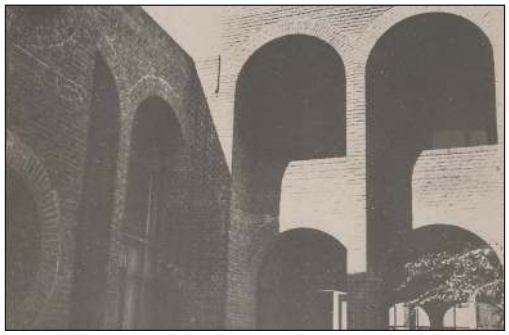
JOURNAL OF THE INDIAN INSTITUTE OF ARCHITECTS

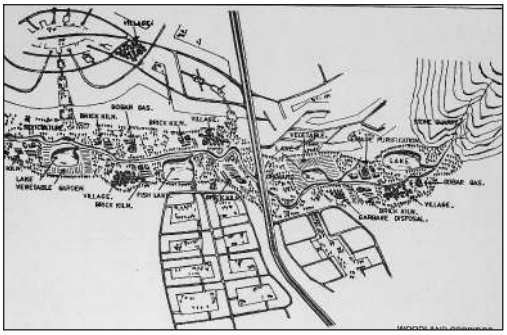
REFEREED JOURNAL OF IIA | ISSN-0019-4913 2020 JANUARY-FEBRUARY | VOLUME 85 | ISSUE 01-02 | ₹ 100

Residential JIIA Awards - 1989



Public / Institution JIIA Awards - 1989

Industrial JIIA Awards - 1989



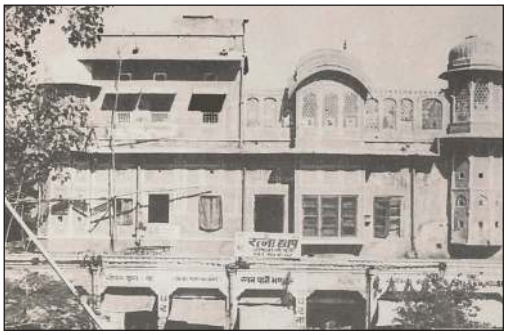
Research JIIA Awards - 1989

Shelter JIIA Awards - 1990

Housing JIIA Awards - 1990

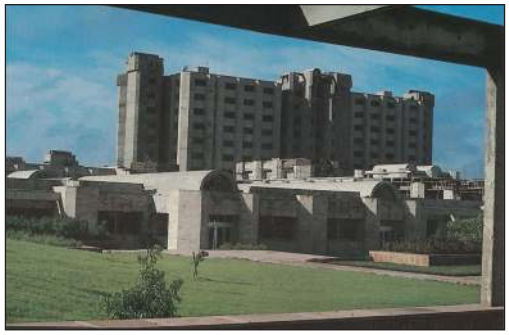
Institutional JIIA Awards - 1990

Commercial JIIA Awards - 1990

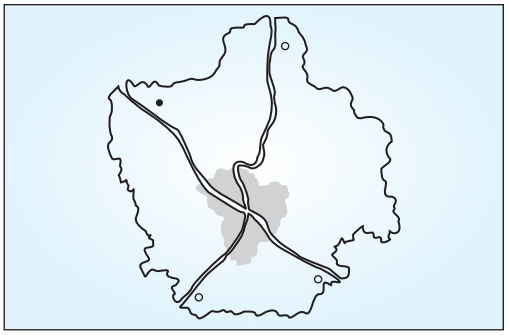


Research JIIA Awards - 1990

Housing JIIA Awards - 1991



Commercial JIIA Awards - 1991



Research JIIA Awards - 1991

happiness through architecture

SketchUp 2020

Trimble.

SketchUp 2020 is here.

Contents

JIIA IS REFEREED JOURNAL
ISSN-0019-4913

REGISTERED UNDER SOCIETIES REGISTRATION ACT, XXI OF 1860
JOURNAL OF THE INDIAN INSTITUTE OF ARCHITECTS
VOL-85/ISSUE-01-02 JANUARY-FEBRUARY 2020

Printed & Published by **Ar Anand Palaye** on behalf of **The Indian Institute of Architects** and printed by **Foto Copy Design Studio,** M-2, Sai Vihar, 22, Mint Back Road, Fort, Mumbai 400 001 and Published at **The Indian Institute of Architects**, Prospect Chambers Annexe, 5th Floor, Dr D N Road, Fort, Mumbai – 400 001.

Tel. : +91.22.22046972/22818491/22884805 **Fax :** +91.22.22832516
Email : iiapublication@gmail.com / iiaho1214@gmail.com
Website : www.indianinstituteofarchitects.com
Editor : Ar Divya Kush **R.N.I. No.9469/57**
Email : divyakush@yahoo.co.in
Printer's Email : fotocopy.ks@gmail.com

IIA OFFICE BEARERS 2015-2017

Ar Divya Kush	- **President**
Ar Prakash Deshmukh	- **Imm Past President**
Ar Vilas V. Avachat	- **Vice President**
Ar Amogh Kumar Gupta	- **Jr Vice President**
Ar Sunil R. Degwekar	- **Hon Treasurer**
Ar C. R. Raju	- **Jt Hon Secretary**
Ar Lalichan Zacharias	- **Jt Hon Secretary**
Ar Anand Palaye	- **Chairman - Publication Board & Executive Editor, JIIA**

Ar. Anand Palaye

EDITORIAL

Dear Fellow Architects and readers

As our institute continues its glorious journey forward into a new year 2020, we at JIIA are delighted to provide our readers with useful and meaningful architectural material.

Year 2020 brings us lots of cheer, pride and happiness and it is time to celebrate **IIA Team India's winning the Champion's Cup in Cricket,** and also achieving the **Runners'-Up position in the Badminton Tournament** which was recently held at **ARCASIA SPORTS FIESTA, 2020** at **Colombo, Sri Lanka** in the month of **February, 2020.**

Congratulations to both IIA teams and all the participants.

There is another milestone in IIA has taken place in that legendary **Architect Shri B. V. Doshi** has been conferred with the **Padma Bhushan Award** by the **President of India** in recognition of his phenomenal achievements in the field of Architecture.

We at IIA are proud of **Shri Doshi's** great contributions to Architecture and congratulate him on being felicitated with this great honour.

In this issue we have once again featured some of the earliest IIA Awards for Excellence i.e. 1989 which incidentally was the first award phenomenon.

Hoping that year 2020 will bring lot of happiness and cheer for all.

Ar. Anand Palaye
Chairman - Publication Board & Executive Editor, JIIA

Ar. Divya Kush

PRESIDENT'S MESSAGE

Dear Fellow Architects,

The year 2020 has already brought cheers to IIA by winning the **Champion's Trophy in Cricket & Runner's up Trophy in Badminton** in the recently held **ARCASIA Sports Fiesta 2020** at **Colombo.** I am sure all round prosperity in the profession will follow in the coming months.

Friends, It is a matter of great pride & celebration that, in recognition & appreciation of a life time contribution in the profession of Architecture, the **Great Master Ar. B.V. Doshi** has been conferred with the **Padma Bhushan Award** by the **Hon'ble President of India.** I am sure his work & philosophy shall continue to guide the present & future generations of Architects.

"Hearty Congratulations to the Great Master Ar. B.V. Doshi"

The last issue of the journal was dedicated to the latest edition of the **IIA Awards for Excellence in Architecture,** In this issue we are reprinting some of the winning projects of the earliest editions of the **IIA Awards.** I am sure, Comparing the two editions of JIIA will be an interesting exercise.

Wishing you a Happy & Prosperous New Year 2020.

Divyakush

Ar. Divya Kush
President,
The Indian Institute of Architects

Iconic Satara, National Level, Single Stage Architectural Design Competition for the Proposed Administrative Building for Satara Municipal Council

While the demand for well designed buildings and infrastructure is on a rise due to rapidly urbanising world, the professionals who are trained to design are still struggling to reach where their services are needed the most. Design of public buildings in India is one such area of concern in urban as well as rural infrastructure. A good architectural design of public buildings can make a positive impact on the lives of the users as well as the fabric of the city. India has witnessed such positive impacts right through its history.

The winning entry by Ar. Kalpak Bhandari & Team of Veekas Studio, Pune.

The Indian Institute of Architects Satara Centre convinced the Satara Municipal Council to hold a single stage Architectural design competition for its proposed Administrative building in Satara. The design brief was prepared with the program requirements and documentation of site. The advertisement for the competition was published on 20th February 2019 and online registration process was followed. The only criterion for a qualified competitor was his/her registration as an architect with the Council of Architecture. This lead to an overwhelming response from the architectural fraternity and 188 Architects registered for the competition. 118 entries were received in the prescribed format from all over the country. The respected

Design Exhibition of top 32 entries.

Ar. Satish Mane, Chairman IIA Maharashtra chapter welcoming Chief Guest Shri Ch. Udayanraje Bhonsale.

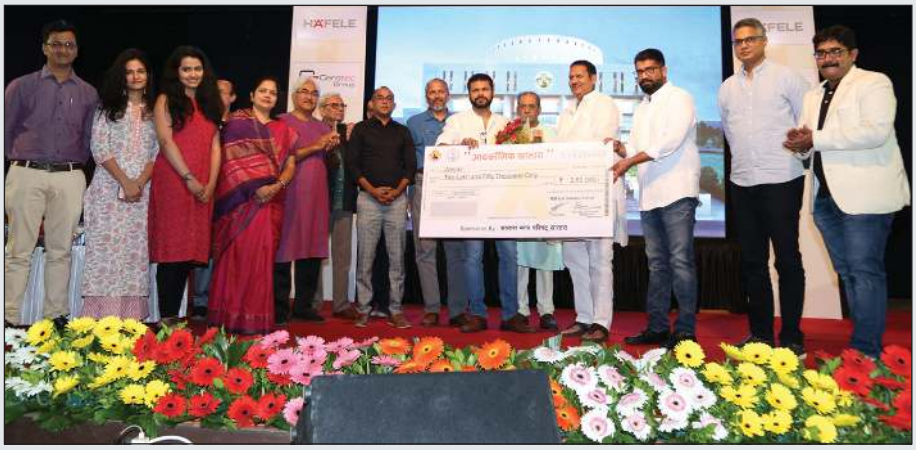
First three winner teams with juries and organisers.

members of the Jury Ar. Chandrashekhar Kanetkar, Ar. Nitin Killawala and Ar. Sanjay Patil enthusiastically went through all the design entries. The prize distribution ceremony was held in Satara on the 12th November 2019. A gala dinner was organised with the authors of top 32 Design entries.

Exhibition of top 32 entries showcasing their proposals was kept open for the citizens of Satara at the venue of the prize distribution ceremony on 12th and 13th November 2019. A coffee table book documenting the top 12 entries as well as the vision statement, design brief, jury report was published and unwrapped in the Prize distribution ceremony.

The aim of arranging a national level design competition was to allow a fair and transparent platform for the nations architects including fresh graduates to compete at the same level and to create a precedence and tradition which can be followed by other local administrative bodies, Government, Public and semi Public organisations across India with the aim of getting meaningful architectural design alternatives for their buildings and infrastructure.

The aim was also to create awareness among the society about architecture and architects.



Ar. Kalpak Bhandari & team of Veekas Studio Pune receiving cash prize of Rs. 2.50 Lakh from Maharaja's being winner of the competition.

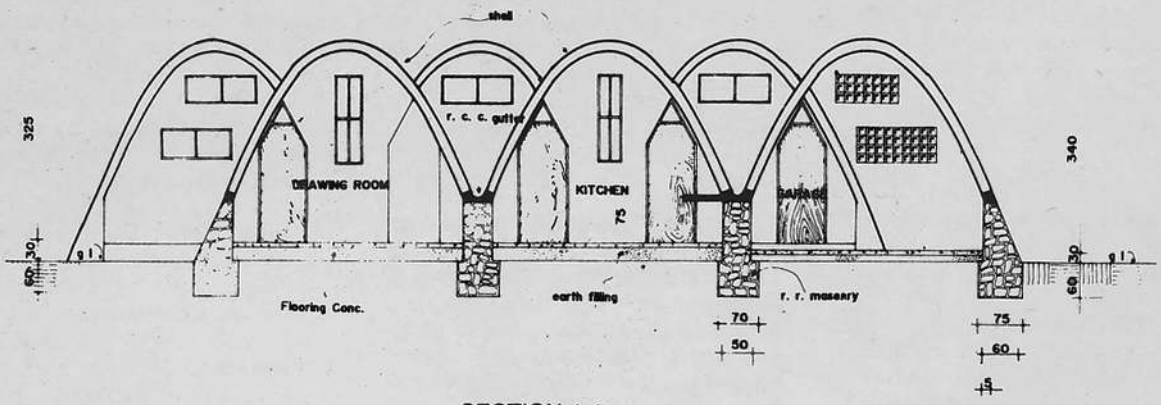
'Team Iconic Satara' organising team of event 'Iconic Satara' design competition. Cheerful as usual while "Celebrating Architecture".

Publication of event coffee table book showcasing top 12 entries. Dignitaries with the editorial team. The book is available at Rs. 1000/- including postage. Interested may contact at iiasatara@gmail.com

This Project was published in the JIIA - January 1991 Issue

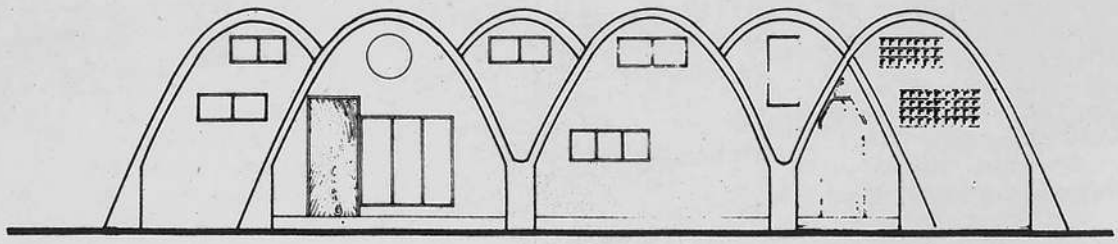
Beach house at Calicut

Ar. R.K. Ramesh F.I.I.A



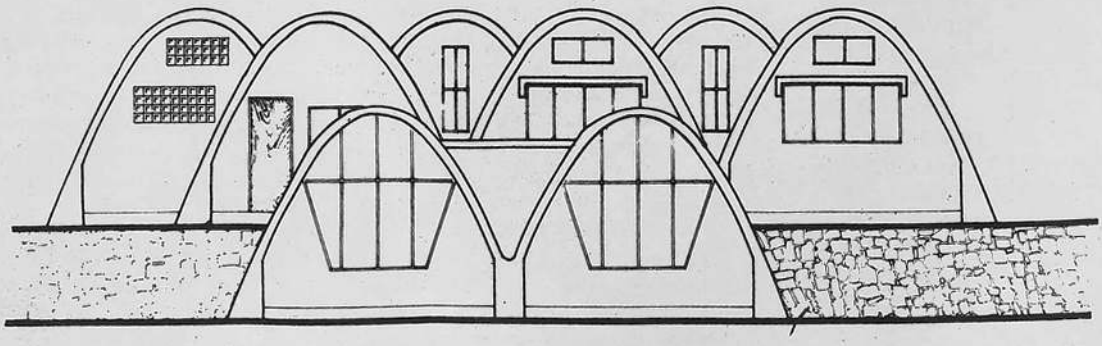
SECTION 1-1

SCALE 1:50



FRONT ELEVATION

SCALE 1:50

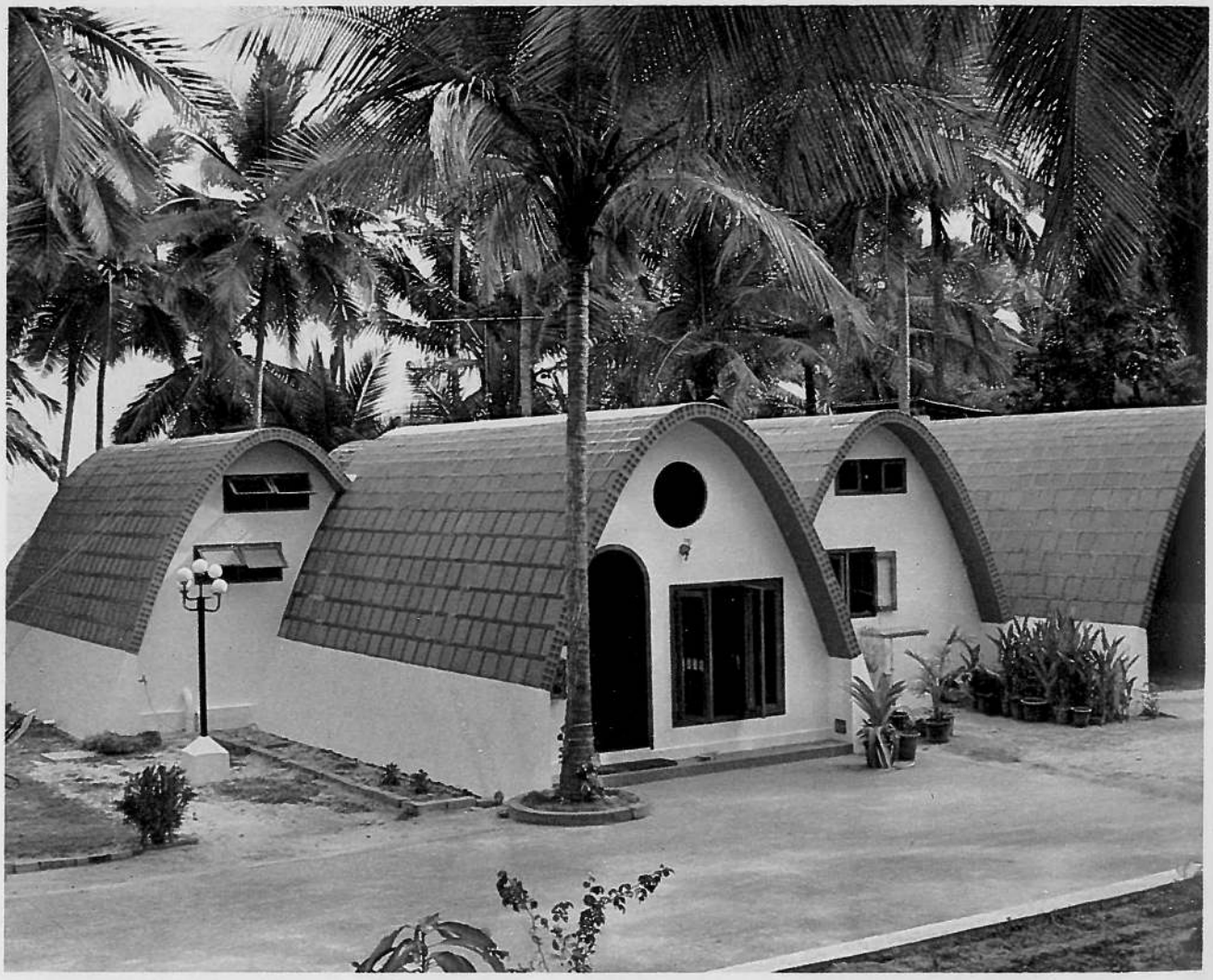


REAR SIDE ELEVATION

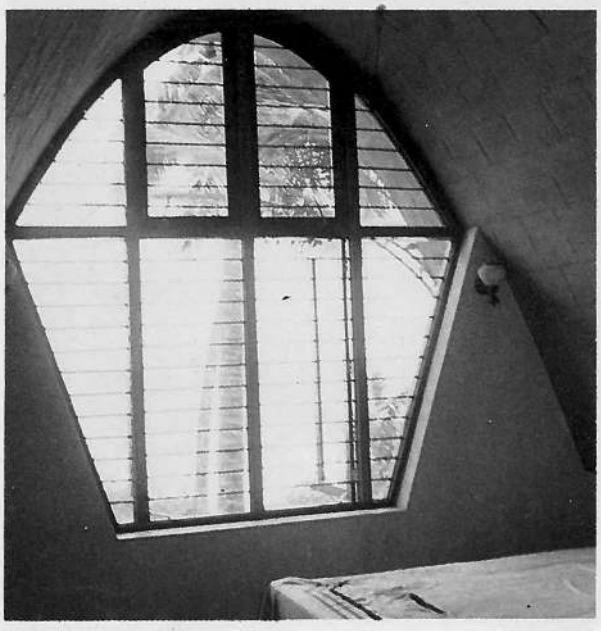
SCALE 1:50

Front view of the beach for Shri Venugopal

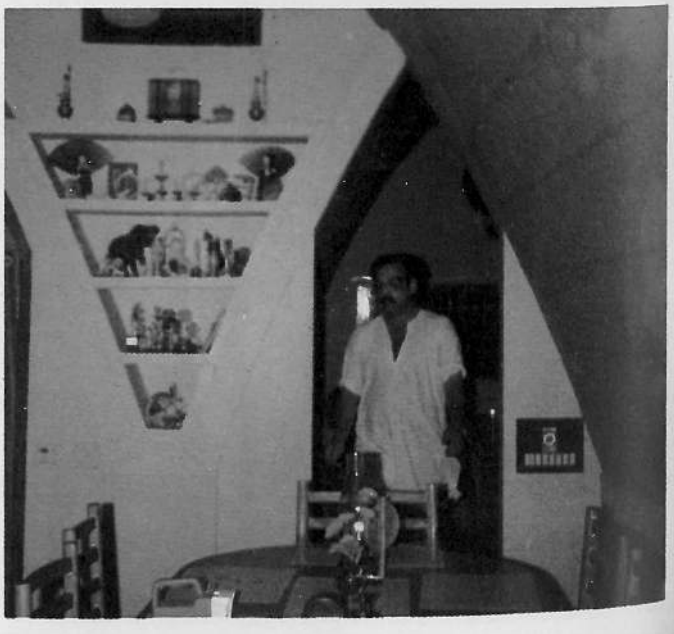
Rear view



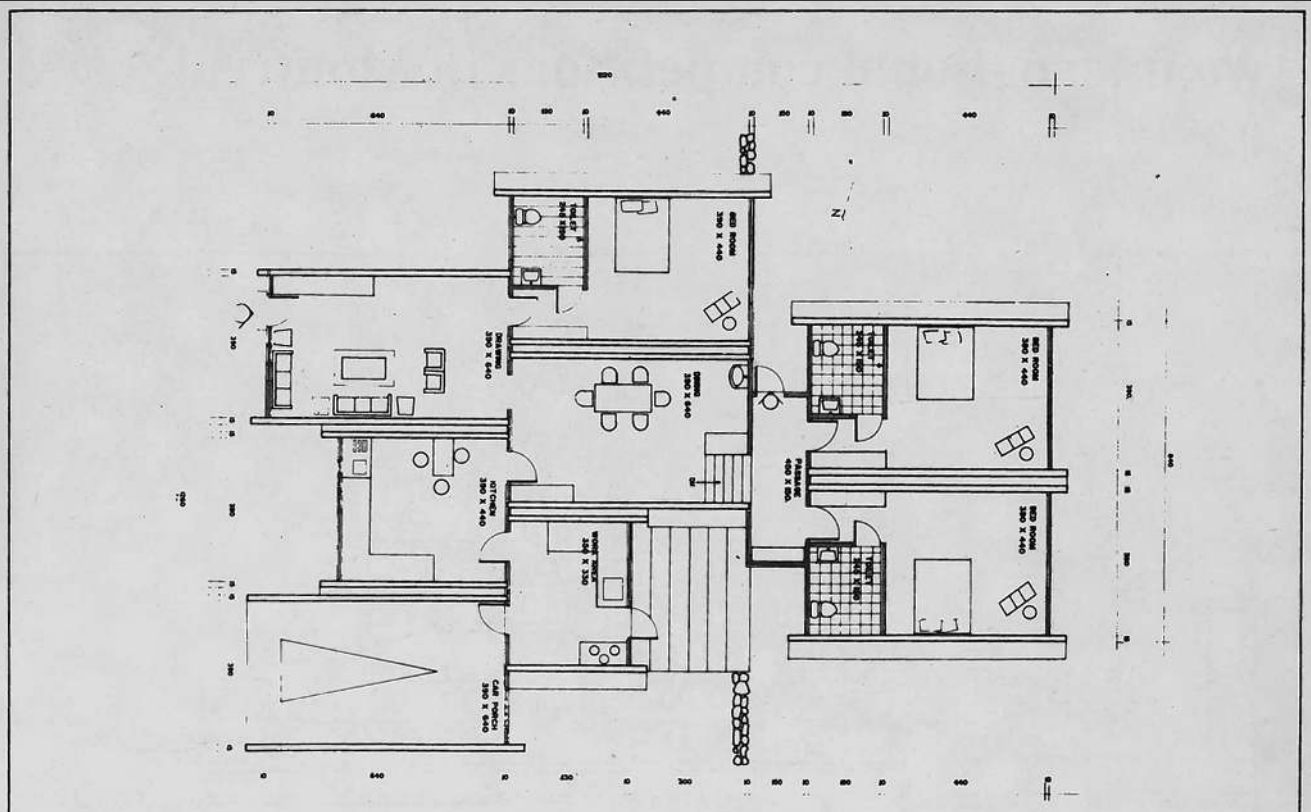
Birds eye view of the beach house



Bed room



Dining room



GROUND FLOOR PLAN

Parabolic shells using hollow clay blocks was an innovative and revolutionary concept evolved by R.K. Remesh in 1970, in collaboration with Standard Tile & Clay Works, a local tile manufacturing unit. A number of constructions using this technique was demonstrated throughout India for different types of houses, clubs, cottages, schools, shops, godowns etc. It was demonstrated in Housing Exhibitions in 1976 in New Delhi and in subsequent years at Madras and at Bangalore. More than 250 structures were erected throughout India and people are occupying these buildings comfortably for the last 19 years. Cost reduction upto 50% is achieved in these constructions depending on the nature of construction.

This model house is designed for Sri. Venugopal, Chartered Accountant at Calicut which was completed in August 1988. A three-bed-roomed House with a plinth area of 206 M^2 was spread in two levels. Eight shells interconnected, accommodated all the required facilities of drawing room, dining room, guest room, 2 nos. bed rooms, kitchen, work area and a garrage. All the rooms will have a view towards the sea. The main bed rooms at lower level are directly facing the rocky terrain of the beach.

The Concept of Sheltering Shell

Extruded, wire cut and burnt terracotta hollow blocks of 5 different types are assembled parabolically over a removable steel form work, provide a very comfortable shelter at minimum cost and minimum effort in a very short time. The parabolic shell do not develop any bending moments and there is only compressive stresses which are directly transmitted to soil through the sloped basement. Since the total weight of structure is very low the foundation required is only minimum. The possible variations and combinations are plenty–from luxury houses to single room tenements. The building of main walls and roof are combined in the shell with the minimum of materials and completely eliminating the use of steel. Two layers of hollows give an excellent thermal comfort inside. Practically space is not wasted even on sides closer to shell when furniture is properly laid out. The idea itself was developed from the very meaning of sheltering by a simple structure, aesthetically magnificent and structurally most stable.

Credits

1. Name and Address of Client:
Mr. M.V. Venugopal,
Chartered Accountant,
Parasuram Iyer & Co.,
Cherooty Road,
Calicut.

2. Architect:
R.K. Remesh, B. Arch., AIIA,
17, Jayanthi Nagar Colony,
P.T. Usha Road,
Calicut–673 032,
Kerala.

3. Executed by:
Brick Bond Shelters (P) Ltd,
Nallalem, Calicut–673 027,
Kerala.

4. Cost of the building
Estimated cost: Rs. 2,10,000/-
Actual cost: Rs. 2,25,000/-

(Actual amount including cost of polished cota stone flooring dadoing glazed tiles in toilet, sanitary fixtures, electrification and other furnishing works)

5. Clay technology:
Mr. Vijaya Kumar,
Bangalore.

6. Electrical consultants:
National Engineering Co.,
Calicut.

7. Location:
Elathur
12 km from Calicut.

8. Plinth Area: 206 sq. m.

9. Period of construction: Feb 3rd to 27 Aug. 1988

This Project was published in the JIIA - June 1987 Issue

Sri Desmesh Academy

Anandpur Sahib, Punjab

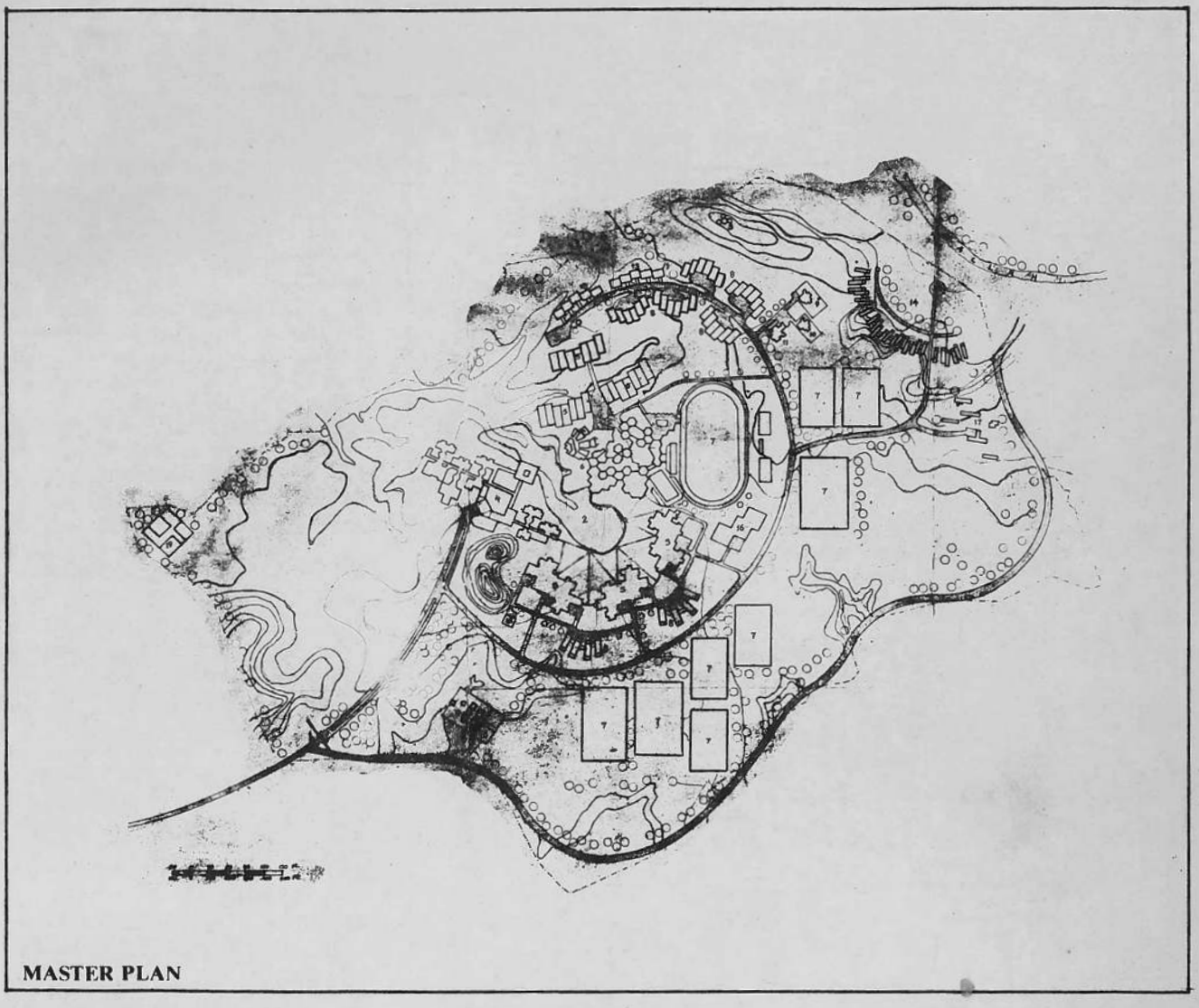
Architects: Satnam Singh,F.I.I.A. & Namita Singh, F.I.I.A.

Sri Desmesh Academy *A view of hostels*

SRI Desmesh Academy is a residential Public School Complex for 1,000 students spread over an area of about 200 acres situated about 5 km north of Anandpur Sahib in the State of Punjab.

This Academy has been set up with the aim to offer better standard education to a large number of deserving RURAL CHILDREN. These bright children otherwise miss the opportunities of better education, which their Intelligence Quotient justifies, but is denied to them for lack of funds and social status.

The scheme opens vistas of high quality education enabling the rural brilliant children of low-income group percentage to successfully compete for the Indian



MASTER PLAN

Administrative Service, Defence Services and other top positions in the Scientific and Technical fields. Admissions to 40 per cent of seats are reserved for such children from rural areas and their fees are financed from an Endowment Fund.

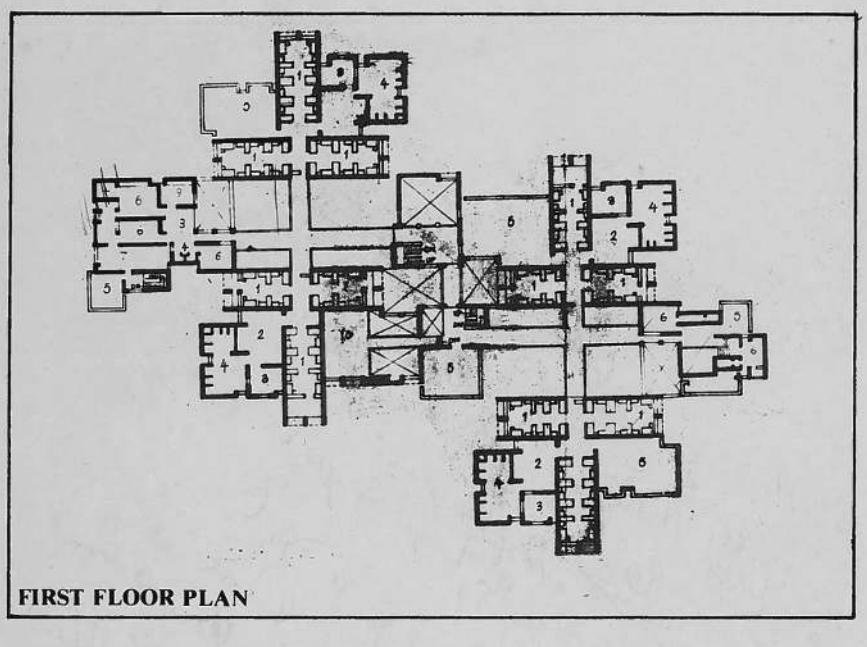
The project involved campus planning and designs of various buildings, employs for schools, hostels for students, housing for Faculty staff as well as Class III and IV staff, sports complexes, open air theatre and community centres.

Master Plan

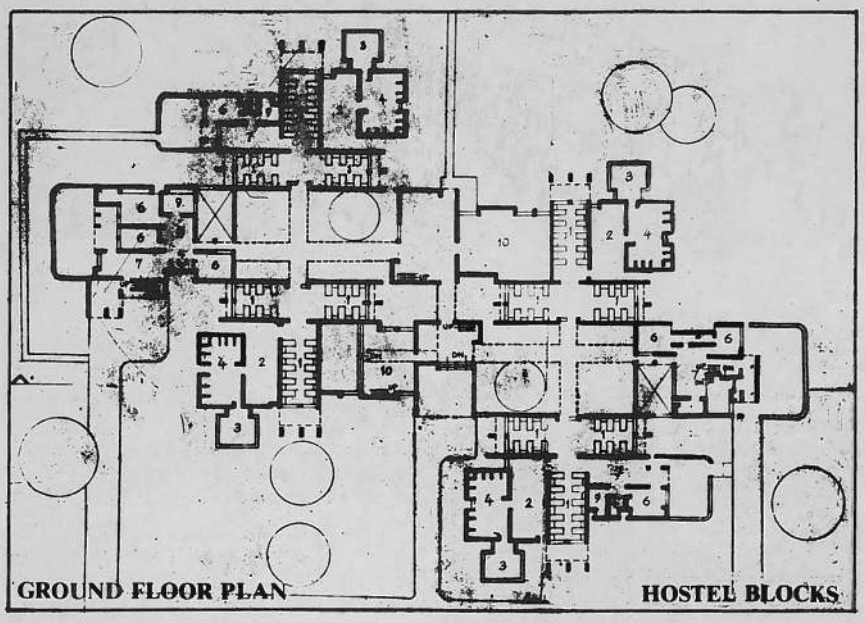
The tenets of a modern residential school have their roots in the traditional system of education in Gurukula, where living is learning, with a view to making learning spontaneous, enjoyable and enriching, this campus is conceived as a series of learning spaces which are not confined to the conventional class room. Learning takes place at all times in all places, in a SHANTINIKETAN like atmosphere.

Maximum utilization of the uneven land, organised yet another interesting movement, endures scaled to suit the multifarious activities, and invigorating visual encounters are the main dimensions of the total concept.

The existing site characterised by its random ruggedness and the magnificent backdrop of the Shivalik Hills, presented a rare and stimulating challenge. The highly undulating land with small flat stretches, a couple of deep erosion and a small mound, was a dream site to work on. The topography of the site itself seemed to suggest an oppropriate place for most of the design elements of the campus, and the master plan that finally emerged was the natural outcome of these logical suggestions.



FIRST FLOOR PLAN



GROUND FLOOR PLAN — HOSTEL BLOCKS

Land utilization

The entrance to the campus was kept on a direct axis with the mound on which was located "Dasmesh Bhavan" — a museum and library on the life of Shri Guru Gobind Singh, after whom the Academy is named.

Natural forms resulting from erosion were exploited to functional and aesthetic advantage by creating a 'water feature' which links together the school, hostels and the central complex. In addition, undulating land around this area was taken full advantage of by creating exciting multi-level spaces.

The remaining dull and flat land was appropriately used for sports fields and cultivation.

The small portion of the site towards the north east, segregated from the main site by sharp slipe, was just right for the class (iv) housing, giving it privacy and independence.

Movement

Movement is not isolated from activity, but is ingeniously inter-woven into the complex. As one moves, one constantly experiences all the different spaces and activities enriched by striking visual encounters. There are no loose-ended walkways or blind alleys. You always walk upto some place through avenues and landscaped tracts of land.

A circular road off-shoots from the main road, serving the hostels, houses for staff hospital, shops and central complex.

THE VEHICULAR MOVEMENT IS THUS LIMITED to the periphery so that the campus becomes the pade-strains' paradise.

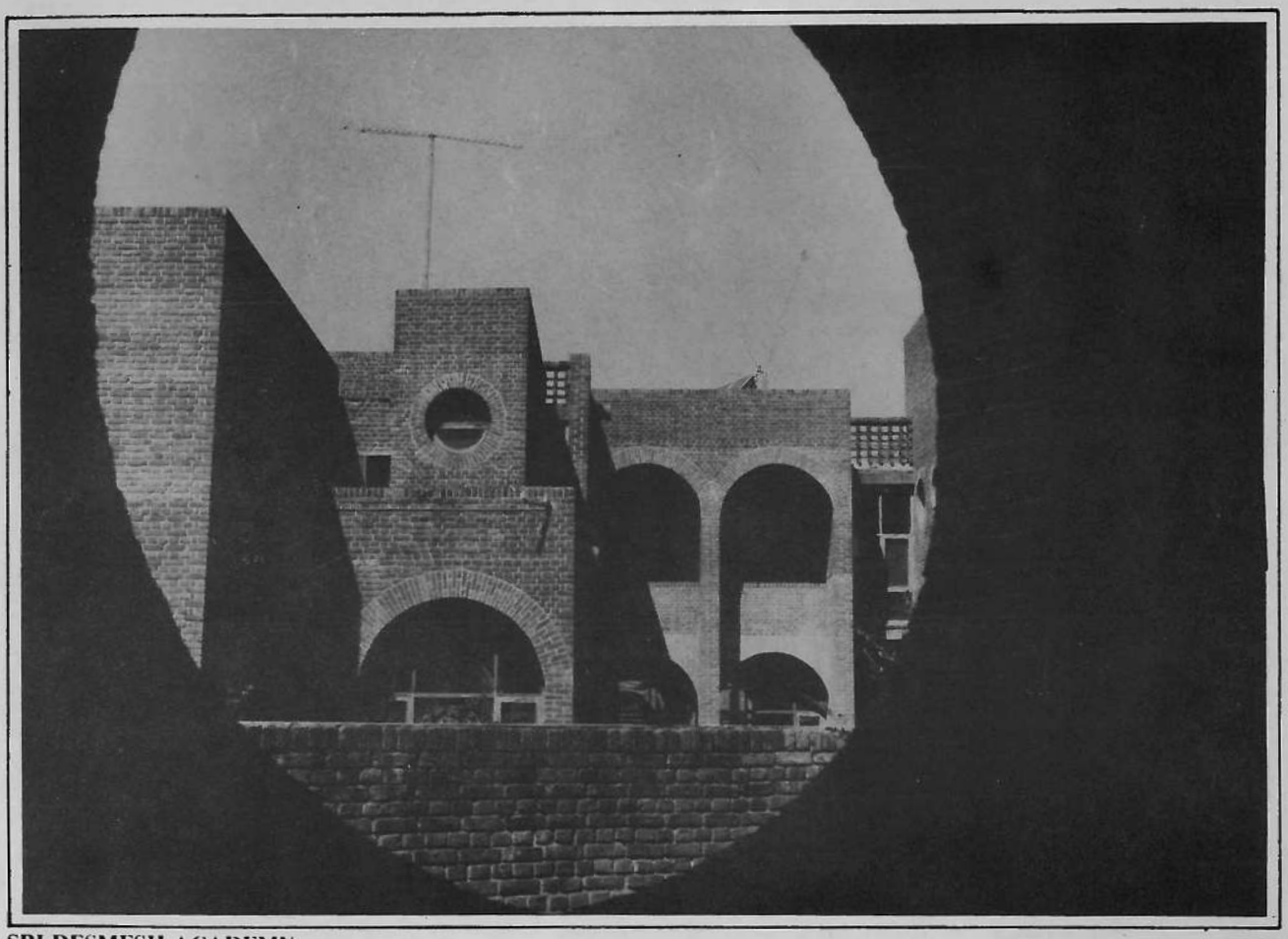
Enclosures

The buildings for each function are resolved into clusters, forming enclosures of suitable size and scale. The outer spaces defined by these enclosures are animated by the vim and vigour of the students, as their out-door activities spill out into them.

