providing a public space for the community (allowing children to play), and giving vehicular access to the houses.

4.1.2   The Contemporary City Street

4.1.2(i)   The Street dedicated to Vehicular Traffic

The role and function of the street in the 20th Century is dictated by two schools of thought emanating from the anti-urbanism and the urbanism philosophies respectively. In essence the multi-functional and diverse street was dissected into a hierarchy of types and dedicated to singular functions. The two schools of thought, which influenced and directed the 20th Century street design are:

- The Garden City approach, which predicated street design on the mechanics of spatial perception, and the requirements of traffic and sanitation.
- The technocratic approach, whereby streets are designed and must function in terms of the technicalities of modern urban traffic and the engineering of street construction. This was underpinned by the Modernist approach, whereby the street was specifically reserved for traffic (in particular fast traffic) even removing its pedestrian function.

This must be considered in the context of the modernist (Le Corbusier) ideal city, whereby work, housing and recreation were to be linked by a gridded network of elevated highways and ground level service roads. This approach adopted a conscious separation in the conventional sense, purposefully separating the street from its buildings.

"A city made for speed is made for success" (Le Corbusier in Kostoff, 1992:233).

The above approaches to the street must be viewed in the context of social and technological precedents where uses and functions had already been separated.   In technological terms, the multi-level arrangement of infrastructure services and traffic routes had been undertaken in the underground reticulation of gas, electricity, water and sewerage lines, as undertaken already by Haussmann in Paris.   This was similar to the establishment of the London and New York underground railways.

In effect Le Corbusier's dissection of the street was the final step of a long and widespread reformist agenda to eliminate the street as a social environment (Kostoff, 1992).   The ills of the industrial city - its poverty, overcrowding and defective sanitation - were 'blamed' on the neighbourhood street.   The indictment on narrow, airless and deteriorating streets as the primary cause of social and physical ills was reaffirmed in the 1890 Housing of the Working Classes Act (Kostoff, 1992, refer **Figure 4-6**).

Le Corbusier's "Contemporary City" also proposed the redistribution of social life into immense courtyard apartment buildings set in park landscapes with recreational and athletic facilities, and tree-lined promenades. These apartments are situated in a supergrid of streets devoted solely to traffic. These proposals are re-enforced in the *Ville Radieuse* (Radiant City) design of 1930, and culminates in article 16 of the Modernist Athens Charter 1933:

> "...*the house will never again be fused to the street by a side walk. It will rise in its own surroundings, in which it will enjoy sunshine, clear air, and silence. Traffic will be separated by means of a network of foot-paths for the slow-moving pedestrian and a network of fast roads for automobiles. Together these networks will fulfil their function, coming close to housing only as occasion demands*" (in Kostoff, 1992:235).

It took a number of years before Modernist idiom was implemented. Initially in the reform period of the 1920's and 1930's, various designers sold the possibility of compromise at an urban scale, both in France and Germany.

However, what happened in the 20th Century city development and its street was a "marriage" of the Garden City Movement and Modernism, becoming the two constituents of the streetscape of the city. Their fusion has resulted in the development of the picturesque suburban street and the multi-lane superhighway, which have underpinned the rapid expansion of cities and the concomitant growth of suburbia (refer **Figure 4-7**). The notion of freeways, "the measured motor tracks", greatly suited the technocrats and engineers' approach, who have taken the development of traffic engineering, freeway systems and road networks to an unprecedented scale, contributing to the modern cityscape.
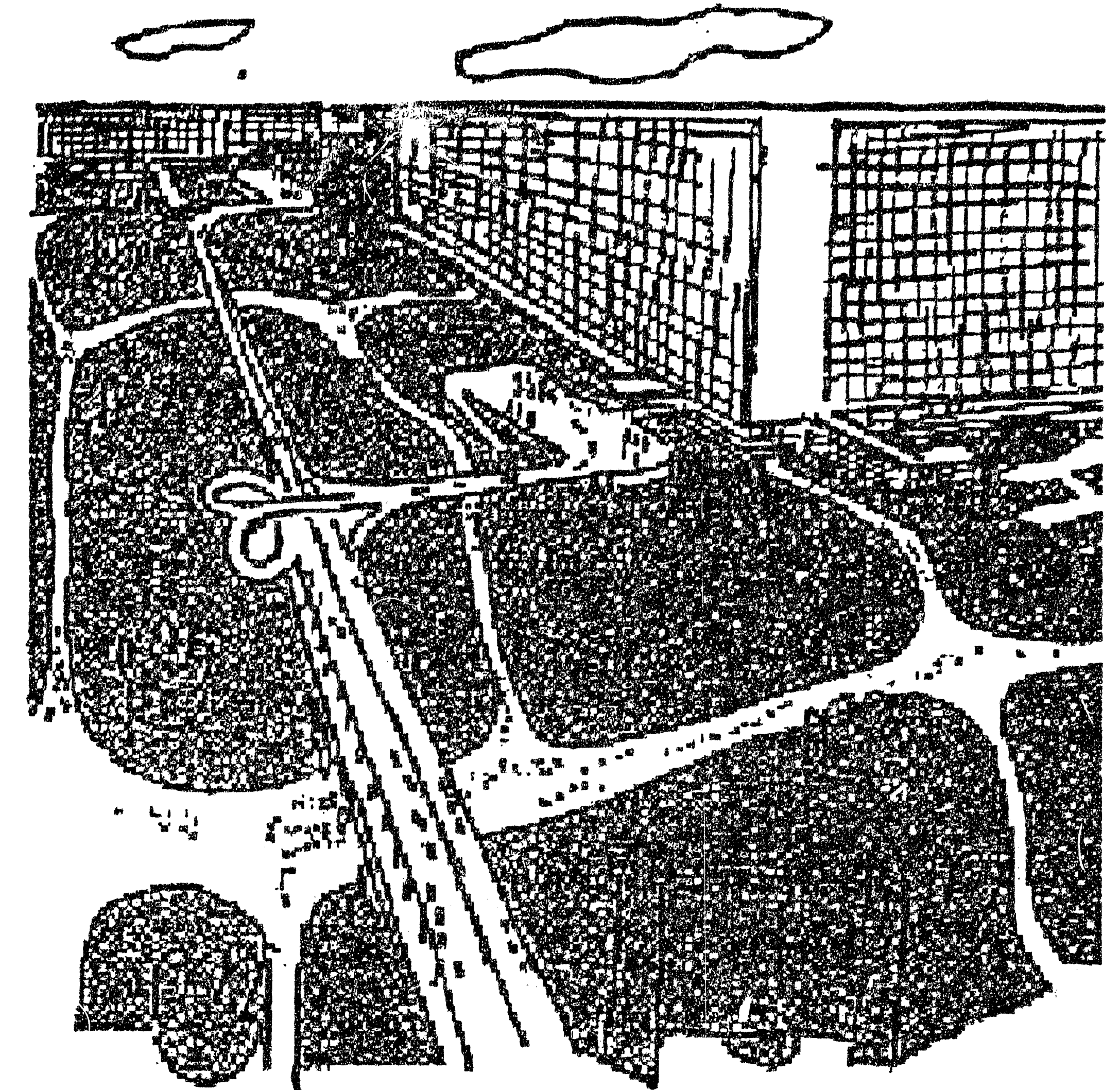
A sketch by Le Corbusier showing the separation of the motorvehicle from the pedestrian, by the elevation of roads above ground and dedicated to vehicular traffic.

Figure 4-6:   Motorvehicle separated from the Pedestrian, Source: Kostoff, 1992:235
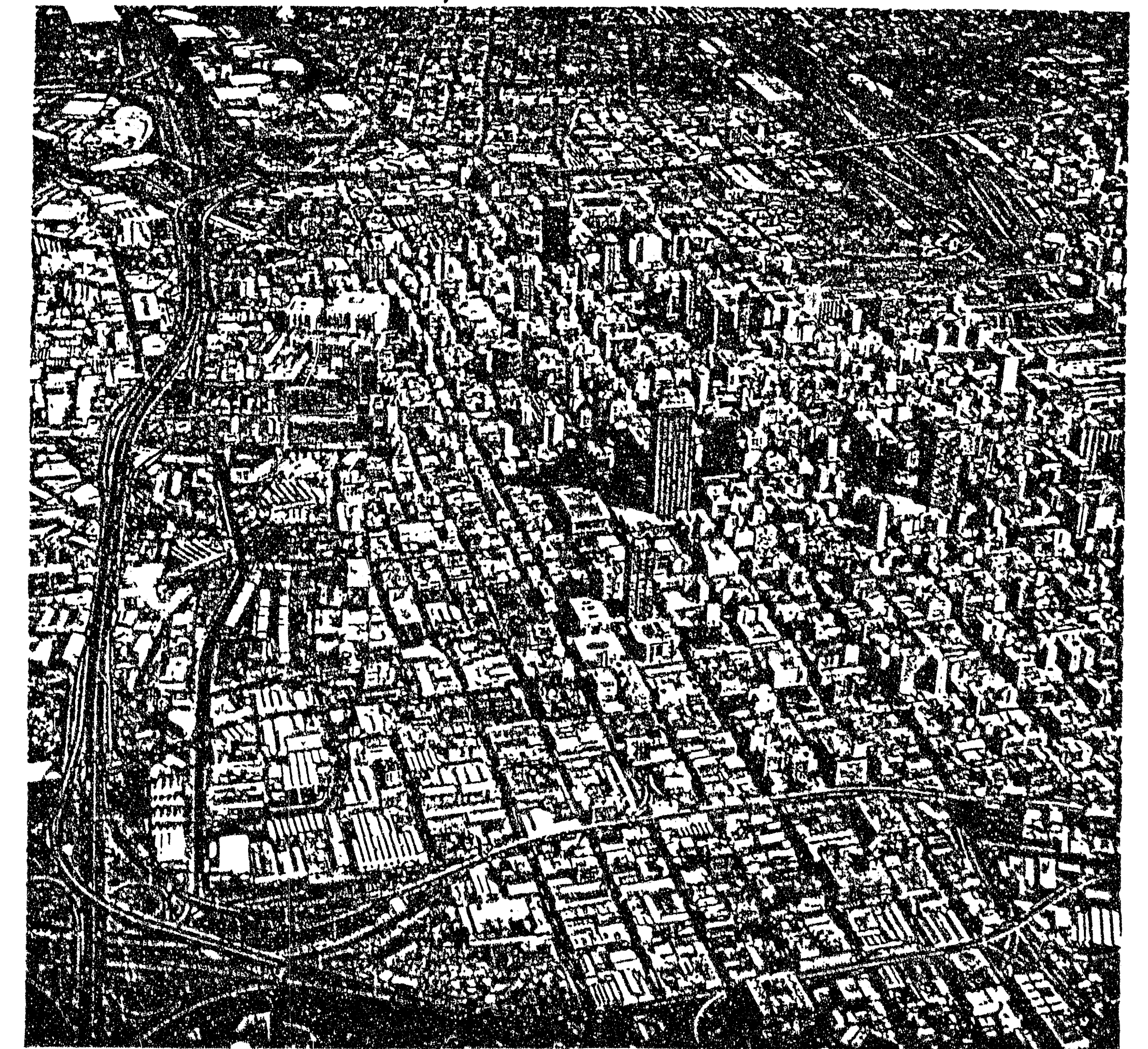

Figure 4-7 :   The Contemporary City-scape, Source: SAMCO, 1996:47

4.1.2(ii)   Separating the Pedestrian and Motorvehicle

The aim of Modernism was to devise a separate system of pedestrian movement that would supplement its high-speed traffic networks. The idea of separate pedestrian paths was already muted in history, for example by Leonardo da Vinci. At the turn of the century, vertically segregated paths for pedestrians and roads dedicated to vehicles were incorporated in various developments, becoming almost prototypes to modernist ideas.

In 1947 Le Corbusier invented his universal "7V" system, ranging from high-speed regional roads (V1) to pedestrian paths through a park-like urban setting (V7) (refer **Figure 4-8**).

A number of systems of elevated pedestrian pathways and links were developed, termed skyways; as well as subsurface passages. However these were often under private control and effectively led to a privatisation of public space. Furthermore, aspects regarding maintenance, security, as well as the duplication of functions and activities within existing ground-level streets, were also problematic. They also complicated movement, making it more difficult and extending walking distances in comparison to ground-level sidewalks and pedestrian ways.

4.1.2(iii)   The Pedestrianised Street

The street as the primary place for social interaction became prominent again during the 1960's and 1970's. There was a public outcry and protest against the heavy handed modernist approach, with its reconstruction destroying the comfort and familiarity of the traditional streetscape. In America this outcry was evident in the extensive opposition to the urban freeway programme and the passage of the Historic Preservation Act of 1966, which allowed 'landmark' status to be conferred on single structures and entire streets of buildings (Kostoff, 1992).

> *"Perhaps the most important were the convulsions of public protest on both continents that brought crowds of people out-of-doors to occupy city streets and plazas, investing these again with political life and civic purpose"* (Kostoff, 1992:239).

Modern society had also come to realise that the benefits of car ownership come at a cost to the quality of life and have an adverse

impact on the environment. The Buchanan Report (1963) outlined how the car damages the urban environment - being a danger to pedestrians - anxiety, noise, air pollution, and visual intrusion were likely outcomes. The proposed solution was the creation of residential streets (Pedestrian Malls) taking precedence over the motor vehicle, i.e. the separation of the pedestrian and vehicle at ground level (refer **Figure 4-9**).

The idea was embraced in Europe and America, where city centres were losing much of their business to suburban shopping malls. The revitalisation of city centres was attempted by eliminating or restricting traffic on main streets and the development of extensive pedestrian malls. Although these pedestrianised streets met with success, and for a short period helped to regenerate the city centre, suburban development with the shopping mall took its toll. In response to the declining activity in city centre pedestrian malls, they were incorporated with a public transport function, resulting in the development of transit malls.

One variation emerging during the 1970's was the motor vehicle restricted zone of sections of the city centre, primarily restricted to public transport (buses) and pedestrians (Vernez-Moudon, 1987). This concept has been successfully applied to the historic centres of European cities such as Rome (Carr et al, 1992).

Another trend during the 1970's and 1980's was the enclosure of pedestrian streets in order to bring the controlled environment of the shopping mall to the city centre. These have also resulted in the privatisation of public space, into semi-public space, separated from the street through little more than blank walls, and offer

> "suburbanites and out-of-towners the opportunity to visit downtown without being aware of the city's streets and inhabitants" (Carr et al. 1992).

4.1.2(iv)   New Ideas to Reviving the Street

The reason why motor vehicle traffic has become the dominant and unavoidable experience of the public realm, argue Duany and Plater-Zyberg, is that the motor vehicle's claim to the city has been entrenched in legislation. The municipal ordinances emphasise above all else provisions for high-speed traffic, parking space regulations and
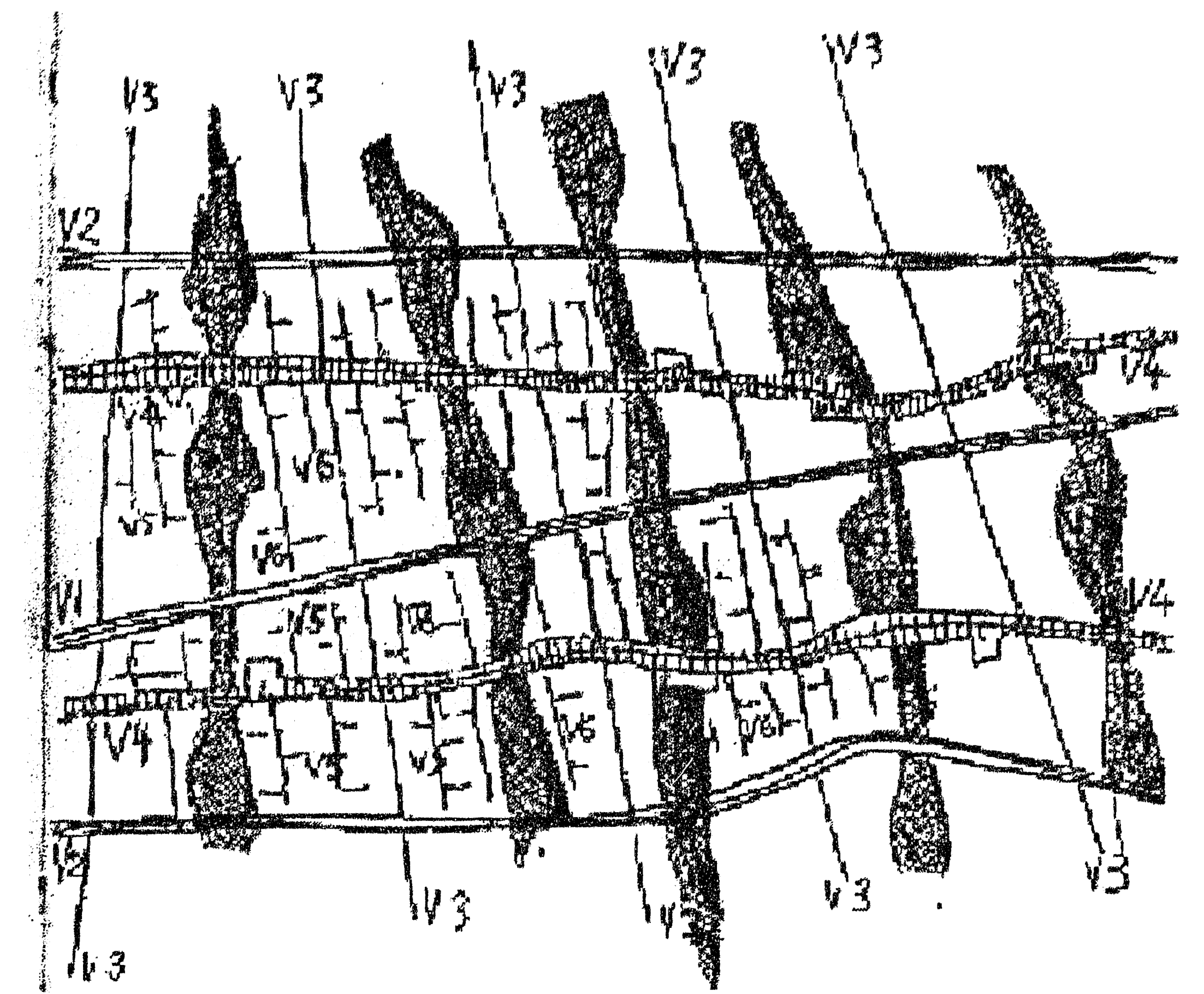
Le Corbusier's "7V's": V1-regional through road; V2-major urban road; V3-motor traffic & no sidewalks; V4-the traditional 'main street' of shops and daily life; V5-a minor street to housing; V6-pedestrian paths; V7-linear parks and circulation with schools, sports grounds etc..

Figure 4-8:   The 7V Road Hierarchy, Source: Kostoff, 1992:237

Figure 4-9:   Pedestrianised Street in Paris, Source: Madanipour, 1996

road design requirements. Duany and Plater-Zyberg have developed an alternative approach, one that promotes urbanity, termed the Traditional Neighbourhood Development Ordinance. It specifically focuses on dealing with suburbanisation, promoting a streetscape that is shared with traffic, but designed around meeting pedestrian needs and pleasures. Their principles encompass the street-facing row-house; the provision of neighbourhood facilities and amenities within walking distance; sidewalks that are a minimum of 3.7m, which have street trees and are lined by shops, are mandatory. More detail on these aspects in the following chapters,

4.1.3   The Public Park in the 20th Century & Open Natural Space

The public park of the 20th Century is directly interrelated with and linked to the entire environmental movement that has emerged, particularly during the latter half of this century. Thus the public park is a component of the open space and recreational system within the urban environment, and plays an important role in enabling urban residents to achieve quality of life and accommodate leisure activities (refer **Figure 4-10**). The public parks and new open public space types are discussed in greater detail.

4.1.3(i)   The Playground and Park of the Reform Era

In reaction to the overcrowded living conditions of the working class, numerous small active play spaces and parks were built during the reform era of the late 19th and early 20th Century. Typically these playgrounds contained an outdoor gymnasium for older children and a playground for younger children. The playgrounds were either added to existing parks or developed as wholly new open spaces.

The key focus of the reform era was the teaching and learning of social content through games, a form of social control (Carr et al, 1992). It was a means of promoting the values of society.

In addition to the playgrounds, a large number of athletic fields and sport games courts were also introduced during this era. Tournaments and other athletic competitions were considered a means of promoting social assimilation.

4.1.3(ii)   Recreation Facilities

The years of 1930 to 1965 are considered to be the era of the recreational facility. The provision of public facilities for active recreation - both outdoor and indoor - were undertaken for a growing middle class with substantial leisure time. The provision of these facilities was not undertaken with the social philosophy associated with the reform era and that of the mid- to late nineteenth-century parks movement.

By the late 1980's suburban flight had taken its toll on the city. This resulted in diminishing resources for municipalities, combined with other social demands in the context of scarce resources, resulting in the decline of public recreation spaces, as well as their physical degradation into dysfunctional and vacant pieces of land.

4.1.3(iii)   Allotment and Community Gardens

The community self-help movement during the 1970's re-introduced the idea of community gardens as a means by which local communities could be involved in the maintenance and control of public open space. This w coupled to environme 'al and grassroots community activism. The community garden in Europe has a fairly long and continuous history in the form of the allotment garden - large groupings of individual plots for the growing of vegetables and flowers. By the 1980's the community gardening concept was included with public facilities, resulting in additional sites at hospitals, schools, public parks, workplaces and elsewhere.

