Place, Urban Design and Poverty: Lessons from a comparison of Cape Town and Ahmedabad

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ABSTRACT

The paper selectively reports on aspects of a research project conducted over several years aimed at a comparative evaluation of a number of local areas drawn from two cities: Ahmedabad, in the State of Gujarat, India; and Cape Town in the Western Cape Region of South Africa. The purpose of the project was to derive a set of understandings that are useful in the making of place and settlements in developing countries.

The research was undertaken as a consequence of the growing realization that urban problems facing cities in the global north and south are, in many respects, very different (ironically, with accelerating globalization, in some respects and increasingly, cities of the north are having to face many of the problems of the developing world, albeit at a different scale). Not least of the differences is that, in developed countries, the primary urban problem is that of renewal in the face of relatively static, or even declining, population, while in developing countries it is primarily one of accommodating rapid rates of new urban growth. The issue of making and managing new settlements is high on the developmental agenda in the global south. Despite these differences, most of the published urban design precedent stems from the more developed countries. There has been insufficient cross-cultural learning between less developed countries. The project has made some contribution in this regard.

The methodology utilized in the research is set out and illustrated by selected material relating to Ahmedabad only, since the paper does not afford sufficient space to also illustrate the work undertaken in Cape Town. The paper then dwells on some of the significant lessons learned across many dimensions of place, urban design, urban structure and the density/grain of urban fabric. In the process, there are considerations reflecting on aspects of livability, livelihood generation, formality and informality, in contexts where poverty is relatively endemic.

Figs. 1-4. 1-3: Ahmedabad Streets. 4: View across Khayelitsha, Cape Town, looking east from the railway station pedestrian bridge.

INTRODUCTION

There are marked similarities between the urban contexts of South Africa and India. These similarities are very different to conditions found in developed countries and include:

- High levels of in-migration from the countryside to the city;

- High levels of poverty and unemployment;

- High levels of economic inequality;

- Strong social divisions, despite the fact that the constitutions of both countries seek to eliminate these (in the case of India, divisions are based on caste, in South Africa, on race);

- The strongly heterogeneous nature of urban societies, in terms of culture, language, religion and social groupings;

- Very limited public resources to deal with urban pressures, relative to need and demand;

- Large capacity issues within the bureaucracy;

- Planning systems strongly informed by colonial influences;

- High degrees of informality in both the economy and housing.

However, there are also strong differences between the South African and Indian contexts:

- A very long tradition of urbanization and urban settlement formation in the case of India and a very short one in the case of South Africa (although currently most of the South African population ─31 million (62%)─ is urban whilst the majority of the Indian population ─over 740 million (72%)─ remains rural)

- Strong landscape and climatic differences. Ahmedabad for example, is situated on a largely flat site in a semi arid zone that receives most of its rain in the violent form of monsoons over a two-three month period. Temperatures are warm and the summers very hot accommodating a world of year-round outdoor living where the largest issue is maximizing shade and cooling breezes. Cape Town, on the other hand, is dominated by encircling mountain chains and the iconic Table Mountain, although a large part of the city, accommodating most of the poorest households, is on a flat sandy plain with high water table levels in winter and significant parts are prone to flooding. The climate is Mediterranean. Summers are warm but most rain occurs in the cold winter months. A central climatic issue is shelter from storms in winter and from a frequent, strong, south-easterly wind in summer;

- Very different cultural expressions and physical forms of these expressions.;

Faced with this complexity, the insights to be gained are selective and partial. The challenge in this is to look beyond form and the particularity to seek the generic. The real value of this type of research is that it raises issues and questions. In this, the negative is as useful as the positive. The study on which this paper is based, then, is strongly driven from a South African perspective. It seeks to uncover insights that are relevant to improving practice in the South African context, with a view to identifying spatial design and place-making factors that facilitate local liveability and the generation of livelyhoods.

Most of the data gathered for the project represents primary research in the field, supplemented by available mapping and the invaluable use of Google-Earth. The entire old walled city of Ahmedabad (now the city centre of the metropolis) was selected for study, while six distinct areas variously dating from 1880's to the present were selected for study in Cape Town. The surface area of each case varies, since the scale of appropriate consideration inherently depends on its structure and its relationship to the metropolitan system. Data has been collected, and is ordered, around the following sequence for each area studied:

- Location: the positioning of the site in relation to broader sub-metropolitan systems and a description of the site itself.

- Development Process: this describes the way in which the area has come about. Where areas have been planned, the main planning ideas are discussed here.

- Elements of Public Structure: this discusses the main elements of structure within the area as a whole (green space, movement of all modes, public institutions and facilities and public urban space).

- Private Land Use and Activity Responses to the above framework: this examines patters of activity which have occurred, or which have failed to occur, in response to these frameworks.

- An assessment of the performance of the whole area.

In order to facilitate local area understanding, more detailed analysis and comparisons, equally sized (100x300m) representative areas were then defined in each instance. As far as is possible, they are comparable in terms of their structural positioning within their respective broader areas. Within each, data was collected on:

- Internal public structure;

- Activity patterns, with particular emphasis on patterns of economic activity;

- Cadastral layout and Developmental Texture and Grain;

- Densities;

- Streetscapes;

- Building typologies;

- A photographic essay;

- Performance.

A number of generic lessons for urban planning and urban design have emerged from this review. They span the following topics:

- Put Nature First

- The Significance of Place-Making

- The Significance of Creating Positive Multi-Functional Green Space

- Attitudes to Poverty

- The Need to Think Qualities of 'City' not 'Suburbia'

- The Importance of the Integration of Local Areas into Broader City Systems

- The Significance of Density

- The Starting Point for Plan-Making is People on Foot

- The Nature of Plan

- The Importance of Process

- Some Issues Relating to Structure and Space

- The Fundamental Importance of Public Open Space

- Structural Clarity and Complexity

- The Importance of Permeability

- The Integration of Public Institutions into the Urban Fabric

- The Need for Innovative Forms of Public Infrastructure

- Issues Relating to Security

- The Importance of Landscaping

- Some Implications for Current Housing Policy in South Africa.

