Conservation : The Search for an Interpretive Method

by

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Conservation in Goa:
The Search for an Interpretive Method

by Partho Dutta

Abstract

Many historic zones within old cities of developing countries like India are vulnerable to pressures of growth and modernization. While the process of modernization brings in the economic resource to improve the environment, the negligence of chaotic growth tends to erase the genius loci of the historic fabric.

The current endeavors of conservation agencies are to preserve and restore the 'authentic' historic nature of the fabric, by means which call for large amounts of funding from the government or private foundations. This funding is difficult to sustain permanently and the idea of restoring authenticity often contradicts the ideals of growth and progress.

This thesis is an endeavor to establish an interpretive strategy for the conservation of the historic fabric, while respecting the notion of modernization and need for growth.It argues that to conserve the historic fabric, a more holistic attitude is required at the theoretical level, as well as at the physical level. At the theoretical level, the attitude embraces the ideas of physical and environmental memory, and the notion of growth and identity for the inhabitants. At the physical level, the thesis views the fabric as an organism and examines its relationship with other such organisms on the four scales of territory, district, block and house.

The historic fabric under scrutiny is Fontainhas, the 'conservation zone' in Panjim, the capital of Goa.

The thesis begins by explaining the theoretical evolution of the principles of analysis and development for the fabric of Fontainhas. The fabric is then comprehended by observing and analyzing it with these principles, on the four scales of territory, district, block and house.
Finally, an intervention is proposed through principles formulated by the distillation of these analyses. The salient features of the intervention are:
• the coherence of the fabric with the rest of the city, the fabric playing an active role (taking a role in the economic growth, than remaining a frozen timepiece in history)
• the continuity of the old order is re-established but within the modern context
• development within the fabric of opportunities for economic growth
• green areas are maximised

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Introduction

A certain atmosphere, gives character to some places and sets them apart from others. In India, Goa is one such place. Situated on the western coast, on the narrow strip of land between the sea and the bold escarpments of the Deccan, it is a land of wide sandy beaches, rice fields and lush green palm groves.

"The climate is warm, the mood gentle and unhurried like its undulating countryside. But these qualities do not make Goa unique. What makes Goa different is its ethos which evolved as a result of being Portuguese rule for more than four and a half centuries."[1]

The Portuguese have left their imprint on the attitudes and the lifestyles of the people of Goa and given the place an identity of its own.

After the takeover of Goa,[2] the Portuguese endeavors in world trade heaped great material prosperity. This strength, shows not only in the monuments of religion, but also in the development of a prosperous new culture which was a unique blend of Indian and Portuguese notions. Churches, such as the Basilica of Bom Jesus and the Church of St. Francis of Assisi prompted the name 'Rome of the East'[3] for Goa.

Before the Portuguese, though, Goa had seen generous patronage in religious architecture and was known as the 'Kashi of the Konkan'[4], due to the presence of important temples. Temples built after the Portuguese, imbibed items from the type and style of Baroque and Rococo.
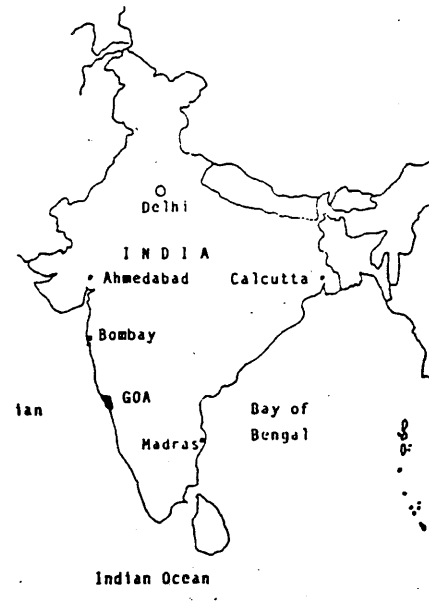
Map of India showing the location of Goa
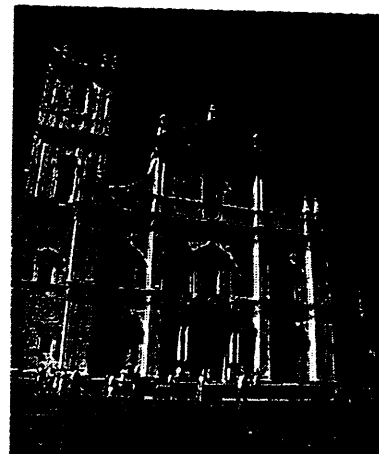
Church of St.Francis of Assisi

Degradation of the Environment

Panjim's Church Square

The concept of "Kashi' and 'Rome' living in peaceful harmony is a hallmark of religious co-existence, unique to Goa, since the end of the Portuguese intolerance[5].

Another significant aspect to be noticed historically is the harmony with nature. It is very rare to find such a finely created balance between land, water and built form. Present day Goa, is a far cry from this image of environmental and cultural balance.
The image of Goa today is that of a tourist paradise - beautiful beaches, clear blue water, a temperate climate and a place for fun, on the other hand and the future center of electronic development. The manifestation of the urban experience of Goa now and the Goa of the past is quite different; the interpretation of urban culture seems to have shifted; Do we mediate between the traditional urban culture and contemporary trends? How do we resolve the dilemma in the search for identity in the traditional and the modern at the same time, that follows the process of modernization.

The Present Condition

After the recent open door policies, the economic development in India has been unprecedented. In Goa particularly the process had been remarkable and it is engulfing existing remains of the wonderful past. Panjim's built environment is deteriorating under a pressing crisis in the process of modernization. The links to the past are being destroyed and thus artifacts of memory but being killed by negligence.
At this time it is imperative that immediate action be taken before the city loses the very assets of urban culture which make it unique. Improvement of Fontainhas will enable Panjim to relocate its historic links that are essential for every city with a historical identity.

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The Problem with history

Contemporary architecture in Goa has endeavored to address this unique feature of a rich heritage. But the practice has been very random and confused; while trained in modern architecture the architects' endeavor to be sensitive to the Goan character is achieved simply by pasting modern boxes with Indo-Portuguese motifs. While there is not a single example which shows an adherence to urban or cultural values existent there.

Thus, though an understanding of the urban history, morphological expressions and social structures, it is possible to develop a theory on urban conservation pertinent to a historic city.

The Question of Progress

India is in the midst of a rapid modernization process. Tradition is adapting daily to the new demands of progress. The processes of modern growth should aim at inheriting the traditional sensibility in a modern intervention. Co-existence of the traditional and the modern and thus their mutual adaptability will facilitate an identifiable growth and progress, in an environment of harmony with culture and nature.

The Crises of Erasing Memory

"Our experience of physical environments depends upon changing perceptions of patterns generated by solid and void, light and shade....patterns which reveal forms in space as we move amongst them and change our position in relation to them. It is this direct exis-

tential experience, combined with the imagery we perceive in our surroundings, that offers the basic material of environmental memory.[6]

The environmental memory of Panjim is vanishing with the forgotten urban traditions. What is in vogue is the idea of borrowing from imported urban models, especially experienced in the new tourist ventures and the new modern industrial office building, totally alien to the local context.

A casual tour of Panjim shows the amount of defacement undergone. There are distortions in scale, by sudden and exploding high rise buildings. Critical edges in the city such as the waterfront and the creek cease to exist as foci of urban visual pleasure but function as modes of pollution by heavy traffic.

The Problem of Stagnation

On the other hand conservation laws prevent any growth in the historic district of Fontainhas. This creates a number of problems for the inhabitants of Fontainhas. Growing families cannot be accommodated within the same sized house. The idea of freezing the same elevation involves funding for maintenance which neither owner nor the government is willing to pay. Thus a sense of belonging is slowly waning amongst the inhabitants of Fontainhas and is beginning to show as an apathy for public spaces.

Premise

The notion of conservation has existed in Goa, since liberation from Portugal in 1961 until current time.The ideas of conservation proposed are very narrow and elitist in their outlook, catering to the idea

of a fabric to be frozen, without any concern for its inhabitants.

The medium for the interpretation of urban and environmental culture can be arrived at, through investigations into the nature of the site, the narrative memory of the fabric and the existent contemporary conditions.

Memory assists us in the act of mediation between our past and the present. We need artifacts to refresh our memory, but for most of the time we depend on our mental construct or some similar system to remind us of anything. This concept holds true for of collective memory; which is pertinent in the case of an urban situation, and by establishing a strategy respecting memory, we can restore traditional values in urbanism, thus bringing back the harmony which made Goa unique.

The nature of the site gives us insight into the type of environmental conditions pertinent for the idea of sustainable growth of the fabric. But the rapidly growing nature of the city should be considered too, and to freeze it in a time zone would be an intervention of stagnation. Thus such a critical interpretation of the fabric can assist in the development of a holistic attitude for the restoration of the idea of the continuity of the harmony of environment, culture and built form in the urban fabric.

Objective

The thesis is an endeavor in establishing guidelines for the development and the conservation of a historic fabric; by investigations into the nature of the site, the historical context and the narrative of memory in the fabric. The site for this exercise is Fontainhas, the 'conservation zone' in Panjim, the capital of Goa.

References

[1] Mulgaonkar, Manohar, *Inside Goa,* Directorate of Information and Publicity, Govt. of Goa, Daman and Diu. p.14

[2] Richards, J.M., *Goa,*

[3] Ibid. 1

[4] Ibid. 2

[5] Ibid. 3

[6] Quantrill, Malcolm, *The Environmental Memory,* p.xiv

Theory

Search for the method

India is still largely a traditional society and the conservation of tradition, or its elimination, is an important issue in defining the nature of development. On the one hand, performing arts and rituals, that define our pattern of life and thoughts, are steeped in the kind of conservatism that is the despair of those who want change, and on the other hand our leaps into the modernization process are bringing about such rapid change in our material life and values, that they are equally the despair of those, that seek to align our identity with the past.

In this view, India, in spite of pursuing a modernizing ideal, is perhaps as a whole, a more divided society rather than a more developed, or less conservative one. Both India and 'Bharat'(the Sanskrit word for India), are realities in the contemporary context. It is the experience of these dichotomies that fuels the debate on larger issues of conservation. The consequent ambiguities are reflected in the character of our built environment where new and old coexist with equal felicity.

The parameters of our built environment are circumscribed by the fact that our cities consist of three distinct entities: the historic town, the new planned and unplanned developments, and the 'spontaneous', informal growth areas of the urban poor, all within the periphery of the city.

In the realm of urban economy, which is undergoing an upheaval, there is exists a relationship between the formal and the informal. In

the Indian context; both the formal and the informal rely on each other to move forward. Thus, the household production and the traditional crafts sector has an equally significant presence today, as do large industrial concerns.

The historic town, in India is not a temporal oddity in the contemporary scene, but a significant part of the prevailing sector of the Indian environment. It is dynamically evolving influencing and being influenced by the formal sector. Thus, the historic fabric can be made to turn two ways: a dynamic force in India's future assisting in the modernization process, while also securing a contextual identity, or an object of mere curatorial interest. After the open door policies of the government, the Indian economy has progressed impressively, and has become a source of national pride. In this time when the national impulse is on the emphasis of moving forward, historic fabrics should play an active and progressive role in the development of the city.

On the other hand we must keep in mind the genius of a historic fabric which is the reason why the fabric is unique. It is essential, therefore, to gain insight into the nature of the fabric, the pull push factors affecting it, the dynamics of the site and the role of the cultural patterns. These factors can be comprehended with the help of the investigative tools, some of which have been used previously by architects e.g. typological analysis, and others which are personal notions of designing in historic fabrics, developed through the observation of previous design excercises by others and by the author. Another significant point is, that the use of these tools reveals the nature of the historic fabric, but the perception and the manifestation of these perceptions into interventions depend largely on personal interpretation. However, these tools are indispensible, to bring out the essential parameters which delineate the uniqueness of a fabric, within which

the interpretation can vary.

These tools are:
• The tool of Typological Analysis
• Historical Contextualism
• Site Vectors
• Site Surveys

The tool of Typological Analysis

From the attitude of the historic fabric playing a significant role in the growth and economy of the city, the historic fabric must allow the ideas of physical growth and continous usage, instead of the notion of the museum like 'frozen state' in time. But, on the other hand to retain its uniqueness, the growth has to be 'ordered'. To find this order in the historic fabric, it is essential to understand the city as an organic evolution along the path of its own consciousness.[1]

With an evaluation of the growth of the fabric through history, the inherent order within the context of the fabric can be established through a typological analysis of the of the urban fabric.

According to Muratori, the organization of complex operations of cumulative orders over time is manifested in the 'type'[2]. By analyzing the 'type', it is possible to give a physical manifestation to the forgotten 'code' of design that can enhance the evolution of the city. In this deconstruction and reconstruction process, memory (or the collective consciousness of the city), through the understanding of the 'code', can be recalled and used to assist in restructuring the fragments into an overall urban coherence.[3,4]

Historical contextualism

"The historic fabric is existing within the context of the present. While
it retains its unique nature, it has to mediate and adapt to the pres-
sures of the contemporary situation. Thus, the inherent nature of the
fabric, extracted through the typological method, can only be perti-
nent in developing an intervention for today's situation, if it compre-
hends the situation and takes measures.

Thus, the order, or the collective memory of the city, can be used in
developing an intervention, if it is interpreted within the framework of
a critical historical interpretation of the contemporary context.

To elaborate; this proposition involves three participants: time, the
place (the fabric) and the inhabitants. For the inhabitant, the notion of
time ranges from the present to his links with history, all of which
emanate from the site. If these links with history remain congenial,
the present day inhabitant has little reason to change the site. Thus,
the consumption of the heritage, depends on the contemporary con-
text.

The idea therefore is to investigate the built form in its historical con-
text, then reinterpret, keeping in mind the contemporary situation;
finally applying the principles derived from the investigation to the
present situation.

Site Vectors

The physical nature of the site has developed through ages, shaped
by nature and by man. Patterns of development, both by man and
nature, on site, can be comprehended by understanding site
forces.Site Forces are natural elements on the site, which affect in
the development of settlements, through their unique physical

nature.[5]

These forces , present as, for example, the curve of the creek, the bend of the hill, jutting promontories etc. can be understood by simplifying or abstracting them into lines, polygons or meshes, in two or three dimensions. Site vectors can only assist in defining the parameters or the notions of design thinking for the site, they do not constitute as the critical decisive factors in the development of the site.

Site Surveys

These are findings about the present day site. They are mainly for an understanding into the problems, infrastructural capabilities, usage etc. of the site in the present situation. (The site surveys used for this paper are a manifestation of the observations by a team from the School of Planning and Architecture, New Delhi, which worked in Goa.).

Some notions on the Interpretive method

This thesis is an endeavor to establish an interpretive strategy for the conservation of the historic fabric, while respecting the notion of modernization and need for growth.

The interpretations gathered from the methods of analysis described above, suggest parameters for an intervention. The strategy, respecting these parameters, for the conservation of the historic fabric, while acknowledging the notion of modernization and need for growth, is the Interpretive method.

Although these parameters are individual notions,they have to be linked coherently, for a successful intervention within the fabric. Development of these links depend entirely on the interpretation of the intervening medium i.e. the architect. Thus, the critical aspect of

this proposition is the definition of these links. That is the reason for the definite nature of FARs, land use plans etc. in the historic district. But, the interpretive proposition does not limit itself to the fabric alone. It should be utilised in the 'territory' (the zone of influence of the fabric, but here places other than the fabric are alluded, such as neighbouring areas) of fabric, in radically different ways to develop the metaphorical notion of continuity of the historic fabric.

The whole process, therefore, is dynamic, always in motion through time, establishing and reestablishing meanings, relationships and links in the evolution of the fabric.

Thus this concept assists us to develop notions or remembrances of the heritage beyond the historic fabric.

References

[1]Muratori, Saverio, *Studi per una Operante Storia Urbana di Venezia,* vol. 1, Rome ,1959

[2]The Muratorian school describes with the general word type, the ensembles of conventions and norms, which have accumulated over time. The method is therefore called: the typological method. The type is defined as an operational information, based on an experimental tradition.

[3]Vidler, Anthony, *The Idea of the Type: Transformations of the Academic Ideal,* Oppositions 8, Spring 1977. Here, Vidler analyzes the nature of type and its relationship with Origins, Models, Character, Style, Memory etc.

[4]*Typology and the Design Method,* Arena, Vol. 88, June 1967

[5]This idea has been imbibed from the lectures by Gianini, in Fall, 1996, MIT.

Methodology

The thesis is divided into the following categories:

1.Observation
2. Analysis
3. Identification
4. Intervention

The paper begins with the observations of the nature of the site, the culture and the history of the fabric. These observations are then analyzed with the tools discussed in the previous section, to comprehend the process of consumption of a historic fabric through site, memory and contemporary conditions. This analysis operates at four scales: the territory, city, district and house and at three levels: planning, urban design and architecture.

Following the analysis, problems are identified in the fabric, alongwith deficiencies in the present planning and conservation policies.

Finally, development principles are developed and applied to form a framework for a contextual matrix at the four scales.

An intervention by this interpretive method is demonstrated at the district of Fontainhas, in Panjim, Goa.

Criticism
understanding the present situation in planning policies and their implementation

Post Independence Goa has had a lot of changes from the Portuguese idea of the 'Cidade de Goa'. An year after the integration of Goa into the Indian Union, the Government of Goa, Daman, and Diu declared that a new master plan in the offing, in conformity with the new ideas in town planning.

After three years of protracted bureaucratic formalities, a Town and Country Planning Department was set up in December 1964. The Old 'Commissao de Urbanizacao' was substituted by the 'Town Planning Committee'. The Committee was assigned with the responsibility of preparing Zoning Plans of Panjim, besides other 11 urban centers and a few fast growing village panchayat areas.

In 1965, the 'Goa, Daman and Diu Interim Building Bye Laws and Zoning Regulations' were enacted. These were repealed when on 2nd April, 1976, the Goa, Daman and Diu Country Planning Act came into force. For successful implementation of this act, Government appointed a State level Apex body, namely, the Town and Country Planning Board with a multiplicity of functions including the appellate functions arising out of the Planning Development Authorities orders. Earlier in 1974, the Goa Government notified 17 planning areas including the Panjim Planning Area as a preclude to setting up a Planning and Development Authority (PDA). The PDAs were to prepare the Outline development plan (ODP) and the town planning schemes as well as to organize and execute various socially oriented schemes. As the PDA was not in a position to prepare the ODP it was done by the office of the Chief Town planner.

As can be seen from above, it took the Government two decades to

establish an unwieldy multitiered planning machinery in the State. Also, during that period a large no: of raw architects and planners made their way into the newly created setup.

The extremely rapid development that took place in Goa after liberation reflected in the increase of population component, more so in urban areas. In fact, around Panjim, new vast agricultural fields, coconut groves and rich cashew hills, were soon bubbling with constructional activity.

Deficiency of the Policy

The planning policies which arose from these planning bodies had the following deficiencies:

1. lack of integration with existing social conditions
2. lack of integration with existing environmental conditions.
3. Exclusive reliance on public sector investment in the funding of development.
4. lack of sensitivity for the planning policies of the Portuguese ' Commisao de Urbanizacao '.

One more aspect that must be highlighted is that there has been an indifferent and callous interpretation while implementing these policies. The post liberation scenario has, emphasized on anti Portuguese agenda which not only resulted in the building of this multi- tiered unwieldy organization of planning, but also had an absolute disregard for the environmental conditions, which teh Portuguese master plan had been able to achieve to a large extent.

Conservation Policies

Numerous reports and seminars, have been made on the issue of
conservation in Goa. All of them, adhere to the static approach of
preservation classification leading to the rigid approach of freezing
time by not allowing expansion, promotes the idea of timelessness
and stagnancy.[1]

The focus on preservation is concentric, rarely considering the visual
and vectorial correlation with other preserved objects, not to mention
those with the general urban area, confined by the rigid controls with-
out proper guidance, the protected zones would fall into a fallacy of
becoming 'theme parks' in which original residents become actors for
the visitors audience.

Detached from a 'real urban life', these protected zones would deteri-
orate into dying urban fabrics in which memory will be trapped within
a dedicated period of the past.

Tourism Planning

After independence, Goa was targeted as one of the prime centers
of tourism development. The prime reason for this being the pres-
ence of amazingly beautiful Goan beaches, which stretch over the
length of the state of Goa. Clear blue water, golden sands and
sometimes wonderful formation of rocks are characteristic of Goan
beaches.
The tourism industry, in order to promote Goan beaches invested
immensely in advertising. This campaign was not only domestic but
international. The idea of this campaign was urged by a large num-
ber of reports and studies, all by non Goan organizations. One of

the examples whose idea is representative of nearly all of them is a report prepared by Harris, Kerr, Forster & Co., Belt Collins & Associates Ltd. and was sponsored by the United Nations in 1973. It was commissioned by the Department of Tourism, Government of India. The purpose of the report was to plan for the development of beach resorts at Kovalam, Mahabalipuram and Goa. The focus was entirely on attracting foreign tourists, while ignoring domestic ones :" (The) domestic tourists prefer middle to lower priced accommodations which would probably not be acceptable to international tourists."[2]

The recommendations of the report can be summed up into two points:

the streamlining of traveling arrangements and the launching of an effective campaign in Europe and the U.S.A.

The document is a telling instance of the manner in which the five star tourism industry and the Government of India views their country: as a commodity to be altered to suit the taste of the rich and to be delivered to them gift wrapped, with no consideration for the views or needs of the local population.

The purpose of this critique is not to condemn these reports so much as to focus on a process which has been going on all over the country at the behest of the government and the tourism industry - the altering of a place to suit the tastes of people who are not in an organic relationship with it. Thus the existence of development plans being designed around tourist preferences rather than local ones.

Tourist Architecture

Due to the flourishing tourist trade, Goa has a burgeoning industry for resort architecture. Tourist architecture has immense support from the Goa government, notwithstanding hindrances such as envi-

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ronmental regulations, town planning laws etc. For example, the
Regional and Country Planning Act disallowed the use of beaches
for building activity because of their environmentally sensitive
nature. But due to the pressures from several groups with vested
interests the Goa government made an amendment in this act.
" As all hotels were to be located in beach areas, and in the
Regional Plan the beach areas were to be declared Reserved due
to their fragile nature and existing land use as green cover zones,
government removed only those plots which had been bought by the
hotel promoters from the green cover areas of the Regional Plan
and converted these to areas for tourism development, a new cate-
gory which it invented overnight."3

Assimilation

Thus, we find that there is a tendency to grow in large leaps, totally
divorced from the notion of regarding the existent nature of the place,
and the aspirations of its inhabitants.
Therefore, while beaches and clear blue water, is something Goa, is
associated with nowadays, the historic nature of the place is fading
out.
The touristic consumption of Goa, comprising the beaches and the
sea, is the cause of the havoc being played on the environment by
excessive development on the beach (refer Appendix 2).
But, on the other hand, tourism is the largest economic activity in the
state. Thus a mediation is required in the issue of tourism planning to
prevent the ruin of historic fabrics.
Tourism planners should look at these fabrics as potential sources of
tourist generation, rather than old dilapidated buildings.
This move, will not only help in saving the environment of the beach-
es, but involve the inhabitant of the fabric in the idea of economic

growth of his native place, thus making the process democratic.

On another level, new 'open door' policies have induced rapid modernization processes such as the introduction of the electronic industry in Goa. This input, has shown up as a pressure on the city fabric as head offices of these organizations vie for space in the infrastructurally comprehensive capital of Goa.

Thus, development strategies, while allowing such measures to happen should be careful that the interpretation of these leaps into progress respects the ideas of the previous image, environment, culture and identity of Goa.   —

The following ideas, therefore constitute the basic notions of a framework:

1. Projecting the image of Goa as a unique historic fabric, with the same emphasis as the image of peerless beaches.

2. Adaptively reusing the historic fabric, to promote tourism.

3. Understanding the nature of environmental balance and making development plans, which respond to this notion e.g. preventing further degradation of the beach areas.

4. Understanding the aspirations of the people, and directly involving them as part of the progress of development and economy.

References

1. Mytton, Ann, Conservation in Goa: *A Report to the Calouste Gulbankian Foundation, Lisbon,* 1984

Govt. of Goa, Daman, Diu, *A Report on the Conservation of Buildings and Sites of Historical and Aesthetic Importance,* 1987

2. Alvares, Claude, *Fish, Curry, Rice,* An Ecoforum Publication, 1990

3. Ibid.2

Map of Goa showing Panjim

Observation

Panjim, the capital of Goa, is situated on the banks of the river Mandovi. It is approximately five kilometres from the mouth of the Mandovi. The place of interest for the thesis is Fontainhas, the old district of Panjim. The geographical location of Fontainhas, makes the fabric pivotal in any developmental intervention in Panjim.

The Rationale for the choice

1. A more recent fabric, than the rest of Goa. Panjim, became a capital only about two hundred years

**Fontainhas:
line
drawing**

ago. The town though was an important one both as a port and a commercial centre.

2. Uniqueness of the Indo Portuguese character which is still existing in the residential quarter of Fontainhas.

3. Juxtaposition between the old city centre and the new developments in the process of modernisation in Goa.

Site Section : Fontainhas

TOMAS
RIBIEKO
ROAD

COMMUNITY WELL

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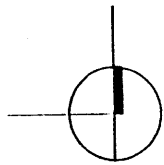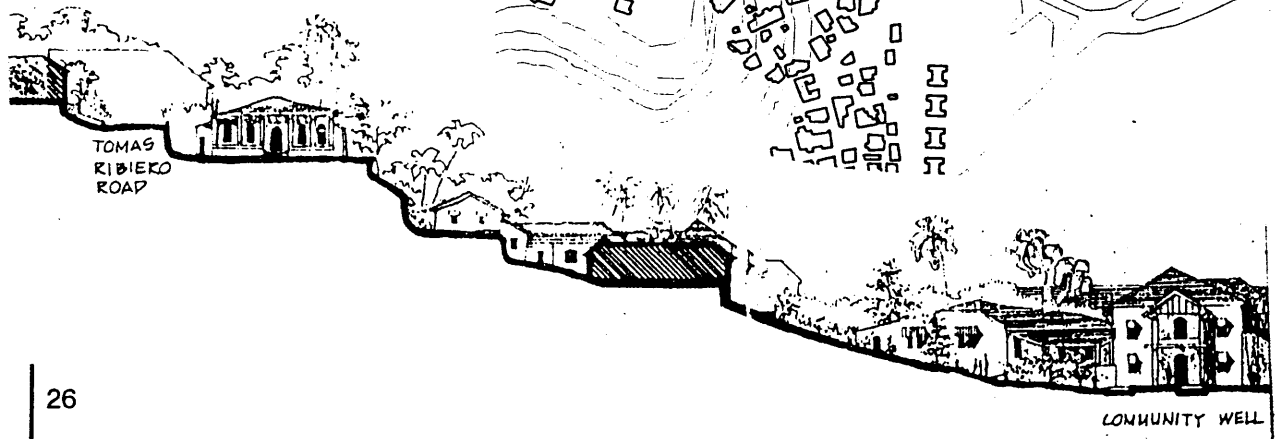
Climate

Like the Konkan region of which it is a part, Goa's climate is hot and humid. The temperature is fairly even throughout the year, and ranges from 22 degrees to 36 degrees Celsius. Lying in the rain shadow of the Sahyadri mountains, the territory receives plentiful rain during the monsoon months from 2800 to 3000 mm, the hilly eastern half may receive as much as 7500 mm. The period following the monsoons is marked by an extreme clarity of atmosphere, when even distant objects can be easily distinguished by the naked eye. The lower temperatures and reduced humidity make it one of the most pleasant seasons of the year.

The period of the monsoons is marked by activity amongst farmers and the post monsoon period is witness to festivities of all kinds, both Christian and Hindu. The reverse is true for the fisher folk: active throughout the year, the rest period is during the monsoons, when fishing is impossible due to the strong waves that lash the shore.

Rainfall Data

Altitude Data

Site Section : Fontainhas

31 6r
JAN
ROAD

RUA DE OUREM

OUREM
CREEK
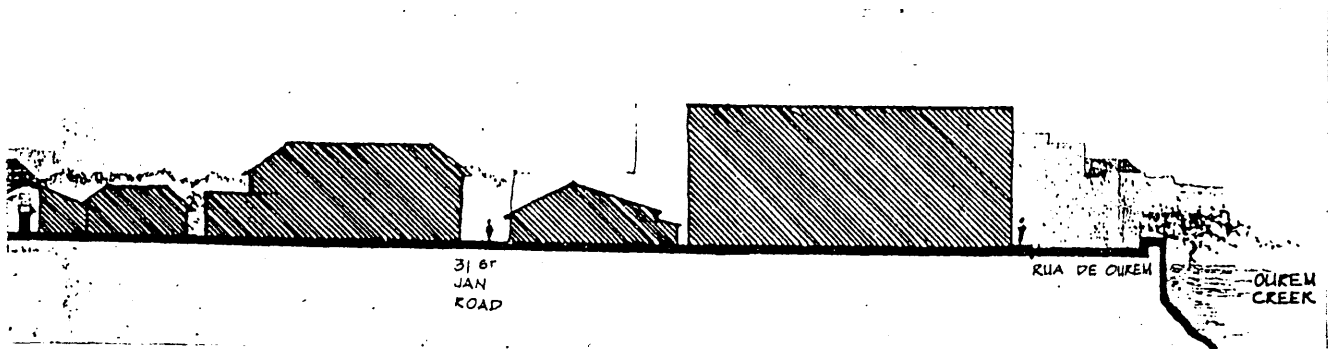
Physical Features

Panjim is surrounded by waters of the
Mandovi river on its western and north-
ern sides. On the East there is a wide
creek, branching off from the Mandovi
into the land. This creek, known as
Fontainhas creek, once defined the
town's eastern limits.The site is domi-
nated centrally by the irregular shaped
50m. high plateau like hill of St. Inez,
from where one can enjoy a magnifi-
cent view of the river and the plains
below. The hill is elongated northwards,
forming a kind of tongue whose tip is
no more than 100m. from the river-
bank. There seems to be a particular
aesthetic appeal to this part of the site,

Fontainhas: Topography
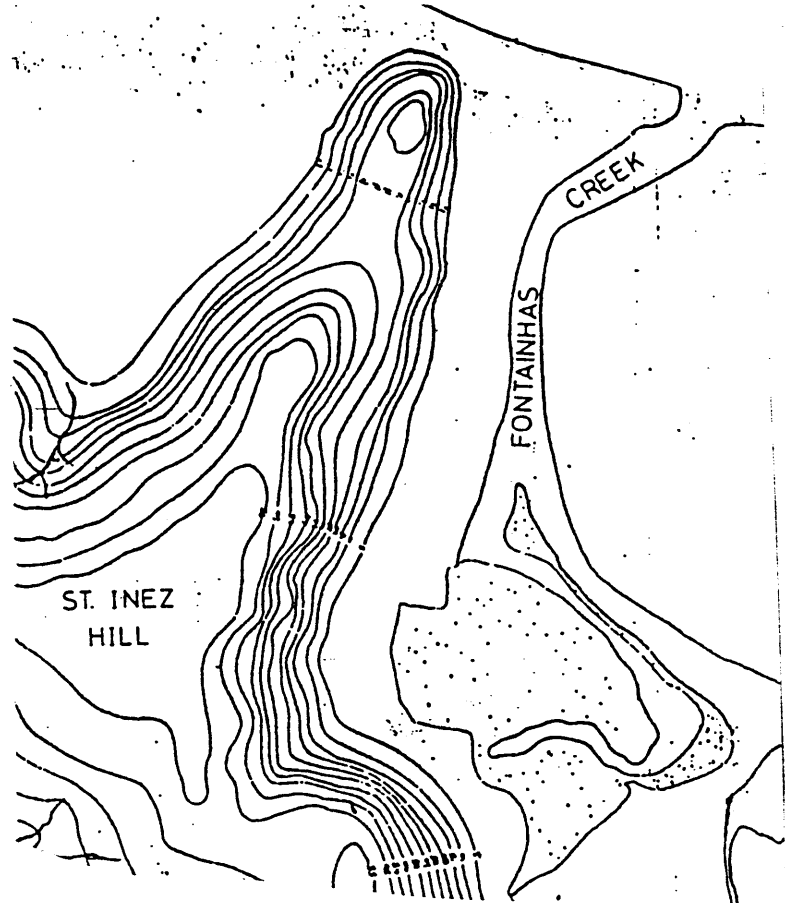
Site Elevation: C

which, viewed from the river and the opposite bank, barely 2km. away, appears as a strip of land floating on the river, with the verdant hillside as a backdrop. This was doubtless the reason for its selection as the site for the earliest 'urban' settlements. The hill acts a catchment area, from where several streams flow downwards, providing a fresh water source throughout the slope, and culminating in fountains at the base of the hill. Lower downstream, that serve for waste and sewage disposal. In the western side, most of the streams are connected to a canal that joins them to the river. Water from the canal was once used to irrigate agricultural land, which has since been gradually taken up for building purposes. On the eastern side the streams flow downwards into Fontainhas, the thin strip of land which is the town's earliest residential settlement, named after the many fountains found at the base of the hill, and then join Fontainhas creek (also known as Ourem creek). Recently, the marsh on the creek has been reclaimed and is a potential development area. The creek, is quite deep and navigation of small boats is possible.

> Insights into the nature of the site and climatic conditions reveal the significant points:
>
> 1. **Heavy Rains** is a feature of this placebetween the months of June and September. All planning measures have to take care of this aspect.
> 2. **Drainage** Patterns due to the flow of the streams that develop during the rains and the indespensible nature of the Fontainhas as a catchment for

Site Elevation: Creekfront

The Creekfront

Site Elevation: Creekfront
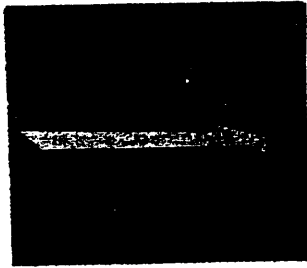
Paths
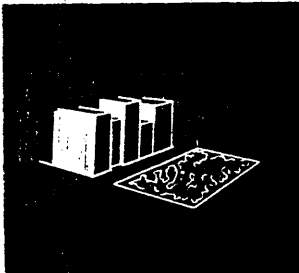
Edges
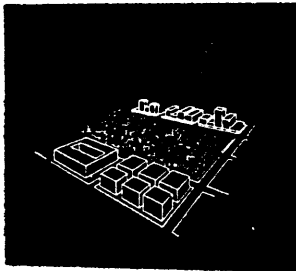
Districts

Fabricscape

To gather further understanding of the fabric, we must deconstruct the fabric into its parts. Here, I have borrowed Kevin Lynch's, methods of understanding a fabric by breaking it down into 'elements'. According to Lynch, this deconstructing of the city is appropriate because of the regular recurrence of these parts in the environmental images perceived by the individual. These individual images overlap to form the public image. Thus, adhering to this method enables us to gain a user's comprehension of the fabric, through his image of the place. This is useful in understanding the dynamics of memory in the process of the consumption of the city fabric..