4.1.3(iv)   Nature in the Urban Area

The emergence of the environmental movement in the 1960's has led to a renewed public focus and advocacy for the preservation of natural open spaces (Carr et al. 1992). This has been a two-focused interest, one on existing natural areas and the other the introduction and / or reintroduction of natural systems and habitats into cities (Hough and Spirn, 1984). The emphasis has been placed on the acquisition and preservation of natural areas such as wildlife habitat, wetlands, indigenous vegetation areas, as well as under- and undeveloped land in cities.
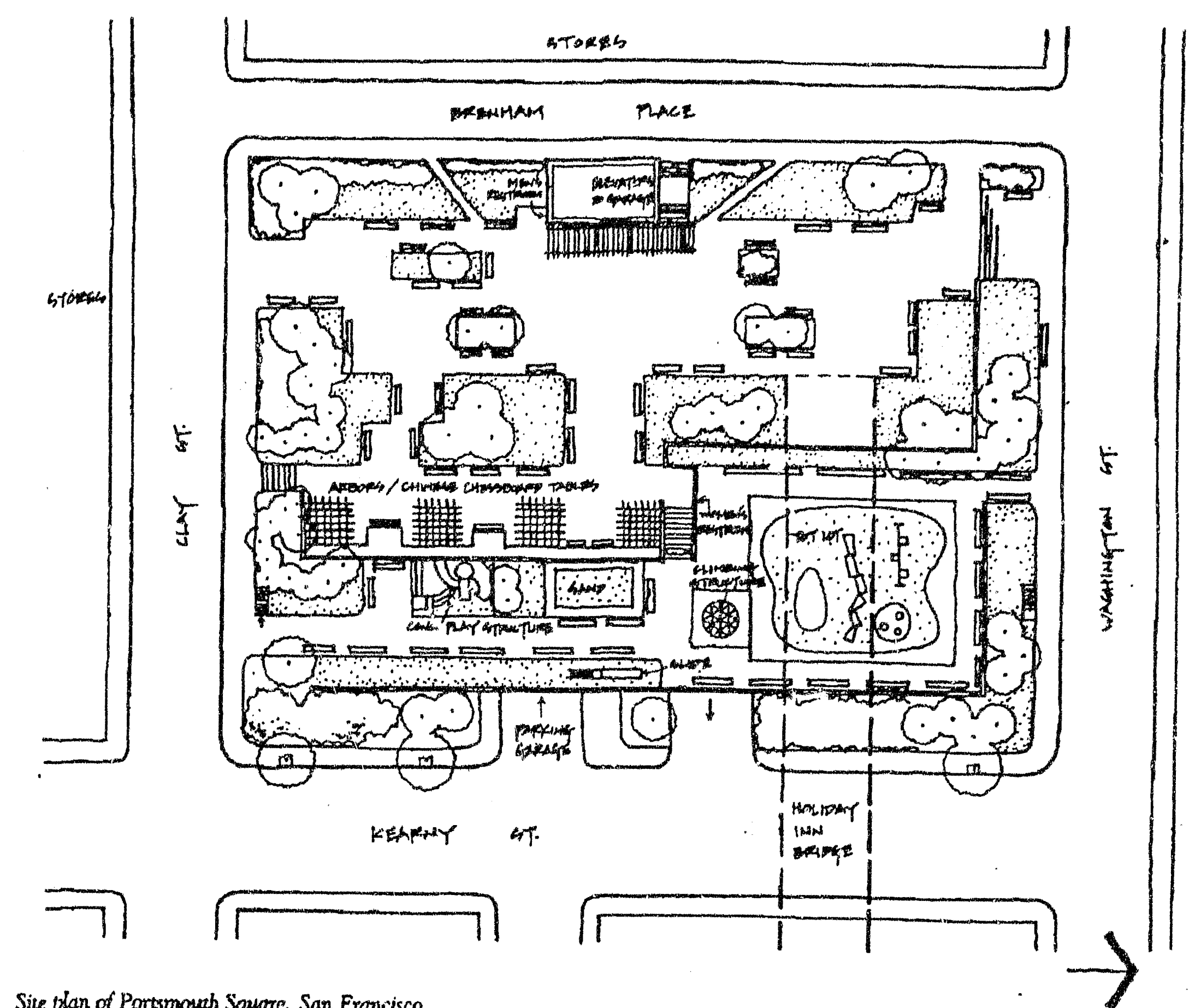
Site plan of Portsmouth Square, San Francisco.

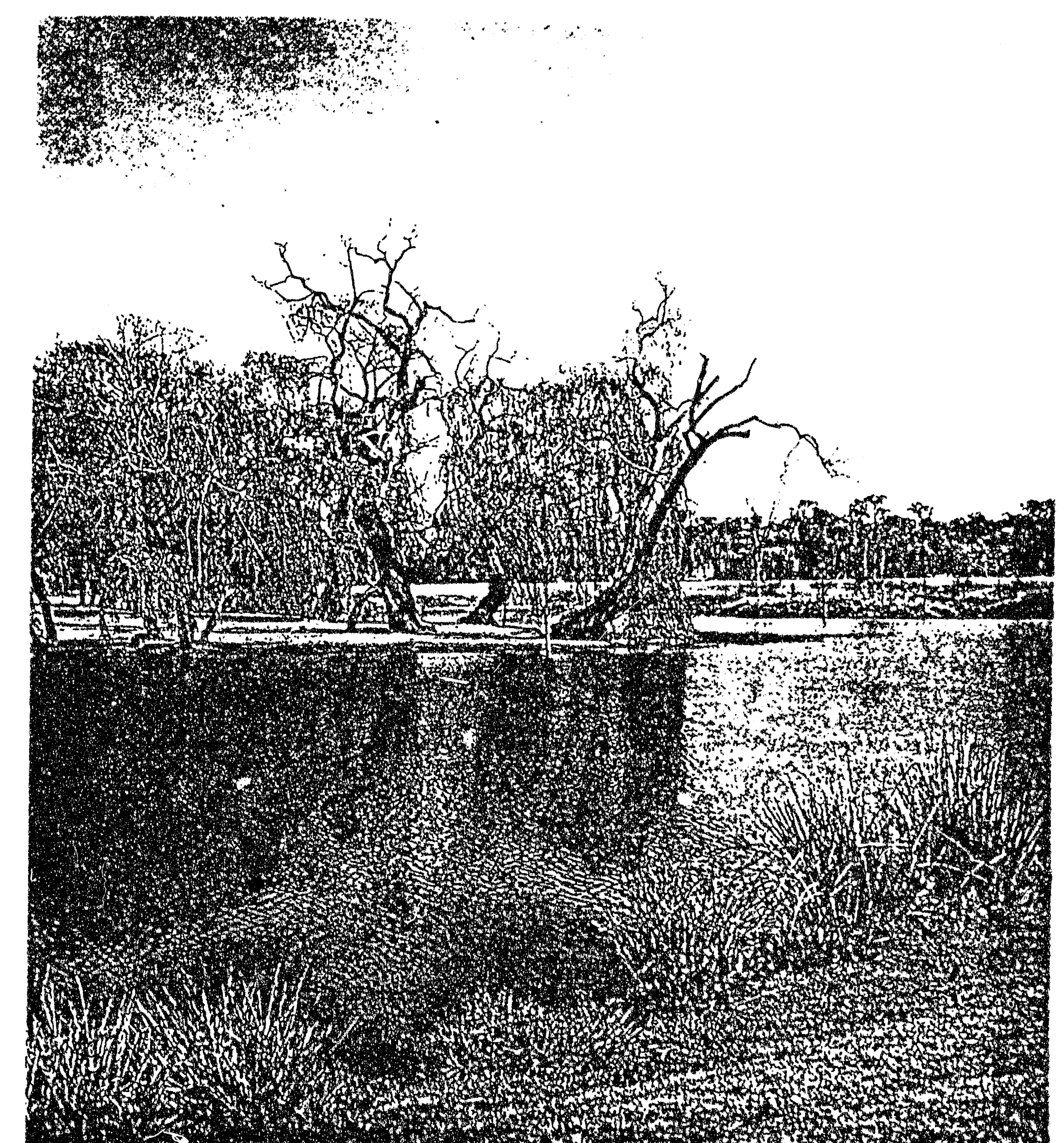Figure 4-10 :   Portsmouth Park, San Francisco, Source: Marcus et al, 1990

Figure 4-11: Urban Open Space System – Gillooly's Farm in Johannesburg which is part of the Jukskei River Open Space System, Source: Johannesburg City Council, 1986:61

This understanding of the importance of natural open space within the city has resulted in the development of entire interconnected open space systems for recreation and / or nature conservation, which are termed "greenways".

4.2 PUBLIC SPACE IN THE SOUTH AFRICAN CITY WITH PARTICULAR REFERENCE TO JOHANNESBURG

The evolving role and function of public space within the South African city is assessed, with particular reference to Johannesburg. Although Johannesburg is a relatively 'young' city, in comparison to the other major metropolitan areas of Cape Town, Durban and Bloemfontein; Johannesburg is the largest metropolitan centre and is at the core of South Africa's economic heartland. It is in this regard that it is considered an appropriate example, albeit that the city, figuratively speaking, "grew out of the veld" just before the turn of the century in 1886 from mining town, to industrial and now commercial and business centre. There is therefore no pre-industrial urban form implication in terms of public space, neither were there any urban settlements of indigenous people (although ruins have been discovered which were small agrarian settlements prior to mining and urban development).

The above does not negate the required understanding of the African city (i.e. pre-colonial), nor that of the colonial city in the South African context. It is important to understand both the latters' understanding of public space and the way they have shaped public space. Consequently, the role and function of public space in the development of the South African city is considered in four 'stages':

a. Pre-colonial urban development;

b. The Colonial and Segregated city;

c. The Apartheid city (institutionalised separation / segregation); and

d. The Post-Apartheid 'Democratic" city. (transition period : the 'post-Apartheid city)

The above encompasses a historic period of over 300 years, and it is not the intention to give a detailed assessment, but present a synopsis relevant to the role of public space, with particular reference to the city of Johannesburg and its inner city, which prepares the ground work for the Ellis Park precinct case study.

4.2.1 Pre-colonial African and South African Urban Development

Hall (1976) assesses that

"... African towns and cities antedated European conquest and domination and that many urban centres played an important role in the advancement of African civilisation".

Urban living was neither a new nor an alien phenomenon in sub-Saharan Africa prior to European conquest and domination. African towns and cities were:

- spiritual and ceremonial cities;
- commercial centres of exchange through trade; and
- centres of governance.

The rise and fall of cities related very much to the destinies of their rulers, as most African societies are based on an autocratic and kinship structure. The African towns and cities served a number of purposes and functions, comprising a combination of at least two or more of the above. For example Great Zimbabwe became first a ritual centre, then a political and commercial nucleus of the Rozwi (Hull, 1976).

Markets or commercial and industrial activity were not necessarily the prerequisites for the existence of towns and cities. Manufacturing was a small-scale operation, confined to family compounds and the marketplace, even in the great commercial cities. Part-time agriculturists constituted a considerable portion of the urban population, as well as cattle farmers. Most of the towns and cities were linked to their hinterland in terms of food production and socio-economic resources, such as trade, sharing a common religion and ethic with the ruralists, the commuting of urban residents to their outlying farms. This was reinforced by the fact that many African societies remained agrarian.

Land and compounds in the areas of Africa were owned, and societies ruled by, their nobility, where life and society focussed on servanthood to the nobility. This had the effect that the spatial structure of the urban centres was determined by the authority of the nobility, and were often microcosms of the entire realm.

"....it was not unusual to find them divided into numerous sections corresponding to the outlying provinces and occupied by peoples from that particular area" (Hull, 1976).

The spatial settlement patterns of African towns and cities were predominantly determined through human relationships. Space was the means through which social, religious, ethnic, political or occupational relationships were expressed. Thus, for example, urban settlements were arranged spatially according to the hierarchies of kinship and lineage structures. However it favoured the centre, in the form of open space, the symbolic, religious, ceremonial and functional core of the urban settlement. This central place functioned as central public meeting place, used as 'storage' for the cattle and grain, and the place of religious and ritual ceremonies and celebrations, it was the focus of African urban life. This is reflected in the structure of the Great Zimbabwe ruins, that of the Zulu royal city, and the Nguni kraal (refer **Figures 4-12, 4-13 & 4-14** respectively).

The 'streets' were paths for people focused on the public centre in a radial pattern (Southern Africa) or modified grid (Northern Africa). Accordingly the spatial make-up was characterised by tight compound clustering in a ring surrounding the centre, punctuated by a major processional route to the central space.

"More than conveyors of trade items and livestock, these great pedestrian ways and gathering points served also as vital lines of human communication, where urban values, etiquette, and historic traditions were periodically acted out and reaffirmed. They were the great human stages upon which all social and political strata visibly expressed their identity purpose" (Hull, 1974).

The African city and town is characterised by a diversity in form, design and function. These were predominantly influenced by the natural environment, specifically climate, soil and vegetation. As a result structures often blended into the environment, achieving a synthesis of vernacular and organic forms (Hull, 1976). They encompassed numerous basic forms such as the circle, square and rectangular; and their variations such as the bullet, onion, beehive, complete cone or cone-on-cylinder; the steeple-crowned square or cylinder; the clay rectangular or square box under a flat, vaulted or conical roof; the termite-hill type tower with porcupine exterior; the rectangular box with gable-ended roof; and so on (Hull, 1976). The cities themselves were

often mosaics of building forms, constructed from a wide variety of building materials (refer **Figure 4-15**).

In conclusion, pre-colonial African cities 'public space' was structured by and functioned according to the societies' norms and values; it was a direct spatial reflection of the structure of the society, rooted in its religious, political, economic and social conceptions.

> "To grasp space; to know how to use it; to see a potential unity among edifice, ethos, and environment; and to perceive a synthesis of form and function are the crucial criteria for urban excellence. Pre-colonial African architecture displayed a clear recognition of these elements" (Hull, 1976).

Principles underpinning the development of urban and public space:

- adaptation of the natural environment by complementing it through the utilisation of indigenous building materials;
- urban living through mutual aid and co-operation under a 'feudal' or kinship social system; and
- civility and gentility, of good manners and etiquette (Hull, 1976).

4.2.2   The Colonial and Segregation City

The colonial type settlement, in broad principle, was based predominantly on a commercial function. The organisation of the city in terms of urban form and structure, replicated the city structure of the mother country, within the framework of a standard colonial plan.

Urban public space was accommodated within the standard plan of a grid-iron street pattern, being predominantly places for exchange, such as the market square, and a means by which to make visible colonial domination. As the process of industrialisation accelerated in Europe its impact also manifested itself on the colonial sister cities in a variety of ways. With Johannesburg, the discovery of gold and associated industrialisation led to the establishment of a city on a greenfields site.

Chipkin (1993) correctly describes the development of Johannesburg as a progeny of the 19th Century Industrial Revolution. The reason for its emergence was the world's largest gold reserves in the earth (the Witwatersrand) and financial speculation.
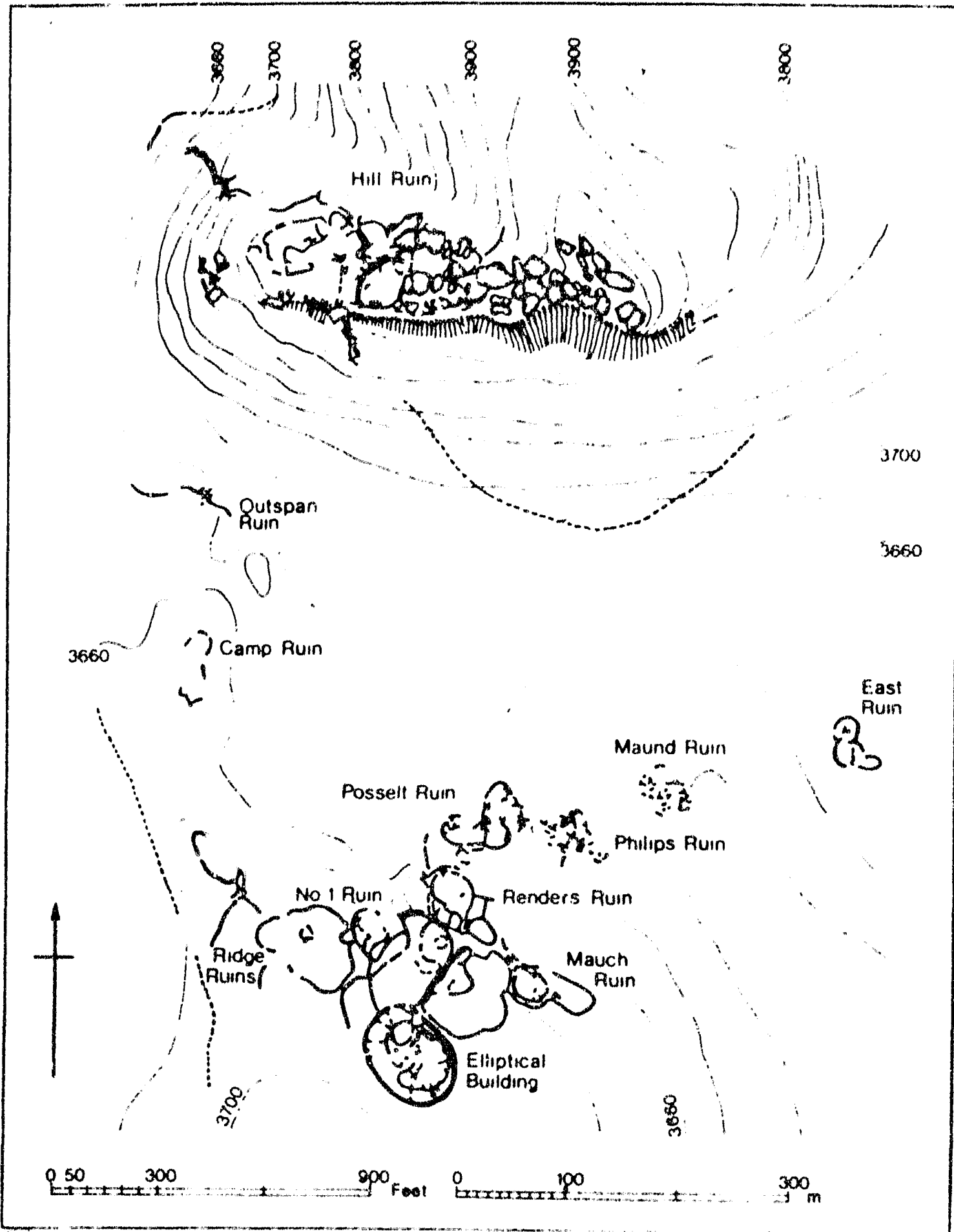

Figure 4-12:   Site Plans of Great Zimbabwe, Source: Hall, 1976:23
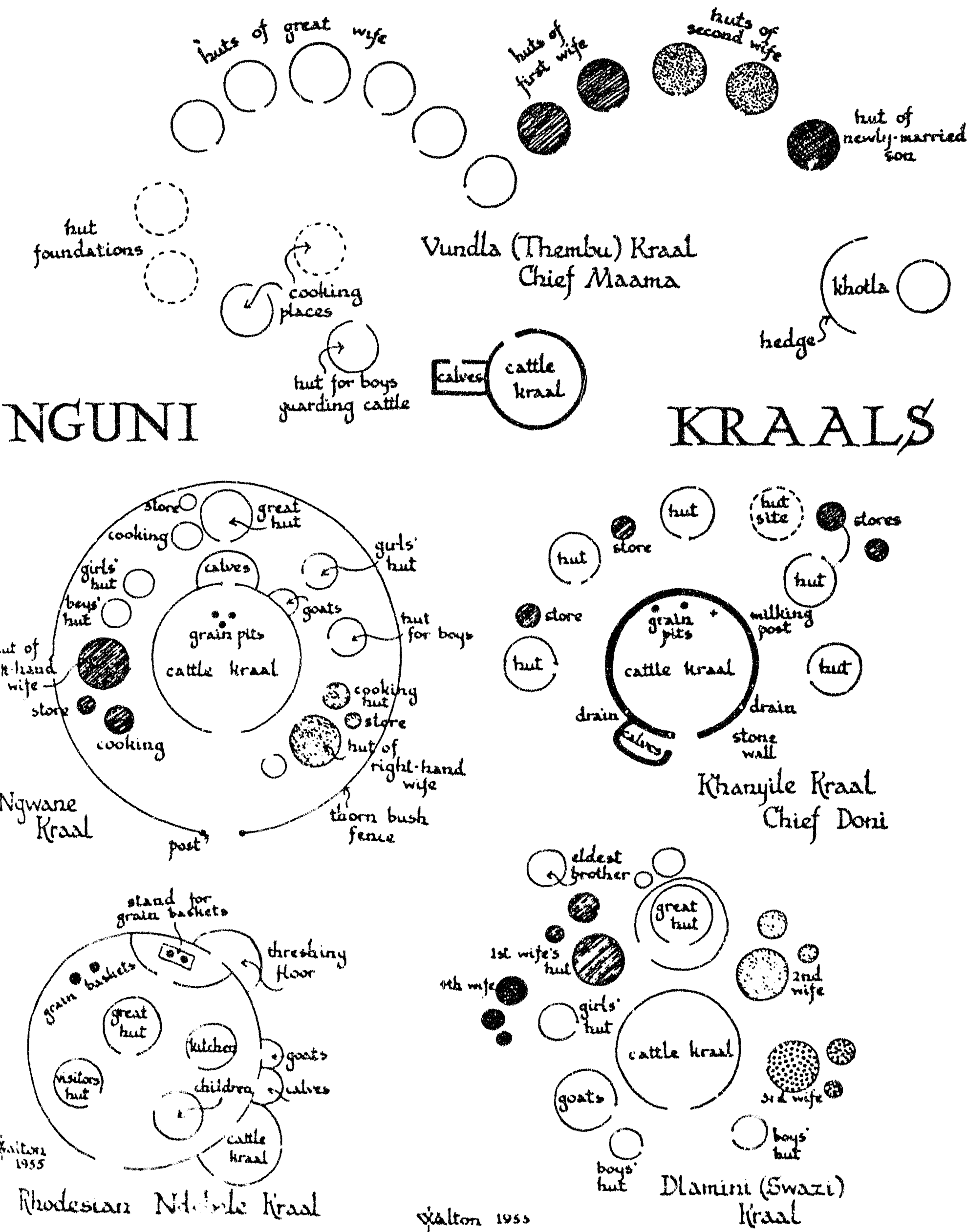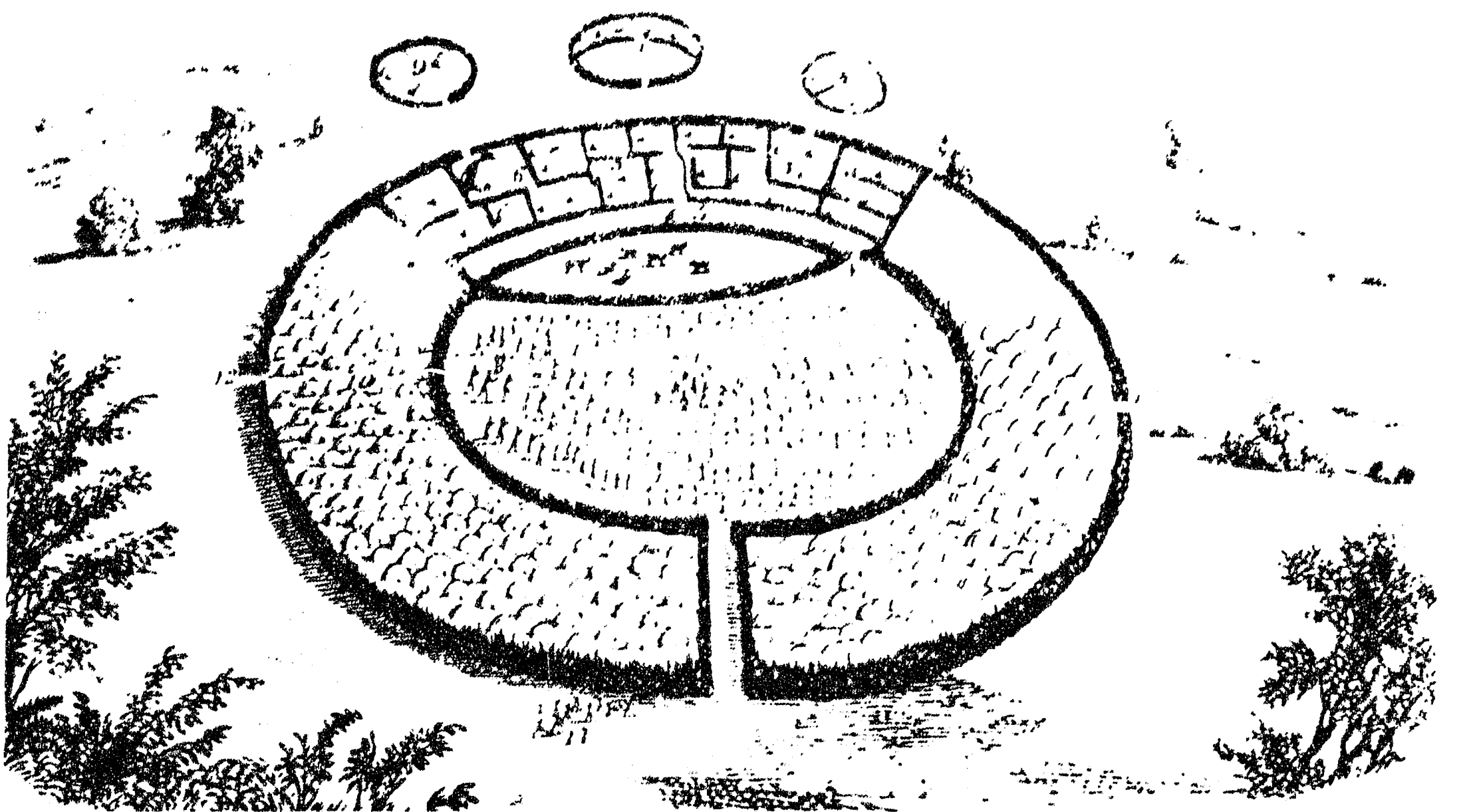