THESE MICRO ENCLOSURES OF INDIVIDUAL BUILDINGS PROGRESS INTO MACRO ENCLOSURES OF ALL THE BUILDINGS AROUND THE CENTRAL WATER FEATURE. The forever enveloping enclosure of buildings and landscape make a secure haven for the children.

Visual strategy

The visual strategy created by the clustering of all the activities around the WATER FEATURE ensures that every one is an integral part of the larger whole, wherever he may be, whoever he may be. As he moves about, he has a constant visual contact with the central complex thro' views framed by gaps between the buildings, thus eliminating the feeling of disorientation which is so common in campuses of this magnitude.



SRI DESMESH ACADEMY

Schools

ACCOMMODATION PLANNED

Phase I — 600 students
Phase II — 1000 students

1. Junior School — 16 class rooms Gen. Science & Gen. Arts rooms — 2
2. Middle School — 16 class rooms, General Science Block
3. Administrative Block
4. Workshops
5. Senior School — 16 class rooms
6. Library
7. Cultural Block
8. Laboratories

Stage of construction

Junior and Middle Schools, Admn. Block, Cultural and General Science Blocks and toilet blocks of Phase I are complete.

YEAR OF CONSTRUCTION — 1980
COST OF CONSTRUCTION — Rs. 60.00 LACS
PLINTH AREA — 87,500 SFT
PLINTH AREA RATE — Rs. 68.00 PER SFT.

Hostels

Number of Hostels — THREE

TOTAL NUMBER OF STUDENTS — 576

Accommodation

Dormitories for Junior students — 12 with attached Dressing area and toilets, Dormitories for Senior students — 12 with attached Dressing area and toilets, Common Rooms for Junior students — 6 Common Rooms for Senior students — 6 Senior House Masters' Residence — 3 Junior House Masters' Residence — 3 Matrons' Residence — 6

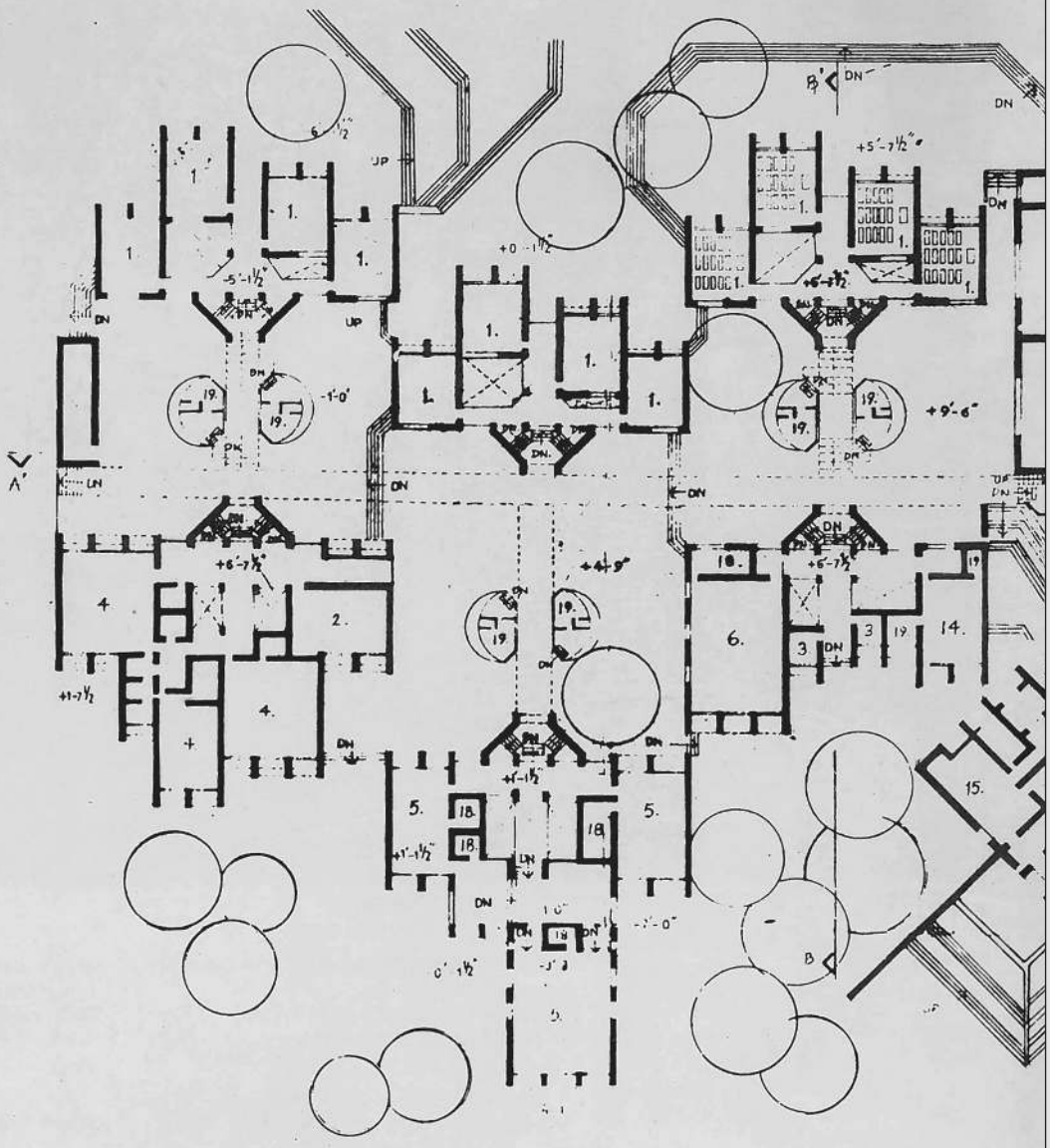
Stage of construction

These hostels are complete.

YEAR OF CONSTRUCTION — 1979-1983
COST OF CONSTRUCTION — 90.00 LACS
PLINTH AREA — 1,29,000.00 SFT
PLINTH AREA RATE — Rs. 70.00 PER SFT

Teachers' housing

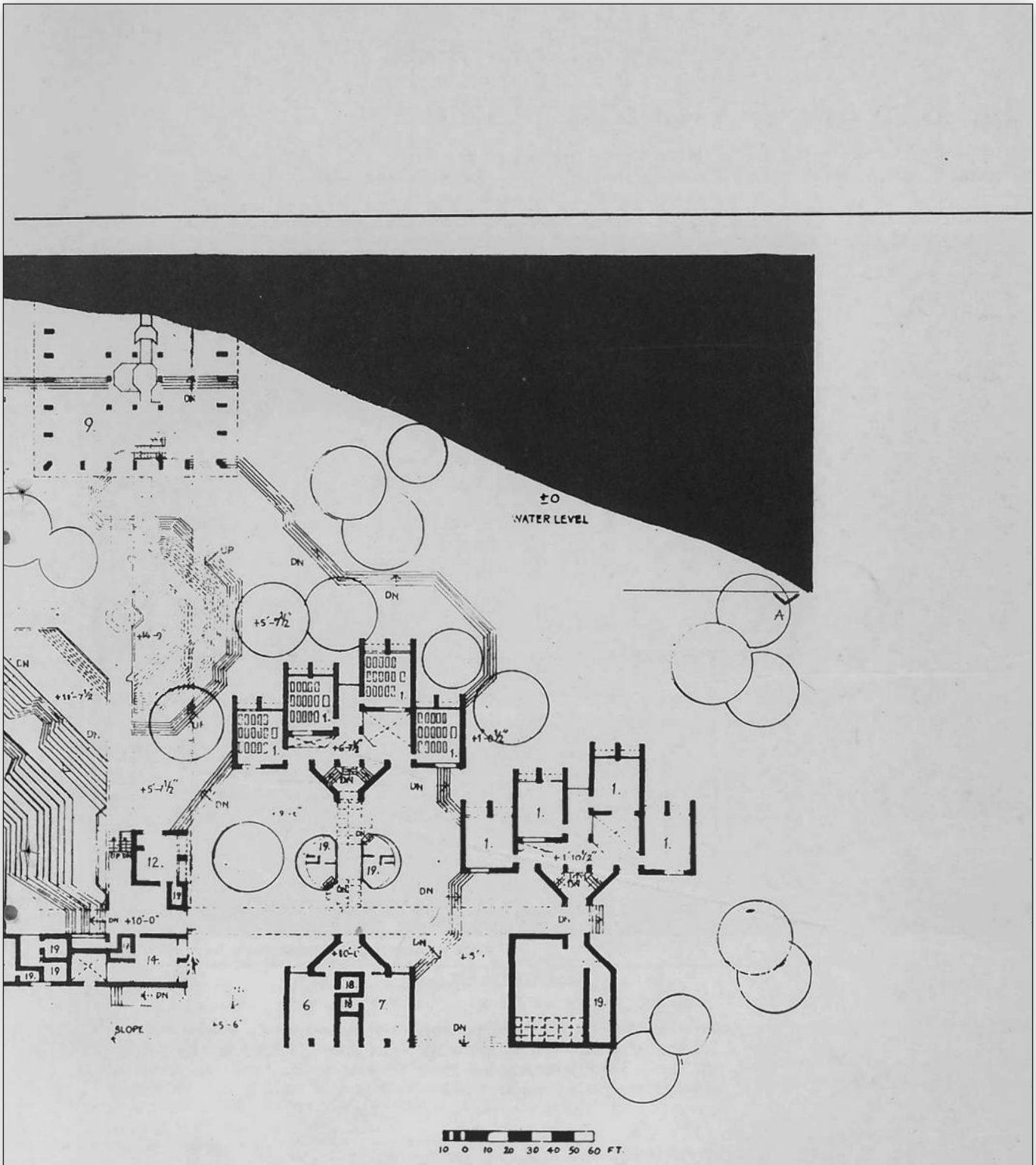
NUMBER OF HOUSES — 54
ACCOMMODATION OF EACH UNIT LIVING ROOM, FAMILY LOUNGE, AND DINING, TWO BED ROOMS,



GROUND FLOOR PLAN

GUEST ROOM/STUDY,
attached toilets, Kitchen
YEAR OF CONSTRUCTION
— 1980-82
COST OF CONSTRUCTION
— Rs. 18.00 LACS
PLINTH AREA — 21,000.00 SFT
PLINTH AREA RATE,
— Rs. 83.00 PER SFT
STAGE OF CONSTRUCTION
16 houses of Phase I are complete.

Director's residence
ACCOMMODATION
Living Room, Family Lounge and Dining, Kitchen, Study, Bed Rooms, attached toilets.
STAGE OF CONSTRUCTION
— Complete
YEAR OF CONSTRUCTION
— 1980-81
COST OF CONSTRUCTION
— 2.00 LACS
PLINTH AREA
— 3500.00 SFT



PLINTH AREA RATE
— Rs. 57.00 PER SFT

Class IV houses
TOTAL NUMBER OF HOUSES — 78

Accommodation of each unit
Multi-purpose Room, Kitchen, Bath, W.C. Courtyard and open terrace.

Stage of construction

24 houses of Phase I are complete

YEAR OF CONSTRUCTION
— 1981-82

COST OF CONSTRUCTION
— Rs. 14.00 LACS

PLINTH AREA OF EACH UNIT
HIGHER GROUP
— 400.00 SFT

LOWER GROUP
— 300.00 SFT

PLINTH AREA RATE
— Rs. 56.00 PER SFT

TVS Berg Factory at Madurai

Ar. Nitin Killawala

A well-known industrial group of TVS in a joint venture with Berg software of USA proposed this factory to manufacture small and precise components for computers.

Located on a state highway, about 40 km away from Madurai, this factory is placed at the front portion of a large plot to facilitate future expansion.

Though the entire set up is air conditioned, but controlled natural light penetrates through clear storey windows. Also windows at strategic locations are protected by overhung pergolas on all four sides. While the basic structure is grid based but internal division of work areas are within variable partition walls.

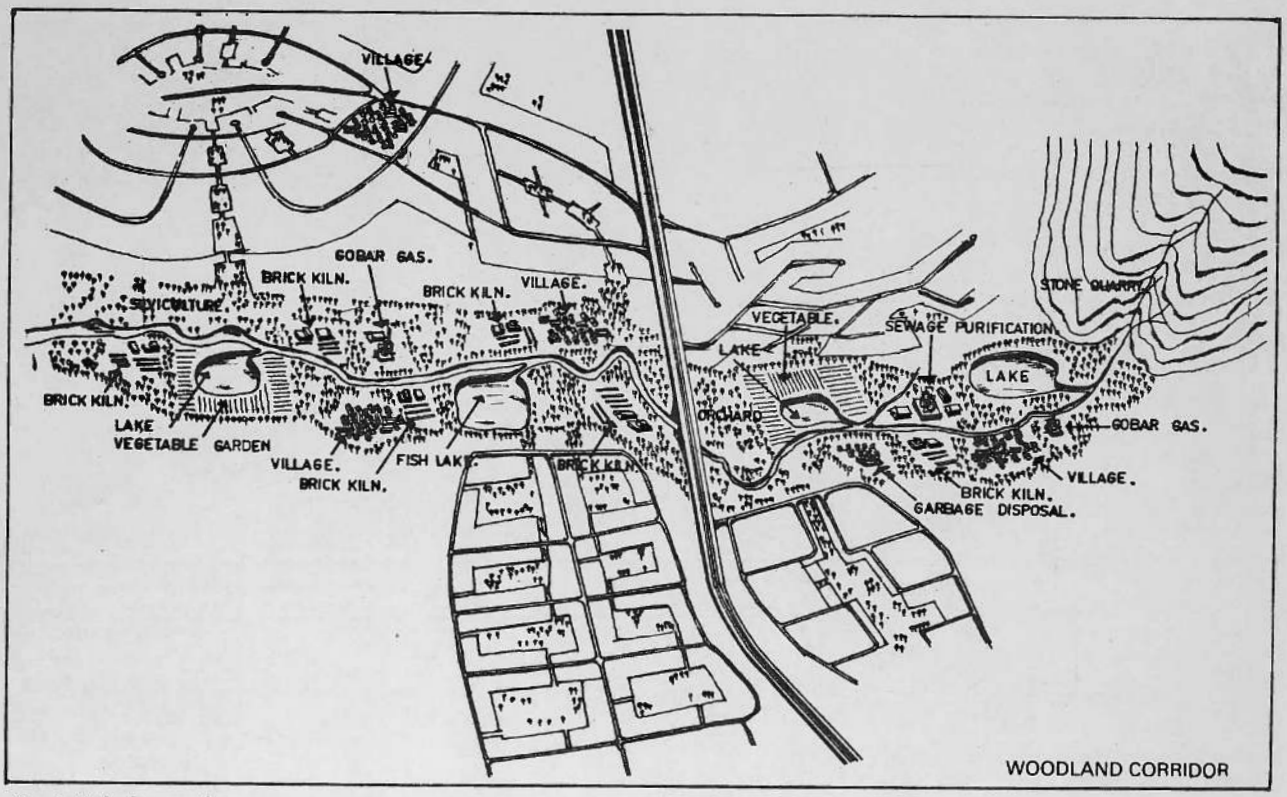
This factory provides ample opportunity for internal changes while enhances its character for an advanced electronic industry.

This Project was published in the JIIA - September-December 1987 Issue

Conflict of Two Cultures

An alternative approach to planning of Indian cities

D.G. Parab. A.I.I.A.



An Artist's Impression

The existing condition of cities and towns in India, and many other developing countries is far from desirable for majority of population. The conditions of lower order settlements such as villages and hamlets is also equally bad. This is in spite of Democratic Socialistic Development Planning which we have adopted since Independence. No doubt, there is commendable growth in some sectors of economy. This development has also helped some sections of population, who know how to exploit the given conditions, who are equipped to take the advantage of development of cash economy because of their position in power, structure of political, economic, bureaucratic as well as educational fields. This has resulted in disparities. The top 20% enjoying 50% of the total household income of the nation whereas the bottom 20% have to live on only 7% share of the income. Thus the proportion of population below poverty line is still as high as 50 per cent. Population growth, low level investment on infrastructure and the emphasis on growth and economic achievements rather than proper distribution and social justice are some of the major reasons for such conditions.

Population Growth

Population of India has increased from 11 per cent during 20's to 25 per cent during 1960. The majority of this population increase is felt by large urban centres. In 1901, only 22 per cent of Indian population lived in towns with population of 1 lakh (100 thousand) and above, whereas, in 1971 this was increased to 49 per cent. The number of class I towns have increased from 49 in 1949 to 150 in 1971 — a threefold increase. Population of cities with one million population and above which were five in 1951, had increased rapidly than other cities. In 1971, it had became 9 and in 1980 it is around 14 to 15. About 20 per cent of urban population live in cities with population of million and above. It is true that about 50 per cent of this growth is due to migration of people from rurual areas and small towns.

Ruralisation of urban centres

The basic question, we must ask — why people from rural area migrate to cities and towns, when the conditions are unbearable? The answer is that they are unbearable for city elites, but not to the poor people from villages, whose conditions are worst than city dwellers. The rural community in India till today is feudalistic. Many rural areas are abode of oppression and cruelty. The law and order in rural area is worst than urban centres. There is fear psychosis in poor who are living in villages. In fact, there is concentration or congestion of these opportunities in urban centres and really void or anaemia of opportunities in rural centres. This congestion has disturbed the equilibrium between rural and urban areas, therefore, this flow of people to cities and towns. The rural migrant

knows that in society of free economy, and elitist planning the opportunities will be hard to come to them, therefore, they go to the places of opportunities, what is happening to-day is the progressive ruralisation of urban areas due to migration of thousands of rural poor, In fact, the burgeoning urban profit oriented capitalist industry required an ever increasing number of workers for its expansion and proletarization of the rural small land holders and others who are rendered unemployed, without any means of subsistance proves functional to the capitalist pattern of society.

Growth of Shanty towns

It is true that majority of these rural poor take refuge in Bustees. Zopadpatties and Shanty towns of cities, which are termed as slum. This start, to begin with as temporary dwelling place or resting place where families are reared. What begins as temporary dwelling place under chronic shortage of durable and cheap housing, eventually becomes functional element and major land use of city. To-day, about 30 to 40 per cent of people in our cities live in these settlements. In Bombay, there are about 847 slums accommodating about 4 million people. Most of these, become slums because of lack of minimum civic amenities such as, water supply, latrines, ventilated, living spaces, without which civilised life loses much of its meaning. The residents of these Shanty towns who are mostly low income group come with the hope of securing some employment as unskilled or semi-skilled labours in cities. But they not only remain but continue to remain unintegrated with the main streams of urban life. They continue to govern in their behaviour by rural culture and social standards. Their economic modes of existence and the distance of their residential environment tends to reinforce their isolation further from the rest of urban population. The term, distance here means, social, educational, cultural moral and psychological dimension rather than physical distance. The slums are, therefore, small villages within our cities with social and cultural trait intact.

Urban modes and occupation do not change them. A substantial section of these people work as unskilled workers, as daily wage earners without any social security in unorganised industries which absorb more than 50 per cent of city employment. Some of them are engaged in self-employment as hawkers, petty traders or the skills which they have acquired.

Most of these people do not stay permanently in cities. They do have ties with their village through village organisations which exists in such bustees and slums. One can see such organisations in working class areas of Bombay. Through such organisation they build schools or temples in villages. In fact, some of these people perform certain rural jobs, within city to satisfy needs of urban population. We see most of these slums dotted with cow sheds, goats tied to tree, small poultry and vegetable gardens developed on strip of land along railway track or existing nalla.

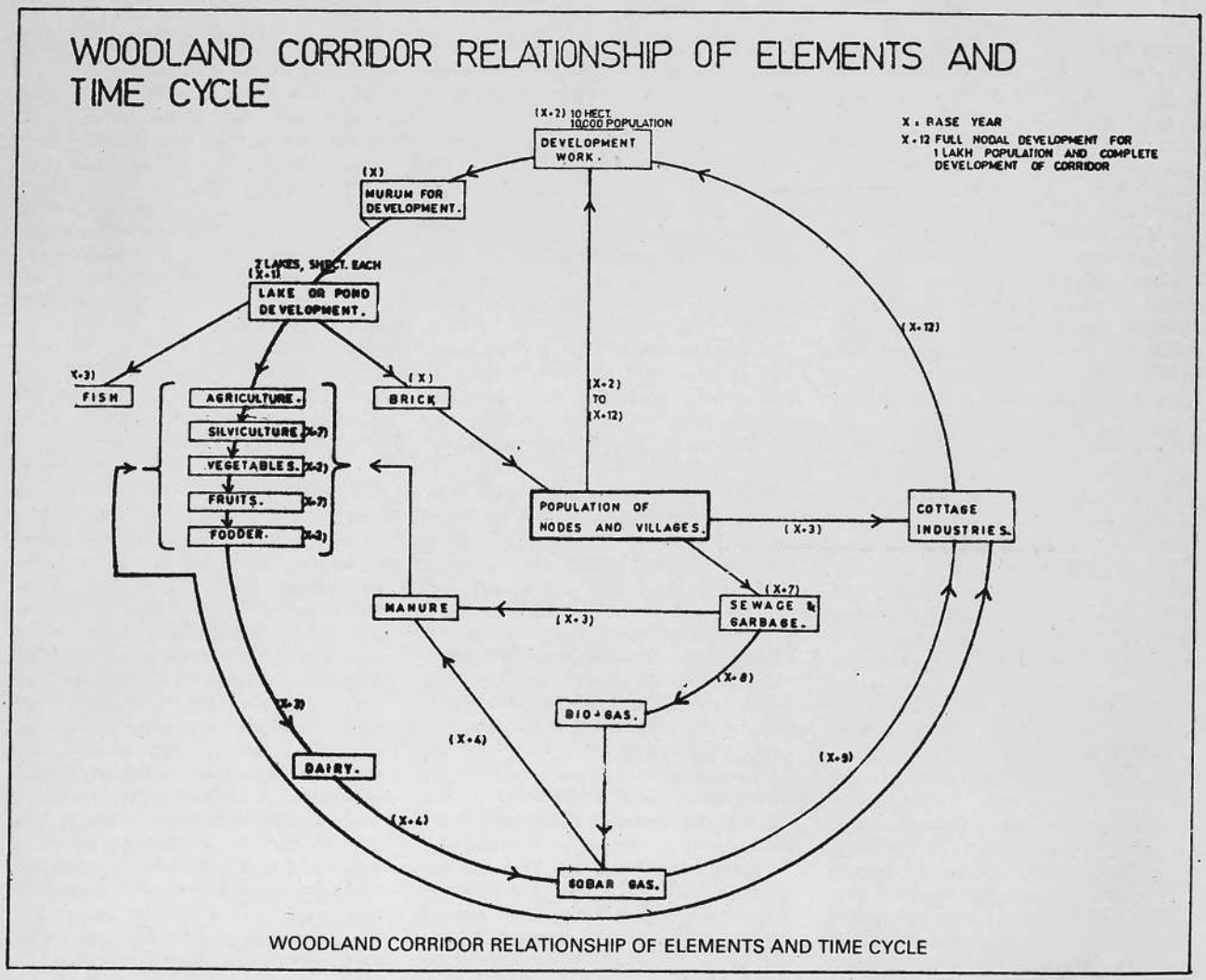
This rural life styles which exists even in our Metropolitian cities is aptly described by many. The areas patronised by rural poor are called by many names such as informal city, unintended city, invisible city, etc. This shows, that two cultures exists in our city — Rural and Urban. These two cultures are in conflict because of conflicting values. The Shanty towns of Indian cities accommodate "Urban Poor" who are nothing but rural poor placed in different setting. Thus Shanty town is not a problem at macro level, but it is solution, and indicator to the problems of intolerence, exploitation and social injustice that exists in rural areas. No doubt that they are problems from micro level, from municipal administration, because of lack of proper amenities and unhealthy living conditions. In urban settling, most of the needs of the people are satisfied through secondary associations or institutions — needs such as recreation, hospitalisation, eating, education, etc. In fact growth of city is based on bringing more and more needs of people in cash economy of city. The institutions developed in the cities to satisfy these needs, are beyond the reach of these poor, because of high price they have to pay for the use of these institutions. Therefore, they develop their own institutions in form of cheap shopping centres, dhaba, etc. Thus they tend to create their own little settlement or township a city within a city.

Urbanisation and labour

Urbanisation is synonymous with industrialisation and modernisation. We claim that our cities are urban due to economic activities in the cities, which are akin to the economic activities of cities in the Western world. But this is far from truth, the recent studies have shown that in most of the Indian cities the proportion of unorganised employment is higher than the basic and organised employment in relation to what one finds in the Western industrialised cities. In cities of Western countries, the employment in manufacturing sector and even trade and commerce is mostly in organised sectors, whereas, in city like Bombay about 50 to 60 per cent employment of various sectors is in unorganised sectors and most of employees are daily-wage earners. The predominant share of employment in the Indian economy is in the informal or unorganised employment.

At national level, only 10 to 11 per cent of labour force is created in organised sectors and 90 per cent in informal sectors where majority of poor (rural and urban) work. It is true that in such unorganised small sectors, wages are not secured and workers are often exploited. The survey done by Prof. Deshpande of Poona regarding development of small scale industries in villages have also strengthen this apprehensions of poor regarding exploitation of labour in small industries. They think that they will not be benefited from these industries. In fact, in cities the workers are more organised due to "Union Movement". Therefore, to some extent they can fight for justice and get higher wages even in small scale industries, compared with such industries in villages.

Majority of the people in Shanty towns work as domestic servants, dhobies, cobblers, hawkers, rickshaw pullers, and in many such unskilled and service jobs. These jobs are essential for providing "Standard of Living" to the urban middle class and rich which they enjoy in cities. These jobs are irreplaceable. The irony of the situation is that the only capital of these poor people is labour and as there are many people than jobs, these people are often exploited. The contribution of these people, to the city is that they offer wide variety of services to the people at, minimum cost. One also observes, the presence of many manufacturing centres run in these Shanty towns by people themselves on newly acquired skills or traditional skills. But they have to sell their product in the



WOODLAND CORRIDOR RELATIONSHIP OF ELEMENTS AND TIME CYCLE

city market through middlemen, who reap the profit of their labour. All these results into the type of development which middle class and decision makers consider undesirable because it is against their value of clean, neat and tidy environment. But poor are forced to evolve such environment, because most of these activities are termed illegal, therefore, they cannot get any assistance from financial institution. They also cannot invest the capital because of their credit unworthiness in the market, sense of insecurity, therefore, they tend to minimise the cost which results into the environment which is hazardous to individual and public health.

Attitudes and approach of planners and decision makers

The intermingling of rual life as described above exists in all our cities. But our cities are not consciously planned for such activities. Even though we face and observe such realities, we plan for ideal cities, where, all such rural aspects are forbidden by law. Not only this, but the illegality of these activities are often exploited. Occasionally, we talk about integration of "Town and Country" by quoting Ebenzor Howard. This is done to avoid city over-crowding and to bring more openness to city structure, which results into "Hausmann" type of planning with wide open spaces exclusively, reserved for city elites.

A provision of such vast open spaces do not consider rural aspects of our cities or functional needs, cultural value and lifestyle of the majority. This approach of planner is highly questionable, but this exists, because planning and development of cities or settlement is today exclusive domain of powerful, wealthy and professionals. Therefore, the structure of city is based on the values and lifestyles of these people. The majority of people are never taken into confidence for shaping environment. This is why today we are creating cities of mono-character and mono cultures.

We deny the existence of rural poor,

their needs and lifestyle and rural character which exist in our cities. Many of us, who are engaged in planning, do not believe that they take ethical or moral decisions by telling people, what to do and what not to do. In fact, we use police and legal power to give the stamp of illegality to the lifestyles of majority of people.

Often we agree that such lifestyle is not complimentary to city life because this creates squaller and unhygeinic conditions. It may be true to some extent, but we need not kill the patient to cure the disease. We must plan our cities in such way that people can pursue their lifestyles without creating problems of public health.

Can we suppress spontaneity, values of people, way of life, culture needs, by police power, bureaucratic ad autocratic means? If we see the history of planning, planners have asked more and more powers to control every realm of individual life. We love to work without people than with people.

Reasons

Development and planning is considered as special activity. Therefore, it is considered as something which should be undertaken by educated elites for the masses. The need to engage energy of masses is hardly considered.

On the contrary, in developing countries, the population is a basic resource and creation of self-help project with community involvement will perhaps solve many problems. The present planning approach deals with concepts such as efficiency, optimum location, economy of concentration and economy of scale, etc. Thus one finds identity of goal of planning and that of market, which reinforces the market mechanism to other disadvantage of the poor.

These concepts are also governed by the common denominator of monetary value. Therefore, even state is tempted to take the urban project which are commercially lucrative such as Back-Bay Reclamation project of Bombay.

The recent thinking of taking urban projects on revolving fund based on short time span also creates problem for people, since majority of them about 30% live below subsistence level, and another 20 per cent below destitution level. It is well known that this section of our society is not only incapable of generating any saving, but to pay even 7 per cent of their income for shelter. Whereas, for revolving the original investment in a short time span, development agencies had to increase the price of land by holding land supply. Such micpic commercial approach, only revolves the people and the fruits of development are often enjoyed by those who can afford to buy it — mostly rich, influential and those in power.

There is lot of talk about small is beautiful. In reality, small is never encouraged by development agencies because they have to dealt with more number or many individuals and thus creates more administrative work. It also does not give the sense of achievement and gratifications to the organisation and decision makers of the organisation. Therefore, there is tendency to have large project which demands heavy investment, large organisation with managerial and profession skills. Thus the majority of people are excluded from involvement and the benefit of development, because they cannot take part, except as daily wage earners.

If small is at all planned or encouraged, it is made relatively expensive compared with large. A small stall owner occupying 1 M x 1 M space in city in distant area is charged often rent of Rs. 30 per month. It means, assuming 10 per cent interest as rent, the cost of land to poor is around Rs. 3600/M², but whereas, big shop owner occupying 100 M² of shop gets the same land around Rs. 300/M².

Lastly, there is myth about the scarcity of land in urban areas. The study by Inamdar on land uses of different cities in India shows that about 25 to 40 per cent land in most of Indian cities in undeveloped or and is used partly for agricultural use. In case of cities above one million population the per cent of undeveloped land is around 25 per cent whereas in smaller cities it is as high as upto 40 per cent.

The above discussion shows that poor are at wrong end in our cities, but they still create their own world. The task before us to respect the true character of our cities and develop school of thinking that will create city structures where both rural character and culture of poor and urban character can function together in complimentary way. The rural character of our cities should be used as an asset to create new type of cities which will avoid many problems that exists due to present city structure, city administration and rules of game.

Alternative approach

The new approach is based on harmonious relationship of Man and Nature. Today, we suffer from three galloping problems:

1. Ecological destruction and Environmental degradation
2. Energy exhaustion and creation of renewable energy
3. Employment paucity resulting into economic imbalances

These three "Es" are the major elements of new approach. Man and Nature: The preservation of plant and living life of this world requires application of our knowledge, skill and imagination. But above all it demand certain restrain on our selfish goals and actions. The conservation of top soil on which the plant life depends, the management of water — the giver of life are the basis of our approach.

Today, in urban development both these elements are neglected. The natural water courses are used as open sewer for disposing of liquid effluent of industry or sewage of the urban population. Many times most of these natural water courses are built over to create more land. To get necessary murum for development work and building material, we assault hills which results into loss of top soil.

Earlier, human settlement in India respected the water sources. Not only this, but most of the villages or cities use to develop ponds, lakes and wells to meet the demand of rural and urban population. Today, in water management we have given more importance to macro-hydrodynamic and neglected micro hydrodynamic to meet the water need. This has created ecological problem. There is need to preserve all natural water courses, however small they are. Along these water courses, series of ponds could be developed by scoping murum which is needed for development work. This will allow us to develop ponds by developing surface quarries. This will stop cutting of hills and destruction of top soils. These series of ponds along water course will store rain water which

WOODLAND CORRIDOR NERUL

RESOURCE CREATION (columns) / **RESOURCE UTILISATION** (rows)

RESOURCE UTILISATION		ARK	COTTAGE IND: PRODUCTS sheds	NODE: PUPULATION '000	NODE: SEWRAGE mgd	NODE: GARBAGE tons	NODE: DEVP (lac) m2	GARBAGE: FUEL tons	GARBAGE: MANURE tons	SEWRAGE & BIO-GAS: MANURE tons	SEWRAGE & BIO-GAS: GAS m3/day	GOBAR GAS: MANURE tons	GOBAR GAS: GAS m2/day	BRICK KILN: BRICKS in lacs	DAIRY: GOBAR mil Kg	DAIRY: MILK Million liters	AGRO ELEMENTS: GRASS tons	AGRO ELEMENTS: BAMBOO '000	AGRO ELEMENTS: TIMBER m3	AGRO ELEMENTS: FRUITS (lac Kg)	AGRO ELEMENTS: VEGE (lac Kg)	LAKE: FISH '000kg.	LAKE: WATER (lac) m3	LAKE: MURUM (lac) m3
LAKE	MURUM																							3lac m3
LAKE	WATER												60										2.2	
LAKE	FISH																					20		
AGRO ELEMENTS	VEGE		PLASTIC BAGS BASKETS									4000									3.6		0.1	
AGRO ELEMENTS	FRUITS		BASKETS PLASTIC BAGS							3600										2.0			0.4	
AGRO ELEMENTS	TIMBER		TOYS FURNITURE							60									200				.01	
AGRO ELEMENTS	BOMBOO		CANE MATS [illegible]							60								80					.01	
AGRO ELEMENTS	GRASS	24 kg/day	Concent ration FOOD						120								700						0.1	
DAIRY	MILK		MILK FOOD BAKERY													3	720						0.3	
DAIRY	GOBAR														3									
BRICK KILN	BRICKS		AUTO REPAIR SHOP											240					50				0.24	
GOBAR GAS	GAS							6000					280										0.01	
GOBAR GAS	MANURE											800												
SEWRAGE AND BIO-GAS	GAS										1500													
SEWRAGE AND BIO-GAS	MANURE	—	PLASTIC BAGS PACKING							15000														
BARBAGE	MANURE								3000											0.01	0.01		0.01	
BARBAGE	FUEL							6000																
	DEVP	—	TILES FLOOR II ROOF				7.3																	4.15m3
NODE	GARBAGE					12000																		
NODE	SEWAGE				3.2																			
	PUPULATION		ALL	80										940		12		5	50	5	15	30		
COTTAGE IND	PRODUCTS		60						m	m 11000 tons	GAS FOR 45 Sheds	m	1720m3	60		0.2m		75	100	0.1				
REMARK										+	-15 Sheds			(+		-9	-20	+	-( )	-2.9	-1 1/4	-10	+.03	-1.15

could be used for development of various agro-based activities such as commercial tree plantation, vegetable gardens, orchards, dairy, pisiculture, etc. This green area could be in the form of corridor of 200 m. width between the residential area. The total area of such agro-based lan use separating compact urban residential, industrial and commercial area will be around 100 to 150 Ha.

Such agro-based land use which is based on aptitude background and the skills of rural migrant will make assimilation of rual migrant easy and will create jobs suited to their skills and agrarian backgrounds.

The drawing Nos. 1, 2, 3 show that such agro-based land use is complimentary to the needs of urban population. It will also allow us to recycle urban sewage, urban waste and agro-waste such as gober into manure an energy which will be used for fulfilling other demands. This would allow urban intelligentcia to develop alternative sources of renewable energy in a form wind mill, solar heater, bio-gas plant, depending upon the context of urban area.

The silt from the ponds and lakes will be used for manufacturing bricks. This would also reduce the transportation cost. In fact this will give an opportunity to create an active green area which will be useful in meeting the demands of urban rich as well as urban poor.

A typical agro-land use of 150 to 200 hectare will create a job for about 1700 to 2000 workers with capital investment varying from Rs. 8,000 to Rs. 10,000 per workers, whereas in very sophisticated organised industry the highest investment is about Rs. 1 lakh per employee and the lowest is around Rs. 20 to 30 thousand per employee. Apart from this, the activities will be carried by people themselves, either on co-operative basis or family basis depending upon the culture and leadership of the community.

Gandhiji has said "According to me the economic constitution of India, and for that matter of world should be such that no one under it suffer for food and clothing. In other word every one should get sufficient work to enable him to make two ends meet. To people famishing and idle the only acceptable form in which God can appear is work and food." The true economics stands for social justice, provides the good for all including weakest.

We are trying to realise these ideals of Gandhiji by keeping the means of production of elementary necessity within the means of masses.

The total concept of this agro-based land use within the city structure is based on three Gandhian principles of Swavalamban, Swadeshi and Swatantrya.

Swavalamban means self-reliance and self-sufficiency in the widest term. This is realised firstly by recycling of waste, conservation of resources and creating community which satisfy the basic needs without much external aid. It also implies self-help mutual co-existance and gives importance to human energy (both physical aspiration and motivation) because here people are considered as basic resources of our cities.

Swadeshi means fullest utilisation of local resources both material and human beings.

Swatantrya means not only self management or self government but also self motivation and self discipline. This is achieved by forming co-operation of workers for self-help, and mutual self-help.

This concept based on 3 "Es" and 3 "Ss" of Gandhian thinking is contrary to the present thinking because today we continue to concentrate on the class market in economic planning as well as urban land-use planning — to increase Gross National Product and to provide standard of living to those who can accord it.

We observe that in real life decision makers in India like to patronise project which can give direct visual impact of development to the people in the form of big dams, tall structures, Hausmann type of urban centres based on so-called principle of civic design with multi-level concrete platforms, wide roads, boulevard, passive garden spaces, open playfield for rich in a form of golf course, etc. Everything that will create an "AWE" in the minds of common people. This grandure is for self-gradishment and self achievement.

Thus they pay lip service (mostly in conference, seminar and newspaper write up) to mass market, mass need and mass aspiration.

In such context three questions remain unanswered:

1. Can we create a city where both urbanites and rural migrants can live with dignity and respect?
2. Will this Gandhian approach acceptable, in the present context of growth of cash economy, cash market and development for grandure?
3. Is this a dream?

I.I.A.

WORKING GROUP PROGRAMME

The IIA has decided to constitute five Working GROUPS as follows:

GROUPS

1 Education & Research
2 Public Sector Architecture
3 Private Sector Architecture
4 Architecture in Rural Environment
5 Architecture in Urban Environment

AIMS

The Working Groups shall study, analyse and recommend policies, strategies and programmes for further development of the profession and its contribution to the cause of National Development.

PARTICIPATION

Members are requested to contribute papers, case-studies & projects. These may be sent to IIA head office, addressed to National Convenor, IIA Working Group Programme. The Working Groups shall function year round at Centres, Chapter and National level.