The fabric can be deconstructed as follows:

1. Paths: are the channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, railroads.
2. Edges: are linear elements not used or considered as paths by the observer. They are the boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development,

Site Elevation : Creekfront

walls

3. Districts: are medium to large sections of the city, conceived of as having two-dimensional extent, which the observer mentally enters "inside of", and which are recognizable as having some common identifying character.

4. Nodes: are points, the strategic spots in a city into which an observer can enter, and which are the intensive foci to and from which he is traveling. Nodes can simply be concentrations, which gain their importance from being the condensation of some use or physical character.

5. Landmarks: are another type of point reference, but in this case the observer does not enter within them, they are external. They are usually simply defined physical objects

Thus, the observation of the fabric is done on 4 levels.
1. The path
2. The Block
3. The Edges
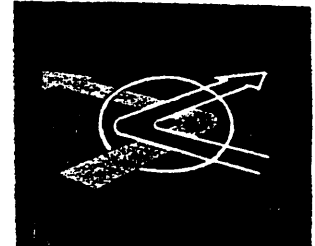
Nodes
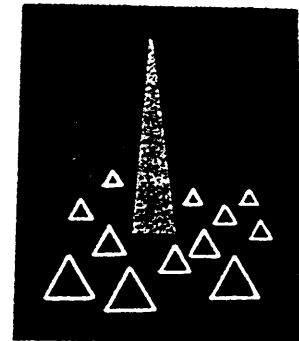
Landmarks

4. The Nodes

5. The Landmarks

Path

31st January Marg

Fontainhas has a hierarchy of street form. There are two main spines running along the fabric. The first one is the 31st January Marg, which was called the Rua de Fontainhas before liberation. This street runs through the length of the fabric. The second spinal street is the Rua de Ourem, facing the creek known as Ourem creek. This street developed later, and has a heavy traffic load. These spines are intersected by secondary streets, each of which leads to a landmark. These secondary streets are markers of the starting and the end of blocks.

Blocks

Rua de Ourem

Blocks are composed of residential fabric mostly. They are defined by the streets. While the blocks in the periphery have seen a change in
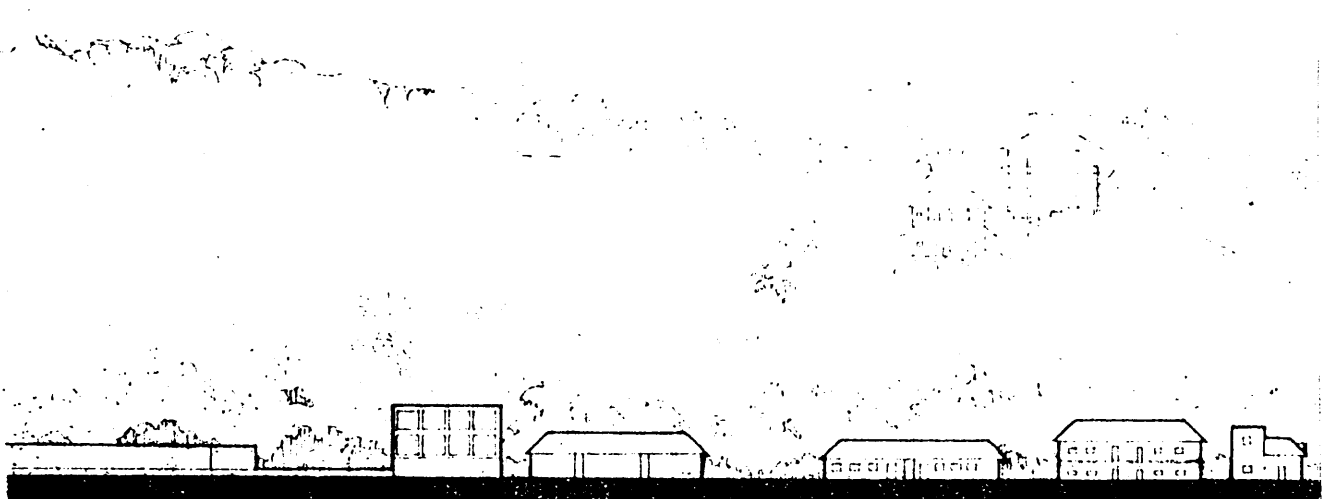
the unit mass and architectural character(especially those on the Rua de Ourem),those away from the periphery have managed to retain their characteristics. Most of the houses are between one and three storeys high. The density of the block is high.

Avenida de Brazil

Edges

This fabric has three distinct edges:
1. the Ourem creek
2. the Avenida de Brazil, or the waterfront
3. the hill of St. Inez

the creek: Ourem creek was much wider and very pleasant at the time of the inception of the town. Although, it has narrowed down considerably, it is still navigational. The creek is a very important environmental necessity in this place. During the months of heavy showers, water from the hill flows down, to the finally to the creek, thus forming an important catchment area. All the buildings along the
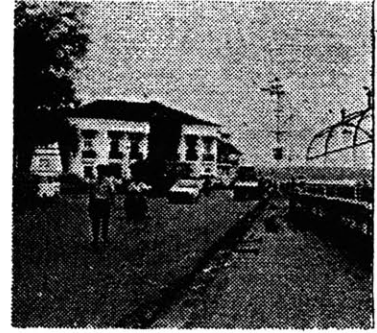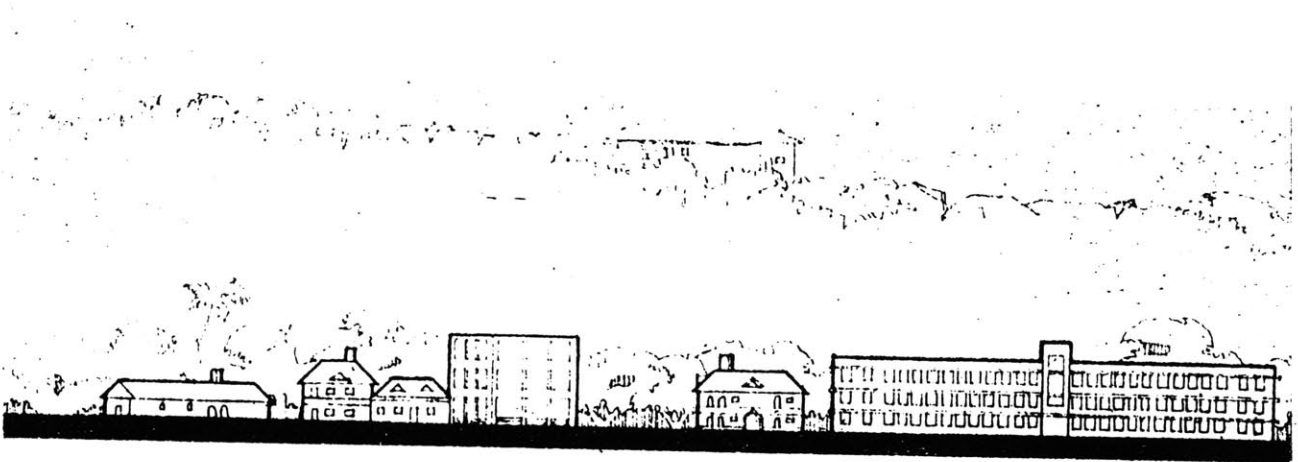
Rua de Ourem have been designed facing the creek. Due to the heavy load of traffic nowadays, all the functions of the buildings have become introverted shielding itself from the heavy traffic.

the Avenida de Brazil: This street which also leads into the Post office Square forms an edge on the northern side of Fontainhas. Most of the houses on this edge have been converted to shop front houses.

the St.Inez hill: this hill divides the city centre of Panjim from Fontainhas,(one of the reasons why Fontainhas still retains its original flavor). It houses residential and institutional buildings such as the Bishop's palace, etc.

Nodes

Nodes, exist in the form of spaces, along the main spines of the fabric. The best example is the square that acts as a receptor, to the street joining the church square in Panjim and Fontainhas. The nodes in this fabric are characterized by heavy traffic and heavy urban vitality with peaks at three or four times a day e.g. starting time for the schools, offices etc.
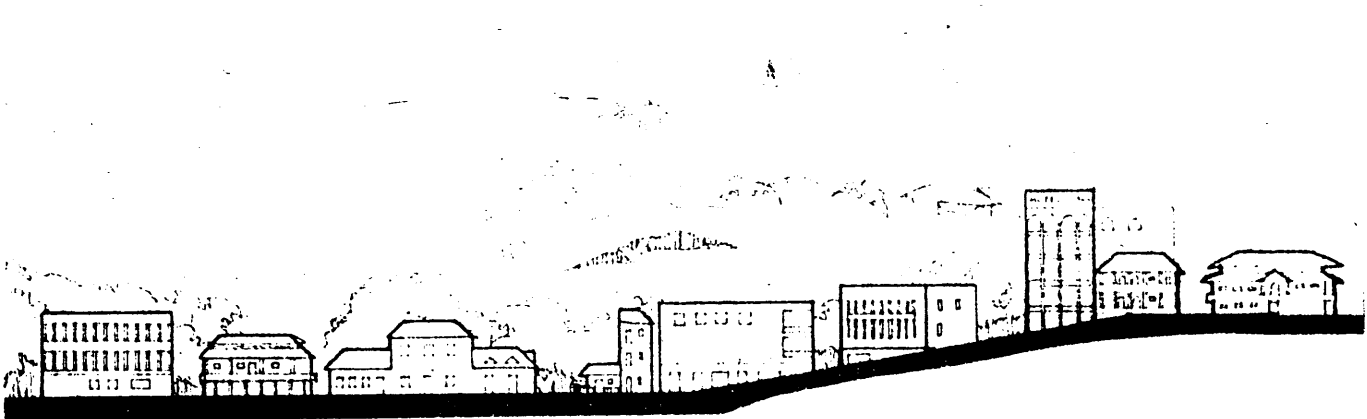
Landmarks

Squares, gardens and staircases, all following the network of sec-
ondary streets form the landmarks in the fabric. But these are in a
state of dilapidation and negligence. Also, illegal development has
played a big role in the defacement of these landmarks.

Thus, we establish a matrix from the
hierarchy of urban forms. This
matrix gives us clues to the inher-
ent order of the fabric.

Let us now identify the most perti-
nent areas in the fabric and under-
stand the problems faced by them.
By pertinent areas I am alluding to
those places which play a pivotal
role in the development of the fab-
ric.

Edge of a Block

Edge

Paths

Edge

Block Edge

Paths

Landmards
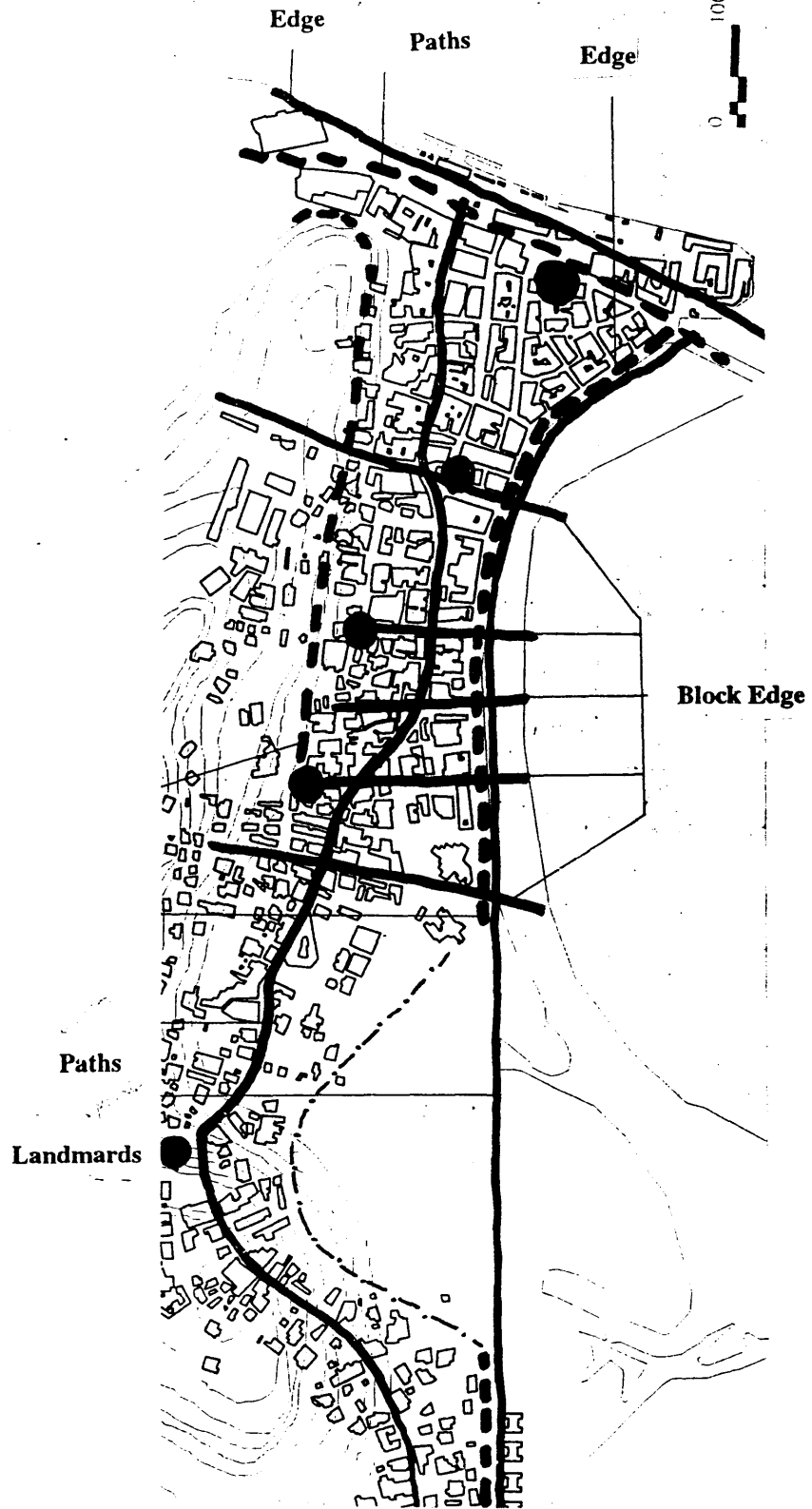
Spines

The two most important spines are the 31st January marg and the Rua de Ourem.

Rua de Ourem is a street along the waterfront, which has a very heavy load of traffic. It has developed incredibly. All the buildings along the Rua de Ourem have a commercial function on the ground floor. Due to the insensitive building activity, Rua de Ourem has lost a number of original Portuguese facades. The width of this street is ten meters. The 31st January Marg, or the Rua de Fontainhas is the main spine of the fabric. The blocks on either side are mostly residential, but there are a few instances of commercial activity too. The scale of this street is very intimate. The street is interspersed with small corners and squares and seatings which lend a special flavour to it. Although the width of this street is ten metres, numerous informal activities make the usable width lesser.

Rua de Ourem

31 January Marg

Rua de Ourem
1. Insensitive building activity, lost Portuguese facades, which were sort of a sugnature of the fabric.
2. Heavy Traffic
3. Idea of development without respecting the nature of urban culture

31st January Marg
1. Heavy Traffic especailly at school peak hours.
2. Dilapidating bnuildings in nodes, resulting in no community interaction: deterioration of spaces.
3. Potential to become a picturesque tourist walk

Post Office Square

St.Sebastian Church Square

House Square

Square linking city to Fontainhas

Squares

There are five important squares.
They are:

1. Post Office Square: This square on the north of the fabric lies on the Avenida de Brazil. Most of the buildings on this square still maintain the Indo-Portuguese character.

2. St. Sebastian church square: This is a very quiet square which brims with activity on Sundays and festival days.

3. The 'house' square: This is a more busy square, although it is present in the middle of the residential area. It has a residential building forming the focus, of he square, also being used as a primary school.

4. The Fountain Square: is accredited for the name of the district, is an important religious focus . The square is in a very poor condition.

5. Square linking main city: This is a very busy square, mostly commercial, and links Fontainhas to the city, through the hill.

There are a variety of small scale communal spaces too e.g. corners of streets, small public verandahs with seating etc.

Quarters

The fabric of Fontainhas seems to be very organic. But on close inspection one can unearth the existence of quarters. These are more definite towards the north of the fabric but lose coherence as we proceed towards the south.

The usage is mixed but the largest function is residential.

The development of the quarter can be explained with an understanding of the development of the house.

1. Houses start developing on the periphery of the quarter.
2. The second increment is more coherent and logical, depending upon the family size.
3. This increment is more diachronic and therefore appearing to be more organic.

Post Office

House

House

House

Church

San Sbestian'

Staircase

Edge of a Block

Fountain

Reading
Thus, the reading of blocks in the fabric assists in developing notions for the strategy in the vacant areas. It is also shows the introverted nature of the residential (developing towards a centre, which is a community space)
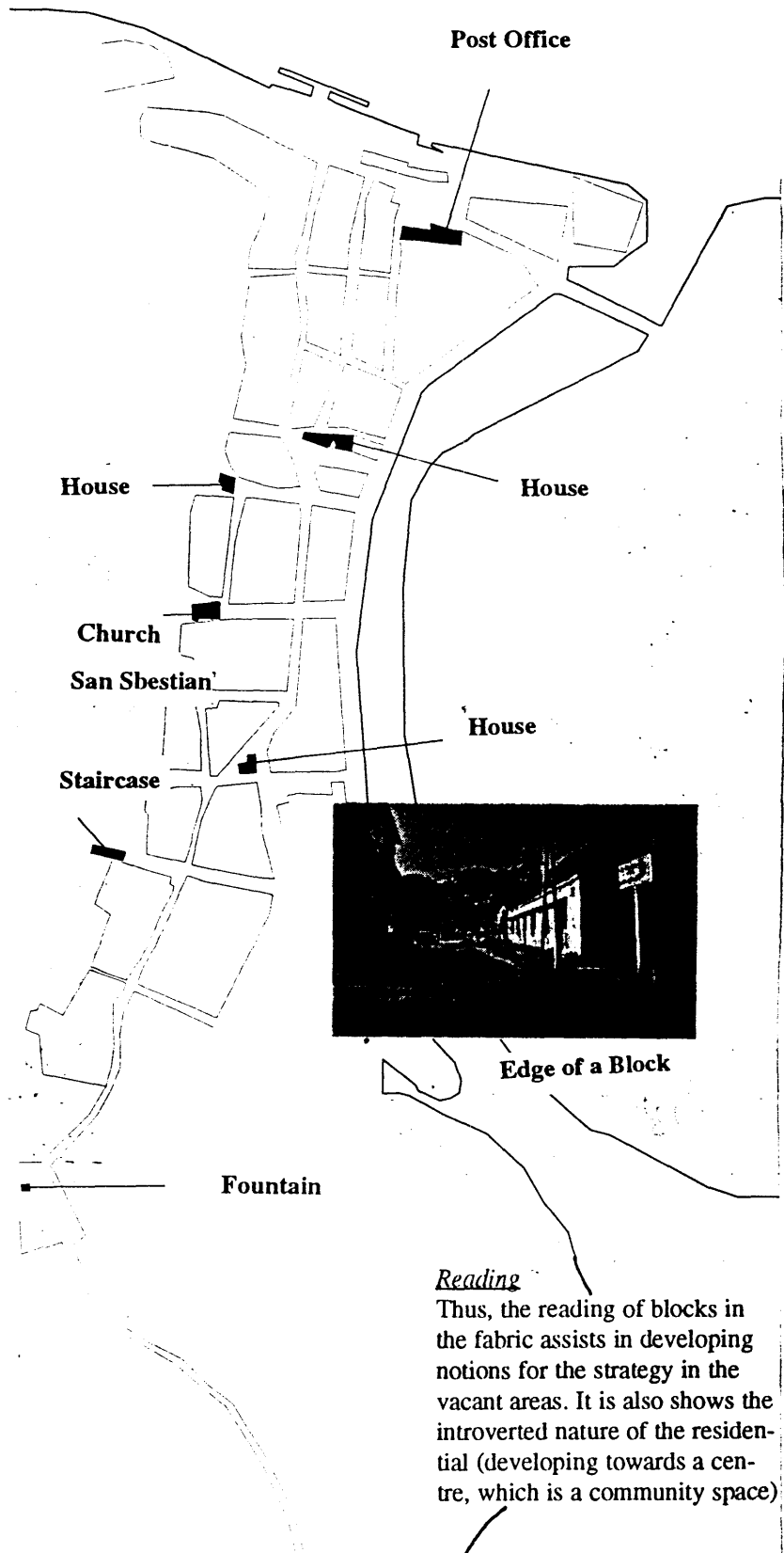
Staircase

Church of San Sebastian
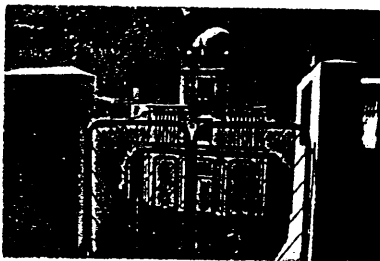
Fountain

Artifacts (Landmarks)

In Fontainhas, urban artifacts include churches, squares, gardens and stairways.

In the past all of them were closely linked by the system of streets, and had high usage during the festival times. Nowadays, although these are still used during festivals, there is a general apathy towards the general upkeep of these places, both from the government and the public.

These artifacts serve as visual references in the image of this fabric.

Notes

Although, some of them are well restored, others have undergone the ravages of overuse and neglect. These artifacts have potential as points as points to which linkages can be developed.

There is no text material missing here.
Pages have been incorrectly numbered.

(Page 41)

Mixed

Religious

Commercial

Educational

Administrative

Residential

Vacant
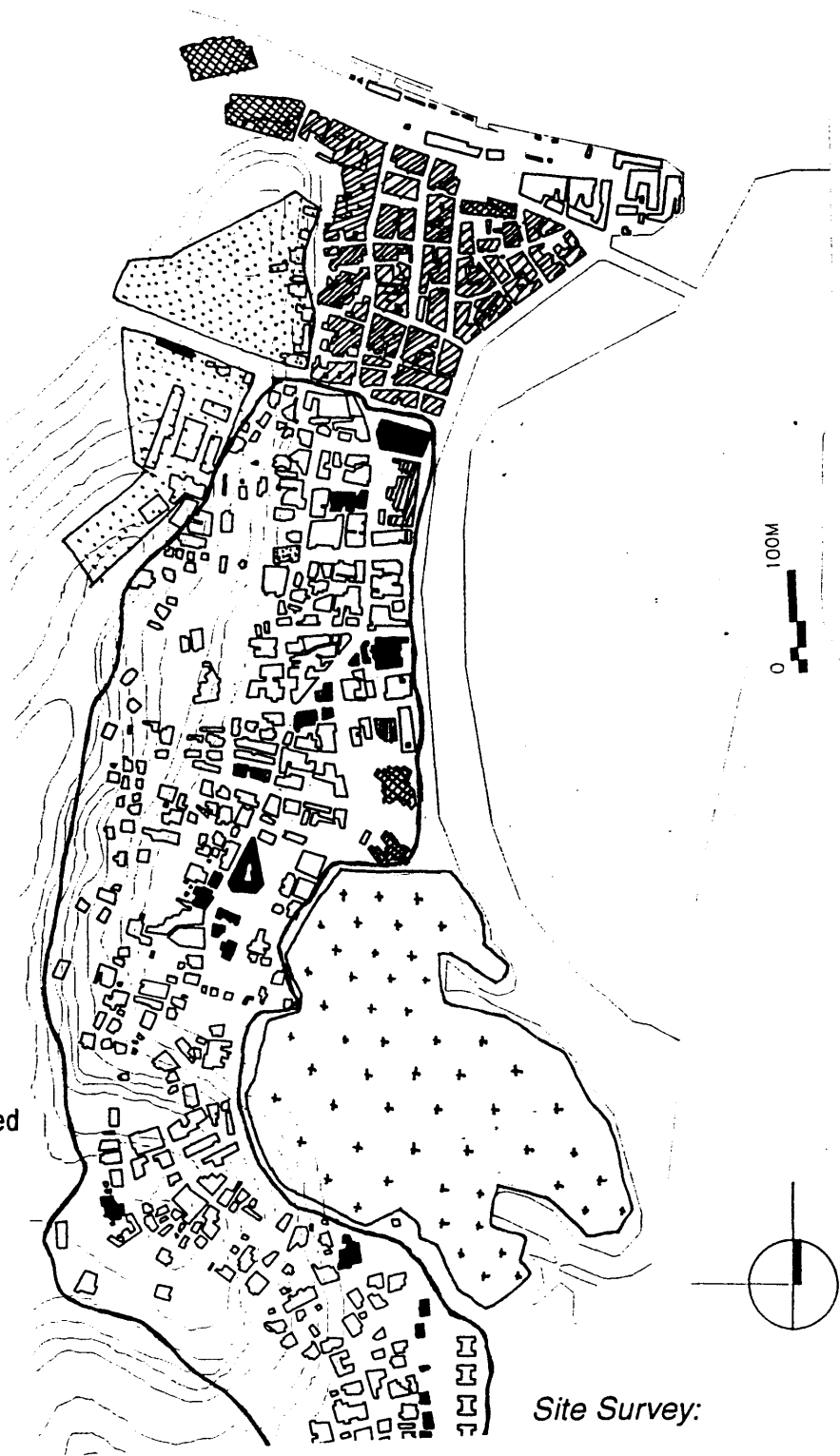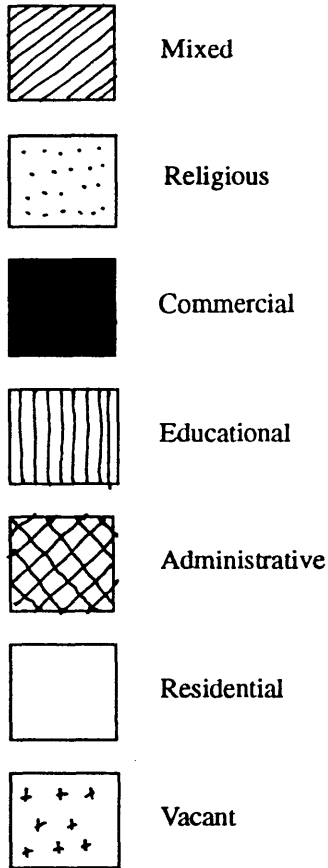
The land use patterns show some interesting points. Mixed land development thrives in the north of the fabric, where a number of houses have been converted to tourism catering activities - restaurants, lodges etc. Basically because of the proximity to Avenida de Brazil, a major commercial artery.

Site Survey:

Existing Land Use

▨ (dotted with +)	1.5
□ (blank)	1.0
▨ (hatched)	1.2
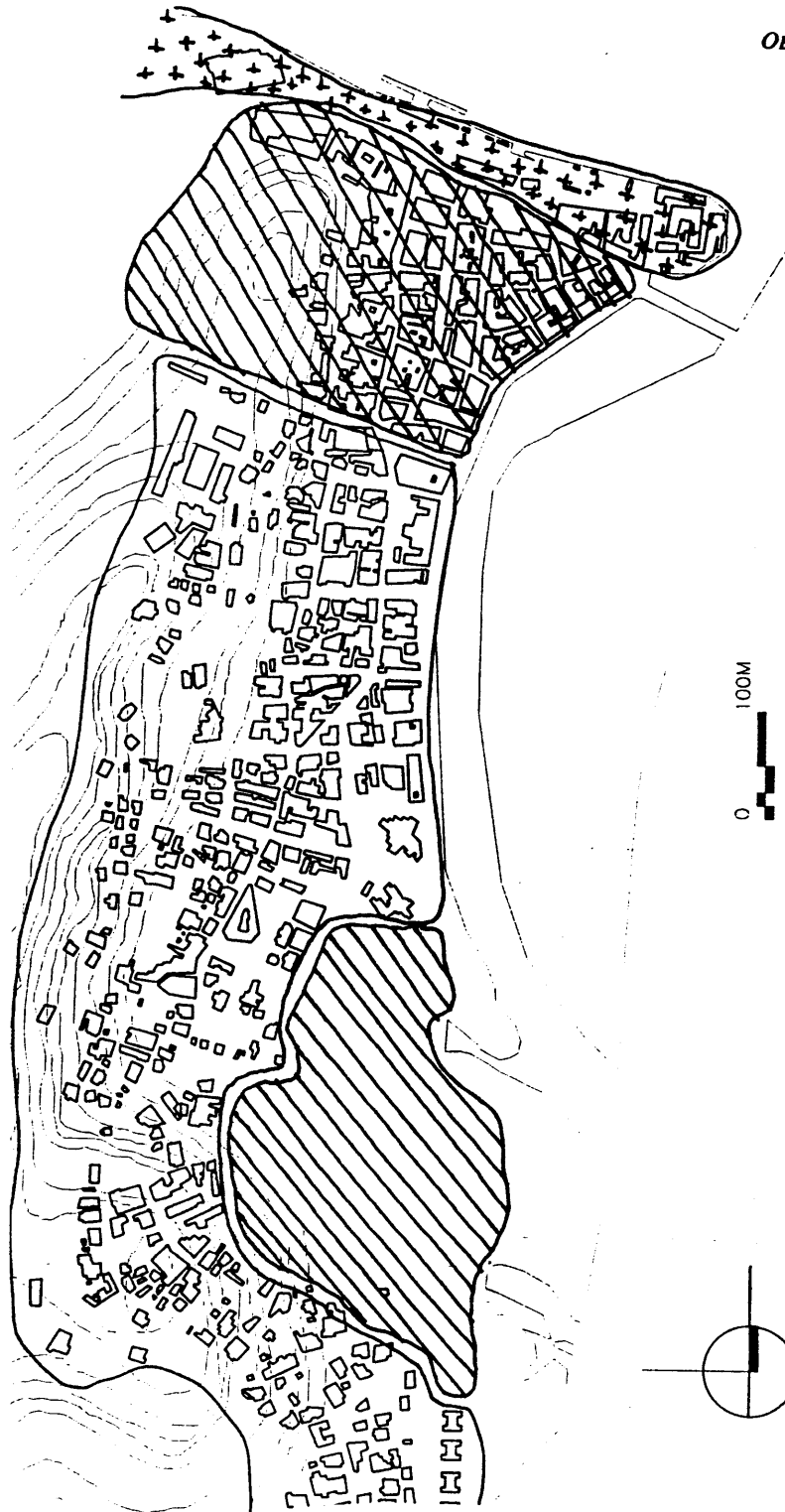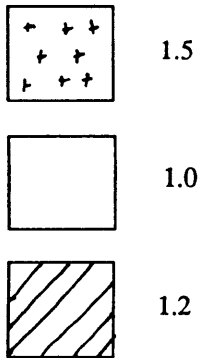
Since the plots are a maximum size of 300 sq.m. and the maximum permissible coverage is 60%, it is advantageous for the owners to reorganise and adapt within the old shell especially since the existing houses are much overdeveloped than the permissible regulations. Although, houses towards the south of the fabric have a greater possibility of expansion, because of their lesser developed nature.

Site Survey:

F.A.R.

Fast Moving

Slow Moving
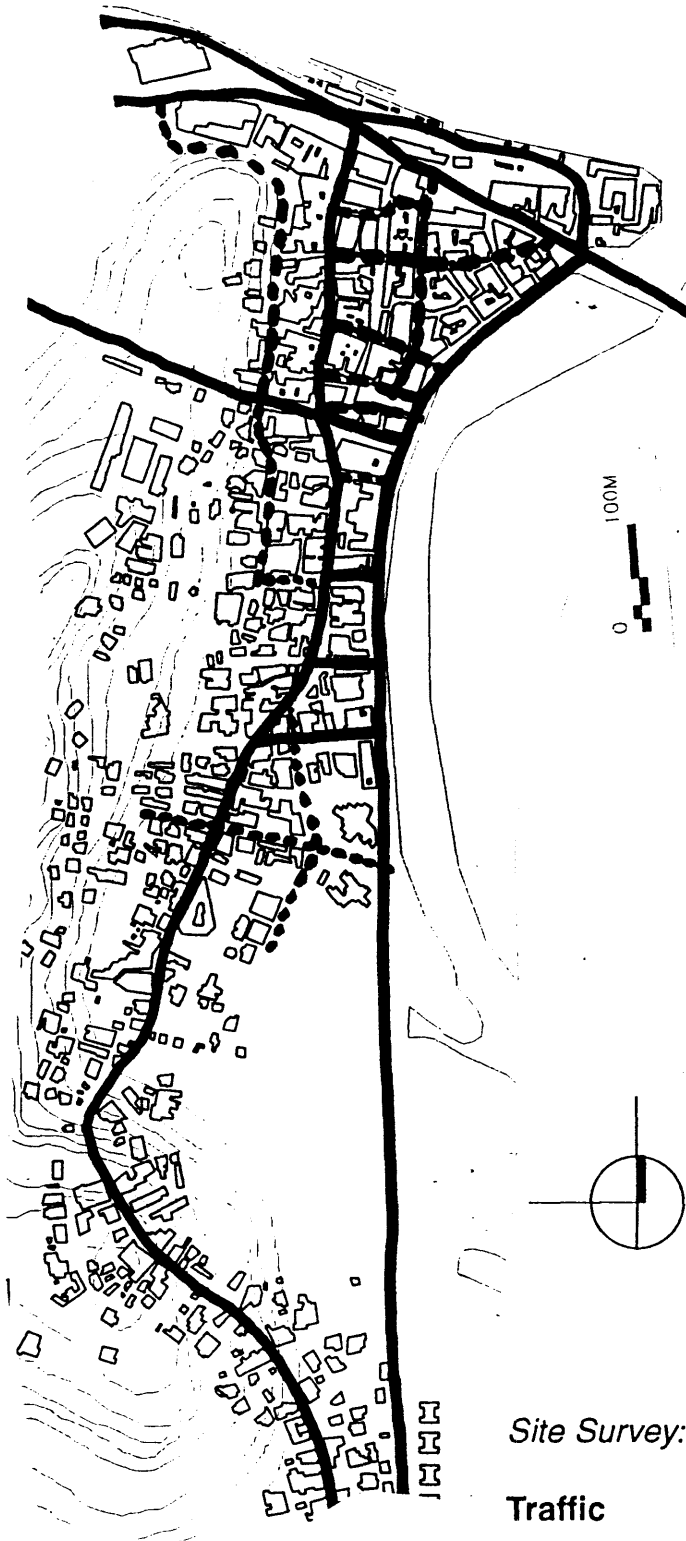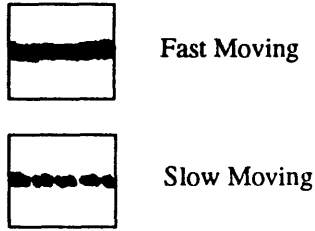
The Traffic patterns in the survey shows the heavy traffic along the two spines of 31st January marg and the Rua de Ourem.

Another important aspect is the problem of servicing the area of Fontainhas at the base of the St. Inez hill because of the lack of a proper road.