Figure 4-14:   Nguni Kraals, Source: Hall, 1976:75

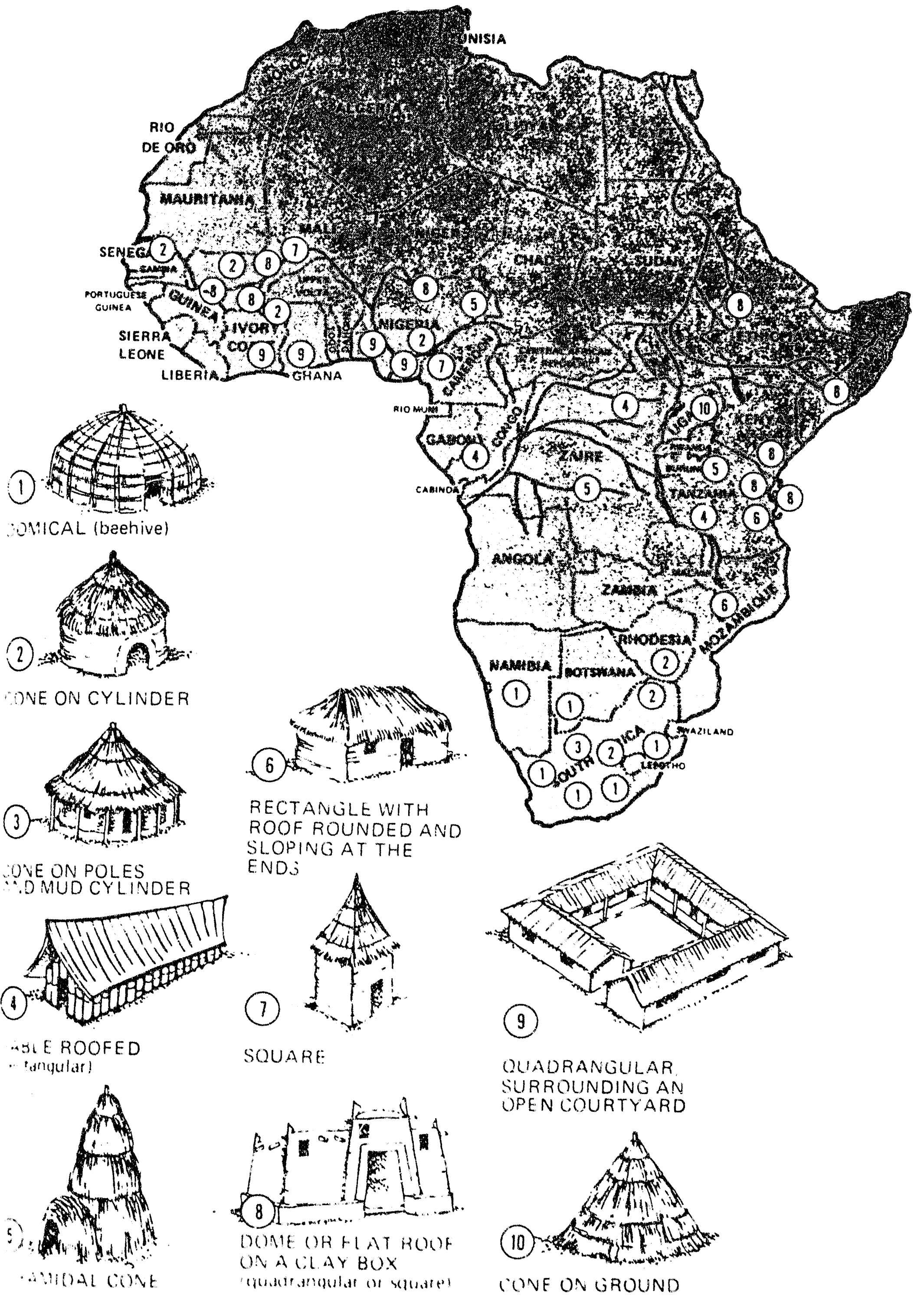

Figure 4-13:   Zulu Royal Kraal, Source: Hall, 1976:25

Figure 4-15:   Major Structural Forms of Precolonial African Dwellings, Source: Hall. 1976:84

The initial mining camp that emerged comprised a hum-drum town plan structured around a central square (Chipkin, 1993). It was located on a piece of 'uitvalgrond' of Randjeslaagte, between the farms of Doornfontein, Braamfontein, Turffontein and Langlaagte (refer **Figure 4-16**).

> "... We are none of us here for the benefit of our health. Money making and money grabbing is the alpha and omega of those resident on these fields...." (Letter to the editor of newspaper fragment c. 1893, in Chipkin, 1993:10)

Within nine months the town was laid out with a regular street grid pattern of 200 x 200 Cape Feet (63m x 63m), with erven in modules of 50 by 100 Cape Feet (15.74m x 31.48m) and corner stands of 50 by 50 Cape Feet. There were three large squares, the main one being the Market Square. The grid street-plan was determined by two strong directional pulls:

- the east-west direction corresponding to the consistent axis of the Main Reef, and the east-west topographical structure of the Witwatersrand in the form of a central plateau with a series of parallel ridges (Yeoville, Kensington, Linksfield, Braamfontein, Melville, etc.); and

- the north-south passage determined by the uitvalgrond and the trade route to Pretoria.

The street-grid plan was open ended and its inherent neutrality and equality enabled it

> "...to accommodate all the various directional movements, market divergencies and other variables that would in time operate in the townscape. The central grid-line plan represented an open slate without predispositions - the perfect tabula rasa for the operation of the market economy" (Chipkin, 1993:14).

By 1896 the city had expanded extensively (refer **Figure 4-17**). The urban structure showed the typical characteristics of the segregated city (as discussed earlier), including native and coolie locations. Johannesburg had been developed with various public spaces and public buildings, including:

- Market Square (refer **Figure 4-18**) and various others (Yeoville Square).

- Public parks including Krugerspark (Wanderers), Joubert Park, Union Football Grounds (End Street Park), and other smaller parks (Barnato Park).

- Railway stations, General Hospital, Courthouse, Market Hall, etc.

- The creation of two lakes in a marshy area around the Juksei source springs where Ellis Park is today, as reservoirs for the waterworks company.

In short, commercial 'white' Johannesburg was physically developed according to the planning principles of its industrial and commercial counterparts in Europe.

Information on the evolution of public space in Johannesburg is very sketchy, suffice to say that all the public space components identified in Chapter 3 were incorporated into its spatial layout and form. It is also highlighted, that the spatial segregation of Johannesburg's city structure was compounded by the advent of and influence of Modernism - the dissection of uses and activities into singular and spatially separated physical domains and buildings. The latter, together with the advent of the motor car, modern communications, television and technology, ensured the emergence of the skyscraper, the freeway, the suburb and reflected physical elements characteristic of the contemporary western city. What made Johannesburg "unique" from the former was its steady development into a distinctly segmented structure, comprising a commercial-industrial function centred around a single core (refer Chapter 3).

4.2.3   The Apartheid City

The year 1948 marks the advent of apartheid social engineering and the rigorous implementation of segregationist policies. By this time Johannesburg was growing and expanding apace through the economic expansion of the 1930's, followed by the massive increase in industrialisation that occurred during the war years and post-war years. The city was becoming the industrial centre of South Africa, drawing the rural population to it. Simultaneously many of the black rural poor were forced off the land by the 1913 Land Act, and many migrated to Johannesburg, the city of gold (iGoli) and of hope, because of the opportunities and potential prosperity it presented. As a result the African population of Johannesburg doubled from a quarter of million in 1936 to above half a million in 1948. It resulted in extensive overcrowding and concomitant unemployment.
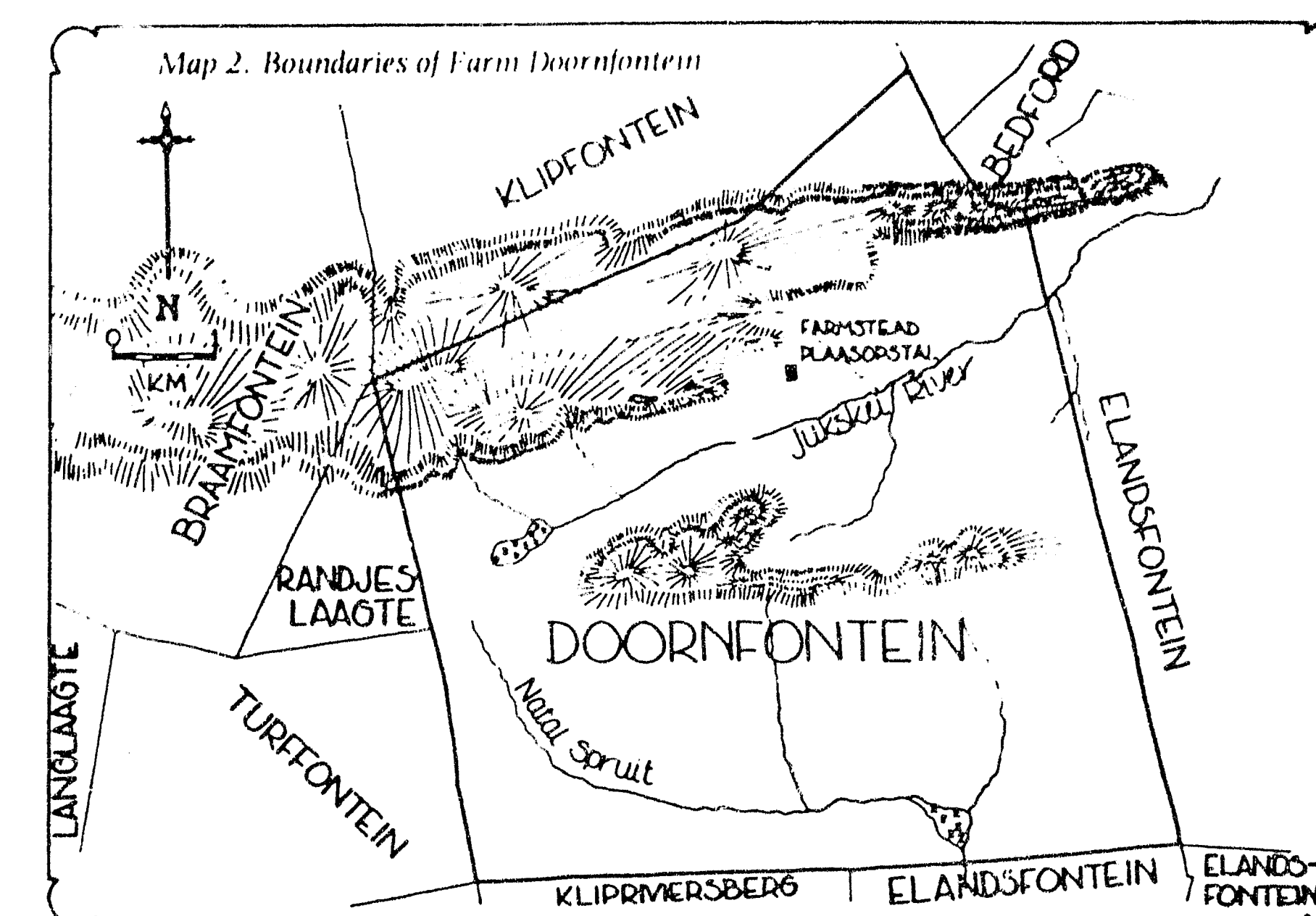

Figure 4-16: Randjies Laagte, Source: Johannesburg City Council, 1986:12
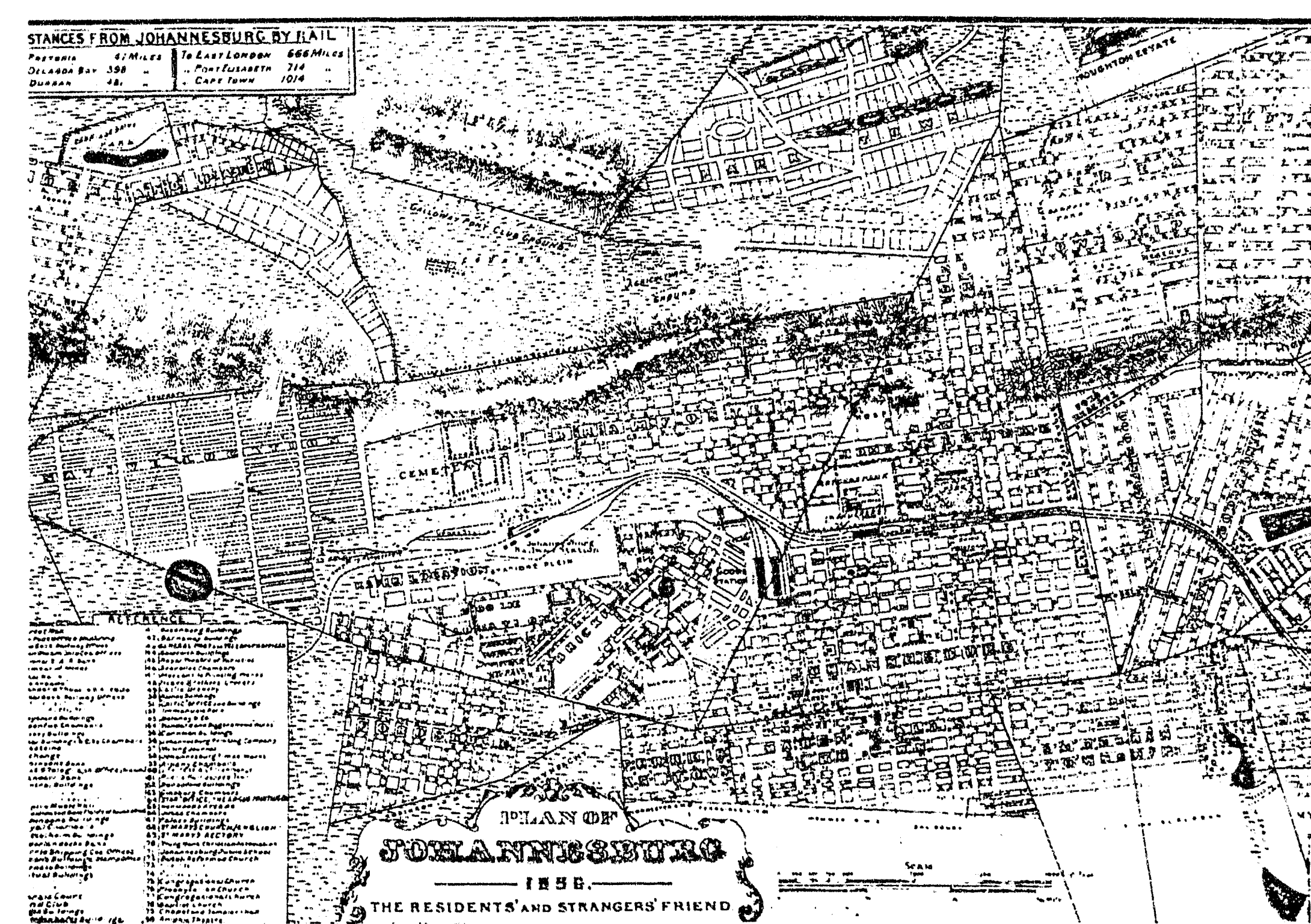

Figure 4-17: Plan of Johannesburg 1896, Source: Chipkin, 1993:13

Figure 4-18: Market Square in 1896, Source: Chipkin, 1993:16

The continued growth and prosperity of Johannesburg and the South African economy in general, secured the means and resources of governments to continue with segregationist policies. Instead of investigating alternative solutions that placed African people on an equal footing, enabling them to fully benefit from and partake in the opportunities of urban living, segregation was entrenched through the new Nationalist government.

The African population developed their own unique life style and public space making in the western townships of Johannesburg (Sophiatown), characterised by diversity and vibrancy. The street and its sidewalks was the linear urban space that comprised the most important spatial element. Besides accommodating traffic movement it was equally a place for pedestrians. The street was the playground, the 'shopping mall' and the promenade. There were major activity streets that included corner shops, eating places, cafés, pubs, manufacturers and service industries (tailor, laundromats, etc.), specialist shops and places of entertainment. Complementing these commercial establishments were social facilities encompassing schools, that were an integral part of the community and constituted a major public space-making element. The schoolgrounds served as the neighbourhood playgrounds, and the school buildings were the neighbourhood community halls, providing for indoor sport, adult education and community meetings. This broad land-use diversity and public life was completed by the churches and mosques which were accorded a civic status, consolidating the religious and cultural traditions. Together with the church halls, bakeries, small libraries and community halls, they constituted a range of shared facilities, and contributed to the making of a diverse and multifunctional public space system.

These places were physically destroyed and the people forcefully removed to areas far outside the urban limits of Johannesburg as they were then (to what is now known as Soweto), through the implementation of the 'apartheid plan' under the guise of demolishing 'inner city slums'. Instead of the diverse and vibrant urban environments, segregated mono-functional residential townships were developed for those displaced by the Group Areas Act and the migrants coming to the city, separated by railway lines, industrial areas and open buffer strips from the 'white' city.

Le Grange (1994) succinctly describes the urban fabric of these townships:

- Public space and use were conceived of as separately zoned areas and entities ('town centres', 'places of worship', 'public open space').
- The emergence of underdeveloped space, undefined and un-cared for residual space.
- Sprawling low density environments, made up largely of single family residences, resulting in dull and monotonous little boxes stretched out on a flat, barren landscape.

These were predicated on the 'garden city' model and laid out in terms of 'neighbourhood' planning principles, more to engineering functions and policing requirements than human needs.

> "... their (township residents) lives centered on their jobs. She went on to describe a situation of total alienation and an atmosphere in which physical insecurity, hostility, depersonalisation, lack of identity and other symptoms of social failure are the daily experience of the inhabitants" (Chipkin, 1993:217).

Even more recent attempts at township development remain alienating and sterile environments, where

> "any attempt at diversity, the provision of transition spaces and individual expression or identity is ignored" (Le Grange, 1994:25).

Buildings, churches and schools continue to be treated as isolated objects, civic centres remain dislocated from the people they serve, the areas remain the focus of en-masse housing unit production (provision of basic shelter), there is no definition of the street as public space – its edges remain undefined and its use is focused on the motor vehicle.

Simultaneously suburban residential development became the norm for Johannesburg's 'white' residents, based on the American model. City capital and development resources favoured these areas, enabling a liveable urban life through the provision of quality amenities and facilities, albeit based on the motor vehicle.

Physical development and the distribution of resources did not only favour 'white' residential suburbs, but investments in infrastructure and services were directed in a way that consolidated Johannesburg's economy and built up the 'white' human resource in terms of education,

sporting and associated facilities. The Apartheid system distinctly favoured and promoted the 'white' population over all others, enabling a quality of life equivalent to European standards (if not better in some instances) at the cost of the African population, considered as a labour pool to serve the industry and economy of Johannesburg, and only 'temporary sojourners' in the city.