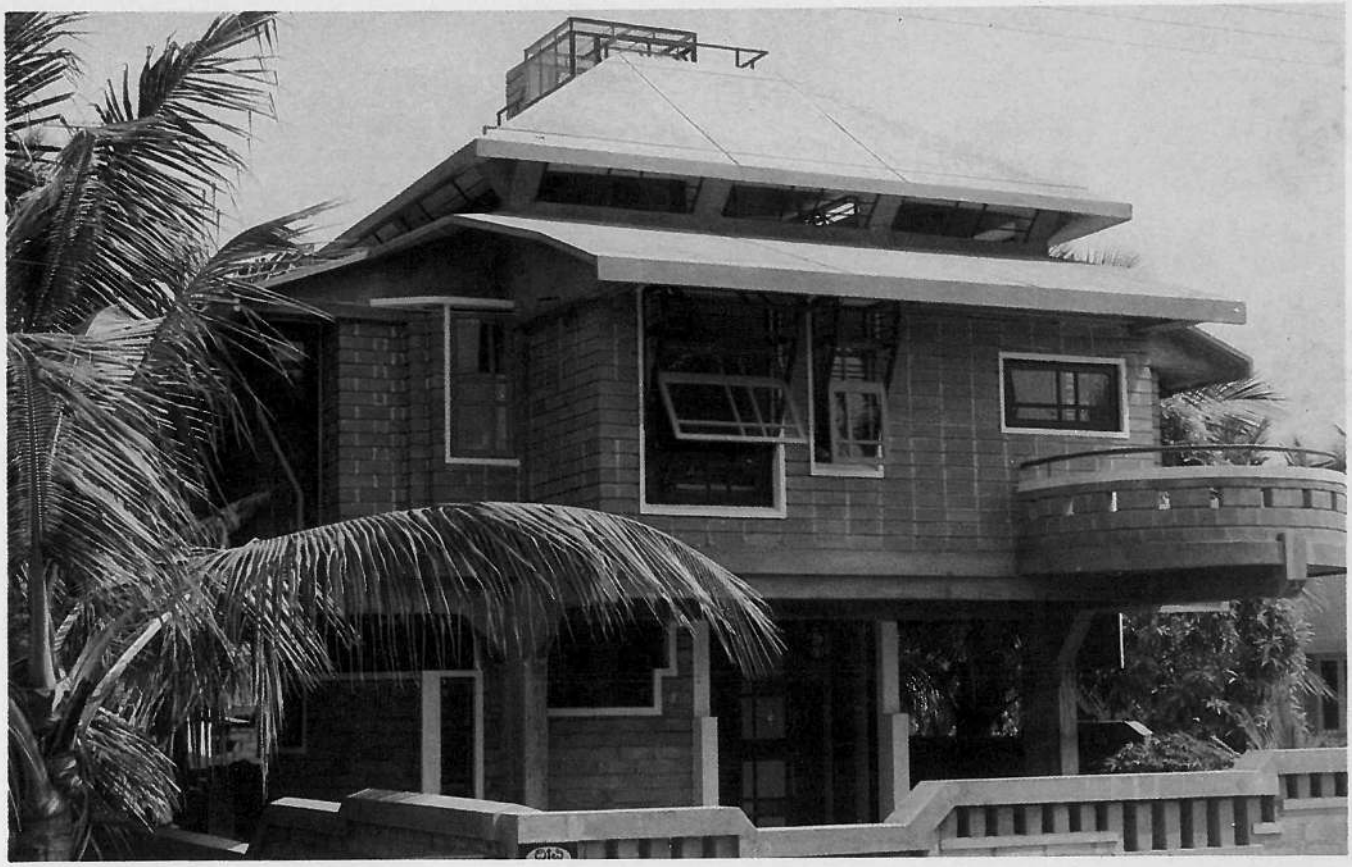
Akhtar Chauhan,
Chairman & National Convenor.

This Project was published in the JIIA - March 1991 Issue

JIIA PROJECT (SHELTER) AWARD 1990

Architect's own house, Mysore

Ar. B.S. Bhooshan, F.I.I.A.



A view of the house with cascade of roofs

The house was designed to provide for the needs of a small family with two growing children on a tight budget. The location is in a prime residential area and plot was carved out of an existing house on one of the large plots of the locality. The larger plots around necessitated large front and rear set backs leaving a building space of only 8.5M x 10.75M. We also wanted to leave a lot of space around in the ground floor for privacy and for some greenery and also for the children to play around.

This dictated the need to put up the major living floor on pilotis with only a guest bed and an entrance space in the ground.

There were two other determinants of the form. One was the urge to give the children spaces which they would love to belong, explore and grow up. The other was the response to the local vernacular idiom of country houses. The general form is a modified adaptation of the pitched roof houses found in parts of Mysore District. These houses have a central attic portion raised above the lean to roof portions all around. These house of course, have rigid plan structure of 9 rectangulars. The quality of this basic form was explored to stretch out a fairly flexible plan and flexible section within the rigid symmetry of the roof.

The idea of plan basically is that of a courtyard house with the courtyard space being very small replaced by a stairwell. Two bed rooms, a living and dining space and a small compact kitchen form the peripheral spaces around the stairwell in the main floor. Corners of the outer rectangle were cut away for simplifying the structure and for better space organisation.

There is an attic reachable by a narrow flight of steps from the living space, which houses a study, work space, a library and storage. It also has a sleeping platform. In the ground floor there is an entrance space which can be used to receive people and clients who are not intimate with the family. There is also a guest room with a toilet in addition to covered vehicle parking space and storage for gas cylinders and other sundry items.

Even though the main floor plan is of somewhat rigid geometry, the section is flexible. The gap between the raised central pyramidal roof and the lower lean-to roofs is used for providing ventilation and light. The stairwell also is topped by a skylight made of a glass box with built-in adjustable pivoted shutters. This makes the stairwell act like a chimney shaft to create an upward draft of air. The wall between the master bed and other spaces do not reach upto the ceiling and thus all rooms except the children's bed are spatially connected at higher level adding to free movement of air and diffused light-

Facade with a curved balcony

Interior view of living room

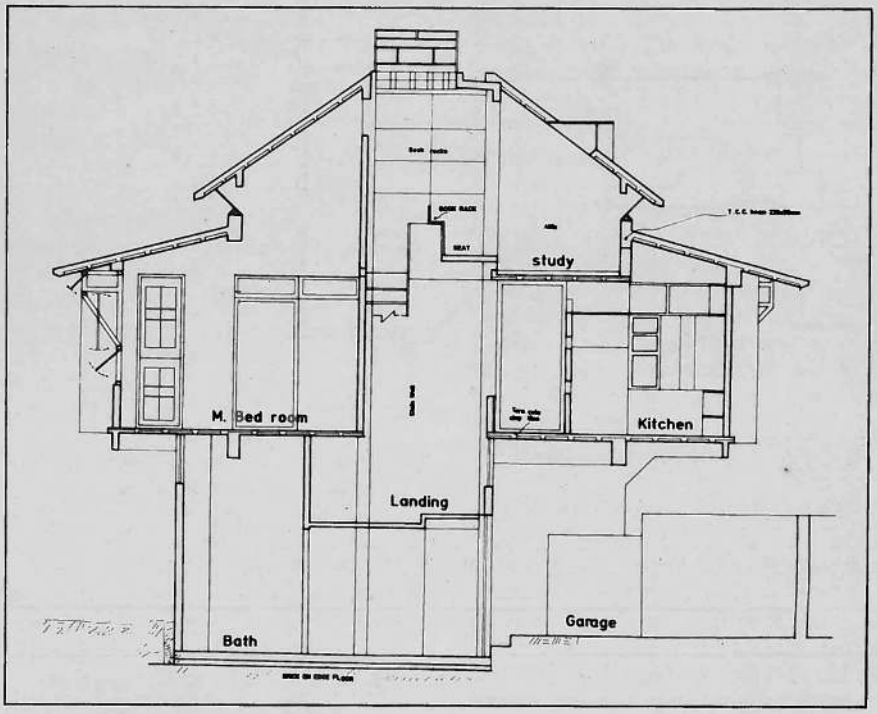
ing through out the day. Stuffiness never occurs. The children's room and the master bed are also connected by a walk-in wardrobe with sliding doors on two sides making it possible for both the rooms to be contigious if need be.

As the first floor overhangs the ground floor quite a bit, the house is designed as a framed RC structure resting on 8 columns. All the RC slabs and roofs are made up of filler slab using hollow clay tiles (manufactured by Baliapatam Tile Works) as fillers. This has substantially reduced the self weight and thus steel and concrete as well as cost in addition to the reduction of heat transfer from outside. All walls are partition walls and are made of stabilized soil blocks (SMB). The outer walls are 15cms thick and inner ones 10cms thick. The bolcks were made at site using ASTRAM machines with 4% cement 1% lime (by volume) as stabilizing agents. This house pioneered the use of SMB in Mysore and has been instrumental in popularising its use. The brickwork is exposed from outside and parts of inside after painting using soil cement mortar.

All joinery are made of a combination of steel and wood; profile steel for door frames, square tube for window frames and glass panelled wooden shutters for both windows and doors.

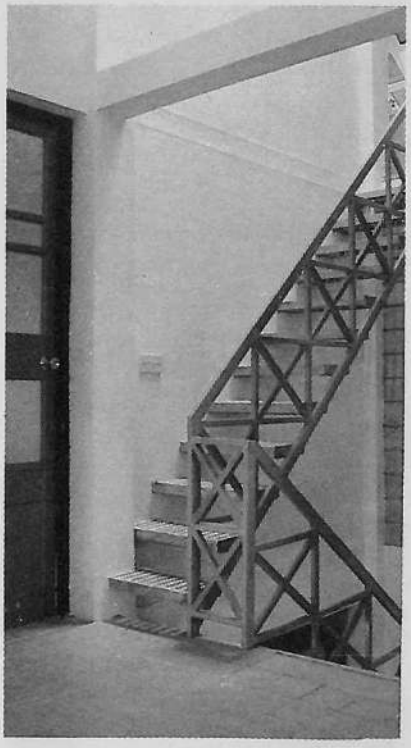
The windows have been specially designed to avoid curtains. The 3D windows of the first floor appear closed even at a partially open position and thus provide privacy without cutting down ventilation. Further the pivoted shutters can be adjusted in 3 positions and thus could be used to control air movements and to deflects breeze. The 3D windows also allows one to put the head literally outside the wall to have full 180 Degree view which makes one never feel that one is out of touch with the ground. It provides the feeling of standing on a balcony. The windows are of varying height for allowing children and seated people also to enjoy the visibility outside especially the distant Chamundi Hill from the living room.

The treads of the stairs are made up of wooden reapers supported on one side by the wall and the other side by the hand-



CROSS SECTION

Innovative detailing:
Window



Staircase

rail designed as an inclined truss. It is not only light and economical but also appear light and see through allowing light to filter through.

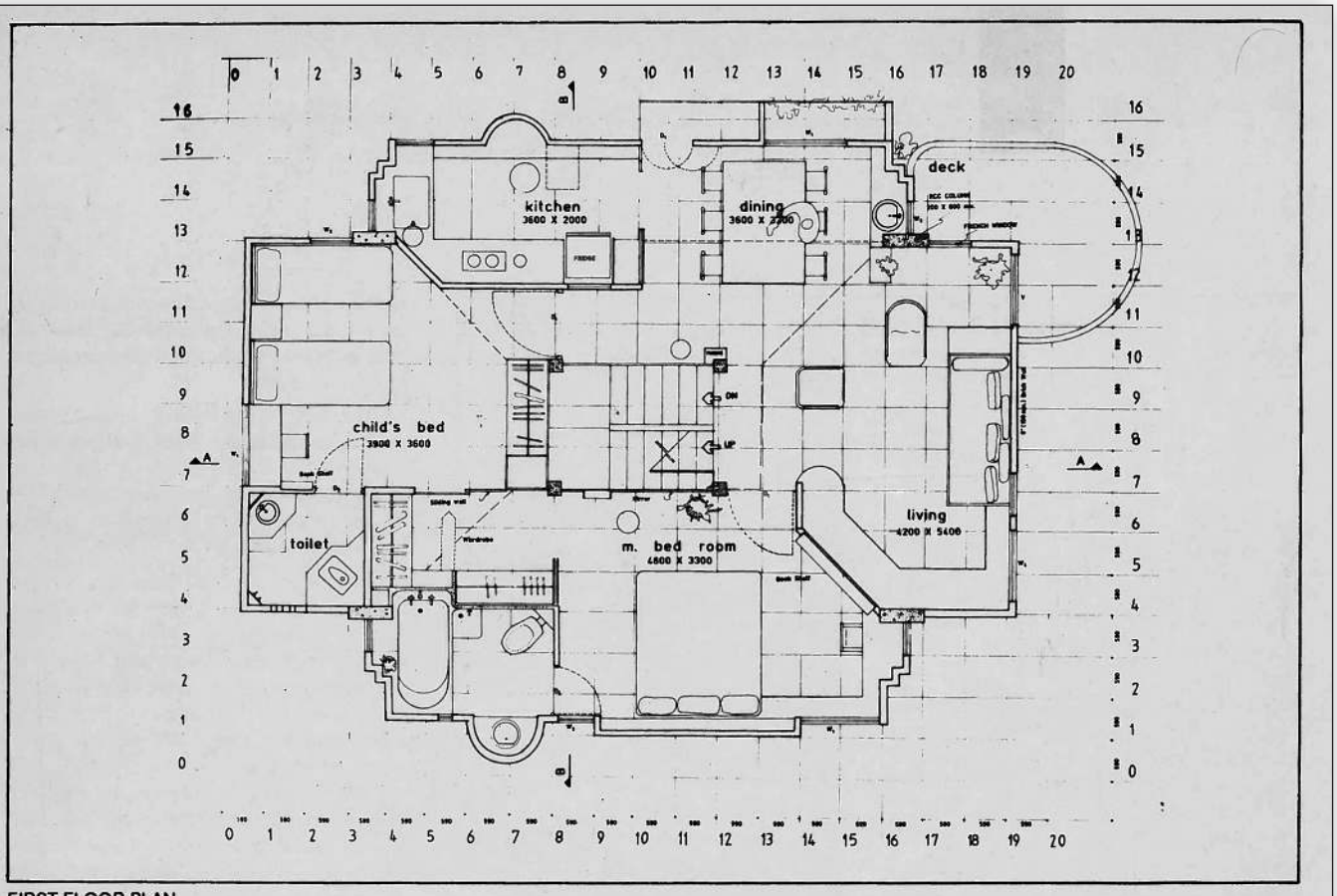
The cabinetry in the kitchen and bookshelves in the living room, bedroom and attic and the sliding doors of the wardrobe etc., are made up of pine wood reapers taken out of discarded used pellets from a local factory.

On the whole, the house provides an unusual spatial experience, yet one feels familiarity and is suggestive of the interiors and exteriors of traditional houses. It provides interesting profiles and patterns of the hollow tile ceiling and lighting even when one lies down. All this has been achieved on a budget which worked out to less than Rs. 180.00/- sq.m. with no compromise on bathroom and kitchen fittings and that too with a framed structure with all round cantilevers.

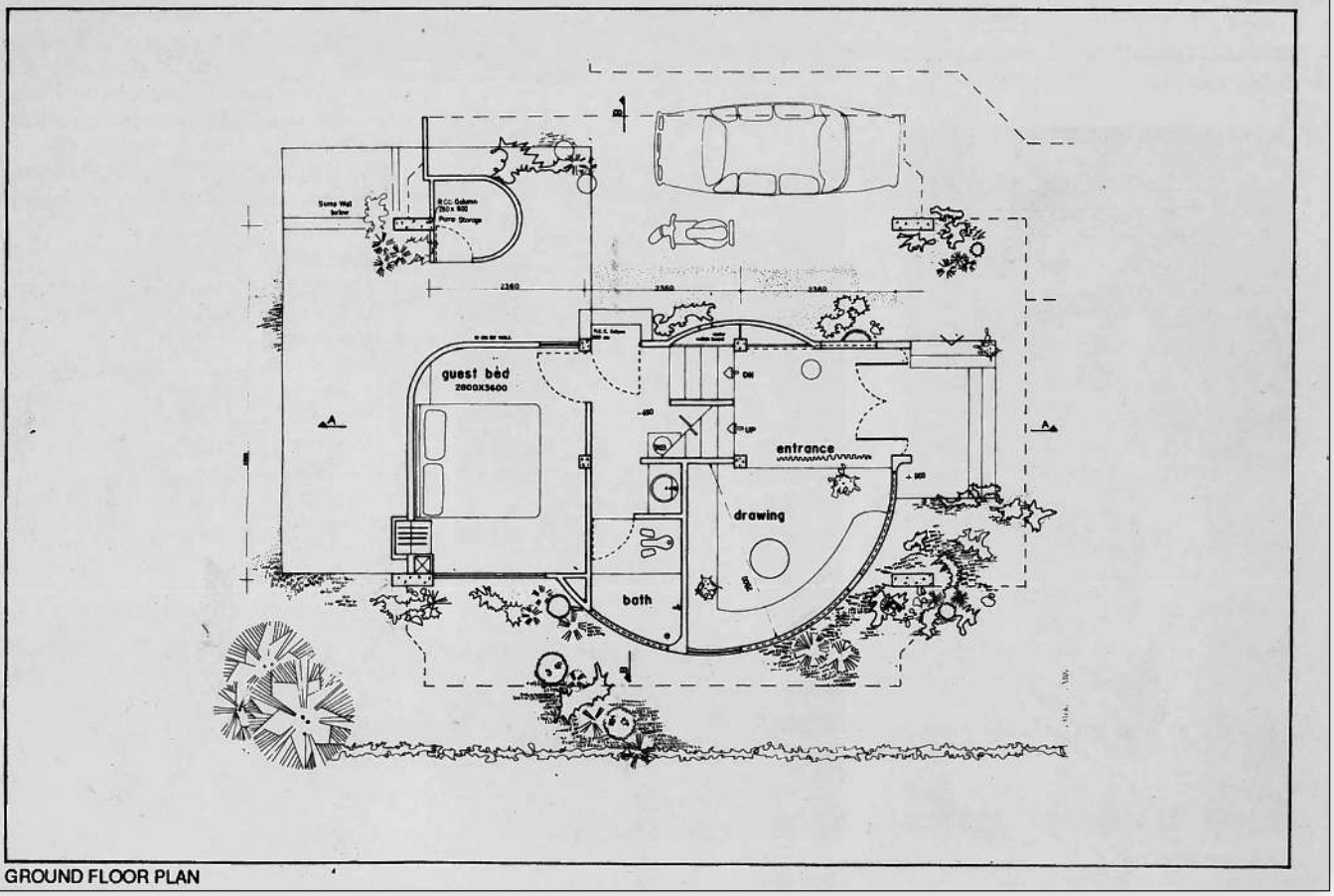
As a piece of urban design it was meant to provoke the passersby and speak of the sensibilities of the traditional forms and ordinary materials and strongly disagreeing with the boxes of modernity which abounds around. The house performs this function significantly. If nothing else, it added significantly to the popularisation of SMB's and hollow tile roofing in Mysore.

Architect: B.S. Bhooshan
Sructural Engineer: C.N. Yadunandan
Labour contractors: 1. Putanna 2. Kuppu Swamy
Special fabrications: Housie Fabrication Combines, Mysore.
Site: 20M x 10.75M
Built area: Ground floor: 40 sqm + 25 sqm of covered parking space.
First floor: 90 sqm + 5 sqm of Balcony.
Attic floor: 10 sqm
Cost: 3 Lakhs
Year of completion: 1989.

A



FIRST FLOOR PLAN



GROUND FLOOR PLAN

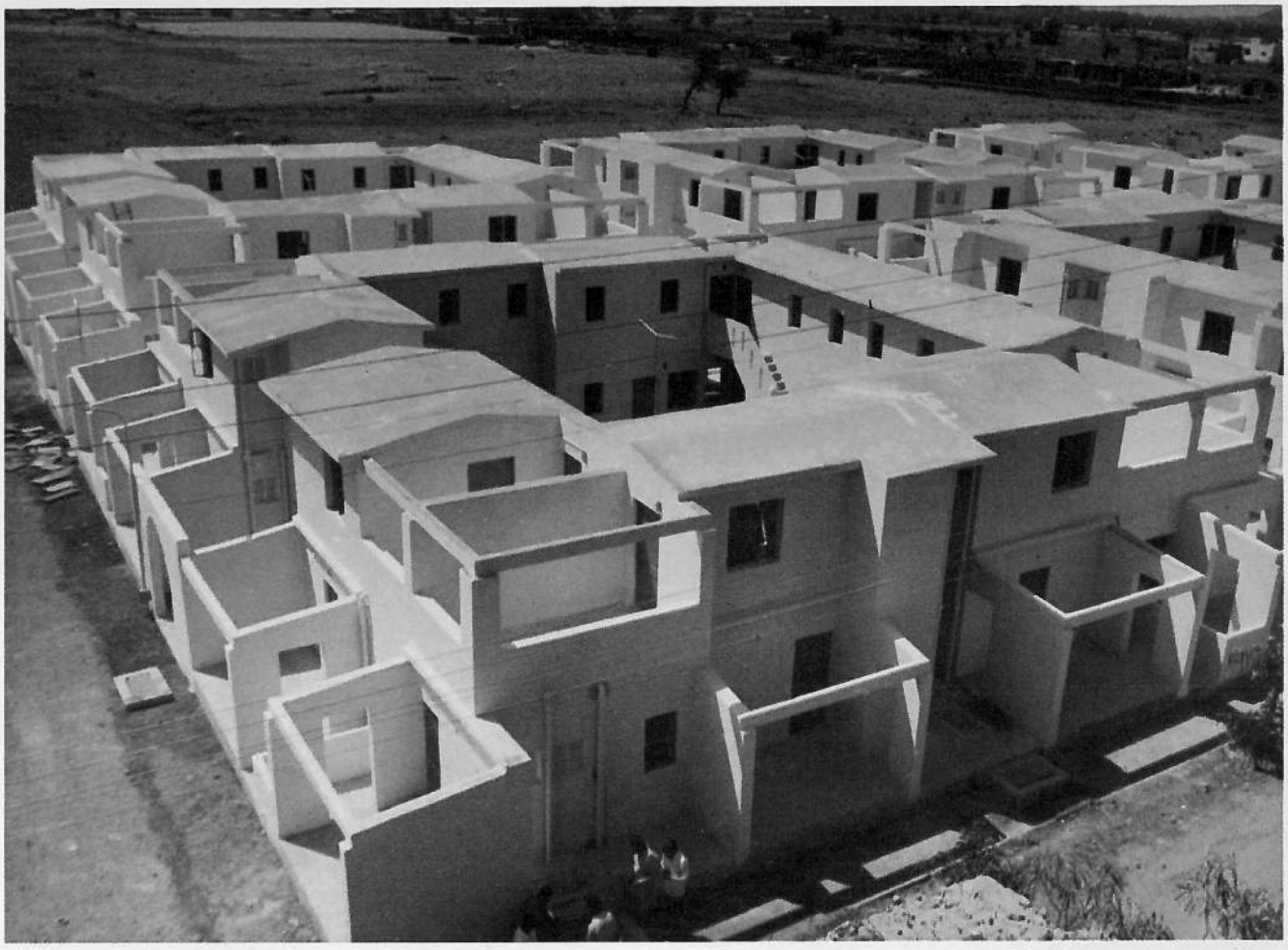
This Project was published in the JIIA - February 1991 Issue

JIIA PROJECT AWARD (HOUSING) 1990

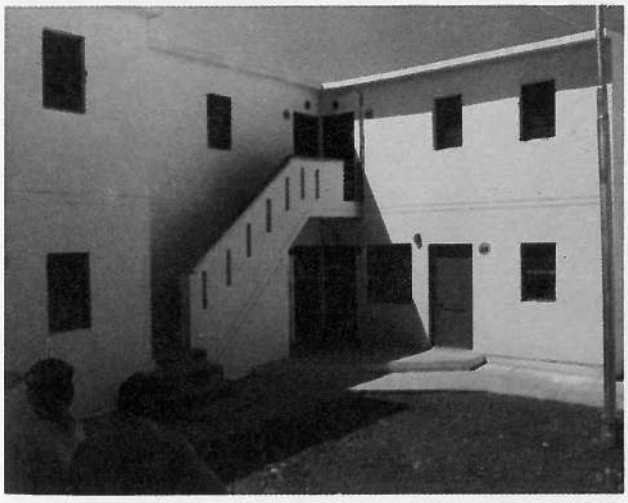
Housing for gas victims

Bhopal, Madhya Pradesh

Ar. M.N. Joglekar, F.I.I.A.



Birds eye view of cluster



View from inside cluster

Introduction:

In 1984, the worst-ever industrial disaster in the world occurred in Bhopal, India. The Union Carbide Factory, which was located in the midst of a sprawling housing settlement, suddenly leaked a fatal gas called Methyl Iso Cyanide (MIC) in the stillness of the night. About 2000 people died in their sleep and many later. Yet thousands more were affected permanently by the gas.

Forced to abandon their houses, these victims, though suffering from various diseases, were now totally shelterless. The State Government therefore decided to provide houses to the families of these victims. The Madhya Pradesh Housing Board (MPHB), was entrusted with this task and accordingly prepared a scheme and presented to HUDCO for availing financial assistance for constructing about 600 houses in first phase at a site having an area of about 3.5 hectares. The scheme consisting of four storeyed blocks of flats, where each flat has one room, kitchen, bath, W.C. and a sitting balcony/verandah was considered uninspiring. However, about 440 houses on about 2.5 hects.

Roadside view of cluster

were taken up for construction by MPHB on multi-storeyed flat concept.

HUDCO's Architectural Advisory Committee evaluated the Housing Board proposal and felt that providing ground + 3-storeyed flats is not an appropriate solution as most beneficiaries are handicapped and may face difficulties in climbing up the upper floors. Besides these victims also deserve a better habitable environment. The committee suggested that the alternative proposals should be on the basis of:

i) Low rise high density development preferably ground and one-storeyed structures.

ii) Houses to be grouped around pedestrianised clusters.

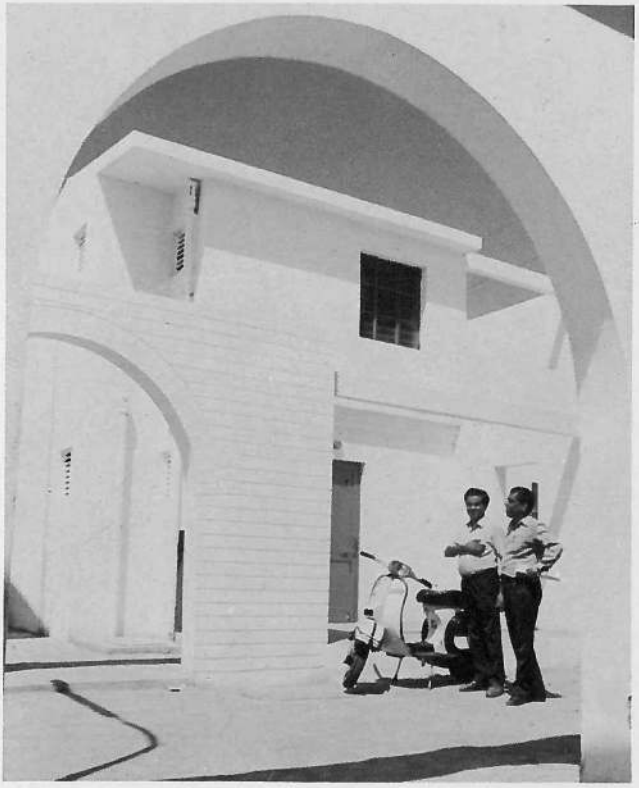
iii) Houses should have growth potential rather than condemn the beneficiaries to live in one room tenement.

Cluster Concept:

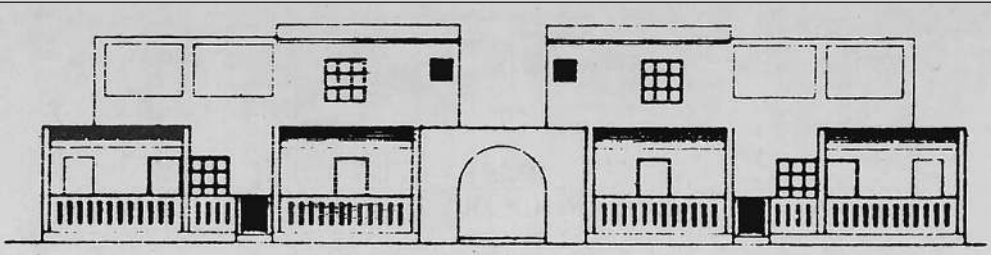
While the National Housing Policy as well as the National Commission on Urbanisation, advocated low rise high density development as the most appropriate solution for housing and in particular for housing the low income families, very little effort had gone in developing appropriate physical planning solutions based on this concept. HUDCO's Design & Development Group, over a period of time had carried out evaluations of various low income housing projects after these have been occupied by the people. The user occupation has revealed several factors which provide useful guidelines in Design & Development for low income shelter. Most important of these were:

i) 100% coverage by the families.

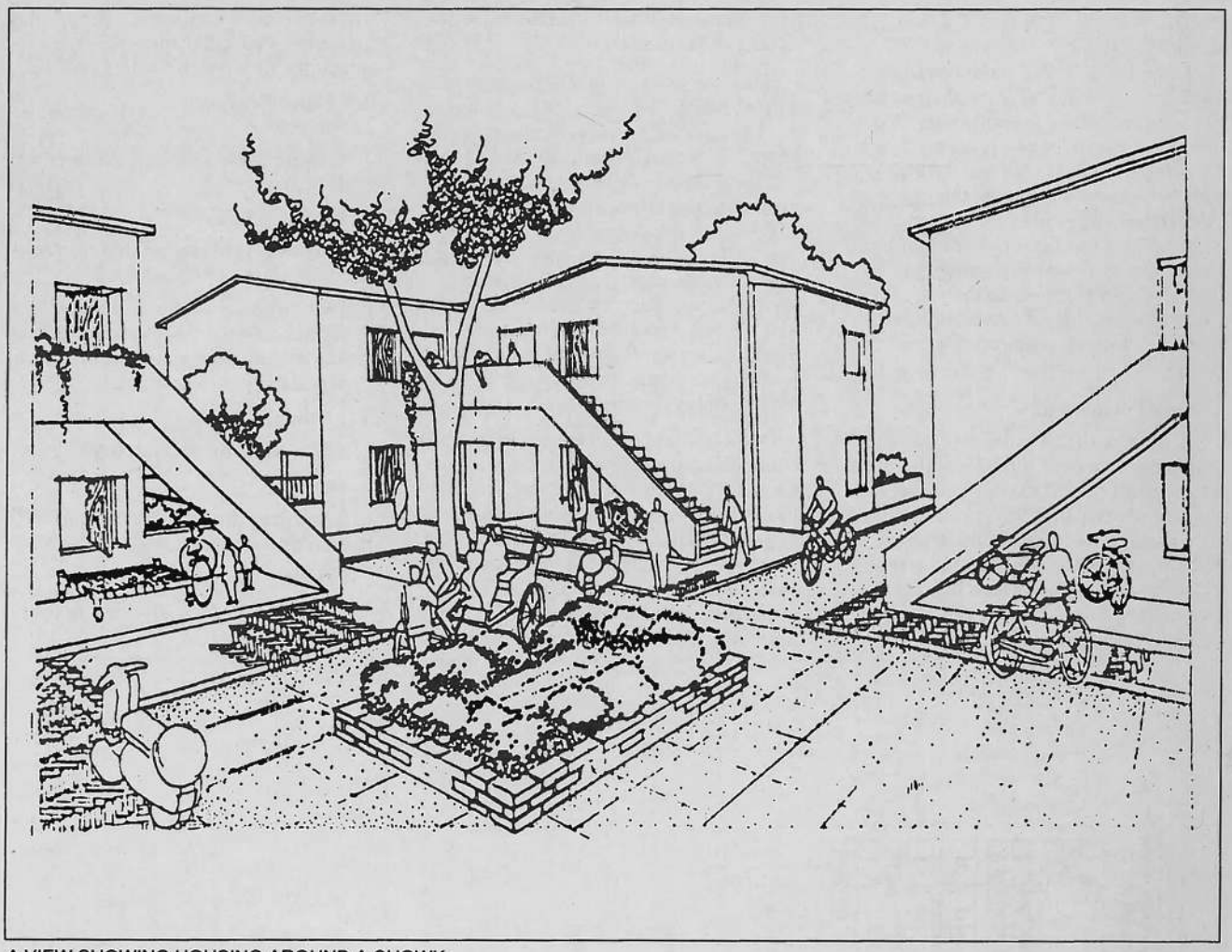
ii) Lack of encroachments on cluster courts of certain sizes and



Entrance Arch of cluster



FRONT ELEVATION



A VIEW SHOWING HOUSING AROUND A CHOWK

iii) Ability of the users to carry out dwelling transformation involving relocation of service core. Considering these trends in dwelling transformation, HUDCO has come to conclusion that cluster formation where 10 to 20 units are grouped around a cluster open space of size not exceeding 9mx9m, provide appropriate solutions which not only prevent the encroachments on the cluster's open spaces but also provide proper safe and habitable environment. Hence, the entire design strategy for developing the gas victims housing was based on use of cluster concept and low rise high density approach, at the same time catering to the needs of future growth requirements of individual families.

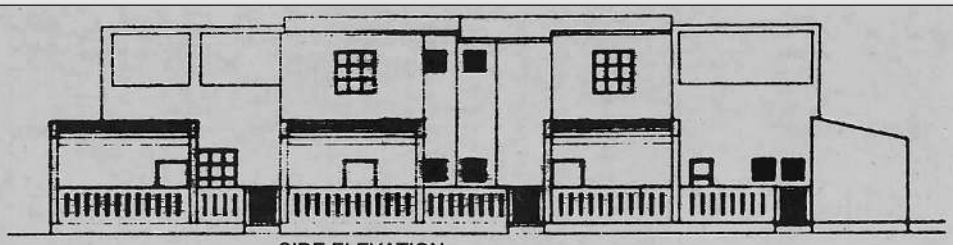
Design Finalised By HUDCO:

Design Strategy:

The proposed design is ground + one-storeyed development with future room facility to each unit at the same level. Houses are organised in cluster condominiums with a single entry point thus promoting a good neighbourhood environment. Low rise development is proposed in view of the fact that ciimbing more than one flight may be difficult to most of the gas victims due to their bad health or physical handicap.

Dwelling Unit Design:

The dwelling unit is designed in a compact manner and consists of one multi-purpose room (carpet area about 8.2 m2), kitchen (3.3 m2), bath (1.4 m2) and W.C. (1.1 m2). A skeletal structure with plinth has been provided where a room can be enclosed as and when required by the beneficiary as per their convenience. In order to promote orderly growly of future extensions, plinth for the second room has been constructed and skeletal structure of columns and facia beam has been provided to take up a sloping roof. Kitchen, bath and W.C. are ventilated through rear lane and accessible through a lobby which directly opens into the multi-purpose room. Space for wash basin has also been provided in the lobby. The built up area in I phase is approx. 20 sqm. and after future expansion, it will be about 30 sqm. Average land area occupied by one dwell-



SIDE ELEVATION

ing unit is about 30 sqm.

Basic Module:

Three units on B.F. with open courtyard and two unit on F.F. with open terraces/future room constitute the basic module. Upper Floor units are accessible by a single flight of stair and the area below the staircase becomes the entrance verandah for three units on ground floor. Sloping roof has been provided in First Floor units to avoid the possibility of further vertical expansion so that the elevational and density control be maintained and the overall environment is not disturbed.

Cluster Formation:

A cluster of 20 units is formed by combining four basic modules of five units as described earlier, in such a manner that the central open area can be utilized by all the beneficiaries for outdoor activities. In this way, the whole cluster has become a closed condominium which is accessible by one entry only. The wet core (kitchen/ toilet) is positioned in such a way that all services network remain on the outer periphery of the cluster.

The site (area about 0.75 hect.) is a part of Rehabilitation Housing Scheme and situatead between two major roads at Moti Lal Nehru Nagar, Bhopal. 160 dwelling units (800 population) are planned in this site achieving the net density of 213 dwelling units/hect. In the overall layout a plot of about 0.4 hect. adjoining the central park has been reserved for providing a school/community hall for the benefit of the community. Space for small shops have been identified at two prime locations along with main peripheral roads.

Most of the clusters are accessibly by pedestrian pathways which join with the main road to allow emergency vehicles like Fire-Fighting Van, Ambulance etc. to pass through. The open space provision in the layout is in the form of cluster courtyards to allow overspill of household activities in an intimate semi-private environment while the larger open spaces will take care of community needs, play spaces etc, Pedestrian movement and vehicular traffic are well seggregated.

Brief Specifications:

Foundation

Underreamed pile foundation with grade beams.

Superstructure

200mm th. load bearing IInd class brick masonry in 1:6 cement mortar.

100mm thich partition wall in IInd class brick masonry in 1:4 cement mortar with 2 bars of 6mm dia M.S. reinforcement laid in every fourth course.

Roofing

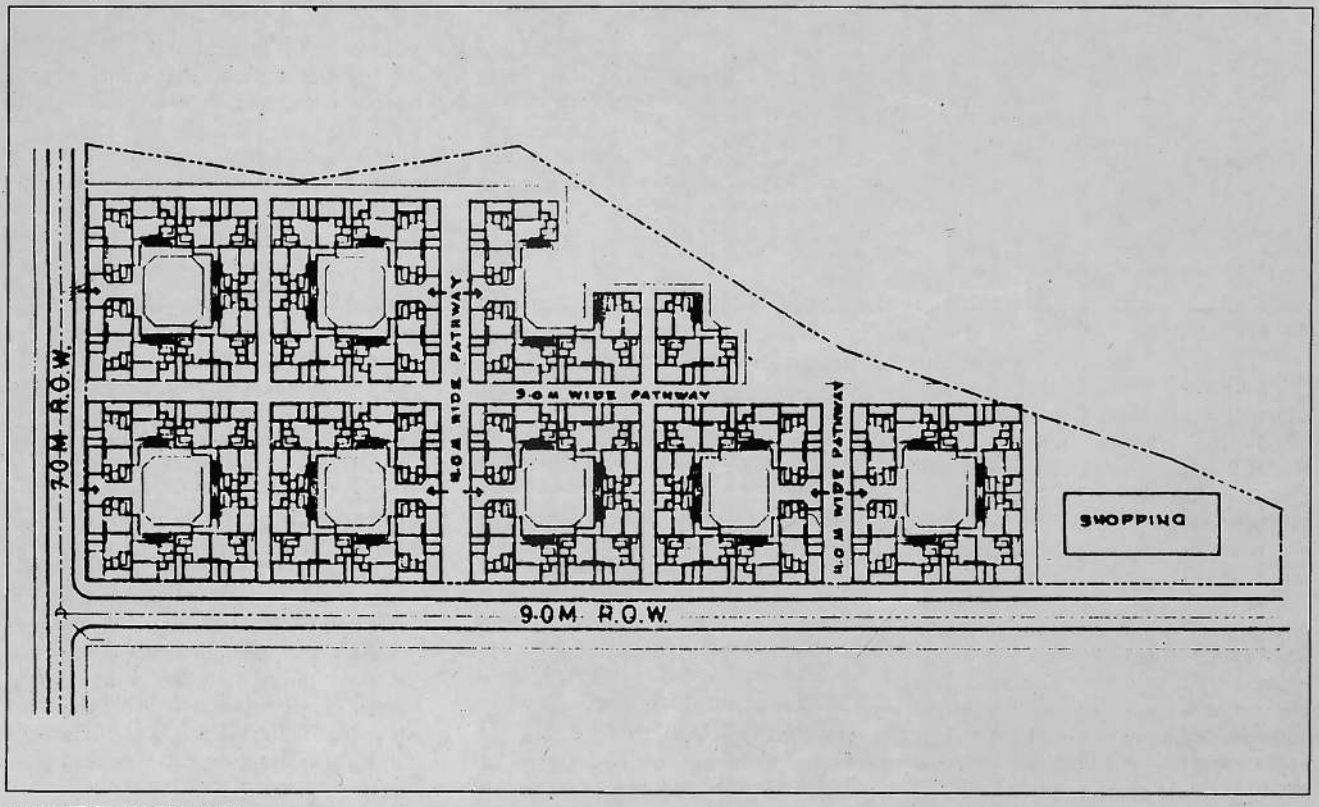
R.C.C. slab, flat and sloping.