After presenting some of the dominant realities of one of the areas studied in Ahmedabad, the paper will conclude with some discussion of a few of the generic lessons alluded to in the bullet points set out above.

AHMEDABAD

The original settlement (the old city) was established as a military and trading centre on the east bank of the Sabarmati. The river, however, has never been the main source of water for the inhabitants. The surrounding region is an aquifer-rich one and an elaborate system of boreholes, traditional step-wells and a complex system of large and small dams, reservoirs and basement cisterns storing rainwater supply water to the settlement.

Over time, the regional centrality of the city, which now accommodates some 4 million inhabitants (and is thus roughly comparable to Metropolitan Cape Town), has been strengthened by a radial regional movement system, providing access from all directions.
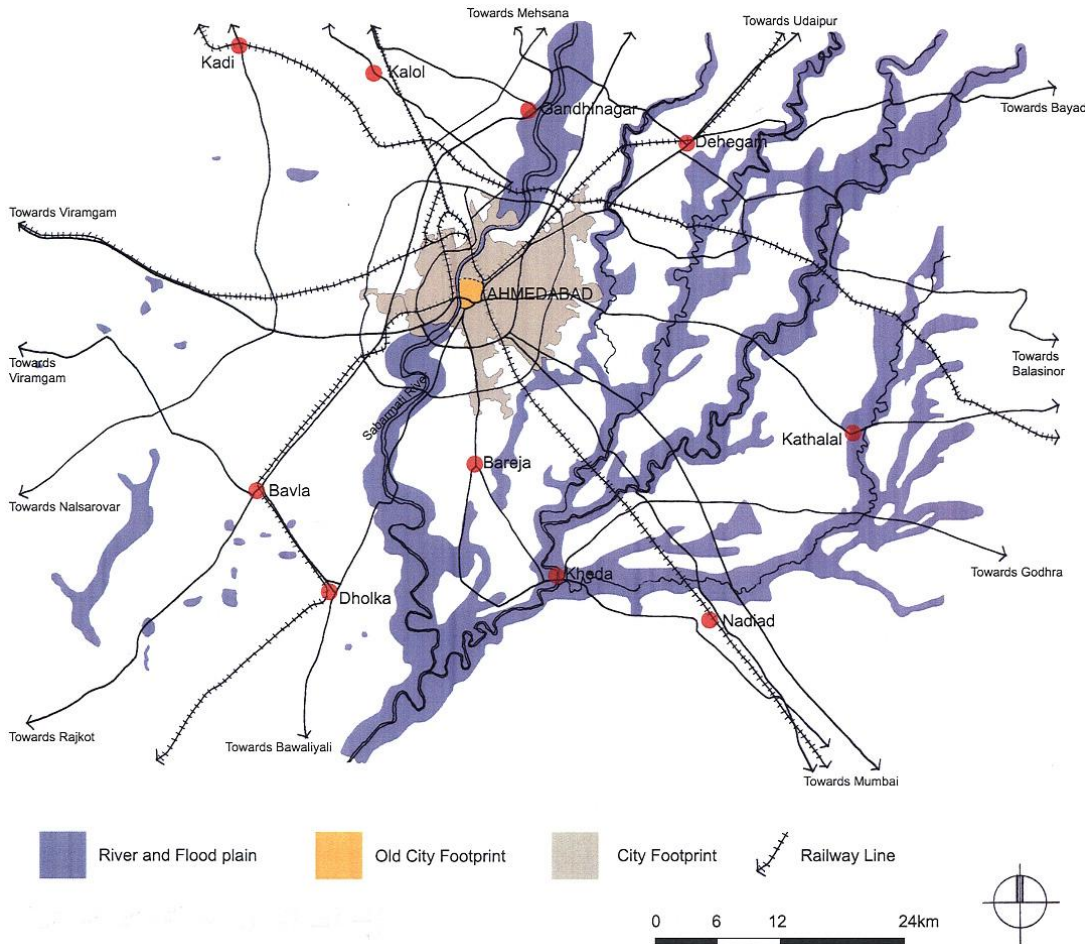

Figure 5. Ahmedabad in the metropolitan context, showing the river and floodplains systems, with the old city footprint at the centre.

The Sabarmati River has played an important part in determining patterns of growth, since it constituted a major barrier. Until the mid-nineteenth century, most growth occurred to the east of the river. In the 20th century a number of new bridges over the river were built, expediting movement between east and west and encouraging growth to the west. The old city was founded as part of the wave of Islamic conquests that swept through India in the early 1400's. Sultan Ahmed Shah established a citadel/fort (the Bhadra) on the eastern banks of the river at the head of a Royal Square. He then allocated twelve large land parcels ('Pura' or 'Pur') to his senior army officers. There was a strong correlation between the demarcation of the 'Pura' and landform — seven of the 'Pura' corresponded with hillocks in the gently undulating landscape.

One of the earliest of the public institutional buildings was the main Friday Mosque (the Jami Masjid) located in close association with the Bhadra. The main road that provided connection between the two was Manek Chowk, which became the main market and the highest order public space. The significance of this axis was reinforced at a later stage by the location of the King's and Queen's tombs and, much later, by the railway station and associated square at the eastern end of the axis.

In 1486, the entire old city was enclosed with walls that were 5-8 meters high and up to 2 meters in width, giving Ahmedabad its particular semi-circular form. Fourteen city gates linked the old city to its agricultural hinterland. Each 'Pura' had its own gate or shared a gate. The wall had 189 bastions and was six miles in circumference.