The favouritism and promotion of the 'white' population over all others, in the context of public space and facilities, was evident in the "Reservation of Separate Amenities Act" in 1953, which legalized the provision of separate buildings, services and conveniences for different racial groups.

Post offices and government buildings, including police stations, were either totally segregated or had partitions erected in them so that whites could be served on one side and blacks on the other, this included liquor outlets. Civic halls, libraries, parks, theatres, cinemas, hotels, restaurants, cafés and clubs were normally barred to blacks if situated in 'white' areas. Sports amenities and beaches were also reserved for the use of one racial group.

Of particular importance is to note that the segregation laws did not impose an obligation to provide an equal standard for all races. As a result the courts could not rule that segregation was invalid because separate facilities were not substantially equal, neither could the courts rule the separation invalid on the ground that provision had not been made for all racial groups. This legally ensured the disproportional and underprovision of amenities in townships and to African people.

In 1979 the Act was changed to permit the opening of the following facilities for multi-racial use: libraries; private hospitals; theatres and halls used for live theatre, music recitals 'of quality', wedding receptions and concerts if alternative facilities were not available for disqualified groups; receptions for people at symposiums and congresses; clubs, in respect of guests; agricultural and industrial exhibitions and charity fêtes; drive-in cinemas and circuses; and restaurants and cafés in certain areas.

However parks and public hospitals still remained segregated.

A final note on the Apartheid city was that the movement of African people was restricted and monitored through the infamous pass-law system. Thus the Apartheid city was not only a restricted living zone for a large section of the population in terms of accessible places, but their actual movement was directed.

4.2.4   The Post-Apartheid 'Democratic' City

Johannesburg is in a transition period and remains spatially a very fragmented city. This, despite a new approach to urban development and the attempts at reconstructing the city into a sustainable urban form. Many of the approaches and attempts have yet become physical reality.

Urban planning in the post-apartheid context has been based on the principles of the Development Facilitation Act and the notion of the "sustainable city". The latter is a focus on achieving a life-enhancing urban environment for all individuals and communities in a way that access to opportunities is maximised; facilities, amenities and services are provided; the urban economy reinforced and acceptable standards of living are met without compromising any of the ecological, cultural, social, economic, security or legal preconditions necessary for continued viability both in the short and long terms.

The Development Facilitation Act (DFA) stipulates the following sustainable development principles:

- a more compact urban form that discourages dispersed low-density urban sprawl ;
- promoting a diverse combination of land-uses that enables a greater intensity of mixed-use development;
- a more complex urban system that spawns opportunity through diversity of activity patterns and brings associated economic and employment opportunities;
- the integration of the historically marginalised areas into the mainstream of urban life by correcting the existing distorted spatial patterns of the urban environment;
- optimising the utilisation of existing service infrastructure and social amenities, particularly where spare capacity exists;

- enabling accessibility to affordable and efficient means of public and private transportation;
- furthering the development of employment opportunities and residential areas in close proximity to or integrated with each other; and
- promoting physical development based on ecologically sound principles that brings the natural environment and the urban system into a mutually reinforcing and integrated relationship.

4.3   PRINCIPLES EMERGING FROM THE HISTORIC OVERVIEW

The multiplicity in types of public spaces suggests that there is a presence of public life in the modern city - how well these serve the urban population, how functional they are, seems questionable in view of the historic overview and analysis undertaken. What is also very apparent is that in the way society has become stratified (class, ethnic, social groups, etc), so different public spaces have come to serve particular social groupings, and public spaces play increasingly specialised roles in most people's lives.

The changes in society, brought about first by industrialisation and then post-industrial development, resulting in fast and extensive developments in technology, infrastructure services, building and construction technology, communications, transportation, have extensively re-shaped public space and resulted in the formation of new types. In particular the growth in population through urbanisation and natural growth, has resulted in the extensive growth in cities and their physical expansion, aided by technology and progress. The end result has been the growth of the suburbs beginning in the 1950's, causing an extensive population shift of mostly the wealth and middle class, to what was previously considered the urban periphery or edge. The development of suburbia had two significant impacts on public space:

a. The privatisation of public space, characterised by a spatially discontinuous landscape of private realms of detached houses, office parks and, in particular, the shopping mall.

b. The central cities became increasingly the living and working domain of the less affluent and disenfranchised, requiring public

places that are more responsive to their needs of employment, health and overall welfare.

Against the historical backdrop of public life, public spaces have arisen out of a number of forces:

- The growth and expansion of a society physically occupying space, especially in urban areas.
- Some were the products of a heterogeneous society with many and different needs, interests and aesthetics.
- Others were products of careful planning, but not necessarily based on the appropriate priorities based on their forms and functions.
- Through informal development, omitting formal planning and design.

4.3.1   The Street

The street has been a physical fact since the dawn of urban settlements (and even before that). Its purpose throughout history - in the broadest sense - has been a combination of economic and social functions, comprising movement (traffic), the exchange of goods, social exchange and communication. All these are directly related to the form of the street - the physical and material ways in which these activities are housed and enabled (or disabled / restricted) (Kostoff, 1992).

In this context then, Kostoff (1992) argues that the history of the street is both about container (the street as a physical entity, its design and components) and content (the activities and functions that the container allows). If there is dissonance between the container and its content,

> *"it is because the frame of the street is more permanent than the uses made of it"* (Kostoff, 1992:189).

The street, whatever form, is a necessity of urban settlement, without it, there can be no city. Furthermore, if the street is not public (at least to some degree), it cannot function in terms of :

- practical needs, such as access to properties and through traffic (from pedestrian to motorized);
- its political function, by creating a public domain that takes precedence over individual rights.

"including the right to build what one wants where one wants and the right to treat the open space as one's front yard" (Kostoff, 1992); and

- its communal function, in the way it displays the workings of the city and society and supplies a backdrop of societal activities, cultures and functions.

4.3.1 (i)   Street Celebrations and Processions

Major religious and cultural celebrations and processions occur in the street.

4.3.1 (ii)   "Theatres" of Power Display and Mass Protest

"It is precisely at moments of political transformation that the street renews it currency as medium for ceremonial assertions of power. In modern times this has been particularly true of societies forged through revolution. Here the secular procession is deliberately cultivated as a mass affirmation of changed social roles and values" (Kostoff, 1992:195).

4.3.1 (iii)   Public Realm

The degree of publicness afforded to the street, what Kostoff (1992) describes as the relative balance between the abutter's freedom of action and the identity of the public domain, is ultimately a matter of culture and the norms and values of society. These in turn decree the laws that regulate the functions and actions of the street, and its publicness, as well as which people - or classes of people may use it or not.

4.3.1 (iv)   Spatial Standards, Physical Functions

The process of control over the public street environment is through the application of common law, which in itself is established by the society and its cultural norms and values. In this regard the common law changes and adapts as society's needs and requirements change. At the most basic level these common laws, such as building codes, street ordinances and traffic regulation, aim to guard against fires and other disasters to ensure public health and safety, and to improve the flow of traffic (or movement).

- *public safety* - these aspects encompass prevention of fire, sound construction, avoidance of impediments and protrusions that endanger pedestrians and street users (e.g. an act of 1834

concerning the South London district of Bermondsey makes liable to the removal of all "signs, sign-irons, sign-posts, barbers' poles, dryers' poles, stalls, blocks, bulks, showboards, butchers' hooks, spouts, water-pipes (Kostoff, 1992).

- *public health* - the outbreaks of epidemics resulted in the establishment of ordinances regulating public health. These encompass aspects of drainage for waste-water and sewerage, as well as congestion. The latter related to street width and the height of flanking buildings. The streets were initially so narrow and high - in western cities - that they prevented the penetration of sunlight. However, this design would be appropriate in very hot and dry climates, like in certain Islamic cities. Accordingly the public health ordinances determined street widths and heights of buildings.

- *traffic* - the street has always dealt with the aspect of movement, in particular pedestrian and vehicular traffic (type) their quality and the flow thereof. This implicated street widths and their design, and has resulted in the development of a road hierarchy of functional categories. Different types of movement, particularly between pedestrian and motor vehicle, have lead to design standards and approaches that specifically attempt the separation of pedestrians and vehicles (i.e. sidewalks and pedestrian paths), as well as their 'flow' throughout the city.

A number of persistent themes of the urban streetscape have been identified by Kostoff (1992):

- waterways;
- the bridge street;
- the boulevard; and
- covered streets

What has become most apparent through the historical analysis of the street is that in modern western society its prime focus and function is that of accommodating and serving the purpose for vehicular traffic. 20th Century street design and use has removed the vitality and functions of the street prior to the industrial city, namely a place where social classes mixed and a diverse range of uses occurred, and were allowed to take place. This is aptly summarised by Kostoff (1992:243)

"In the past, the street was the place where social classes and social uses mixed. It was the stage of solemn ceremony and improvised spectacle, of people-watching, of commerce and recreation. In its changing architecture, its slow shifts and adjustments, in its sometimes wholesale reincarnation, the street was also our communal register - the safeguard of those continuities of culture and place that made us as street users vastly and substantively older than our age and infinitely wiser than our natural gifts. This street of the past was an untidy place, physically and morally, but it was also both school and stage of urbanity, which in the end means nothing less than the belief that people, as Gerald Allen put it, can live together in proximity and interdependence."

Thus the old 'adage', as expressed in the Buchanan report, still holds true

"people are prepared to trade off their environment in return for motorised accessibility". (Sir Colin Buchanan, in Kostoff, 1992:243).

This fundamental loss of public life - of street culture - requires to be addressed.

4.3.2   The "Square" - Enclosed Public Places

"Since piazzas are areas in villages or cities, empty of houses and other such things and of obstructions, arranged for the purpose of providing space or set up for meetings of men, it should be remarked that in general through piazzas the condition of man in this world can be discovered" (Petrus Berchorius, 14th Century French mythographer, from Kostoff, 1992).

The historic analysis of public space within urban settlements has shown that some form of public space exists in cities throughout the ages. Kostoff (1992) call this a universal urban trait - the essentialness of public space. Consistently in the development and growth of cities, their form and content has included public places (enclosed and / or covered) that promote social encounters, enable commercial activities and serve the conduct of public affairs. This includes the street, which is primarily a place of movement and transit, but also includes places within it. A public place, on the other hand, Kostoff (1992) argues, is a destination; a purpose-built stage for social interaction and ritual.

The boundaries between public and private space are not distinct, they overlap and are blurred, considering the way urban form is configured and inhabited by humans. In broad speaking terms, public places are free to be used by people, as opposed to the private realm of houses

and / or shops, to which access is 'reserved'. In public places people cannot or do not act in ways they would in the private realm. Public space is defined in physical terms by the architecture of buildings that encompass private and / or public activities and functions, conversely all buildings fronting or facing public space are endowed with publicness.

Throughout the reviewed history these are two aspects that underpin the need for public space and its role in urban settlements.

4.3.2 (i)   Social Encounter

One important reason for the existence and necessity of public space is to facilitate social encounter between people, which may either be with familiar people and / or chance encounters which may be considered as offensive, disturbing, unpredictable or agreeable and enjoyable. The matter of the fact is that public places enable and allow freedom of action within the norms, values and laws of society, and the right to inaction and by implication observation. Kostoff (1992:123) describes this as follows:

> "We go out to meet our friends and neighbours by the town well, at the park bench, in the square in front of the church. But since everyone is entitled to make use of public places, we will also see in the same park or square people we do not know or do not care to associate with. They might sit next to us, and they might do things that are unpredictable, things that we might find offensive or annoying".

4.3.2 (ii)   Hosting Cultural and Communal Activities and Ritual

The public places host societies' cultural rituals and communal activities - festivals, religious processions, riots, celebrations, mass protest action (in the past, public executions). In this context the fundamental aim of public space is to enable and support (ensconce) community and to arbitrate conflict, i.e. enable constructive conflict resulting in a win-win situation.

4.3.2 (iii)   Enabling / Accommodating Human Activities within the City

The historic analysis has revealed a variety of activities that have characterised public places:

- The Civic Centre - not referring to a building, but the civic centre as a place, the civic centre square. This accommodated markets

(economic activities) and was a place where public business was conducted - religious, cultural and public administration. The best example of a democratic civic centre remains the Greek agora. The latter was, for the first time in history, the creation of a public place as a necessary element within the urban settlement through which the communities collective political power was expressed, as Kostoff (1992) explains. The Roman forum is also a good example in this regard.

- The Place D'Armes - the display of armed forces occurred on a regular basis in public spaces. This was undertaken for two reasons:
  - to assure the citizenry that its defences were on the ready; and
  - as a show of force, to discourage a challenge against authority.
(Kostoff, 1992).

- Games and / or Sport - the association of public spaces with games and sport is well established and recognised. This was enabled through the size of the public space, often being the most suitable area for such activities to occur.

- Traffic - the convergence and distribution of traffic, ranging from pedestrian to wheeled - horsedrawn and vehicular, has been the primary reason for the urban square (Kostoff, 1992). Although the issue is not always directly apparent in the historic analysis, the needs of traffic do conflict with the nature of the square as gathering place. Hence the reason for the squares' positioning adjacent to the main route, based on the overall principle of separation between pedestrian and vehicle.

- Residential - the use of public squares in residential environments emerged with the development of "residential squares". This comprises the uniform development of residential dwellings with continuous frontage grouped around an open space. The space is restricted to the use of the residents and limits commercial activity. As discussed earlier.

4.3.3   Beyond mere 'Public Garden' to Environment

The historic analysis has shown that the motion of the public garden has moved beyond a mere public open space for the enjoyment of nature, to a recognition of the physical environment as a whole, that recognises nature to be a vital component to enable healthy and comfortable urban living. Thus the public park is but one component in a wider greenway system of the city. The latter encompasses roles and functions to accommodate not only active and passive reaction, as well as sports and games, but the maintenance of essential ecological processes and support systems.

The fundamental approach to nature that has emerged out of the 20th Century environmental movement is the following ethic. Because the physical structure of the planet is constantly changing, the capacity of ecosystems to adapt must be maintained. In essence, this means:

- Maintaining the life-support systems that nature provides - that is, those ecological processes that shape climate, clean the air and water, regulate water flows, recycle essential elements such as nitrogen and oxygen, create and regenerate soil, and generally keep the planet fit for life;
- Maintaining the diversity of all life on Earth; and
- Ensuring that all uses of renewable resources are sustainable.

4.3.4   Public Space and the Urban System

The morphology of the urban system is the broader physical and spatial context of public space. Although the component parts of public space were discussed separately, it is reiterated that they are inter linked and from an inter-related part of the urban system. The structure of this system is either irregular, formed in terms of organic growth, or formally planned, as in terms of planned new towns or urban extensions to cities.

The co-ordination of public space into systems comprising public squares linked with public street space was most evident in the Renaissance and Baroque periods. This was undertaken in two ways:

- In existing towns and cities, new public places were established in a manner to form a sequence of public spaces linked to the existing ones (refer **Figure 4-19**)

- In new towns and new extensions, a formal predetermined sequence of public squares and places were laid out on to the landscape. These were based on abstract rules of composition, encompassing a variety of public squares of differing geometric shapes, vistas and bold diagonals within the street-layout.

Kostoff (1992:136) concludes that

> *"These fanciful systems continue beyond the Baroque period proper, as part of the academic grand tradition of urban design. The lessons of L'Enfant in Washington, Joseph Marie Saget in Toulouse, and Leblond and others in St Petersburg were to guide the town-planning school of Haussmann and hundreds of colonial designers in this century, from Fez to New Delhi, in the placement and form of squares as in everything else".*

4.3.5   The Value of Public Space

Public space is the 'place' (stage) where the communal life of the city unfolds. The streets, squares and parks within the city are the form (the 'containers') within which human exchange occurs, providing movement channels, modes of communication, and the common spaces for relaxation and play. Public space plays a critical role in the:

- satisfaction of meeting people's needs;
- protection and securing human rights; and
- conveyance of special cultural meanings, and hosting related activities.

Different cultures place differing emphases on public space - as has been highlighted in the history (more detail required); and there is always a dynamic balance (interface) betwee￼ public and private activities. This balance is influenced by changes in the culture itself, cultural exchange, technology, changing political and economic systems, and the ethos of the time.

The value of public space has declined. This is suggested by Sennett and others, arguing that the balance in society is shifting strongly toward the security and conveniences of private life. The latter is being tempered by the notion of a transformation of public life into new forms

Figure 4-19: Palermo (Sicily), the sequence of Public Spaces,
Source: Kostof, 1992:135

of association and communication, which do not necessarily depend on the primary relationships in traditional public places. (Carr et al, 1992). However, the proliferation of public space types over the last thirty years indicates that the primary role of public space is to provide (enable) freely chosen settings for family / group / individual enjoyment, development and discovery.

> *"In the process of choosing the spaces for their public lives, people can also choose to experience other groups in settings that are conducive to relaxed exchange. Successful multicultural spaces add to the richness of the city as a learning environment and give hope to cultural integration, or at the very least, cultural understanding"* (Carr et al., 1992:10).

4.3.6   Cultural Value of Public Space

In society there is a dynamic balance between public and private activities. Different cultures place different emphasis on this balance:

- Latin cultures of Southern Europe place great emphasis on public aspects, displaying wealth and civic and religious power in palaces, town halls, and churches facing on to main streets and squares.

- Muslim cultures of North Africa have fewer public spaces comprising markets and shopping streets, with rich design expressions in the more private domains of home and mosque.

> *"Although the public-private balance is unique in each culture, it will shift under the influence of cultural exchange, technology, changing political and economic systems, and the ethos of the time"* (Carr et al., 1992:3).

Thus roles of public space as:

- relief from congested living and working environments; and

- an essential setting for social exchange and its associated social support systems;

are somewhat reduced, but not excluded.

The reasons for public space development have been varied:

- public welfare (health, function-movement)

- visual enhancement (aesthetically and psychologically important)

- economic development (to attract people for potential economic benefit).

- socio-cultural needs.

Three overall primary goals emerge in the design and development of public space:

a. Public space must be RESPONSIVE - spaces that are designed and managed to serve and meet the needs of their users

b. Public space must be DEMOCRATIC - spaces that protect the rights of the user groups. *"They are accessible to all groups and provide for freedom of action, but also for temporary claim and ownership"* (Carr et al., 1992:19).

c. Public space must be MEANINGFUL - spaces that enable people to make a strong connection between the place and their social / personal lives, encompassing their culture and the larger multi-cultural world.

> *"These connections may be one's own history or future, to a valued group, to one's culture or relevant history, to biological and psychological realities or even other worlds"* (Carr et al., 1992:19).

> *"These values can incorporate the public space motivations previously discussed. For instance, they define "public welfare." Visual and environmental motives come into play in satisfying people's needs for passive engagement, discovery, and meaning. Spaces that satisfy people's needs, protect their rights, and offer them meaning will be attractive, and are therefore quite likely to be economically successful. Corporate and government symbolism can be appropriate aspects of the meaning of certain spaces. Our central assertion is that public space values must grow out of an understanding of why people go to spaces, how they actually use them, and what they mean to their users over time"* (Carr et al., 1992:19).

It is argued in this context that public spaces that meet people's needs, protect their rights and offer them meaning will be user-friendly, functional and will be frequented. This makes them potentially economically successful as the 'feet' are present to generate economic activity. In these environments corporate and / or public symbolism can be integrated.

4.3.7   Forces shaping Public Space

A number of forces play a role in the shaping of public life:

- Climate and topography influence and direct the existence of outdoor public life and the nature of its settings. Technology, such as climatic control, etc., has influenced this and widened possibilities in this regard. In warmer climates public life is generally more pronounced.

- Social and political milieus that are supportive of an active public life, are a required basis for the existence of successful public places.

- Cultural forces:
  a. Public spaces, which accommodate multipurpose activities through which the social life of the community is strengthened.
  b. Meeting functional needs of society, comprising movement, shelter against the natural elements and public safety and security (from policing to fire protection etc.)
  c. Symbolic life, relating to the cultural values that gives specific public places a unique meaning and the practice of rituals shared by the culture.

- Technological influences in terms of what can and cannot be achieved in society:
  a. the parameters to construction and transportation, affecting accessibility to resources; and
  b. telecommunications (in particular the home-computer) and the opportunity of increasing numbers of people to work at home (homeworkers).

> *"Although different forms of communication and mutual assistance will likely develop around the microcomputer, the local community may also come to serve new functions as homeworkers set out contacts to replace camaraderie of an office."* (Carr et al., 1992:29).

- The physical structure of places implicate the nature of public life. One such example is the streets of the city, its arteries. These are the components that facilitate communication and interaction between people and communities, the means by which objects, people and information is distributed throughout the city (Vernez-Moudon, 1987). Streets enable contacts, both planned and serendipitous ones, allowing people to live and be together. However, streets are also the context for crime and fear. In this regard Jacobs (1961) has advocated that street life should be complex and active with diverse uses and activities and many people, making them exciting places and safe ones.

The impact of the motor vehicle has largely been blamed for the decline in public street life. Appleyard's study of streets clearly identified an inverse relationship between the volume and intensity of motor vehicles and the residents' public life. However, it must also be noted that street life quality in the 19th Century was characterised by dirt, noise, and chaos. During the turn of the century, noise and air contamination became acute problems, threatening the health and welfare of city dwellers.

The point being made is that contemporary grid lock and pollution has a long history. What needs to be addressed is the accommodation of traffic in a public life milieu in a manner that does not produce the health and welfare risks of the past. Improving technology in motor vehicle design is assisting in this process, with cars becoming more 'environmentally friendly' in terms of reduced toxic emissions, more, cleaner sources of power such as electricity, etc. The motor vehicle has certainly privatized the street in the sense of dominating the street scene by traffic volumes and associated paraphernalia as traffic lights and street signs that control it.