Site Survey:

Traffic
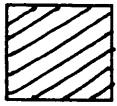
Buildings to be
preserved

Buildings having
sources of funding for
preservation
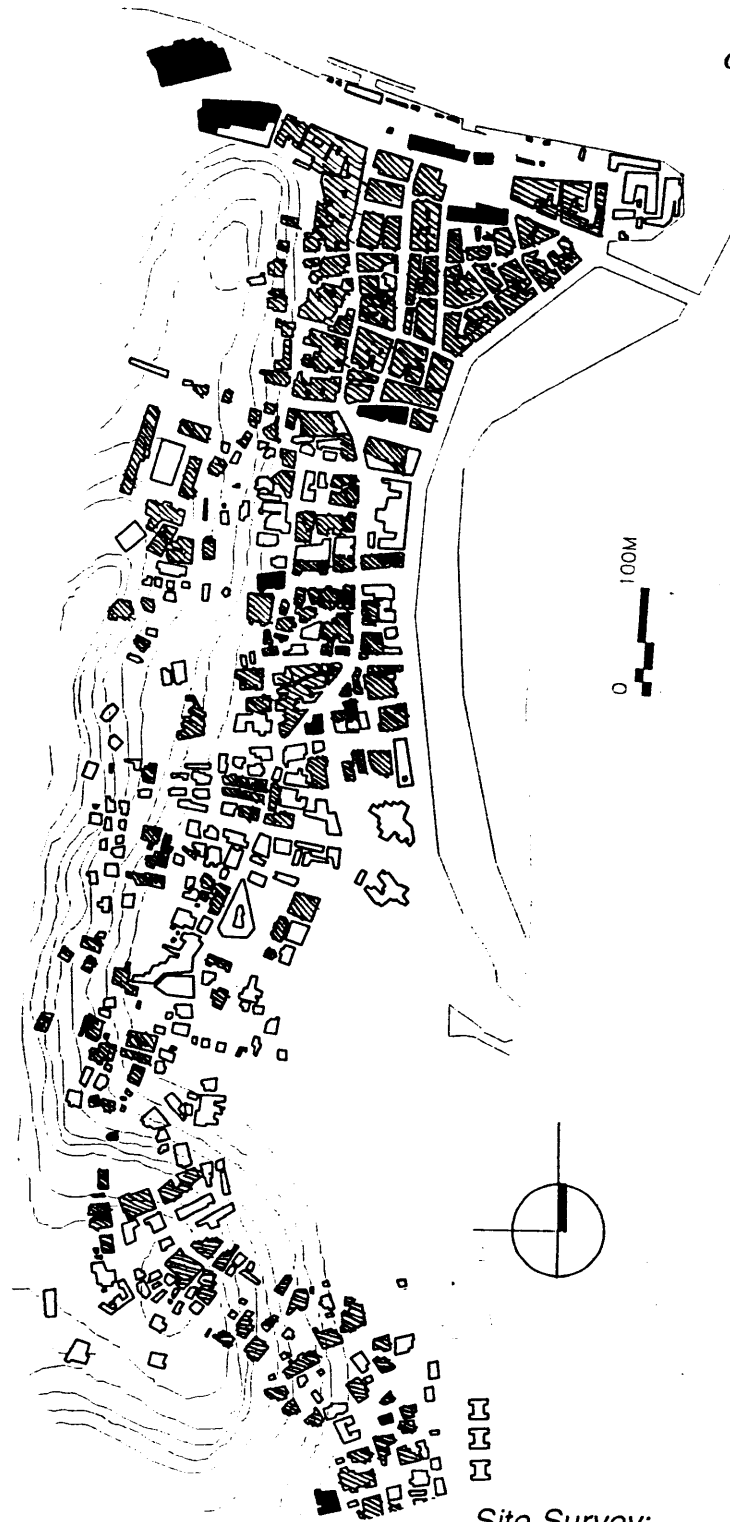
The Survey shows the buildings
which have been classified as build-
ings to be preserved.

While some have funding from the
Government, relifious organisations,
others have no means to generate
finances for restoration.

Site Survey:

Building Preservation

45
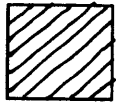
Parking Zones
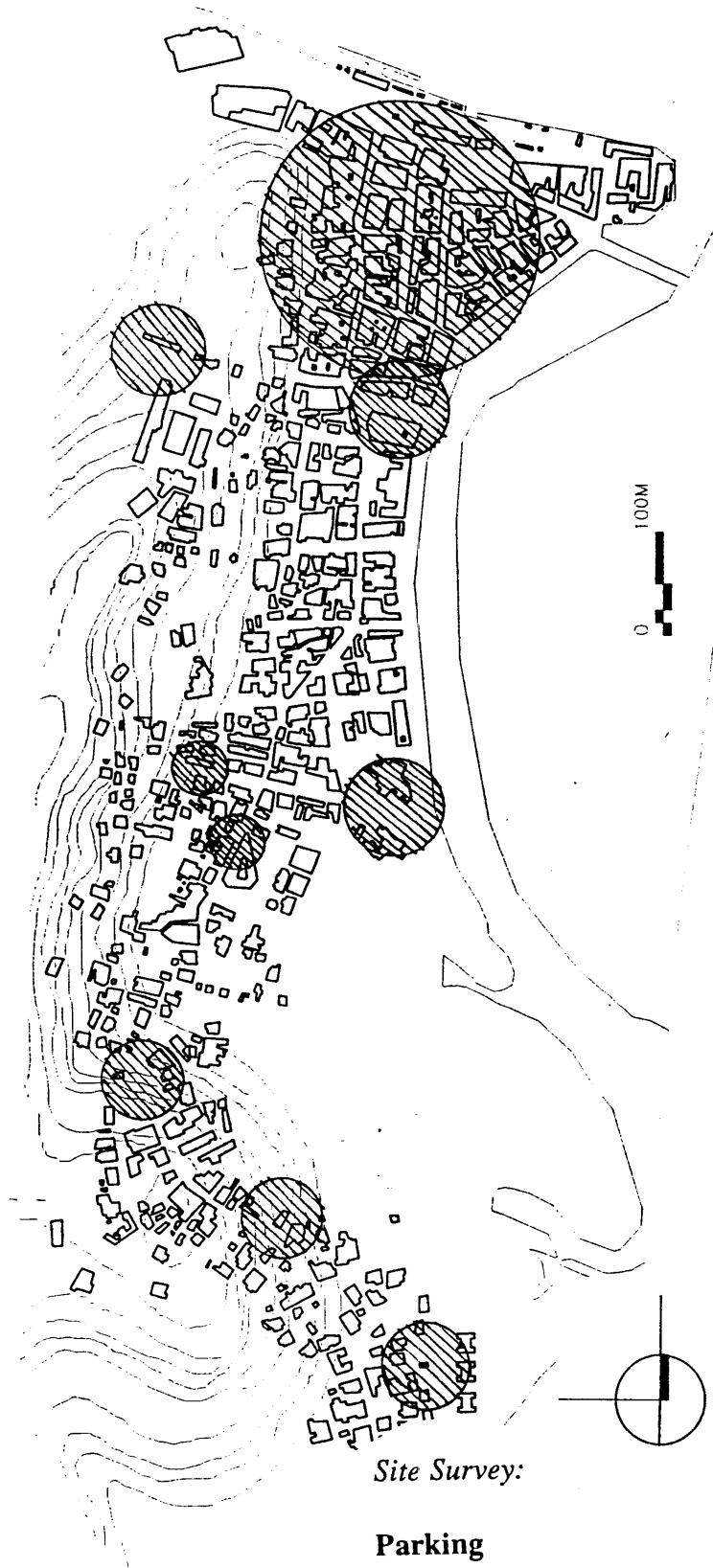
The Survey shows the deficiency in parking area and the places of concentration of parking in areas of mixed land use.

Site Survey:

Parking

Government
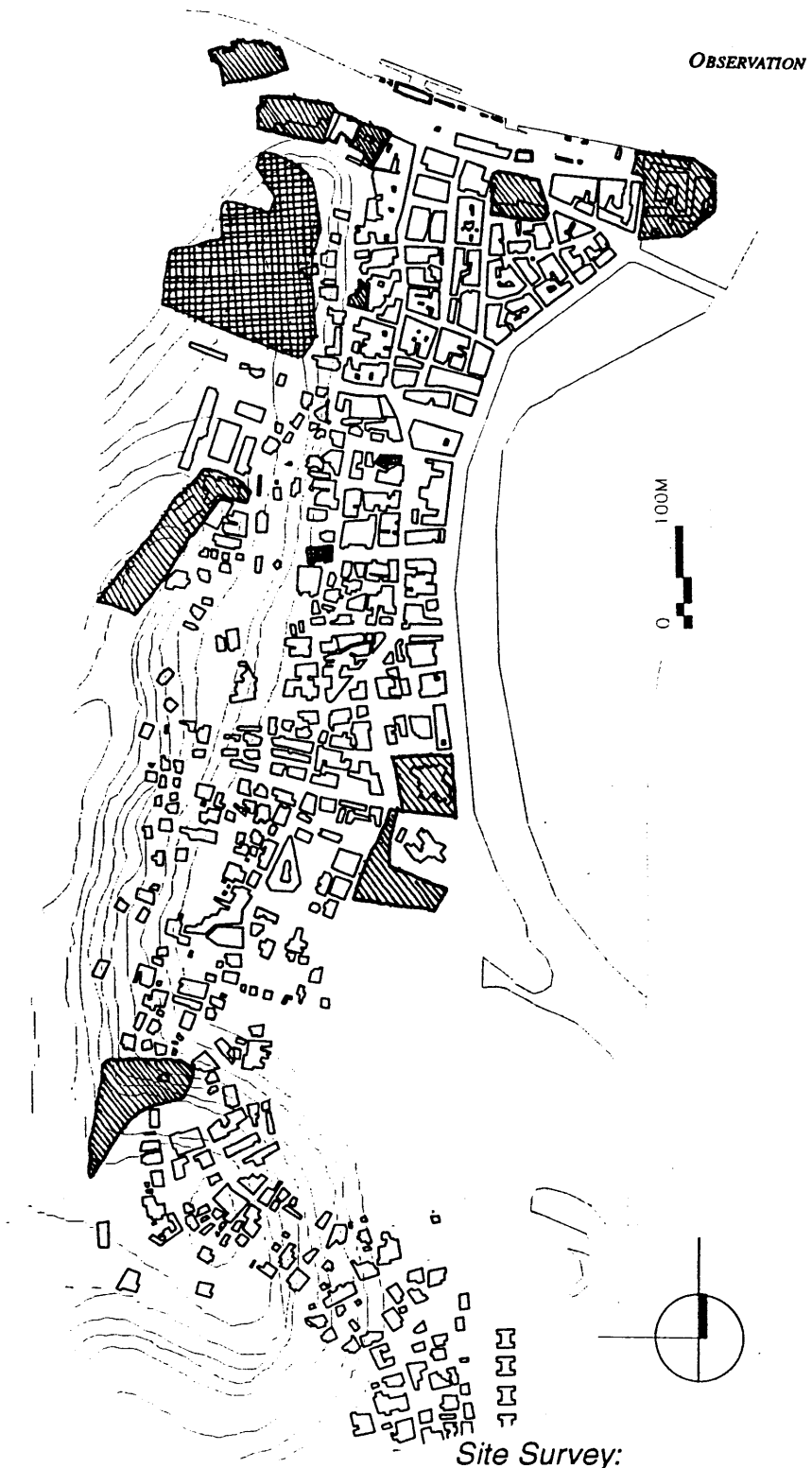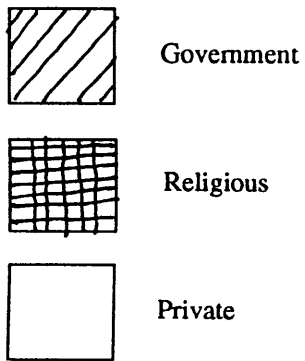
Religious

Private

Most of the buildings in Fontainhas are privately owned, only a few belong to the Government or to the religious organisations. Even some institutions such as schools are privately owned.

100M

0

Site Survey:

Ownership

47

This drawing shows the Rua de Fontainhas in relation with the fountain square, which was the catchment area for the seasonal springs from the hill of St.Inez. Also shown, are the two important geographical edges which play a role in the development of the fabric.

**Typological
Investigations of the Site**

48
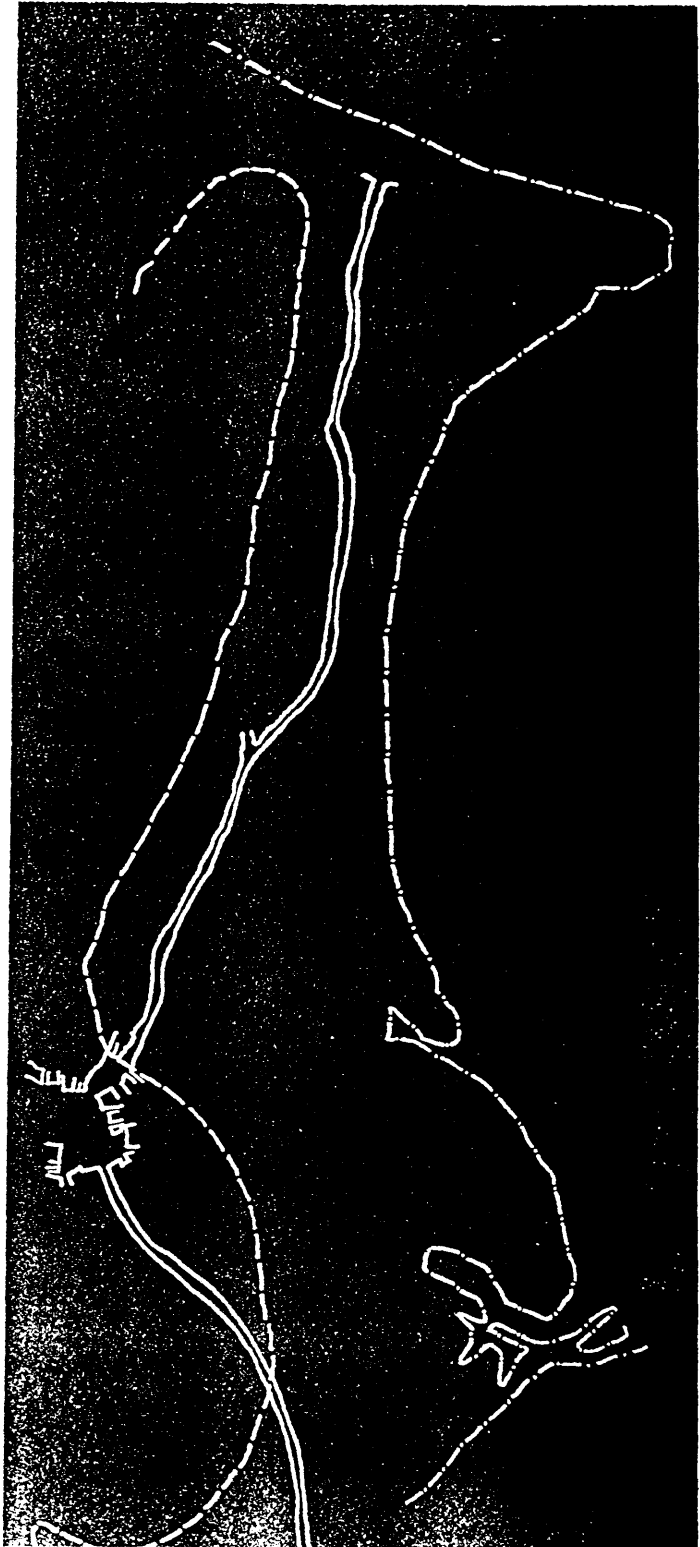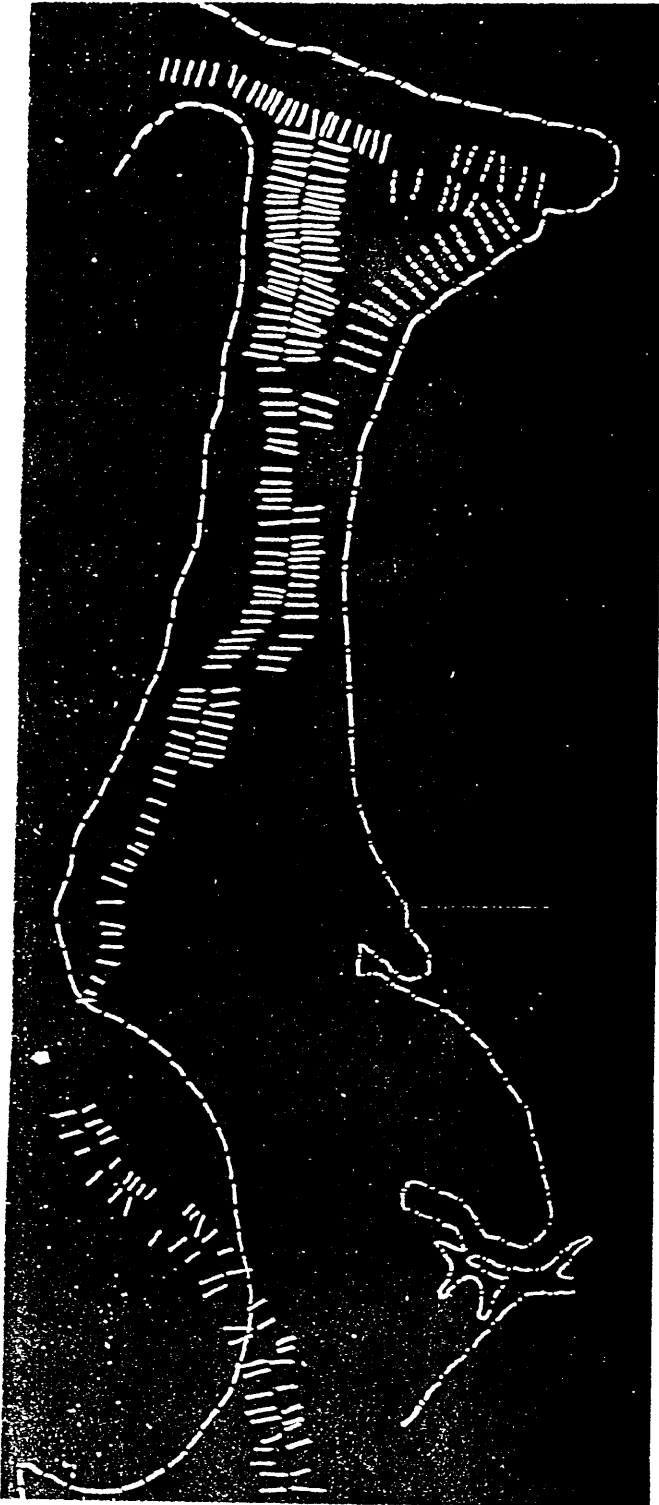
This drawing shows the growth of the matrix, along the Rua de Fontainhas, later known as the 31st January Marg. The density of the matrix lines in the north shows the place where settlements first began; shows the existence of the street and of the adherence to the edge of the waterfront and the hill.

**Typological
Investigations of the Site**

The development of blocks showing the matrix, implant, connection, and reconstruction. This assists us in understanding the nature of the growth within a block and its relationship with the spines of Rua de Fontainhas and Rua de Ourem.

Typological Investigations of the Site

50
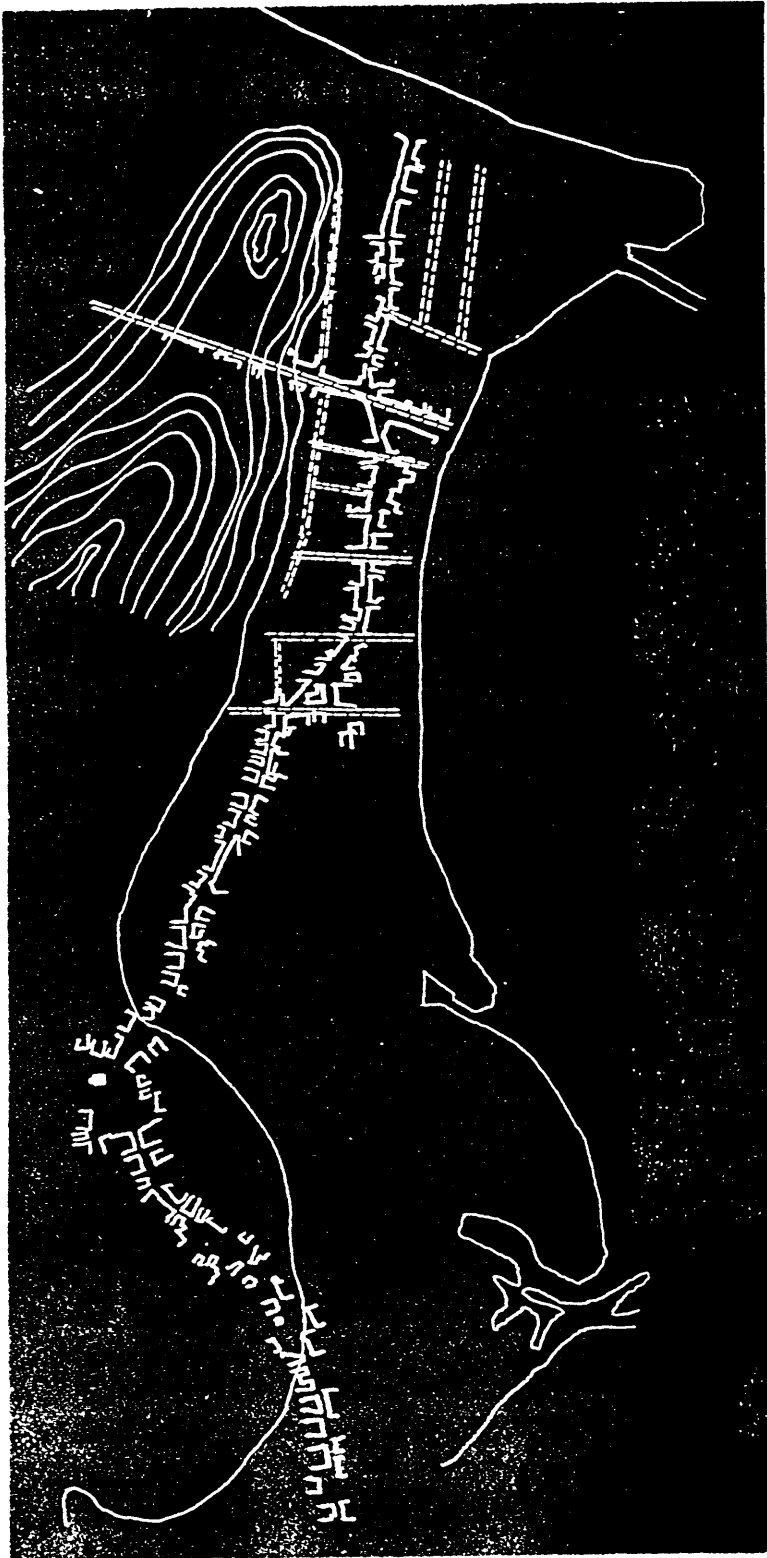
The path vectors establish and divide the blocks. The reasons can be many. The presence of a dip, in the hill allows the connection of the fabric with the church square in the city. Different blocks can also occur due to the need to practice one's diurnal relifious rituals in a space respected one's immediate neighbours, and lastly for establishing efficient services to the blocks. The main reason, though is the latter, since this district was entirely made for the Christian population (mainly scholars, soldiers).

What is interesting to note is the, quite regular, divisions, happening along the spine; until the school house square.

The division of the blocks as they exist now, with squares housing landmarks as markers denoting the edge of the block.

**Typological
Investigations of the Site**
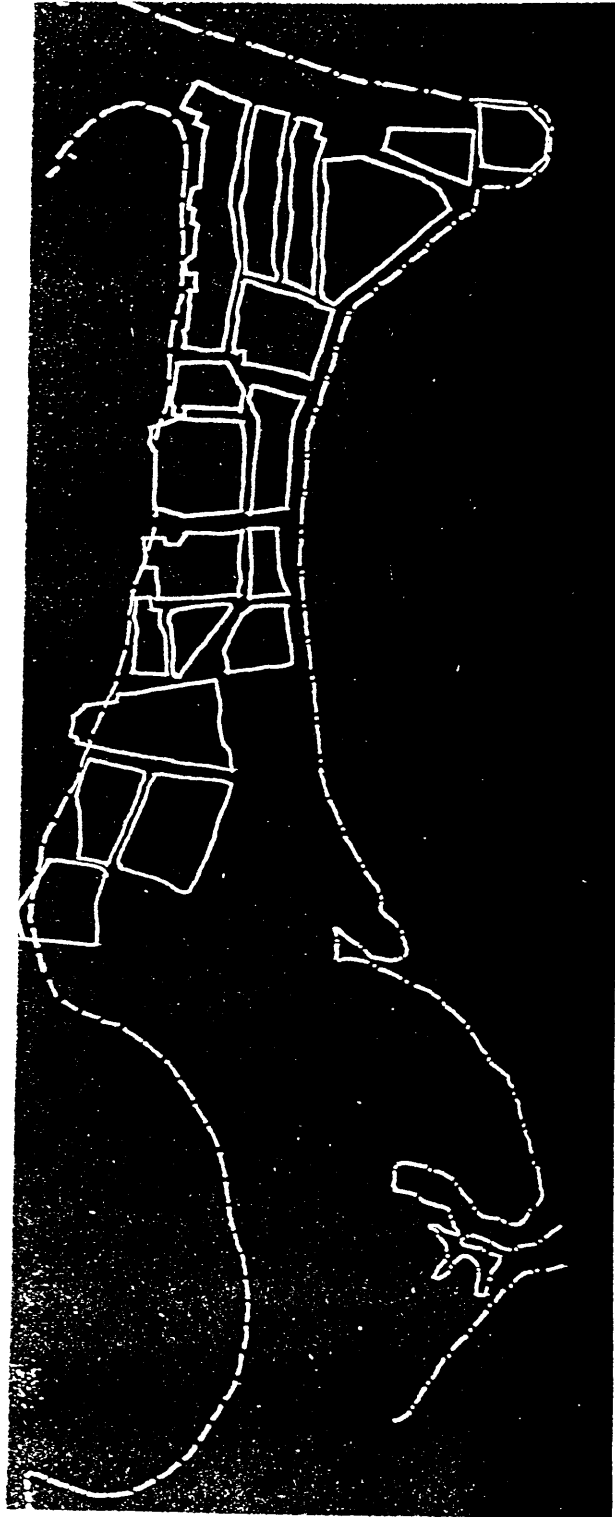
The division of the blocks as they exist now, with squares having landmarks as markers denoting the edge of the block.

**Typological
Investigations of the Site**

House

In a region like Goa, where history and cross cultural currents are so
complex, built form has developed a startling multiplicity of styles and
their variations that he only invariant factors, which have affected
this development are:
• response to climate
• scale.
Along the investigation of the above factors, an insight is sought into
the patterns of growth of the house with the methods of transforma-
tion and typology.
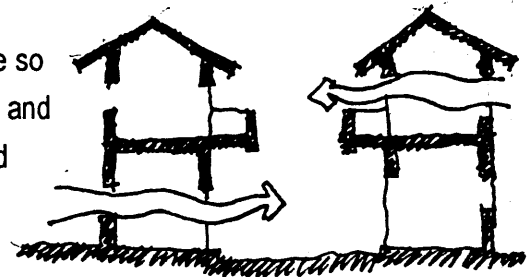
Courtyard: Ventilation

1. Response to climate

The climate of Goa is hot and humid, with heavy monsoon rains, and
minimal year round temperature variations. Through the centuries,
certain climatic responses have been evolved, involving the construc-
tion materials most easily available in this region : laterite stone for
masonry, lime out of sea shells for plaster, termite resistant timber for
the roof and baked clay for roof tiles.
The basic patterns that have evolved as a response to climate are
the courtyard, the sloping tile roof, the verandah, the porch like 'bal-
cao'.

The courtyard is an element that has been used here since times
immemorial in buildings of every type. The hot humid climate requires
plenty of ventilation, and enclosed spaces were therefore built quite
narrow so as to take maximum advantage of the cool breeze. It was
an obvious move to build this narrow building around an open space,
which allowed greater sense of enclosure and could be used for pri-
vate activities. Through the years innumerable variations of this pat-
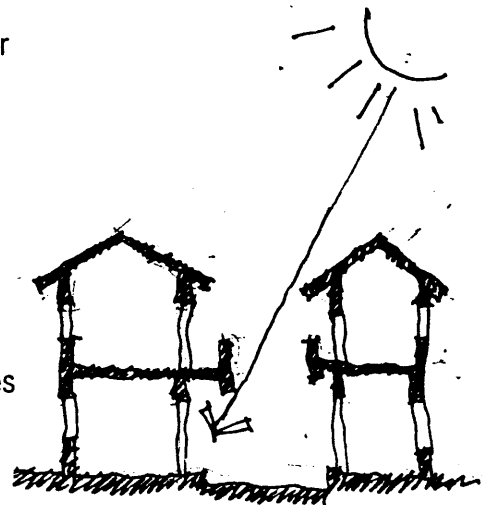

Courtyard: Sunlight
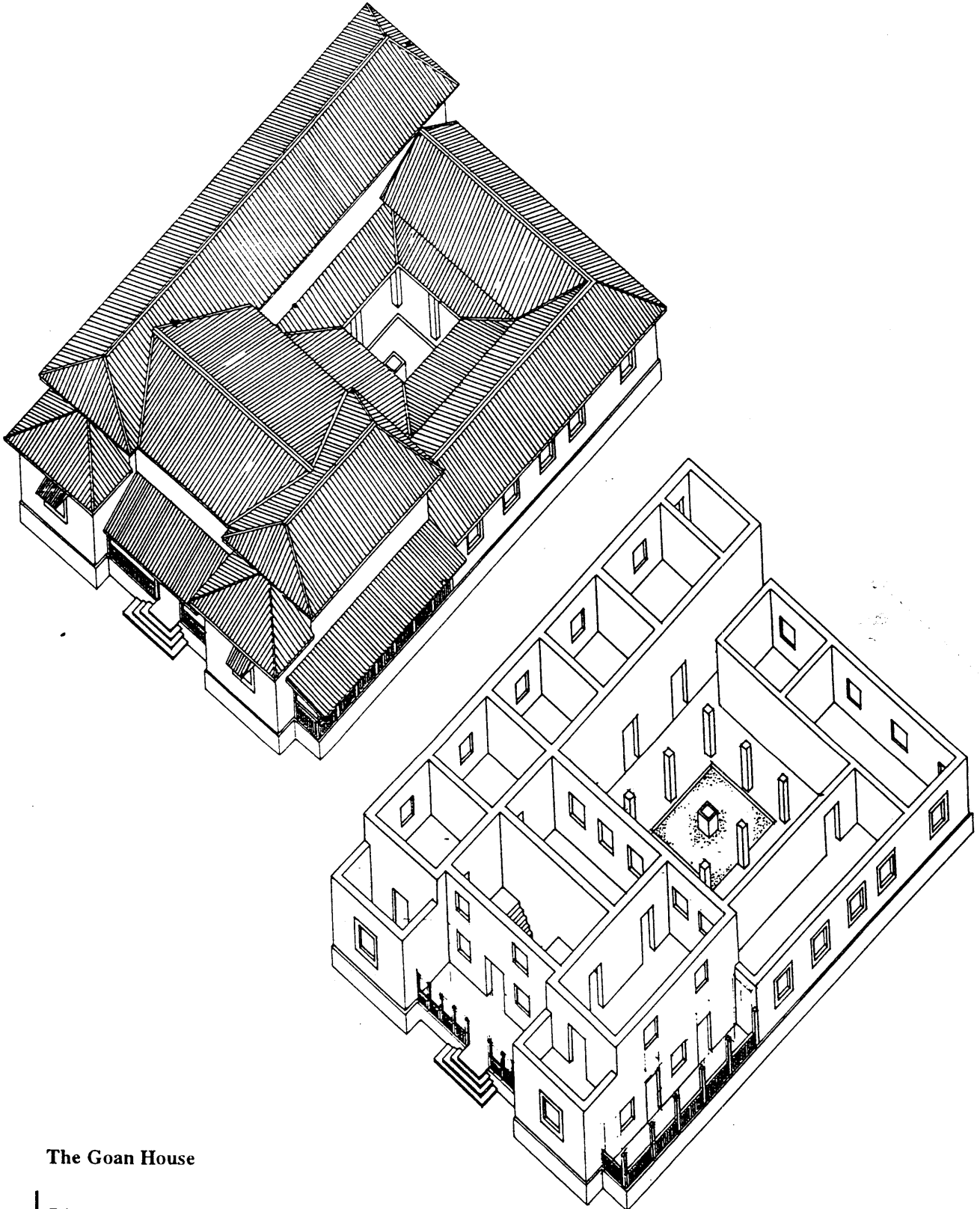
The Goan House

tern have evolved, both in public as well as residential buildings. In the case of the latter the nature of the courtyard varies according to the socio economic religious background of the inhabitants.

In large Hindu mansions, generally belonging to Brahmin families, the courtyard is a large rectangular space surrounded on all sides by a side passage, covered directly by a sloping roof, supported on thick masonry walls. This passage is used for circulation as well for house-hold activities. The court yard is paved and features the sacred 'tulsi' plant at the centre. Smaller Hindu houses are also organised around a courtyard, but smaller and the surrounding passage is narrower.
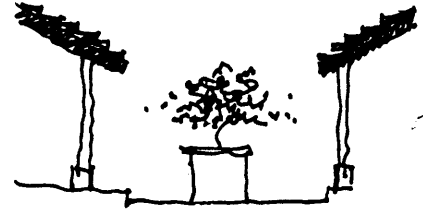
Hindu Courtyard

Christian houses are, by and large more exterior-oriented. The court-yard, however, is present in almost every large mansion, in which some ventilation would be required to keep the spacious interior rooms comfortable. Wherever used in Christian dwellings, the court-yard never assumes the ritualistic significance of the Hindu houses. It was extremely small lacked a surrounding passage, and was seldom used, except as a garden.

The sloping roof of 'Mangalore' tiles is a pattern which is truly distinc-tive of the Goan house. The sloping roof is an obvious response to rainy climate. The Goan sloping roof may be distinguished by its slope, the treatment of the eaves and the roof covering. The plan is orthogonal on account of the timber construction techniques, and characterised by the king post truss. Due to the heavy rains, the slope of the roof is about 40 degrees or more from the horizontal. Older roofs, of which a very few examples remain, rose very steep above the normal slope at some points, forming a series of crowns.

Houses along the street in Altinho

The eaves are usually 40 - 60cms. wide - enough to protect the
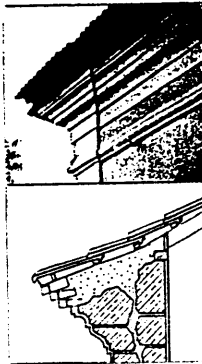
Eaves

walls. During the rainy season, temporary weather sheds of corrugated iron are used. The eaves are constructed by corbelling out two courses of stones to form a kind of moulded cornice, topped by rows of projecting half round country tiles upto a prescribed width, the whole thing, then, being plastered over.

The roof covering was initially of 2-3 layers of country tiles, which are still used in these parts, but were later replaced by Mangalore tiles. The tile covering is supported on timber batens and the usual timberwork.