Over time, merchants gained control over the 'Pura'. In an active attempt to make Ahmedabad into a great commercial centre, merchants were encouraged to attract surrounding villagers to live in their particular 'Pura'. There was a tradition in the countryside for villages to specialize in certain economic trades (for example, goldsmiths, silk spinners, textile workers, carvers) and skills levels were very high. Rural folk attracted to Ahmedabad were grouped together in small urban villages or 'Pols'. The 'Pols', therefore, had both a social and an economic unity and became a major instrument of social organization. The products of the labour of these 'Pols' were primarily sold in markets outside the 'Pura' gate.

1411 Muzzafarid Dynasty · 1573 Mugal Empire · 1753 Marathas

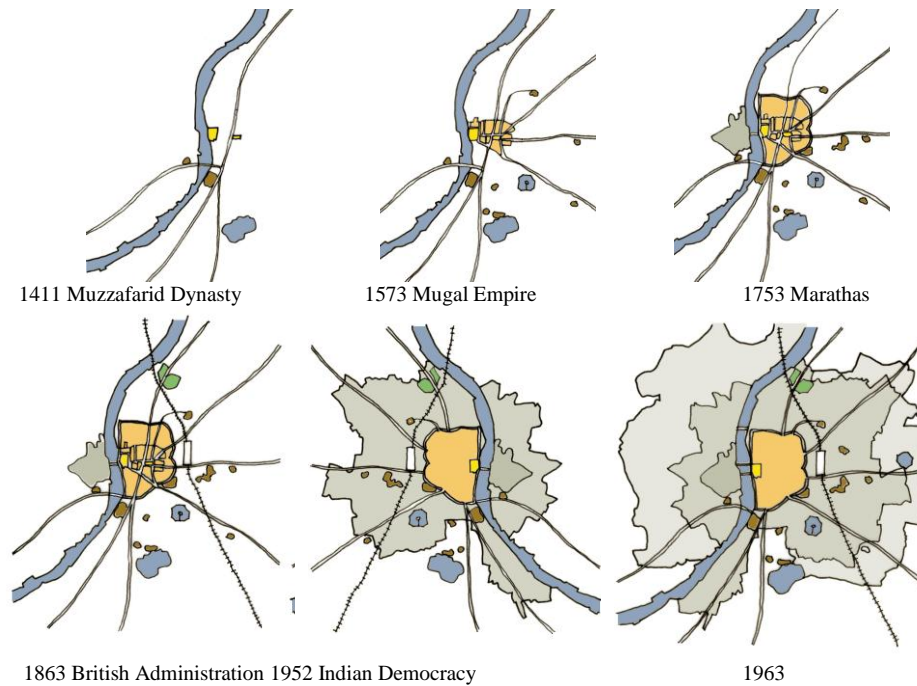1863 British Administration 1952 Indian Democracy · 1963

Fig. 6. Ahmedabad: the historic growth path of the city. For the first four hundred years of its development, most was contained within the walls. During the period of the British administration the city grew exponentially.
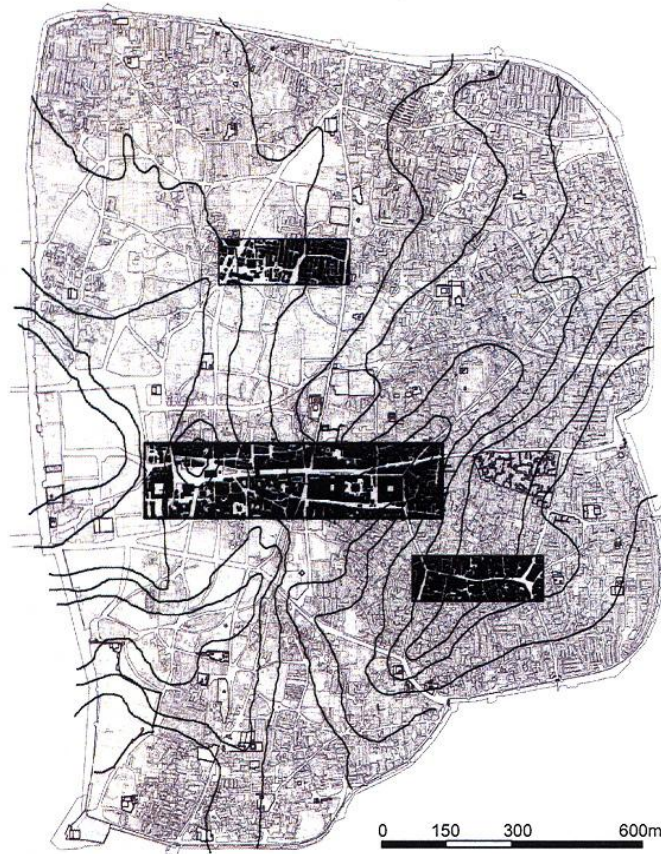
Fig. 7. Ahmedabad: The central axis and the representative areas. The axis is pinned
to the west on the Badra Citadel.

A number of points emerge clearly from an analysis of the elements of internal public structure (green space, movement, public institutions, hard public space, etc.):

There is a virtually total lack of green space: the intensity of living is extreme. In these contexts, the very limited number of trees which exist take on great symbolic and even religious significance: replicas of shrines are often placed at the feet of the trees; they are almost always enclosed by low walls which provide seating; and they frequently operate as information clearing houses since notices are posted on them.

The movement and spatial structure is very complex. This complexity creates places of great secrecy in close proximity to more continuous routes, which carry more public, frequently commercial activities. While being private, therefore, they are also places of great convenience.

Despite this complexity, the route hierarchy is very legible. This sends out clear locational messages to users of land. All activities, large and small, formal and informal, can find a place in the system, according to their need for publicness and exposure or privacy.

There are many supportive community facilities of diverse kinds (education, health, religion and so on). This is made possible by the very high densities and thresholds of support.