Staircase

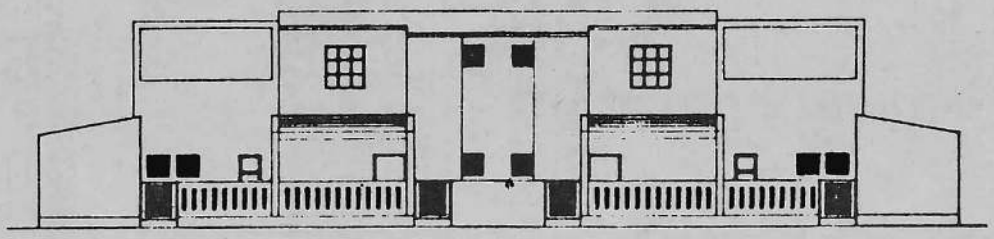
Brick step in R.C. waist slab with 100mm thich brick railing.

Flooring

40mm thick I.P.S. flooring in room, W.C. bath & kitchen.



LAYOUT PLAN (PHASE I)



REAR ELEVATION

Doors, Windows & Jali

Angle iron frame (35x35x5) with wooden panelled door shutters.

Steel glazed windows with M.S. grills.

R.C.C./jali in cm. 1:4 in bath & W.C.

Plastering

13mm thick plaster on smooth surfaces.

20mm thick plaster on rough surfaces.

6mm thick plaster on ceiling.

Finishing

Ready mix paint to wood work & steel work.

White washing/colour washing on internal surfaces cement paint on external surface.

Cost details (per unit)

Land and development cost Rs.4134.00

Construction cost including (Ist phase) internal services Rs. 35525.00

Interest on investment Rs.3463.00

Administrative & Supervision charges & 10% Rs.3552.00

Total Rs.46674.00

Future Programme:

In second phase of the development another 600 houses are already under construction as per phase-I design. State Government will be constructing in all about 3000 houses. 160 houses completed in the first phase on HUDCO cluster design have been allotted and are under occupation. Though the beneficiaries have expressed satisfaction, for third phase housing programme covering about 2500 houses, HUDCO has decided to change the dwelling design, within the same overall design strategy framework. Design for the third phase reverses the growth pattern within the cluster. Provision for the second room faces the cluster court unlike the first phase design where future from faces outward and opens on the lane. Besides change in design, HUDCO will also be experimenting with new building materials and technologies for remaining houses. Experimental construction will be taken up through Building Centres promoted by the Ministry of Urban Development and HUDCO.

Project Details:

Location:

Housing Board Colony Berasia Road Bhopal, Madhya Pradesh.

Client: Government of Madhya Pradesh.

Executing Agency: Madhya Pradesh Housing Board.

Architectural, Structural & Services Consultant: Design & Development Group, Housing & Urban Development Corporation, New Delhi.

Name of the contractor: M/s Vaswani Bros. Bhopal.

Date of commencement of construction: January 1989.

Date of completion: December 1989.

Site area: 0.75 Hactares.

Number of units: 160

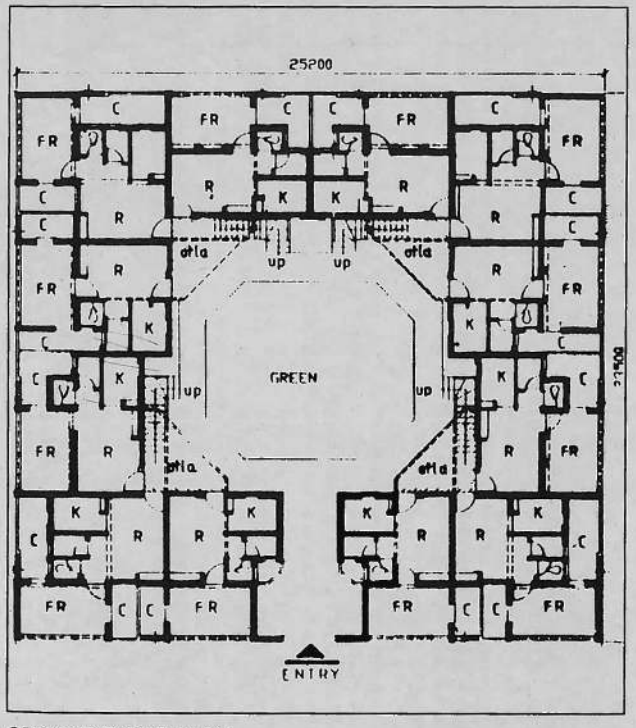
Density: 213 D.Us. per hectare.

Area of one unit: 20 Sqm.

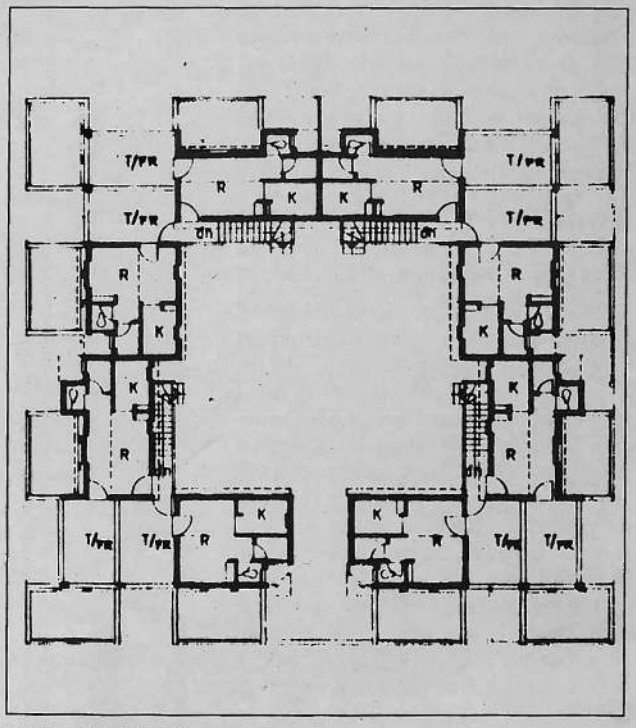
Addition to each D.U.: 10 Sqm.(with skeltal structure & plinth)

All inclusive cost/D.U: Rs.46,700.00

A



GROUND FLOOR PLAN



FIRST FLOOR PLAN

JIIA ONE YEAR SUBSCRIPTION

GENERAL

MEGASAVER

GENERAL SUBSCRIPTION
Other than IIA members

J O U R N A L
OF THE INDIAN INSTITUTE OF
A R C H I T E C T S

Prospect Chambers Annexe, 5th Flr., D.N. Road, Mumbai 400 001
Tel.: +91 22 22046972/22818491/22884805 Fax: +91 22 2283 2516
Email: iiapublication@gmail.com / iiaho1214@gmail.com
Website: www.indianinstituteofarchitects.com

Please enter my annual subscription at ₹ **1,000/-**
Payment is enclosed herewith. (Please tick appropriately)

☐ Demand Draft ☐ Cheque ☐ Money Order

Name : Title

Address :

City : Pin :

Signature : Date :

Please tick the appropriate box only

- ☐ Architect registered with the Council of Arch
  Arch. CA No.
- ☐ Planner
- ☐ Engineer
- ☐ Builder
- ☐ Designer
- ☐ Educationist
- ☐ Administrator
- ☐ Business
- ☐ Other than above
  (Please Specify)

STUDENT

MEGASAVER

GENERAL SUBSCRIPTION
Other than IIA members

J O U R N A L
OF THE INDIAN INSTITUTE OF
A R C H I T E C T S

Prospect Chambers Annexe, 5th Flr., D.N. Road, Mumbai 400 001
Tel.: +91 22 22046972/22818491/22884805 Fax: +91 22 2283 2516
Email: iiapublication@gmail.com / iiaho1214@gmail.com
Website: www.indianinstituteofarchitects.com

Please enter my annual subscription at ₹ **500/-**
Payment is enclosed herewith. (Please tick appropriately)

☐ Demand Draft ☐ Cheque ☐ Money Order

Name : Title

Address :

City : Pin :

Signature : Date :

CERTIFICATE

This is to certify that

(Student's Name)

is a bonafide student of

(School, College of Arch.)

City

Please enter student Subscription

Signature of Head of the Institution
(Please affix stamp of the Institution)

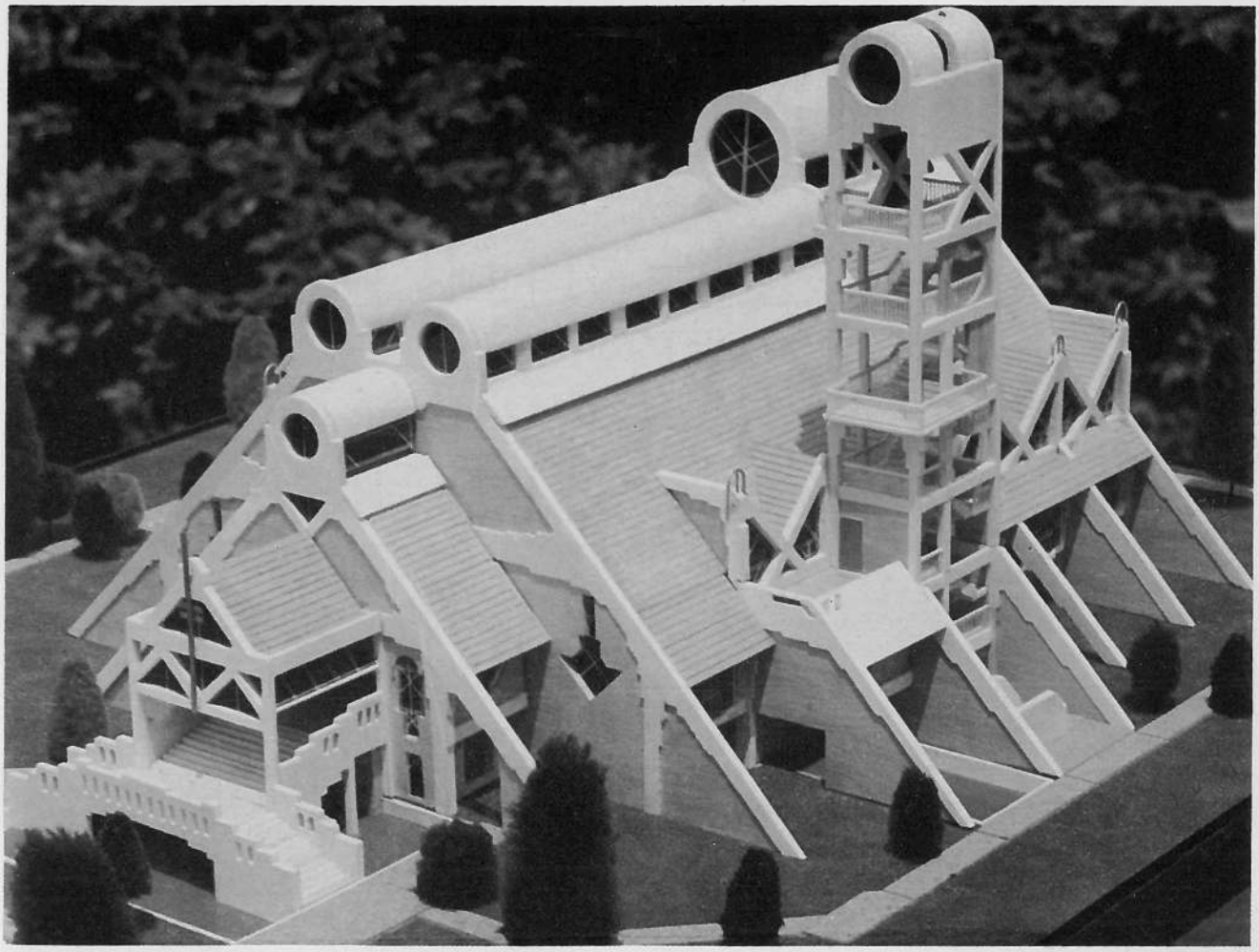
This Project was published in the JIIA - December 1990 Issue

JIIA PROJECT AWARD

Church for Don Bosco at Kalyani, West Bengal.

Design Concept

Ar. Dulal Mukherjee F.I.I.A.



Birds eye view from south west side

Kalyani is about 50 Km. North of Calcutta. It was conceived as a small satellite town about 40 years back by the then Chief Minister of West Bengal Late Dr. B.C. Roy, the great dreamer. Because of his early demise, the town could not get the necessary boosting to become a potentially important place of urban acivities. However, of late infusion of a few industries has brought about a renewed development activites in Kalyani.

The location of the church is in the fringe area of the town. The environment is a typical mixture of semi-urban and semi-rural character. Though the site is surrounded with dense vegetation and agricultural land the view of modern buildings in the form of Housing and Industrial Complex can be seen nearby.

This contradictory environmental character is the main source of inspiration in creating a form of strong geometric character emerging out of the ground like a small hillock and ending iin to a pinnacle, toned down by softer lines.

In architectural language it is a juxtaposition of an 'A' form ending into a vaulted roof. The effort was to create a sculputre around a definite axis broken by softer and flowing masses and details whereby the built form and the surrounding Nature fuses into one total composition. Use of materials, except concrete work, are mostly local like exposed brick work in wall cladding and pavement, teracotta tiles over sloped roof, etc. to restore the ambience of vernacular character.

Area:

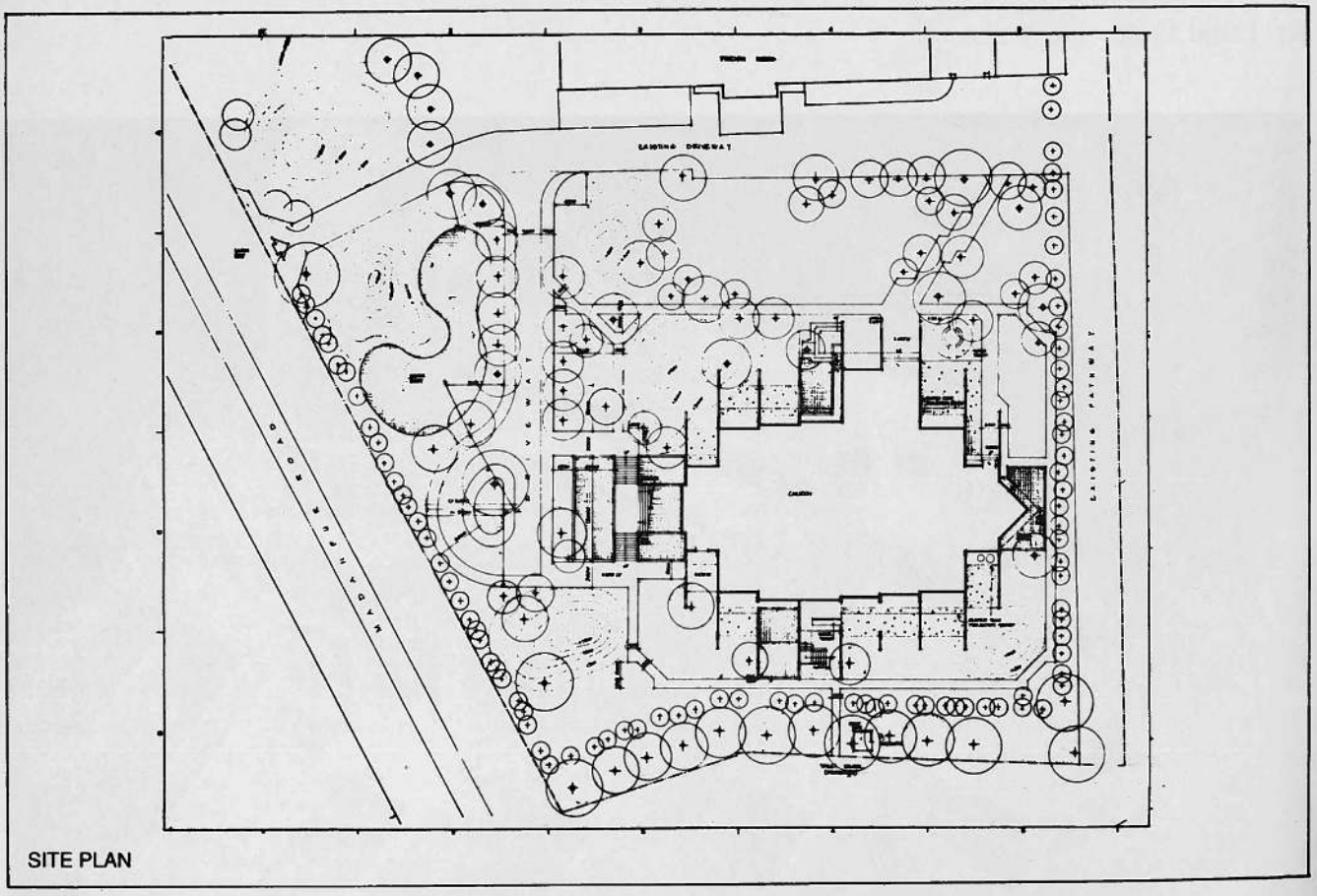
i) Lower Gr. floor 801.02 sqm. (School)

ii) Upper Gr. floor 947.21 sqm. (Main Church)

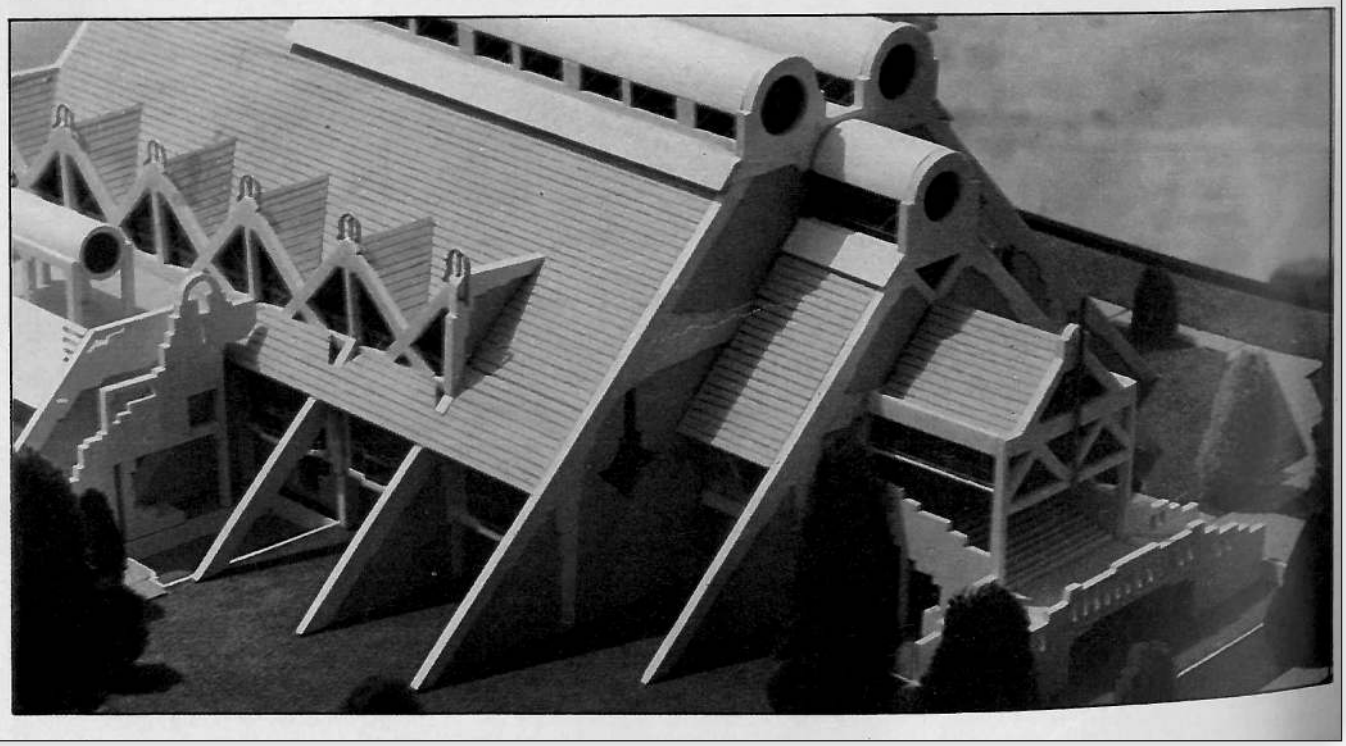
Cost: Rs. 35.00 Lakhs (Approximately).

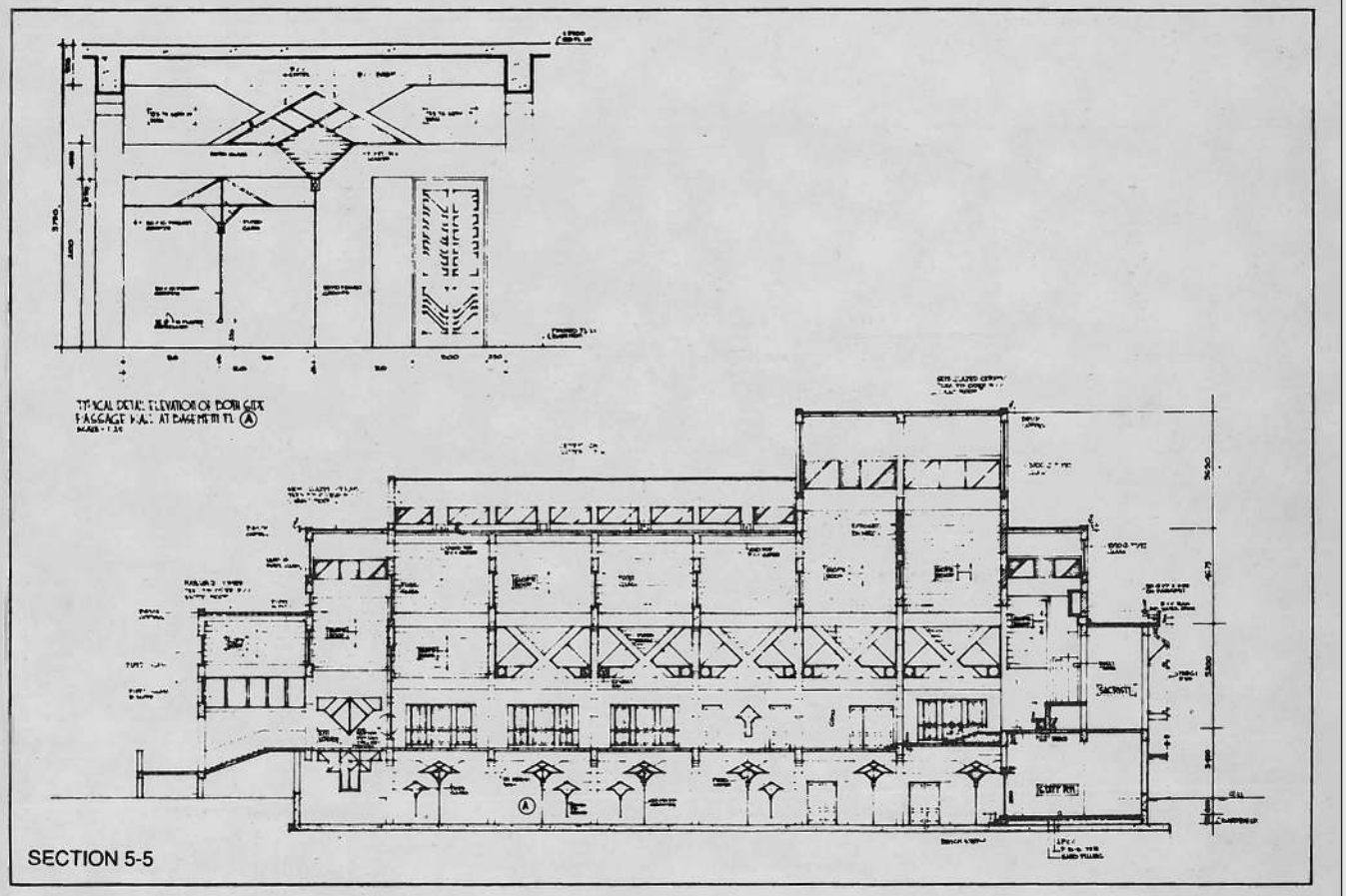
Present situation: Work just started. Raft at foundation completed.

Architects & Engineers: Dulal Mukherjee & Associates.

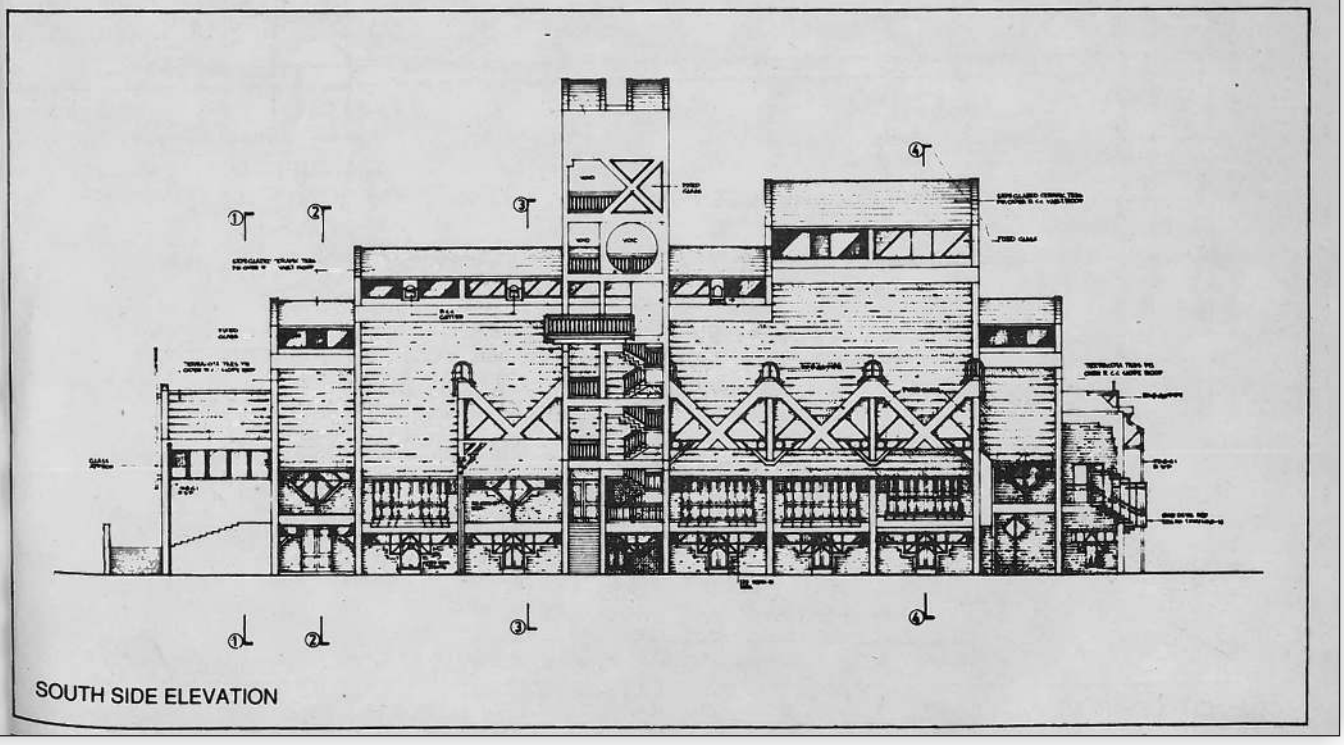


SITE PLAN

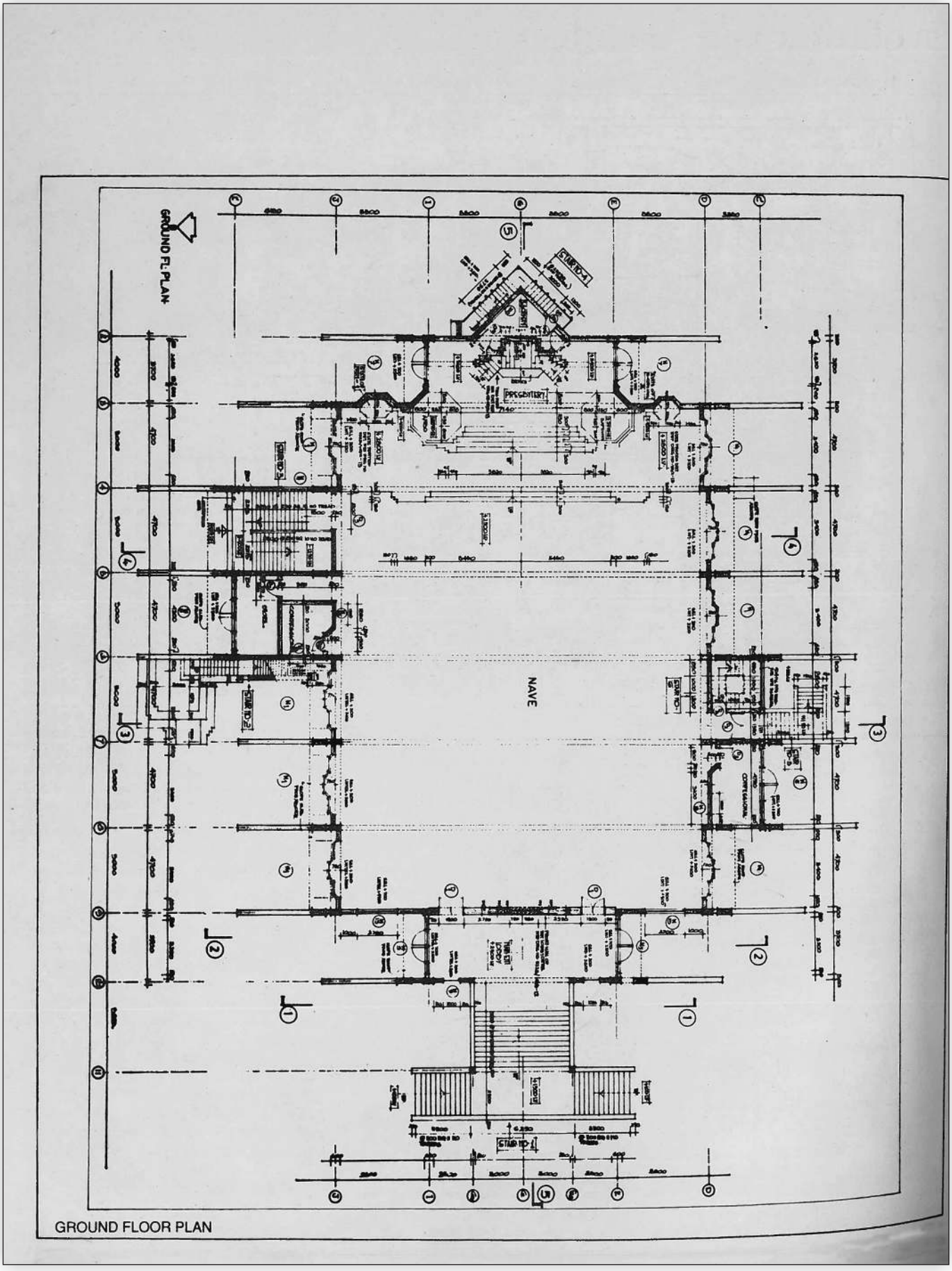




SECTION 5-5



SOUTH SIDE ELEVATION


GROUND FL PLAN
NAVE
GROUND FLOOR PLAN

This Project was published in the JIIA - March 1989 Issue

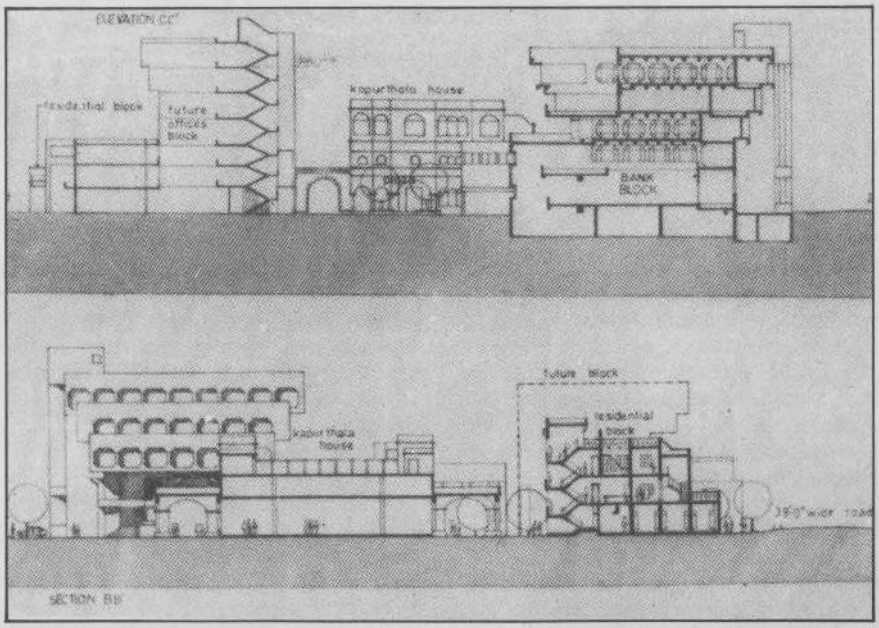
Central Co-operative Bank Complex, Jalandhar

Anil S. Thakur, A.I.I.A., Chandigarh

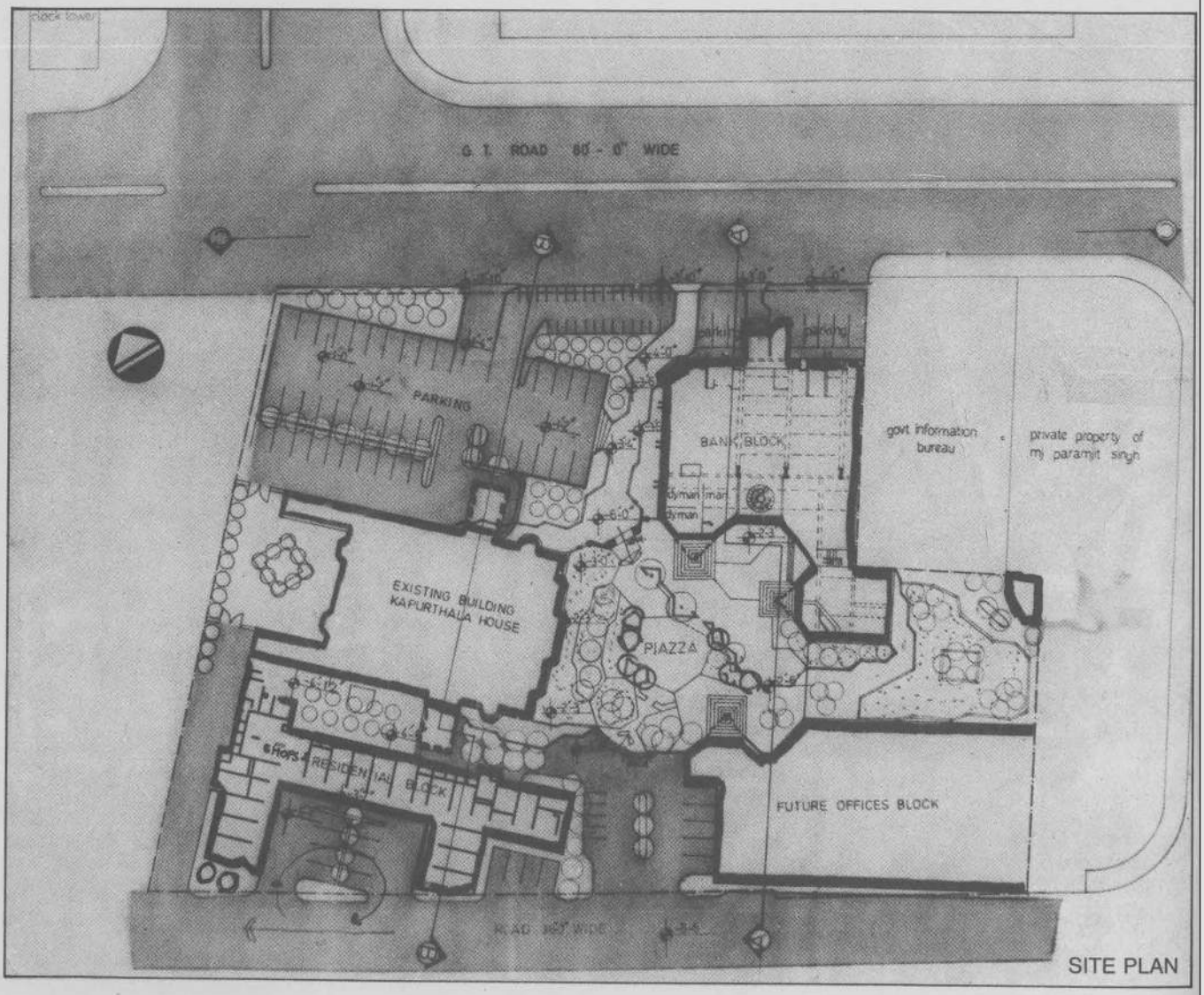
Central Co-operative Bank, a view from the junction.

"In times when most of the important cities of Punjab are bursting themselves apart with the natural economic, demographic and geopolitical growth and when the once so beautiful formal core development of these cities of the colonial era and of earlier period is rotting in the face of compulsive, unregulated and informal growth, the urban projects of the nature of "Central Co-Operative Bank Complex" at Jalandhar, hold surmountable significance. Their significance is not limited to the extent of activities/functions that are housed and find an end in itself, but it begins to exert itself both on the city and on regional scales."

"Every city that is marked with stagnancy in the upkeep of its old nucleus and the formal core around which the development had begun and has been achieving over a long stretch of time, continues to degrade till such time that it either falls under its own weight or isolated land marks/projects of the nature, under description (that form:- alternate cores of development) are planted to relieve the caused stress. Such poly nodes rejuvenate



SECTION AA, SECTION BB



SITE PLAN

the regulated and self conscious urban architecture that plays a pivotal role in forming an integrated imageability and fabric of an Indian city, hand in hand with informal growth that continues to polarise around it. Such developments are imperative in overall climates of economic growth supporting both formal and informal systems and the growth thereof.''

''Limited to its functions that it forms an abode to, the project speaks of an exemplary saga of certain government officials who showed uncommon courage, sense of purpose and an off the routine approach adopted to incept this project that shall find its due place in the sunshine of the historical development of the cities of Punjab. Through this project, the inceptors have very successfully pulled out the co-operative movement in Punjab out of the yoke of a poor imageability of a traditional, insignificant limping movement and represented it to its full content through this 'Pedestal Project':— as a revolution with higher aspirations that meet the challenges of times in all spheres be it banking, managerial, housing, marketing, and producing agro products and in general anything that means welfare of the masses of Punjab. The project certainly is a booster in as far as the idea goes that the co-operative sector can serve through 'Modernity' more than through mere shackles of age old self centered singular phased approaches''.

This is how the project architect Anil S. Thakur of Designers International situated at Chandigarh describes the background of the project and goes on to describe how he devised a twin edged solution to meet the abovementioned facets of the problem i.e. interest and aspirations of the group on one hand and urban design commitments on the other hand.

The site and its location for this complex of Central Co-Operative Bank, Jalandhar (providing space for offices, showrooms of the various apex bodies of the Co-Operatives, low rise flatted housing for the local staff and a main branch of the said bank), are of a paramount and historical importance. In the centre of the city Jalandhar and fed on one side by old G.T. Road (presently 120'-0'' wide), this site faces an important junction having two structures of im-

portance namely General Post Office building 3 storeyed high on one side and Clock Tower Restaurant about 45'-high on the other hand.

Kapurthala House, magnificent old palace building sits towards the N-W. edge of the site. In fact whole of the site is amidst neighbourhood of a dense sprawl of residential development. This is absolutely vernacular in character and embraces the N-W & S-W faces of the site. See the pictures — A series.

In the closed ideas competition floated by the promoters, all the entries except the one under description proposed to dismantle 'Kapurthala House' and treat the site as a clean slate to achieve the proposed FAR of 1:1.25.