* The nature of community, its size and heterogeneity directly implicate the notion of public life. In highly diverse communities there have been in general two types of responses to public life:

a. Withdrawal to the private realm - as Sennett has argued - because it is difficult to make contacts in the public realm as people are less and less in a position to identify others with similar interests or backgrounds. This, Carr et al (1992) argue, is unlike in the pre-industrial city, where people were identifiable to each other by their clothing; in contrast the "modern urbanites are largely unknown quantities."

b. Refocus to the development of urban subcultures that form the basis of people's lives, as argued by Claude Fischer (1976). The subcultures develop around various combinations of ethnicity, occupation and economic status. In terms of these urban residents forge meaningful environments, implying that people are capable to identify and seek enclaves of common interests that determine their spatial location in the city. Thus Fischer's "subcultural theory" acknowledges the direct impact of

urbanism on public life, but does not see it meeting the withdrawal and mental collapse (Carr et al, 1992). In this regard the principle is noted. However it must be expanded beyond reasons of ethnicity, occupation and economic status as the underpinnings of public life, to encompass aspects such as people's interests, needs and stages in the life cycle, which play an important role in the formation of and the grounds for public life.

- The changes of contemporary urban life must also be considered in their implication on public life. The former comprise the drug culture, organised crime, threats to person and property, criminal behaviour directed against people, etc.

    "this means that efforts must be made to make the streets safer at the same time we recognise the supportive side of life, the ways people extend themselves to offer help, and the risks taken to provide assistance". (Carr et al., 1992:33).

- The social, political and economic system also determines the nature and settings of public life. In this regard:

    - public gathering and free speech; Speakers' Corner in Hyde Park in London allows for the public expression of personal views and ideas. The principle being that public spaces are channels of communication and expression among society that may be supported, tolerated or refused by different political systems ; and

    - social values of communities either support or work against public life, shaped by the ethos of a time and place.

- Economic systems and activity have had a direct effect on public life. The contemporary free market economic system has determined the development of and accessibility to public space and life, and on the 'demand' for such development and its maintenance. The free market system has developed strong economic ties between itself and public space. Public space in a free market society is vital, as it enables people direct access to the markets' products and their purchase, hence directly implicating profitability and overall economic success. Examples of such developments are shopping centres, waterfronts, the pedestrianisation of streets, etc., which are focused on the

particular activities of retail, entertainment, recreation (albeit the latter to a lesser extent) and business / commercial developments. The effects have been both negative and positive. The positive effects have been characterised by the development of public parks, open space and recreational areas. The uprooting of communities through the gentrification and physical transformation of neighbourhoods by upgrading of shops and housing have yielded negative results.

Positive aspects of economically engendered public life are the development of street markets and farmers' markets, which attract people into public space. These can be important to the public life and image of the city.

"Markets combine for social and economic purposes. They can be centres for both social exchange and commerce, attraction points that serve essential functions with a social overlay that can draw people out for more than commodities offered". (Sommer, 1989, in Carr et al., 1992:40).

Carr et al (1992) conclude that across cultures, geographies and time, the marketplace has played a central role in the public life of societies. This continues to date, although the physical nature of the marketplace has changed and become more 'selective' in the community it serves, i.e. class orientated.

- Informal economic activity - the economic difficulties of the 1980's and 1990's have resulted in the re-emergence of peddling talents and goods (street performing and vending of merchandise), affording people alternative means of employment and overcoming some job losses. These activities have transformed the use and physical nature of public spaces and streets.

- Other forces shaping the physical nature and directing public life :

    - Fitness and active sports, combined with the environmental movement, have created new and varied demands for open space and natural environment.

        "The enthusiasm for running, jogging, cycling, and other active sports has drawn many persons into public spaces to exercise. Whether the public presence of sports-minded people reflects a genuine interest in public life, a self-centred and hedonistic pre-occupation with personal vanity, or a concern with the health-related benefits of strenuous activity, those involved are out in the public spheres and open to public encounters." (Carr et al., 1992:41).

- Attraction to natural features also strengthens the focus on public life. These encompass:

  - Vegetation, street trees, and gardens are highly valued parts of cities.
  - Contemporary plazas, streets and squares include vegetation and natural features such as combinations of trees, flowers, plants and grass.
  - The creation of parks and open space areas.

In many instances the above are indigenous and / or exotic, principally idealised nature, tamed, cultivated and predictable. They form an important component - an often ignored one - of the necessities of life to providing a restoration role and qualities. It is recognised that their design, layout and physical qualities are constructions of a particular society and culture, within a particular climatic and natural environment context, at a particular point in time. They provide opportunities for diverse groups and people to encounter one another in differing and positive ways.

- Rivers, streams, dams and waterfronts are also important components of public life.

  - Where water serves the central functions of life (i.e. where it is not necessarily distributed into each individual household), places to bathe.
  - and wash clothing, to obtain food, and to fill containers for use at home, the waterfront becomes a place of social interaction and public life.
  - A place for promenading, or offering panoramic scenes, recreational facilities, and comfortable resting places for urban inhabitants.

However in many cities with waterfront edges, they have been developed for commercial purposes, isolating the water edges from public use. The latter was exacerbated by the construction of elaborate highway systems, obscuring the water edge from view and public use. Again topography, climate, form and culture are a significant factor in all the above aspects.

4.4   CONCLUSION

The historic overview has shown that prior to industrialisation and the development of the post industrial, modern city, public space played a far more important role in the life of urban society. In the 20th Century this public space has fallen into decline, it has been dispersed into separate, isolated and function-specific components, that serve part of an increasingly fragmented and polarised society. What is left of the public places of the western city is not much, however in their limited capacities they continue to play the important function outlined here - that of social encounter and the hosting of socio-cultural activities and rituals, i.e. 'publicness'. A refocus on the role and functionality of public space as a place of 'publicness' is required and is considered a fundamental necessity to enable a comfortable and healthy urban life.

Throughout history "good" public spaces were supportive, democratic and meaningful. The historical perspective indicated that the forces that have shaped it *assisted in creating a more humane culture.* Consequently, as public space has evolved, it has produced many types.

Although there is concern for the decline of public space in more recent times, public space is not necessarily 'dying'. A positive approach to this requires an understanding that public space is simply taking new forms. The problem is not necessarily the abundance of public space, but that the motives in providing public space do not adequately reflect or meet user needs, resulting in failures with regard to design, functionality and management. This indicates that public space is in continual transformation, as the urban environment and society changes.

History has shown that public space has been 'diluted' (opened up) and dispersed, with specialised types for different groups. This is in the context of a multi-cultural, changing society, becoming culturally much more complex.

The underpinning assumption of this thesis is that public life in public spaces is desirable for people and healthy - if not vital - for society. It is important to recognise the value of public life. Simultaneously the need

for privacy must be recognised. A healthy life contains a balance between private and public experiences, enabling people the opportunities to engage in each domain. (Carr et al, 1992).

Public space affords the following:

- casual encounters in the course of daily life that can bind people together and gives their lives meaning and power;
- places for open disagreement, which

  "may be healthier and easier to resolve than those kept in private" (Carr et al., 1992:45);
- gathering places for special occasions;
- relief from the stresses and pressures of daily life;
- opportunities for relaxation, entertainment and cultural interaction and contact;
- discovery about and learning from people and cultures;
- the potential of bringing diverse groups together enabling learning from each other, which is perhaps the richest quality of a multi-class, multi-cultural, heterogeneous society;
- enabling political life; freedom of expression, protests, marches, political gatherings, rallies, parades, etc.;
- facilitating free society civility and public resolve; and
- serving as a social binder in the context of the particular history of the society and its culture, historical places and monuments provide connections to past events that engender national pride, a sense of association, concern for an entity beyond one's primary associations with family and friends, and define people's membership in groups.

In conclusion, the most important aspect regarding public space is that its physical quality and structure must enable a sociable public life, which supports and underpins societies' functions and meets people's needs and accommodates their diverse activities.

The purpose of the following chapters is to distil urban design principles and a concomitant urban design approach that enables a rich, diverse and open public life- accommodating a multiplicity of functions, activities and actors. A particular focus is to enable and promote opportunities for increased beneficial contacts between the different socio- cultural groups and the meeting of diverse needs, which is a

characteristic of South African society, to enable sociability (greater tolerance and understanding) and foster 'ubuntu' – human kindness and goodness.

Aspects to be considered within the South African context in this regard include:

- Democratising our cities by giving people easy access to the opportunities presented by urban living, and in particular the related facilities and services, and facilitating the important role that public space has to play in the process.
- The predominant public space (public structure) in Johannesburg in terms of 'quantity' is the street (particularly in the Inner City);
- Land and by implication space was used in the Apartheid city to separate people and to fragment the city;
- Through such manipulation South African citizens have not been able to share a common world (in fact public life has been dominated and rigorously controlled by 'white' authoritarian rule).

> "We have not been able to publicly share our common concerns or differences" (Le Grange, 1994:23).

This has contributed to intolerance and a lack of understanding between the different socio-cultural groups. As a result, the South African citizen's experience of public life and public space has on the one hand been one of suppression and control, and on the other relatively "democratic" within their own race group – i.e. limited and not truly democratic;

- South Africa is a democratic, non-racial South Africa; and a nation of many cultures, which should find ways and places in the city to give expression to this diversity. This means that public structure of urban environments can now be developed to enable expression of this diversity and enable the development of a democratic city structure, affording people a sociable public life. Thus building a democratic society and a democratic city is dependent on the appropriate development of public spatial environments.
- Public life is a strong characteristic of African urban settlements prior to colonialisation. This tradition was continued in the African locations of the colonial city and the subsequent townships of the apartheid city. This public life was a strong social binder, forming the basis of community ties and groups. Consequently there is an

opportunity to build on the rich heritage of public life inherent within South African cultures.

Public space is therefore a vital component within the urban settlement system, enabling and facilitating all the component parts of the urban environment to interact and form a whole. This emphasises the need for a public space-centred focus in the growth and development of urban settlements. In fact, it places the public realm at the critical centre of the urban settlement system, for without the public realm and public space, the urban settlement system would collapse. Concomitantly, the more reduced and ineffective public realm and space are, the greater the dysfunctionality of the urban settlement system, and vice versa. It points out that public space is required to accommodate and facilitate a multitude of functions and activities, requiring public space to be inherently multifunctional. It furthermore emphasises that each of the component parts (activity and physical / spatial) interrelate with each other, but most importantly need to support and underpin the multi-functionality of the public environment, and should be structured accordingly and undertaken in a manner that achieves this overriding goal.

CHAPTER 5

URBAN DESIGN THEORY DIRECTING THE DESIGN OF THE URBAN ENVIRONMENT

5.1   INTRODUCTION

The historic overview of public space and its role in the urban environment has highlighted the continuous cycle of growth, development, decay and / or regeneration that characterises the nature of human settlements.   This never-ending cycle of change and adaptation has affected the public realm of urban settlements. In this context the public realm has either created new opportunities, new problems, exacerbated existing ones or fallen into a state of disuse and desertion where it has been unable to accommodate and promote the needs of a society and its people.   Consequently, urban design must be seen within the context of a system - the urban settlement system - which continuously adapts and mutates into new forms and associated activities, under-pinned by competing and allied efforts by people (both individuals and groups) to improve their lives and communal efforts to improve the overall quality of life of urban dwellers.

This context of process and change implicates the way in which urban design is to be practised, both in terms of the urban design process and the theoretical approach that underlies the urban designers practice. The latter are further directed by the urban designers' field of "expertise", the public realm and its physical realisation, public space.

In an environment characterised by continual process and change, the most suited approach is one of *strategic position*: putting in place an urban design framework that is sufficiently robust to give direction for the future, yet simultaneously retain a flexibility that enables adaptation and accommodates future changes of urban settlement growth and development.

The issues facing urban settlements are summarised in broad terms as follows:

- increasing population growth;
- a predominantly urban population;
- increasing population densities;
- radical changes in family structures and concomitant changes in housing forms;
- technological progress and change (becoming increasingly available, even in poorer / third world countries);
- rapid and increasing resource consumption;
- pollution of the environment and its permanent eradication in parts (i.e. irreplaceable);
- changing climates that reduce the quality of life;
- the issue of fairness in dealing with the allocation of and access to resources;
- resource scarcity and competition for resources to meet varying and diverse needs;
- internationalisation of the world through communications (media) and transportation (air travel), have changed attitudes and the lifestyles and values of "local" societies, in particular through electricity and the motor vehicle; and
- information technology (computers) which is playing an increasing role in all facets of life.

The result of this is a

> *"... highly fluid situation that will lead to major changes in the world's political, societal, religious and cultural structures. One hopes it will be a world more tolerant of individual and group differences than it is now. It will probably have to be"* (Lang, 1994:68).

The nature of the public realm is both contributor to change and a consequence of it.

Urban design needs to be considered in the socio-cultural fabric of society and the associated political issues:

> *"It needs to be seen for what it is - a political tool. While architecture and urban design cannot* (and should not) *shape the social world to any great extent, they do mirror it.   The layout of the environment does affect the affordances of the world, and as such it is inextricably linked with social change* (and society)*"* (Lang, 1994:70).

Urban design deals with the *public welfare* of society through its concern with public space and the built environment of cities.   In this regard it involves the considered and conscious intervention in the marketplace, the legal and socio-cultural processes of allocating and designing the combination of land and building uses, building configurations and the public spaces that constitute the three-dimensional physical nature of human settlements (Lang, 1994).

Such an approach is based on

> *"... a model of the human being, an image of the ideal world, a model of the environment, and a set of values.   These models and values are seldom clear and almost never stated explicitly"* (Lang, 1994:70).

The models and values also differ from society to society and change over time.

5.2   THE SIGNIFICANCE OF URBAN DESIGN THEORY

Lang (1994) contends that a sound theoretical base to urban design assists in making sense of an otherwise chaotic world, enhances our ability to deal with multivariate problems in design, and therefore improves our ability to predict accurate outcomes of design implications.

Certainly making sense of a chaotic world, and dealing with multivariate problems is critical in urban design. However, prediction is very difficult. Therefore the inherent philosophy of this thesis is not about prediction, but to put in place a robust and flexible urban design framework that achieves the development of a multifunctional public space environment, in which the "1000 designers" have freedom to act accordingly to society's norms, morals, values and laws.

The Lang (1994) summary overview of twentieth century urban design theory of the western world assists in identifying the theory that is applicable to the establishment of the public structure urban design approach that is being sought. The focus is on urban design theory that promotes urbanism as a positive way of life, accepting that the city is predominantly man's dwelling place. This in the context that more than 50% of the world's population is now considered to be urban, i.e. living in cities. This percentage is increasing on a daily basis as urbanisation continues, particularly in developing countries. There has been a "de-urbanisation" trend in first world countries, which has led to a

movement of people outside of the city environments (similar in nature to the movement that created the first suburbs), however the full impact of this has not been yet assessed. Neither has the implication of computer and information technology, particularly the internet, which allows people to be less space bound in terms of where they physically locate.

Certainly in the South African urban context the relocation of people to the countryside and access to the internet is predicated on a high education levels, wealth and the means of private mobility, which is only available to a low percentage of the population. The South African urban context is predominantly one of urbanisation characterised by poverty, high illiteracy levels and a dependence on "public" mobility, the means available being either on foot or by public transport. The apartheid city structure has exacerbated the problems associated with the aforementioned, placing the bulk of the urban dwellers at a disadvantage, whilst the remainder lead materially and physically a relatively comfortable urban life-style.

A number of shared theoretical assumptions on which much urban design theory is based emerged from the interpretations of the concepts of Christian compassion and the Enlightenment tradition, at least in Europe and North America (Lang, 1994). Essentially these comprised the notions that the world and people could be made perfect and that freeing the world of war and hunger are important goals worth achieving.

The Modern Movement is categorised by Lang (1994) into two broad groupings. The first is the *Rationalist* branch (also termed the *Progressive Utopians*), which focused on designing idealised future social systems, where people would live within an idealised and predominantly geometric world. The major proponents of the rationalist approach, contends Lang (1994), were *Congrès Internationaux d'Architecture Moderne* (C.I.A.M.) and its descendent, Team 10. Other influential professionals were Louis Kahn, the Bauhaus, Mies van der Rohe and Ludwig Hilbesheimer.

> "*Although all these different streams of thought exist, there are a number of philosophical positions that the groups have in common. They were unafraid of large cities, of proposing the*

alteration of the piecemeal ownership of land into large holdings, of radical political theories, of harnessing modern technology, or of developing a new aesthetic. Their designs consist of tall buildings set in open green spaces connected by, but turning their backs on, roads and highways in as orthogonal a pattern as possible. Not only were they simply unafraid to depart from the past, they strongly advocated a new architecture for a new age" (Lang, 1994:50)

The rationalist deductive approach of establishing a model society, socially and physically, encompassed the following principles. It:

- Focused on the functionality of the built environment to suit human needs.
- Considered the city in terms of four major systems: dwelling, recreation, work and transportation.
  - *"Much of its* (CIAM) *thinking was based on the evolution of the means of production [as a] decisive influence upon urban structures and with the creation of a 'functional city'. The needs of 'man and the city' are seen in these terms. 'Form follows function' was indeed their slogan"* (Lang, 1994:121).
- CIAM thinking viewed aesthetics, or the poetics of form and / or the associated meaning of forms, as a by-product of meeting the functional goal. Efficiency and rationality were the driving forces that underpinned CIAM functionalism.
- CIAM did not have a clear model of human understanding nor a model of the interaction between human behaviour and its environment. This lead to simplistic assumptions and shortsighted approaches.
- Modernists attempted to deal with the problems of their time, a problem-orientated approach.
- Their designs were based on
  - limited and simplified models of human needs;
  - lifestyles of people and what these might be in future; and
  - new spatial patterns to address the problems of the city through the application of technology.

The second grouping of the Modern Movement is the *Empiricist* branch, whose design proposals were based on the assumption that actions should be based by the knowledge gained from observing the world. This branch emerged because of alternative thinking to urban development and the failures that resulted from the *Rationalist* approach. The latter's proponents failed to recognise the cultural bias of their proposals when presenting them as universal solutions.

"*In proposing future cities and urban precincts the Empiricists looked at life as lived, but they were highly selective about the experiences they chose to look at. It has been casual Empiricism ... (they were) ... labelled regressive utopians ... (because they) ... looked for solutions to the problems resulting from the Industrial Revolution in imagined idealised pasts rather than in systematic observation of life, human needs, and human values*" (Lang, 1994:46).

Two major sub-groups within the *Empiricist* grouping emerged, the first being the *Urbanites*, who focused on the concept of urbanity. Their urban design concern and practice has been concerned with the structure and detailing of the public- and open spaces of the city, and

> "*... their built frame, and the sequential experience they offer as one moves through them. The street and plaza are their elements of urban design*" (Lang, 1994:46).

The second *Empiricist* sub-group comprises the *Garden City* movement, which is based on a design ideology that is anti-urban. From this emerged the development of new towns and the neighbourhood unit, which ultimately caused the extensive suburban development that characterises our cities. Their ideal model for a human living environment is

> "*... the small green country town ... the solution to the problems of the major industrial cities was to decentralise them, reduce their population densities, and create more park land and more space for each household. The vehicle for achieving this end was the creation of ... new towns, which afforded the best of urban and country life*" (Lang, 1994:47)

The post-modernism movement that has evolved out of the reactions to and criticisms of modernist urban design ideas, both *Rationalist* and *Empiricist*, encompasses many schools of thought (Lang, 1994). These include, what Lang (1994) terms, the *Neo-rationalist* and *Neo-empiricist*. The former continue to focus on major geometries and are considered to be in the realm of urban architecture, rather than urban design. The latter focus their concern on urban life, hence also the name of *New Humanists*. They are promoting urban consolidation comprising a return to high density, relatively low rise living environments, to make viable mass public transport, prevent dispersion and save agricultural land (Lang, 1994). In a similar way New Urbanism is promoting the restructuring of suburban environments. Post-modernism includes the movements of *Cosmological Revival, Discrete*

or Weak Architecture, Classical Revival, Deconstructionism, Neo Traditionalism and *Community Design* (Lang, 1994).

It is in this context that urban design theories emerging from the *Empiricist (Urbanism), Neo-Empiricist (Urban Consolidation)* and *New Urbanism* approaches are investigated and assessed, in terms of their contribution to establishing the public structure urban design approach.

5.3   MEETING BASIC NEEDS

An important underpinning to achieving a functional urban design is an understanding of the basic concepts of human behaviour and needs.

The premise is that urban environments exist because their functions meet people's / human needs and have been created by human beings to meet these needs.   In this regard human settlements perform a multitude of functions, some co-exist and other conflict, some are more dominant than others, and these functions have physical outcomes (positive and negative, healthy and unhealthy). Urban environments change their functions as people and society's change, this induces physical change and adaptation.   The urban designer's task is to develop urban environments that better meet the needs of people today (i.e. are robust and functional, meeting needs in a multitude of ways), yet enable sufficient inherent flexibility to change and adapt, as social change occurs.

> *"If urban design is to serve people well, it must be concerned with the needs of people, and thus the mechanisms they use to meet those needs. The term 'mechanism' needs to be interpreted broadly. Not only does it mean the patterns of the built environment, it extends to include other people and other animals, the flora of the world, and the machines people have developed to aid themselves in meeting their needs / desires. A functional environment is not simply one that meets people's needs for ease of movement and access to sunlight, but one that meets the broad ranges of needs of many diverse people and the needs of their supportive machinery. All designs / environments involve a trade-off between the needs of people per se and the needs of their equipment. In some instances the machines required to support human life comfortably, in comparison to humans themselves, have a very low tolerance for variability in the conditions around them. In such situations, paradoxically, to meet human needs, the machines need to be considered more thoroughly than the direct needs of people themselves - serving the machines indirectly serves humans".* (Lang, 1994:153)

The modernist notion that all needs can be met in one universal way is a fallacy. What needs to be understood and appreciated is the full range of human needs and the individual differences that exist among people within and across cultures.

> *"Designers need to be sensitive to and argue for environments that fulfil not only 'general human needs' but also the specific needs of specific people within specific cultures"* (Lang, 1994:155).

This emphasises the need for urban design to be culture-specific. This is to be achieved by adapting a model of general human needs to cultural and social realities.

Abranam Maslow (1954, updated by colleagues in 1987) proposed a hypothetical model of human behaviour. The model is based on a five set hierarchy of basic needs, from the most fundamental to the most esoteric in a hierarchy of prepotency (refer **Figure 5-1**). When one need is fairly well fulfilled, the next (higher) needs emerges.