There is a clear structural logic to the distribution of public facilities, with the higher order activities gravitating towards the highest order, busiest routes. Very local facilities are frequently located at the head of the 'Pols' they serve. Indeed, a significant ordering element is the 'Pol' gate that defines a clear threshold between public and private.

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KEY
Green Open Public Space   Primary Route/space   ● Pol Gate
Public Facilities   Secondary Route/space
                           Tertiary Route/Space
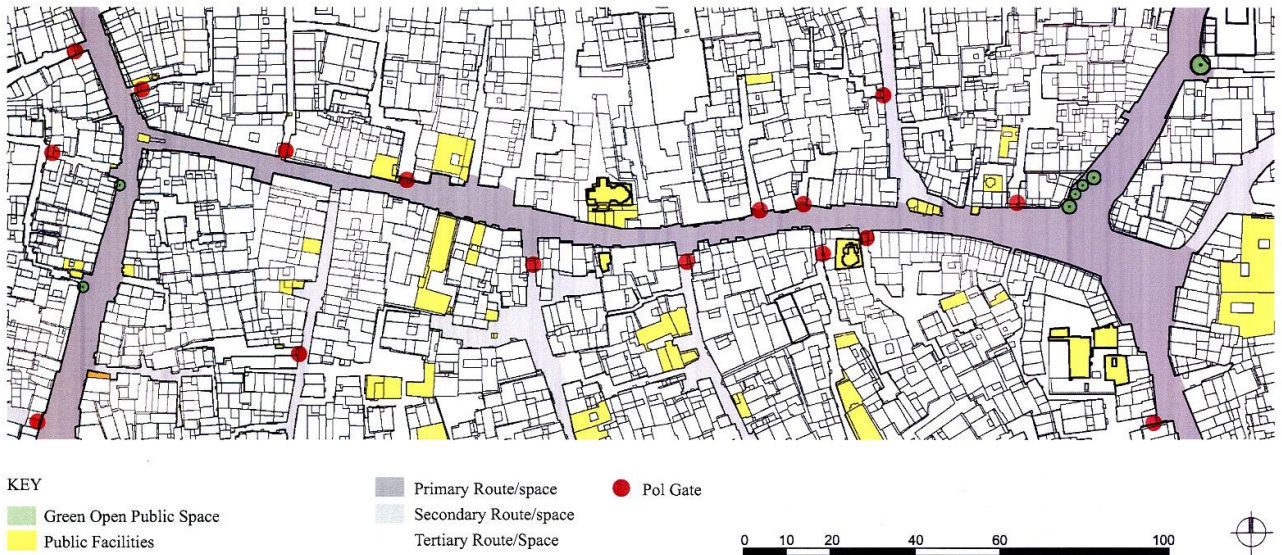
0 10 20   40   60   100

Fig. 8. The southern representative area: Internal public structure.

A number of factors, more than any others, characterize the pattern of activities and land use in the representative areas of Ahmedabad. The first is the extraordinary intensity of the street life. Most streets accommodate many modes of movement (foot, bicycle, human rickshaws, mechanized rickshaws, motor cycles and scooters (of which there are many — reputedly Ahmedabad has the highest number of two wheelers of any city in Asia), taxis, private motor cars, buses and trucks and, at times, even camels or elephants), without preference given to any. The consequence is that traffic congestion and high levels of traffic noise and air pollution are a constant factor of daily life. Despite this, the movement system is reasonably efficient because there are very few devices (like traffic lights) that cause stops. Similarly, there are few rules of the road. Seemingly, the only rule is that the person who is in front (even by millimetres) takes precedence. As a consequence, although traffic moves slowly, it generally keeps moving.

The second is that the street is the primary focus of daily public life. Only the most private activities are carried on in the house. All other activities (meeting, playing, manufacturing, selling, even the keeping of livestock) take place in the street: the hierarchical order of the route determines the nature of the activity that occurs within it.

KEY
■ BUILT FABRIC
□ OPEN PUBLIC SPACE

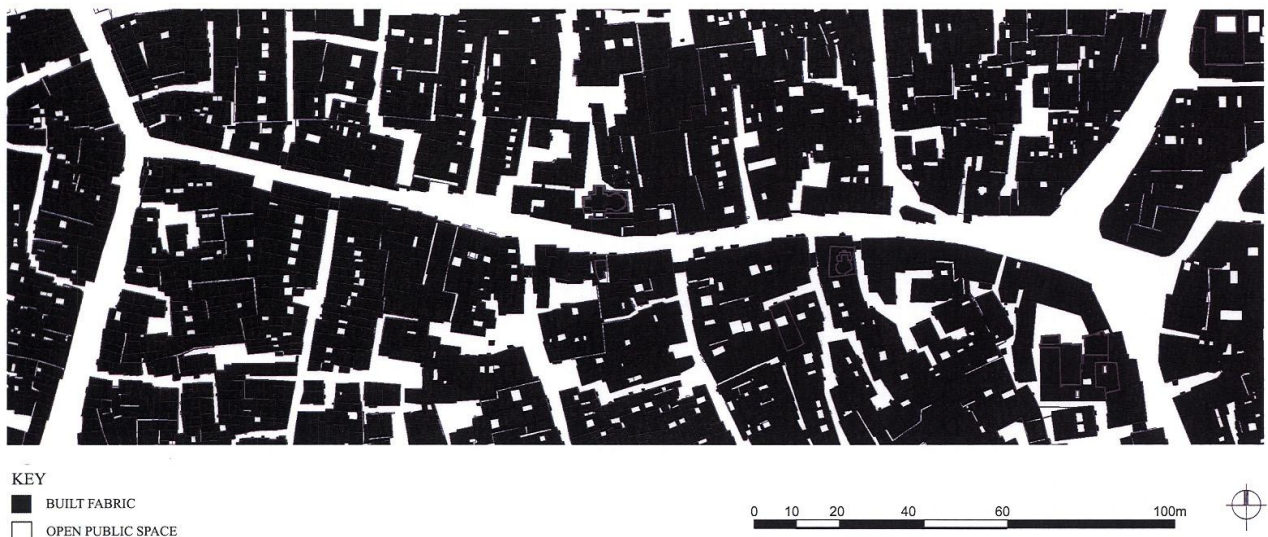0 10 20   40   60   100m

Fig. 9. The southern representative area 100x300 meters: Figure-ground.

