustrated material or you provide your readers with a gripping read by tackling the burning issues of the day It seems to me that MIMAR shouldn't do the first because of its very *raison d'être,* which has to do with *the* burning issue of the day: the rights and wrongs of a return to an appropriate expression both in cultural and technological terms . I found the mix of the first issue rather good, though it might have helped to have had a good 'western import' among the schemes to set off the indigenous ones. I think, too, that there might to advantage have been more in the issue This may be as much a matter of layout as of actual quantity

Brian Taylor's introduction to the 'Technology and Image' theme is workmanlike but I wish I could say the same for the article on *The Development Workshop*. I am afraid that the very real sympathy I had for this group and the work they do vanished as it got engulfed in the mire of their jargon The diagrams of the vaulting are delightful, and communicate instantly with the minimum of words

Returning to the issue of not coming to grips with major issues, I don't think the interviewer should have allowed Abdel Wahed El Wakil to get away with his statement about functionalism and the Modern Movement Leaders of the Modern Movement never used the word functionalism in its narrow sense, in which it came to be understood by the slavish followers, and detractors of the movement. They used it in its full sense and as Gropius put it, "not as a simple-minded, purely utilitarian approach to design, devoid of any imagination that would give grace and beauty to life

Serban Cantacuzino
London, August 1981

Sherban Cantacuzino is Secretary of the Royal Fine Arts Commission.

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Editor's Notes

The response to MIMAR · 1 has been most gratifying. Architects and other designers, as well as clients have been complimentary. The graphics have been admired, and for this I direct the praise to Emilio Ambasz and Viscom Design Associates. There were, of course, as with any new publication, problems that will have to be worked through for future issues. The important thing is that there is now an international periodical devoted to issues important to the developing countries, one which conveys the work of architects therein to the mainstream of architectural work and thought. We hope to epitomize the sentiments of a friend of mine who said that MIMAR could be "the 'cutting-edge' of architectural thought".

With this in mind MIMAR · 2 examines emerging professions — and professionals — working in design in the Third World. One such group is women. Women designers seem to have found a niche in teaching, writing about architecture, as interior designers, and in textiles and graphics: but very few seem to practice architecture. We found it difficult to find women designers from the Third World who have built large commissions. This situation parallels that of women entering other professional — and non-'traditional' fields. Not surprisingly, however, there are now more younger women architects who are beginning to practice but who have not yet had the opportunities for major commissions. MIMAR felt it important to bring to our readers' attention some of these better and more interesting designers working today — designers who happen to be women. Most of them are unknown outside their own countries, but their work reflects what is happening in the architecture of the so-called 'emerging' countries. Much of this work (of both women and men) is relevant to industrialised nations as well, especially questions of energy conservation, people's participation in planning their environments, preservation of cultural heritages, and development of national and regional identities in architecture. I believe this fact is too little recognised in the West, and hope through this magazine to present these important themes in a convenient forum.

Our editorial cartoon depicting the emerging architect has been deliberately left vague to allow each reader to interpret it according to his or her perspective. All that I should add is to say that we hold optimistic attitudes toward all the kinds of people who are struggling to create better living conditions.

This issue continues its regular sections, such as NEWS and BOOK REVIEWS. In our last issue we presented a GALLERY of photographs dealing with the visual environment and we do this again, but rather differently, as a BUILDING STUDY of a hotel in Tunisia. We feel it points the way for an alternative design vocabulary for the architecture of North Africa. Its design does not resort to easily identifiable symbols of Muslim architecture, such as the dome or vaulted window facades, but uses skillfully some of the principles of organisation and sequencing of spaces and ties together elements of different scales with a quiet harmony. The building has just been completed and in about two years we would like to return to it to present it in use and see whether it functions successfully.

The MIMAR COMPETITION was announced in our first issue and we repeat it for the last time, with the expectation that the response brings with it interesting approaches and solutions to the design problem posed herein.

We have initiated our FEEDBACK section, where we publish readers' responses, criticisms and ideas in our continuing dialogue about Architecture in Development.

We have made an exciting beginning, and with your help, hope to make this magazine not only useful, not only beautiful, but indispensable to you.

Hasan-Uddin Khan
Editor-in-Chief