The verandah is an element of Mediterranean origin which has been successfully adapted to the Goan climate. In this context, it means a semi open space attached to the building which is used for outdoor living. This is very necessary in a climate which in the absence of adequate ventilation, makes interior spacves very hot and uncomfortable. The use of verandahs in Goa dates from the XVIII century, when the converted Christians striving for a new image and lifestyle, began to 'exteriorise' their houses by opening out large window and door openings to the outside. Gradually, verandahs with lean to roofs were added sdto the front facades. Climatically, it served the same purpose as the Hindu courtyard, but it was more street oriented for it provided a space where the residents could enjoy the evening breeze as well as participate in street life.

The 'balcao' (The balcao is a porch which has developed from the Portuguese 'alpendre' a semi open raised entrance porch) is a unique Goan element that can be described as a semi open space which protrudes out from the front facade, directly off the main entrance of a house. The balcao, is a transition space between the house and the street, as well a space to receive visitors, who would not be desired in the interior rooms. It too responds admirably to the climate. This space is covered by the sloping roof and houses inbuilt seats for socializing.
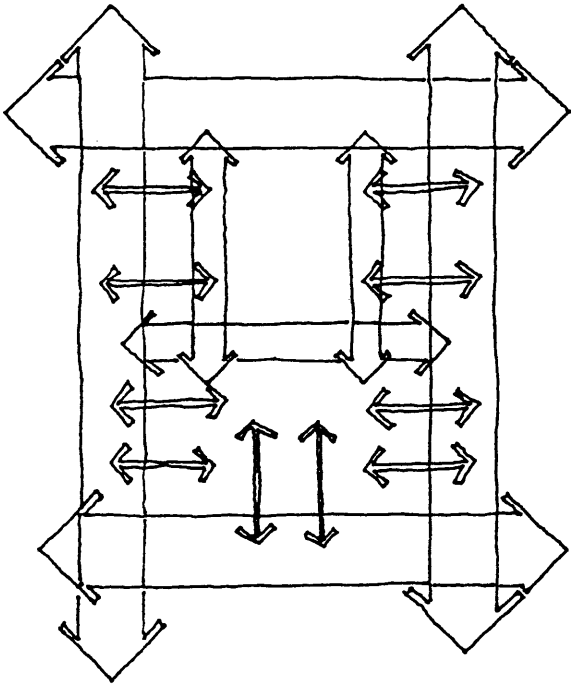

Balcao
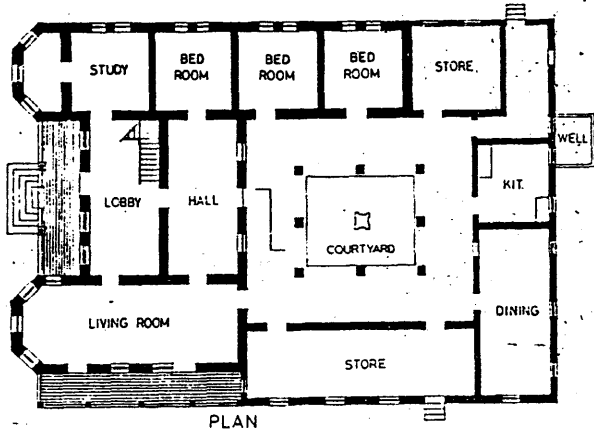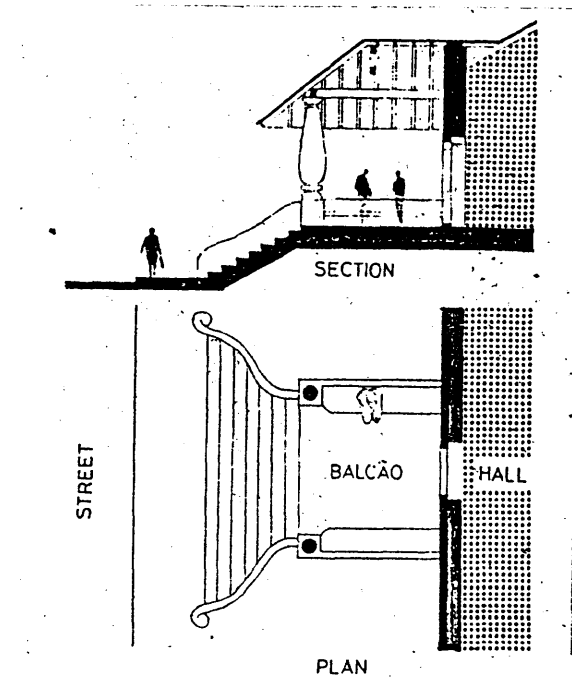
Plan of a typical Goan house
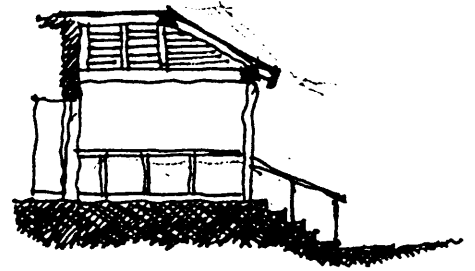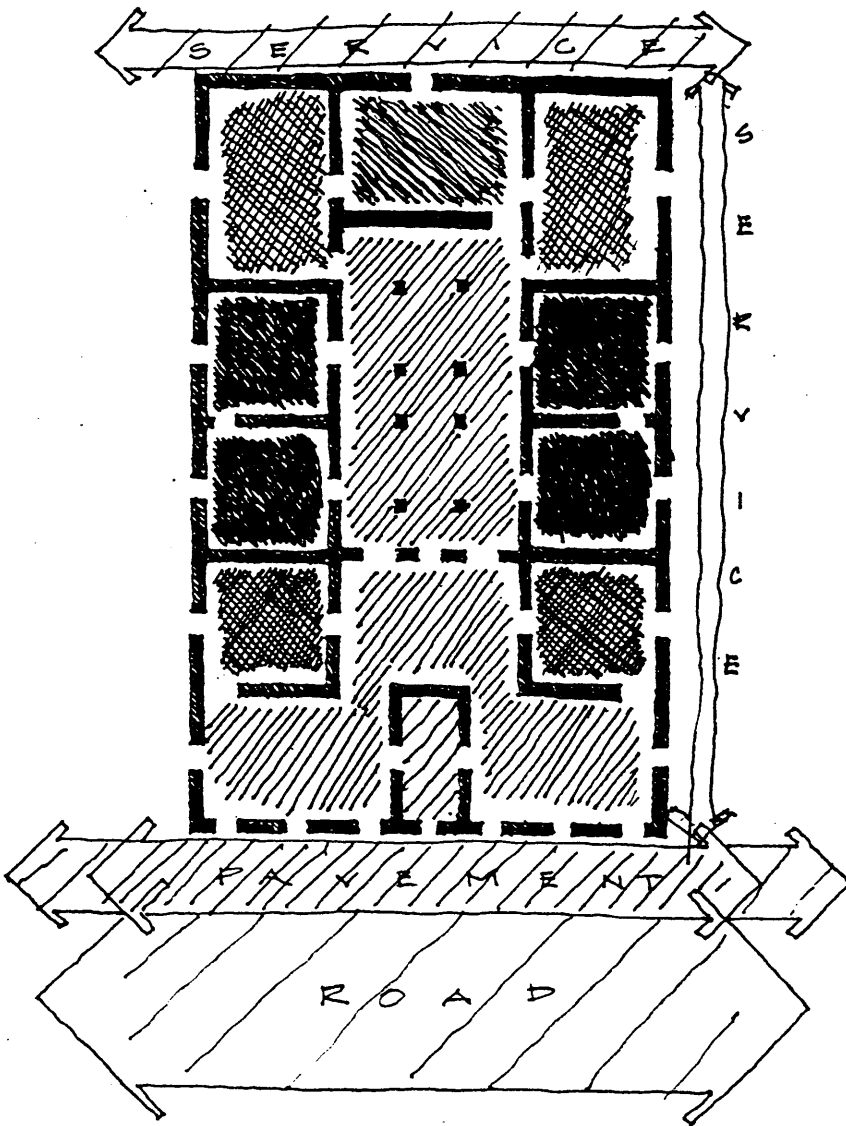
THE 'BALCAO'
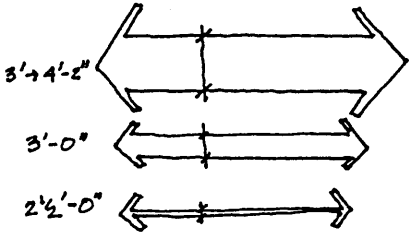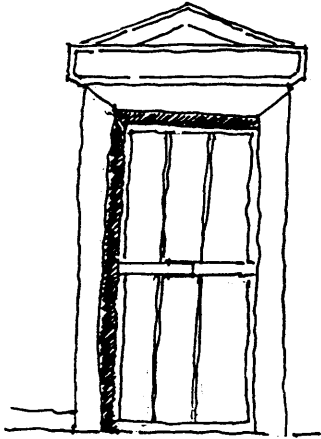TRANSITION
BETWEEN
PUBLIC + PRIVATE.
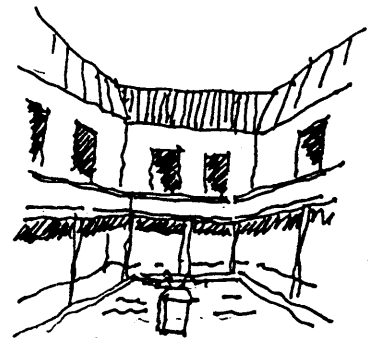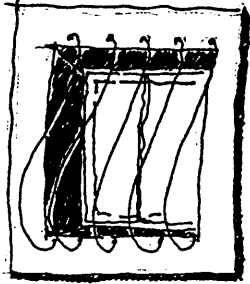

THE COURTYARD
'PRIVATE'
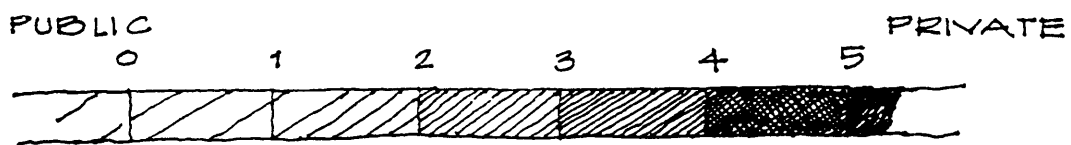
**Relationships of the Public and
the Private**

MOVEMENTS
IN THE UNIT. FROM
THE PUBLIC TO THE
PRIVATE.
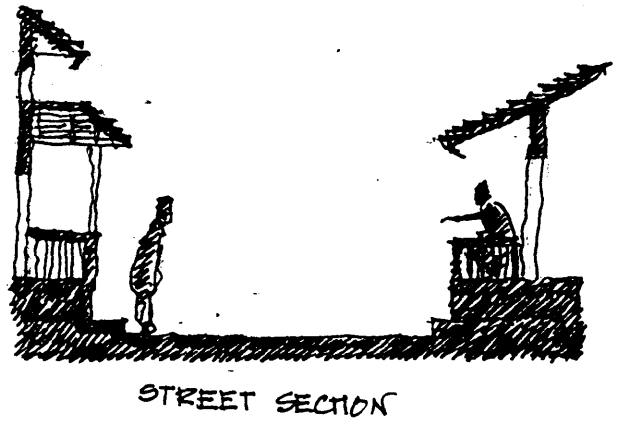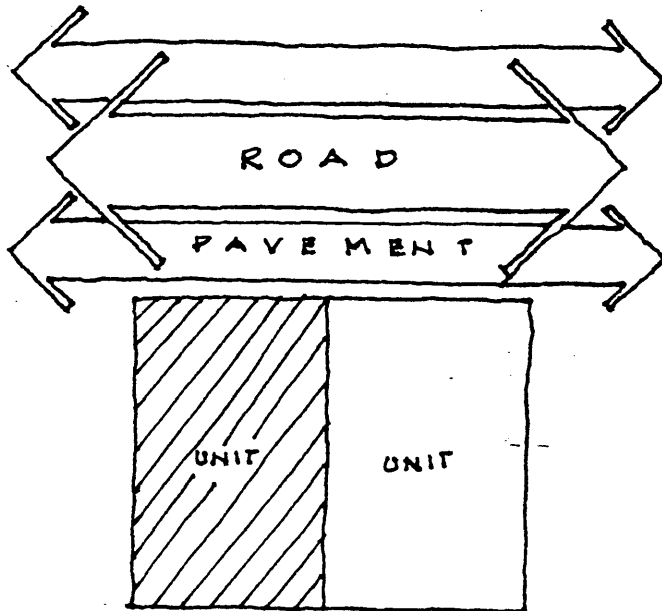ALSO, AN ANALYSIS
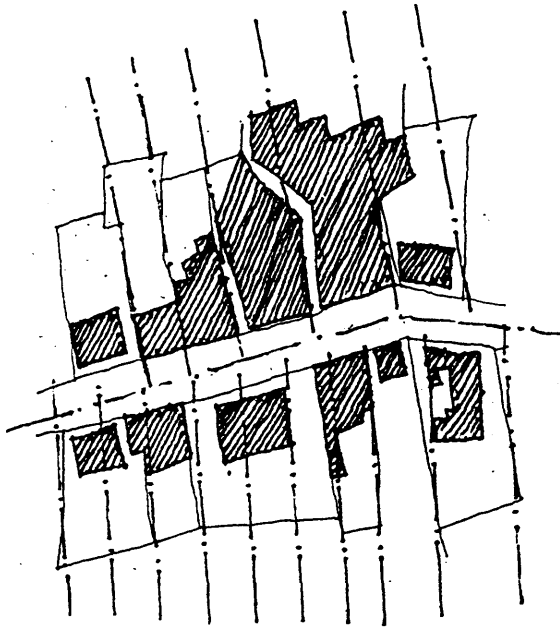OF THE WIDTHS
REQUIRED.

3' → 4'-½"

3'-0"

2½'-0"

OPENINGS.
RESULTING
FROM THESE
DIMENSIONS.

Movement Patterns within the house

STREET FACADE.

ROAD

PAVEMENT

UNIT   UNIT

STREET SECTION

**The Street and
the Unit relationship**

WIDTHS

|← 8'-9" →|

|← 10' →|
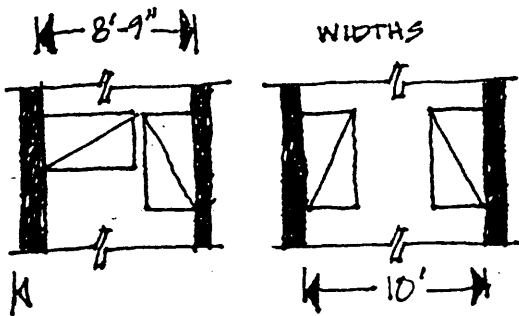
WITH THE ASSISTANCE OF THESE FIGURES, IT IS EASY TO UNDERSTAND THE WIDTHS AND LENGTHS OF THE UNIT.

|← 4.5 →|

THESE ARE SERVICE SPACES SUCH AS TOILETS, BATHROOMS

KITCHEN, MOSTLY ADJACENT TO THE SERVICE.

BEDROOM, OPENING TO THE COURTYARD & THE INTERNAL STREET.

LIVING ROOM.

HIGHER PLINTH.

|← 7.00 →|

Dimensions
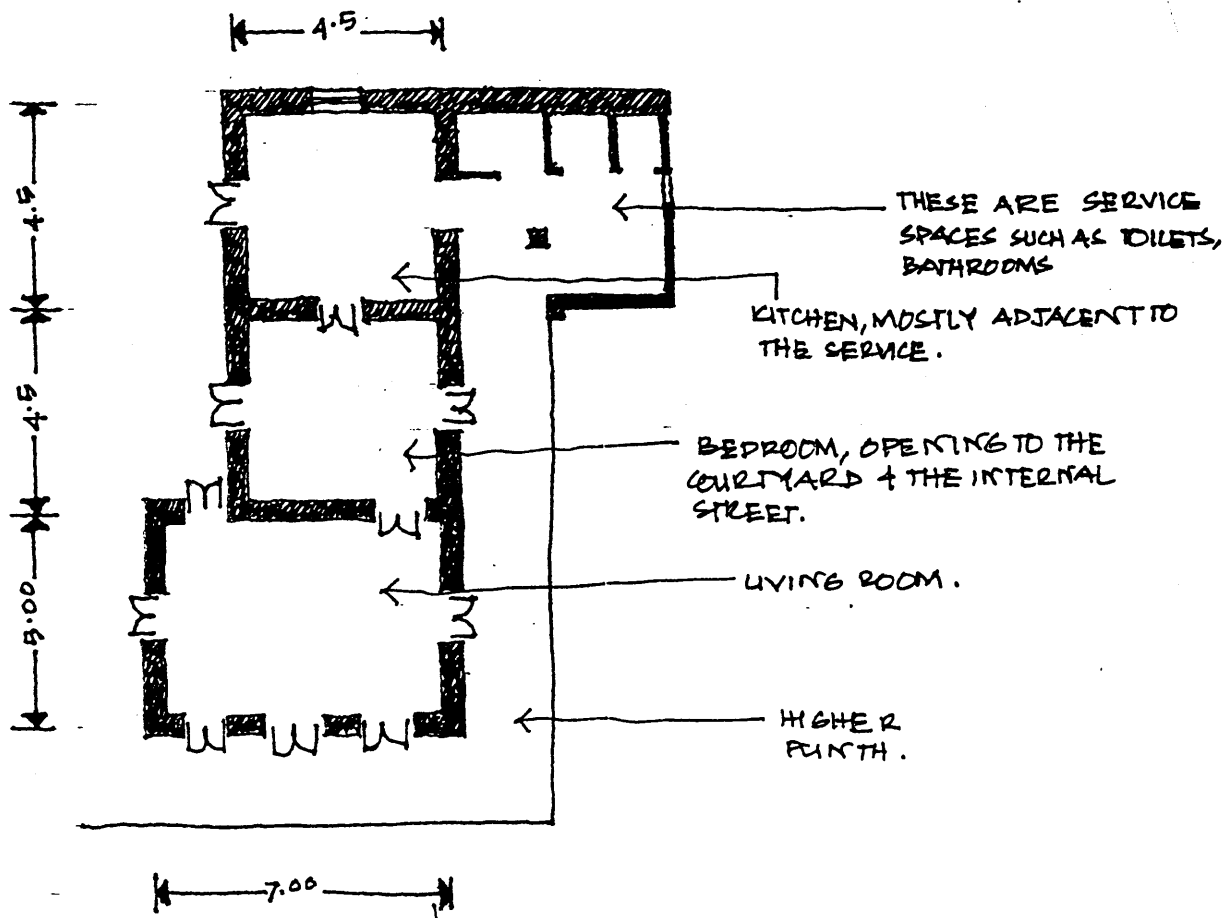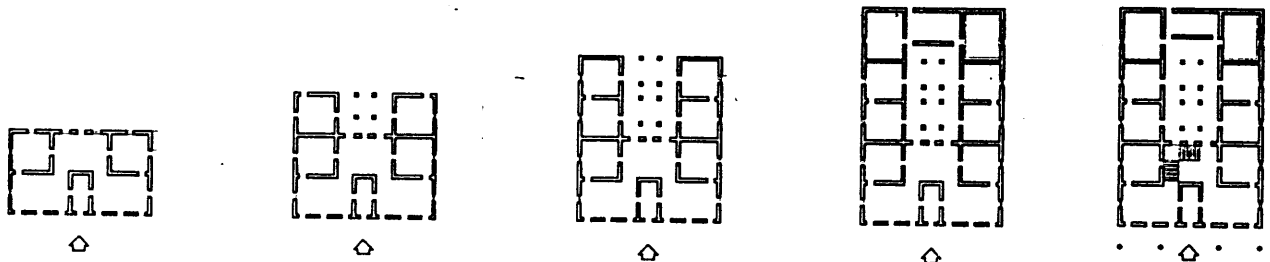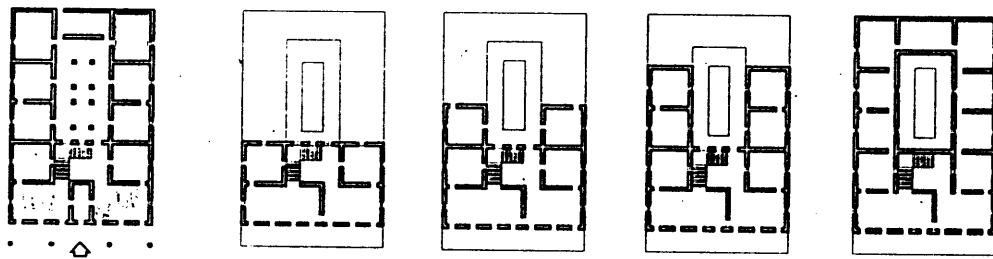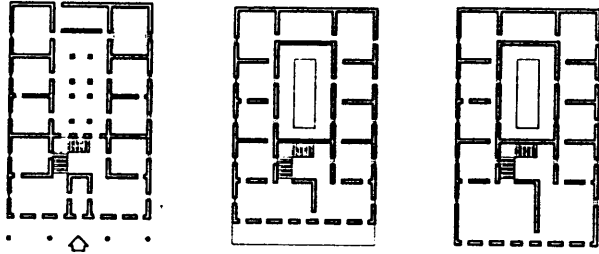
Incremental Growth - 1
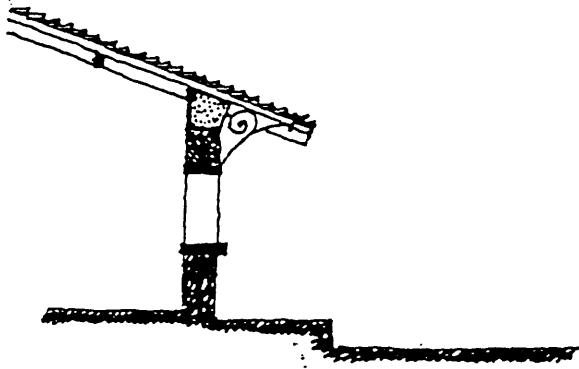
STAGE 1: INTERIOR, PAVEMENT
AND STREET
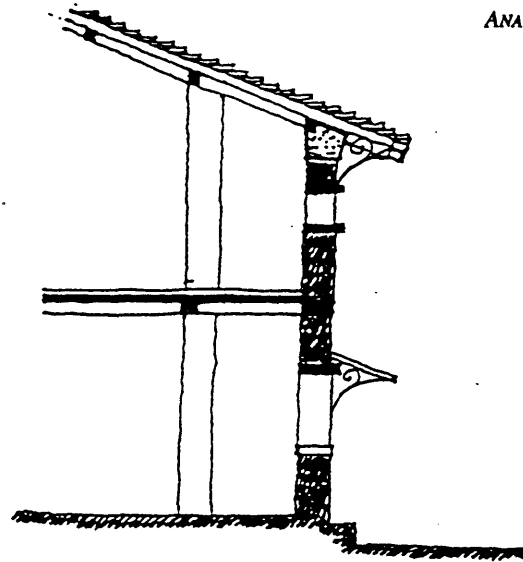
STAGE 4: APPROPRIATING,
PAVEMENT BECOMES
SMALL. THE SENSE OF
PUBLICNESS, THOUGH
RESIDES IN THE
VERANDAH & BALCAO

STAGE 2: BEGINNINGS, APPROPRIATION
OF THE PUBLIC BY A
COLLONADE, A SEMI
PUBLIC ZONE. THE
WALL CAN MOVE TO
THE COLLONADE

STAGE 3: MOVEMENT OF
THE WALL, AND
THE SECOND FLOOR.
WITH BALCONY.

Incremental Growth - 2

63

Intervention

After the analysis of the fabric through various methods, the nature of
he narrative of the fabric is understood. The extraction of the
essence of the narrative through the principles described below, will
assist in forming unique guidelines upon which the hypothesis of his-
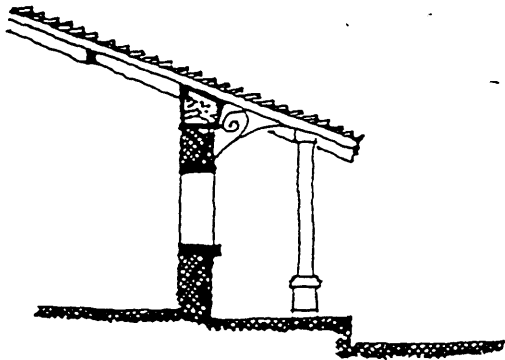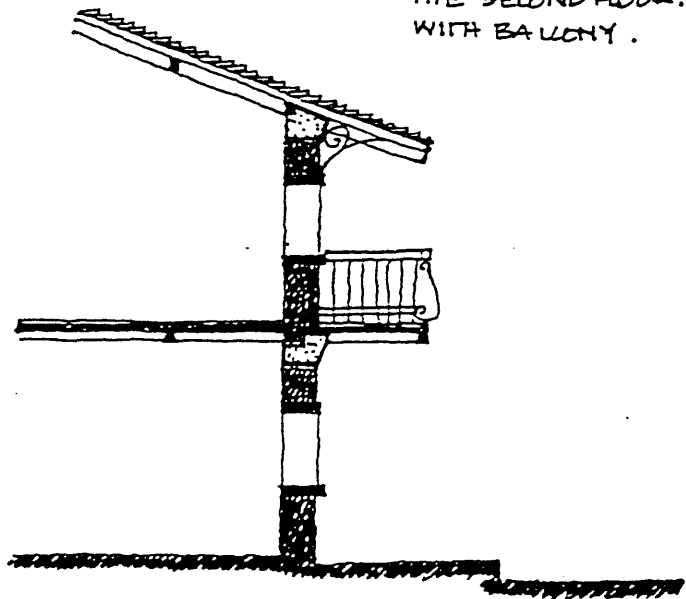torical contextualism can rebuild a model of interpretive interventions.
These interventions, as a design manifestation of the essences of the
narratives would assist in bringing a new sense of order respecting
both the past and the present in Fontainhas.

The Basic principles

Principle of Permanence
continuity of the order

With the notion that contextual preservation plays the role to continue
the distinctive historical character of the old city, a character that sur-
vives these processes of change irrespective of time so to respect
history the act is not to simply preserve or reconstruct old things as
they were but to reinterpret and re express the ideals of the past in
the light of today.
Fontainhas has a unique characteristic, due to its streets, squares
and landmarks. The idea of conservation should be to reinterpret
these and enable them to play active role in the urban process, thus
continuing the genius loci of the place. Thus the intervention process
is constantly reevaluating the existing conditions, establishing new
meanings and linking the elements into patterns, which evolve within
the genius of the fabric. Thus, the idea of permanence resides in the
context and the genius of the fabric, rather than the isolated artifact.

Principle of Change
evolving within the order

With a concept of evolution, the physical form of a city even that of a historical town, is constantly changing. In this sense, new places are found within the old fabrics with growth that is sustainable. The exogenous influences should be absorbed in the local context, adapted and changed into a hybrid existence that would quote cultural idioms into its natural expression. Thus, the notion of the restructuring of the house with the idea of new economic demands and family structure.

Principle of Reference
re-envisioning the order

In locating the preservation act in time and in space, the urban artifacts should provide perceptive reference as a link of the culture and a landmark of the district for the people. The reference is an abbreviation of the urban meaning that would guide the people along time. The reference can be established in two ways: reference through time and reference through spaces
The idea of revitalizing Fountain Square and bringing back the old order · to the creek front would assist in bringing to life the earlier notions of the fabric of Fontainhas; a reference through time. Although, the idea of restoration should abide by the idea of a new interpretive meaning, more conversant with the present context.
Linking landmarks and artifacts within the fabric by interventions in the streetscape; a reference through space.

Basic Concept

The project is intended to reestablish the role of Fontainhas, not only as a passive historical quarter, but as an active participant in the progress of Goa.

Urban considerations of human activities, social conditions and environmental characteristics are emphasized in the process of establishing an intervention. The main issue of contextual conservation falls on the integrity of the traditional context and contemporary requirements in both services and functions. Because the living conditions of contemporary city life, to a large extent are different from a traditional one, in the process of extracting, then distilling the essence of the fabric, the content instead of the form, are being abstracted and reapplied in the intervention strategy.

Design Guidelines

The strategy comprises design guidelines at two levels, urban and architectural. The following are the basic guidelines adhered to:

1. The fabric is like an organism, and like organisms, it is affected by the nature of events in its proximity. Thus, a comprehension of areas adjacent to the fabric, the pull push factors generated by them, and strategies to be adhered there.
2. Understanding the territory, suggesting interventions
3. Upgrading the existing environment to suit modern requirements.
4. Intervening by adding to the fabric. A new quarter is added within the fabric, assisting in the facilitation of services etc.
5. Connecting urban artifacts, activities, nodes and neighboring districts, so to integrate the pattern holistically.

Implementation

As the proposal stresses on the complementary support of both the old and the new development, the dynamic process of urban evolution should acquire preservation, redevelopment and upgrading at the same time. Preservation would stress on keeping the original flavour as well as attaining the balance between the commemorative values and the present day values.

The project falls into three categories:

1. Development : inputs into buffer areas and the vacant plot of land on site
2. Redevelopment : inputs into the previous programs by the government, changing them where necessary
3. Regeneration: interpretive reuse of existing conditions

The redevelopment and the development portion should initiated by the government to provide a directional vision of indicative significance for the latter stage of upgrading. Semi autonomous agencies from the neighbourhood e.g. the Fundacao de Oriente, the Calouste Gulbankian Foundation, the Indian National Trust for Art and Cultural Heritage should shoulder responsibility for the upgrading work. Working closely with the residents of the old city, these organisations would acquire a sensitive improvement to the overall environment. In this way, the old town would survive as a living entity that 'regenerates' the new tissue to substitute the unhealthy cells.

Financing

Some of the following can assist in the generation of funds for the project:

1. Grants for the improvements of the fabric from the Conservation Department, Goa Planning Authority and from the Heritage Society of India, Goa Chapter, by fund raising activities such as seminars and exhibitions.

2. Funding from the Panjim Public Works Department for the improvement and adaptive reuse of historic buildings, which can be recovered through visitors' charges.

3. Grants from various Indian and Portuguese foundations for projects to attract visitors, such as museums etc.

4. Subsidised loans to the inhabitants, for improvements and changes in the houses, for commercial gains, with the idea of easy repayment schemes.

Intervention	Design Principle	Objective	Strategy
I. *Urban Intervention*			
a) reviving the historical streetscape of the fabric to further develop the urban significance of the streets.	1. a street with multiple functions	- to bring back the lost street life of Fontainhas	- reducing traffic along these routes, making them pedestrian
	2. memorable streetscape	- to maintain spatial relationships and the scale of the streets	- controlling heights, volumes of new buildings, and allowing growth according to the design principles derived from analysis
	3. Street Tourist trail	- to promote cultural image of the fabric	- rehabilitating old structures along the street
	4. re-evaluating the creekfront	- to encourage the weekly market to develop a permanent nature here	- rerouting the traffic, on the other side of the creek
b) upgrading existing environment to suit modern requirements.	1. identifiable blocks as mini neighbourhoods	- to assist in the identification of small wholes, to enable the setting up of an ordered growth	- setting up demarcations properly, i.e. upgrading the squares
	2. increase green space	- to prevent loss of precious greenery from this area	- to provide green patches in all squares; provide for a greening scheme in Fontainhas
	3. refuse management	- to improve hygenic conditions	- setting up refuse collection points, increasing garbage receptacles in alleys and lanes
	4. setting up of a community body	- to control illegal buildings, prevent unhygenic conditions etc	- setting up local control group to supervise, execute and keep check on the other agencies.
c) restoring the creekfront to perform a new role in its old setting	1. Making the architectural functions on the ground floor face the creek	- to bring back the old order on the creek front	- setting up a collonade along the creek
	2. Pedestrinising the creekfront	- to allow the development of a tourist walk along the creek	- providing Goan cast iron furniture; shaded walks, along the creek

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Intervention	Design Principle	Objective	Strategy
d) connecting the urban artifacts, activities nodes and the neighbouring zones, to integrate the urban design framework as a whole	1. traffic route	- to relate urban artifacts via a system of transportation and pedestrian network	- identifying monuments and re-establishing their relationship with the rest of the city.
	2. green belt	- regeneration of an environmental memory	- making green patches not only along the spines, but allowing green areas around the artifacts
	3. restricted areas	- to regain linked social activity within the district	- ordering traffic to create more livable streets

II. *Architectural Interventions*

Intervention	Design Principle	Objective	Strategy
a) maximising the commercial potential through a reinforcement of human activities	1. Commercial belt along the spines	- to maximise exposure to the tourists	- modifying the houses to accomodate commercial functions, within the parameters of type
	2. art and craft shops	- to promote the dying Goan arts and crafts	- modifying shopfronts to accomodate display spaces
b) promoting cultural patterns by stimulus of tourism	1. tourist route	- to provide a dynamic experiance for discovery	- conserving the picturesque streets, and arranging a sequential order of interest
	2. street acticities	- to provide an interaction which the Goan type suggests in the verandah, balcao etc.	- extension of activities to the street, e.g. the cafe etc.
c) adapting the existing unit for various other uses, while respecting the old logic	1. tourist related provision	- to provide cultural link to both visitors and residents	- refurbishing appropriate old buildings in the form of visitors' centers, museums, galleries etc.

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	Territory	Blocks	Spines	Squares	Houses
General	**Plan of territory** showing interventions. Pg. 74				
Zone A	**Plan of Zone A** showing interventions. Pg. 76				
Zone B	**Plan of Zone B** showing interventions. Pg. 78				
Zone C	**Plan of Zone C** showing interventions. Pg. 80				
Zone D1	**Proposed Figure Ground.**Pg. 82 **Proposed 3D model of fabric.**Pg. 86 **Proposed Building Use.** Pg. 83	✱	**31st Jan. Marg** - General. Pg.87 - 3D Model. Pg.89 - Nodes. Pg.88 **Rua de Ourem** - General. Pg. 93 - 3D Model. Pg.95 - Nodes. Pg.94 - Specific interventions 95	✱	**31st January Marg** modifications in the house. Pg.90 **Proposed increments in the house** (general). Pg. 92
Zone D2	**Proposed Traffic Pattern.**Pg. 84 **Proposed Parking.** Pg.85	✱	✱	✱	✱

The Strategy

The fabric is like an organism. It breathes, eats, grows and affects. It relates with other organisms in its proximity. It is born, it mutates and sometimes it dies. During the time of its death, it acquires a state of stagnancy, clinging on to a deteriorating past, unable to reconcile with the present or the future; it is in a state of inherent confusion which manifests itself into dilapidated buildings and ruins with dark interiors where the rays of the sun seldom visit.

Consideration for the neighboring areas around the fabric is essential for determining buffers, to assist the fabric to bear the pull push rigors of present day urban dynamics.

Understanding these buffer zones, and proposing development guidelines for them assists in developing the cushioned framework for the optimal functioning of the intervening proposals. Any intervention in the fabric can never be isolated; it requires a platform to get propelled from. This platform acts, not only as a buffer but also as a catalyst in the performance of the intervention in the fabric.

Thus, areas around the fabric which affect it are identified into categorized as:

Zone A: is the area adjoining the fabric on the side of the hill of St. Inez. This area is mainly of residential and institutional nature.

Zone B: is the vacant piece of land on the opposite side of the creek. Presently, the Panjim bus stand terminal occupies a portion of this land

Zone C: the small portion of Avenida de Brazil which adjoins Fontainhas · in the North.