KEY
OPEN PUBLIC SPACE
BUILT FABRIC

0   10   20   40   60   100m

Fig. 10. The southern representative area 100x300 meters: Ground-figure.

The third is the intensely mixed nature of activity and use. The separation that does occur does so vertically. The model of living over workplace is a common one.

The fourth is that it is an environment characterized by small business. Densities are so high that economic circuits are almost closed. Many daily needs are met publicly, on the principle of taking on other peoples' laundry. Many daily economic activities are played out in the street (for example, many households cannot afford refrigerators, so people eat on the street, personal functions, such as ear-cleaning can be undertaken more cheaply publically than privately, and so on).

Finally, despite the intensity of life, the complex system of 'Pols', which largely order the internal structure of city blocks, creates conditions of great privacy and secretiveness. This enables needs for privacy and for convenience to be met in close proximity to each other.

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Fig. 11. The location of two 'Pols' in the representative area.

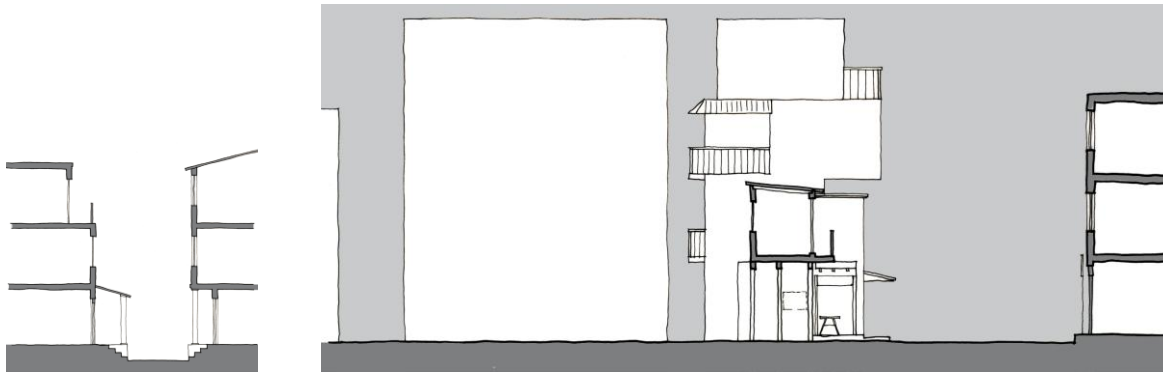Fig. 12. The spatial structure of the two identified 'Pols'.

Figure 13. Typical sections through the representative area. Street widths range from 2 to a maximum of 9 meters and buildings are typically 3-4 storeys in height, very seldom exceeding 5 storeys.

Consideration of the development sections reveals a number of features, frequently used repetitively:

- The deep, but often subtle, street hierarchy.

- The wide variety of street types.

- The fine-grained nature of the minor movement networks.

- The way in which buildings make the street and transform it into a linear space.

- The use of different forms of roof overhang and balconies to provide climatic protection for the pedestrian.

- The use of balconies and other overhanging features to increase living space and to strengthen surveillance over the street.

- The repetitive use of platforms. In quieter areas, these effectively operate as extensions to the private dwelling unit. In more exposed locations, these are frequently occupied by informal traders.

- The use of elevated entrances to dwellings in order to increase privacy from street life and to rise out of the mess of the street. Frequently these steps are associated with taps to enable people to wash their feet before entering the dwelling.

- The structural and spatial significance of trees.

- The use of gateway buildings (units spanning over the 'Pol' entrance) to announce entry into the 'Pols'.

A	1 Storey Residential Row House	D	4 Storey Residential	G	2.5 Storey Mixed-Use Row	J	4 Storey Mixed Use Row
B	2 Storey Residential Row House	E	1 Storey Commercial	H	3 Storey Mixed Use Row	K	Gate-House
C	3 Storey Residential Row House	F	2 Storey Mixed Use Row	I	3.5 Storey Mixed Use Row		Light Industry

Fig. 14. Building typologies.

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The grain of settlement is generally very fine. This is essentially a world of walking and the system is scaled to the pedestrian. Despite this, walking is not always safe or pleasant since motor cycles and scooters (of which there are hundreds of thousands) can and do penetrate into even the narrowest of circulation spaces in search of short cuts.

Plot sizes and configurations are varied. This gives rise to a rich variety of architectural responses. A common model, however, is the very long but very narrow plots (3-4 meters). This particularly occurs on commercial streets.

The spatial quality of the systems is shown in figures 9-10 (figure-ground and ground-figure). The areas are anchored by a hierarchical system of courts, which serve as shared living rooms for clusters of dwellings, linked by a hierarchy of streets (linear spaces). The complexity of the street edges sets up a wide variety of conditions to which people respond creatively. Common design devices include cutting the street back to create kinks into which small shops facing down the street are inserted, the use of pinch-points and splays to create gateway and other linear spaces, and the creation of subtle platforms on pavements which invite informal occupation either by informal traders or by households (depending on the structural positioning).