The hierarchy of basic needs is:

a.   Physiological needs - the need for survival;

b.   Safety and security needs;

c.   Affiliation needs;

d.   Esteem needs; and

e.   Self-actualisation needs.

A second set of needs was also identified by Maslow, namely cognitive and aesthetic needs. These guide and shape the process of attaining the other needs, but also have a character of their own.

Other theorists have also contributed in the field of defining human needs. The latter models of human behaviour all presuppose a hierarchical structure. An examination of people's lives very quickly shows that not everybody orders their lives in this manner. In some instances Maslow's model applies, but in others, the socio-cultural environment and associated values turn the model upside down. In other instances the needs occur simultaneously.

Although Maslow's model has weaknesses, it does emphasise the focus on the needs of humans and that people strive for growth. Given this context, it is important to understand human needs through a series of complex interrelationships, that are anything but ordered and

Maslow's hierarchy of needs

Figure 5-1:   Maslow's hierarchy of needs

hierarchical. This complex web of interrelationships proposed by Lang (1994) is depicted in **Figure 5-2**. Lang (1994) outlines the underlying philosophy of a needs-based approach to urban design as follows:

"Human needs are neither independent of each other nor mutually exclusive. They are, indeed, highly interdependent. Some needs have a biological basis. Others are a product of the sociogenic environment, and many have a biological base that is very much culturally moulded ...... there are still many processes that are poorly understood .... Suffice to say here that the prerequisite for the attainment of the full set of needs is having freedom of action within a moral order" (Lang, 1994:156).

This underlying philosophy is the basis in terms of which a public structure urban design approach is established, with the purpose of enabling the development of a multi-functional inner city public environment. Giving people the choice through freedom of action to fulfil their needs for living a sustainable and healthy life (salubrious). This empowers and allows people to pursue their lives.

5.3.1 Physiological Needs

Physiological needs are a component part of basic needs. The former range from survival needs, to healthy development needs and to comfort needs.

"The basic survival needs are for air, food, and shelter to stay alive. Beyond this level are the needs for a healthy life and for opportunities to develop well physically" (Lang, 1994:218).

a. Survival Needs:

In the underdeveloped world, survival needs are a much greater priority, whilst in the developed world, the focus is on creating salubrious environments that are comfortable, as survival needs have been met. There is also a focus on management processes that retain these salubrious environments, and improve these incrementally.

The human needs for survival are oxygen, food, water and energy, and it is the urban designers' concern that these basic life-sustaining necessities are provided for, and that these remain free of pollutants.

b. Health Needs:

In urban design the focus is on the distribution and location of facilities, such that health needs are met, and that people have access to them.
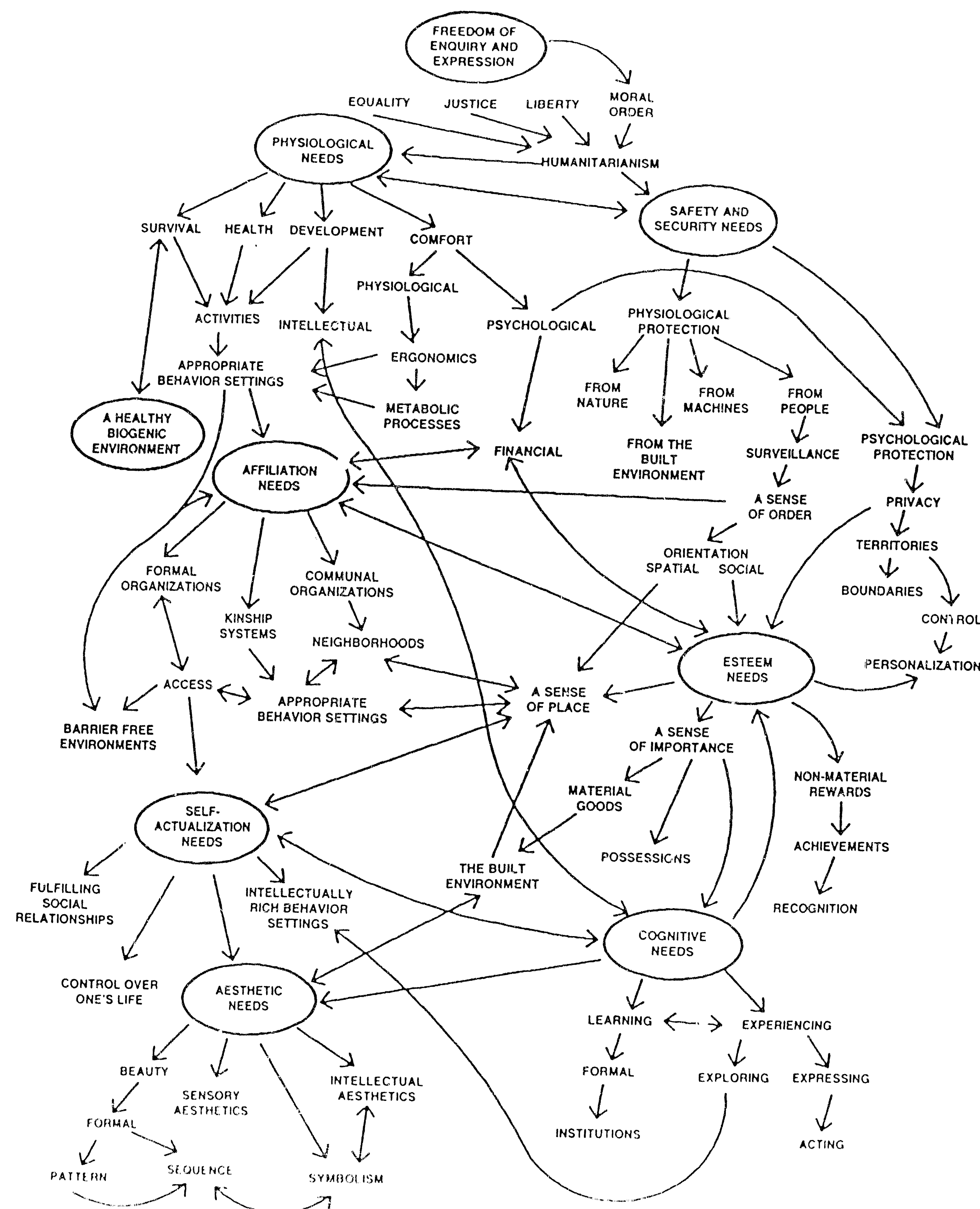
Figure 5-2: The Hierarchy of Human Needs and Design Concerns
Source: Lang, 1994:157

An important contributing factor toward a healthy environment is the arrangement of buildings in space and the nature of open space within it (Lang, 1994).

c.   Developmental Needs:

The urban design concern is to enable the development and maintenance of a healthy body by providing people with opportunities to exercise their bodies

"....and to increase their physiological competence through the self-testing of their abilities" (Lang, 1994:220).

d.   Comfort Needs:

To meet needs of comfort, urban design requires to provide access to services and mechanisms that provide comfort, as well as the design of a physiologically comfortable public realm – much of it outdoors (Lang, 1994). In this regard consideration of the elements of the built environment need to be structured such that they give access to or provide sunlight, shade, air movement, and that the furnishings of the public realm meet ergonomic, economic and functional needs, enabling a safe and comfortable use.

Lang (1994) outlines that there are three major areas of concern for the urban designer in developing urban environments that meet human needs:

a. The behaviour setting system, the activities required for survival, health and development.

b. The qualities of the milieu required that afford those activity patterns.

c. The ambient conditions required that make the execution of these activities comfortable.

The aim of urban design is to provide a series of behaviour settings that enable survival and / or create suitable socio-economic conditions through which people can meet their needs, within the ambit of society's available resources. This encompasses:

• providing access to employment, retail and educational opportunities, and other basic services;

• health services, including their nature, distribution and quality; recreational activities promoting a healthy life;

• the development opportunities inherent in everyday life; and

• the quality and comfort level of the public realm.

(Lang, 1994:222)

Lang (1994) states that the basic concern for urban designers is to enable the development of a healthy milieu. Consequently the

"....goal is to enhance the quality of the milieu of the city : (1) as an overall settlement pattern, (2) as a set of places, and (3) as a set of links between places" (Lang, 1994:222).

This encompasses the following aspects:

• Designing for access, regarding the movement of goods and people, as well as transportation (ranging from pedestrian to mass-transit), and the removal of physical barriers to enable movement of the physiologically impaired.

• Designing for activities, enabling the development of multi-use settings, the quality of surfaces supporting activities and the type of enclosure required.

• Designing for shelter and comfort, including
  - visual quality and comfort;
  - sonic comfort;
  - olfactory comfort;
  - metabolic comfort (temperatures, humidity and air movement); and
  - appropriate support infrastructure such as water services, refuse / solid waste, sewerage, energy (electricity, coal, wood, etc.), medical services and facilities, and communications (post-office, telephones, etc.).

5.3.2   Safety and Security Needs

The principle focus of urban design with respect to safety and security needs is on the avoidance of harm. The urban design concern here is with the layout of environments that provide safe and secure settings in which people can pursue their lives in terms of physiological and physical safety needs, as well as psychological needs.

Security that one is safe from physical harm that may be caused by:

• natural elements;

• human elements;

• artificially created elements (e.g. moving cars, structurally unsound buildings, etc.);

Psychological security is achieved by enabling control over the environment and location in space and time (not to be socially or physically lost). This encompasses the need for privacy from censure for carrying out various activities and for developing self-confidence.

The ways in which safety and security needs are fulfilled depend on:

• the nature of the social organisation of society : culture; and

• the layout of the environment that denies or affords possibilities for many kinds of behaviour.

Lang (1994) cites in particular the example of Newman (1972) as being the concern for "defense" from one's fellow citizens; and the layout of the city and its precincts as per Lynch (1960).

Being a member of a group is another factor that contributes to security. The aim is to fulfill the need for belonging, which is obtained through being part of a stable social order.

5.3.3   Affiliation Needs

In general affiliation needs are complex and interact with all other needs. All individuals have a distinct identity – needing to know who they are and having a distinct identity. The formation of identity is a continuous process and is influenced by the individual character of the person and the socio-cultural group of which he/she is part.

"Our affiliation needs are met by knowing that we are members of a group and of a social and a moral order. These groups are diverse and based on such common characteristics as kinship, locality and interests. People need to have a sense of belonging, community, and relatedness, as well as to receive affection and approval from other people" (Lang, 1994:159).

This includes the need to be with others – a desire to please and win affection. If these needs are not met, the psychological cost would be very high, causing feelings of anxiety and isolation, often resulting in a withdrawal from society. This breaks down psychological security.

Inherently interrelated to the need of affiliation is the need for <u>privacy</u>. It serves needs:

- To control information flows and demands placed by society on people, about what one is doing and what others are doing; and

- The need of "counteraction", enabling a regrouping before further action is taken,

> " ... a time-out to recharge batteries and strategise, rest and undertake private actions and activities" (Lang, 1994:159).

<u>Displaying of symbols</u> is an important need to show that people are members of a particular group. Some symbols are very subtle and largely unselfconscious, others are self-consciously designed.

> "The symbolic aesthetic of the places we inhabit is fundamental to our individual group identities" (Lang, 1994:159).

Affiliation needs are met through urban design by the inclusion of gathering places, of places to observe what is taking place – the vicarious participation in the lives of others.

> "It tends to be thought of in the romantic terms of English pubs, French cafés, and Italian plazas" (Lang, 1994:159).

Although the above do play a role, Brill (1989) and Schmand et al (1990) correctly argue that communications technologies have vastly changed the patterns of behaviour related to affiliation needs. The automobile, television, the telephone and the internet have provided a variety of means for bringing people together, not necessarily physically. This means that there is less of a dependence for like-minded people to be grouped in a particular place or physical location. It is reiterated that this does not negate the need or the necessity of physical interaction between people; it is stressed that the dynamic has changed.

> "Urban designers need to understand these changes and potential changes and to design with them in mind rather than hanging onto a romantic view of life that has too frequently resulted in the creation of places that are unused and unloved". (Lang, 1994:160).

5.3.4 Esteem Needs

Esteem deals with the person's consideration of himself. It is considered an important need that people have a positive evaluation on themselves, based on aspects regarding competence, confidence, independence and freedom of self-expression.

Lang (1994) identifies two, often interrelated, types of esteem needs:

a. to be in possession of self-esteem, and

b. to be held in esteem by others.

> "One gets self-esteem through achievement and through the recognition by others of one's achievements. To get a sense of achievement one needs to be able to master tasks, to be able to manipulate, organize, or own time, physical objects, or ideas, and, maybe, simply to look good - to be regarded as beautiful" (Lang, 1994:160).

There are four types of achievement, which are underpinned by socio-cultural factors:

a. unique accomplishment;

b. long-term involvement;

c. successful competition with a standard of excellence; and

d. a life-style of religious values.

The fulfilment of esteem needs occurs in many ways, it is important that the layout and physical structure and form of the urban environment enables people from different socio-cultural and class backgrounds to fulfil their esteem needs within the framework of a moral and regulated order.

5.3.5 Self-Actualising Needs

Self-actualisation needs are met in two ways:

a. freedom of action, shaking off constraints, and to be independent; and

b. to provide succour to other people, to give aid and assist.

Lang (1994:161) states that "the full implications of these observations for urban design are unclear." Although in this regard Lang (1994) contends that there is little unique in terms of the layout and design of the environment that is required to meet such needs. The consequences for urban designers are predominantly procedural, not substantive. To meet self-actualisation needs, an involvement in the design and decision-making process is required. This encompasses people at all levels in the socio-cultural and class spectrum. However, it must be noted that people choose in a variety of ways to meet their self-actualisation needs, which are mostly dependent on the opportunities urban living afford, as well as areas and regions outside the city.

5.3.6 Cognitive Needs

The acquisition of knowledge - to have an understanding of the world - is necessary for survival. The former is acquired through the process of learning, both in a formal manner by educational institutions, and in an informal manner because the entire urban environment is a "universe" to be explored and for testing one's knowledge and skills.

> "It is a store-house of information, available for use and for attaining understanding and wisdom. People strive to have access to it to the degree necessary for attaining their basic needs" (Lang, 1994:161).

Formal education within the urban environment is provided through education institutions such as primary, secondary and tertiary education facilities, cultural centres, libraries, museums and sporting facilities.

Informal educative environments should have, according to Lang (1994), the following characteristics afford a variety of behavioural opportunities, the vicarious participation in the lives of others, and opportunities for expressive acts:

- A variety of housing types to meet the housing needs of populations at all stages in the life cycle (Ritzdorf 1987), perhaps clustered into small groups (Gans 1972; Alexander et al. 1977).

- Street and block patterns that afford a variety of behaviour settings (J.Jacobs 1961).

- Mixed uses in close juxtaposition with each other (J.Jacobs 1961; Parr 1969; Alexander et al. 1977).

- A richness of formal institutions - schools, libraries, museums, and so on - accessible to children independently.

- Buildings of different eras (in existing built environments).

- Accessible unmanicured open space (Hart 1979; Olwig 1986; Nohl 1988; R Moore 1991), both within the built environment but also in adjacent natural areas.

- Broad sidewalks (J.Jacobs 1961; Ward 1990) and good streets in which to play games (R. Moore 1987).

- Formal places for playing and for games that provide testing environments (Dattner 1969; Rouard and Simon 1977; Cohen et al. 1979; Wilkinson 1980; Eriksen 1985; Cooper Marcus and Francis 1990).

- Adventure playgrounds (Allen 1968).

- A wide variety of sensory experiences   an educative environment should have sources of sensory experience that are natural elements of the landscape and also those that are from artificial sources (Olds 1987).

- Deciduous trees in temperate climates.

- Posters and plaques explaining important buildings, events, and experiences (e.g. Hayden 1989).

- The ability to watch neighbourhood activity from safe areas (Cranz 1987).

- Sites for occasional activities such as fairs and circuses.

(Lang, 1994·312)

5.3.7   Aesthetic Needs

The aesthetic quality of the built and natural environments is an important mechanism in attaining a variety of ends, certainly a sense of belonging and a sense of self-esteem.   Aesthetic needs encompass beauty and self-expression, as defined by the socio-cultural milieu.

With regard to the design programme, Lang (1994) proposed that the task is to establish guidelines that create:

- a set milieu for events and activities so that, as behaviour settings, they afford the sensory, formal, and symbolic experiences that make places pleasant to inhabit;

- a sequence of pleasurable experiences, or pattern of places; and

- places having a clear intellectual idea that is the basis for the geometry of places and the links between them.

The ultimate aesthetic goal of urban design is to create pleasurable places - behaviour settings - in the public realm. The specific urban design task is to specify the milieu that should exist. This is established in decisions regarding land and building uses, as well as the use of places and the links between them.

The design of a multi-functional milieu is difficult and complex. The layout and design of the public realm has to keep people comfortable, provide the appropriate privacy for their activities, and provide

opportunities for continued lear. 'ng about the environment. All of this within an overall acceptable aesthetic quality that is approached in a multi-dimensional way.

Although Maslow's model is generally accepted as an overall needs model - or motivations for behaviour, it must be recognised that there is considerable variability in the way these needs manifest themselves and the mechanisms in which they are fulfilled.   These aspects are influenced by:

- the nature of the individuals, their physiques and personalities;

- the roles of individuals as members of a group (or groups), linked to a stage in life cycle or socio-economic status; and

- the culture of the society - the system of beliefs directing appropriate behaviours in different circumstances; the values and symbol system it shares.   This has a specific implication for the definition and fulfilment of cognitive needs.

5.4   URBAN DESIGN THEORY WITH PARTICULAR REFERENCE TO THE CONCEPT OF URBANISM

The urban design approaches and theory of a number of urban designers is reviewed. Their work is founded on urbanism, viewing the city and urban life as a positive and viable living environment. However, an environment that requires much improvement, adaptation and change, if it is to realise its true potential. The theorists outline how this can be achieved, citing both from theory and praxis. The order in which the urban design theorists are reviewed is in terms of significance of contribution. The exception is made with Jacobs, not because her contribution is considered to be of least value, but because she marks the "origin" of concerted urban design thought on urbanism, and is one of the most vociferous proponents thereof.

5.4.1   JANE JACOBS

Jane Jacobs based her view of the ideal urban environment on Greenwich Village. In *The Death and Life of Great America. Cities* she argues that the streets of the city are the

> *"very stuff of which real urban fabrics are made"* (Jacobs, 1961, in Broadbent, 1990).

The city streets, according to Jacobs, are full and lively with people and activity. People who are mostly strangers to one another, give streets their vitality. However, strangers can be a threat, and therefore the city street that functions best is one in which people are safe and secure, even among strangers.

> *".......the public peace - the sidewalk and street peace ...... is not kept primarily by the police, necessary as the police are. It is kept primarily by intricate, almost unconscious, network of voluntary controls and standards among people themselves, and enforced by the people themselves"* (Jacobs 1961, in Broadbent, 1990).

The principle is that well-used streets are likely to be safe streets. In this regard they need a certain minimum density of people, of buildings and of building use. Jacobs suggests three principles that give streets their vitality and liveliness:

a. A clear demarcation between public space and private space.

b. A constant watch must be kept:

> *"the eyes of*   (those whom Jane Jacobs calls) *'the natural proprietors of the street' must be scanning it all the time"*.

This is facilitated by:

- Buildings lining the street must face on to it; and be

- Planned with projections and recesses, bay windows, balconies, stoops, steps, etc.

These enable people - the *"proprietors"* - to watch and observe each other, and thus result in constant, but unconscious, yet real vigil.

c. The street must be .. constant use. Accordingly the street must go from one place to another where people want to go (desire lines). There must be sufficient attractions for people to be there.

> *"An empty street has nothing much to offer but those who love their fellow human beings find it fascinating, not to say hugely entertaining, simply to watch the world go by. Quite simply, we enjoy 'people watching' and if that is made easy for them then the 'proprietors' of the street will spend large amounts of their time doing it."* (Jacobs, 1961, in Broadbent, 1990).

In this way, Jacobs argues, the street environment will be enabled to take on a life of its own - being interesting, lively and secure. People will enjoy going there to see and to be seen.

If these principles are absent, the street may be viewed as insecure, hostile and actively dangerous. The street as a place becomes

deserted, leaving behind those that have no option but to use it, and left to deal with all the problems that result.

The absence of diversity and activity results in the mono-functional use of the street environment. Jacob's views this sterilisation of street life as the destruction of real urban life, compounded by the segregation of land uses and activities. Diversity and mixed-use activity, interspersed with housing, are too complex for the planner, who compartmentalises functions and activities into neat, distinct singular categories.

The planning of the physical environment, as well as planning the lives of the people that live in it, are an anathema to Jacobs. For her the fundamental point of urban life is choice - people must be free to come and go as they please with no outside interference or constraint. This requires diversity in the activities and functions of the street.

Thus to Jacobs the essence of urban life

> "... lies in exuberant diversity, in the making available to anyone, at any time, a vast range of choices of things to do" (Jacobs, 1961, in Broadbent, 1990).

The above diversity can be enabled in the designed form of the street and its functions. Broadbent (1990) outlines the four design principles proposed by Jacobs, which form the heart of her thesis:

a. The district as a whole is to meet at least two, if not more, primary functions: living, working, shopping, eating, etc. The activities related to these functions should be varied in a manner such that different people are present throughout the day, working to different schedules, coming to the same place and street for different purposes, using the same facilities and services at different times and in different ways.

b. The street block should be relatively short : 60m to 120m. The 270 metre street blocks in some areas of Manhattan are far too long in her experience. These should be much shorter, with cross streets for easier access by reduced walking distances and maximising street corners.

c. Buildings should be enabled to co-exist in "close-grained" mingling, accommodating historic ones, which are important to the *economy* of the street.

d. The street must be sustained by an extensive population and in high concentration, including a residential nucleus, as well as those who work there, the entrepreneurs, business owners, land-owners, etc.

Jacobs' mixed-use approach is in direct opposition to the notion of zoning on which a large degree of Corbusian planning has been based. It is conceded that zoning was necessary in terms of directly conflicting and hazardous uses associated with heavy industry for example. However, advances in technology has enabled a mixing of human activities such as work, living and shopping, as it did in medieval times - if not even to a greater degree than then.