Zone D: the fabric of Fontainhas; this is divided into the existing built fabric, and the vacant piece of land which was once a marsh and has been reclaimed.

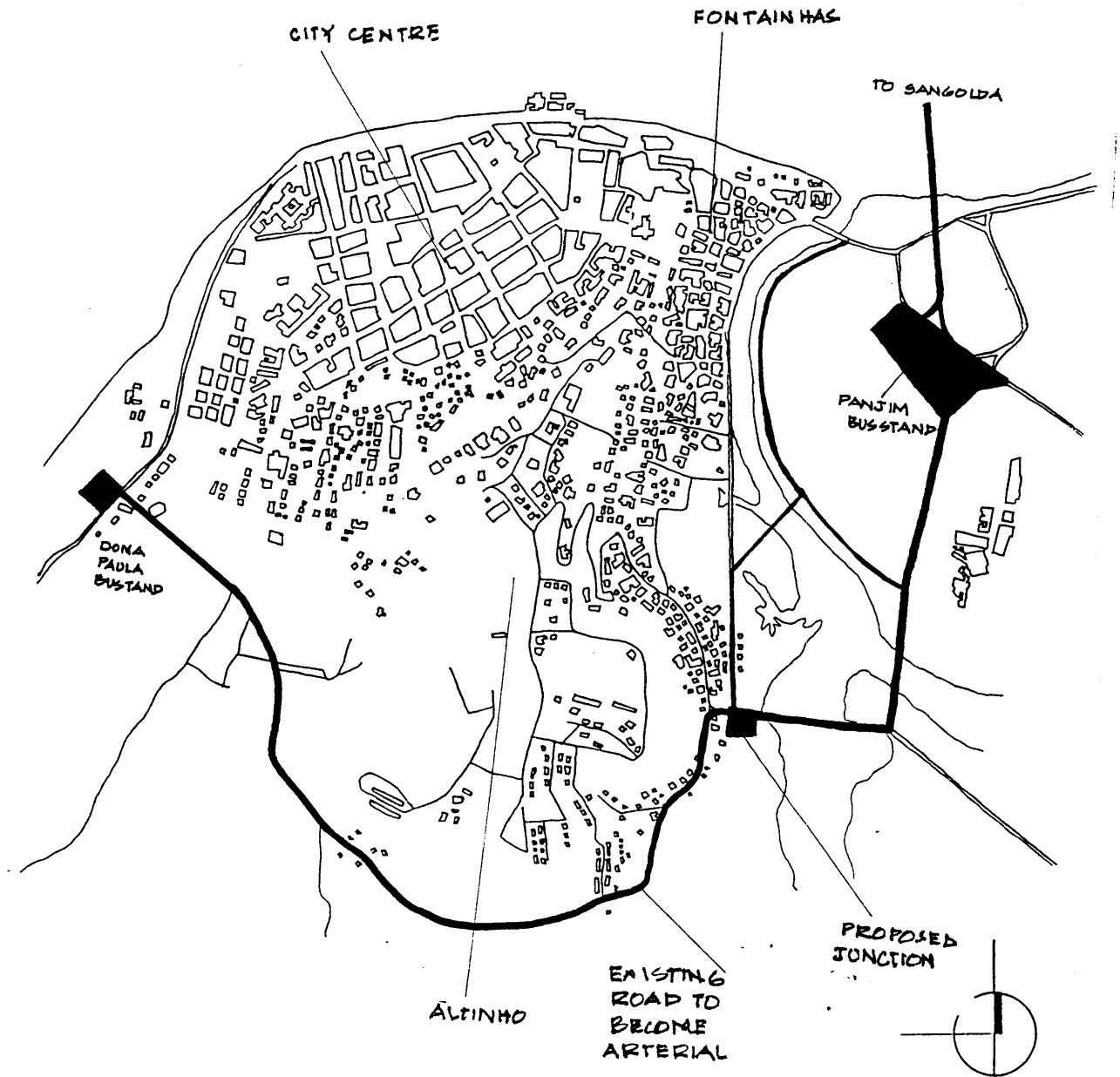All these zones form the territory, the first stage of intervention.

◄ **Chart describing the interventions**
The interventions shown here are the ones which are immediaely needed. Some interventions, marked with stars are important too, but could not be duscussed due to the constraint of time.

Zone D1: The existing fabric of Fontainhas.

Zone D2: The new proposed fabric of Fontainhas.

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CITY CENTRE

FONTAINHAS

TO SANGOLDA

PANJIM BUSSTAND

DONA PAULA BUSTAND

PROPOSED JUNCTION

ÁLTINHO

EXISTING ROAD TO BECOME ARTERIAL

The Territory

The following inputs form the strategy for the territory:

1. Rerouting the traffic, in the territory:

a) making the road along the south of St. Inez hill as the important artery of traffic, thus reducing the load from the Avenida de Brazil, thus making the old part of Rua de Ourem pedestrianised.

b) Providing infrastructure to the Dona Paula bus stand to handle large loads. Also, making it the transition from the large interstate bus to the small mini bus, vans etc. which serve the city.

c) Creating another node to distribute the traffic in Fontainhas i.e. from large buses to small vans, tempos and private motorcycles.

d) Shifting the traffic on Rua de Ourem to the other side of the creek, to make part of Rua de Ourem pedestrianised.

2. Cleaning up of the creek to make it accessible for tourist activity such as boating etc.

3. Increasing the green coverage in the forms of plantations such as parks, forests etc.

WIDENING
OF EXISTING
ROAD, TO
PROVIDE
SERVICE.
CARE TO
BE TAKEN
OF RETAINING
WALLS IN
THIS REGION

MAXIMIZING
FOLIAGE
THROUGH
PLANTATION
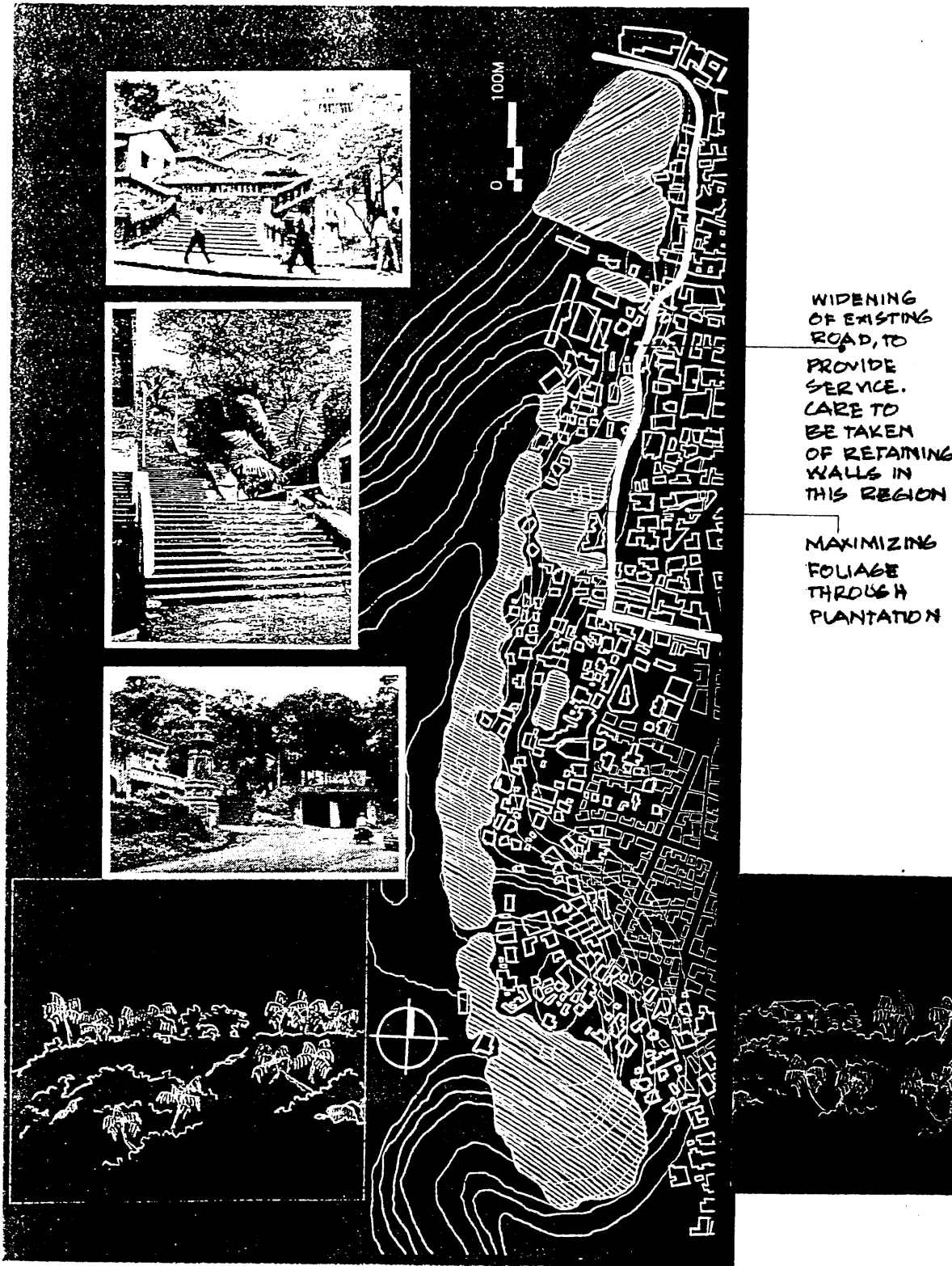
Zone A

Altinho, as the name suggests, is the zone on the hill. Besides residential buildings, this place houses the archbishop's Palace, the Public Works Department building etc. The area of intervention is inhabited sparsely. The main interventions here are:

1. Restoration of staircases which connect Altinho and Fontainhas.

2. Development of stepped parking zones, to assist in the servicing of the western part of Fontainhas.

3. Restoration of the service area for the Church of Our Mary of Immaculate Conception.

4. Planning a plantation program to regain greenery.

The palimpsest or the patterns which has evolved through analysing the fabric, is the generating principle of the forms and spaces. While the use of these patterns is notional, on the other hand it can be used as a means of restricted intervention, with the help of bye laws etc.

77
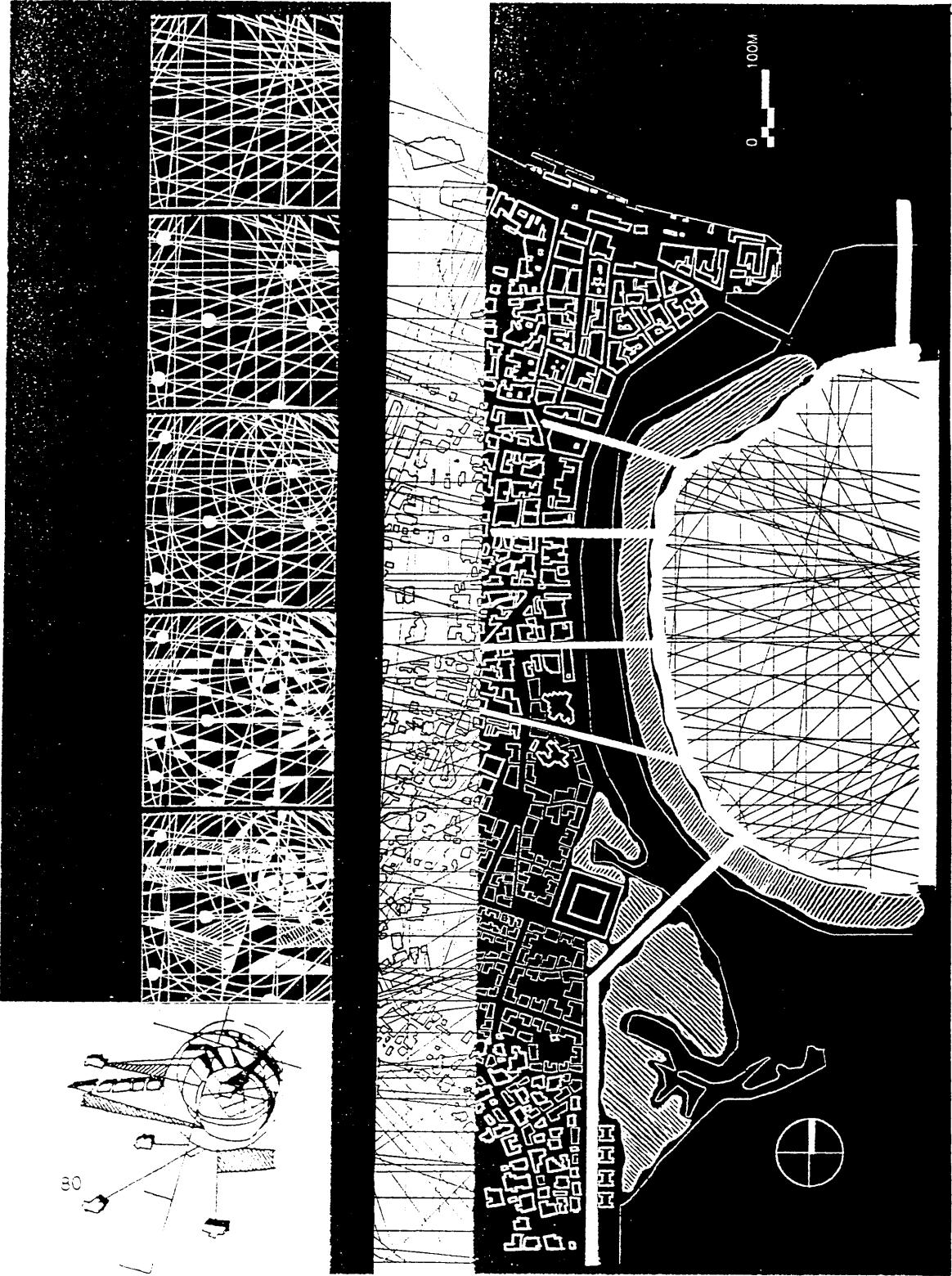
Zone B

Panjim's new industrialization, requires certain new inputs into the city. Trade fairs and industrial displays are held in the Kala Academy and the Sports Complex, in Miramar. Both of these are not suited for these new requirements. Therefore, an exhibition ground is proposed in Zone B.

Since traffic on Rua de Ourem is going to be diverted through this side of the creek, and due to the presence of the Panjim bus terminal, this space is serviced very well.

The rules for the development of this exhibition ground are to be taken from the grids and vectors, discovered from the analysis.

The six small squares show the development of the derived pattern into form; the development of the lines into points of intensity, which develop into figural and ground entities. The exhibition space and the zone where land has been reclaimed are examples where this idea has been used.
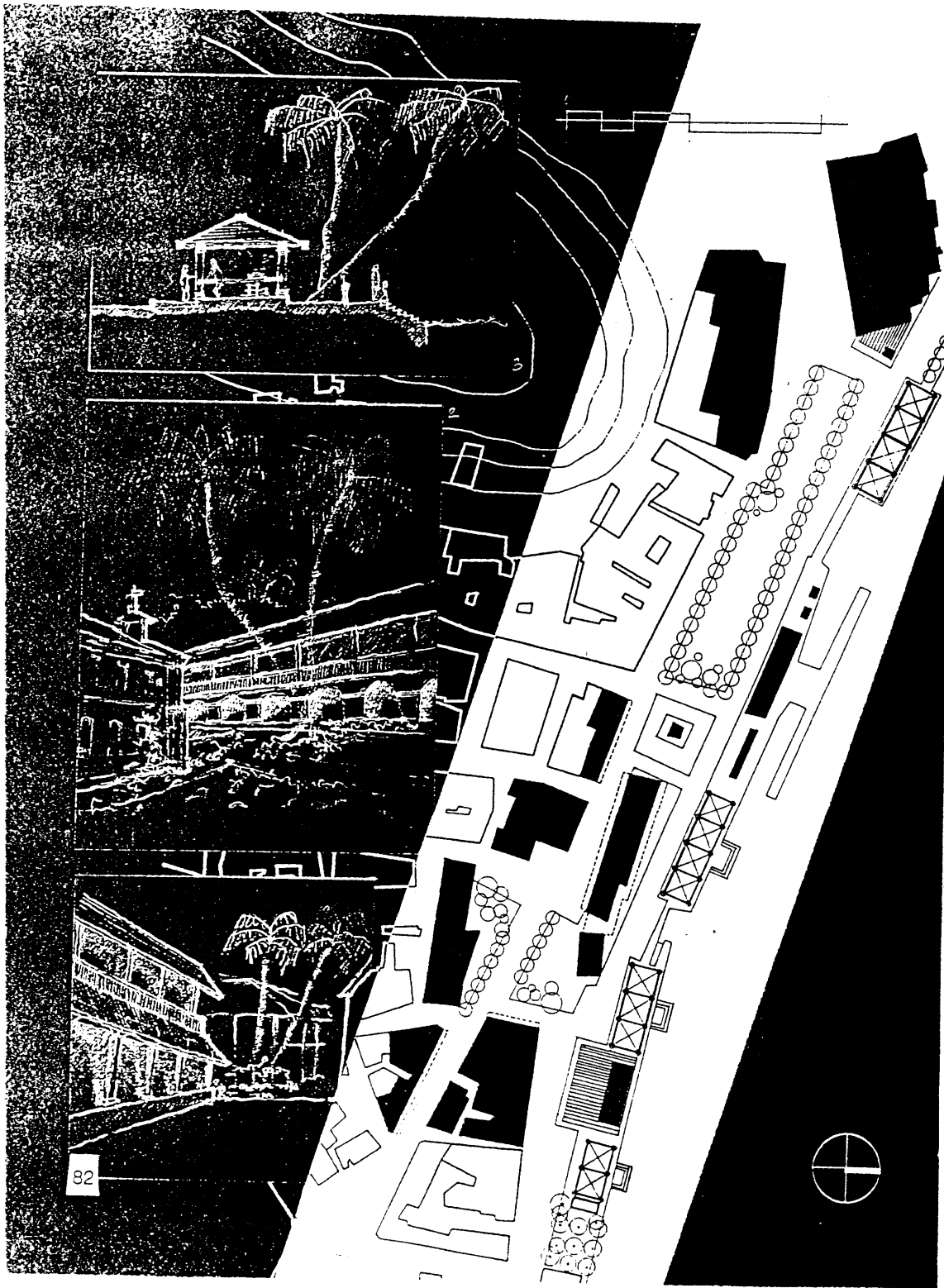
Zone C

Due to the rerouting of traffic,
the previous essence of the
waterfront should be revived.
The Post Office Square should
be revitalized: landscaping of
the garden of the Post Office
Square, developing the buildings
into shopping areas with colon-
nades. The waterfront should
have inputs such as seating,
steps leading down to the water
and landscaping with lots of
greening.
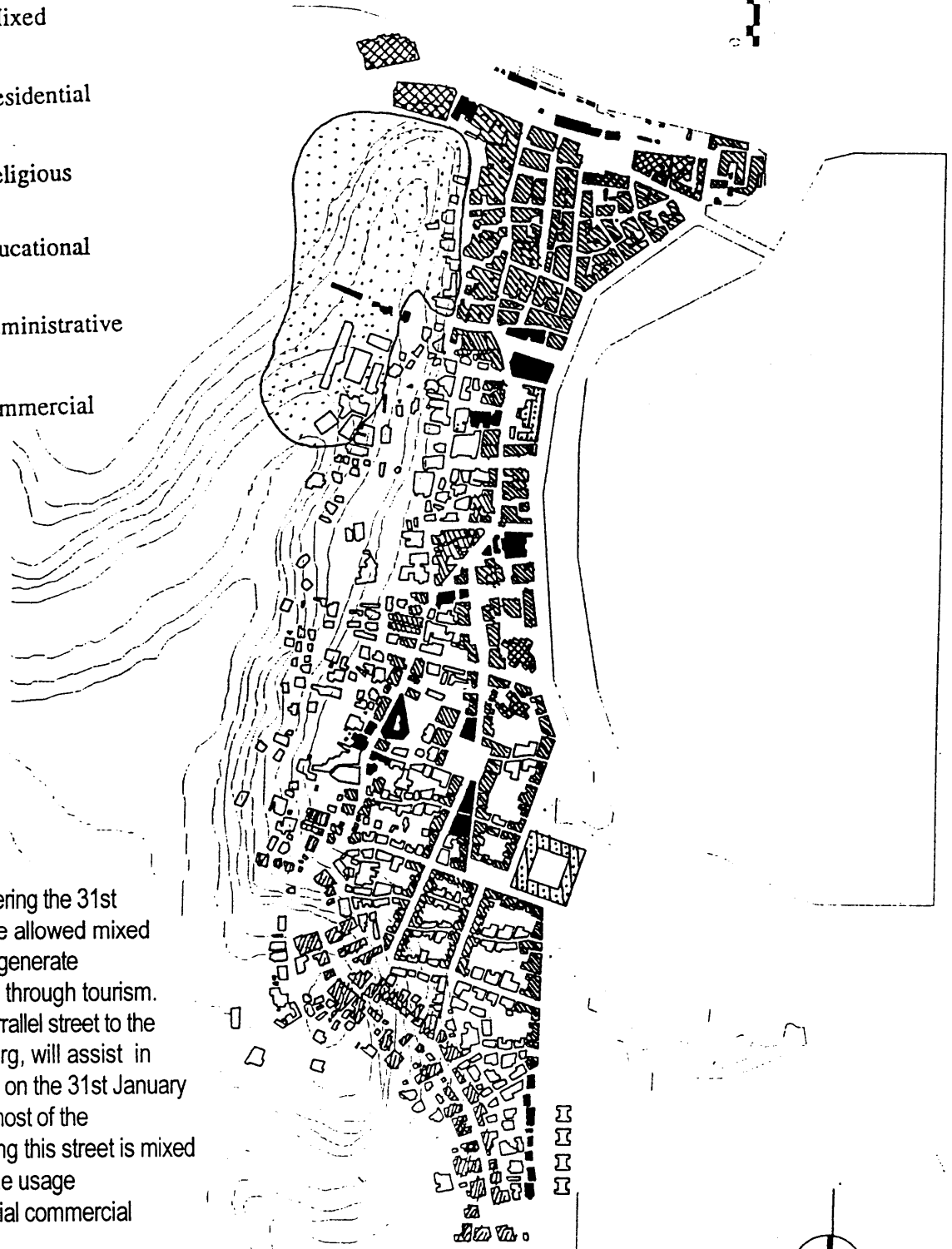
Zone D

This is the fabric of Fontainhas.
This has two categories:

a) the new development: after
the analysis, proposals are sug-
gested on page 82 - 88.

b) the existing fabric: interven-
tions in the new fabric are sug-

INTRODUCTION
OF A STREET
PARALLEL TO
31st JAN. MARG
TO ASSIST IN ITS
SERVICING AND
REDUCING THE
LOAD ON IT.

THIS STREET
AS A SUPPORT
STREET FOR
SERVICES IN
THIS AREA

CONSOLIDATION
OF THE OLD
PATH LEADING
TO THE FOUNTAIN

SQUARE
WITH COMMERCIAL
ACTIVITY. SHOPS
SERVING THIS FABRIC

PROPOSED
INSTITUTION
FOR THE ART AND
CRAFTS OF GOA

RESIDENTIAL
BLOCKS WITH
INTERNAL
COMMUNAL SPACES.
THESE ARE MANAGED
BY THE PWD DEPT.

Proposed Figure Ground

Legend

- Mixed
- Residential
- Religious
- Educational
- Administrative
- Commercial

The houses bordering the 31st January Marg are allowed mixed development, to generate economic activity through tourism. The proposed parrallel street to the 31st January Marg, will assist in reducing the load on the 31st January Marg, therefore most of the development along this street is mixed or commercial; the usage should be essential commercial activity, helping to fill up the lack of essential facilities in this area.

Intervention

Proposed Building Use
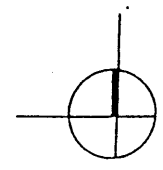
■■■■ Serviceable Pedestrian

Vehicular (Small)

Vehicular (Arterial)
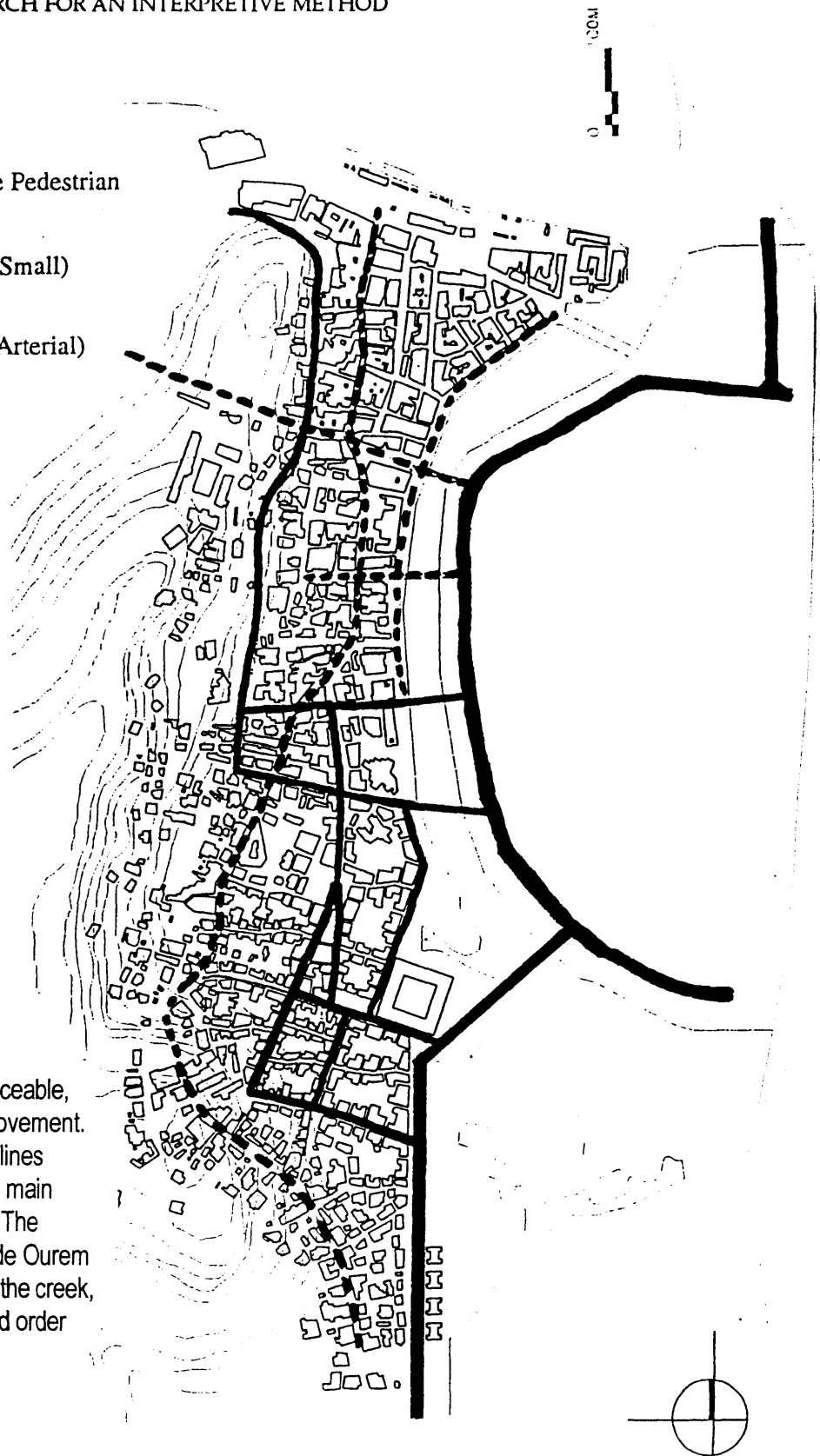
The 31st January marg and
the Rua de Ourem, are
pedestrianised, but are serviceable,
to allow maximum tourist movement.
The areas shown in the thin lines
are the streets which are the main
service streets for this fabric.The
heavy traffic along the Rua de Ourem
is shifted to the other side of the creek,
to assist bringing back the old order
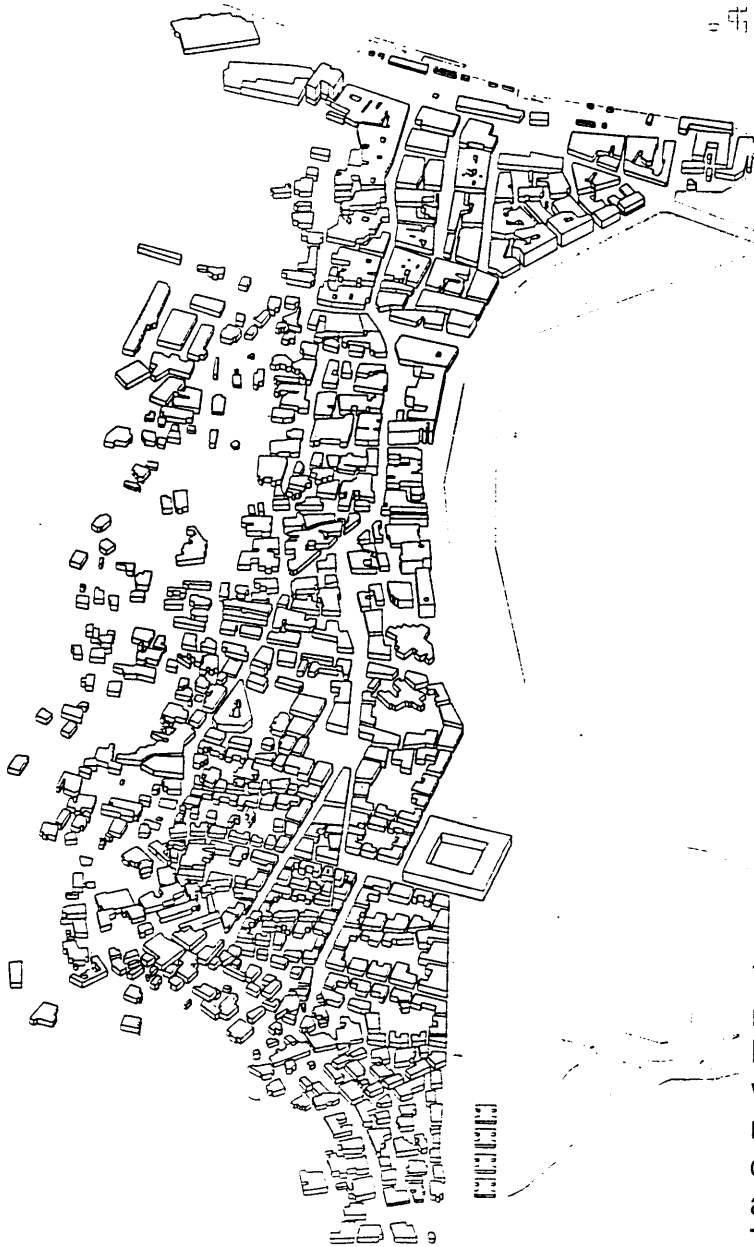in the buildings there.

Parking
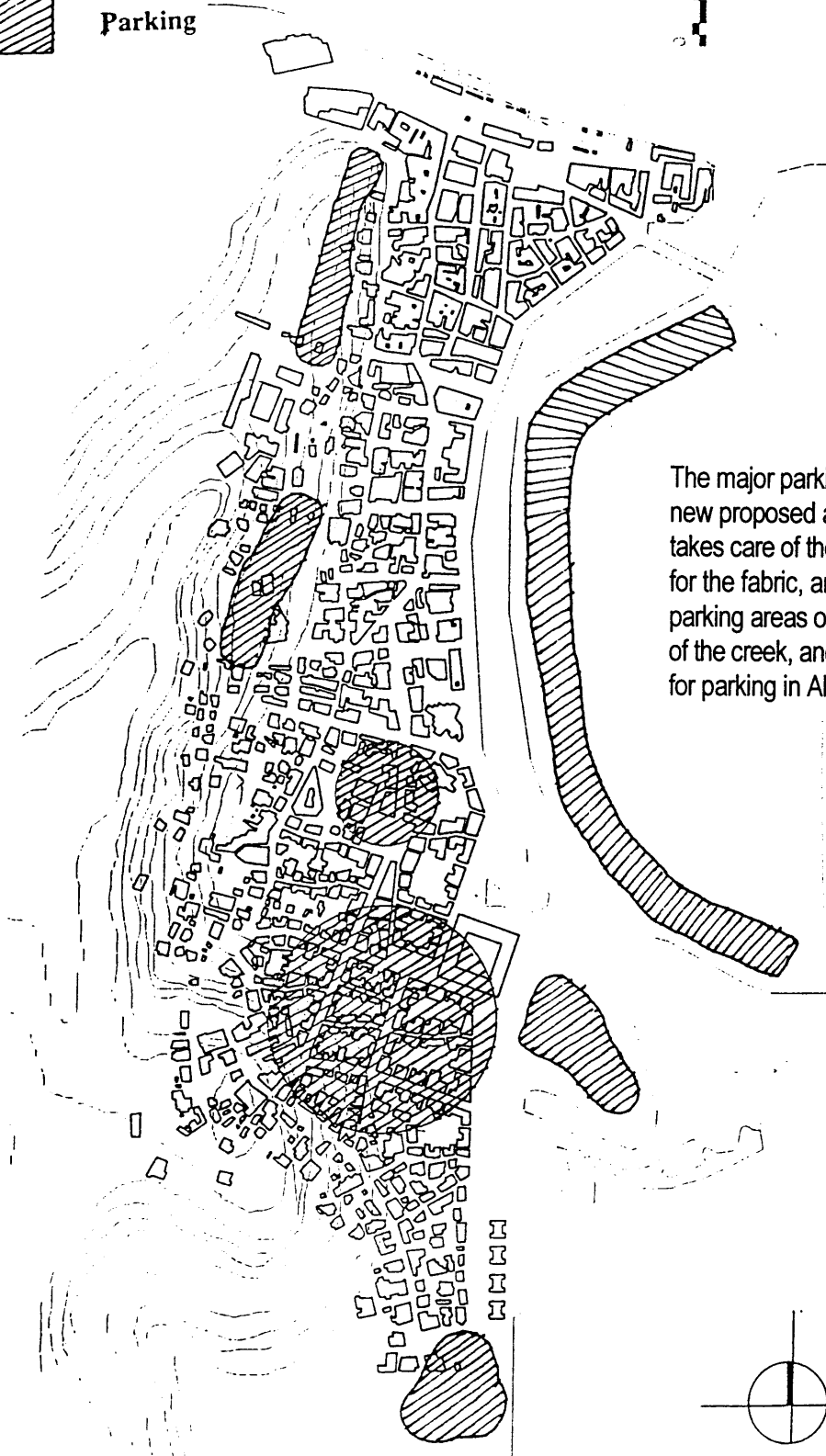
The major parking zones are in the
new proposed areas. This area
takes care of the parking requirements
for the fabric, and is assisted by the
parking areas on the opposite side
of the creek, and the areas denoted
for parking in Altinho.
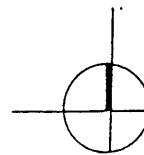
The model shows the
new street spine formed
by the proposed fabric, which
will assist in the essential
needs for thefabric. The curve
of Rua de Ourem is consolidated
and the street is pedestrianised.
The square institutional building
acts as a pivot between the exhibition
grounds and the fabric.