KEY

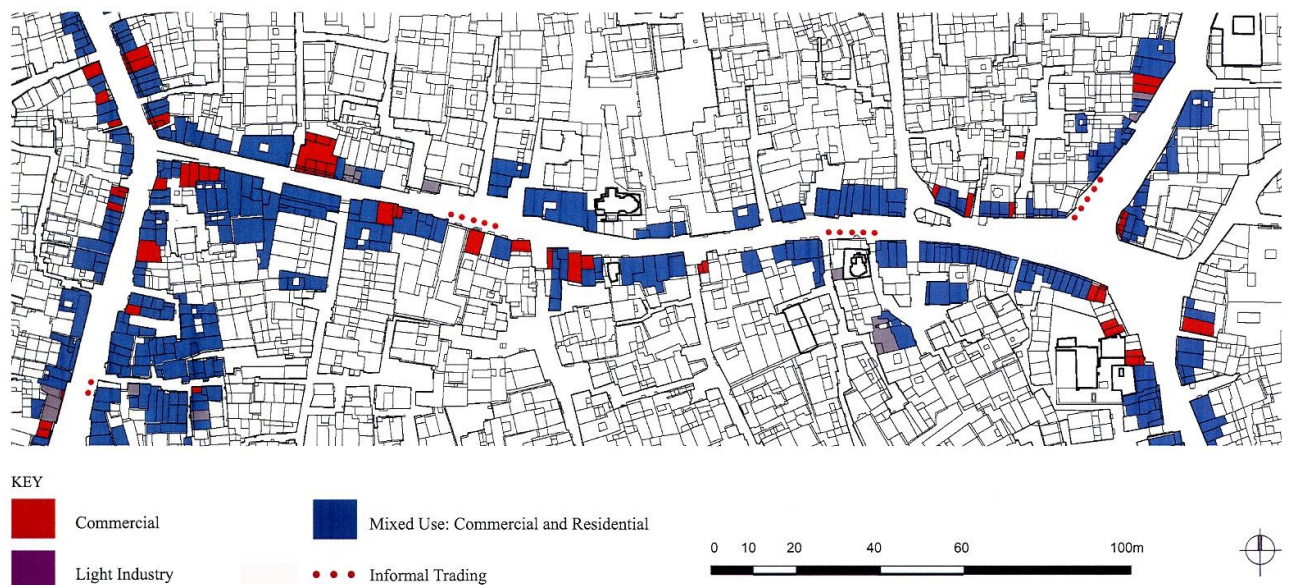| ■ | Commercial | ■ | Mixed Use: Commercial and Residential |
| ■ | Light Industry | • • • | Informal Trading |

0 10 20 40 60 100m

Fig. 15. Economic activity.

It is with regard to local economic activity that the greatest difference with the South African local cases occurs. In the South African cases, economic activity is very thin on the ground. In Ahmedabad, it is very dense. Some larger enterprises such as department stores do exist, but it is generally a world of small business. It has been estimated that some 70% of all business is informal, although informal trading in non-designated areas is illegal and is periodically policed. A number of points need to be made about the economy:

It is enormously diverse and economic circuits are closed to a considerable degree: most local needs are met locally. Accordingly, money circulates very rapidly. In this sense, it is highly efficient.

Because most households have very limited amounts of disposable income, and since most households do not have the technology (particularly refrigerators) to store consumption goods for any length of time, convenience is of great importance. The principle of breaking bulk is a major driver of the economy. Most products are broken down into the smallest possible units (right down to individual cigarettes, sweets or items of fruit). This, in turn, generates specialization and diversity in the economy (for example, selling fresh foodstuffs requires the purchasing of ice: mobile ice traders are a common form of economic support).

The economy generally operates on the principle of small mark-ups and large volumes. High densities are the key to this.

When traders have small surpluses which they have not sold locally, informal markets play a pivotal role in allowing trading to occur with low overheads: in effect, they extend the market range of very small traders. The main markets frequently occur near the gates of the old city (there is also, however, a central perishable goods market just to the west of the Friday Jami Masjid Mosque).

Historically, when regional traders came to the city they needed a place to stay. Accordingly, community hostels called 'upashraya' were established close to the markets. Some of these still exist and operate as community centres that accommodate the needs of the itinerant traders.

At a larger scale, different product specializations occur in different parts of the city. This is because of the 'law of cumulative attraction': spatial concentration enables greater product selection and this increases the effective range of the concentration — the concentration can pull customers over a larger area than could be attracted by any one trader.

The model of living over work or shop space is a common one. Accordingly, levels of mix are very high.

Given the consistently high and relatively broad spread of the local market, the space economy is not expressed in terms of nodes as much as linear concentrations (corridors) along more continuous routes.

The spatial distribution of economic activity in the representative area is shown in figure 15. More formal establishments that draw on a market greater than the immediate local area gravitate towards the arterials. More local activity (for example, the selling of fruit and vegetables) occurs deeper within the 'Pols'. Frequently, this takes a mobile form.

A particular form of economic activity that occurs relatively frequently is 'Pol production'. Different 'Pols' specialize in different form of production and different households undertake different parts of the production process. In effect, the 'Pol' operates as an integrated 'factory' and market place. This actively serves to draw outside income into the local economy of the 'Pol'.

Calculating net residential densities in central Ahmedabad is very difficult for a variety of reasons. Given this complexity, and the impossibility of undertaking a detailed building-by-building survey, the best way of giving an indication of density is to use official statistics. These statistics tend to be rather general, by 'Pur', and are given as persons per square kilometer (persons/ Km^2); hence they are gross densities and range from about 30,000 persons/Km^2 to 60,000 persons/Km^2 in the old City of Ahmedabad. The densities that prevail in Ahmedabad tend to be higher, by an order of five times or more, than those that obtain in Cape Town.

Local living in the old city of Ahmedabad is not easy for many. Levels of poverty are high. Private accommodation is cramped and many buildings are dilapidated. The intensity of living is extreme and noise and pollution are constant. Hygiene is also difficult in the circumstances. Streets are frequently dirty and keeping dirt out of the home is a constant struggle.