Ageing and historic buildings, Jacobs contends, have an important *economic* role to play. She reasons that high costs are incurred through demolition and construction, which are passed on to the users. Only highly profitable and / or heavily subsidised enterprises should develop and use new buildings. Furthermore, the historic value of buildings through their scale, form and design detail, are the essence of the city,

> "... enshrining its memory in the way that Rossi describes" (Jacobs, 1961, in Broadbent, 1990).

Jacobs argues that older buildings enable activities such as specialist book shops, record / CD shops, shoe shops, private art galleries, artist studios, neighbourhood bars, specialist restaurants and specialist shops, etc. Chain stores, supermarkets, chain restaurants and banks are the highly profitable developments that can afford new development.

The specialised services require low-rental accommodation because these entrepreneurs

> "will by no means be concerned with the making of maximum profit" (Jacobs, 1961, in Broadbent, 1990).

Activities in heavily subsidised premises - such as an art museum - require considerable support services, as an example the art museum would require galleries, studios, supplies of artists materials, musical instruments, specialised books and records.

Regarding population density, Jacobs contends that, given the correct built environment and associated facilities, quite high population densities without overcrowding can be achieved. Jacobs' urban vitality requires a density of approximately 250 dwellings per hectare. In her experience Greenwich Village building densities ranged from 125 to 200 or more dwellings per acre (308 to 493 dwellings per hectare), achieved through a mix of dwelling types, ranging from single family (row) houses, houses with flats over them, tenement blocks, apartment houses with flats, "elevator apartments", etc. Coverage was 60% to 70%, the remaining area open to small courts and yards. This yields a built environment where people are "forced" out on to the streets (i.e. utilise public space), whilst the back yards and courts are retained as private space. Densities beyond 250 dwellings per hectare (assuming an average of 3 persons per dwelling, considering the typological mix described before, results in 750 persons per hectare). In this situation:

> "... dwellings have to be packed so closely together - especially if there are generous open-spaces between - that a certain uniformity is bound to creep in. And uniformity of architectural form, for Jacobs, spells, inevitably, social uniformity". (Broadbent, 1990).

Lang (1994) aptly summarises Jacobs approach, utilising short blocks, mixed land-uses, and eyes on the street as the principles that enabled a degree of security in the street, as well as form the basis of the fine-grained interactions of the complex and interlocking webs of friendships and acquaintances. The approach is undoubtedly established from the American Experience.

5.4.2   OSCAR NEWMAN

Newman developed the concept of 'defensible space' in a reaction to Jacobs' view on urbanity, which was in his opinion essentially a scientifically unsupported hypothesis with regard to safety and crime. He points out that the presence of commercial and institutional facilities in a project does not necessarily lead to the "proprietorial surveillance" Jacobs envisages.

"Defensible Space" is the control of space by residents in a manner that reduces the potential and opportunity for criminal activity.

> "Defensible space is a surrogate term for the range of

mechanisms - real and symbolic barriers, strongly defined areas of influence, and improved opportunities for surveillance - that combine to bring an environment under the control of its residents .... (therefore)
A defensible space is a living residential environment which can be employed by the inhabitants for the enhancement of their lives, while providing security for their families, neighbours and friends" (Newman, 1973, in Broadbent, 1990).

To achieve defensible space, Newman proposes a hierarchy of space types from:

- public, being the street; to
- semi-public, reserved for those who live in or legitimate visitors of dwellings; to
- semi-private, space clearly belonging to a private dwelling and open to public access; and finally
- private, the inside of the dwelling.

The objectives of these space types are summarised by Broadbent (1990):

- to enable natural surveillance of the area by residents;
- to structure public space by creating a hierarchy of public, semi-public, semi-private and private areas and paths;
- to increase the sense of ownership felt by residents;
- to change the negative stigma of public housing and enable residents to relate better to the surrounding community;
- to reduce inter-generational conflict among residents within the neighbourhood; and
- to intensify the use of the semi-public areas and paths in mutually and socially beneficial ways, and promote and encourage areas of responsibility of the residents.

Newman's approach of public space types gives a clear set of territorial markers. Increased surveillance offers residents the opportunity to watch out for each other as part of everyday life, assisted through the deliberate placement of entrance halls, windows and seating where people are and that overlook other areas. The utilisation of building and landscaping forms and materials in a manner that enhances the physical appearance and overall aesthetics improves the imageability of the neighbourhoods.

Newman's approach certainly maximises the built environments' potential of enabling improved living environments and the formation of communal or neighbourly relations. This, however, does not guarantee the development of community and acceptable sociable behaviour, as the social status of residents is influenced by numerous other and more complex factors than the built environment. For the unemployed, the desperate, are more likely to turn to unpredictable, a-social behaviour, such as crime for instance. This is, as Broadbent (1990) states, in contrast to

"... the affluent and contented who among other privileges have been able to buy privacy and protection".

In conclusion it is apt to mention Alice Coleman's statistical work on blocks of flats, which builds on Newman's work. She, however, concludes that the size of building is not negative in itself, nor its age, nor the density propagated. Broadbent (1990) states that

"Above all she maintains that poverty, unemployment, the concentration of problem families in certain blocks, do not correlate with anti-social behaviour. Indeed she points out that however bad these things may have been in the 1980's, they were even worse in the 1930's. But most people then lived in houses, in streets with all the advantages that Jacobs describes. Except that, curiously enough, Coleman finds that far from being beneficial effects, the presence of shops, places of recreation, entertainment and so on can bring anti-social behaviour if they are located within a housing estate."

Coleman proposes the following principles to enable a more liveable residential environment:

- the provision of gardens, fences and gates for houses, as well as the provision of car spaces and the ability for people to make their personal mark; and
- for flats: the removal of overhead walkways; the clear demarcation of individual blocks to give them an independent character; reduction in the number of access and escape routes and therefore the anonymity of blocks; the improvement of entrances and streetscapes.

It is reiterated that there is a fine line between social engineering and *"the creation of living environments"* that aim to enable the development of liveable human environments. As Anson states (in Broadbent, 1990):

"..... in Belfast they shoot the graffiti man ..... what we really should be doing is taking the trouble to read what he writes."

This is a reminder to avoid the mistake that environmental determinism will not - and has to date been unable to resolve the complex socio-economical urban problems of our age (the downfall of Modernism). Simultaneously the design and physical structure of the urban environment has an important role to play in the enablement of human living.

5.4.3   ROBERT VENTURI

Robert Venturi advocates an approach that achieves a complexity and contradiction in designing of the built environment.

This was in reaction to the products of modernism and his reaction to Mies van der Rohe's views on urbanism, considered to be gross over-simplification. By being too "simplistic", Venturi argues that important considerations may be excluded from the experience of life and the needs of society. As a result, Venturi believes that these needs *can* be only met by an inclusive architecture, which encompasses

"the fragment, for contradiction, for improvisation, and for the tensions these produce" (Venturi, 1966, in Broadbent, 1990).

Thus Venturi embraces problems and uncertainties that result in complexity and contradiction. However, he also considers vitality and validity to be important aspects in the design of the built environment. In this regard principles such as

- the Compromising rather than the Clean;
- the Distorted rather than the Straightforward;
- the Ambiguous rather than the Articulated;
- the Boring as well as the Interesting; and
- the Accommodating rather than the Excluding.

Venturi is for "richness of meaning rather than (for) clarity of meaning", for "the implicit function as well as the explicit function". He prefers "both-and" to "either-or", "black *and* white, and sometimes grey to black *or* white" (my emphases).

For all this variety, however, Venturi's "architecture of complexity and contradiction has special obligations towards the whole", which he goes

on to call "the *difficult* whole" (Broadbent's emphasis, 1990). Venturi's whole

> "*must embody the difficulty of inclusion rather than the easy unity of exclusion*". (Broadbent, 1990).

To achieve this, Venturi propagates two aspects in his approach:

a. the establishment of goals in a manner to achieve complexity

> *"....to see how these can be used to increase the scope of our architecture. The variety inherent in our visual perception, with all its ambiguities, must also be acknowledged and exploited"* (Venturi, 1966, in Broadbent, 1990); and

b. the understanding and consideration of the broader context

> *"We should recognize also our problems at city and regional scale"* (Venturi, 1966, in Broadbent, 1990).

The notion of ambiguity is of fundamental importance in Venturi's approach.

Venturi considers that complexity and contradiction can be achieved in two ways:

a. Based on perceptions: the contradiction between what an image is and what it seems to be. This aspect encompasses scale, direction, openness or closedness, symmetry or asymmetry, and dualities, ambiguities, "both – and" modes of planning, as well as other contradictions between physical fact and psychic effect.

b. The form and content of the building, to discrepancies between its "programme and structure". Thus these should be at least double-functioning elements in buildings, for example drip mouldings which become cills, windows which become niches, etc. In addition there is also the multi-functioning room, that enables flexibility. A multi-functional room, with generic purpose rather than a specific one, and with moveable furniture rather than moveable partitions, promotes a perceptual flexibility and form the basis of multi-functional buildings, such as the Ponte Vecchio in Florence.

Venturi looks for meaning in the contradictions generated by the programme - not the overreaching order, but for the limitations of systems (Broadbent, 1990).

The order propagated by Venturi can be achieved through normal conventions, besides the Classical orders. Hereby Venturi refers to the elements of buildings and the methods by which those elements are

disposed. The first are conventional elements, everyday things, commonplace:

> "*in their manufacture, form and use .....the vast accumulation of standard, anonymously designed products*" (Venturi, 1966, in Broadbent, 1990).

The second are commercial display elements which

> "*are positively banal or ugly in themselves*" (Venturi, 1966, in Broadbent, 1990)

People use these elements in a variety of ways. These should therefore be included in the architect's repertoire, particularly considering that they are rarely used by architects because they are viewed as being banal and ugly.

Venturi furthermore argues that the consistent spatial order has numerous contradictions in scale, rhythm, and textures, as well as the varying heights and styles of the surrounding buildings (Venturi, 1966). This contained and consistent mixture or variety contained within an overall spatial order has its own validity and excitement.

A further essential characteristic of urban architecture is the achievement of contradiction - the contrast between the inside and outside. Examples of this, Broadbent (1991) states, are the domes of the great Renaissance cathedrals such as St Peter's and St Paul's, as well as Lloyd Wright's Guggenheim Museum.

Finally, Venturi examines the interrelationship between the singular and the whole, and how best the obligation to the whole is met.

Venturi's approach not only signifies the importance of, but also endeavours to achieve a complex and contradictory urban environment to enable a liveable and vital city.

5.4.4   VENTURI, SCOTT BROWNE (et al.)

In *Learning from Las Vegas* (1972) Venturi, Scott Browne (et al.) examined the popular vernacular architecture along the commercial strips, which characterised the main street of many American cities.

The approach was based on the philosophy that the strip is a *"phenomenon of architectural communication"*. The morality of the commercial advertising, gambling interests and entrepreneurial spirit that gave rise to this vernacular was not questioned. The approach was focussed on method, rather than content.

The philosophy is further underlined by the history of architecture, which reflects from Egyptian times to the early 20th Century, *'a tradition of iconology'* in which

> "*... painting, sculpture, and graphics were combined with architecture*" Venturi & Scott-Browne et al., 1972, in Broadbent, 1990).

Building on the notion of complexity and contradiction of Venturi, the strip must be considered as follows:

> "*... complex programmes and settings require complex combinations of media (far beyond) the purer architectural triad of structure, form and light at the service of space. They suggest an architecture of bold communication rather than one of subtle expression*". (Venturi, Scott-Browne et al., 1972, in Broadbent, 1990).

There are three types of communication:

a. heraldic signs - such as those at the kerbside;

b. physiognomic signs - message given by the face of the building itself; the balconies and regularly spaced windows which say *hotel*, the spire added to a bungalow which says wedding *chapel*, etc. (physiognomy - characteristic aspect of features or form); and

c. locational signs - where particular uses are located in specific places, such as casinos in front of the hotels in the Las Vegas strip for example.

The team then developed an approach to analysing this type of urban space by distinguishing between three quite different ways of displaying function:

a. The Las Vegas way - a Big Sign placed at the kerb side in front of a Little Building.

b. The Alternative Las Vegas way - designing an efficient building and then covering the façade with signs; the Decorated Shed.

c. The "*Duck*" Building - the making of a building in the form, looking like what it is functionally for. The example used is Maurer's Duck

building, which is in the form of a large duck, and is clearly understood for what it is - a building selling ducks and eggs.

The above was refined to establish two main types of buildings:

a. The *duck*, the building-becoming sculpture, where the architectural systems of space, structure, and programme are submerged and distorted by an overall symbolic form.

b. The *decorated shed*, where systems of space and structure are directly at the service of the programme, and ornament is applied independently of them.

(Broadbent, 1991).

They argue that most great buildings in history, in one way or another, have been decorated sheds, and conclude

> *When Modern architects righteously abandoned ornament on buildings, they unconsciously designed buildings that were ornament (in themselves). In promoting Space and Articulation, over symbolism and ornament, they distorted the whole building into a duck .....substituted for the innocent and inexpensive practice of applied decoration on a conventional shed the rather cynical and expensive distortion of program and structure to promote a duck; mini-megastructures are mostly ducks. It is now time to re-evaluate the once-horrifying statement of John Ruskin that architecture is the decoration of construction, but we should append the warning of Pugin: it is all right to decorate construction but never (to) construct decoration"* (Venturi, Scott-Browne et al., 1972, in Broadbent, 1990).

5.4.5   BENTLEY (et al.)

Bentley et al. (985) have developed a practical book for urban design that enables the translation of ideals through to the fabric of the built environment by appropriate design ideas.   The reason for this being that the

> *"... tragedy of modern design, it seems to us, is that designers have never made a concerted effort to work out the form implications of their social and political ideals"* (Bentley et al., 1985:9).

The premise of the Bentley et al. (1985) approach is the concept of *responsive environments*; the idea that the built environment should provide its users:

* with an essentially *democratic* setting; and

* enrich their opportunities by maximising the degree of *choice* available to them.

The seven key aspects to achieve this, according to Bentley et al. (1985), are permeability, variety, legibility, robustness, visual appropriateness, richness and personalisation (refer **Figure 5-3**).

a.   Permeability

The number of alternative ways through which an environment determines its accessibility to people (either enabling or restricting) and therefore the choice they have.   In this regard permeability has fundamental implications to layout, as indicated in **Figure 5-4**, the more routes, the greater the permeability.   The latter is determined by the number of routes, their linkages and their placement, and conversely on block boundaries.

c.   Variety

This focuses on the range of uses and activities available to people. In this regard it is important to maximise the variety of uses.   Variety is achieved by an assessment of the demand of different types of uses at various levels, and how wide a mix of these activities are economically and functionally feasible.   From these the buildings that have already been tentatively established as spatially desirable are tested to see whether they are able to accommodate the established mix (refer **Figure 5-5**) and, if required, the design is adapted accordingly.

d.   Legibility

Legibility determines how easily people can understand the opportunities an urban environment offers, in particular the layout of an area.   Part of this are the routes and their junctions, which are differentiated from one another by designing them with differing qualities of spatial enclosure, thus encompassing decisions about the volumes of buildings that enclose public spaces.   The elements that give perceptual structure to the place are Lynch's (1960) nodes, edges, paths, districts and landmarks (refer **Figure 5-6**) encompassing physical form and activity patterns.

Figure 5-3:
Key Principles of the
"Responsive Environments"
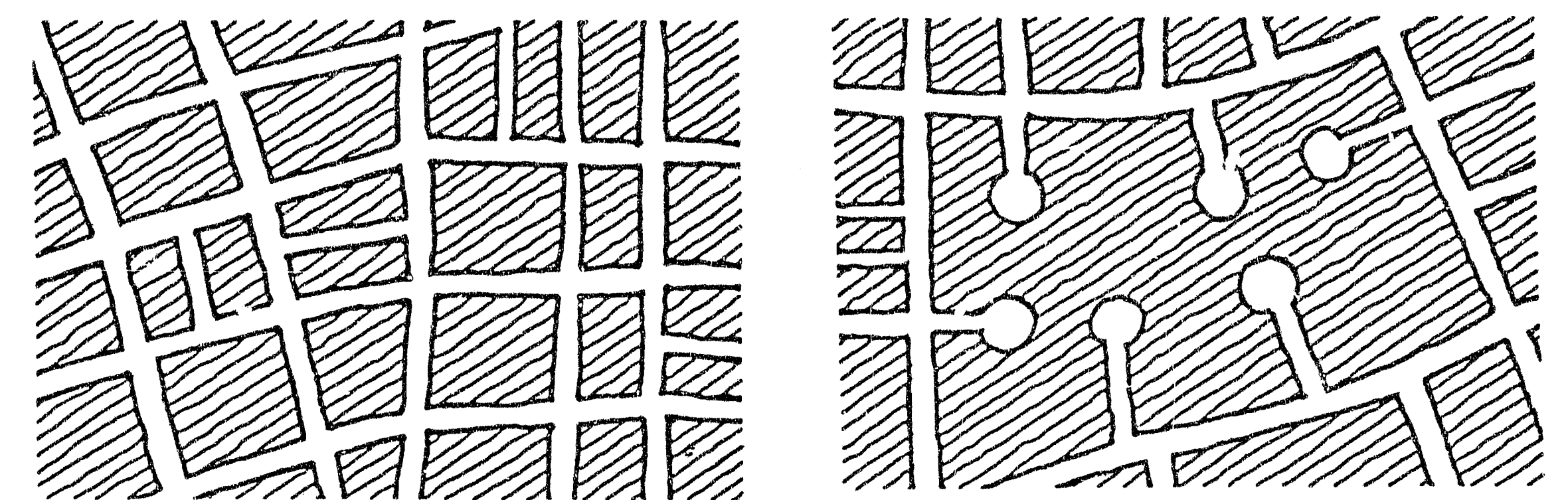Urban Design Approach,
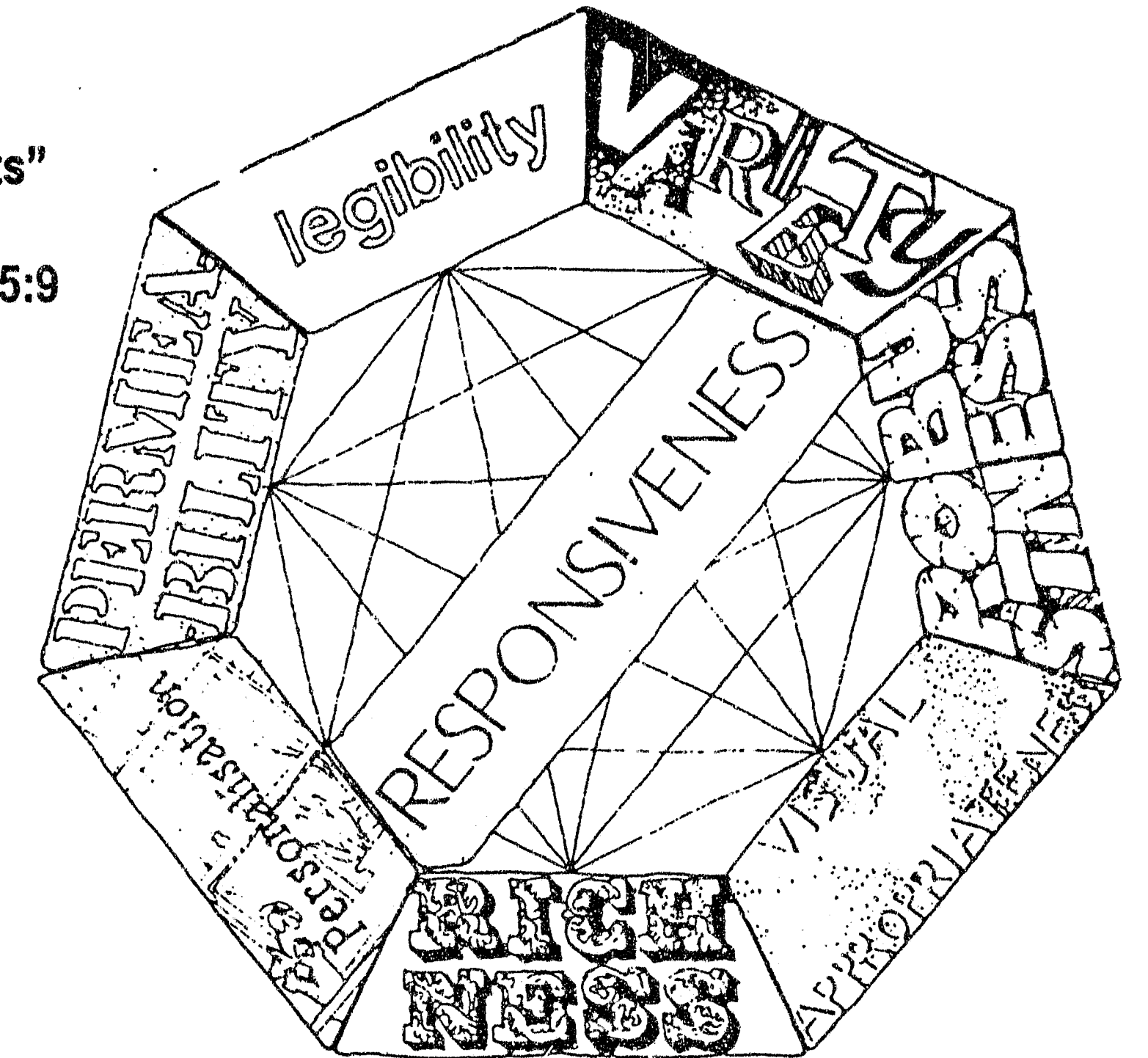Source: Bentley et al., 1985:9