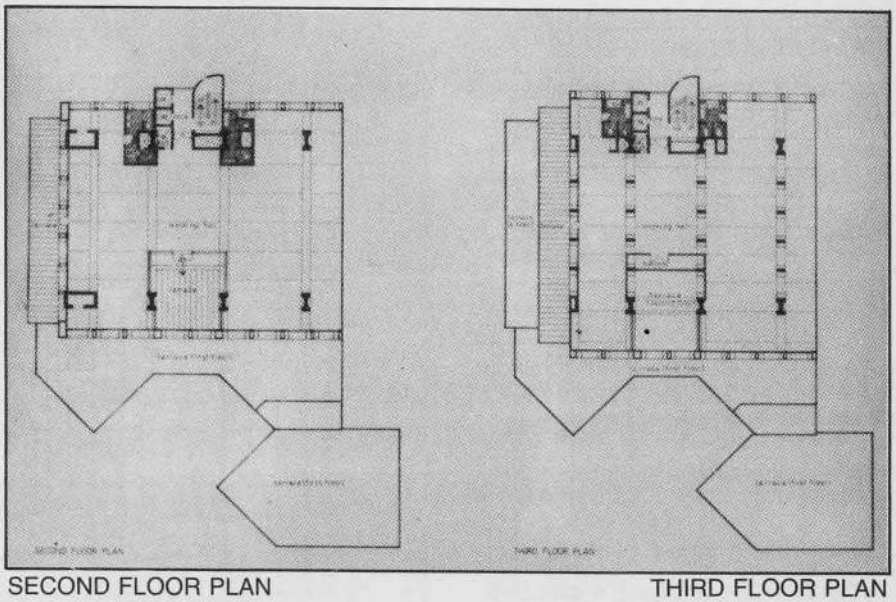
This proposal provided the optimum coverages after preserving the beautiful edifice Kapurthala House. In fact this scheme not only advocated its preservation but evolved the layout around it in a manner that highlights its existence and forms an architectural environment in which 'old' and 'new' built up spaces co-relate and co-exist in equal brilliance. No attempt is made (as one can see in the illustrations) to achieve this by employing imitated architectural elements of the old building in its contextual absentia, particularly in the design of the Bank Block that relies heavily for its self-expression on the structural system seated deep in its breast.

But for its interrelationship with other blocks namely Kapurthala House and the future offices block, it relies on its specially designed configuration. On the G.T. Road side it makes the offices enjoy a potent 'Commercial Frontage' and on the rear side it forms a low edged enclosure that forms an integral part of a Piazza which is also enclosed by the angular edges of Kapurthala House. This angularity has been taken down to the newly constructed forms to effect an architectonic assimilation.

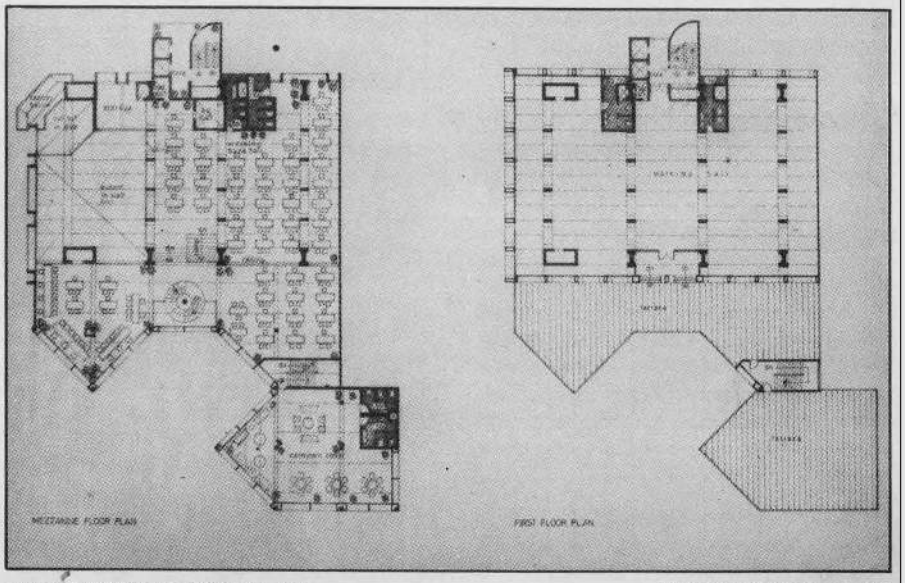
This Piazza in the Centre of composition not only provides a spatial relief but also an internal frontage to the Complex and absorbs in itself the generated tension because of the axial differentiations of the blocks in the layout that correspond to their frontages, edges of the site and mutual alignments. Due to this very reason the Piazza has been laid out in free and organic order which helps it absorb invincible geometric tensions and hardships resulting from the confiruration of the site. In the initial scheme this Piazza was envisaged to be sunk 6,0'' below ground to provide basement the advantages of Ground floor on this rear side. This idea had to be ultimately dropped for various engineering considerations.

BANK BLOCK

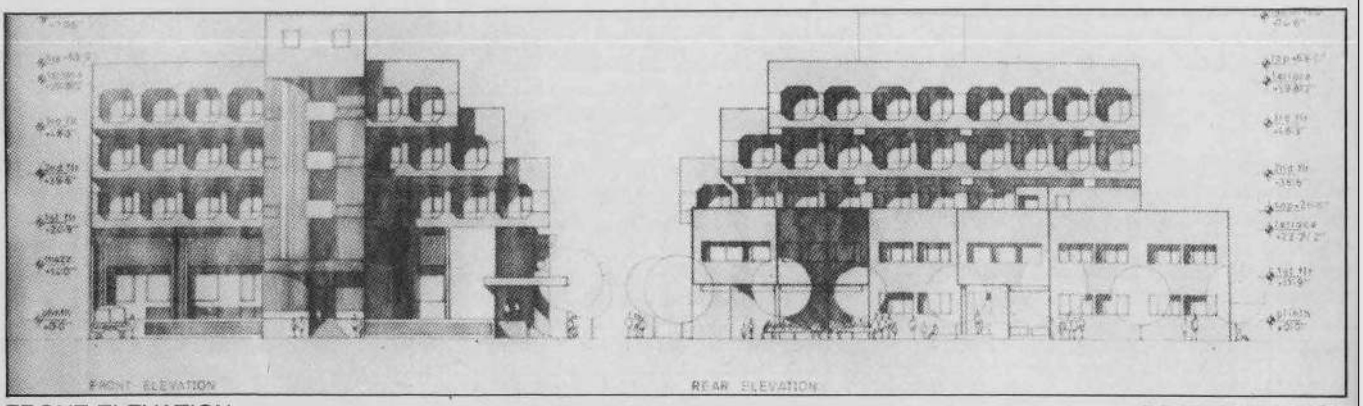
This is a five storeyed structure (including basement) in R.C.C. vindriel and frame construction which permit office space as large as 65' × 110'columns free on alternate floors. However this arrangement of five storeys permit two column free halls and three columned work spaces. 'Basement + Ground floor + Mezzanine and First floor' is the volume to be used by the bank itself therefore its independent entry at the corner of the building flanked by a sculptrous overhang.



SECOND FLOOR PLAN THIRD FLOOR PLAN

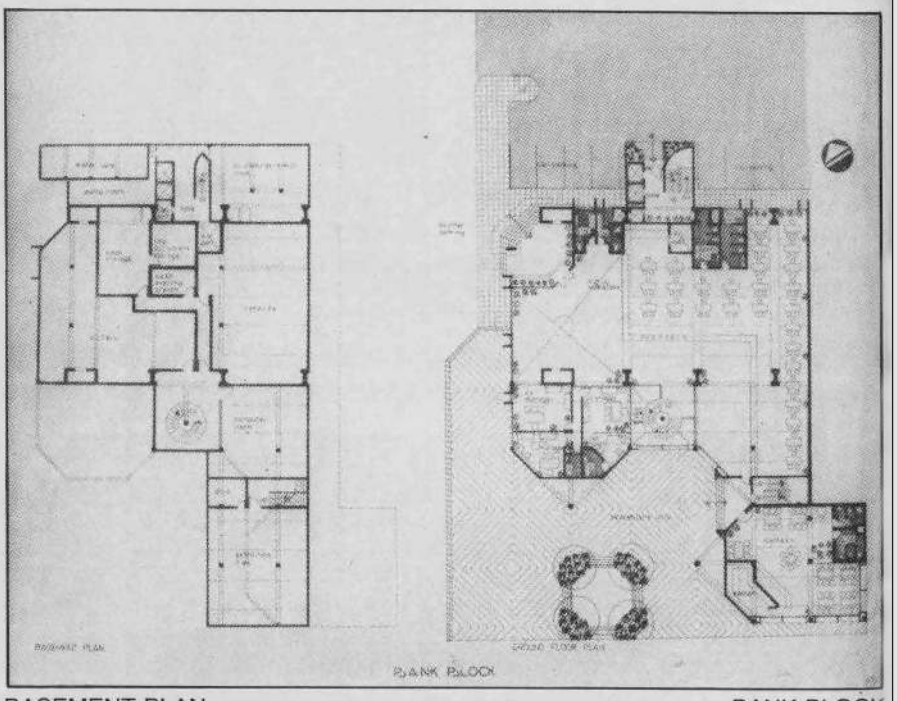


MEZZANINE FLOOR PLAN FIRST FLOOR PLAN



FRONT ELEVATION

REAR ELEVATION



BASEMENT PLAN

BANK BLOCK

The bank hall is a double volume enclosure in which the mezzanine peeps in. This three tiered volume is served by its internal staircases. Subsequent floors with seperate entries are fed through external vertical core containing vertical circulation and services. The block has an exposed ribbed and criss-crossed wooden pattern in poured concrete.

In external treatment the volume with the bank is treated separately whereby high exernal walls will be built in glass blocks to permit natural night. This is also to provide a sense of scale through a 'miniature square' texture and to extend a bouyancy and transparency to the building towards its base.

RESIDENTIAL BLOCK

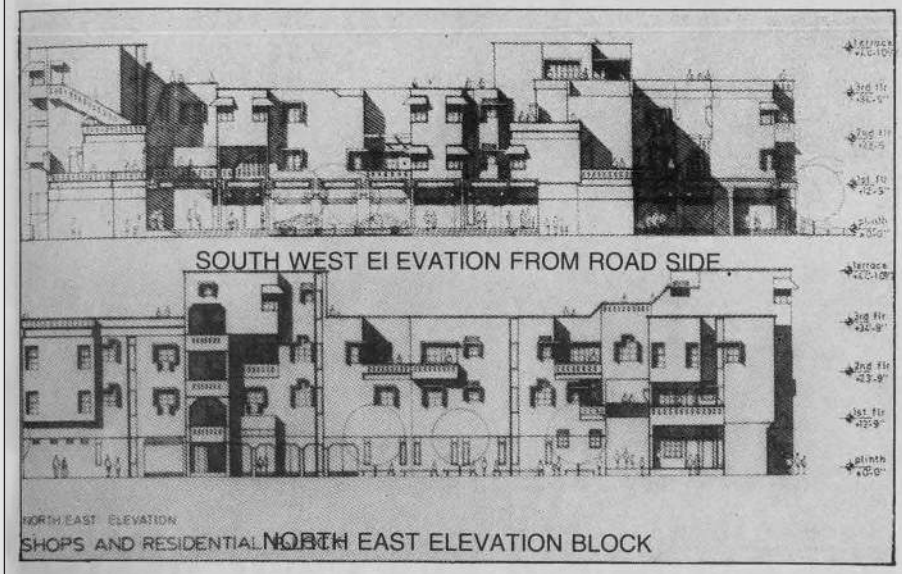
The S-W face of the site abuts a 38,0'' neighbourhood road that supports Commercial-Cum-residential mixed use functions on both of its edges along an approximate 1000 yds. of length. This road also forms an important frontage to the side and therefore the decision to plant advantageously the traditional mixed use functions whereby shops are located on ground floor of this block and flatted residences for staff (11 no: of different categories ranging from 2 beds to 3 beds and with additional study and configuration of toilets and stores) on subsequent floors. To fit into its immediate surrounding and the existing morphology of the forms around, this block had to stay low and also thus eliminate the necessity of the elevators and other mechanical risers. Therefore the decison to stick to maximum three storeys was struck.

The configuration of the block has been so designed that it scoops the 38,0'' road in and provides the advanges of (i) Extended Frontages (ii) Additional areas for parking, (iii) Gives a much wanted relief in the middle of this rather busy and long road — a design consideration that has surely done a service to the street as a whole!

The block steps up from the lowest at the road to the highest points i.e. the staircases, in playful cresendos employing the traditional slopes and slit punctures in the wall, that initiate immediate dialogues with the ornamental treatments in the adjacent vicinities. These also serve the purpose of privacy extending screens to the dwellers in this mixed use development. Inspired by the informal skyline around the site and the general diversity of the built masses in the spontaneous and organic residential development in the cities of Punjab, here the architect has tried to re-create the order 'distilled from the disorderly developments' that are typical of Indian cities and have distinct rural flavour. This is a significant step towards esthetics of informal order!

The maximum depth of the block is broadly limited to 27,0'', throughout to facilitate cross ventilation and natural light in frequent power failures — a practical problem in distant future too.

To mitigate the harsh effects of off the ground flatted accommodations to which most of the future occupants *1 may not be used to, (particularly in this semi-Urban and



tropical area), the provision of suitable terraces in appropriate locations with each flat has been made. This feature in this part of the tropics is as important as giving the family a space to ''swing a cat''!

While all this happens where is the privacy of dwellers and their security (a key issue in planning of a project in Punjab) *2. This problem is

Foot Notes

1. Presently the staff members are living at distant places scattered all around the city. All of them are used to extending their household activities in the open areas.
2. The project was planned during the troubled periods of Punjab when 'security' was the key issue of neighbourhood.

accentuated further in mixed use development. Therefore the residential approaches have been located at two distinct locations where commercials/customers have nothing to do. Staircases laid in a pattern to serve three dwellings on a floor, are located at two distinct points approached from the rear of the block. Adjacent to these are located Cars and Scooters garages as per the projected demand.

All this happens in a mixed construction of predominantly load bearing brick walls over a grid of 12,0'' C/C and RCC, relieving members. In order to release the terraces, and to make a terrace of one, useful to the other, the unit devetails into each other both horizontally and vertically.

A note worthy feature in this design of the complex is that the consistent relationship between the form and contents of the buildings conceived by this architect is no longer statjc and impelling but always interpretable and playful.

'Colour' is a word which Architect Thakur lays utmost stress and enthusiastically cites examples of streets, neighbourhoods and towns that are completely coloured- 'Gaudi's Casa battllo' on Paseo della Gracia, in Barcelonia, the blue tiled palace in Mexico city, the watts Tower in Los Angeles, blue town in Denmark and Burano near Venice where literally every house has a different colour.

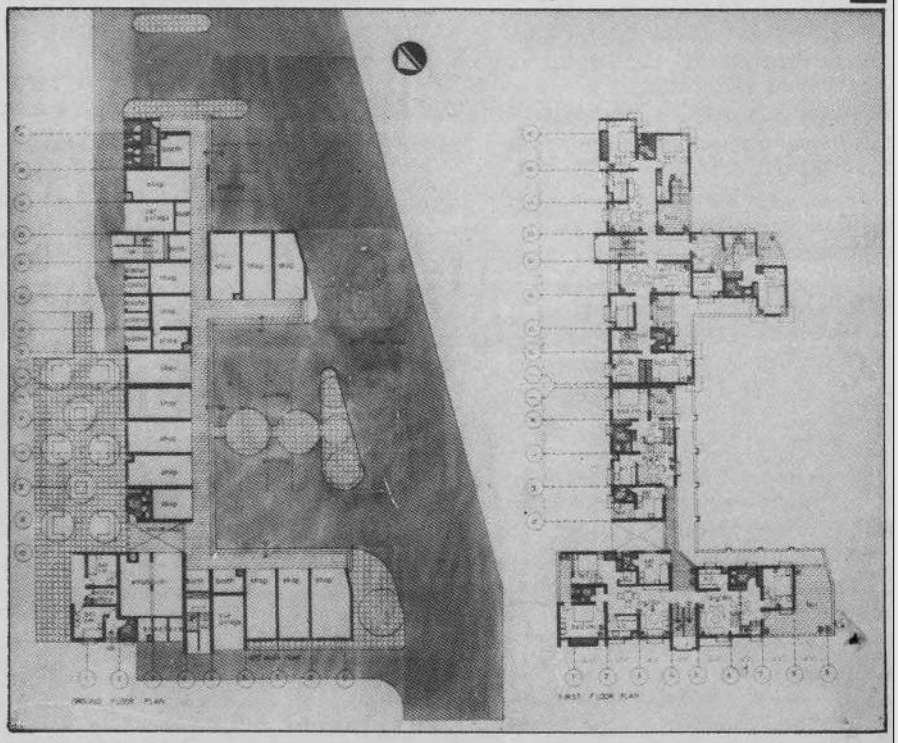
''We witness ubiquitous masses of grey concrete and smoke which form the predominant image of our cities. I know exactly why the architects are hesitant to make use of colour...'' He is finding tremendous pressures and resistance from the promoters of the projects for painting the residences in the 'rainbow'! However in the garb of paucity of funds the colour scheme stands at presently titled' pending!

''The Engineering Cell of the co-operative bank teamed by the PWD (B & R) engineers who regulated the construction, often had divergent views and it takes a lot out of you to move with people of all tastes and backgrounds.''

''This project is realised upto 85% of my likes and the balance 15% contributes to the weight thrown decisions of the cell.''

This is how the architect of this project describes his feelings towards its execution. However with this score too he feels contented but hopes for better score next time!

A



THE INDIAN INSTITUTE OF ARCHITECTS

Prospect Chambers Annexe, 5th Floor, Dr. D. N. Road, Fort, Mumbai – 400 001.
Tel. : +91.22.2204 6972 / 2281 8491 / 2288 4805 • Fax : +91.22.2283 2516
Email : iiapublication@gmail.com / iiaho1214@gmail.com • Website : www.indianinstituteofarchitects.com

STUDENT MEMBERSHIP FORM

(TO BE FILLED WITH BLOCK LETTERS ONLY)

Photo

To,
The Jt. Hon. Secretary
The Indian Institute of Architects
Prospect Chambers Annexe, 5th Floor,
Dr. D. N. Road, Fort,
Mumbai – 400 001.

Subscription Payment Details : (*Cash will be accepted only at IIA Office in Mumbai, against receipt*)
₹ 200/- (Yearly Subscription)
Add GST @ 18% on the amount payable

cheque *(Multicity Cheque for outstation)* D.D. No. dt.

of ₹ drawn on

in favour of **"The Indian Institute of Architects" payable at Mumbai.**

Personal Information :

Name (As appearing on my graduation certificate) :

First Name

Middle Name

Last Name

(In case of change of my name I shall attach the ncessary legal documents, as required by IIA).

Gender : Male Female Date of Birth :

Contact Information :

Telephone : Res. Mobile :

Email :

Residential Address :

State : Pin Code :

Year of Joining Architectural Studies **Nationality**

Name of Parents / Guardian :

Address :

State : Pin Code :

I have gone through the rules and regulations of **The Indian Institute of Architects** and shall abide by them.

Signature of Student

SHRI / KUM. _____
is a bonafide student of our institution & He / She is at present studying in _____ Class

Signature of Head of Institute

The above information is correct to the best of my knowledge
(Proposed & Seconded by Members of I.I.A.)

1) _____

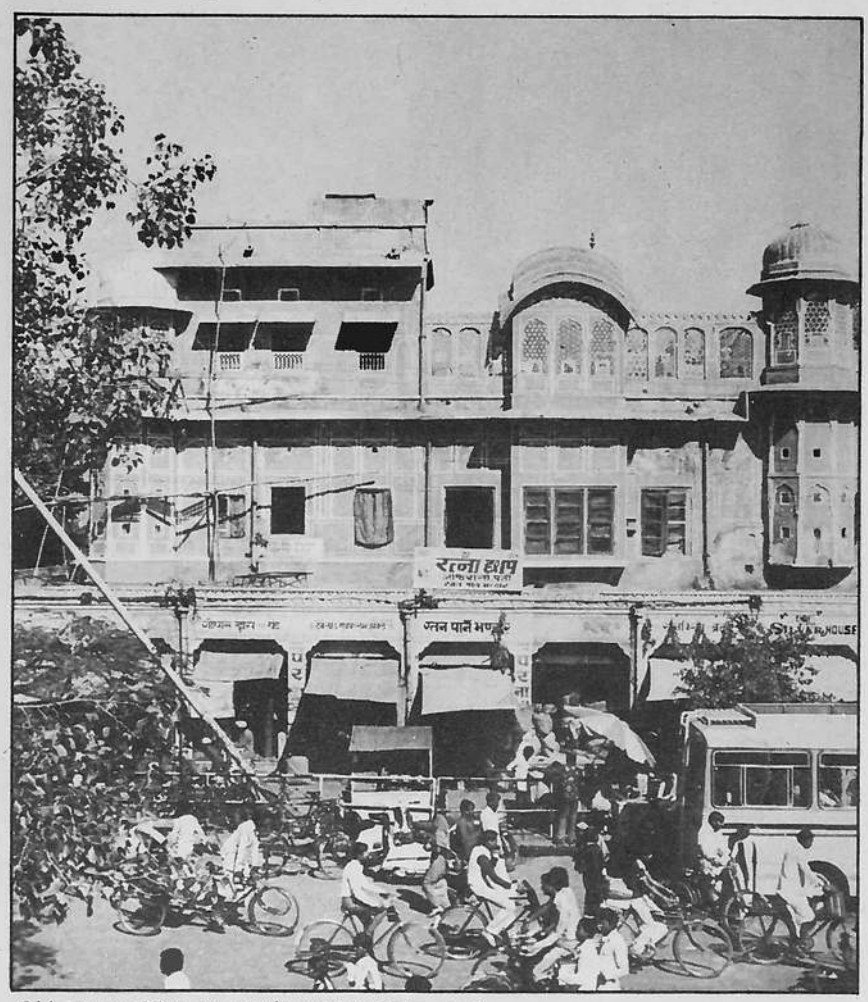
2) _____

This Project was published in the JIIA - September - December 1987 Issue

STUDY

Learning from Old Jaipur

(Balkrishna Doshi & Muktirajsinhji Chauhan)
Vidyadhar Nagar Study Cell, Ahmedabad



Old Jaipur: View across the major sector road

Walled city of Jaipur strongly represents an approach to planning concerns at all seals of hafitat which is assured of a timeless quality. Perhaps the right solution for all times to come for the region.

Concerns for optimal use of man and material esources, an urban fabric which is energy conscious, flexibility and growth within an overall framework, harmonious urbanism and a humane pedestrian scale are achievements of this city worthy of emulating with humility and necessary reinterpretation for contemporary needs.

LEARNING FROM OLD JAIPUR

Vidyadhar Nagar is conceived as a reflection of its parent city, Jaipur. Jaipur, the city, which invokes popularity amongst scholars as well as laymen.

Its unique conception, execution and that it is still a thriving well preserved city after two hundred and fifty eight years, makes it an excellent example for understanding the architectural and planning traditions in our contexts.

Planning for Vidyadhar Nagar in proximity of such an environment becomes a challenging task aimed at judiciously combining the lessons from the traditions to the contemporary era. Added to this challenge is the role Vidyadhar Nagar is expected to play in the fast developing north-western sector of the Jaipur city. Like old Jaipur which functions as the hub of activities for the subsequent developments to its South, Vidyadhar Nagar is expected to lay a similar role in the south-western sector. In built environmental terms, this implies that besides the activity dependence, the urban character of Vidyadhar Nagar must attain a quality which the inhabitants as well as daily and occasional visitors can be proud of. Being named after the architect planner of old Jaipur, Vidyadhar Nagar should be a fitting tribute to the ingenuity of Vidyadhar Bhattacharya, whose visionary plan integrating basic elements of planning with philosophical value oriented lifestyles is valid even today.

With this aim, the planning team has undertaken several studies of old Jaipur at varying scales of habitat. The emphasis in these studies has been to understand planning and architecture of the old city.

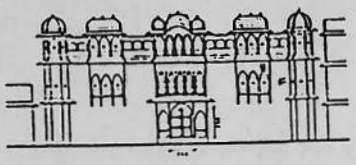
Historical Background

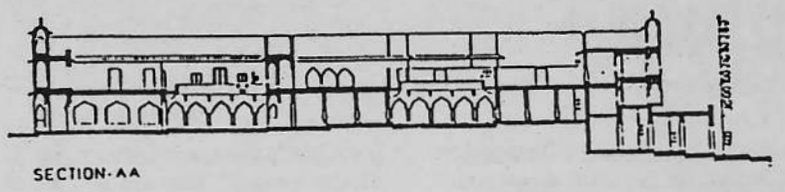
King Sawai Jai Singh (1700-1743), the founder of Jaipur ascended the throne of Amber (situated about 8 km North of old Jaipur) at the age of 13. Using a judicious mixture of stratagem and statesmanship he brought prosperity to his kingdom through strong links with the Mughal emperor Aurangzeb and control over the local, smaller principalities.

In these prosperous and peaceful circumstances, it was but natural that he would want a new capital city. Amber, dating back to 10th century, was sited on a hilly terrain with strong fortification to meet the demands of a kingdom in process of establishing itself. Its site precluded the potential for expansion necessitated by the prosperous condition of early 18th century. Being a learned man, well-versed in many fields of sciences and arts, Sawai Jai Singh would naturally aspire that his capital reflect his wider consciousness. This might have strengthened his desire for a new capital city.

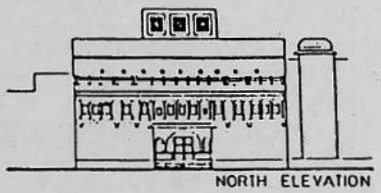
He was ably assisted for fulfilling this ambition by his architect, Vidyadhar Bhattacharya, great grandson of the priest of the King's temple at Amber. Vidyadhar had successfully undertaken construction of important structures for the King before the founding of the city on November 17, 1727.

Besides Vidyadhar's skills, Jai Singh's pursuit of astronomy, arts and particularly study of ancient scriptures seemed to be the major inspiration behind the

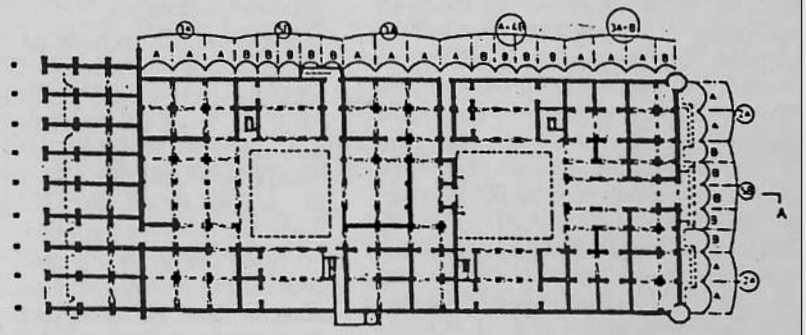




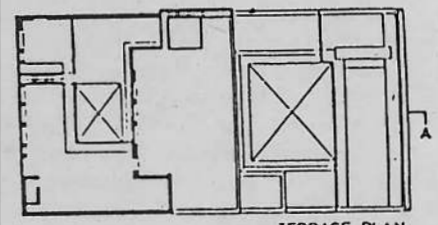
SECTION-AA



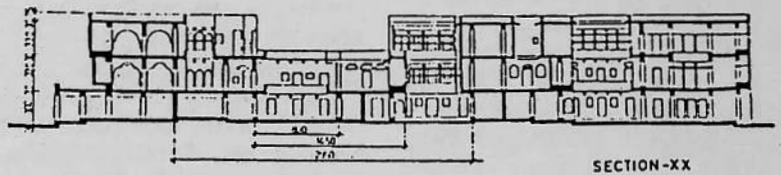
NORTH ELEVATION



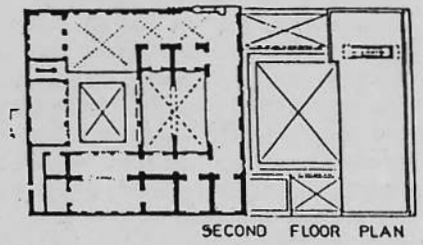
GROUND FLOOR PLAN



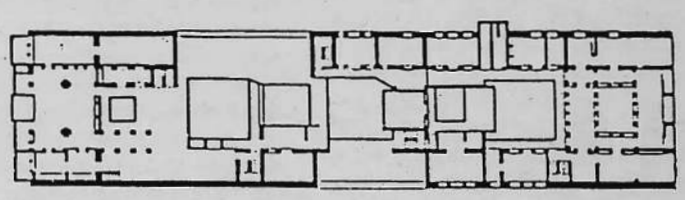
TERRACE PLAN



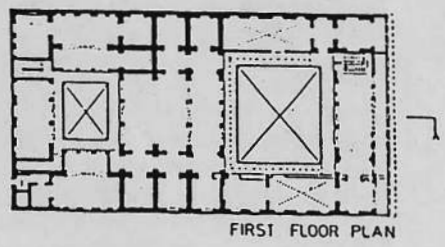
SECTION-XX



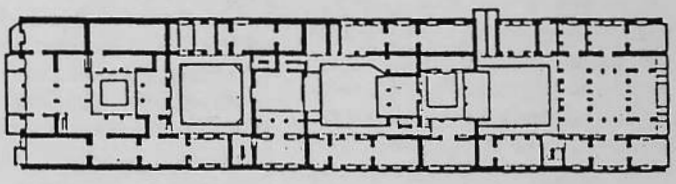
SECOND FLOOR PLAN



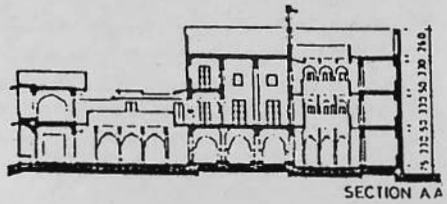
SECOND FLOOR PLAN



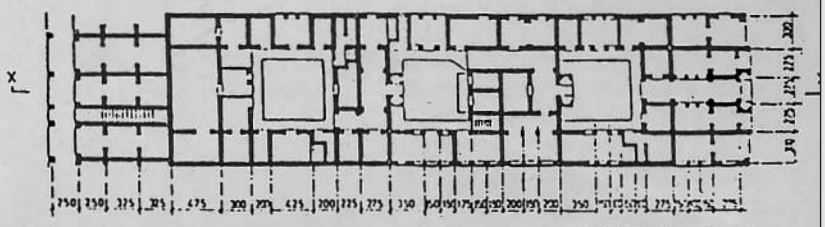
FIRST FLOOR PLAN



FIRST FLOOR PLAN

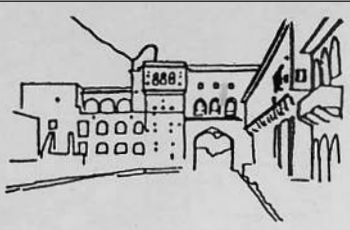


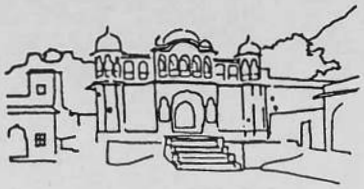
SECTION AA



GROUND FLOOR PLAN

HOUSE DIMENSIONAL STUDIES





IMAGES

conception of the plan of old Jaipur. His interest in astronomy was exhaustive, and he had obtained a thorough knowledge of its principles. He was fully familiar with astronomical methods of Hindus, Muslims and Europeans and seemed to have closely followed the Muslim astronomer Ulegh-beg. His library included works like Ptolemy's Almagest, which he had his assistant translate into Sanskrit from Arabic. Finding the ancient astronomical tables defective, he took up the task of preparing new ones. For the purpose of gathering new observations, he set-up a series of observatories in the five cities: Benares, Mathura, Ujjain, Delhi and Jaipur. Besides his interest, in astronomy, Jai Singh was thoroughly familiar with Hindu scriptures, particularly related to *'Vastu-Shastra'* and fine arts. It is natural that when such scholarly sensitive King decided to build for himself a new capital city, his vision would be equally expansive in conception.

Records indicate that Jai Singh took special care to invite groups of various tranders and craftsmen to assure a success of the new city he was founding. Being conscious of the social and economic interdependence and the hierarchy prevalent in a tradition bound society, Jai Singh planned different zones of the city in confirmity with the *Vastu-Shastra*. *Brahmins* thus were allocated areas in the North, *Kshatriyas* in East, *Vaishyas* in South and the *Sudras* (artisans) in the West. This arrangement, as can be observed, strengthened the economic base of Jaipur. The major roads, which were designed along with commercial facilities by the State were the first structures to be constructed in the new city.

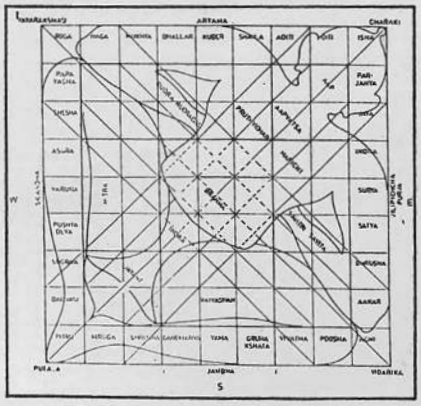
The concepts And Its Application

Many scholars have attributed the very basic concept plan of old Jaipur as being a *Prastara* a typed mentioned in *Mansara,* one of the ancient treatise on Hindu Town-planning. The physical interpretation of the basic *Prastara* scheme in the final plan of old Jaipur is obvious.

British historian, George Mitchell has observed that any study of cities and symbolism in Asia must inevitably focus on Jaipur. According to him, it is not only the best preserved example in India of a town laid out according to traditional Hindu theory, but embodies ideas that may have travelled to India by way of the Islamic invasion and which are pre-Islamic in origin.

These ideas are concerned with linking the city with the heavens, either by recreating the structure of the universe in form of a sacred mandala or by incorporating into the city, the means by which the heavens may be observed and movement of stars measured. Interestingly, the central position in a *mandala* is occupied by *Brahma,* which could be readily interpreted as the position of the king in case of monarchy. While at Jaipur, locating both the palace complex and an observatory to study the heavens, *Brahmand,* further strengthens the symbolic case sought to be made of recreating a city in the image of the universe.

George Mitchell cites the example of a town, Koy-Krylgan Kala Khwarazm (now in USSR), built in 400 BC in what he calls near-Eastern tradition. This town was essentially an observatory city. According to Mitchell, even though this region was linked to India through trade, a stronger link for exchange of ideas must have existed. The fact being that in the 15th century, Ulugh-beg's observatory at Samarquand in Transoxiana was situated close to Khwarazm. As we already know, Jai Singh was well acquainted with the work of Ulugh-beg and presumably the concept of an observatory city might have influenced him greatly. This was further strengthened by his desire to create a city symbolically expressive of universe through a *mandala* and according to the ancient Indian tenets of town planning.



Vastu-purusha Mandala

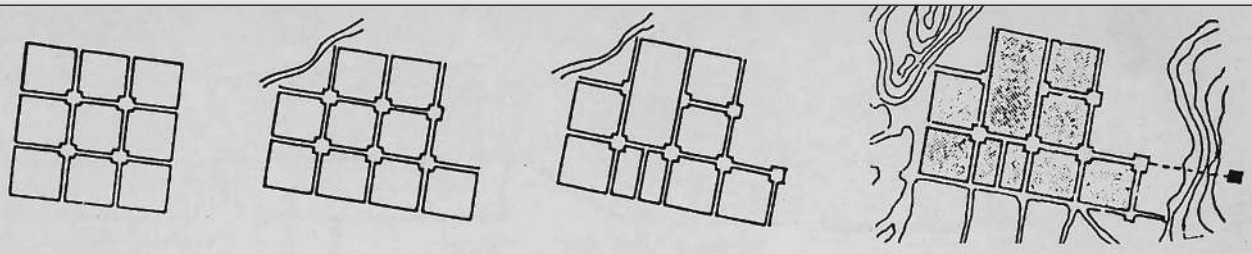
According to ancient texts, 'A long time ago something existed that was not defined by name or known in its form. It blocked the sky and the earth. When the gods saw it they seized it and pressed it upon the ground, face downward. *Brahma* had it occupied by the gods to hold it down and called it *Vastu-purusha'* Thus an existence which did not follow any principle is defined by *Brahma* who forces it to assume and retain a certain form, *mandala* with the aid of gods presiding over it.

With the central location presided by *Brahma,* the inner and outer rings of the *Mandala* were occupied by 44 other Vedic Gods. In Indian symbolism, a square represents a celestial world and with the gods appropriately sited over the Mandala, e.g. Sun God to East, the *Vastu-purusha mandala* assumes great significance to town planning and architecture.

"The *Vastu-purusha mandala* is an image of the laws governing the cosmos, to which men are just as subject as in the earth in which they build. In their activity as builders, men order their environment in the same way as once in the past *Brahma* forced the undefined *purusha* into a geometric form. For the architect, building is an act of bringing disordered existence into conformity with basic laws that govern it. This can only be achieved by making each monument, from the hermit's retreat to the layout of a city, follow exactly the magic diagram of the *Vastu-purusha mandala''* (Volwahsen, 1973).

Prastara

Mansara's description of *Prastara* plan in noted by Prabhakar Begde as a town which is either suqare or oblong in form. It is so divided as to form the mystic figures of *Paramasayika mandala* or *manduka mandala*. *Paramasayika* and *manduka mandalas* are the most commonly adopted divsions of the basic *mandala* square. These divisions number 81 in *Paramasayika* and 64 in case of *manduka*. Within the boundaries of the *Vastu purusha mandala,* a *prastara* town is divided into four, nine or sixteen major wards by an appropriate number of roads which run east-west and north-south. Within the wards, roads are again planned on a chess-board pattern and the spacing of the roads is determined by the sizes of plots in the sub-divisions. Wards with larger plots are inhabited by people



of higher ranks, while the wards with smaller plots are inhabited by people of lower ranks.

Almost all published material, on ancient Indian town planning, refers to the distribution of the different castes-classes within the overall frame work of the *Vastu-purusha mandala* by assigning them specific quarters with respect to the cardinal points. Locating the seat of religious or political power at the centre is commonly accepted.

Analysis of the walled city of Jaipur suggests that the *prastar* concepts for a town plan as described in *Mansara* has been adopted and further evolved in planning of the city.

Siting

The site of old Jaipur is in the valley formed by hills to the North and East. The old capital of Jai Singh, Amber, was located in the northern hills overlooking the valley. The southern boundary must have been determined by the ancient trade route Delhi-Agra-Ajmer, which was also used by the Mughal emperors for their pilgrimage.

Alternately, it has been speculated that the basic *prastar* plan was adopted for a system of nine squares (residential sectors) or six of them as an orthogonal cluster. Presence of a single major East-West road would naturally imply a six square version. However, the most commonly accepted interpretation of *prastar* plan is the sequence postulated by Kulbhushan Jain, which envisages an orthogonal cluster of nine squares with two major road running East-West and North-South. Constrained by the southern boundary of the Agra-Ajmer road, the north-western square of this orthogonal cluster of nine squares would have fallen of the hill of Nahargadh. This square, therefore, was placed adjoining south-eastern sector. The central square in addition to the observatory, accommodated the palace and its gardens, administrative offices, etc., which required larger area and hence was merged with the square on its North.

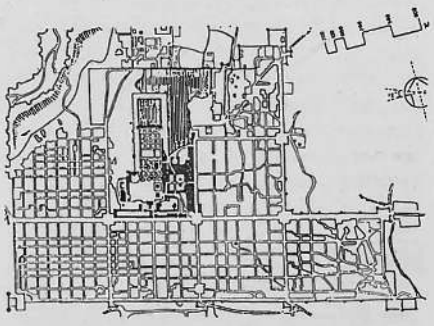
Thus, of the two major East-West roads required for the perfect nine square cluster, only one remained. Several scholars have mentioned that a ridge ran East-West at the site and the major road came to be situated along the ridge which also established a direct axial link to the ancient Sun temple of Galtaji in the eastern hill range. This axis occurs at 15° deviation to the cardinal directions, having several advantages. The significant ones being, a) Persons moving in the morning and evening hours do not face the low angle sun directly; b) It allows the early morning sun in winter which is welcome and rightly avoids the evening sun in summer on buildings; and c) The angle is conducive to the predominant wind direction for flushing the streets.

It may, however, be noted based on our detailed studies that 30°-35° clockwise deviation from the cardinal direction at Jaipur allows maximum advantages for the above planning consideration in an orthogonal urban fabric. This might have been known by the king and his architect, but use of the ridge occurring along the middle of the site to facilitate the surface drainage must have been a major consideration.

Essentially the city's structure could be described as a grid iron resulting from the orthogonal clustering of square sectors along *prastar* pattern. The major East-West road from Surajpol to Chandpol, and three North-West roads divide the city into 8 district sectors (known as *'chowkris'*). One of them, where the palace precincts including administrative offices and the observatory occur, is twice the average sector area. The sector to the South of the place was divided by introducing a North-South road in the late 19th century.