Nevertheless, the areas studied offer a number of enormous advantages. They are places of great convenience. Most daily activities can be carried out on foot. There is a high level of social organization and informal networks of support, centering on the system of 'Pols'.

Street life is vibrant and always interesting.

Perhaps more than anything else, the diversity of the local economy generates a rich range of opportunities for economic survival. Enterprising people can find opportunities to generate income through their own ingenuity and energy. Additionally, there is a high degree of mix of income groups: the poor benefit from the presence of the more wealthy. The size and vibrancy of the local market, made up primarily by poor people, is key to this.

CONCLUSION

Many generic lessons for place-making, urban planning and urban design emerge from the comparative study. Only a few that relate directly to place-making are included here due to length.

In environmentally hostile environments place-making before development is not a nice-to-have: it is essential. Place-making actions may include: planting wind-breaks; moulding the site to ensure that stormwater run-off is effective; treating stormwater on the surface and making a feature of it, as opposed to placing it in underground pipes, and making larger water features as part of the stormwater strategy. The worst thing that can happen is for the landscape to be bull-dozed and flattened in the interest of engineering efficiency. Yet, this is precisely what has happened in many of the South African cases. While this approach may be somewhat cheaper in short-term capital cost terms, the long-term costs, measured in terms of human misery and high operational and maintenance costs, make it a much cheaper longer-term option.

Part of this concern with a sense of place, too, is recognizing that in cosmic landscapes (such as the flat Cape Flats), where the natural landscape does not provide many clues to guide settlement response, a sense of place must be people-made. It must result from the creation of the settlements themselves. Conditions on the windy, hostile Cape Flats, for example, call for an urban form which is compact and which turns its back to the wind, huddling around an hierarchical 'family' of public spaces and courts. In practice, what has happened is that all development stands, in serried ranks, fully exposed to the wind.

The analysis reveals that one of the key differences between Ahmedabad and the cases in Cape Town is attitudes to density. In Cape Town, higher densities have always been regarded as a problem. The Ahmedabad case reveals that higher densities are probably the key variable in achieving qualities of urbanity. It is necessary to promote small-scale economic activity. In developing economies, where economic survival is almost entirely dependent on micro-enterprises, developing vibrant local economies is a key issue. This cannot occur without an intensive local market. Further, efficient and viable essential public services, such as public transportation and educational and health facilities, cannot be provided if thresholds are too low. The central planning question, therefore, is not determining maximum densities: it is determining minimum levels of support.

A number of points need to be made about this issue of density. Firstly, it should not be equated with overcrowding, which is a measure of the number of people per habitable space. Overcrowding is a very negative condition, impacting on issues such as levels of privacy, levels of stress, the spread of communicable diseases and so on.

Secondly, higher densities can be achieved in many forms. In poorer countries, high-rise solutions, which are being promoted in some quarters in Cape Town and which can be observed along the corridors of Curitiba, Brazil, as well as in many parts of the Far East, are not the answer. They are dependent for effective use on lifts and almost by definition these are expensive and cannot be maintained. Further, they remove people from the ground level public space that, as has been shown in the case of Ahmedabad, serves as vitally important extensions to private dwelling units. Acceptably high densities can be achieved through the promotion of three to five storey walk-ups, as is shown in Ahmedabad.

The third point is the importance of choice. In an urban sense the most fundamental form of choice is in terms of life-style. This can be expressed in a continuum ranging from very public to very private. In this sense, the old city of Ahmedabad does not perform particularly well: it is ubiquitously too intense. It is impossible to escape the intensity of daily life sufficiently and it is almost entirely unrelieved by green. In the Cape Town cases, again there is little choice. Here the problem is that there are too few opportunities for really public living.

The clear implication is that the continuum of choice should ideally occur within limits: the choice should not be one of access to intense public living, with associated convenience but with no access to relief, or access to green and relief space but with no convenience. It should be gradations between these poles.

The fourth point is that in areas of high density, the provision of public places of relief is essential. This is a major problem in the old city of Ahmedabad. There, the intensity of living is unremitting. Further, there is no

absorptive capacity to deal appropriately with demands such as the hygienic keeping of livestock. This lack leads to a serious threat to public health.

Finally, densities have a profound impact on the space economy of settlements, and particularly the nature of economic centrality. When densities (and thus, thresholds) are high, economic activity is much more widespread and diffuse. In these situations the pattern of activities tends to be linearly-informed: economic activity responds to movement flows.

In situations of significantly lower densities, such as in the South African cases, urban economic activity is more point-related. Patterns of access are more informed by the interconnection of more intensively utilized movement routes. This situation leads to fiercer competition for land at the (more limited) points of high accessibility and promotes the domination of the space economy by larger enterprises that can afford to pay higher rents. It thus promotes economic monopolization, oligopolization and inequality.

The comparative analysis starkly reveals differences in the starting points for settlement-making. In the case of Ahmedabad, established in the 15th century, settlements were unequivocally made to favour people on foot. Indeed, this was unquestioned: there were few other movement technologies available, save for the horse and cart. The consequence is a very fine-grained urban fabric as the basic urban web. Over time, new technologies (rail, bus, freeway) have been superimposed over these in places, causing successive waves of structural adjustment and, in places, a coarsening of the urban grain. Nevertheless, most of the fine-grained fabric, that is very supportive of urban life, remains. Higher technologies have been accommodated, albeit imperfectly.

To a lesser degree, this was also true of Salt River in Cape Town. Although cars were around, and could be accommodated, the fabric was relatively fine-grained and sympathetic to the pedestrian. Indeed, the development of Salt River was propelled by the technology of rail (both railway and tram), which preceded the appearance of the motorcar and provided considerable support to pedestrian movement along the urban corridor.