31st January Marg

General Strategy

1. Development of this street into a tourist walk, with commercial activity.

2. The main idea of the street is a pedestrian street, but there is access for two wheelers. It is also serviceable.

3. Emphasis on nodes as punctuation's to the flow of walk. As mental edges of blocks for residents, nodes encourage human interaction. Thus, encouraging community activities.

4. Encouragement of commercial front house.

Specific Strategies

1. Revitalization of Post office square, with inputs such as the re-architecture of the buildings in the square. The motor shops to be relocated and this building to be inject-

31ST
JANUARY
MARG

THE WATERFRONT

THESE
LINES
BECOME
BRIDGES
CONNECTING
WITH THE
EXHIBITION
GROUNDS.
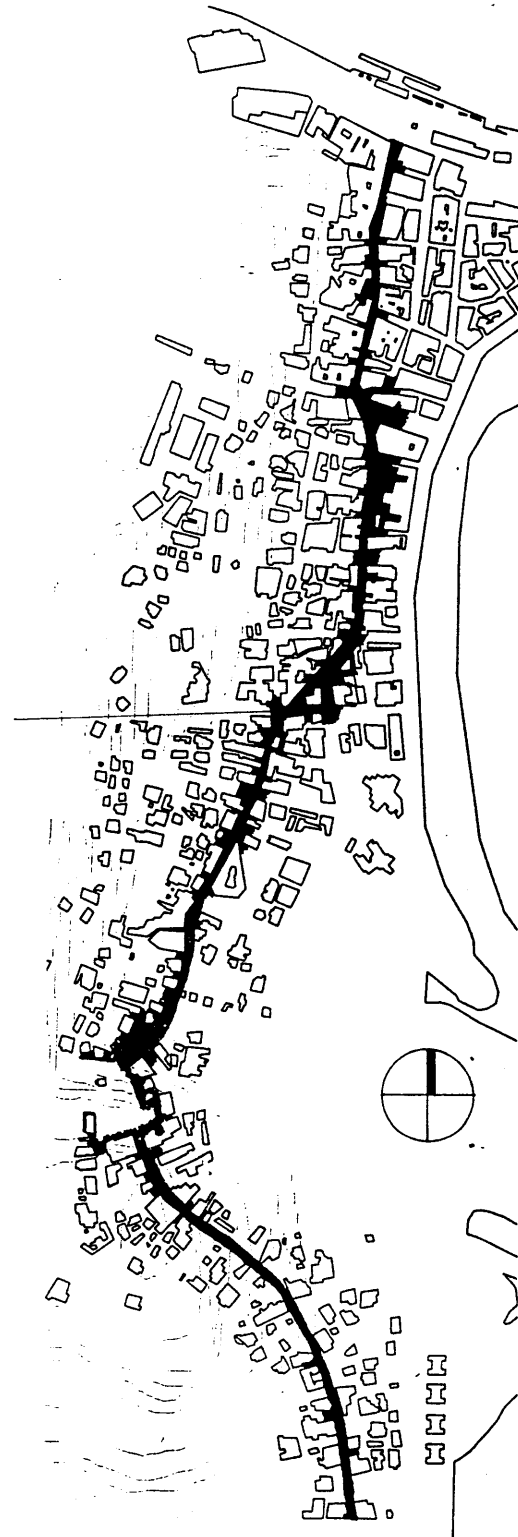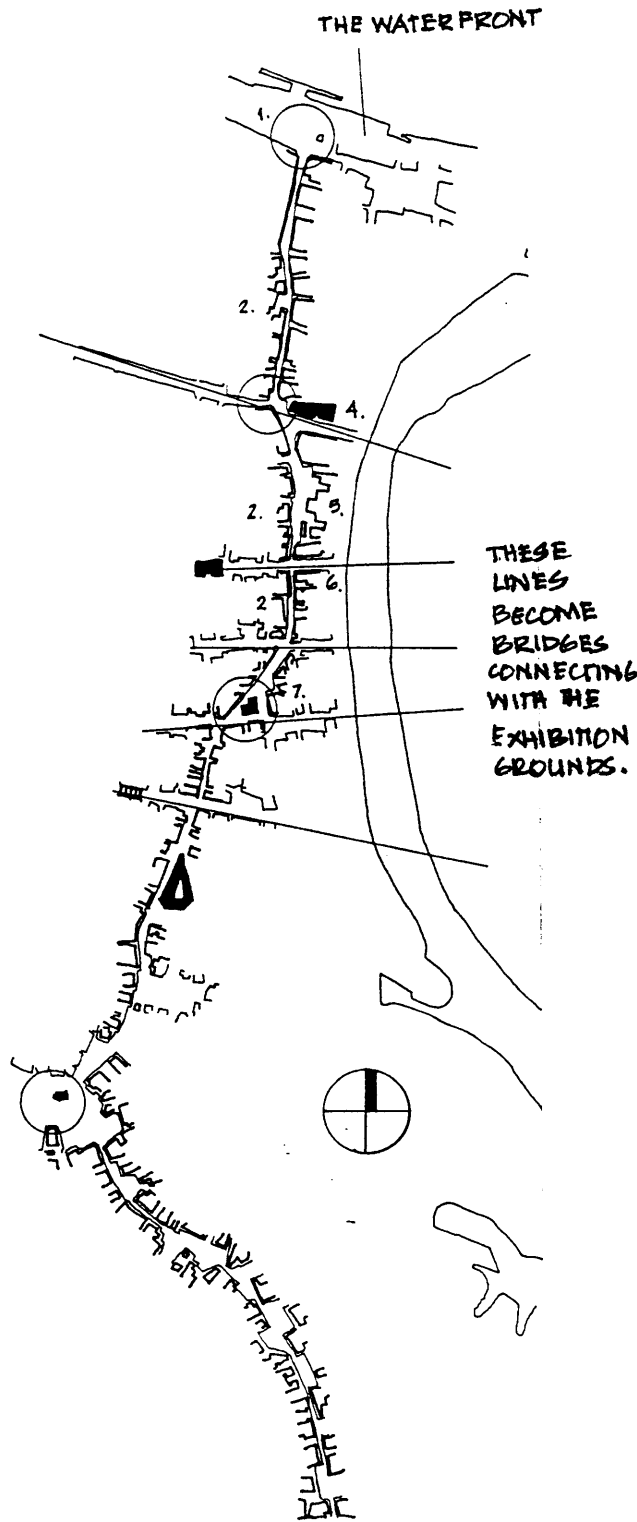
ed more public functions such as administrative, commercial etc.; the treatment of the facade according to the investigation of the types.

1.1 Reorganizing the garden with the idea of keeping maintenance low, inputs such as Goan cast iron furniture, coconut trees etc. (refer drg. Zone A)

2. Colonnaded shopping street, adhering to elevation controls. Corners and niches in streets to be landscaped for maximum interaction.
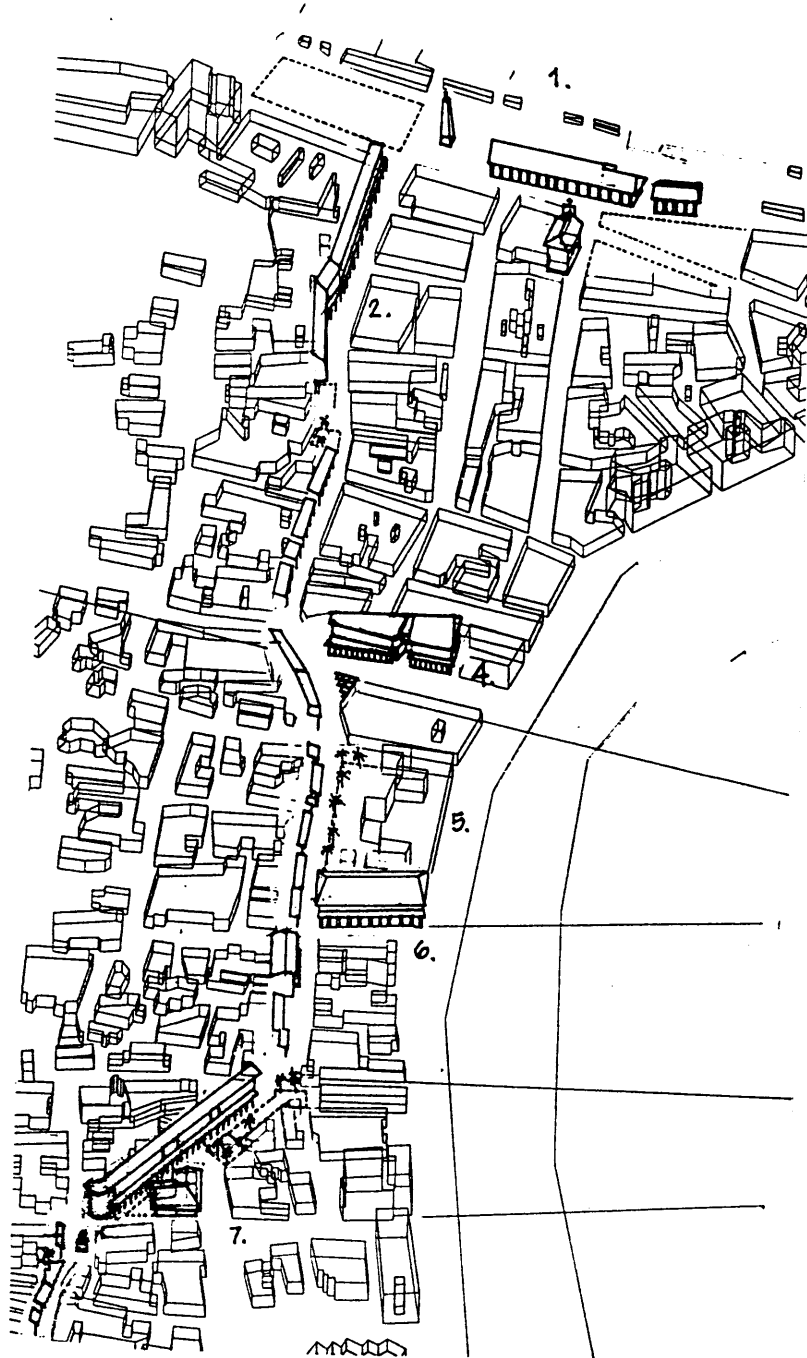
4. *Node 1. Link to the city.* Refer Pg.80 This house, is one of the oldest and is dilapidated. To be restored into a commercial establishment.

5. Pedestrianisation will assist in the functioning of the school. Lesser congestion during hours opening and closing of the school.
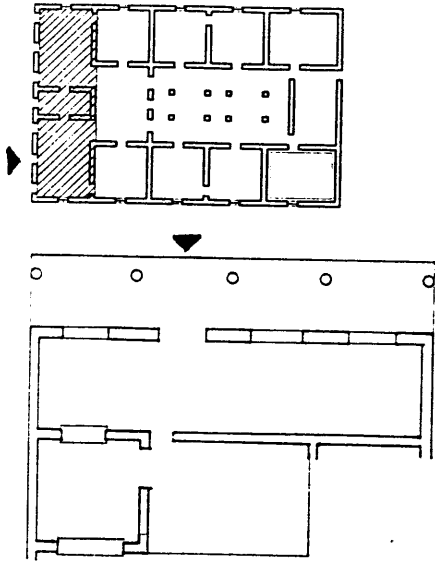
6. *Node 2. San Sebastian church square*
The elevation treatment in this square is to be preserved; but certain commercial activities are possible.

7. This house, presently housing a temporary primary school to be developed as the set piece for the square. To be developed as a handicraft center.

1. Front of house converted into a **restaurant**. Removal of study from the living room. Converting living into eating area, and one bedroom into kitchen and store. Opening up verandah; to be used for cutting, washing vegetables.

2. Converting front of the house into a **craft workshop**. Front portion becomes display. Verandah and rooms used for working and storage.

To be used for 'cottage industries', and not for uses with high water and electricity demands.

1.

Transformation of the front of the house into a restaurant
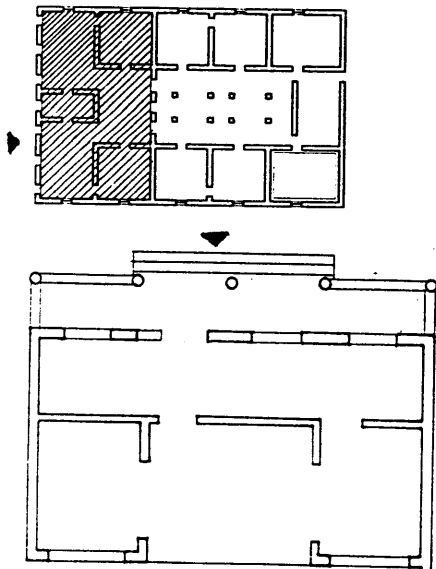
2.

Transformation of the house into craft workshop

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3. **Shopfront house.** This can
be the first intervention to start
with. Later with the generation of
finances through the shop, larg-
er interventions can be adopted.
4. **Tourist hostel.** The front of
the house becomes the recep-
tion desk, while the other portion
becomes the small dining room,
the study as the pantry. Rooms
can develop on the upper floors,
linked through the staircase in
the verandah. Later extensions
can also be made along the
back of the house, depending on
the built area available in the
plot.
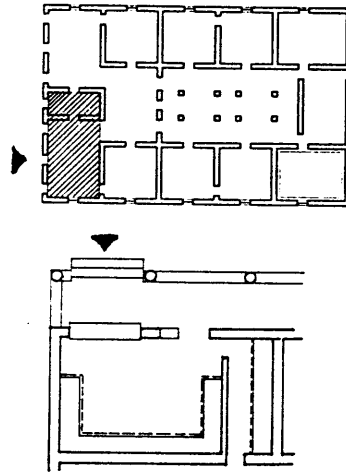
3.

Shopfront House

4.

Tourist Hostel
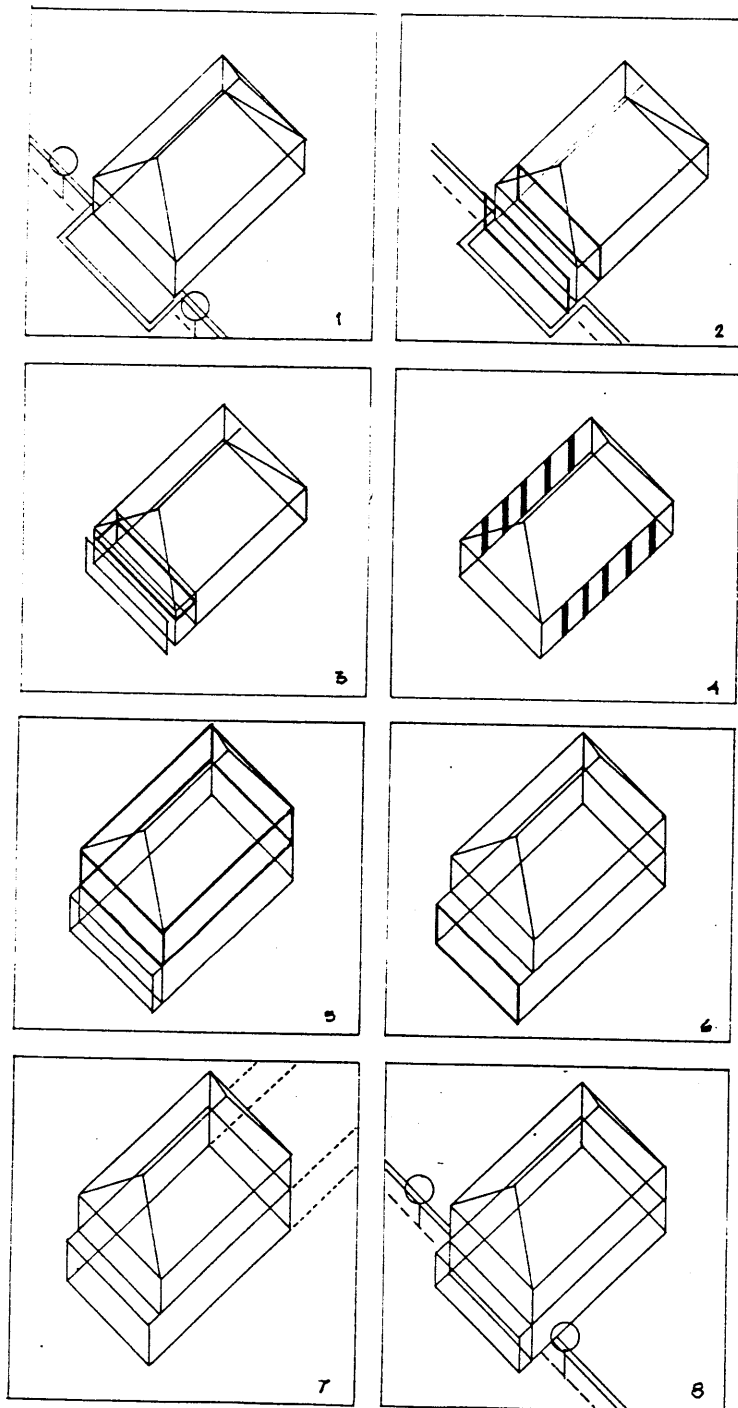
1. This shows the given, govt. provisions.

2. Verandah is extended, and the front of the house is used for the most basic intervention such as a shop etc.
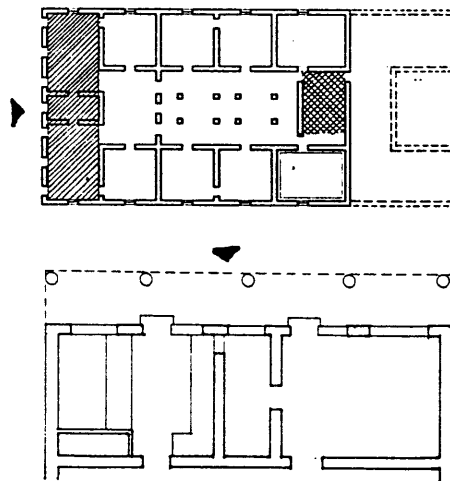
3. Interventions, e.g. mezzanine for storage within the small intervention.

4. The finance generated by the small intervention used to restore the structure of the house.

5. Work on the second storey starts, while the primary intervention keeps functioning.

6. Second storey starts functioning; generates finance. Time to change the front of the house according to the new second storey.

7. If required, possible extensions made at the back of the house.

8. Adding to the greenery and general upkeep of the place.

Rua de Ourem

General Strategy

1. Commercial development to
be encouraged on ground floor.

2. To be pedestrianised, but
allowing essential services to
function.

3. Development of infrastructure
for flea market, which does not
have a permanent location,
along this street.

4. Developing reception nodes
for site vectors, such as the
squares, and making informal
spaces overlooking the creek.

5. Use of Goan cast iron furni-
ture to be encouraged in the
development of the landscape
proposals.

6. Building a colonnade along
the creek, part of which already
exists.

7. Elevation controls to be devel-

RUA
DE
OUREM

THE MOST IMPORTANT
INTERVENTION HERE
IS THE SHIFTING OF
THE TRAFFIC TO THE
OTHER SIDE OF
THE CREEK.
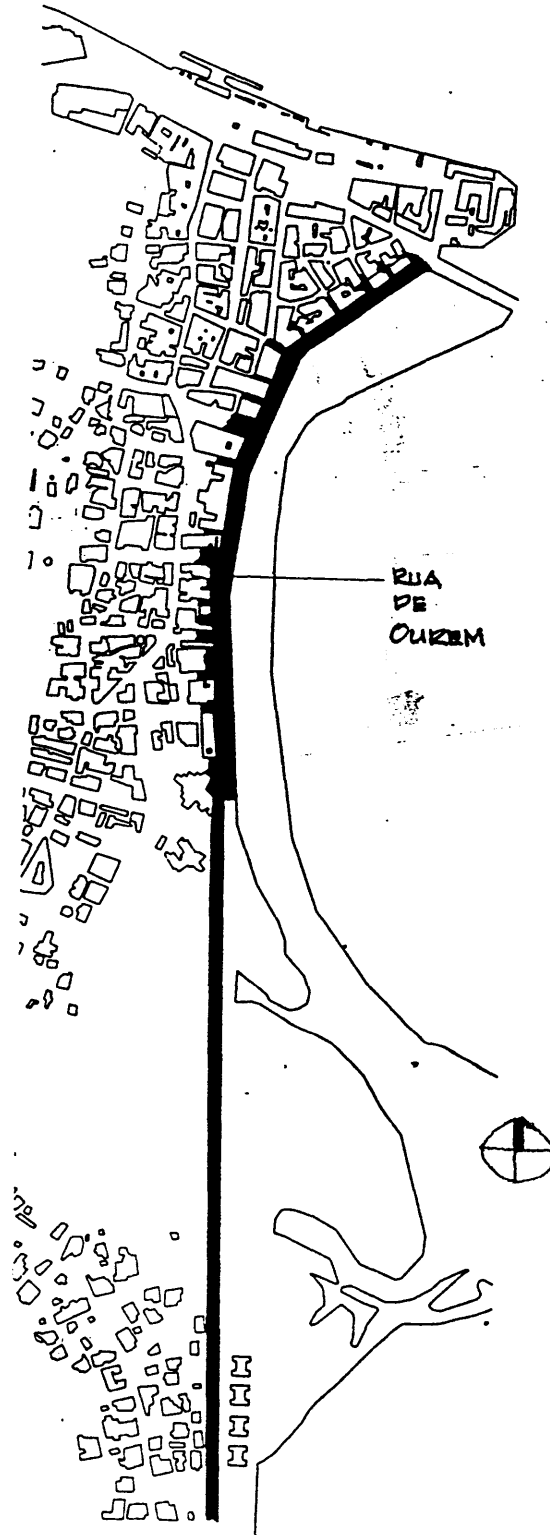
oped, as per typological analysis, not per style.
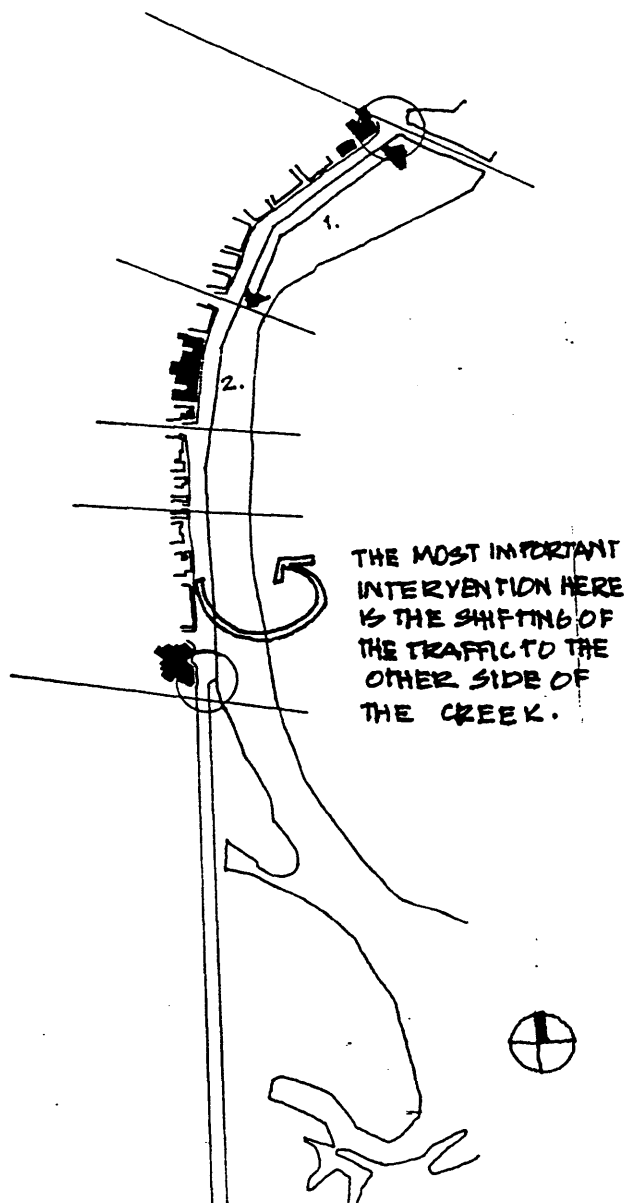
Specific Strategies

1. Important activities like banks, tourism offices can develop on this facade. Parking for these facilities are on the opposite side of the creek.

2. Pedestrianising the street helps relieve congestion during school peak hours.

3. Bridges, break down scale of the road and are important as connections to parking and exhibition ground.

4. Bringing back the old order of the creek front, by attaining the original orientation, which has been lost due to the heavy traffic on the Rua de Ourem.

GREEN
PATCH
BETWEEN
THE CREEK
AND THE
ROAD

THE ROAD
WHICH TAKES
THE TRAFFIC
PREVIOUSLY
ON RUA DE
OUREM.

PLANTERS

PAVEMENT
WITH SEATINGS
AND TREES

STAIRS
LEADING
TO WATER

SEMI
COVERED/
COVERED
COLLONNAD
PASSAGE.

Rua de Ourem : Proposals

USING THE
PAVEMENT
FOR THE MARKET
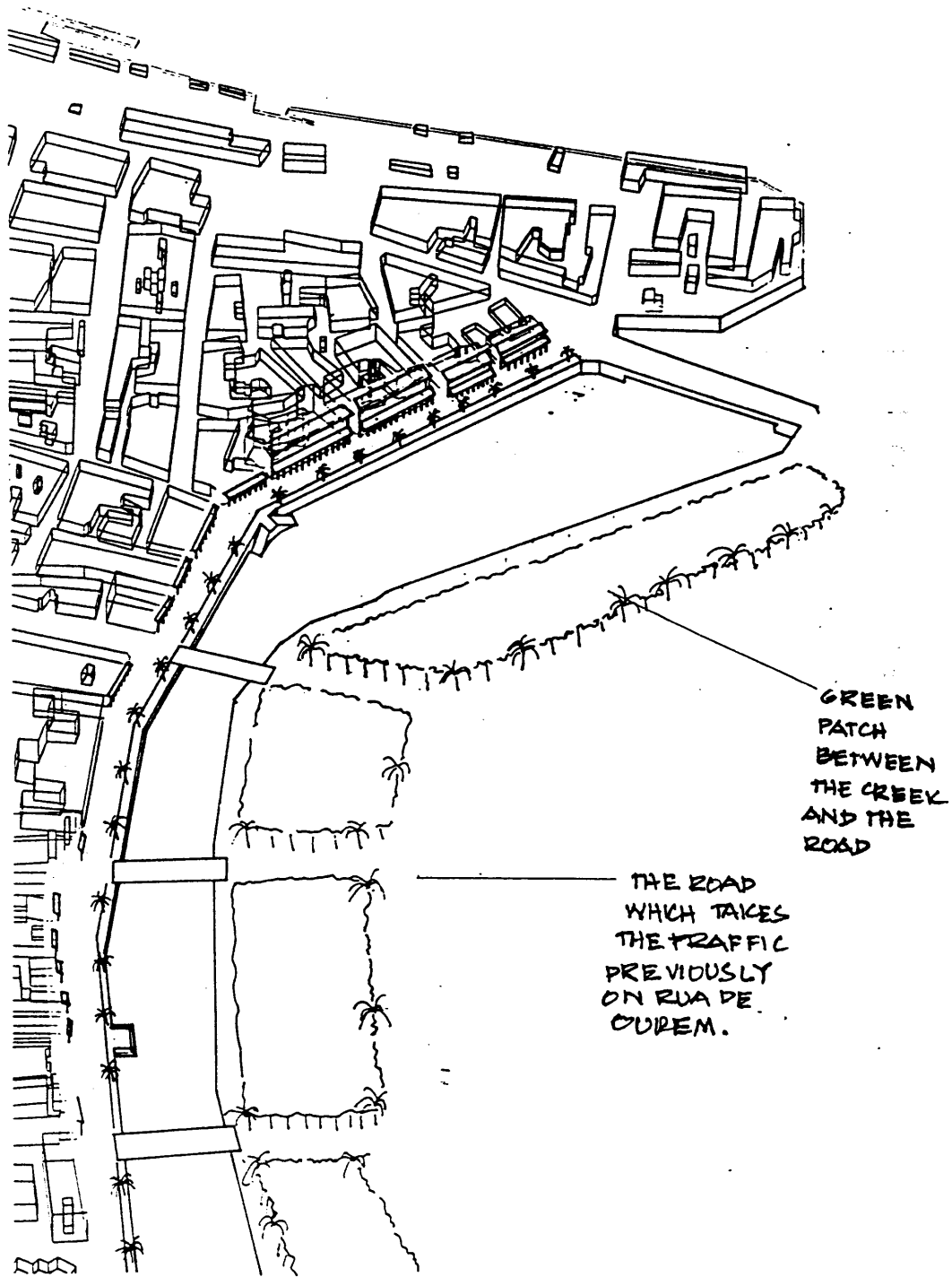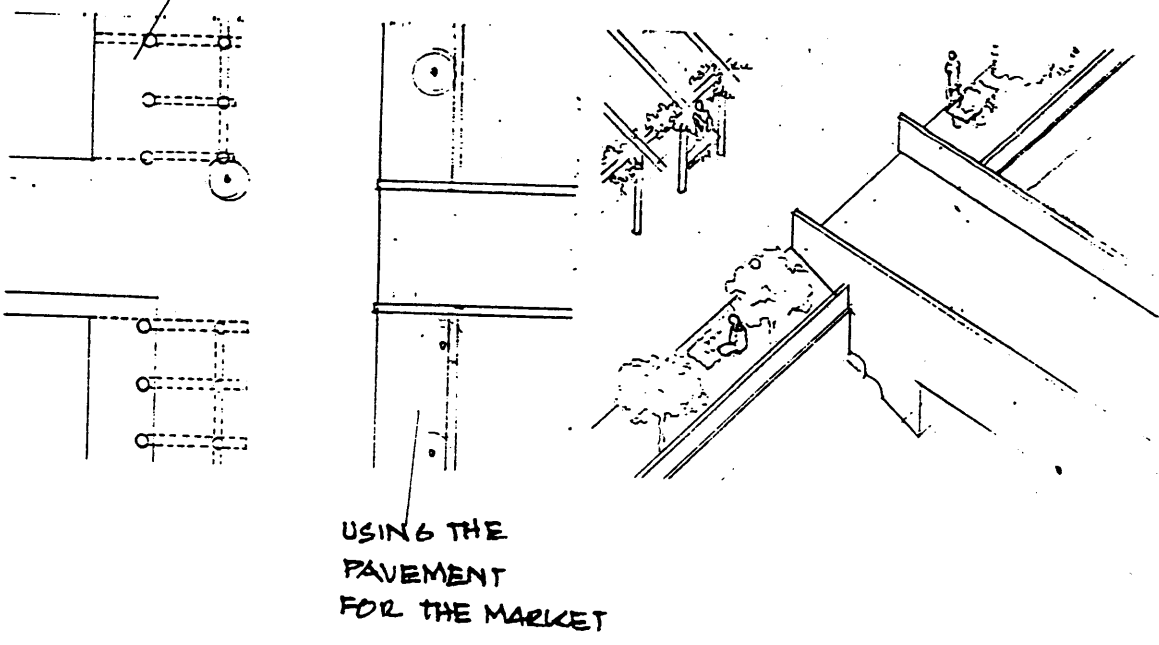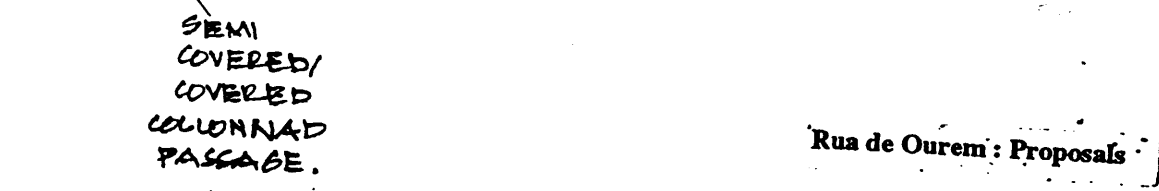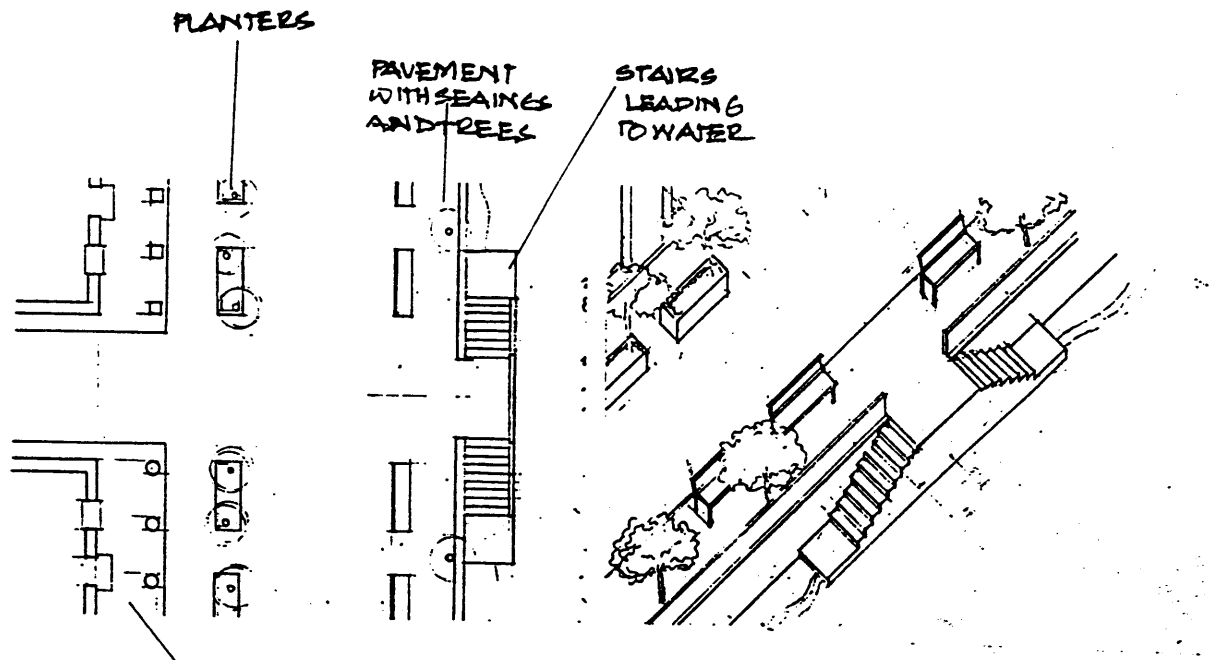
Conclusions

Conclusions

Goa is undergoing upheavals of change due to the new open door policy, which has led to the reshaping of its historical environment, while adapting to rapid urban changes.
Already there have been various instances of irreversible mistakes of modernization, due to which both the environment and the unique fabric of Goa is in the danger of being wiped out.

Some of the reasons for this are:

1. *Differing conservation values*: Dichotomy of values of 'conservation', both in its planning and implementation, amongst organizations such as the Town and Country Planning Authority, the Goa Development authority etc. These organizations have disparate agenda with respect to ideals of conservation which form the basis of their development proposals.