Road Network

The road network at Jaipur is well-thought out and follows definite heirarchy. The major East-West, Surajpol-Chandpol road and the North-South roads which from the sector boundaries could be termed as Rajmarg since all of them lead to gates in the fort-walls in confirmity with the *prastar* norms. These roads measure 33 mts. wide. Next, there is the network of 16.5 mts. wide which run North-South in each sector linking the internal areas of the sectors to the major activity spine formed by the Surajpol-Chandpol road. An orthogonal grid of 8.25 mts. and 4.0 mts. road in the true *prastara* chessboard pattern further divides sectors into *mohallas*, the smaller residential clusters.



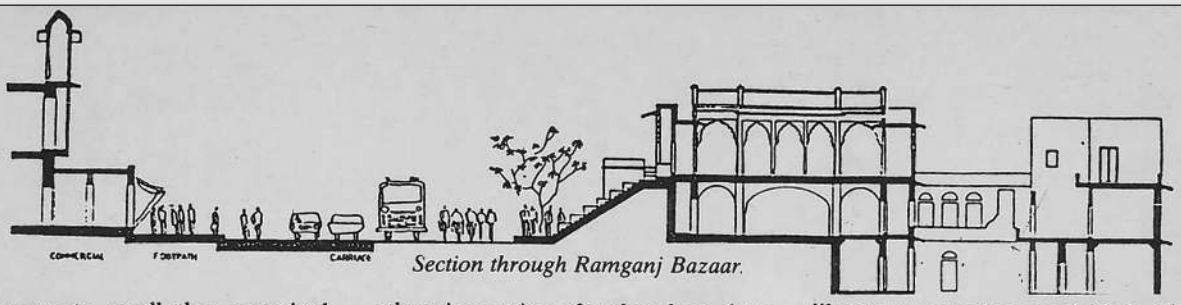
Old City of Jaipur

The frequency of sub-sector roads is observed to reflect the individual plot sizes within a sector. In the south-eastern sector, which was allocated to the traders and *Kshatriyas*, the frequency is much lesser, while in the western sectors where the artisans and craftsmen inhabited, the individual plot sizes are smaller and the frequency of the sub-sector roads is greater.

Extreme consideration is observed to have been given to the major roads and their intersections in planning of the town. The city has played a dominant role as a major trading centre for the region. The commercial uses along the major roads, Rajmarg, as well as the treatment of intersections which become large gathering spaces have contributed significantly to the imageability and growth of the city.

Public Places

Given the period of its founding, it is not surprising that the city would lack the amenities which are commonly accepted today. Being a monarch the palace precinct became the hub of major public activities. This precinct, suitably, occupies two of the city sectors and has large squares and appropriate structures to deal with the various administrative functions. The most distinguishing feature in the entire urban fabric of old Jaipur is the *chaupar*, which occur at the intersections of the East-West road by the three North-South roads. Creating an open square, thrice the width of the major roads at the inter sections, the city gained three such squares measuring about 100 x 100 mts. Considering that the city was planned for about 60,000 persons, these squares could definitely be considered adequate enough for public gatherings on festive occasions. It



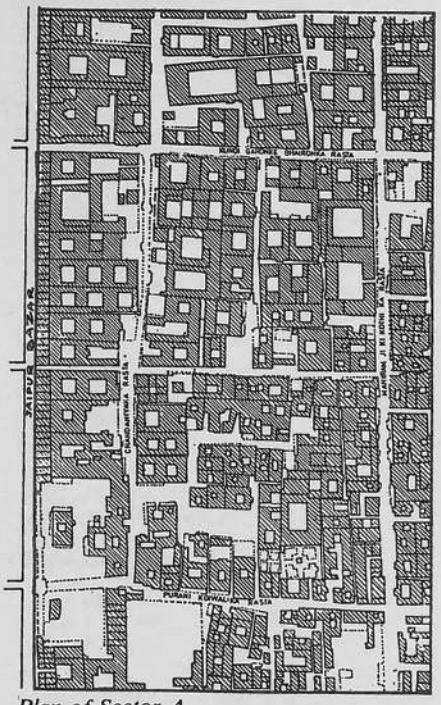
Section through Ramganj Bazaar.

is necessary to recall that motorised movement did not exist during the period, and until 40 years ago, must have formed an unique urban experience, enhanced by the controlled facade treatment enveloping it.

Besides these three *chaupars*, large and small pickets of open spaces occur within each of the sector's constituent *mohallas*. These usually served groups of houses that clustered around them. It has been observed that when such open spaces in the residential *mohallas* occur within easy access from the major roads, they are being used for commercial activities.

The location and treatment of temples received special attention in the old city. At all the gates in the fort-walls, as well as the *chaupars*, large temples were located. Records indicate that temples which already existed on the site when the town was laid out, were incorporated withn the plan. Thus, one may find a few temples right in the middle of major roads.

The temples on the major roads are the only structures allowed to break the otherwise uniform facades along these roads. This was done by allowing a single flight of steps leading from the roads to the main floor of temple, which invariably occurs at a much higher level. Such an architectural consideration makes the temples stand out as distinguished landmarks in the entire urban character of old Jaipur.



Plan of Sector A
'Ghat Darwaja Chqwkri'

It may be worth mentioning here that in the 18th century, formal education, as we know of today did not exist. Only a small segment of the society had any education and that too on religious scriptures. Thus one finds at Jaipur several large temples having 2 to 3 courts in successions (courts measuring as large as 25 x 25 mts.), surrounded by wings deep enough to accommodate teaching areas. Indeed, these structures are pesently used for formal schooling. The courts are observed to be used as outdoor classrooms as well as for games like basketball, badminton and such like.

As discussed earlier, the facades along the major roads throughout the city were designed and constructed by the State to ensure aesthetic control. Thus one finds a continuous shopping arcade along the road with residential structures rising behind it. Yet anther method of facade control employed was in maintaining a uniformity in colour. The major roads were abutted by building facades with pinkish stone (later terracota wash was used), a phenomenon that earned Old Jaipur its name of the **Pink City.**

Response To Climate And Resource

The design of the old city of Jaipur responds very well to the hot climate. The close-knit urban structure reduces the surface area of the built-form in relation to its volume. The radiation absorbed from sun therefore decreases significantly. The houses are attached to each other in groups in order to maximise the common walls which are not exposed to elements. Even the spaces between the buildings within the sectors are narrow so as to exclude the sun. The external shaded spaces can thus become the extensions of the built-form which the public can use. The climatic constraints thus create intimate external spaces which also relate well to the human scale. At the urban level, the spaces between the built-form as well as the open spaces within buildings give a sieve-like structure to the overall fabric. Thus, whilst individual dwellings may not be well cross-ventilated, the urban mass as a whole becomes porous for cooling at nights due to large surface area radiating the heat absorbed. In any case, the proportions of the courts ensure that during the day, direct radiations on the horizontal surface is minimised by shadows.

A typical Old Jaipur house sited within the close-knit town fabric is observed to be in complete harmony with the hot-dry climatic conditions of the region. The plan organization is basically introvert, around a court, and the treatment of facades and openings indicates a sensitive response to climate. This introvert character very well suited the lifestyle of the people of that period.

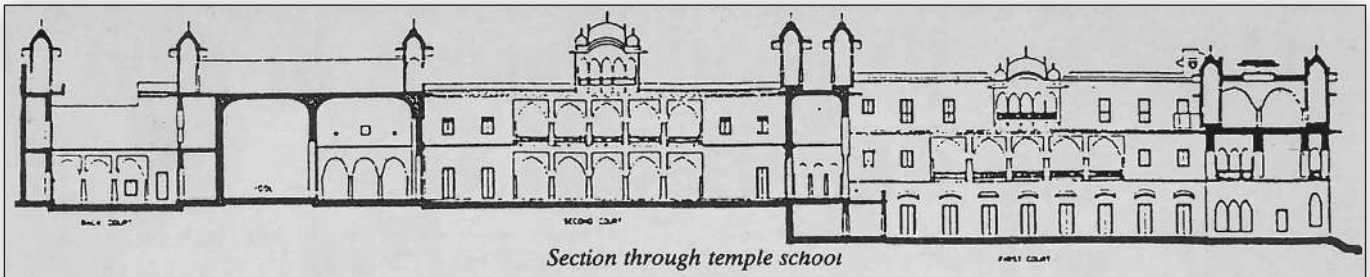
At the dwelling level, one sees all the features which one would expect to see in a hot climate. The walls are thick and have a high thermal resistance. Minimum openings are provided in the external walls to prevent the hot summer winds entering the house. Larger windows with wooden shutters could have helped exclude the hot summer winds with the added advantage of permitting cross ventilation when opened at nights. However, the scarcity of timber must have ruled out this nights. option. The method used for cooling the houses is a passive circulation of air rather than direct ventilation. Invariably, the small windows are further protected by overhangs known as *Chajjas*. Indeed, on the East-West streets even small *chajjas* can protect most of the external wall surfaces from direct solar radiation. The roofs, which receive considerable solar radiation are heavily insulated by the layers of *surkhi* embedded with stone chips which overlay the stone roofing planks.

To achieve passive cooling, courts are provided in all the houses. The courts work by trapping cool layers of air at night. This trapped air is prevented from heating during the day time by limiting the courts' plan dimensions in relations to their heights. It is observed that in larger houses, rather than providing an equally large court, a series of smaller courts is provided.

Residential Character

MOHALLAS

As discussed earlier, the typical Old



Section through temple school

Jaipur sector size of 800 x 800 mts. is ideally suited to predominantly pedestrian modes. In absolute terms, this makes the inhabitant at the centre of the sector only 300 mts. away from the commercial activities along the major roads, which is about 5 minutes of walking distance.

Individual *mohallas* within the grid of sub-sector roads, are found to be varying between 160 mts. x 160 mts. to 110 mts. X 110 mts. in size in different sectors inhabited by people of different ranks, and varying residential plot sizes. Observations have indicated that such *mohallas* typically accommodate about 40 to 50 residential plot. This number is highly conducive in making the *mohalla* a chohesive social and cultural sub-group. Since the inhabitants of *mohallas* invariably belong to a single caste, sub-caste and pursue the same trades, the social cohesion would become stronger.

This implies that apart from sharing common facilities like drinking water-well, workshop areas etc, their religious practices and festivals including the presiding deity in the *mohallas* temple would be similar. All such factors contribute to strengthening their community ties.

Observations

The studies carried out by the team at various scales from sector to individual house-plan of the old city of Jaipur generated a number of observations which were felt to be a part of the principles that must have been adopted from the *Vastu-Shastra* in the planning of the city. These observations can be described under four major heads which broadly reflect the aims that were intended to be achieved through the city's planning.

Environmental Concern

The planning of the old city reflects an excellent response to the hot-dry climate of the region, which is prone to dust-storms in summer. The close-knit fabric of the city and the introvert character of the built-environment help to keep out the harsh climate. The orientation of major and minor roads are such that according to the context, the streets get varying amounts of shade. By locating the major axial road, running East-West along the ridge, the city's layout takes advantage of the natural topography for drainage. It is a well-known fact that the old city was the only area that was not affected during the 1981 floods in Jaipur. Since water and vegetation were scarce, wells and tanks were treated with importance and trees were planted at such locations that they also served as social meeting places. Rainwater was collected in tanks and was used throughout the year. At the dwelling level, the use of court, shading devices and minimum exposure of the walls to direct radiation helped to achieve thermal comfort.

Efficiency

Efficiency is interpreted as the use of all available resources for the ease and convenience in the activities of the government, business and individuals. Unlike several planned cities and capitals in India, the decision taken by Jai Singh invite different social groups representing various trades and craft proved to be beneficial, since it provided the city with an economic base and ensured its survival and growth. Treating all the communities with equal importance helped in promoting efficient interaction in terms of business, trade and communal harmony. Trade was particularly given an impetus by the State which executed the major bazaars and institutions.

The special treatment accorded to temples is noteworthy. Temples did not only enshrine a deity but also served as institutions of learning, and generated a sense of community in socio-cultural terms.

In terms of the city plan, the average size of a sector, measuring 800 x 800 mts., is found to be highly suitable to facilitate pedestrian dominated movement. Given this size, the maximum distance a person would walk to reach any major commercial or transport mode would be about 400 to 500 mts. which is approximately a five-minute walk. This not only enhances safety but also attributes a human scale to the city. At the cluster and residential level, the organization of community spaces and street access are planned so as to promote social interaction and also increase the level of privacy for its residents.

The building materials used are those which were available locally and utilized the skills of the local craftsman, thus promoting their trade and expertise.

Flexibility

A remarkable feature of the basic grid-iron structure adopted from *Prastar* plan in Jaipur is that it allows growth and change on a gradual basis. It is open ended but not endless. Shifting the north-western falling in the hilly site to the south-eastern corner, (Topkhana Hazuri Chaukri), is itself demonstrative of this potential of a grid-iron. Also, in a contemporary sense, the plan is extremely democratic in character. The city structure, due to its orthogonal geometry does not stress a particular spot or activity area. Within the grid, however, despite a similar pattern, the clustering of houses and street network respond to the needs of the people and are not rigidly fixed.

Imageability

The low key character of the entire urban experience is regarded as a significant aspect of old Jaipur. Moving along the major road network, and at the *chaupars*, one is not confronted by imposing edifices like the administrative offices, palaces, memorials and such structures. Despite being founded by a king, there is no expression of his authority or imposition on the lives of the people, which reflects highly on his sensitivity and humane attitude. This character is highlighed by the fact that the axial roads do not terminate at any major public edifices. Visually the openness of the plan is strengthened by long perspectives along the roads which offer views of the temples in the distant hills.

The visual harmony and urban character along axial roads was achieved by executing the *bazaars* and abutting structures and applying facade controls. The vivid images created of the old city are a result of all these factors intermingling with the rich culture and lifestyle of the people, to create a strong identity and character to which the residents and visitors relate and respond strongly.

Urbanism — Old Jaipur

One of the most significant aspects of Old Jaipur's conception and execution is that no effort has been spared to realize both, the abstract, as well as physical objectives that Jai Singh and Vidyadhar Bhattacharya shared as a vision. This thoroughness is amply evident in Old Jaipur where, whether one is moving along the major roads or within the residential areas, the total urban environment exhibits a well thought-out and cohesive character.

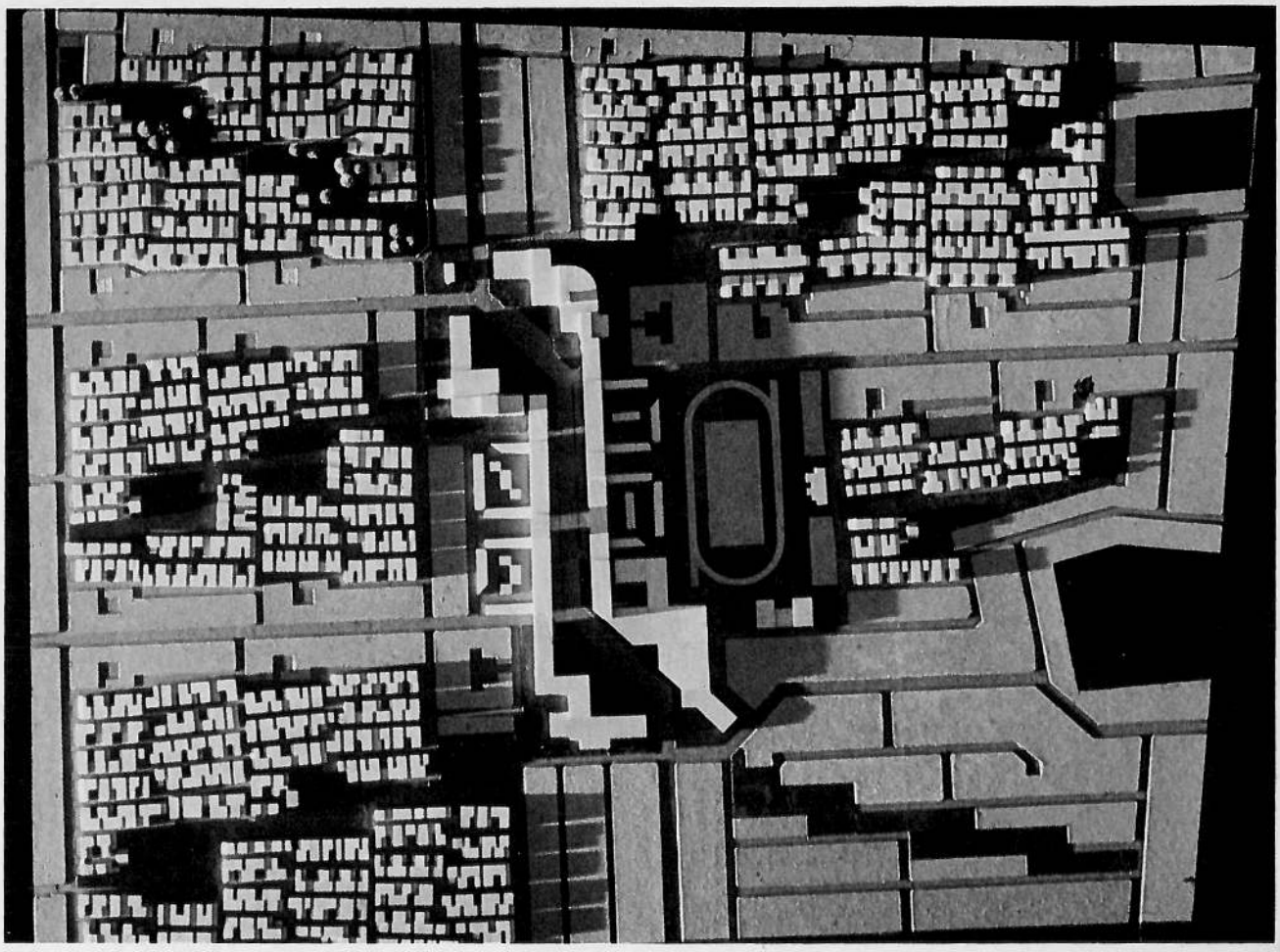
This Project was published in the JIIA - February 1991 Issue

PROJECT

Aranya

An approach to settlement design

Ar. B.V. Doshi, F.I.I.A.



Aranya: A view of model showing housing and town centre

The low cost housing project at Indore, named Aranay (meaning forest), is an innovative exercise undertaken by the Indore Development Authority (IDA). This township for 40,000 people uses a site and services approach to serve, primarily, the economically weaker section (EWS) of the society within a balanced matrix of other income groups. The design of the township was entrusted to the Vastu-Shilpa Foundation for studies and research in environmental design (VSF). This presented a unique opportunity to bring together the lessons learnt from various research programmes of the foundation and implement the findings in a live project.

This document describes the process followed in the planning and design of Aranya township. Norms and methodologies had to be evolved for settlement planning relevant to and in tune with the needs of the urban poor. Cultural, social and economic needs were taken into account to arrive at solutions sympathetic to their life style.

To realise the desired objectives, a rigorous methodology was evolved to tackle issues comprehensively at all levels of planning and design. In a site and services project, land and infrastructure are the principal cost components.

Thus efficient site planning was given due importance. A fresh approach to infrastructure design was evolved to enhance economic viability and performance by using new materials, design methods and computer aided models.

Location of the site

The Aranya township is sited on the Delhi-Bombay highway, approximately 6 k.m. from the city centre of Indore. Selected out of four possible locations, the deciding factor in favour of the selected site was that it was far ahead in the process of land acquisition.

The site was also more suitable in terms of linkages to the city, as well as its proximity to other employment areas. There are large pockets of existing and proposed industrial areas within a radius of 2 k.m. from the site.

The existing suburban growth has almost reached the southern boundary, whereas towards the east and the north, the site is surrounded by open fields and

Aranya : Demonstration houses

agricultural land, earmarked for the future growth of the city.

Philosophy and design methodology

To a large extent, the chaos in urban areas is the result of the lack of philosophical backbone to the planning process adopted. Hence, these plans are subject to forces which a planner can neither control nor direct in a meaningful way. To understand this in the first stage, the broad goals to a successful settlement were identified. To these broad goals were added issues of specific concern to the project, which arose in response to the contextual situation.

The settlement design process would then require the broad goals and the specific issues to be convened into a tangible checklist of parameters structured on the hierarchy of community sizes within a settlement.

Broad goals of Aranya

It is important for any township plan to have a strong ideological basis. A sense of continuity of fundamental values of the society should be the essence of the approach to plan a good habitat. The broad goals of Aranya are:

Vitality

To create a township form which at various levels supports its vital functions, the biological requirements and capabilities of human beings.

Imageability

To achieve, have a settlement character that can be clearly be perceived and mentally differentiated. This dimension leads to establishing harmony between the built environment and cultural constructions.

Equity

To create a balanced community with satisfactory level of environmental quality for all; especially for the disadvantaged groups, along with equitable access to resources generated through planning actions.

Efficiency

To evolve a township form that optimises all resourses–physical, natural, fiscal and human, to the advantage of the community, so as to facilitate its activities:

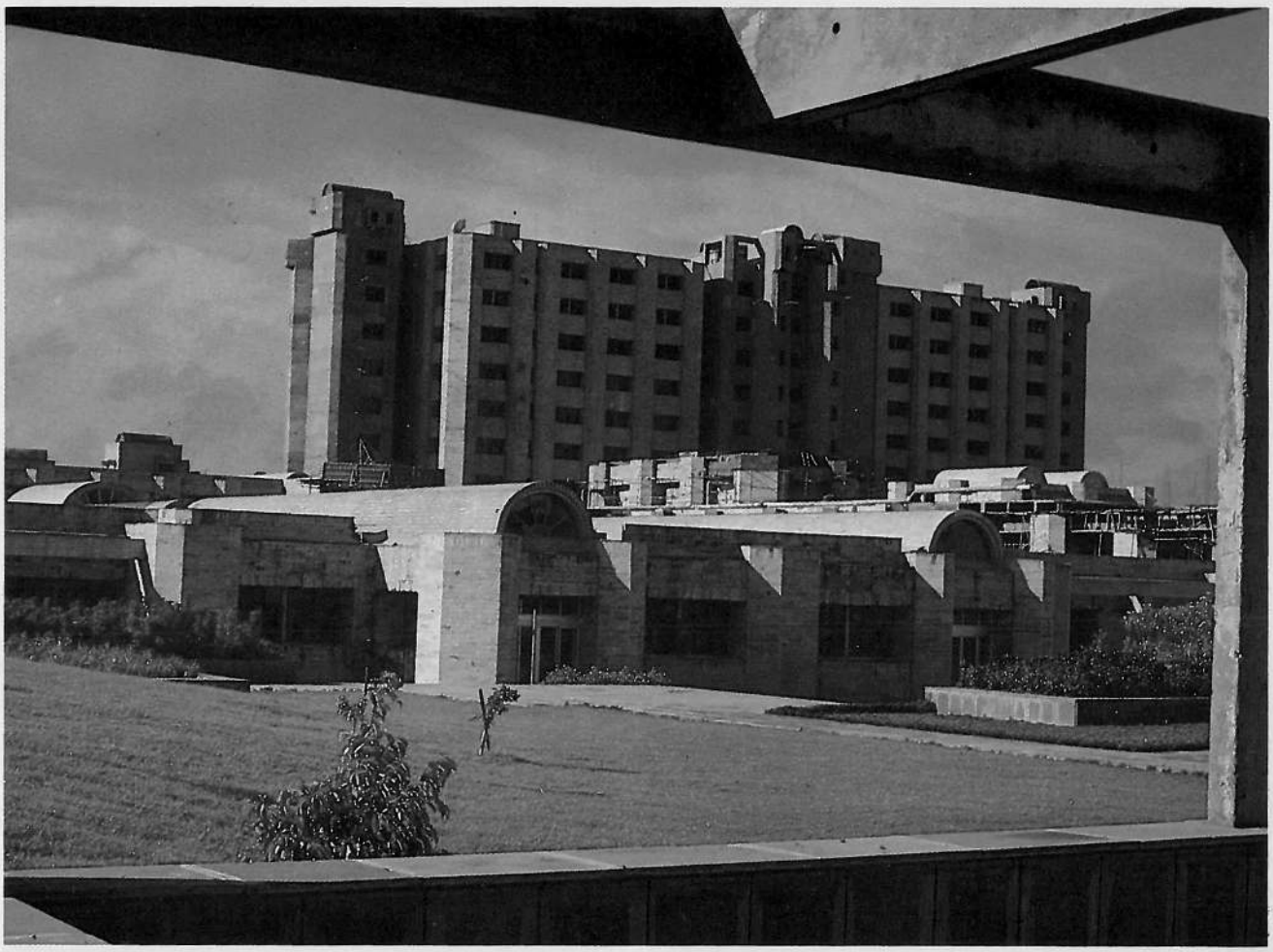
This Project was published in the JIIA - May - December 1991 Issue

PROJECT

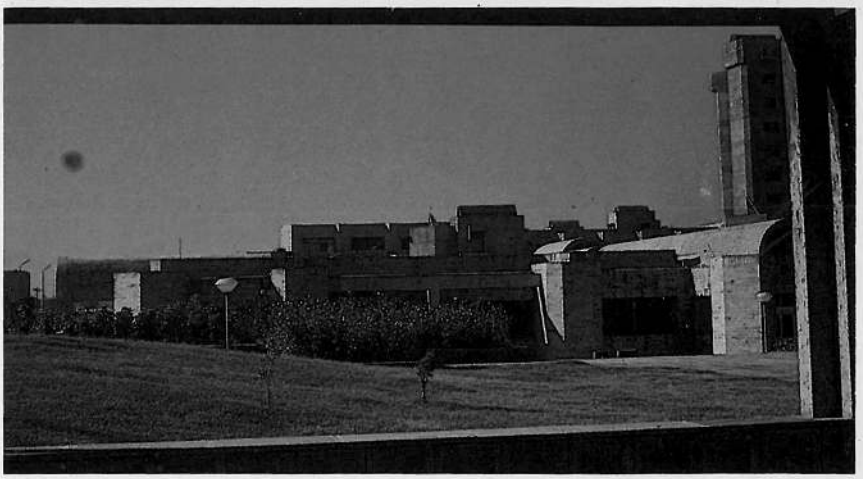
Sanjay Gandhi Post Graduate Institute of Medical Sciences

Ar. D.S. Bhui, The Uttar Pradesh Rajkiya Nirman Nigam Limited.

Awarded JIIA Project Award 1991 for Administrative Block, S.G.P.I.M.S.



Hospital Building– Low rise vaulted blocks surrounding bold ten storeyed ward block acting as focal point of the campus.



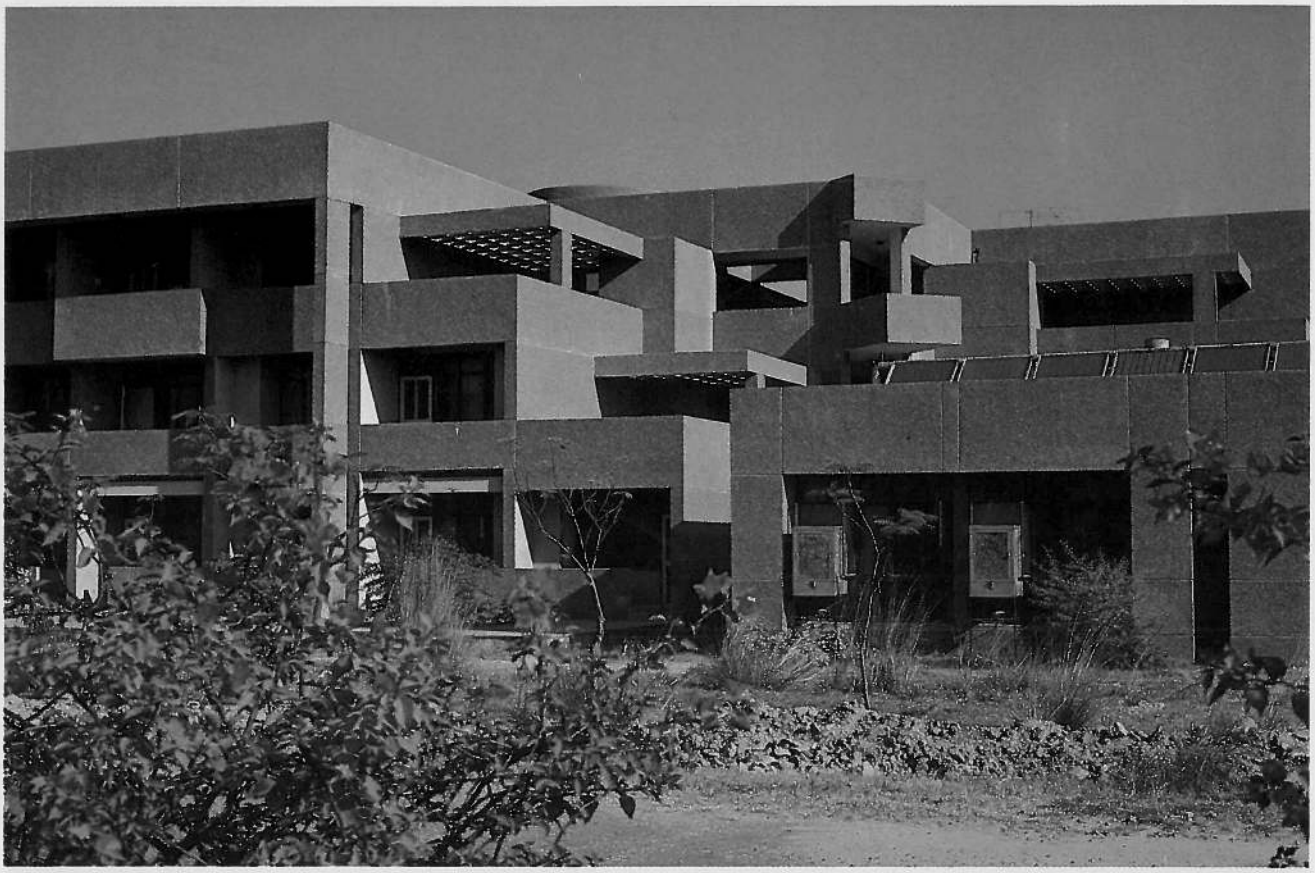
Hospital Building– Low rise vaulted blocks.

The S.G.P.G.I. Campus is being developed on a 220 hectare site about 15 km. from Lucknow on the Lucknow - Varanasi highway. The campus with a planned investment of Rs. 1,436 million caters to a tertiary care six superspecialities hospital besides hostels, housing, community & recreational facilities.

The hospital with six superspecialities –neurosciences, cardiac sciences, nephrosciences, endrocrine sciences gastro sciences, genetics & immunological sciences, hostel–housing, community facilities and infrastructural facilities at a cost of Rs. 750 million is already functional.

The campus

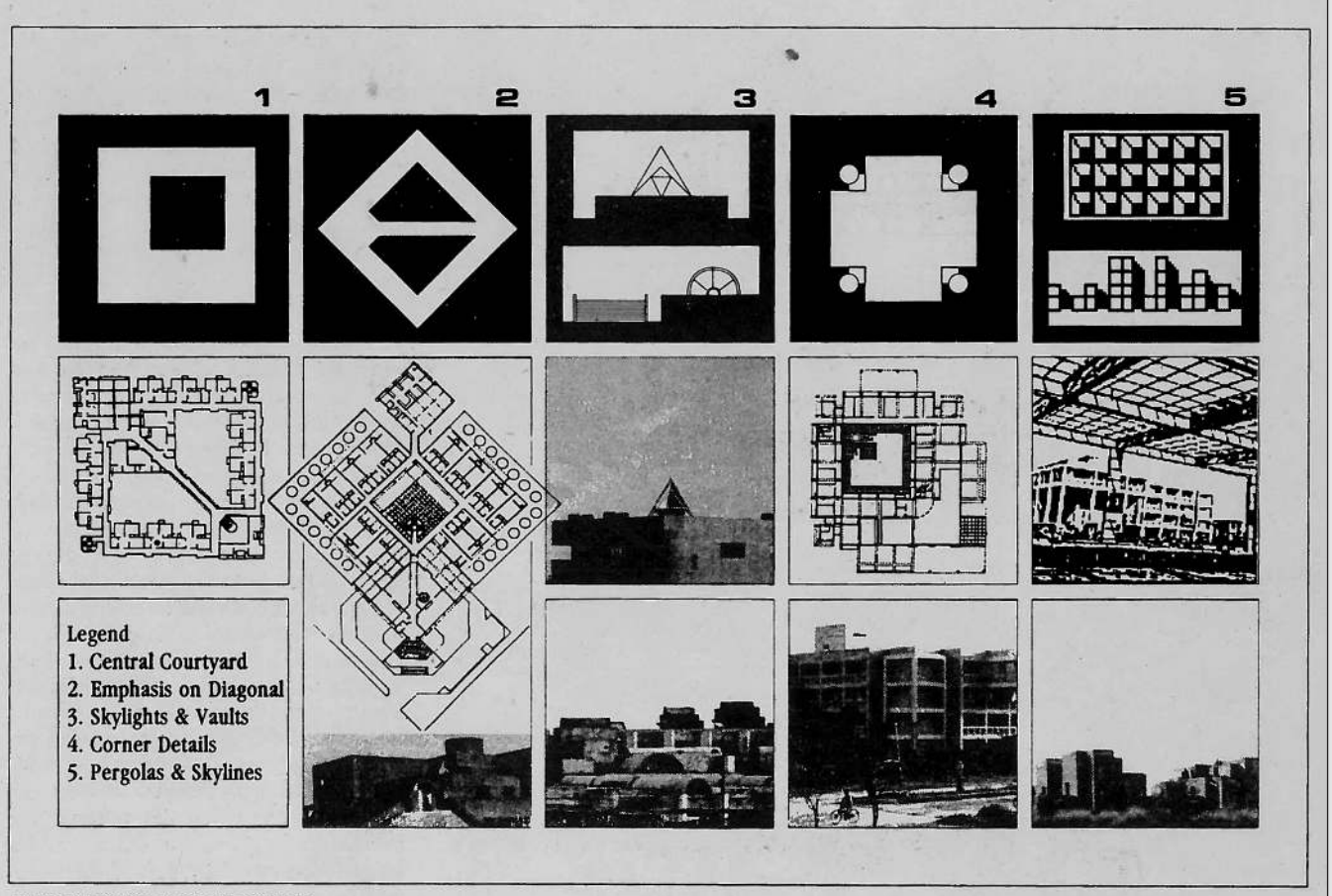
For the design of S.G.P.G.I. campus my main objective was to create a func-



Post Graduate Students' Hostel– Corner details and terraced construction.

Nurses' Hostel– Four storeyed washed grit finished.

Guest House– Low rise, vaulted 36 roomed guest house.



ELEMENTS OF ARCHITECTURE

tional organisation of the various requirements in a form that aims at compact, zoned and phased development with magnificent hospital building as an identifiable focus.

The doctors & nurses routine has been limited within a comfortable range from the hospital allowing for easy pedestrian movement.

Large areas have been landscaped to achieve comfortable dust free micro climate.

The planning of main hospital building is based on modular grid resulting in flexibility of use. Seven basic elements of Architecture–courtyards, exphasis on diagonals, skylights, vaults, interesting corner details, pergolas & undulating skylines have been used throughout the campus. Besides permanent building finishes like Dholpur stone & washed grit has been used to give a finish texture close to that of soil of Lucknow.

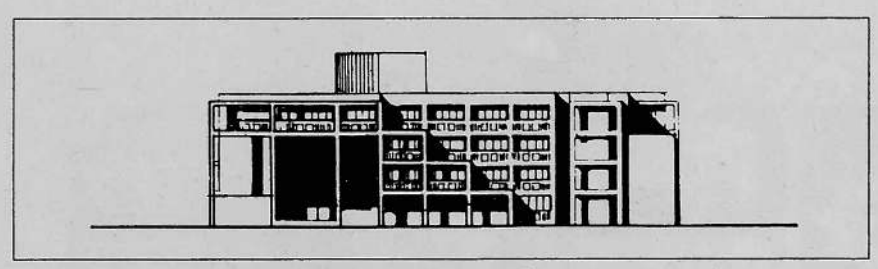
The hospital by its sheer magnitude (area 0.1 million square metres) forms the focal point of the campus. To offset its magnitude the Administrative Block, Library and Auditorium are grouped together to form the alternative focus set apart by landscaped plaza. The hospital building itself has been mellowed down by keeping its major volume (about 70%) less than three storeyed whereas only ward block (area 30%) is allowed to go up to 10 storeys. It acts as a landmark of the campus.

The functional effectiveness of placement of buildings in various zones is achieved by employing "Pedestrian Time Measure". The hospital and community centre are the two nucealii of the campus. The distances of other zones from these two centres are determined in accordance with their functional inter-dependendability and intensity of interaction using the pedestrian time scale measure.

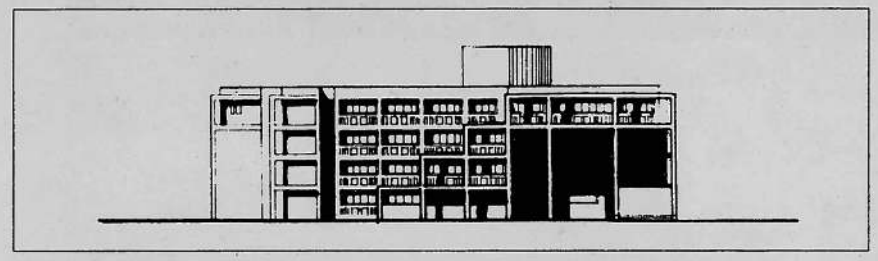
Adequate area is earmarked for zones to enable future activity to grow unhindered in that zone allowing planned growth while at the same time placement of the building in the zones is such that different phases of growth are compact.

Ecological considerations play a very important role in campus planning. Seventy five hectares of land has been identified for plantation. The site is protected from noise and dust emanating from Lucknow-Varanasi highway by a 100 metre deep plantation. Similarly plantation belts have been organised on major traffic arteries within the campus. All road sides have been planted with different varieties of trees.