In the planned Cape Town cases, the underlying assumption has been that everyone will own a motorcar. The urban environment is scaled to the motorcar and the urban fabric is coarse. The introduction of new technologies, such as the limited access highway, has coarsened the grain still further. It is an unpleasant and inconvenient world for people on foot.

In reality, conditions in cities in many developing countries are quite medieval (movement is primarily on foot, much of the fabric is informal and so on), albeit with the potential to use more sophisticated technologies selectively. The clear implication is that the starting point for achieving more liveable environments is placing people on foot central to design. Further, when the cycle of movement on foot is broken, efficient public transportation is essential: it is not simply a desirable option.

Perhaps one of the key factors affecting urban performance raised by this comparative review relates to the nature of the plan.

The old city of Ahmedabad and Salt River reflect entirely different approaches to the planning of urban settlements to the other cases studied in Cape Town.

In the more recent Cape Town cases, the plans are essentially programmatic plans. They are informed by an (over-simplistic) conceptualization of a (standardized) 'good urban life', which they seek to impose on everyone. Ironically, the more specific the conception of the 'good urban life' and of ways to achieve this, have become, the more urban performance has deteriorated. These plans are based on the principle of comprehensive rationality and they focus on land use. Idealized patterns of land use are conceptualized, neatly separated and distributed in space. The approach is essentially functionalist and quantitative. Space demands are 'scientifically' calculated on the basis of range and thresholds and a land use schedule is generated. Planning and design becomes the more or less rational distribution of the parts or scheduled elements. In this conception, settlement-making is seen as a rational, comprehensive, highly controlled process leading to balanced end-states.

The central problem with these approaches is that the environments that result from them are inevitably sterile. There are two main reasons for this.

Firstly, the science of prediction on which they are predicated is notoriously unreliable. The result is environments that are permanently incomplete with large amounts of residual space lying around waiting for

events to 'catch-up' (the practice of reserving space). This, in turn, dilutes thresholds and frequently ensures that events never do catch-up.

The second is that, in this approach, plan-making is essentially driven from the bottom-up: from the parts. There is nothing which holds the whole together.

The plans of the old city of Ahmedabad and of Salt River are non-programmatic or structural plans. They say nothing about the definition of the 'good life'. They are essentially neutral, focussing on the creation of choice rather than a defined way of living. The plan is simply seen as a framework: a container of life that allows people room to manoeuvre. The framework itself is properly driven by issues of public good: efficiency, sustainability (although this never received much attention in the plans of Ahmedabad or of Salt River), equity, integration and choice. The plans say nothing about land use, although they have implications for use. They do not attempt to be comprehensive. In fact, they say nothing about final outcomes.

The focus of these plans is on structure and space. In these approaches, elements of public structure (green space, movement of all modes, urban public space, public institutions, utility and emergency services) are brought together to create a particular spatial geometry: as is always the case with any geometry, point, line, grid, plane and volume result in a particular configuration. This geometric configuration establishes a spatial logic of hierarchies of accessibility and degrees of exposure. All urban activities, in turn, have their own requirements in terms of accessibility, along a continuum of great exposure (publicness) and great privacy. Accordingly, all activities can respond to the logic and find a suitable place in the structural system, according to their particular needs for exposure or privacy.

In the same way that there is a hierarchy of access in the particular geometric configuration of the plan, there is a hierarchy of public space, which represents a structured or controlled transition from more public to more private living. The urban design process, therefore, becomes the complex integration of levels of hierarchy of elements of the public structure and of space.

The elements of public structure and space are not neutral. If properly made, they contribute directly to the quality of urban life.

Perhaps the key difference between programmatic and structural plans is the role of design. In all of the planned Cape Town cases, the plan itself is entirely two-dimensional. There is an attempt at some rationality in terms of the distribution of elements in relation to each other but, to a large degree, they are treated as engineering projects. They are driven more by concerns of engineering efficiency than they are by social, environmental or spatial qualitative concerns. Indeed, almost all tenders for the creation of new urban settlements are directed at engineering enterprises. There is commonly no mention of urban design.

In structural-spatial approaches, design is central. While reflecting rationality, they go beyond this. They employ creativity, ingenuity and a deep understanding of urban precedent to provide a container that enriches and enhances human activity. Precedent is the primary source of theory in this regard.

Neither Ahmedabad nor Salt River are particularly good examples of structural-spatial plans. In particular, important elements of public structure (specifically green space and nodal urban space) are not well represented. Nevertheless, they are significantly better than the plans that have followed. This is strongly demonstrated in a comparison between the street sections in Ahmedabad and those of the Cape Town cases. In Ahmedabad, the street is made as a social space which is responsive to the nuances of urban living (for example, the subtle use of platforms to define priority zones, the organization of street taps to deal with public hygiene, kinks in the street which encourage reactions such as the insertion of small shops, permanent surveillance over streets, generous pavements which recognize that these will be used as extensions to the abutting units, the human scale of the street space ad so on). In the Cape Town cases, there is no quality of street (a multi-functional space which also accommodates movement): rather, these channels are roads – they are simply conduits for vehicular movement.

It is clear that, if significant improvements of South African urban environments are to be brought about, it is essential for a paradigm shift to occur: for the planning system to shift from programmatic to structural-spatial approaches and for urban design to be placed central to the system.

The cases reveal that the quality of the public spatial environment is critical to the quality of the settlement as a totality.

A defining characteristic of poverty is that, when people are poor, they cannot carry out all, or even most, of their daily activities in private space. A significant amount of life occurs in public space. These are the places where people meet, lovers court, children play, scholars study when the house is overcrowded and so on. When the quality of the public space is positive (when it is defined, enclosed, protected, humanly scaled and surveilled), the entire environment is dignified, regardless of the quality of the individual buildings. Conversely, when this space is sterile and hostile (as for example, in many of the Cape Town cases reviewed) the reverse is true.

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