2. *Industrialization:* is the cause of the major crunch for space, which is showing up as haphazard building activity; although, industrial organizations are willing to positive advice in adhering to and assisting in the interventions.

3. *Lack of sources of good advice:* The archaeological survey of India, the Intach etc. have developed a prejudice against the ideas of industry and modernization. Their unsympathetic attitude towards these processes makes industrial organizations apprehensive in joining hands with these conservation cliques.

The above observation is true for most of Goa, where an abundance of historic sites exist. While there is the need and the will to progress,

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there is hardly any forum to mediate between the idea of the historic and the processes of medernisation.

Conservationists in Goa, appear oblivious to the larger of consequences of their work and inadvertently, they reinforce prejudices and resurrect differences where none existed e.g. the creation of heritage zones. Not only, is there a dire need for the conservation movement to hold a dialogue with planners but also with cultural anthropologists and other social disciplines.

Also, the conservation movement in Goa, should shift its priority to what is 'becoming' of our historic cities rather than what they were. Thus, the significant aspect should be the comprehension of the principles of planning through the existing urban patterns, which could be applied to contemporary and future situations.

On assimilating the various issues discussed, we can identify some points to be considered in the establishment of a design theory for the development of Goa. These points constitute the notion of interpretive conservation. They can be divided into two parts:

1. *Factors:* these are issues to be read and analyzed from the site, and form the inherent pattern for any intervention.

2. *Procedures:* These are the principles, to be adhered to, while implementing the interpretation of the factors.

Factors

The following are the factors to be taken into consideration:

a. *The Environment:* This is the most important factor. There is havoc being played, on the natural environment of Goa, by callous judgment, bureaucracy and misguided building activity (refer Appendix 2). Apathy for both the natural and cultural environment can undermine any well meaning intervention.

b. *Memory:* The notion of collective memory is essential in establishing a narrative of continuity (discussed in the Theory section). For the fabric to identify with both the old and the new order, memory plays a significant role in the development of a strategy.

c. *Progress:* The idea of progress and modernization is not to be prejudiced or categorized as the cause of the ruin of the historic fabrics. A proper mediation between the notion of progress and the historic fabric, can produce a historic fabric playing a pivotal role in the economic growth of the city.

d. *Identity:* For any development process, identity (both cultural and environmental) of the site and its inhabitants is a significant factor, in determining the nature of development. In Goa, the question of identification, with the Indo Portuguese style, as the Goan 'authentic', assists in the establishment of an identity in a dialogical process i.e. there has to be the existence of the "significant other" to form an identity; the argument of the local unique within the modern ideal of a uniform Indian mainstream (Charles Taylor in "The politics of recognition"). This identity, a source of pride, is being neglected by forces of tourism advertising, in Goa, by showing Goa, as a fun filled beach place, and forgetting the historic genius.

e. *Critical Aesthetic:* Due to the large amount of historic artifacts, it is more practical to develop an aesthetic through an interpretation of the historic, rather than preserving the artifact as it was, to assist the artifact in addressing contemporary issues and not be stagnant (refer the section on Theory).

f. *The People:* Respecting the notions of collective memory, bringing

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economic growth to the people, and making people participate in the interventions, makes this process more people oriented, rather than 'monument' oriented.

Procedures

a. *Continuity:* Between the lost memory and the new urban value, the link is in the urban order that can regenerate the missing tissues. To integrate the broken cultural fragments and their values in daily life or the socio-economic reality, is therefore a practical act. The appreciation and restoration of the urban order of the creekfront, the spine as a link between communal spaces, are examples of such cultural beliefs whose order was restored, with the idea of economic progress.

b. *Coherence:* Between the new development areas and the old urban settlements, continuity would be maintained through physical connections of the streets, with a similarity of functions such as commercial etc. Situations such as the creekfront, while imbibing its old order, would integrate with the other parts of the city by its functions, such as the weekly market etc.

c. *Adaptability:* In the reconstruction of the existing old settlements of Fontainhas, it is essential to provide an organic matrix for the natural growth of pluralistic urban expressions with unity, e.g. the possibility of innumerous interpretations of the order in the house.

The interpretation of traditional fabrics is therefore a mediation of the historic and the modern, and the continuation of the unique cultural and physical environment, with a practical link to contemporary life. *Conservation in India is at the crossroads. It can provide the impetus and ideology for a conservation-oriented development policy, or to be content with arguing about "authenticity in the intellectual and artistic realm".* (Menon, A.G.K.)
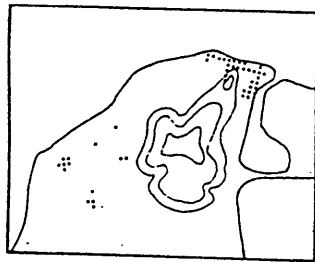
Legend :

1. Adil-Shah Palace
2. Mhamai Kamat House
3. Church of Our Lady of Conception
4. Gaspar Dias Fort

MANDOVI RIVER

N
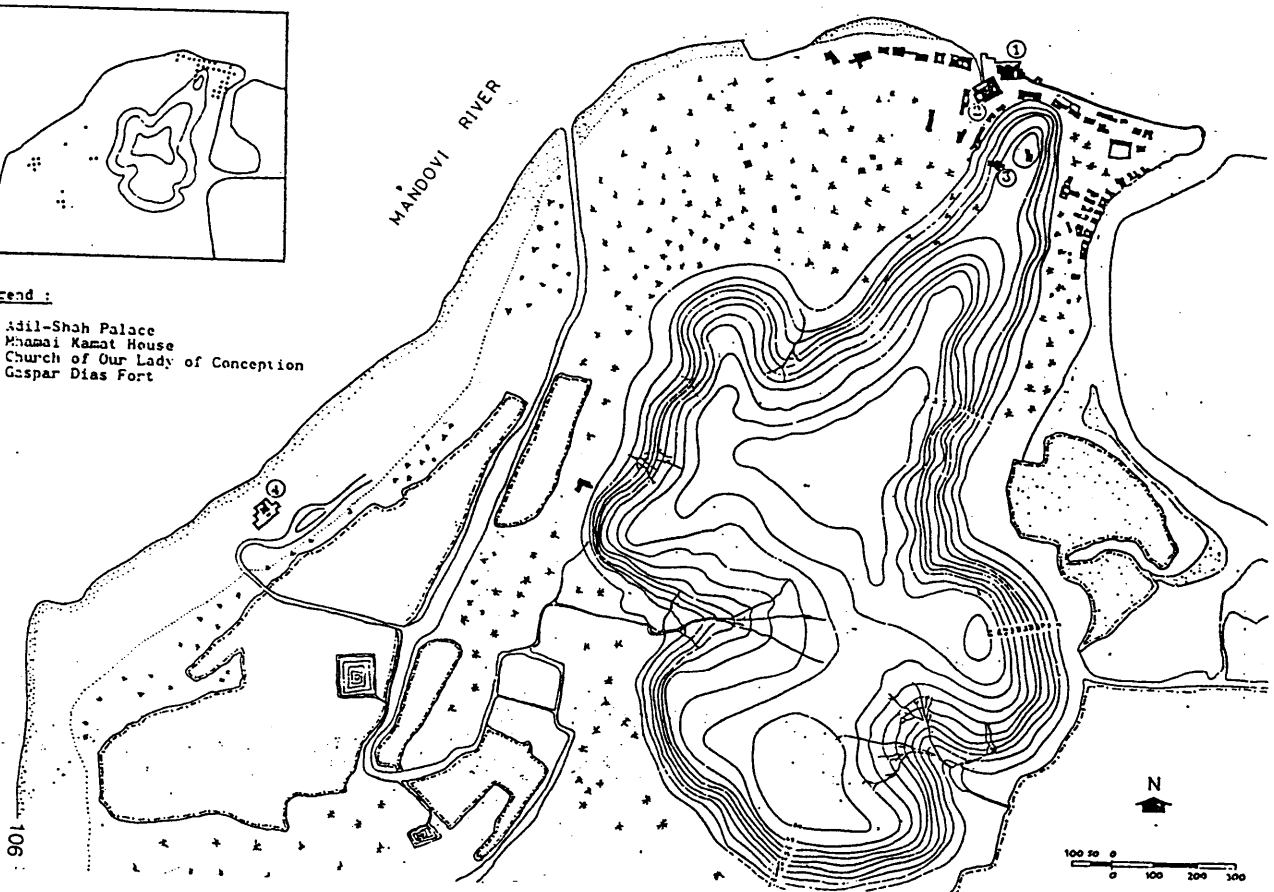
Growth

History
Origins of the name

An inscription of 1107, of the time of the kadamba kings refers to Panjim as 'Pahajani Kali', Pahajani meaning the eastern part and Kali meaning bay or canal.[1] According to Gonsalves Cardoso[2], the Portuguese corrupted the word 'Panchyma Afsumgry' or the five enchanted palaces inhabited by the Muslim Kings and their wives, into 'Panjy' and subsequently 'Panjim'.

Brief History

Not much is known about the early origins of Panjim, except that in the XIVth century it was a kind of riverside resort for the king and other dignitaries, who lived in sumptuous palaces, the most outstanding being the king Ismail Adil-Shah's fortified palace.
When the Portuguese conquered Goa, little could they foresee the future of Panjim as the capital of Portuguese India. It was but a modest ward of the Taleigao village, and occupied mostly by Adil Shah palace referred to above, and the nearby house of Mhamai kamats, where the merchant ships unloaded their goods.

Due to its strategic location, the Portuguese had selected it as an important military post, to control the entrance of the river and thus protect the city of Goa, the then capital, from country river-bore invasions. During early Portuguese rule,
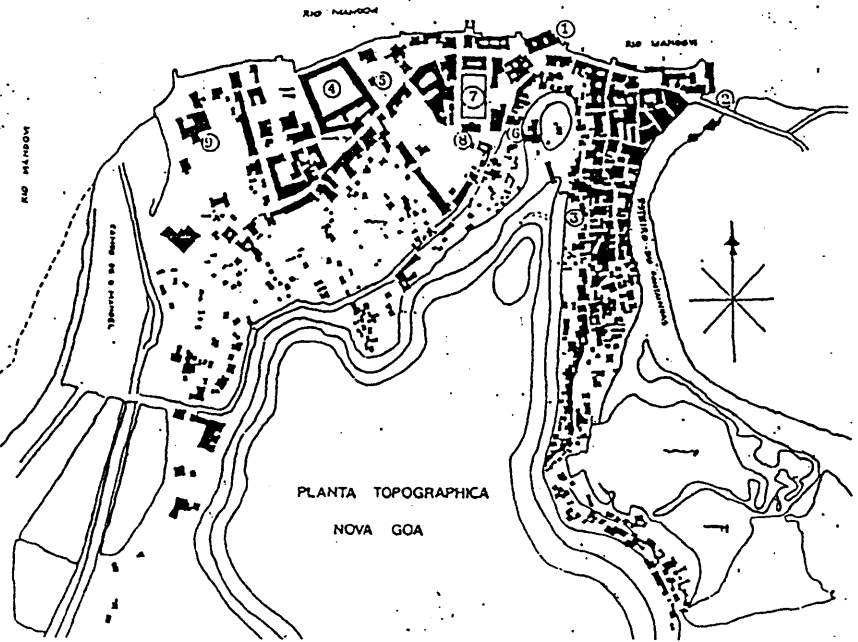
Legend :

1. Adil-Shah Palace
2. Linhares Bridge
3. Fontainhas
4. Infantry Headquarters / Public
   Library
5. Praça de 7 Janelas
6. Church of Our Lady of Conception
7. Municipal Garden
8. Senate or Municipality building
9. Military Hospital
10. St. Inez Church
11. Mahalaxmi Temple

PANGIM
1870

PLANTA TOPOGRAPHICA

NOVA GOA

it was also a country resort for the rich and the powerful, as is evident from a 1635 manuscript by Garcia de Resende:" (Panjim had)....fifty houses, some of them storied and some quite big and beautiful, belonging to the Portuguese of Goa and others who have settled down there, part of them lying along the river bank, with gardens and palm grove."

The selection of Panjim the new capital was chiefly due to the decadence and the eventual ruin of the city of Goa. Earlier, as we have seen, Mormugao had been selected as the new capital, but the project had been abandoned. It was only the shifting of the Viceroy's permanent residence to Panjim in 1759 that virtually laid the foundations of the town.
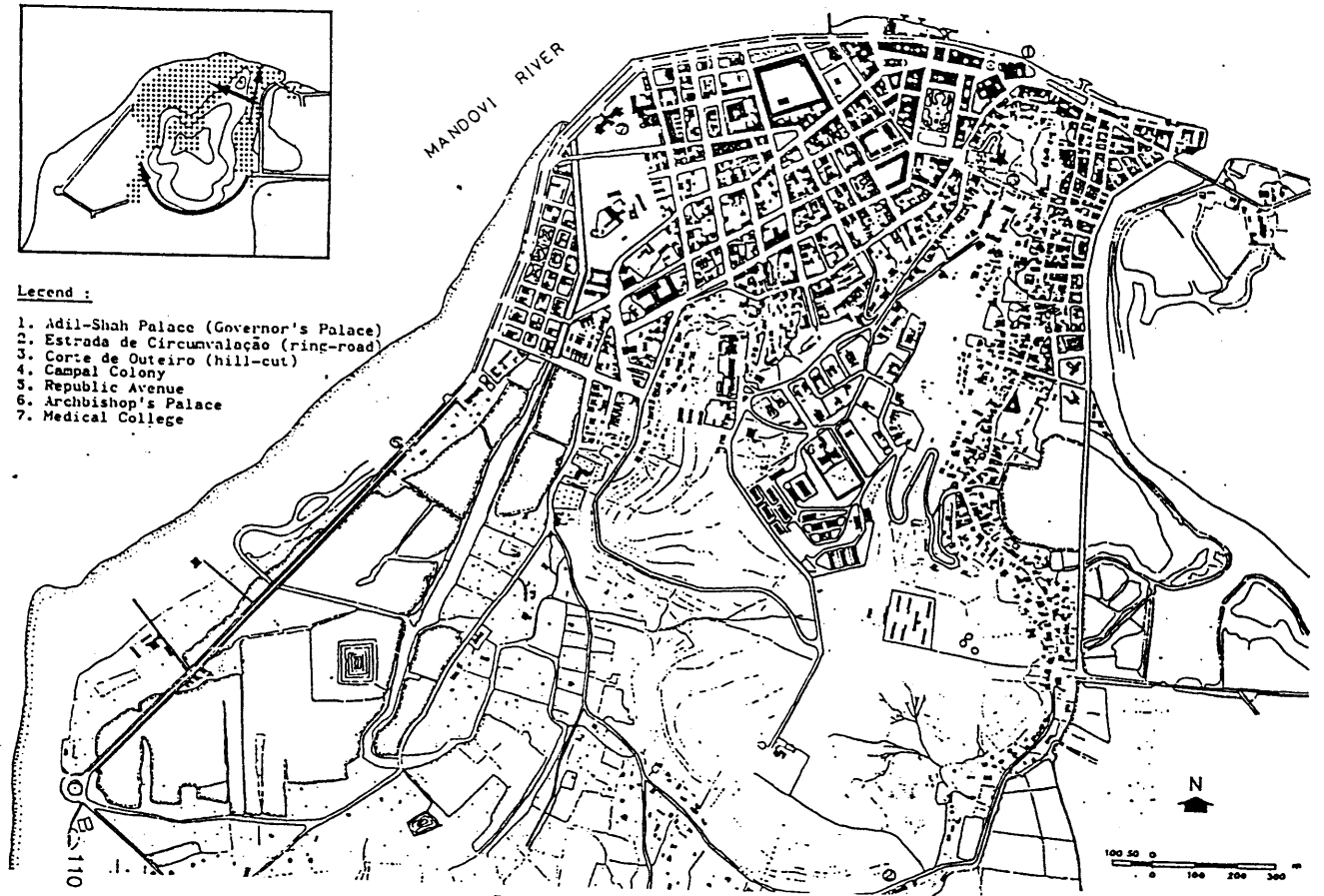
Panjim was raised to the status of a city and capital of Portuguese India by a Royal decree in 1843. Renamed Nova Goa, the new capital was conceived as a large region encompassing not only Panjim proper, but also neighboring Ribander and the remains of the old city of Goa.[3] Naturally, such a large project was found to be impracticable and eventually the term 'Nova Goa' soon came to be applied to Panjim alone, though the town was always popularly called by the latter name.

After liberation, Panjim remained the capital of the Union territory of Goa, Daman and Diu, and now that of Goa state.

Origins and Evolution

Panjim as an urban settlement came into being as a result of the decay

Legend :

1. Adil-Shah Palace (Governor's Palace)
2. Estrada de Circumvalação (ring-road)
3. Corte de Outeiro (hill-cut)
4. Campal Colony
5. Republic Avenue
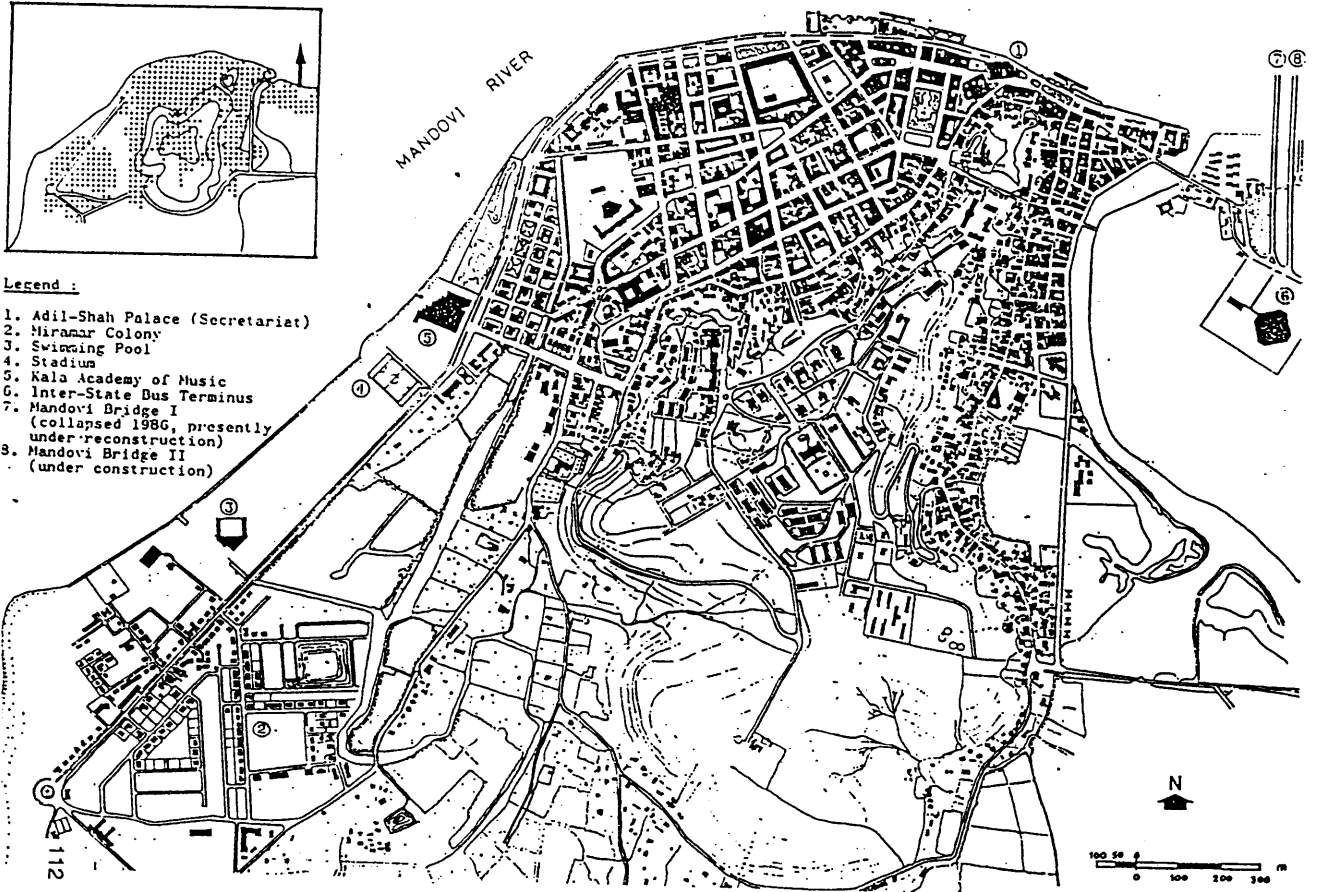6. Archbishop's Palace
7. Medical College

and decadence of the former capital, the old city of Goa. " ...to Dom Manual de Portugal e Castro (one of the Viceroys) goes the credit of selecting Panjim,....apprehending that (city of) Goa would in course of time be completely destroyed and deserted ....without an alternative place to serve as capital."[4] This could have been an arbitrary decision, and it is easy to conjecture a possible psychological associations with Lisbon, whose site is likewise dominated by a hill and on the banks of a river estuary. Historical evidence, however points otherwise : the choice of site seems to have been influenced by the existence on it of Adil Shah's palace and palatial mansions which served as temporary resi-dence for arriving or departing Viceroys and their courtiers. These build-ings which according Antonio Bocarro, "...were one of the best things that this State had"[5], could be used as a base for the establishment of administrative and other infrastructure, vital for the functioning of any urban settlement.

Unlike Vasco, the town was not planned at once, but actually underwent a gradual evolution which responds to the regional context, the physical features of the site, and parallel historical developments in Portugal.

Early Origins

Little specific graphic information can be gathered about pre-Portuguese Panjim. The map at left is based on descriptions and sketches from his-torical archives and documents, the location and plan of some buildings being at best conjectural. As successive transformations undergone by the town have obliterated most traces of structures existing before the

Legend :

1. Adil-Shah Palace (Secretariat)
2. Miramar Colony
3. Swimming Pool
4. Stadium
5. Kala Academy of Music
6. Inter-State Bus Terminus
7. Mandovi Bridge I
   (collapsed 1986, presently
   under reconstruction)
8. Mandovi Bridge II
   (under construction)

Portuguese conquest, the only original ones are shown are the fortified palace Adil Shah and the Mhamai kamat house, owned by a noble Goan hindu family. Several country mansions also existed, most of them located along the waterfront, showing an early predilection in the orientation towards the beautiful waterfront.

Panjim did not change much under early Portuguese rule, i.e. XVI - XVII Centuries. As a sign of Portuguese domination, the Chapel of Our Lady of Immaculate Conception was built on the western slope of the hill. The Adil Shah palace was adapted as a vigilance post to control the river entrance, and as residential quarters for the captain of the place. later, it served as temporary residence for the Viceroys and Governor Generals arriving or leaving after their tenures. The Mhamai kamat house, which had residential quarters as well as large storerooms to store the merchandise from the family's ships, continued to be occupied by its former owners, while most of the country mansions were now occupied by the Portuguese wealthy, and 'fidalgoes' or noblemen. During the XVII and XVIII centuries, more and more such mansions were built by the latter , continuing the movement along the waterfront.

Urban Foundations

Upto the XVIII century Panjim lacked a sufficiently developed residential community and infrastructure to be classified as an urban settlement. It was only in the beginning of the XIX century that with the imminent desertion of the old capital, several institutions were transferred to the new site of Panjim. This process was begun due to the efforts of Dom Manuel de Portugal e Castro, Count of Linhares, Viceroy who can rightly
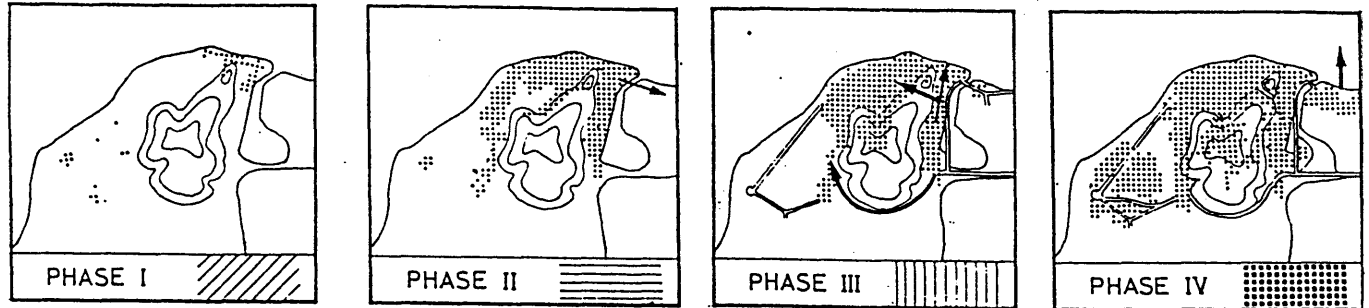
Waterfront development
Riverside resort
Military control post

New capital
Establishment of urban infrastructure
Shifting of institutions
Development of residential community

Definition of streets in administrative/ commercial zone
Establishment of links between different parts of the town
Development of suburban areas

Expansion in all directions
Inauguration of new suburbs
New road links between Panjim and other parts of the State
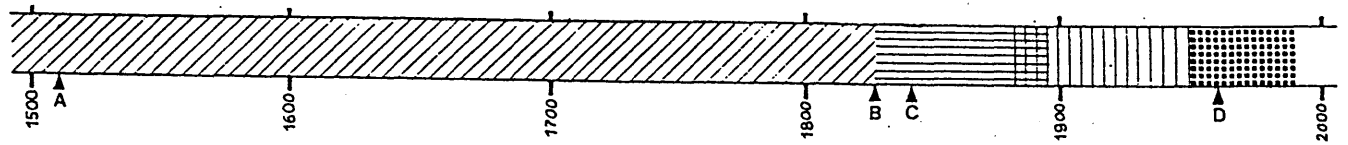
TIME-SCALE :
A   1510 — Conquest of Goa by the Portuguese
B   1827 — Portugal e Castro's regime begins
C   1843 — Panjim becomes official capital
D   1961 — Liberation of Goa

be called the 'founder of Panjim'. During his administration (1827-35) hillocks were leveled dunes were cleared and swamps filled to prepare the ground for the construction of roads and buildings. The Linhares bridge, named after the Viceroy, was also built at this time across Fontainhas creek, providing a direct road link with the old city of Goa. Portugal e Castroi's successors continued to develop the settlement and by 1870, Panjim could already boast of a sizable population, wide streets and squares, and many institutions, housed either in former palaces or buildings of their own, which gave it a truly urban character. Meanwhile the continuous exodus of people to the ward of Fontainhas made the latter a compact, thickly populated zone with narrow, torturous streets characteristic of medieval Portuguese towns. Thus, the town developed into two almost independent parts separated diagonally by the hill: the northern part, facing the river was mostly administrative and commercial in function and the eastern part, Fontainhas has as purely residential character.

Improvements and Stabilization

The period of stabilization of the urban structure of Panjim stretches from late-XXX to mid-XX century. During this period, Portugal was receiving the late impact of Renaissance ideas which naturally was also felt in the colonies. The evolution of the street pattern of Panjim echoes that of Lisbon's lower town, rebuilt after the 1755 earthquake: its northern portion is divided into rectangular/ trapezoidal blocks, by rectilinear streets running from the base of the hill to the river, intersected by others more or less perpendicular to them. Some of these blocks were reserved for squares (pracas) and a municipal garden, essential features of any Portuguese town. The layout of streets was sometimes determined by the position and plan of important buildings, such as the great

quadrangle housing the Infantry Headquarters and library. The communication between the parts of the town, separated by the volume of the hill, was improved considerably by the road cut through the hill in 1878 - 82, and by a ring road in 1900 - 05, which skirted the southern edge of the town, between Fontainhas and St.Inez.

Laws and Ordinances involved in the growth of Panjim

The shifting of the capital from Old Goa to Panjim, involved building activity in Panjim. The Viceroy ordained that Panjim be built according the law of the Indies. These were followed by Spanish settlers in their colonies. "On arriving at the place where the new settlement is to by founded a plan for the site is to be made dividing it into squatters, streets, building lots, beginning with main square from which streets run. This main plaza should never be less than 200ft. by 300ft. nor larger than 532ft. by 800ft. A good proportion being 600x400 ft. "[6] This grid in Panjim extends from the river front to the hill of St. Inez. The grid took its starting point from the square of the church of Our Lady of Immaculate Conception. It includes parks and squares as per the ordinances.

References

1. Referring probably to the creek of Fontainhas on the eastern part of Panjim

2. Cardoso Gonsalves in 'Journal de Viagens', voll, p.3.

3. I must be remmbered that the old city of Goa was a multi-continental trade and political centre, its size exceeding even that of present day Panjim. It was unnatural then that the new capital with jusisdiction over only three small parcels of Indian territory should have been conceived on such a large scale.

4. Azvedo, Carmo, 'The Makers of Panjim"

5. Bocarro, Antonio, in Arquivo Portugues Oriental, tomo IV, vol.II, part I, p.214

6. Noronha, Jose, The Urban Structures of Goan Towns, 1989

Effects on the Environment of the Beach due to the tourist industry

Beach areas are sensitive areas and their conservation is a very delicate issue. The presence of huge 'Goan' five star structures on these beaches has resulted in coastal degradation in many layers. The damage these buildings have caused can be highlighted under:

• the disappearing sand dunes
• diminishing treeline along the beaches
• unclean beaches and sea water

Sand dunes on the beaches are mounds of drifted sand topped with vegetation. A stable seashore has two main lines of sand dunes: a sea dune which runs parallel, but about 100 - 500 meters away from the sea shore. In between these two line of dunes lies a sandy plain with a minor dunes and coconut palms.

The sea dune is formed by the incessant pounding and the swirling action of the ocean waves, which throw up sand to a height of even five meters. This is nature's first line of defense to prevent monsoon storm waves, and cyclonic surges from overtopping and flooding the coast.

The land dune is formed by blinding summer winds howling over dry sands which are carried for several hundred meters until precipitate against bushes and vegetation and pile up as dunes which can even 10 meters high. This land dune is nature's second line of defense because it catches the blowing sand, deflects the wind upwards and creates a zone of calm behind itself. The area beyond the dune therefore develops as an area of peaceful stable habitation and agriculture.

Since both the dunes are a result of interacting forces brought to stable equilibrium, any continuous disturbance of the dunes can cause material

imbalance and subsequent erosion with disastrous results.

In the 60s due to political reasons, the ruling party granted sand extraction leases to appeaser its opposition. After that, thousand tonnes of sand were extracted by the lease owners, mainly for the use of the hotel industry causing the disappearance of these dunes and incidents of massive soil erosion.

As a side effect of this phenomenon, the treeline has diminished considerably due to this incessant extraction of sand alongwith the massive building construction of beaches.

The beach resorts' wastes are disposed into the sea making the water in the proximity extremely dirty. The management of the overflowing garbage in these resorts is quite poor.

Urban Grids

In the course of deciding to shift the capital to Panjim, the Viceroy ordained, that Panjim be built according the law of the Indies. These were followed by Spanish settlers in their colonies. "On arriving at the place where the new settlement is to by founded a plan for the site is to be made dividing it into squatters, streets, building lots, beginning with main square from which streets run. This main plaza should never be less than 200ft. by 300ft. nor larger than 532ft. by 800ft. A good proportion being 600x400 ft. "

This grid in Panjim extends from the riverfront to the hill of St. Inez. The grid took its starting point from the square of the church of Our Lady of Immaculate Conception. It includes parks and squares as per the ordinances.

Taking a glance at the figure ground of the fabric of Fontainhas, the main spine is the most prominent feature. Another eye catching feature are the secondary streets, cutting the spine of the 31st January Marg.

Fontainhas developed spontaneously, according to historical sources. Initially, this land was agricultural, divided into plots. Later, after the decision to shift the capital to Panjim in the eighteenth century, this area was inhabited by soldiers, scholars and students.

One of the first exercises I did in an endeavor to understand the fabric, was to draw out the spine and the secondary streets and abstract them as lines. The secondary streets occur at a an approximately regular interval. Then I superimposed the grid of the law of the Indies (600ft. x

400ft.), on these lines. They did match.

Initially, after getting the regular pattern of increment of the fabric, I assumed that the divisions came from the divisions of the agricultural land, which developed into blocks and paths; the latter developing into these secondary streets. But, due to the regularity of the measurements, being quite similar to the 600 ft. x 400 ft. it is evident that there was some sort of relationship with the Portuguese grid.