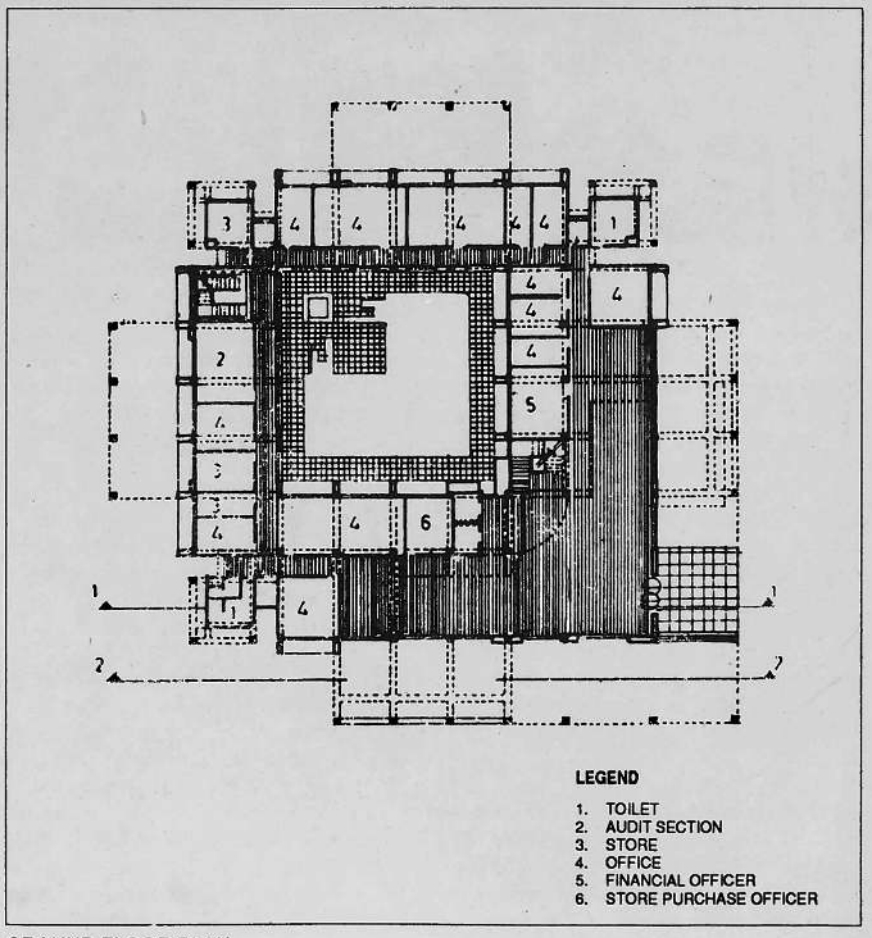
ADMINISTRATIVE BLOCK



EAST NORTH ELEVATION



SOUTH EAST ELEVATION



GROUND FLOOR PLAN

The Hospital Building

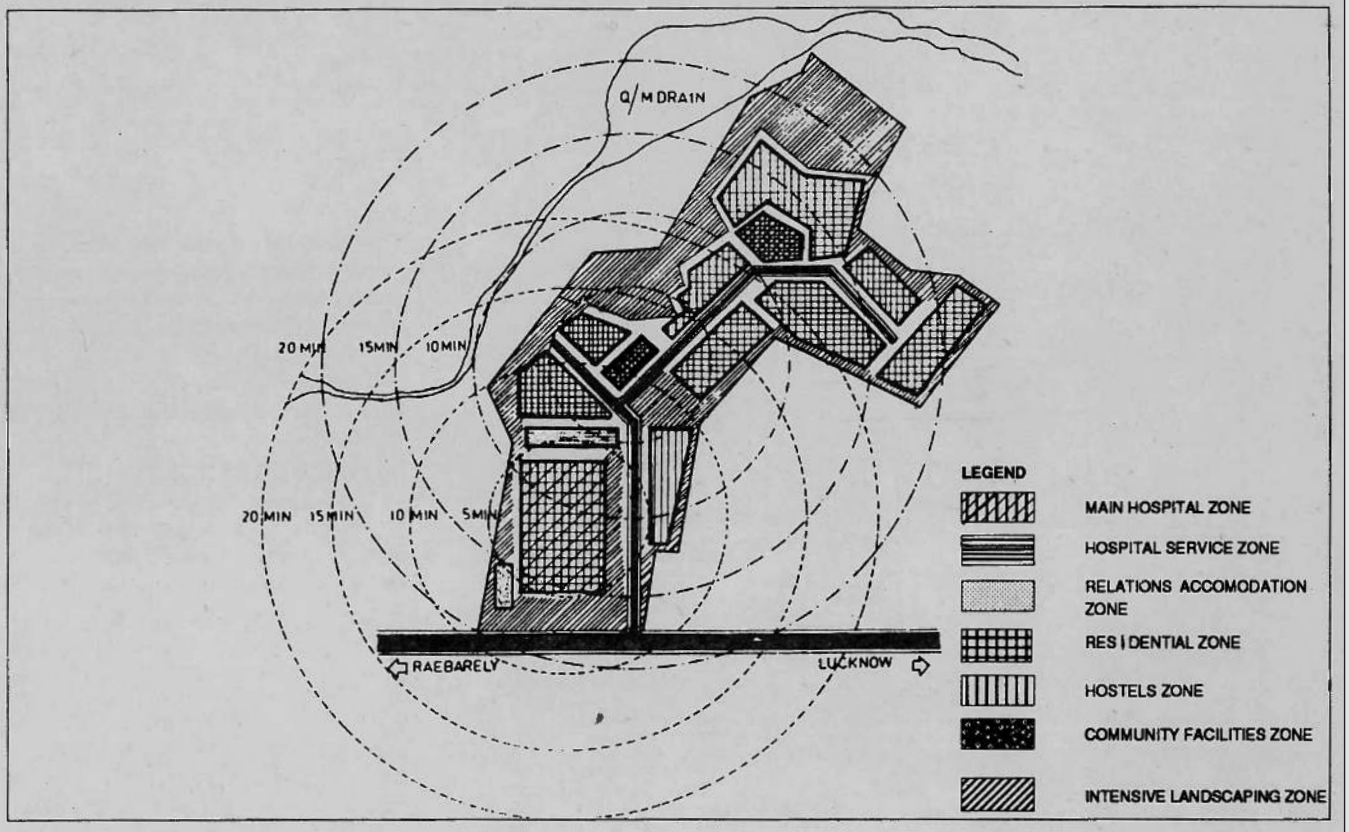
Hospital building inherently resolve themselves into uninteresting building masses. I segregated spaces which could be treated with identified elements of architecture without affecting the functioning of the hospital. Thus entrance halls, horizontal and vertical circulation elements are extensively skylighted and vaulted.

The rest of the hospital building system has been developed by integrating the structural, mechanical and electrical systems in the architectural design so as to reduce the complexity of the hospital construction. Building services are consolidated at a central point from where air-conditioning, heating, electrical and mechanical services are fed into the entire hospital through the service zone provided between the roof and false ceiling for horizontal distribution. With this in mind the roof of the hospital building is kept at 4.2 metres. The interior is divided into two spaces by a false ceiling at 3 metres from floor level, and the remaining space above is used for running the horizontal services in a systematic manner. For vertical distribution semi-octagonal ducts enveloping the columns are provided on the exterior which, besides being functional, form part of the elevation.

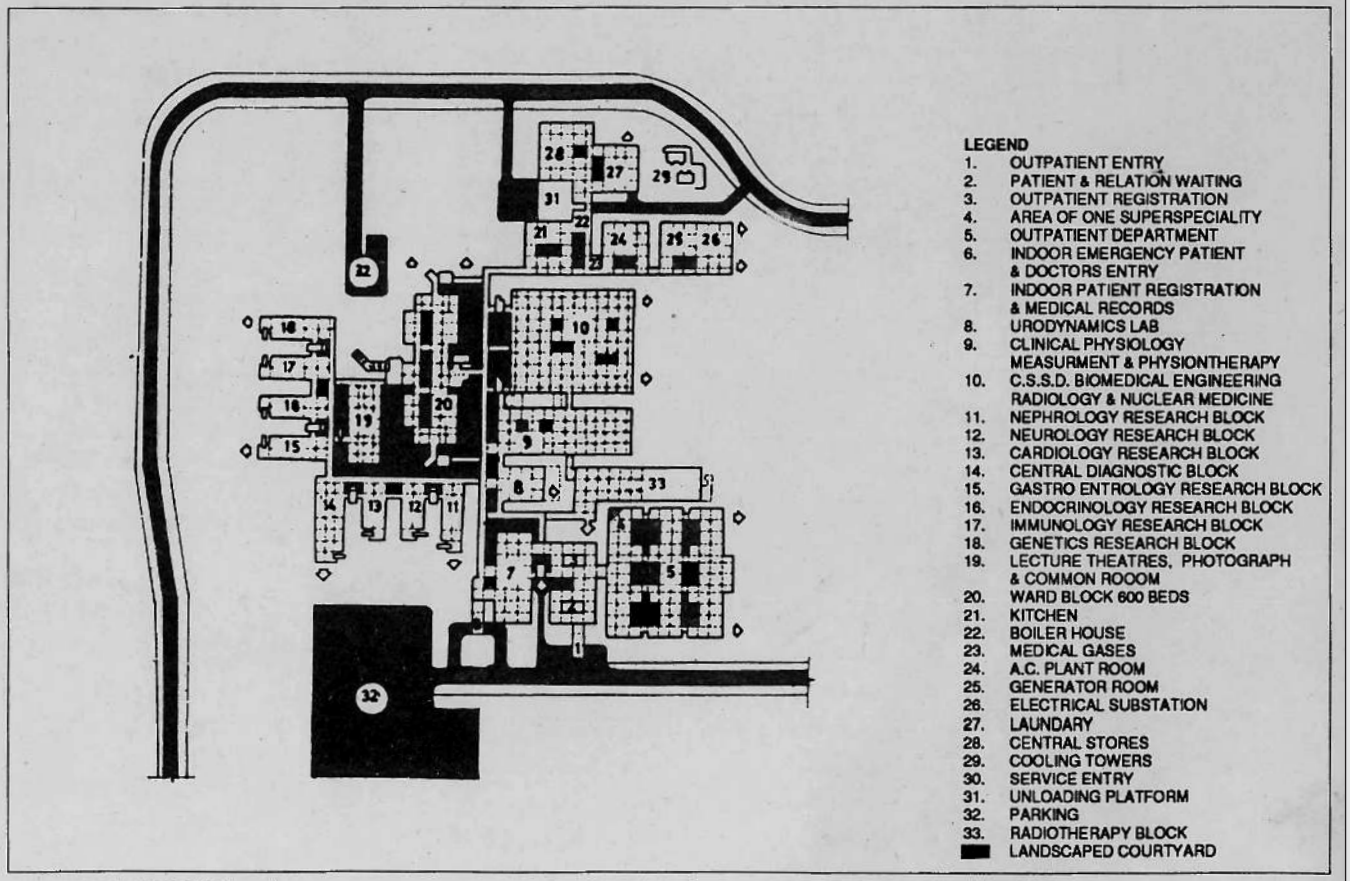
The entire hospital has been built on a grid of 6.6 m x 6.6 M. The functions to be housed in spaces generated by this grid have been analysed for common system creteria regarding services and structural requirements. The grid has responded well to the requirements of teaching, research, offices and areas of patient care.

The S.G.P.G.I. has three main programmes : patient care, research and education. Two distinct planning patterns have been used to earmark the placement of building blocks. In patient care area the techniques requiring similiar facilities have been grouped together whereas for research and education facilities Baillliwick planning principle has been used. In this each superspeciality has its own three storeyed complex with common circulation and services. All laboratories are on the first floor with teaching spaces on the second and the administrative areas on the ground floor.

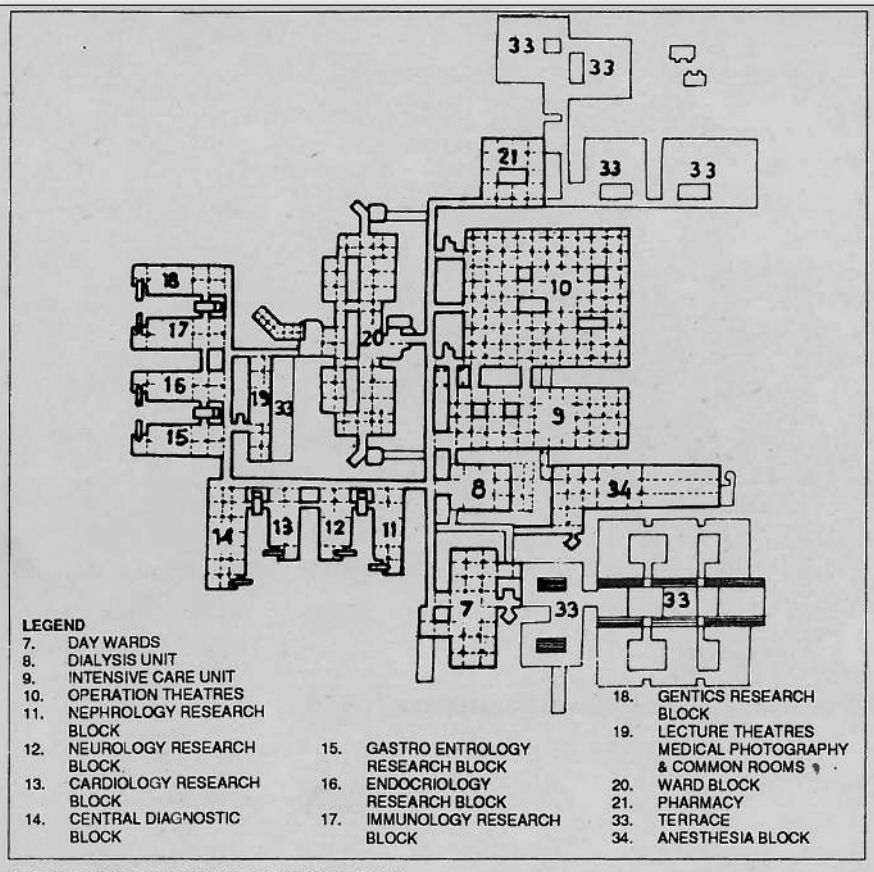
HOSPITAL COMPLEX



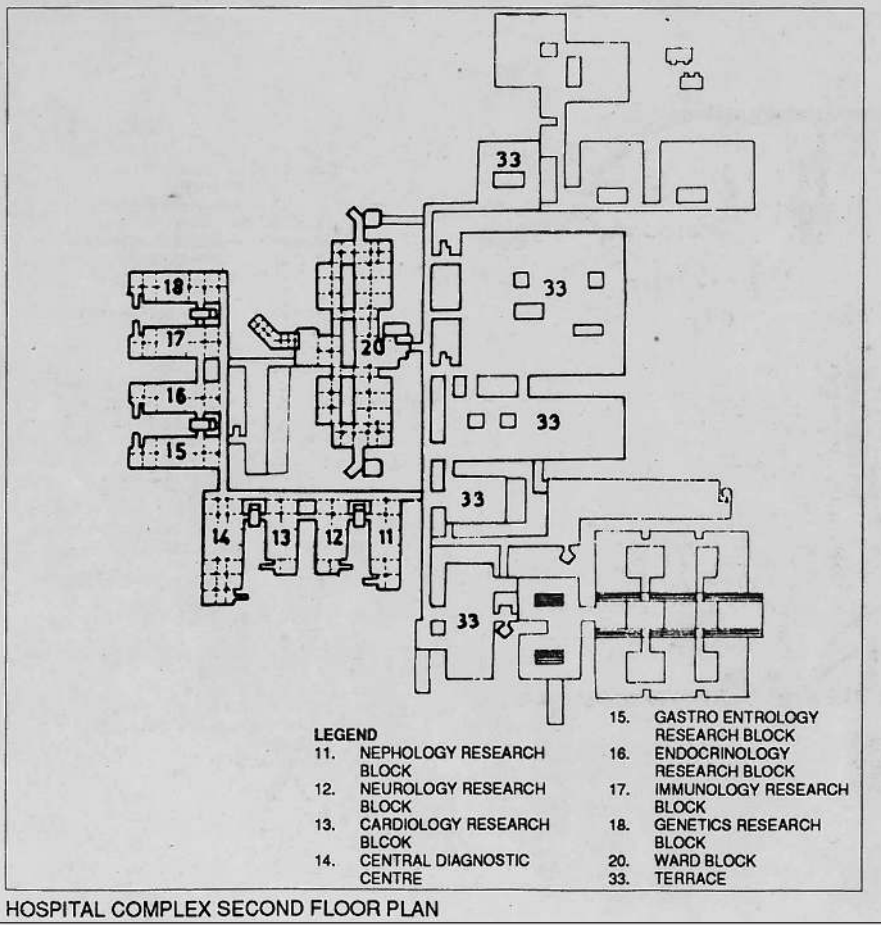
LAND-USE PLAN



GROUND FLOOR PLAN



HOSPITAL COMPLEX FIRST FLOOR PLAN



HOSPITAL COMPLEX SECOND FLOOR PLAN

All the blocks in the hospital are interconnected thus ensuring the movement of people among all parts of the complex without exposure to severe Lucknow weather.

The judicious use of materials and finishes imparts a sense of permanancy to the structure.

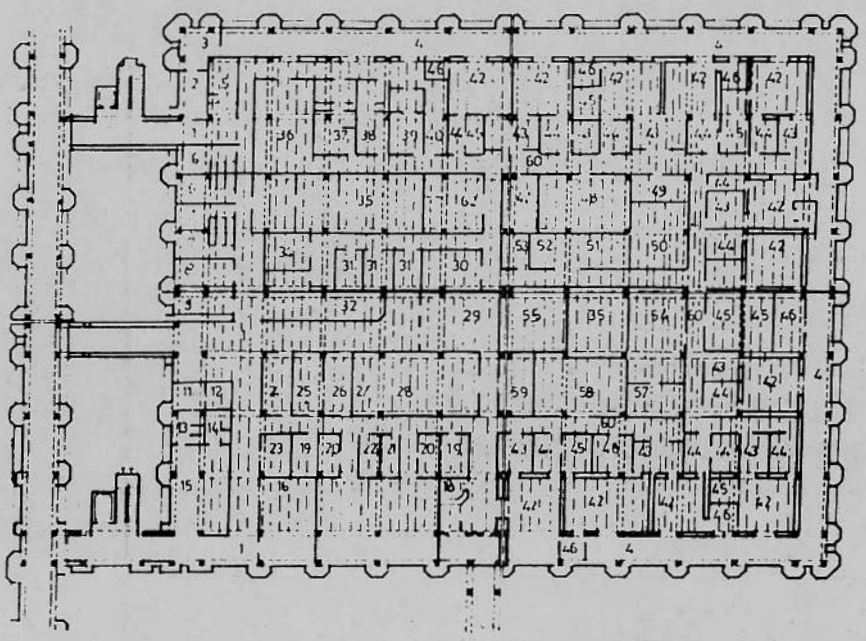
OTHER BUILDINGS

The other buildings constitute of housing, hostels, guest house, schools, bank, post office, market, administrative block and accomodation for patient's relations.

The plinth area for six different categories of houses is regulated by U.P. Government norms and ranges from 34 sq. metre to 225 sq. metre. Low density low rise brick load bearing structures are planned in clusters. Each residential unit is provided with a courtyard or a terrace approachable from a central common area.

Hostels, administration block and relations accommodation is a four-storeyed central courtyard structure whereas community facilities are housed in a single storey.

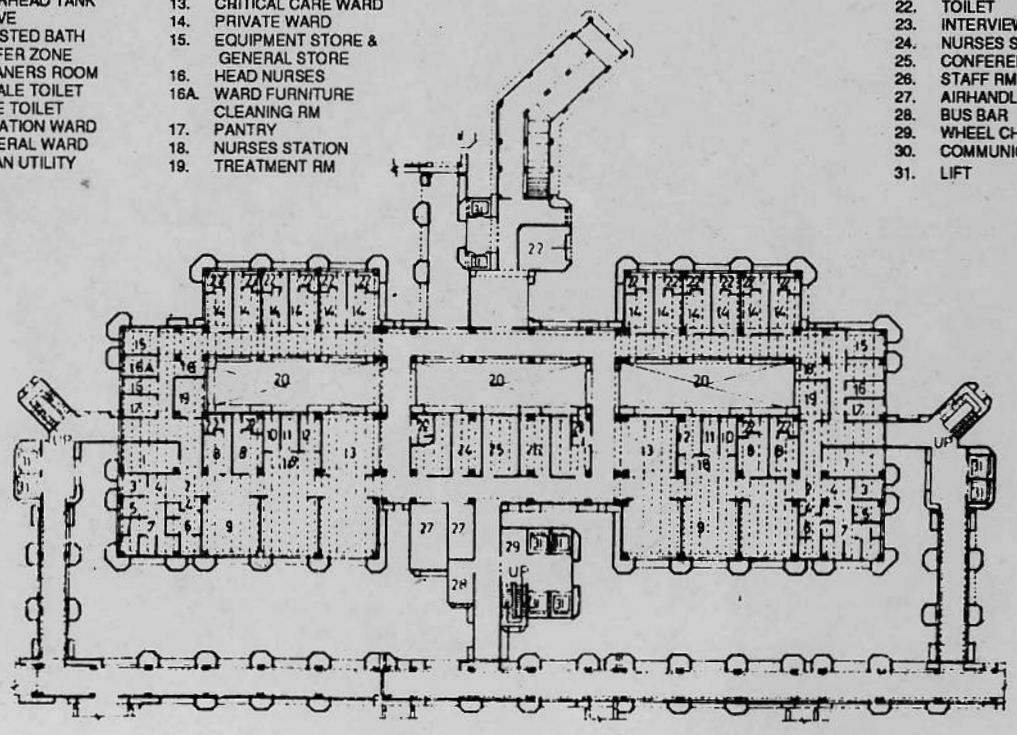
Client	-	Uttar Pradesh Government.
Location	-	Lucknow, Uttar Pradesh.
Planned area	-	3,75,000 square metres.
Built area	-	1,90,000 square metres.
Estimated cost		Rs. 1436 million.
Present expenditure		Rs. 750 million.
Contractor	-	Uttar Pradesh Rajkiya Nirman Nigam, Limited.
Other consultant		Uttar Pradesh Rajkiya Nirman Nigam Limited.
Architect	-	D.S. Bhui, Uttar Pradesh Rajkiya Nirman Nigam Limited.



LEGEND

1. RESTRICTED CORRIDOR
2. DISPOSAL CLEANER'S RM
3. DISPOSAL HOLDING ROOM
4. DISPOSAL CORRIDOR
5. DISPOSALSTAFF CHANGE
6. FEMALE STAFF TOILET
7. MALE STAFF TOILET
8. CHILLER UNIT & PACKED MATERIAL STORE
9. PAKED MATERIAL STORE
10. WARD TROLLEY PARKING
11. CLEARNER'S ROOM
12. PORTERS WAITING
13. RELATION'S TOILET (M)
14. RELATION TOILET (F)
15. RELATION WAITING
16. EXTERNAL STAFF CONFERANCE WITH EQUIPMENT & PROJECTION FACILITIES
17. RECOVERY AREA
18. NURSING STATION
19. STAFF ROOM RECOVERY AREA
20. NURSING STATION
21. CLEAN UTILITY
22. DIRTY UTILITY
23. PANTRY
24. RECEPTION
25. RECORD
26. THEATRE SUPERVISOR
27. NURSING STATION PATIENT HOLDING
28. PATIENT HOLDING AREA
29. TRANSFER ZONE
30. EQUIPMENT ROOM
31. CLEAN MATERIAL STORE
32. STERLINE STORE
33. UNPACKING AREA
34. FROZEN SECTION & BLOOD BANK AREA
35. NURSES CHANGE
36. MALE RESIDENT CHANGE
37. SENIOR MALE DOCTOR CHANGE
38. FEMALE DOCTOR CHANGE
39. DOMESTIC MALE STAFF CHANGE
40. SWEERS CHANGE
41. CLEANERS ROOM
42. OPERATION THEATRE
43. SCRUB AREA
44. PREPRATION ROOM
45. EQUIPMENT ROOM
46. DISPOSAL ROOM
47. COMMON ROOM FOR GASTROENTROLOGY
48. EQUIPMENT ROOM FOR GASTROENTROLOGY
49. COMMON AREA FOR NEPHOROLOGY
50. EQUIPMENT ROOM FOR NEPHROLOGY
51. ANESTHESIAST ROOM
52. X-RAY ROOM
53. DARK ROOM
54. ANESTHETIC EQUIPMENT WORK SHOP
55. CONFERENCE ROOM
56. EQUIPMENT ROOM FOR NEUROLOGY
57. COMMON AREA FOR NEUROLOGY
58. EQUIPMENT ROOM FOR CARDIAC SURGERY
59. COMMON AREA FOR CARDIAC SURGERY
60. CLEAN CORRIDOR
61. ANESTHETIC EQUIPMENT
62. THEATURE TROLLEY WASHING & PARKING
63. CONTROL ROOM

OPERATION THEATRE FIRST FLOOR PLAN

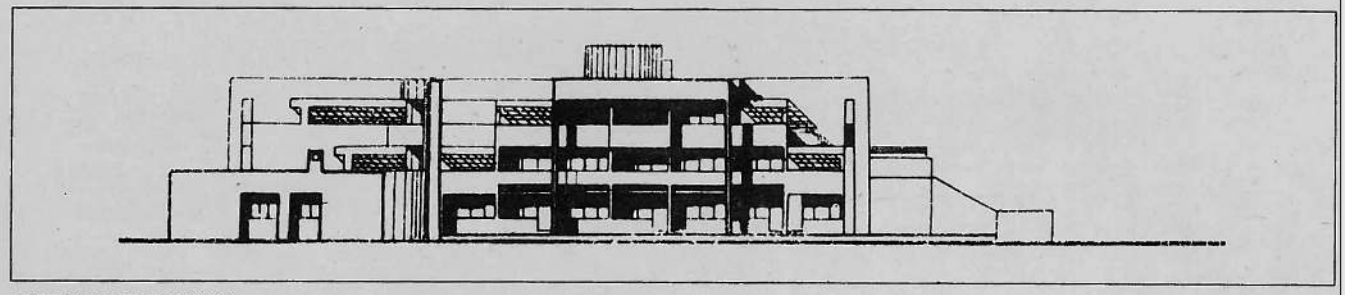


LEGEND

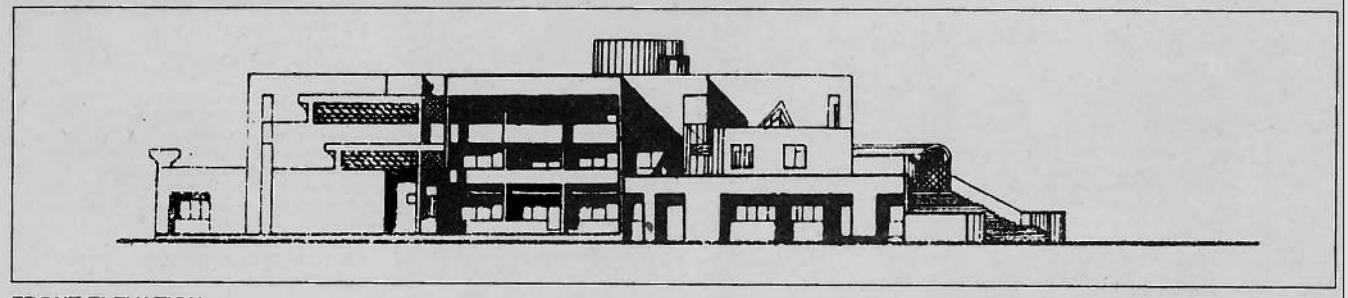
1. DAY SPACE
2. OVERHEAD TANK ABOVE
3. ASSISTED BATH
4. BUFFER ZONE
5. CLEANERS ROOM
6. FEMALE TOILET
7. MALE TOILET
8. ISOLATION WARD
9. GENERAL WARD
10. CLEAN UTILITY
11. LINEN ROOM
12. DIRTY UTILITY
13. CRITICAL CARE WARD
14. PRIVATE WARD
15. EQUIPMENT STORE & GENERAL STORE
16. HEAD NURSES
16A. WARD FURNITURE CLEANING RM
17. PANTRY
18. NURSES STATION
19. TREATMENT RM
20. OPEN TO SKY
21. RELATION WAITING
22. TOILET
23. INTERVIEW RM
24. NURSES STAFF
25. CONFERENCE RM
26. STAFF RM
27. AIRHANDLING RM
28. BUS BAR
29. WHEEL CHAIR PARKING
30. COMMUNICATION CORRIDOR
31. LIFT

WARD BLOCK GROUND FLOOR PLAN

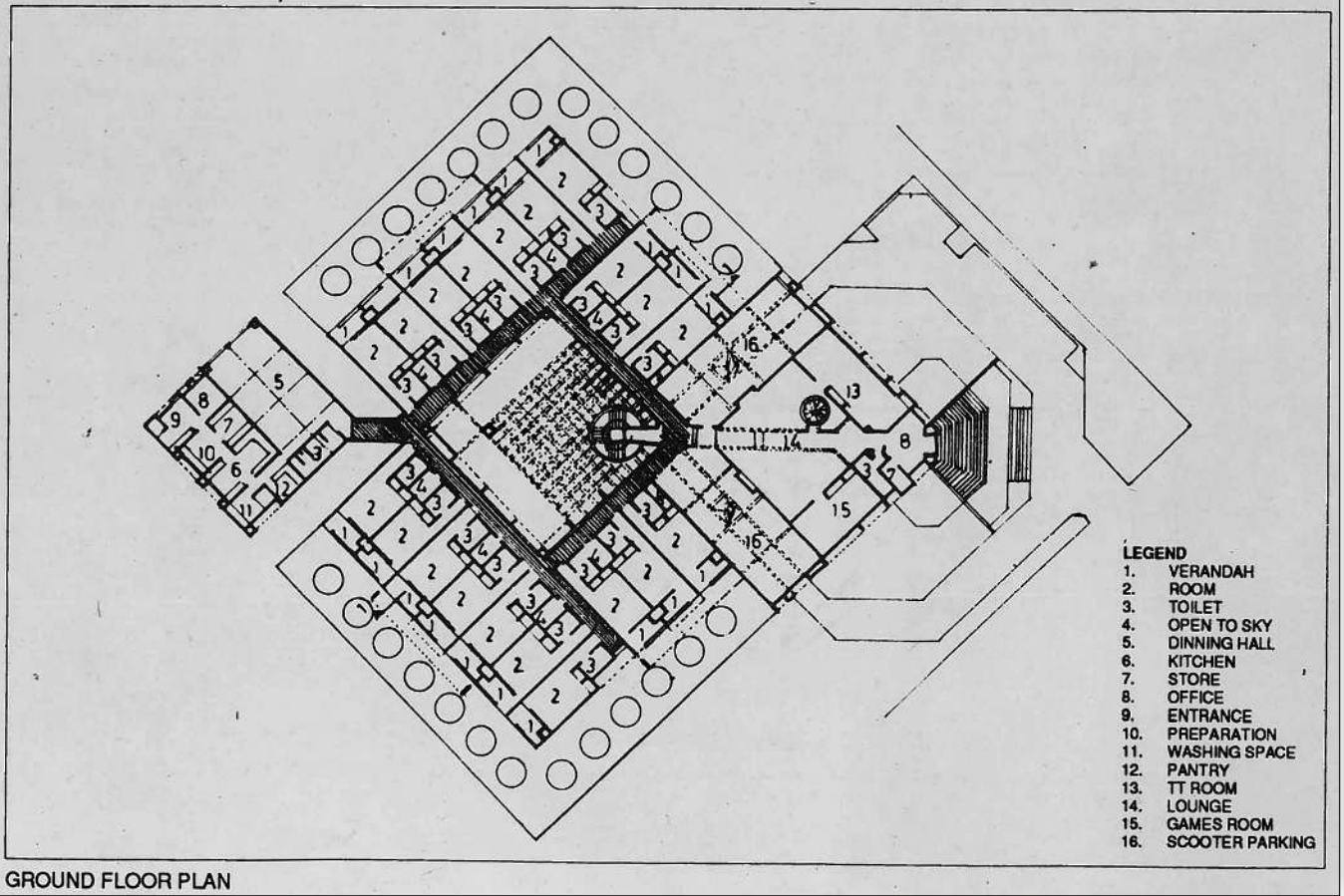
POST GRADUATE HOSTEL



LEFT SIDE ELEVATION

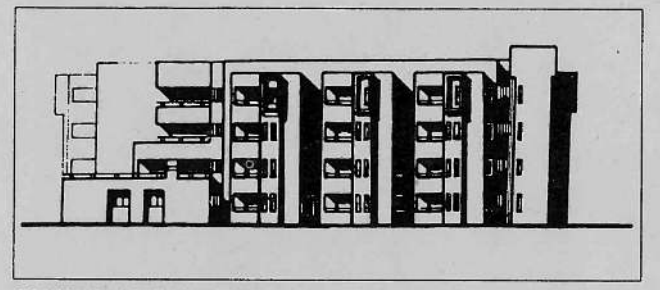


FRONT ELEVATION

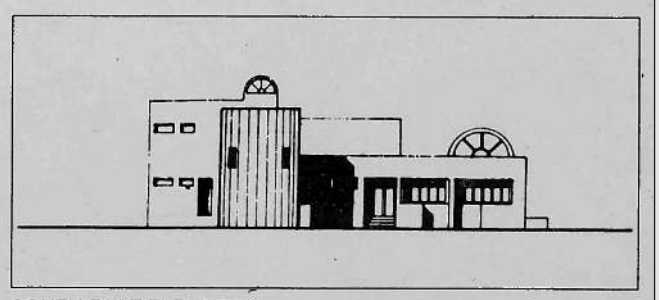


GROUND FLOOR PLAN

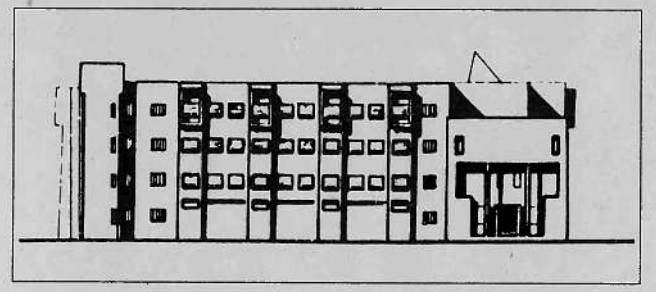
NURSES HOSTEL/POST OFFICE/COMMUNITY CENTRE



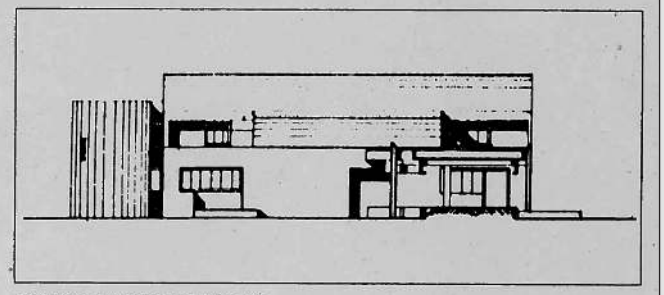
SOUTH EAST ELEVATION



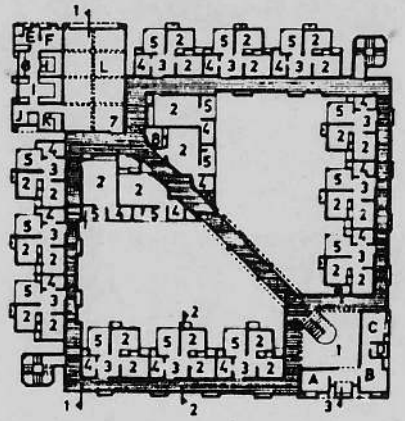
SOUTH EAST ELEVATION



NORTH EAST ELEVATION



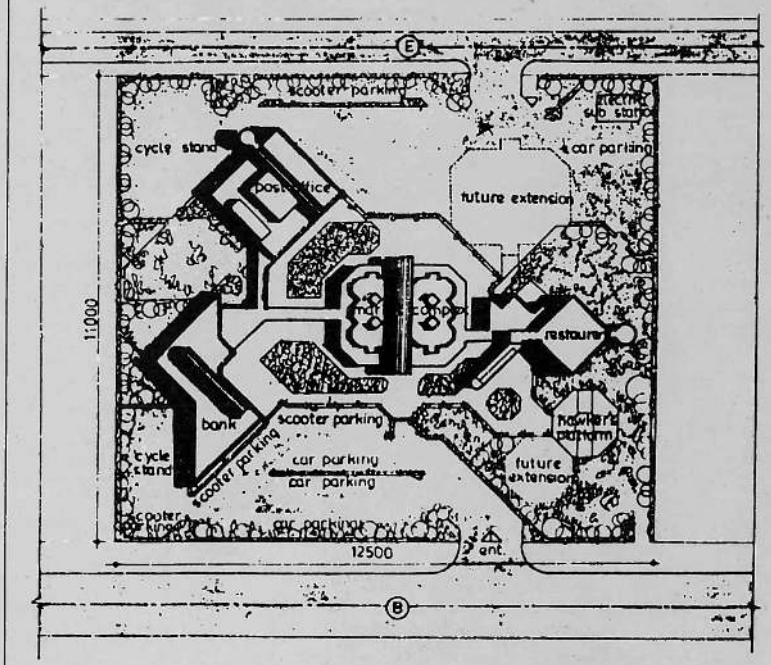
NORTH EAST ELEVATION



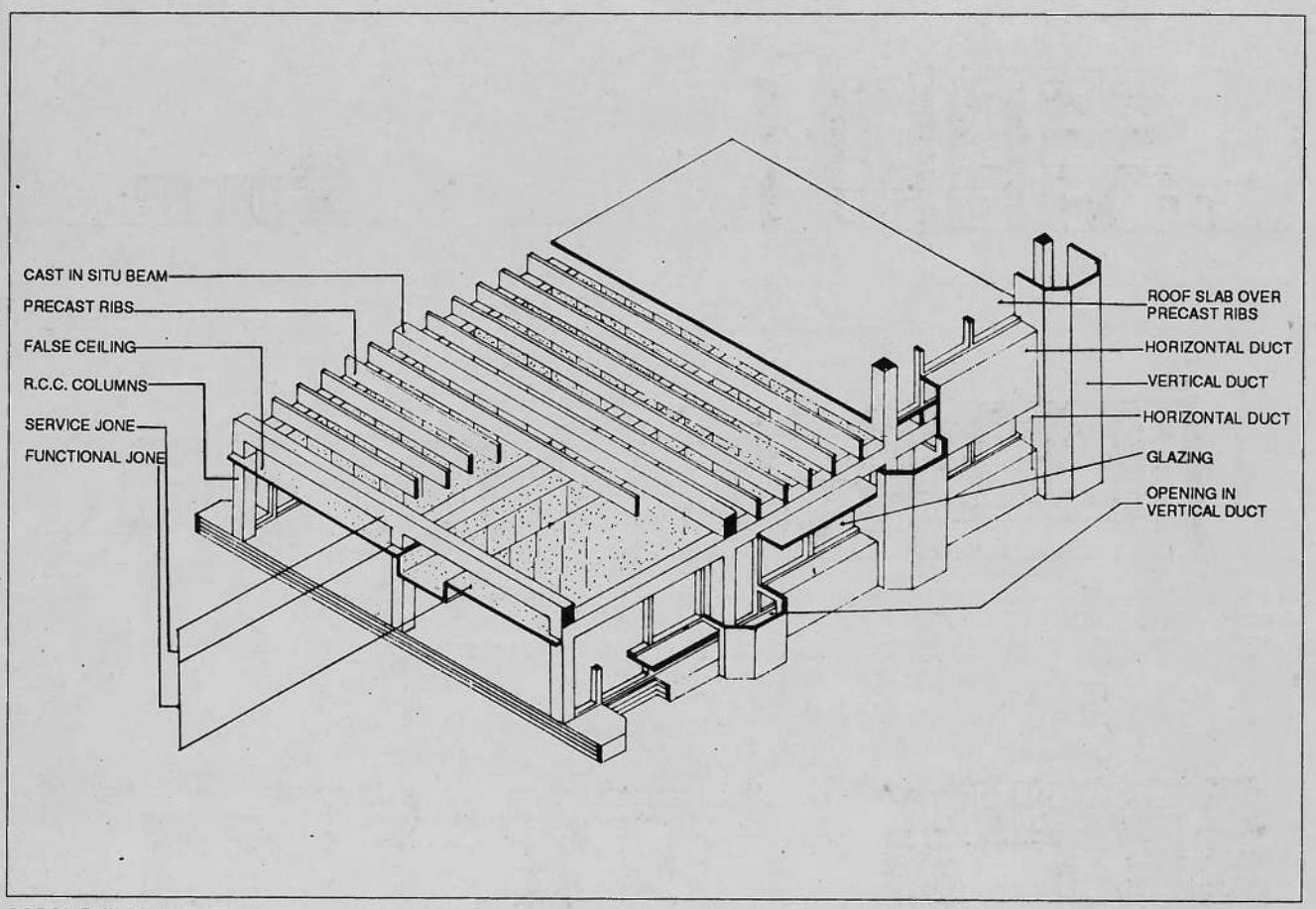
LEGEND

1. ENTRANCE BLOCK
   - A OFFICE
   - B VISITORS ROOM
   - C GUEST ROOM
   - D TOILET
2. ROOMS
3. LOUNGE
4. TOILET
5. VERANDAH
6. DUCT
7. KITCHEN BLOCK
   - E ENTRY
   - F OFFICE
   - G PREPRATION
   - H STORE
   - I KITCHEN
   - J WASH ROOM
   - K PANTRY
   - L DINING HALL
8. BUS BAR