But, it is also unlikely that the grid was actually laid out, since historical sources state the development of Fontainhas as spontaneous. What is possible is the existence of this division in the mental construct of the inhabitants of this fabric. Thus increments in the fabric, although spontaneous, following the street leading to the Fountain, were according to these division patterns existing in the memory of the people.
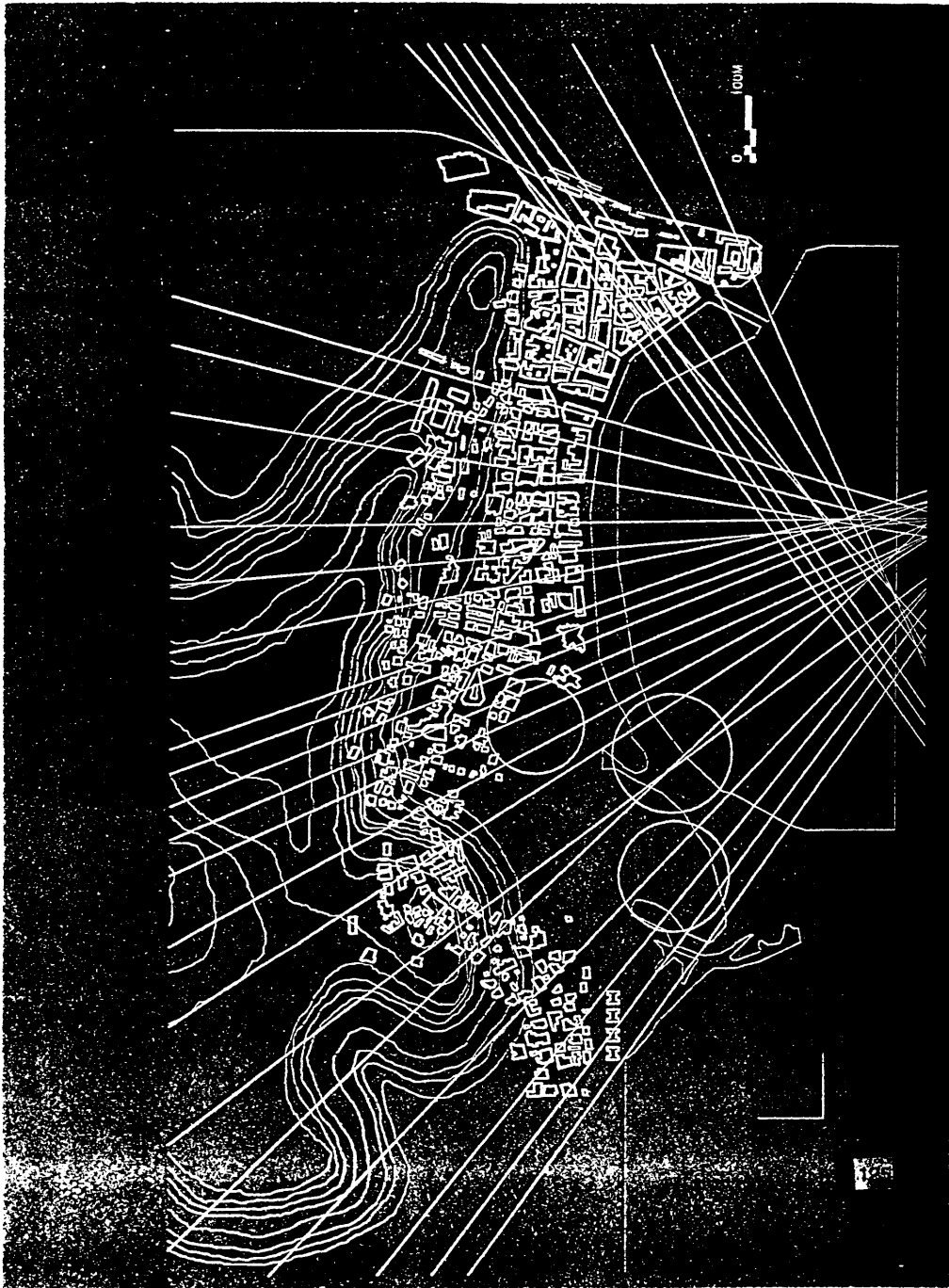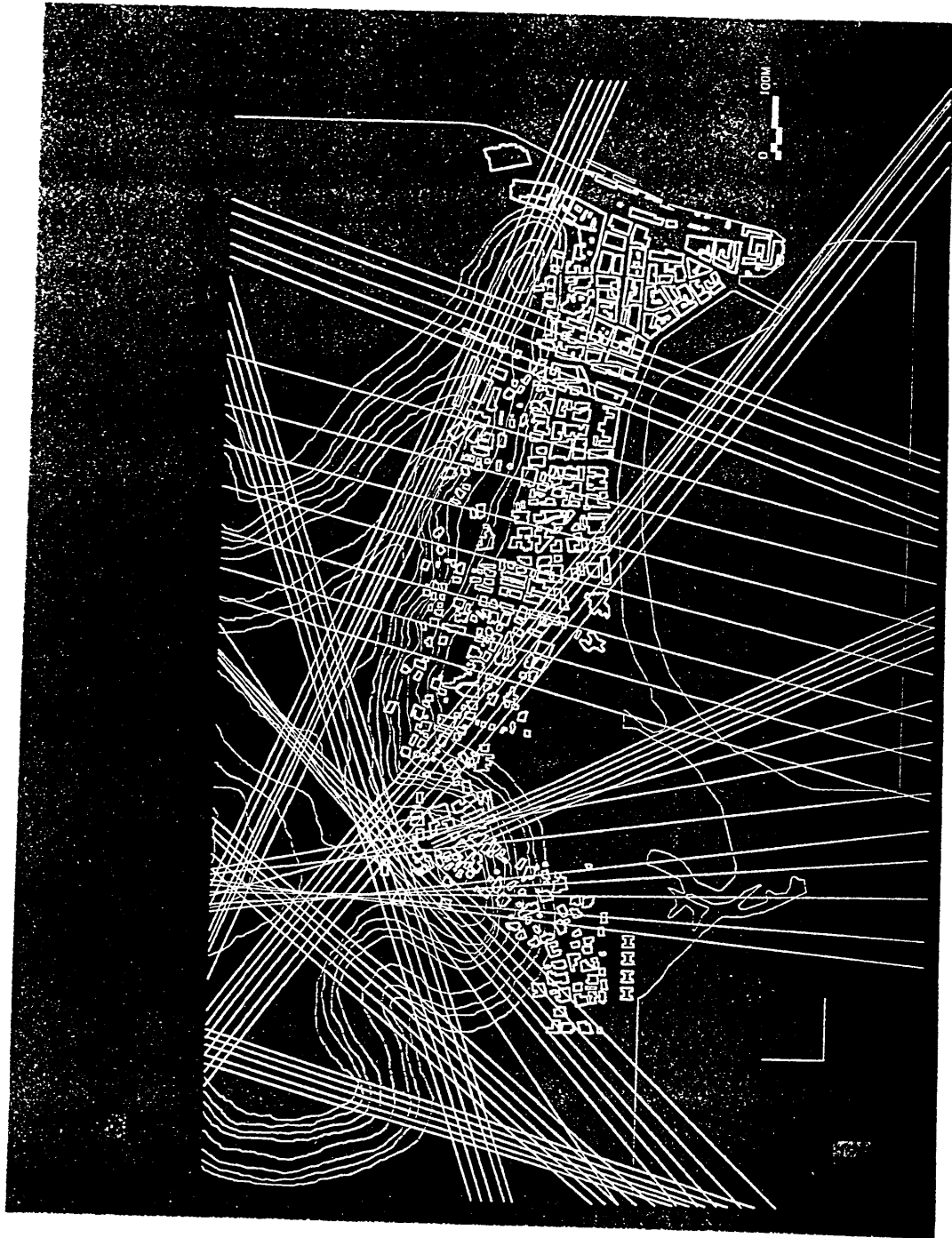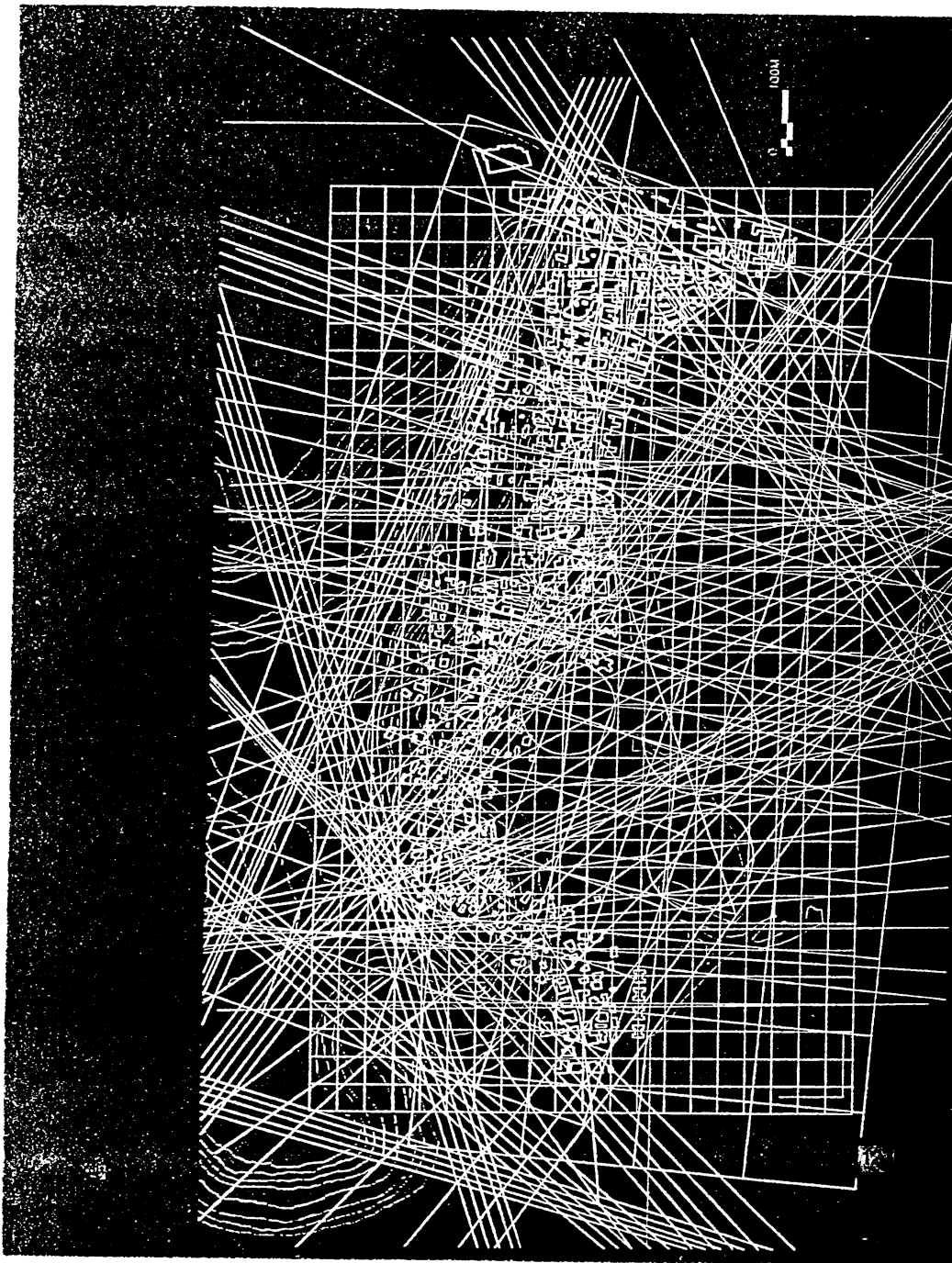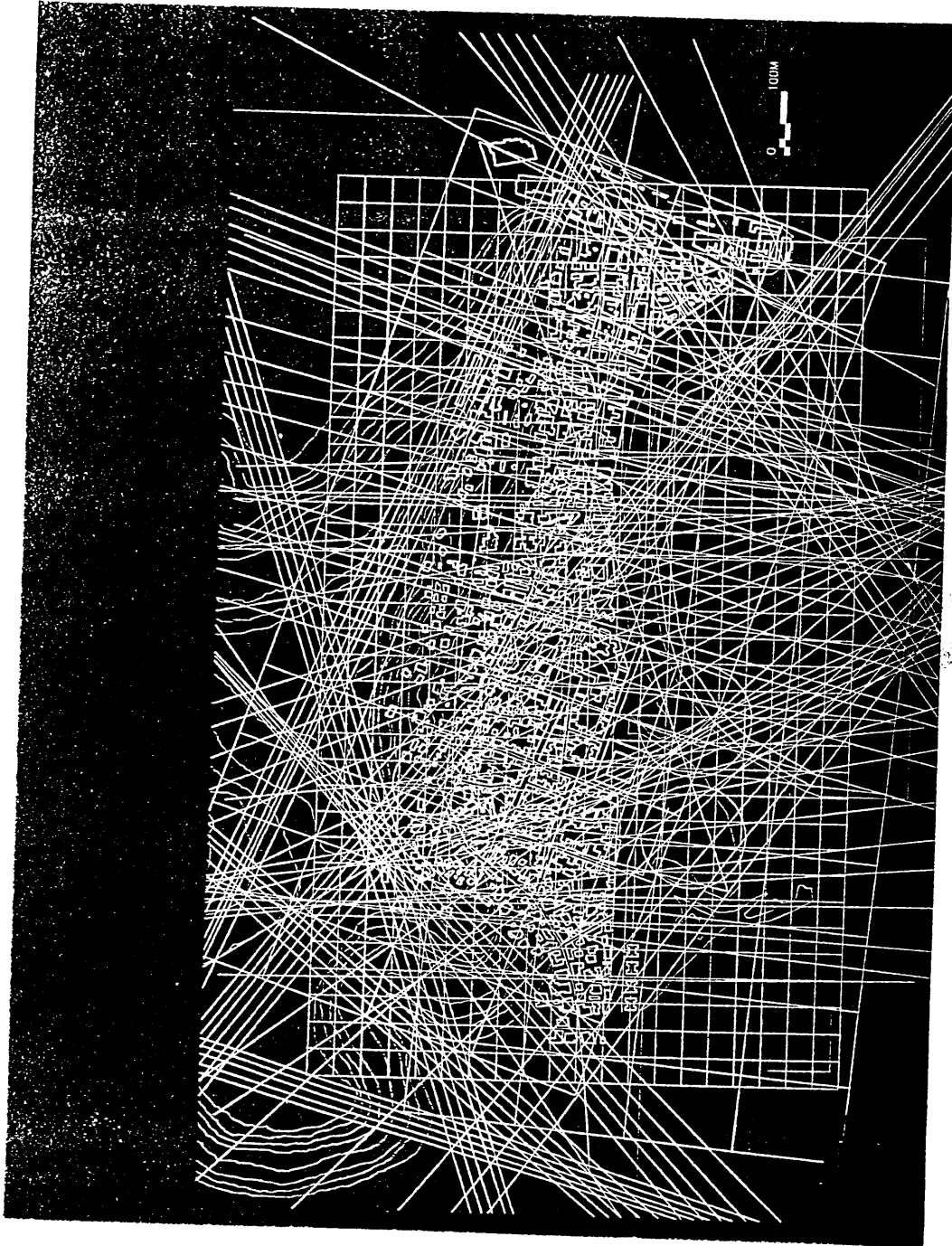
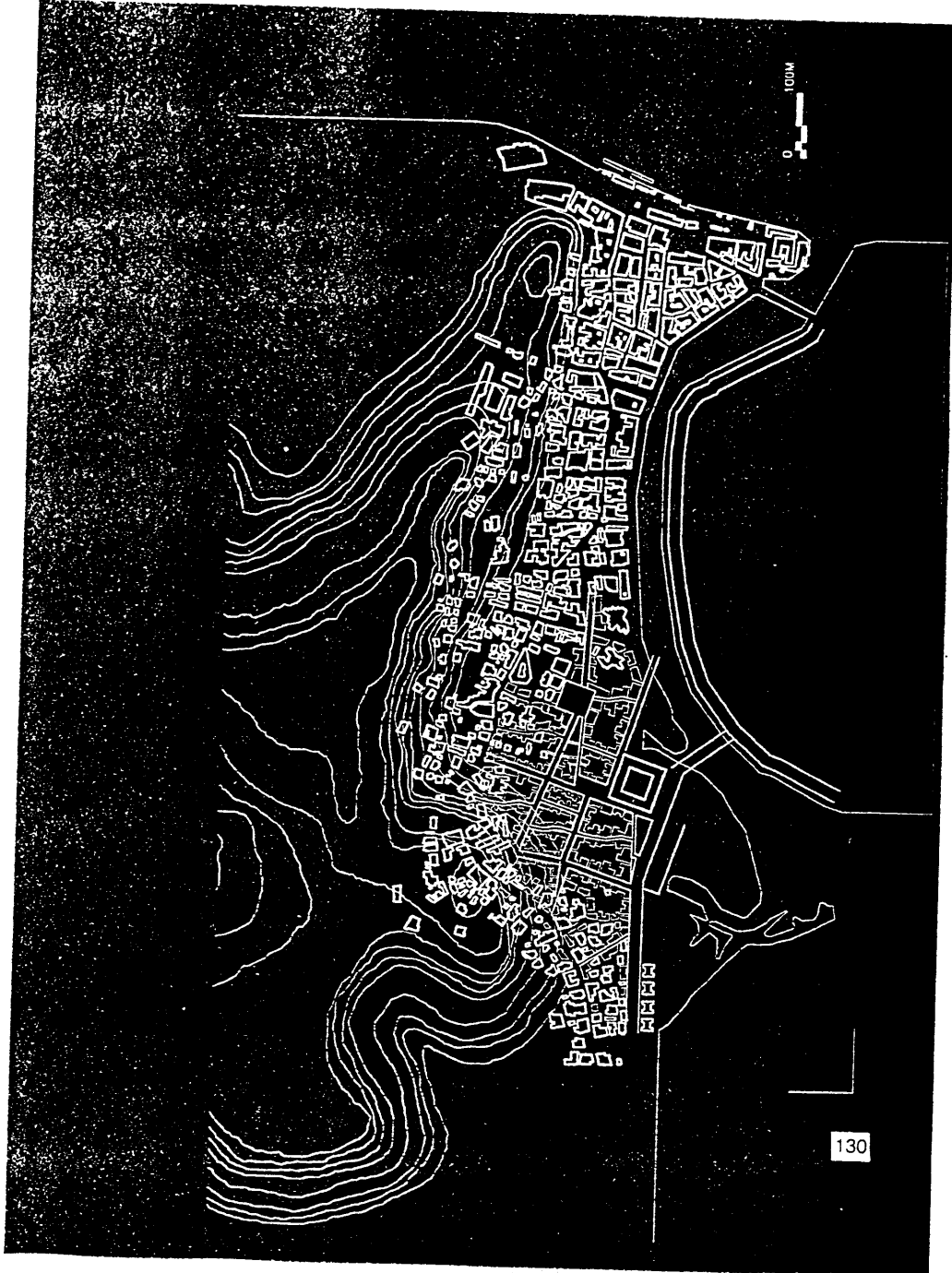Grid 1

100M

Grid 3

0 100M

Grid 4

130
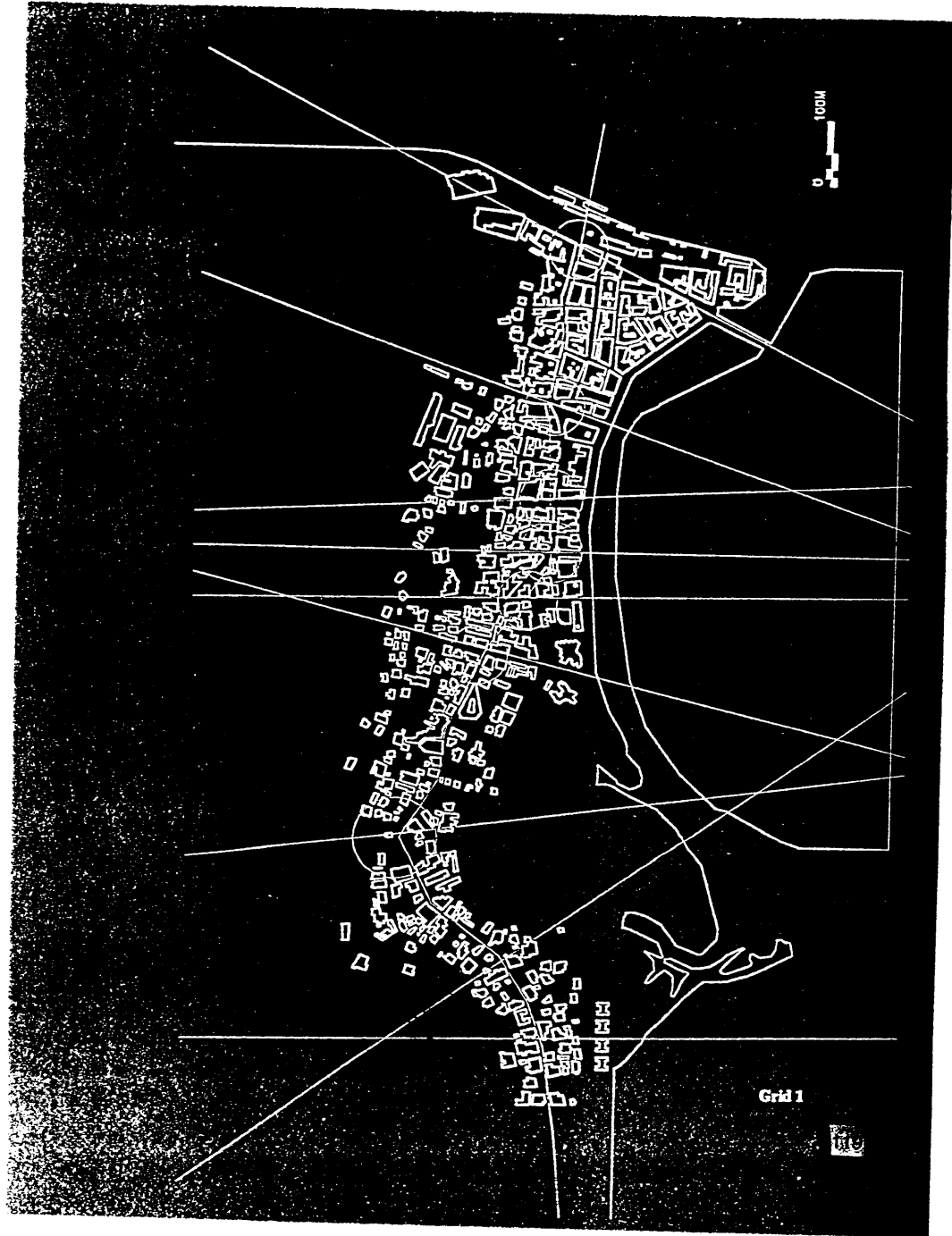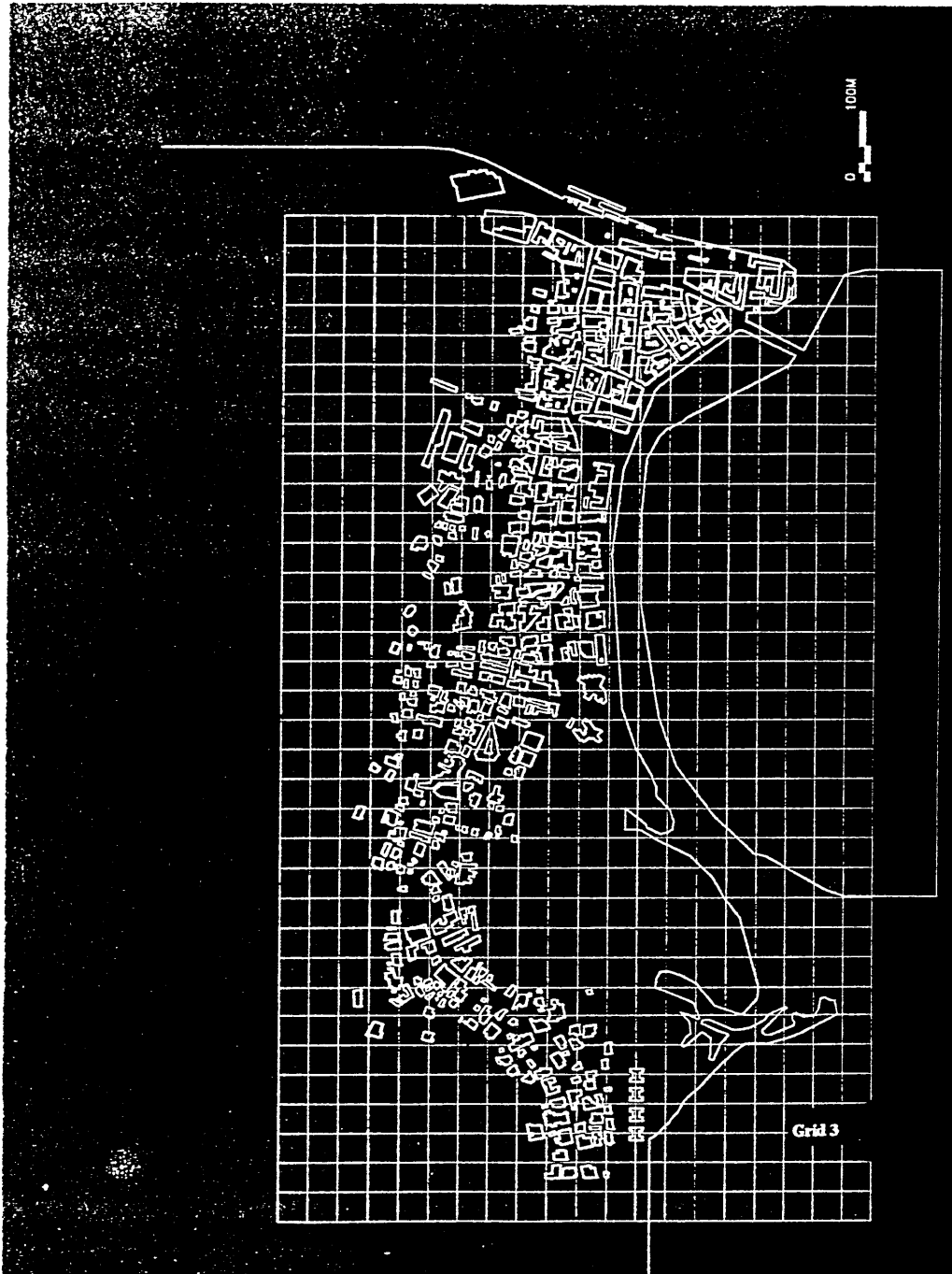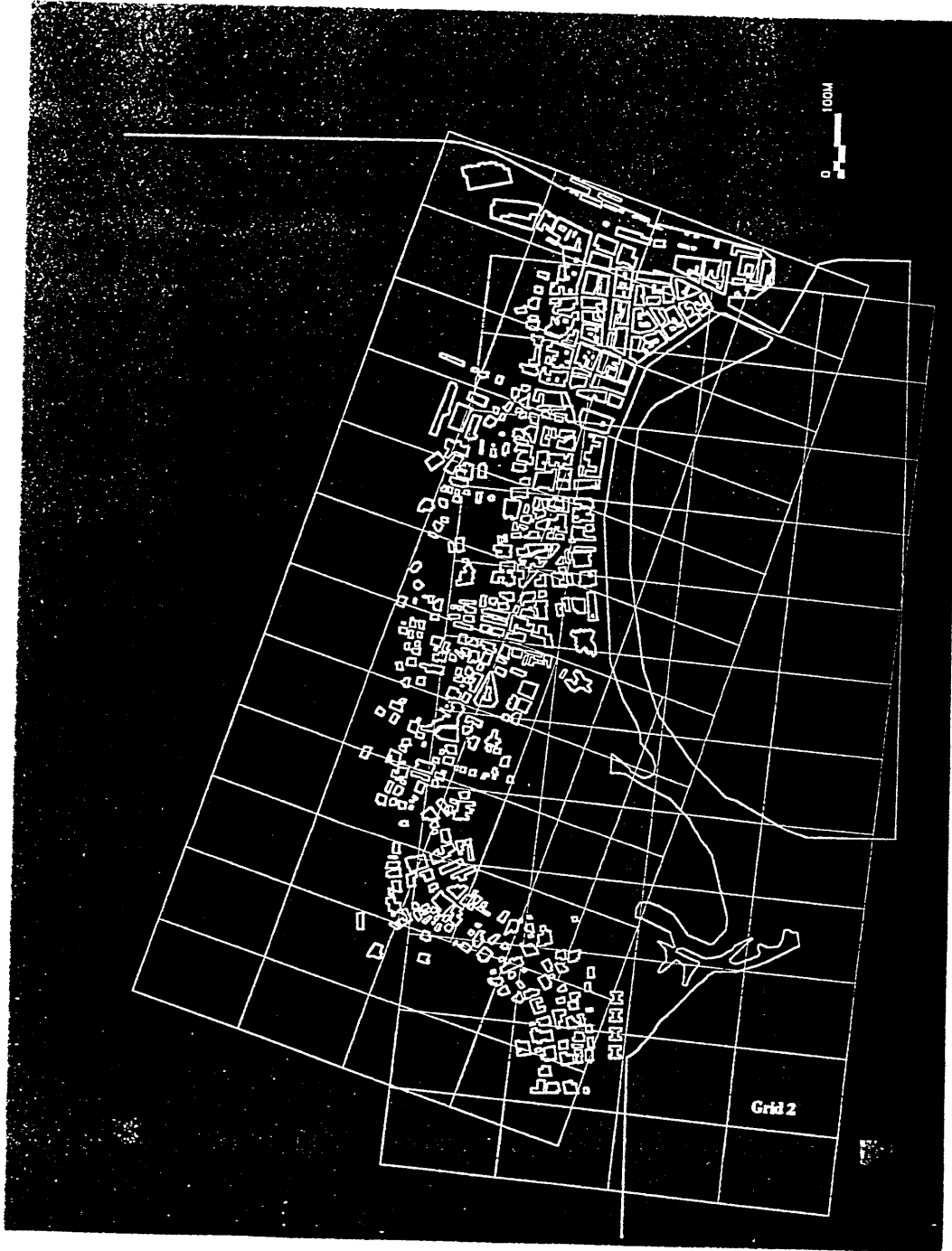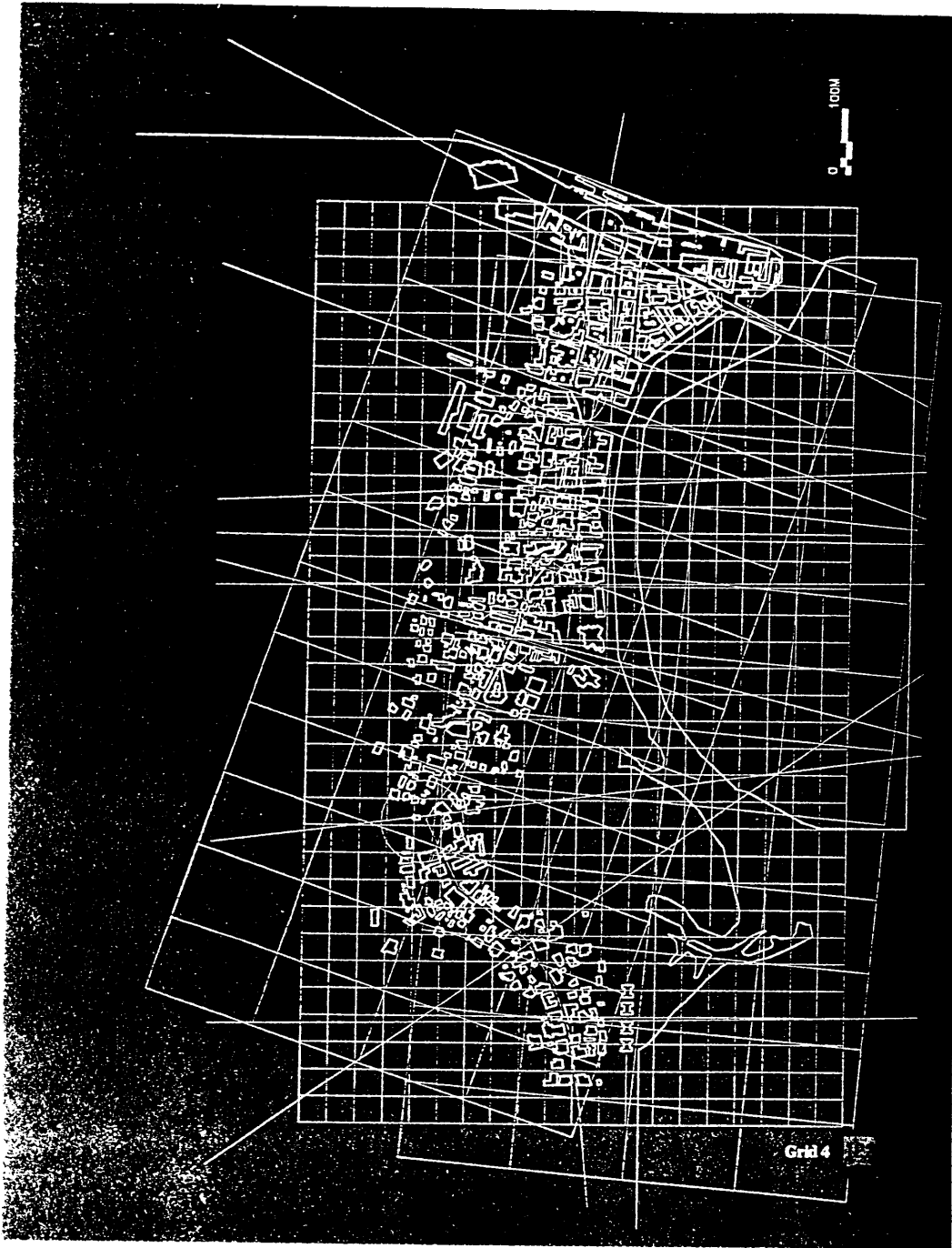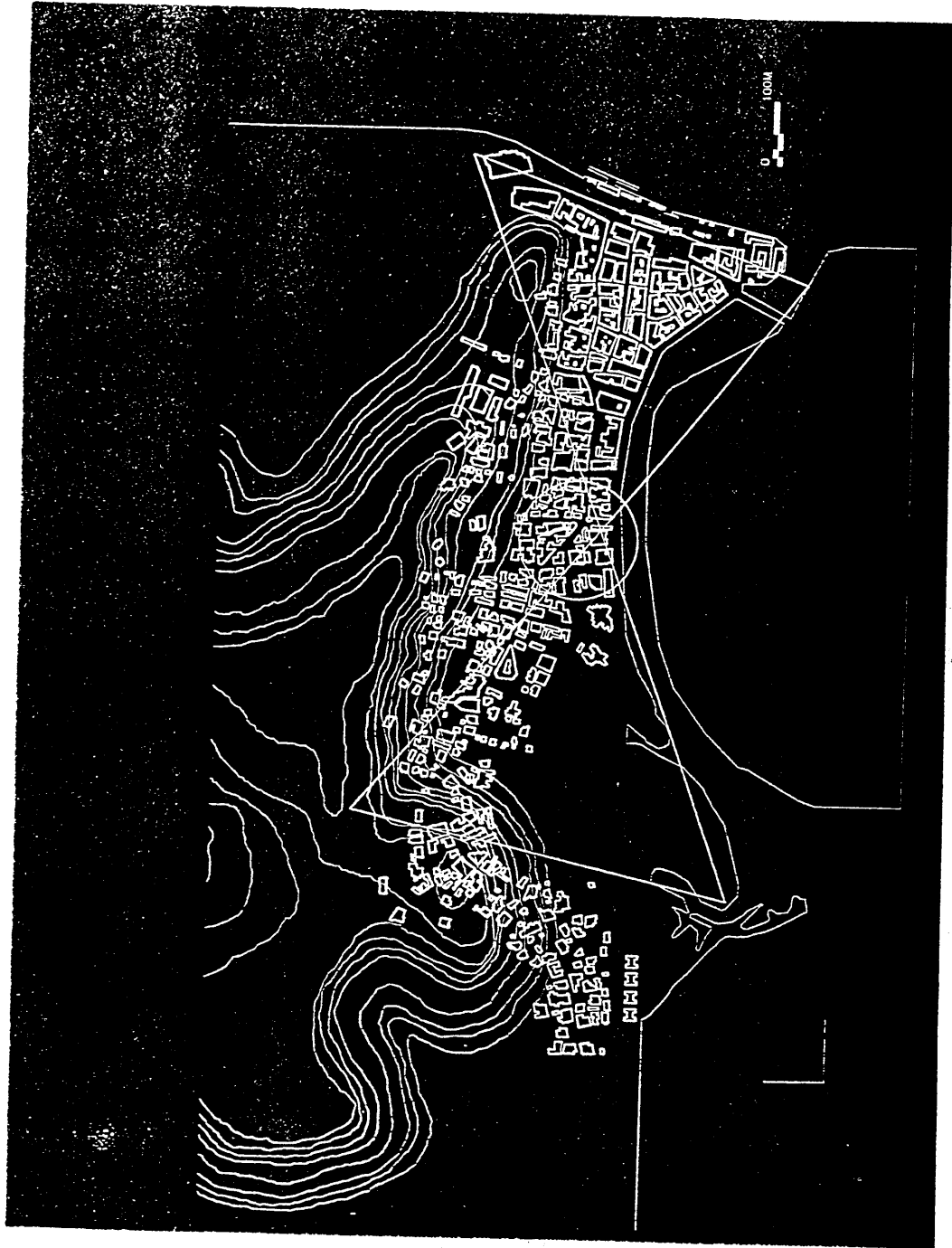
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List of Figures

All the other illustrations, drawings and photographs are done by the author during the thesis and the visits to the site.