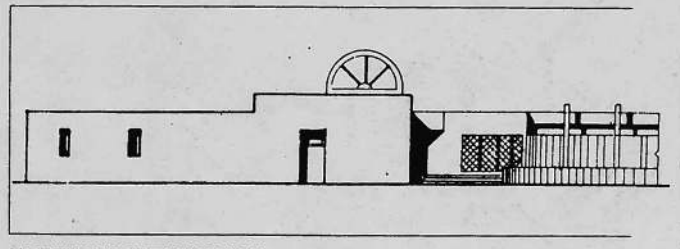
GROUND FLOOR PLAN



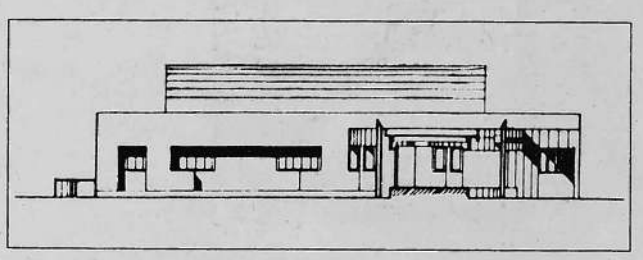
SITE PLAN



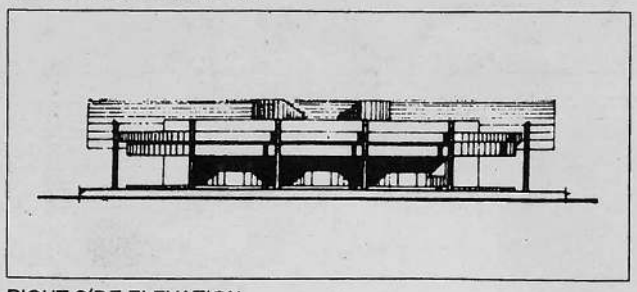
SGPGI: BUILDING SYSTEM



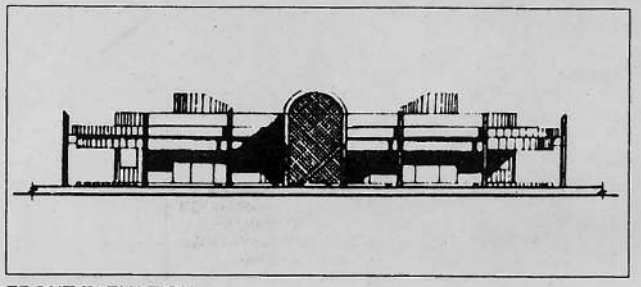
NORTH WEST ELEVATION



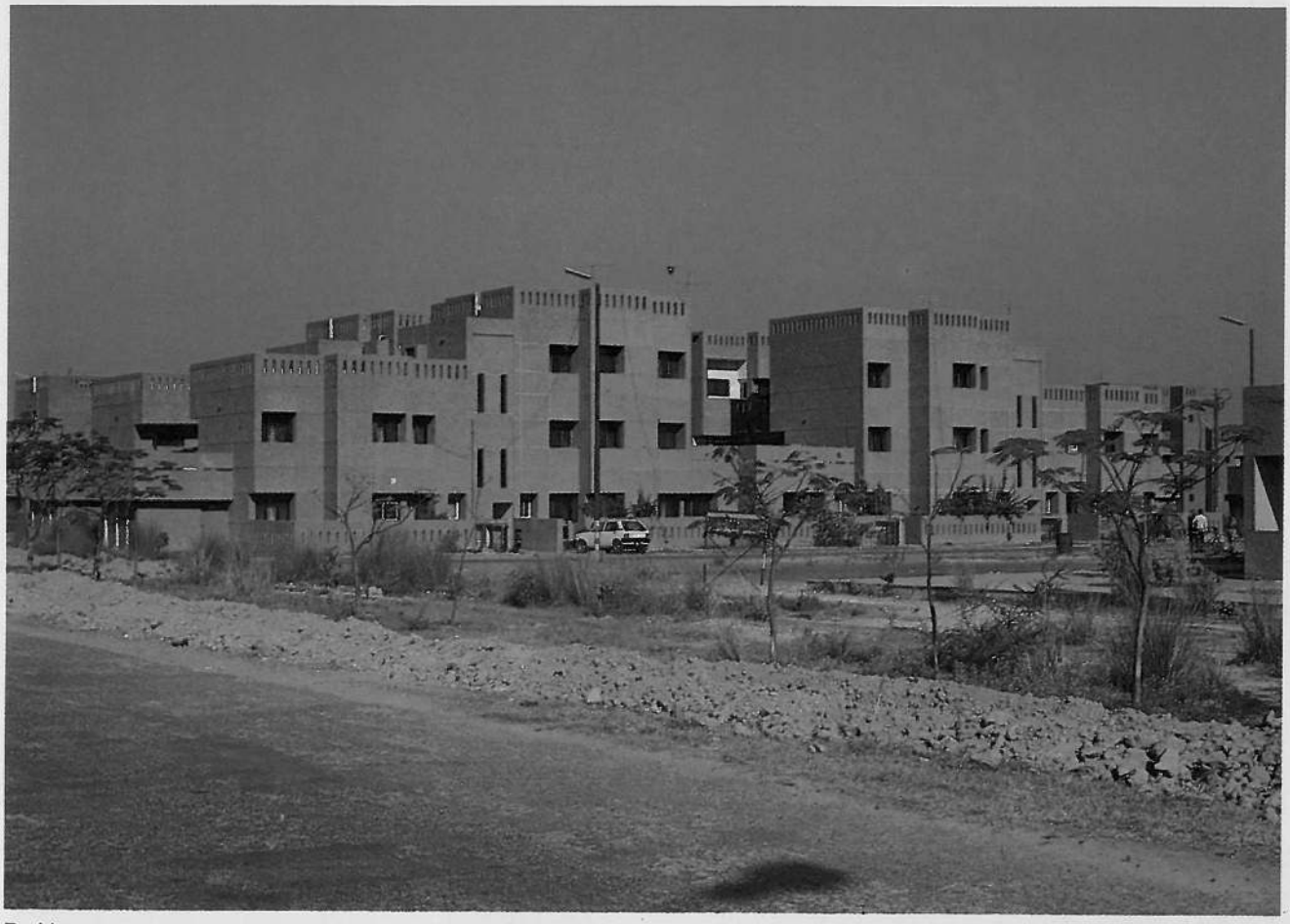
WEST SOUTH ELEVATION



RIGHT SIDE ELEVATION



FRONT ELEVATION



Residences

Hospital corridor

Market

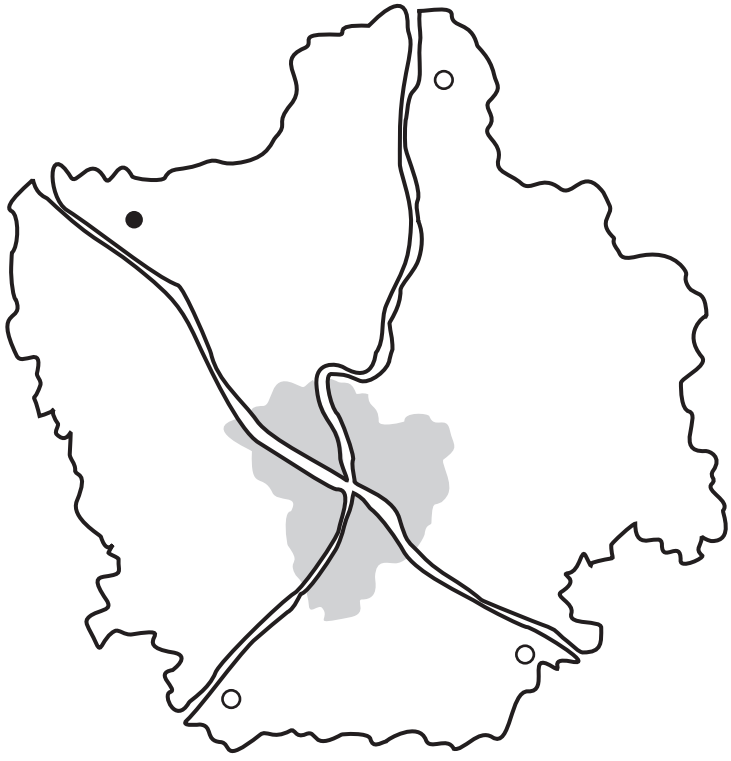
Primary School

Primary School

Ar. D.S. Bhui, F.I.I.A. was awarded JIIA Project Award for the design of The Administrative Block of the S.G.P.G. & Institute of Medical Science.

PLANNING FOR METROPOLITAN CITIES

A Suggestive Approach



M. PRATAP RAO

PREFACE

A COMPREHENSIVE view of the book is given below :

Identified Problem
The increasing growth and number of metropolitan cities in the country is a cause of concern for the past few decades. There are 12 metropolitan cities in India as per 1981 Census. The problems due to rapid growth of these cities are well known.

Solution in Practice
There are several measures taken by various metropolitan authorities depending on the nature of their problems. One of the widely used measures to de-centralise the growth is the development of satellite towns, ring town, ne towns, etc. The experiments are found to be successful at some places and not so in some other places.

Drawbacks in the Present Approach
The development plans of the metropolitan cities lay emphasis on land-use. The new towns developed as satellite towns or ring towns are guided by the zonal development plans; which are basically land-use plans. At this juncture, it is pertinent to bring out two important issues on which this book tries to elucidate :

(a) An unending debate is going on, on what should be a satellite town, ring town, etc., particularly about their definition, location and content. In these heated arguments, the essential purpose of organising the inevitable growth of metropolitan cities is lost. it should be accepted that a city cannot grow extremely mono-centric. There should be sub-centres to de-centralise the growth. This should form the crux of the problem and the book tries to highlight this angle. It does not debate on what a ring town should be or its definition. It tries to interpret how best its purpose derived from the development plan could be achieved.

(b) There is an increasing emphasis on detailed land-use planning in our zonal development plans and also in the development plans in general. This book tries to focus that a basic structure plan of the area is important before working the land-use details.

Suggested Approach
Having accepted the fact that it is essential to develop sub-centres around the main centre of the metropolis, it is necessary to identify the potential work and service centres around whom the increasing growth could be de-centralised. After identifying these areas, it is necessary to find out the function, commercial core, hierarchy of shopping centres, road network, industrial sites, employment potential, etc., of the area. Based on these factors a 'Structure Plan' should be prepared containing the future development policies in the area. These aspects are substantiated with the help of a case study.

The basic framework fro this approach has been derived from the developement plan system adopted in the Town and Country Planning Act, 1971 of Great Britain.

Acknowledgements
I thanks the then faculty members of urban and regional planning department, Institute of Development of Studies, University of Mysore, Mysore, Mr. P.D. Mahadev, Mr. R.N. Achyutha, Mr. B.S. Bhooshan and Mr. N.N. Sastry for their inspiration and timely guidance in shaping the work.

I invite any criticism on the book because the essential purpose of the book is to provoke new thinking on the subject rather than give a universal solution.

Ar. M. Pratap Rao

Planning & Designing For Street Vendors In India - An Uphill Task For Architects

Prof. Subodh Shankar - Email : subodh.arch@gmail.com

Prof. Subodh Shankar is an honours graduate from IIT Kharagpur. He is a Fellow of the Indian Institute of Architects and also a Fellow of the Institute of Town Planners, India. Post retirement from the position of Chief Architect Planner, U.P. Housing &Development Board in 2006, he joined full time academics and served Amity University as a professor and Integral University, Lucknow as Professor cum Dean. He is the recipient of Life Time Achievement Award (2006) from U. P. Architects Association for exemplary contribution towards urban planning and housing in the State of Uttar Pradesh.

Ar. Mukesh Kumar Ruhela - Email : mukeshruhela123456789@gmail.com

Ar. Mukesh Kumar Ruhela is a graduate from IIT Roorkee (2001) and has done Master of Planning (2004) from SPA, New Delhi with specialization in Housing. He is a Member of the Indian Institute of Architects and also an Associate of the Institute of Town Planners, India. He is serving on the position of Architect Planner, in U.P. Housing & Development Board since 2004. He has published a book on "Design of Earthquake Resistant Buildings".

ABSTRACT : *Street Vendors exist in all almost all cities of the country; everyone realises that they undertake very useful function to the society; yet they remain an eyesore and a soft target for the police and the local civic bodies, to be dislodged as an when there is a pressure from above. Architects and Urban Planners have also ignored them all through, resulting in the present day chaos. Planners don't plan for them, and Architects don't design for them; therefore, of their own they occupy the footpaths along the roads, especially near to the street junctions, causing traffic blockades and ugly landscape. Now that, through the street vendors act-2014, they have become legal identities, why not we planners and architects take up the uphill task of providing affordable and commercially profitable spaces within aesthetically pleasing landscape for them. The article dwells over this subject with the help of a case study of Indira Nagar Colony at Lucknow, developed by Uttar Pradesh Housing & Development Board.*

INTRODUCTION

As per National Policy For Urban Street Vendors - A street vendor is broadly defined as a person who offers goods or services for sale to the public without having a permanent built up structure but with a temporary static structure or mobile stall. They may be stationary by occupying space on the pavements or other public/private areas, or may be mobile in the sense that they move from place to place carrying their wares on push carts or in cycles or baskets on their heads, or may sell their wares in moving bus etc.

Street vending was illegal in urban India for almost six decades until the passage of the Street Vendors Act in 2014. Despite the law having legalised the activity, the default policy in most cities across India is to clamp down on street hawkers. Yet street vending remains a viable source of employment for many. As the pace of urbanisation increases across India, greater number of street traders will contest for space at affordable price - a difficult proposition for the architects and urban planners.

Clearing streets, footpaths and transport terminals of vendors and hawkers, and confiscating their goods, is a daily municipal activity. For their part, the street vendors continue to claim their space in the cities to earn their living. In a cat-and-mouse game, local officials ignore hawkers when convenient and tighten the rules on them when exigencies have demanded preventive action.

Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014- salient features :

- The Act aims to protect the livelihood of street vendors and provide them with a conducive environment for carrying out their business.
- It covers all varieties of vending and defines the mobile vendor, stationary vendor and street vendor.
- The Act mentions vending in a street, lane, sidewalk, footpath, pavement, public park or any public place or private area.

- It stipulates that cities will establish Town Vending Committees (TVC) with members drawn from all stakeholders—including hawkers themselves
- The Act provides for designating Vending and Non-Vending Zones
- It states maximum number of street vendors who can be accommodated in any vending zone. If number exceeds, draw of lots
- A maximum of 2.5 % of a city's population could be accommodated in the vending zones, depending on the holding capacity.
- The Act does not take into consideration the total number of current vendors and the potential increase in their numbers in the future.
- The Act also states that the plan for street vending will contain consequential changes needed in the existing master plan, development plan, zonal plan, layout plan etc. for accommodating street vendors in the designated vending zones.

Let us Recognise……

- They offer easy access to a wide range of goods and services in public spaces
- They sell everything from fresh vegetables to prepared foods, from building materials to garments and crafts, from consumer electronics to auto repairs to haircuts.
- They provide the main source of income for their households, bringing food to their families and paying school fees for their children
- They create jobs, not only for themselves but for porters, security guards, transport operators, storage providers, and others.
- Street trade also adds vibrancy to urban life
- Let us first of all recognise that street vending has the potential to add to the efficiency of a city
- Street vending must become a planned activity written into the urban planning and operational statutes.
- Vendors should be placed where they can easily find business and this must be achieved without impeding pedestrians, moving traffic and any other city activity.
- Adequate amount of land along roads around transportation terminals, hospitals, government offices, business centres etc. must be allocated for vending areas
- Vendors should have access to facilities such as safe drinking water, hygienic toilets, electricity and storage facilities.
- BUT all at Affordable Price

Street Vendors in major cities of India

• Mumbai	2.50 Lakh
• Delhi	4.50 Lakh
• Kolkata	1.50 Lakh
• Ahmadabad	1.00 Lakh
• **India**	**100.00 Lakh**

Bhubaneswar Model of integrating Street Vendors into City Plans-A Unique Public-Private Partnership Model

Bhubaneswar is among the first cities in India to acknowledge street vendors as an integral part of the city and to manage and support them through a complex public, private, and community partnership model

Success Factors

1. Political Will : Acknowledgement of vending as a legitimate profession
2. Able leadership from the Vendors' side
3. Social Dialogue : Consensus building and allowing multiple voices in debates
4. Effective Partnership among Local body, Vendors and Private Partners

A three Phased Approach

Phase-1 : Mapping of vendors' spatial distribution jointly by Town Authorities and Vendors Association

Phase-2 : Six month Probation period- only bamboo structures permitted

Phase-3 : Issue of Permits and construction of Iron Kiosks in partnership with private sector

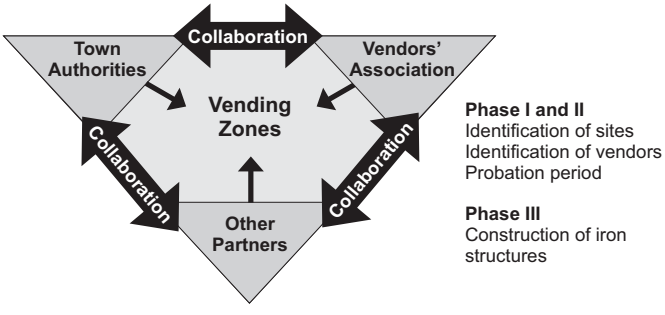


Fig. 1 : The Model Bhubaneshwar

The Lucknow Scenario

- As per Lucknow Municipal Corporation (LMC)- 27,000 Vendors in Lucknow while the street vendors' association said there were around one Lakh
- LMC has decided on 175 Vending Zones
- In the first list, LMC had come up with 24 vending zones providing permanent vending spots to only about 1,500 vendors

About Indira Nagar Colony, Lucknow

- Located along Lucknow Faizabad National Highway in the Trans Gomti area in the near vicinity of Hindustan Aeronautics Ltd. (HAL)
- Scheme-1 comprising of 550 acres (7 sectors) was planned in 1972-73 as Bastauli Ghazipur Grahasthan Yojna
- Scheme -2 known as Indira Nagar Vistar having an area of 750 acres (18 sectors) annexed to scheme 1 in 1982-83
- Both schemes, now known as Indira Nagar, planned as housing colonies
- Indira Nagar caters to a population of more than 3 Lakh
- Scheme Land marks are Bhoothnath Market and Munshipulia
- Now the scheme is also served by Lucknow Metro

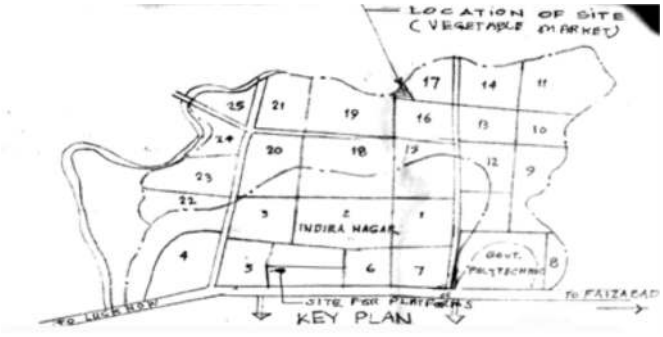


Fig. 2 : Key Map of Indira Nagar, Lucknow

Vegetable market in Sector-5, Indira Nagar, Lucknow

- Way back in 1979, a need was felt to relocate the street vendors spread in the vicinity of Bhoothnath temple & market.
- A project consisting of 319 numbers, 2m.x2m. open platforms was prepared
- Based on commercial land pricing, each Platform costed around 25,000/-, much beyond the affordable level of street vendors
- Many Platforms were purchased by non genuine people
- Hardly any Street Vendor shifted to this location
- Problem of Street Vendors remained unresolved
- Later efforts were made to organise them along an 18 m. wide road in the near vicinity
- Some grocery and daily needs shopkeepers have made steel structures, while vegetable vendors are selling vegetables in open as before
- The layout plan also desisted people to buy inner properties

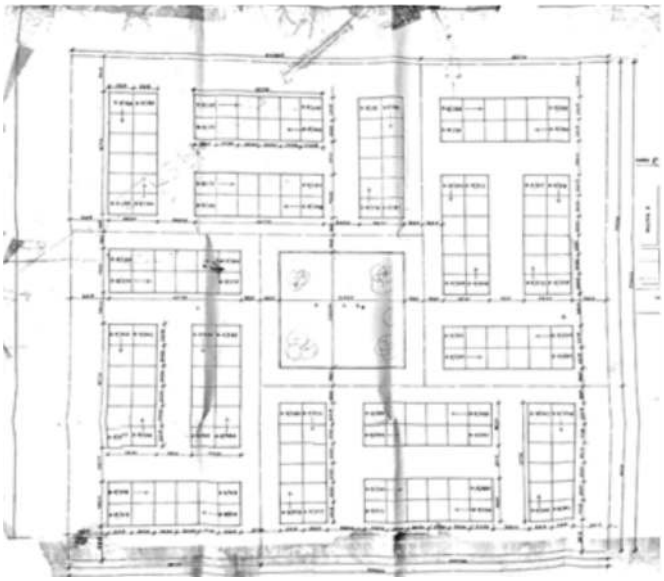


Fig. 3 : Layout Plan of Vegetable Market at Sector - 5

Fig. 4 : Road facing plots grabbed by 'big ones'

Fig. 5 : Vendors forced to remain on road

Fig. 6 : Inside shops remain unoccupied at such a prime location!

Fig. 7 : No one to take care of the inside Shops / Plots

Fig. 8 : The Central Court has become meaningless

Vegetable Market, Sector-17 Indira Nagar, Lucknow

- Similar to old Indira Nagar, lot of informal sector activity got generated in the extension scheme, particularly near the Munshipulia Chauraha
- To mitigate the problem, a vegetable market project with 360 open platforms was implemented in sector -17.
- To make the properties affordable, land price was subsidised
- This Subjee Mandi is working well with all properties having been allotted and an association of vendors formed.
- With the help of Association, this area is properly maintained and serving the desired purpose.

Fig. 9 : Layout Plan of Vegetable Market at Sector-17

Fig. 10 : Formation of Vendors Association help in proper upkeep of the Market

Fig. 11 : Provision of Parking Space makes shopping convenient

Fig. 12 : An inside view of the Market

Fig. 13 : All sorts of daily needs goods are available in the Market

Fig. 14 : Better organised vending spaces

Fig. 15 : Overall a well maintained vendor market

Conclusion :

While planning for the Vendors care must be taken to ensure that the properties created for them are within their financial reach, otherwise, even at prime locations, the vendors remain deprived of the facilities provided for them. Also, the typology of the layout plan also plays a vital role for making a site utilisable. Closed circuit or cluster patterns really don't work at Indian Bazars especially designed for the vendors and informal sector.

Acknowledgements

I. Randhir Kumar : The Regularization of Street Vending in Bhubaneswar, India : A Policy Model

II. Ramanath Jha : Strengthening urban India's informal economy : The case of street vending

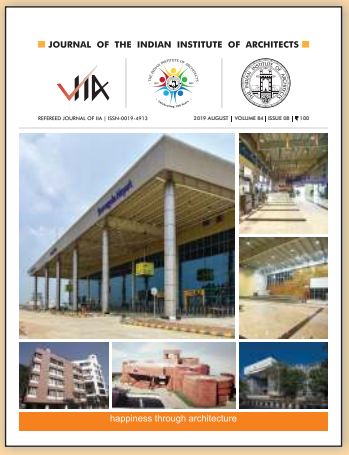
III. Deden Rukmana : Urban Planning and the Informal Sector in Developing Countries

JOURNAL OF THE INDIAN INSTITUTE OF ARCHITECTS

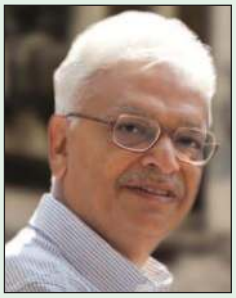
ADVERTISEMENT TARIFF CHART (w.e.f. 01.04.2019)

S.No.	Location	1 to 4 issues Per Insertion	1 to 8 issues Per Insertion	1 to 12 issues Per Insertion
1	**COLOUR**			
	Inside front cover	1,50,000	1,25,000	1,00,000
	Back cover	1,50,000	1,25,000	1,00,000
	Inside back cover	1,25,000	1,00,000	75,000
	Full page Right Hand Side	80,000	70,000	60,000
	Full page Left Hand Side	70,000	60,000	50,000
	Half page	40,000	35,000	30,000
	Quarter page	25,000	22,500	20,000
2	**BLACK & WHITE**			
	Full page Right Hand Side	60,000	50,000	40,000
	Full page Left Hand Side	50,000	40,000	30,000
	Half page	30,000	25,000	20,000
	Quarter Page	15,000	12,500	10,000

"The Cheques to be issued in the name of **"THE INDIAN INSTITUTE OF ARCHITECTS".**



Innovation Center for Aquapharm Chemicals Pvt. Ltd. - Pune



Ar. Pramod Beri - Email : admin@beriae.com

Ar. Pramod Beri, Master's in Civil Engineering, (Architectural Engineering), Wayne State University, Detroit, USA (1970) Bachelor's Degree in Civil Engineering, Shivaji University, India (1967).

Mr. Beri was a visiting professor at College of Architecture, Kolhapur and was a member, Ad-hoc board of studies – Architecture of Shivaji University, Kolhapur. He is presently Ad-hoc Committee member for M. Arch., Syllabus formation for Shivaji University, Kolhapur. He regularly conducts workshops for students of Architecture and Engineering.

Mr. Nitish Beri - Email : nitish@beriae.com

Mr. Nitish Beri, Bachelor's of Engineering (Civil Engineering), Shivaji University, India (1994). Masters of Science (Structural Engineering), Tennessee State University, USA (1996). Masters in Business Administration (MBA), University of Chicago, Booth School of Business, USA (2006).

Mr. Nitish Beri, with his over twenty year experience, has deep expertise in design and master planning of industrial projects, especially in the power, sugar and automotive sector. He has led cross-functional teams of consultants on over fifty construction projects ranging in size from $400,000 to $10 million; responsible for design, project management and execution.

Ms. Shilpa Beri - Email : shilpa@beriae.com

Ms. Shilpa Beri, Diploma in Interior Design from J.J. School, Mumbai. She has designed residential and commercial spaces in India as well as USA. Her philosophy is to design interiors which are not only practical but also enhance the quality of life for those who work and live in them. With her strong ethical background, technical knowledge, sound designing skills and an experience of over 19 years Shilpa has excelled in designing aesthetic interiors for both residential and commercial spaces.

She has successfully executed over 100 plus projects over the past 19 years. She assure a unique and innovative design that's bound to pleasantly surprise the clients and the people who are viewing it.

To convey its commitment to the environment, technical innovation, and emphasis on human resources, Mr. Vimal Mangwani, Managing Director of Aquapharm Chemicals Pvt. Ltd. asked Beri Builtspace Designs to design a research facility for conducting state of the art research on specialty chemicals related to detergents, oil & gas etc.

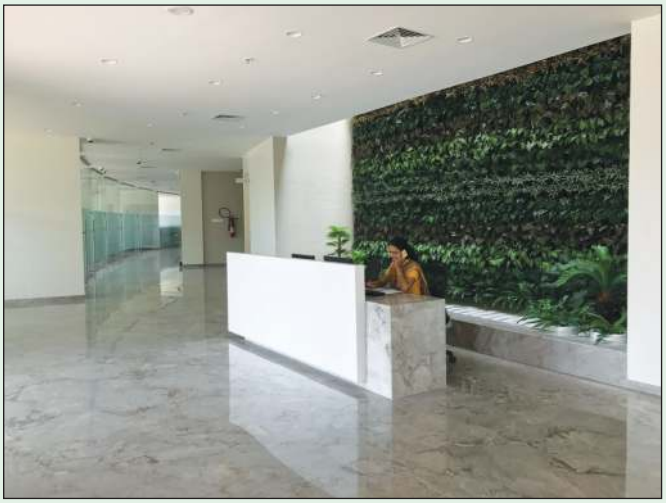
The brief was to set up sixteen different research units each with a dedicated research task as well as give related spaces for Senior / Junior Scientists and Senior / Junior Administrative staff.

Dedicated spaces for services of Water, Gas and Electricity etc. and staff related spaces like changing rooms and dining were required. Further allied spaces like conferencing spaces, library, chemical stores and parking etc. were also necessary.

The successful experiments conducted in the lab would also need to be tested in a pilot plant in the same facility to test success at industrial scales.

THE SITE :

The site admeasuring 5000 Sq.M. was an odd trapezoidal shape and also had a slope of 4 meter from access road end to the rear end.



THE RESPONSE :

Taking advantage of the site contours, the building was planned in such a way that a natural basement was carved out for parking, utilities and pilot plant facility with all the other lab facilities were strategically located on the upper ground and first floors.

The front elevation is circular which aligns with the site profile with the research wings radiating at the back to form a triangular shaped research complex. The front is also a boldly framed solid cladded surface paneled and glazed façade.

The side elevations are punctuated with service towers creating an vertically as well as horizontally interesting juxtapositioned built form.

At the upper ground level main arrival, reception, eight labs and allied "Scientists" cabins are provided.

First floor houses further eight labs and also has Senior / Junior Executive cabins, conferencing facilities besides smaller lab related spaces.

A floating glass corridor of 3 meters links the two lab wings various spaces and splits the building into public and secure zones. The scientists also have an access to a triangular podium garden, which provides visual relief and a green respite space.

The spatial arrangement of the entrance draws visitors, as well as regular occupants, through the entire building traversing thro a light-filled circular lobby and passage. There is a double storied "green wall" with a roof light, which subtly punctuates the otherwise Minimalist lobby space.

The staff-dining hall opens up on a landscaped terrace garden. As far as interiors of the project are concerned, the scientists and administrative staff cabins follow the curve of the façade. Interactive spaces for the staff at various junctures are created. The executive cabins and conference spaces are dignified and simple.

GREEN BUILDING FEATURES :

The project has numerous received a **LEEDGOLD** rating from US Green Building Council for the following eco-friendly features.

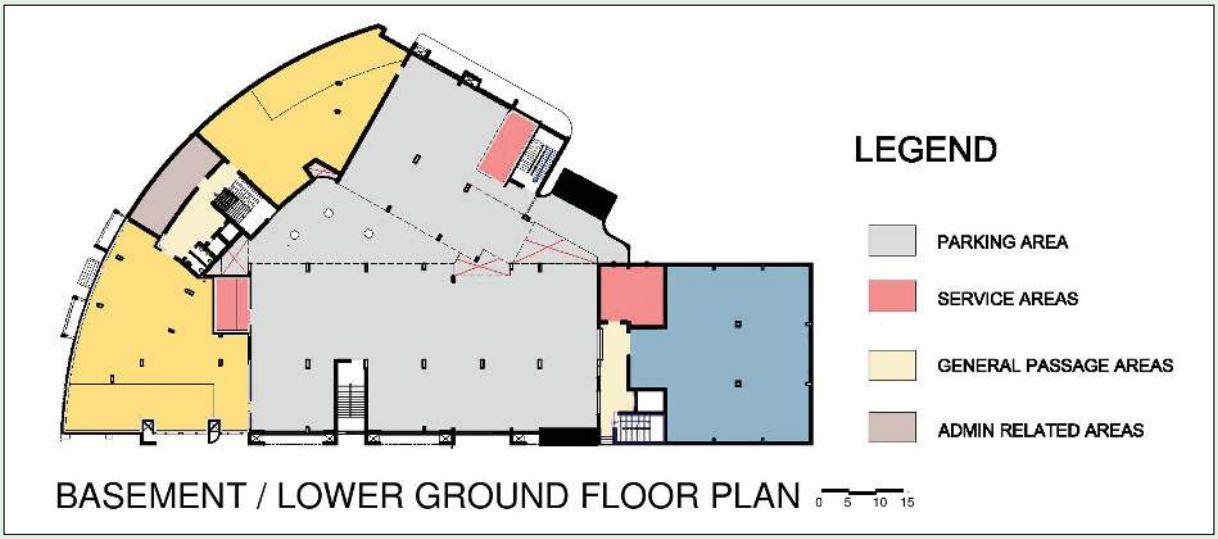
1. **Water and Waste Management :**

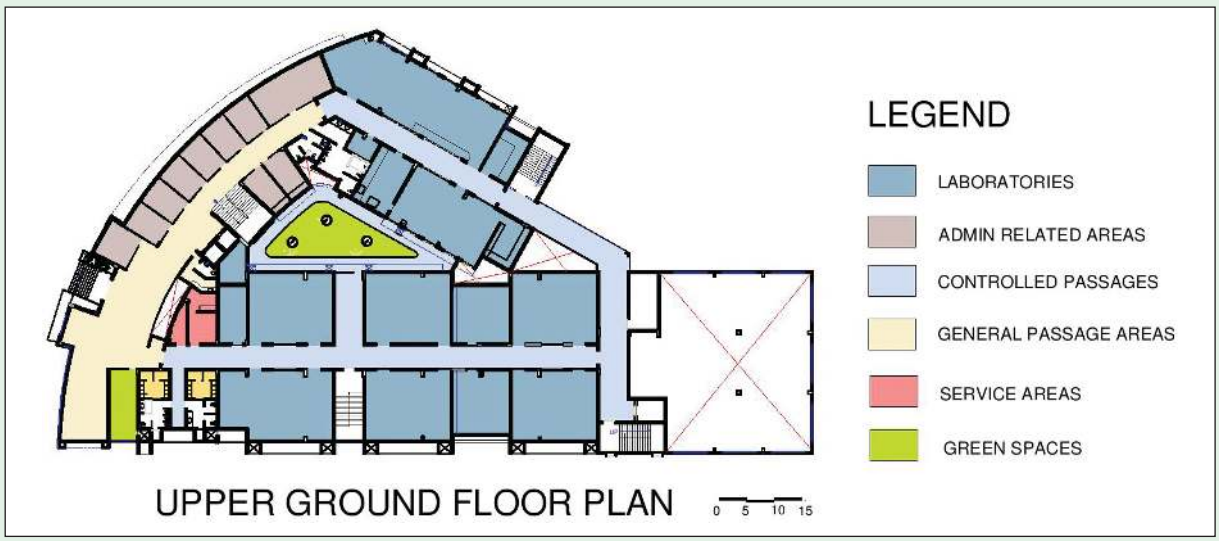
   a. Landscaping and irrigation systems have been designed to reduce potable water consumption by 100%.

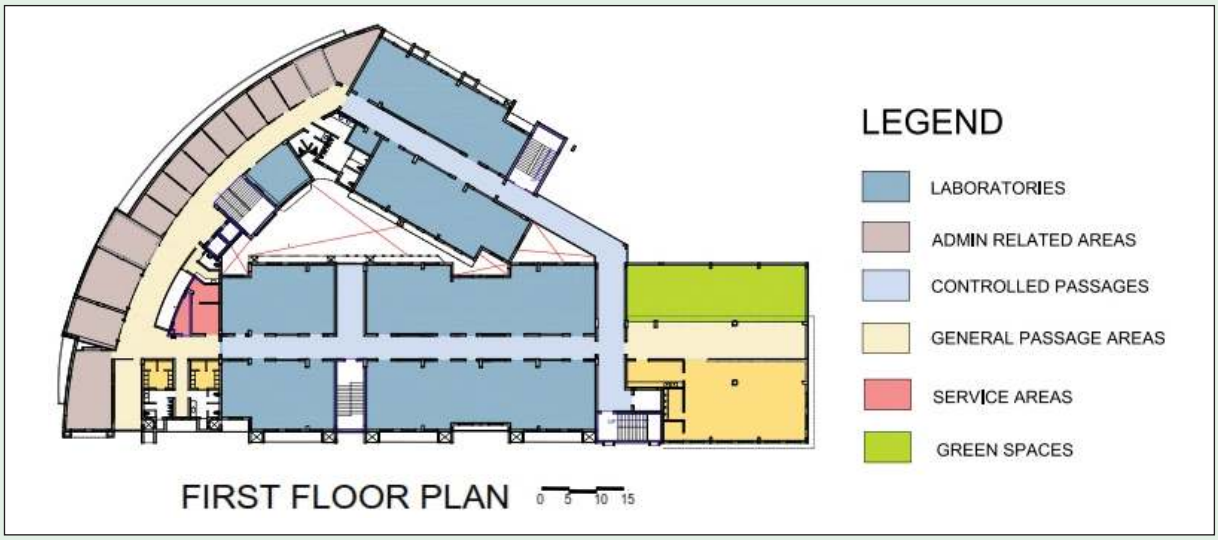
   b. Chemical effluent and sewage is being treated in an effluent/sewage plant and reused for gardening and also for flushing

   c. Common waste collection facility with segregation to facilitate recycling of the waste on site has been implemented.

   d. Low flow fixtures have been used in all toilets and taps reducing water consumption by 75%.







2. Energy :

a. All equipment purchased are BEE 4 Star rated and above.

b. The roof section of the projects is well insulated which adds to the reduction of energy consumption.

c. Eco-friendly facade material and double glazed windows have helped reduce Energy costs by 30%.

d. Photovoltaic panels have been installed to reduce lighting load requirement from grid by 40%.

3. Building Design & Indoor Environment :

a. Natural light coming in through the external façade and internal courtyard helps reduce the day lighting requirement for the labs.

b. Project has diverted 88% of the on-site generated construction waste from landfill to recycling vendors.

c. Low emission / Zero VOC material used for interior, fit-outs and paint. Most interior materials also have high recycled content.

CONCLUSION :

A successful attempt has been made to make the building answerable to various aspects such as site, service, function and above all by creating an interactivity promoting atmosphere in the scientific and administrative community using the facility.

FACT FILE :

Architectural, Structural, Interior and Landscaping Design :

Beri Urban and Environmental Planners LLP, Pune - Kolhapur.

Design Team : Pramod Beri, Nitish Beri, Shilpa Beri, Mohan Bhasme, Pradeep Terdale, Ruchita Samant

Client :

Shri Vimal Mangwani, Managing Director, Aquapharm Chemicals Pvt. Ltd., Pune.

- Great Master's Award/Chairman's Award which is by nomination for lifetime / outstanding contribution to Architecture profession, is "GIVEN ONCE IN TWO YEARS".
- All other Awards are declared annually by selection of a project completed during calender year 2018 / 2019.
- **There is no fee for participation.**

2. AWARD CATEGORIES & Prizes For 30th JK AYA

GREAT MASTER/CHAIRMAN'S AWARD — (There is one award under this category)

2.1	Open to Architects from : India, Bangladesh, Bhutan, Kenya, Maldives, Mauritius, Nepal, Seychelles, Sri Lanka, Tanzania & Uganda	**INR 3 Lacs (Approx. US$ 5000), Trophy & Citation.**

GREEN ARCHITECTURE (Environment Conscious Design) — (There is one award under this category)

(10 point write-up justifying green status is a MUST. Each point not exceeding two sentences. Drawings should show green features in distinct colour . Mention shall be made about number of occupants of the building & use of building.)

2.2	Open to Architects from : India, Bangladesh, Bhutan, Kenya, Maldives, Mauritius, Nepal, Seychelles, Sri Lanka, Tanzania & Uganda	**INR 2 Lacs (Approx. US$ 3300), Trophy & Citation.**

INDIAN ARCHITECTURE AWARDS (IAA) — (There are Seven awards under this category)

2.3	Architect of the Year Award		**INR 1.75 Lacs, Trophy & Citation.**
	Commendation Awards For :		
2.4	Private Residence	(PR)	**INR 1.25 Lacs, Trophy & Citation.**
2.5	Group Housing	(GH)	**INR 1.25 Lacs, Trophy & Citation.**
2.6	Public Building (In case of Public Building minimum built-up area should be 1000sq. meter)	(PB)	**INR 1.25 Lacs, Trophy & Citation.**
2.7	Industrial Architecture	(IA)	**INR 1.25 Lacs, Trophy & Citation.**
2.8	Young Architect's Award		**INR 75,000/-, Trophy & Citation.**
2.9	Architecture Student of the Year (Only for Colleges in india)	Winner Student shall be awarded at National Level with all other winners.	**INR 25,000/-, Trophy & Citation.**

INDIAN STATE ARCHITECTURE AWARDS (ISAA) — (There are three awards under this category)

(Focus States : Gujrat & Maharashtra)

2.10	State Architect of the Year Award	**INR 1.25 Lacs, Trophy & Citation.**
2.11	State Architect Commendation Award	**INR 75,000/-, Trophy & Citation.**
2.12	State Young Architect's Award	**INR 50,000/-, Trophy & Citation.**

FOREIGN COUNTRIES' ARCHITECTURE AWARDS (FCAA) — (There are three awards under this category)

(Foreign Countries : Bangladesh, Bhutan, Kenya, Maldives, Mauritius, Nepal, Seychelles, Sri Lanka, Tanzania & Uganda)

2.13	Foreign Countries' Architect of the Year Award	**INR 1.75 Lacs, (Approx. US$2900) Trophy & Citation.**
2.14	Foreign Countries' Commendation Award	**INR 1.25 Lacs, (Approx. US$2000) Trophy & Citation.**
2.15	Foreign Countries' Young Architect's Award	**INR 75,000/-, (Approx. US$1250) Trophy & Citation.**

Grand Total 15 Prizes in 30th JK AYA

Last date for Submission of ENTRY : 30th June, 2020

For details, log on to : **www.aya-jkcement.com**

85/01-02
IIA PUBLICATION
POSTAL REGD. NO.MCS/007/2018-20

RNI NO.9469/57
POSTED AT PATRIKA CHANNEL SORTING OFFICE, MUMBAI-400001
PUBLISHED ON 14TH OF EVERY FOLLOWING MONTH AND
POSTED ON 15TH & 16TH OF EVERY FOLLOWING MONTH