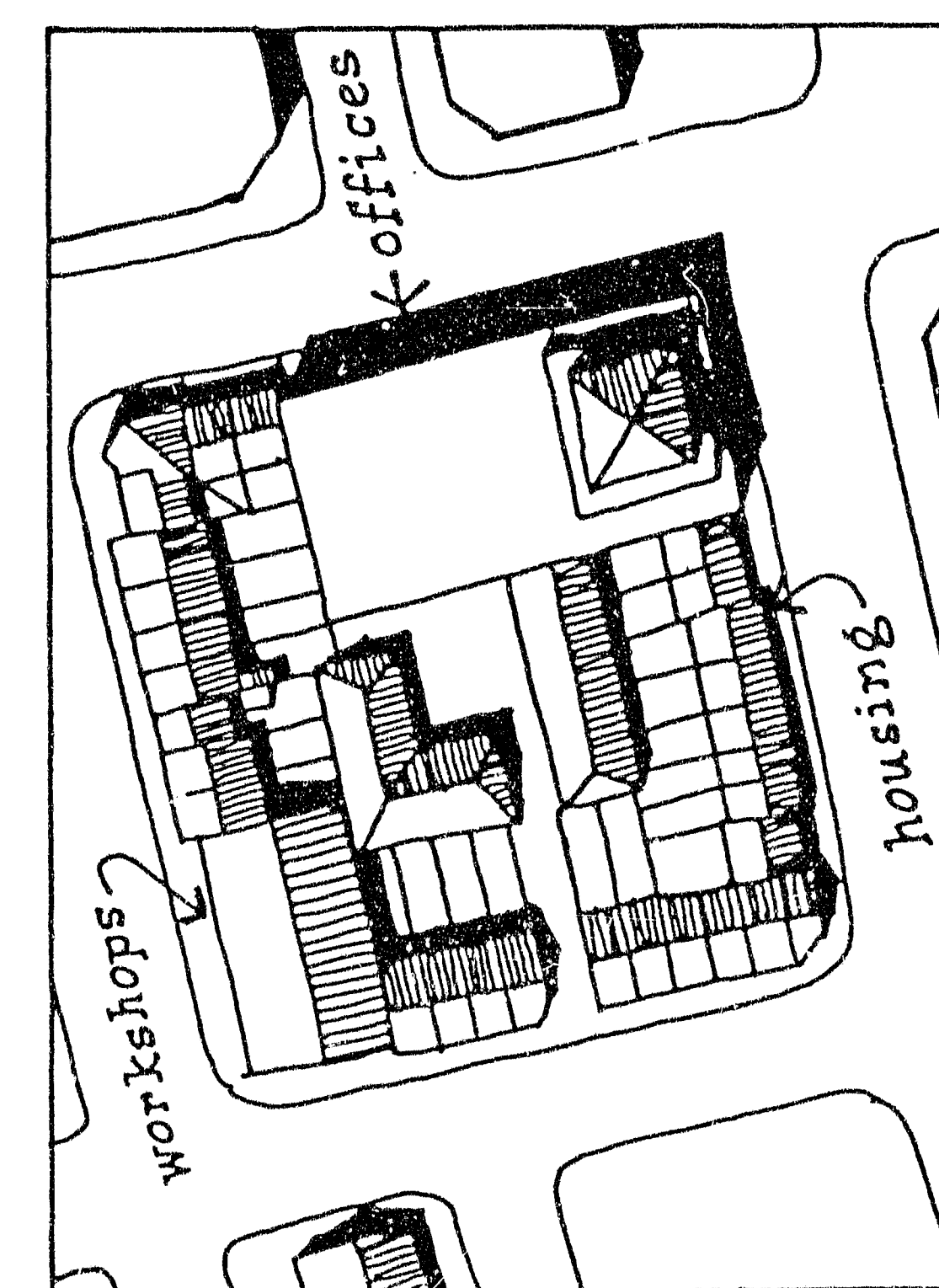Figure 5-4:   Permeability, Source: Bentley et al., 1985:10

Figure 5-5:
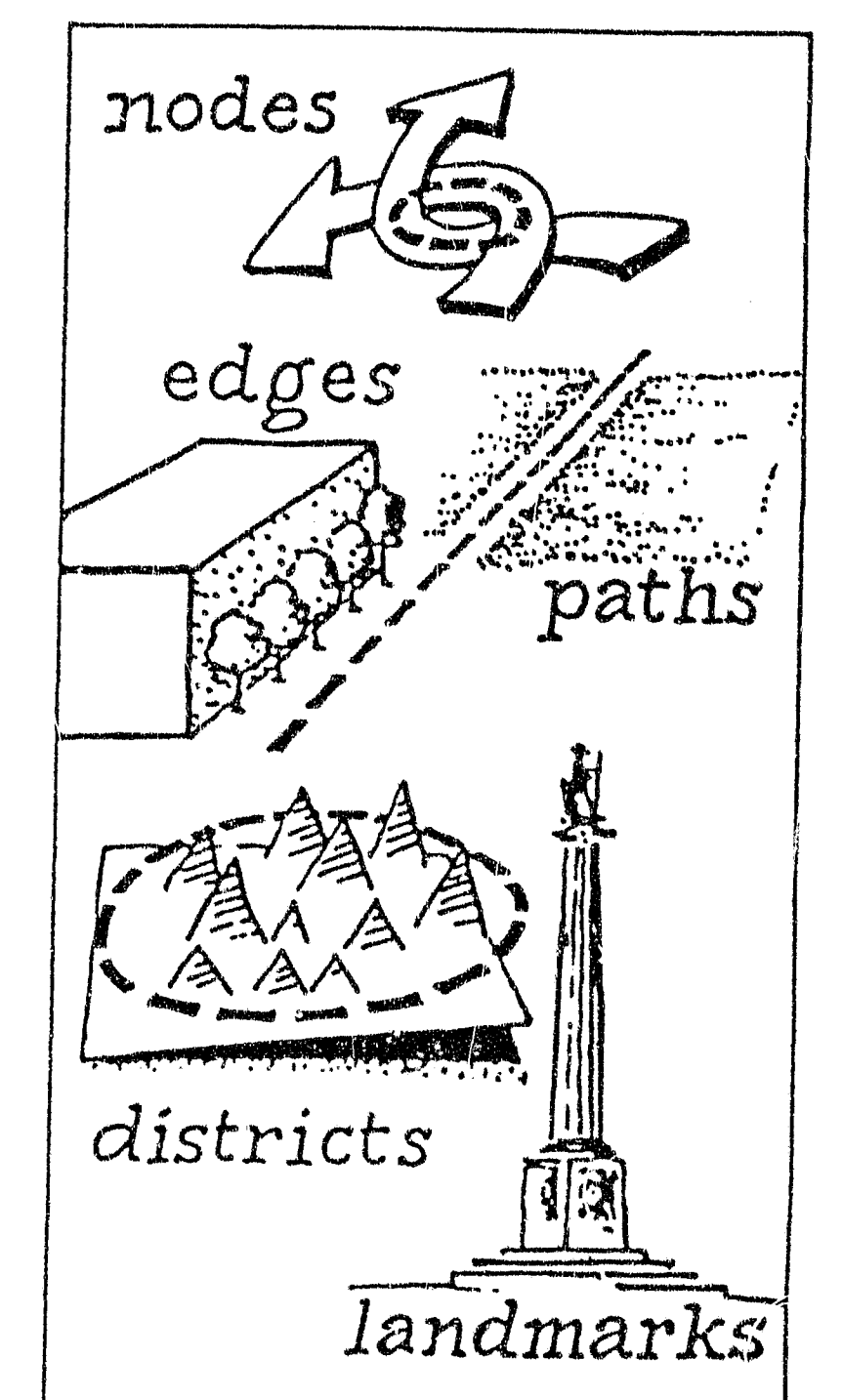Maximising Variety of Use,
Source: Bentley et al., 1985:10

Figure 5-6:
Using Lynch's imageability to
achieve Perceptual Structure,
Source: Bentley et al., 1985:43

e.   Robustness

Robustness encompasses the degree to which a place can be used physically for different purposes, be this a building or public space. A place or space that can be used for many purposes offers greater choice and can be suited to meet user needs during different times of the day (refer **Figure 5-7**).

e.   Visual Appropriateness

Visual appropriateness assists in making people aware of the choices available to them. This affects people's interpretation of a place, indicating that people interpret places to have a specific meaning to them. The means of achieving this is to elicit a vocabulary of visual cues, to communicate the types of choices available, and using these cues as a basis for design (refer **Figure 5-8**). The clues are elicited from the legibility in terms of formal use, by supporting variety and supporting robustness at both large and small scales.

f.   Richness

Richness focuses on the choice of sensory experiences of people, and in particular how these can be increased, both visual and non-visual, through appropriate materials and construction techniques. In this regard smell, touch, sight and hearing are critical factors as well as motion. (refer **Figure 5-9**). People experience the environment by focusing their attention on different sources of sense-experience on different occasions, and / or by moving between sources.

g.   Personalisation

Enabling people to personalise the places they use (to a certain degree). Thus design must support personalisation to the degree that it will not overpower the public role and function of a place. Through personalisation people can achieve an environment which bears the stamp of their tastes and values (refer **Figure 5-10**). Personalisation also enhances the place's pattern of activities.

Bentley et al (1985) conclude that the above is an approach to designing and not a recipe; it should be used *creatively.*

5.4.6   NEW URBANISM

New Urbanism, formalised through The Congress of the New Urbanism (CNU), is a North American (USA) urban design movement that has a sincere environmental underpinning and conservation ethic, focuses on the rebuilding of the urban fabric of existing urban environments, and aims to create new place with lasting heritage values. In this context New Urbanism is:

- a fresh new look at how to assemble and reassemble communities, according to a set of principles; and
- a reaction to the failure of current development practices to offer a sustainable pattern of land uses, socially diverse neighbourhoods, a spatially interactive public realm, and integrated historical precedents of effective regional planning, community and neighbourhood design, and the traditional block and street layout, from a civic-balance perspective.

The CNU has a Charter that addresses the disinvestment in cities, the spread of placeless sprawl, environmental deterioration, loss of agricultural lands, and erosion of the built heritage, with specific reference to North America. The CNU stands for the restoration of existing urban centres and towns within coherent metropolitan regions, the reconfiguration of sprawling suburbs into communities of real neighbourhoods and diverse districts, the conservation of natural environments, and the preservation of built legacy. CNU has dedicated itself to reclaiming the streets, neighbourhoods, towns, cities, regions, and environments. CNU has asserted principles to guide public policy, urban planning and design, and the practise of various design professionals.

The key design elements that are promoted by New Urbanism to achieve the development of traditional (American) towns and neighbourhoods, encompass:

- An institutional "anchor" in the town or neighbourhood centre. This encompasses a park, meeting hall, corner store, post office, library, town hall, train station, theatre, or like use; enjoys most success along a "main street"; provides a place for special events.
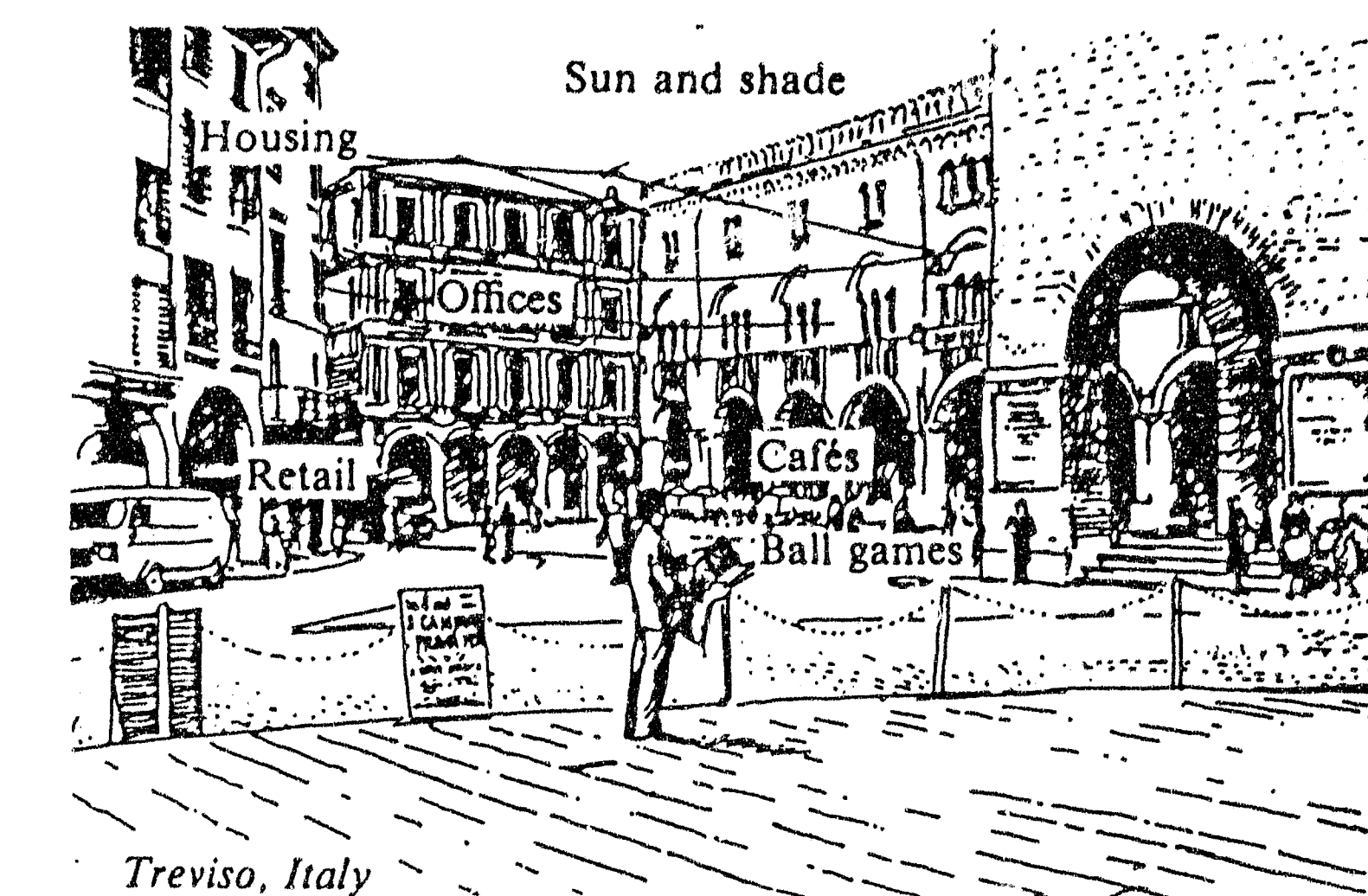

Treviso, Italy

Figure 5-7:   **Robustness – Places that physically enable Multiple Uses and Activities, Source: Bentley et al., 1985:56**
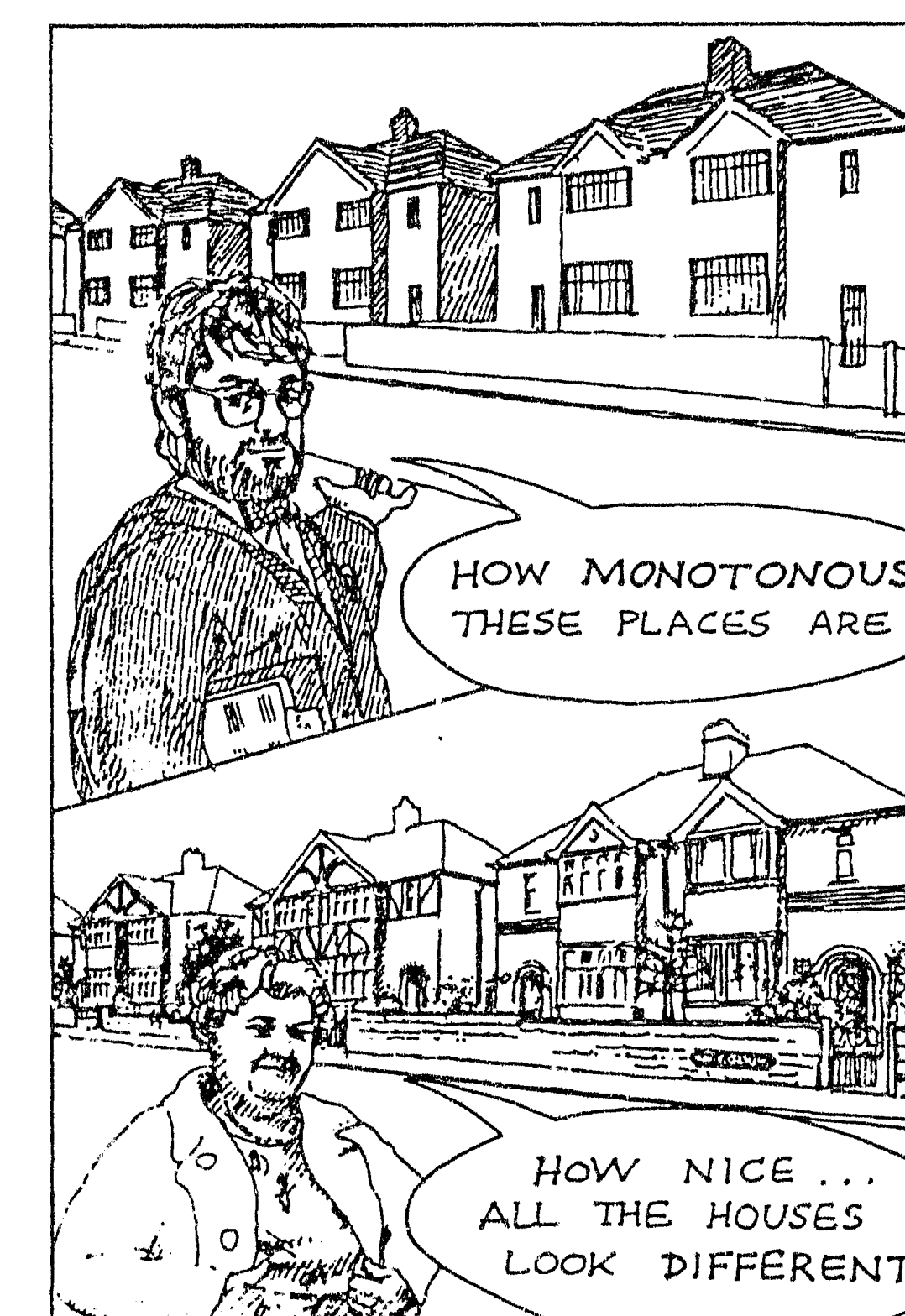

HOW MONOTONOUS THESE PLACES ARE

HOW NICE ... ALL THE HOUSES LOOK DIFFERENT

Figure 5-8:
Visual Appropriateness, Source: Bentley et al., 1985:76

UNSELECTIVE
CHOICE THROUGH CHANGING POSITION
SMELL AND MOTION
TOUCH AND HEARING
SIGHT
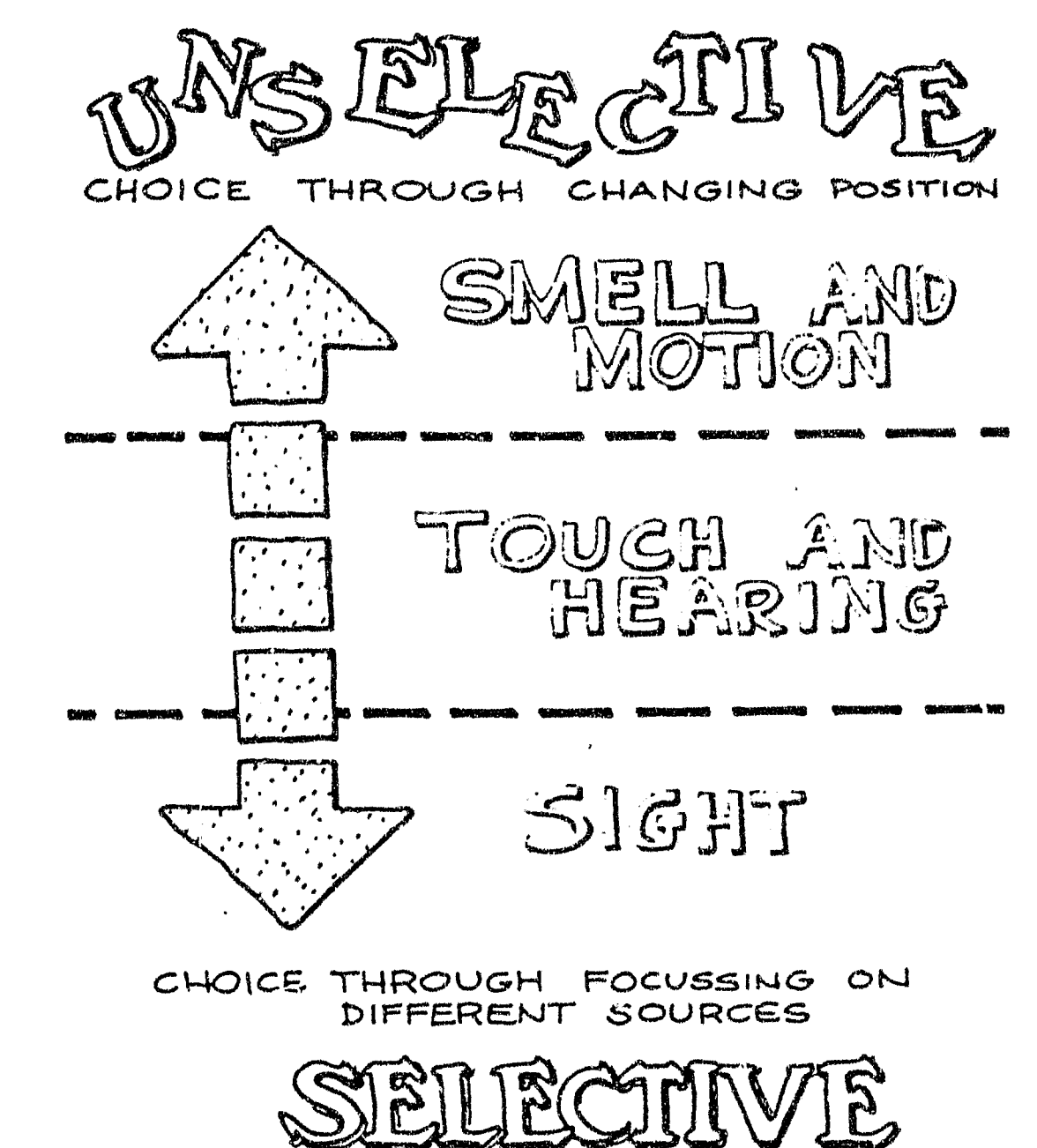CHOICE THROUGH FOCUSSING ON DIFFERENT SOURCES
SELECTIVE

Figure 5-9:
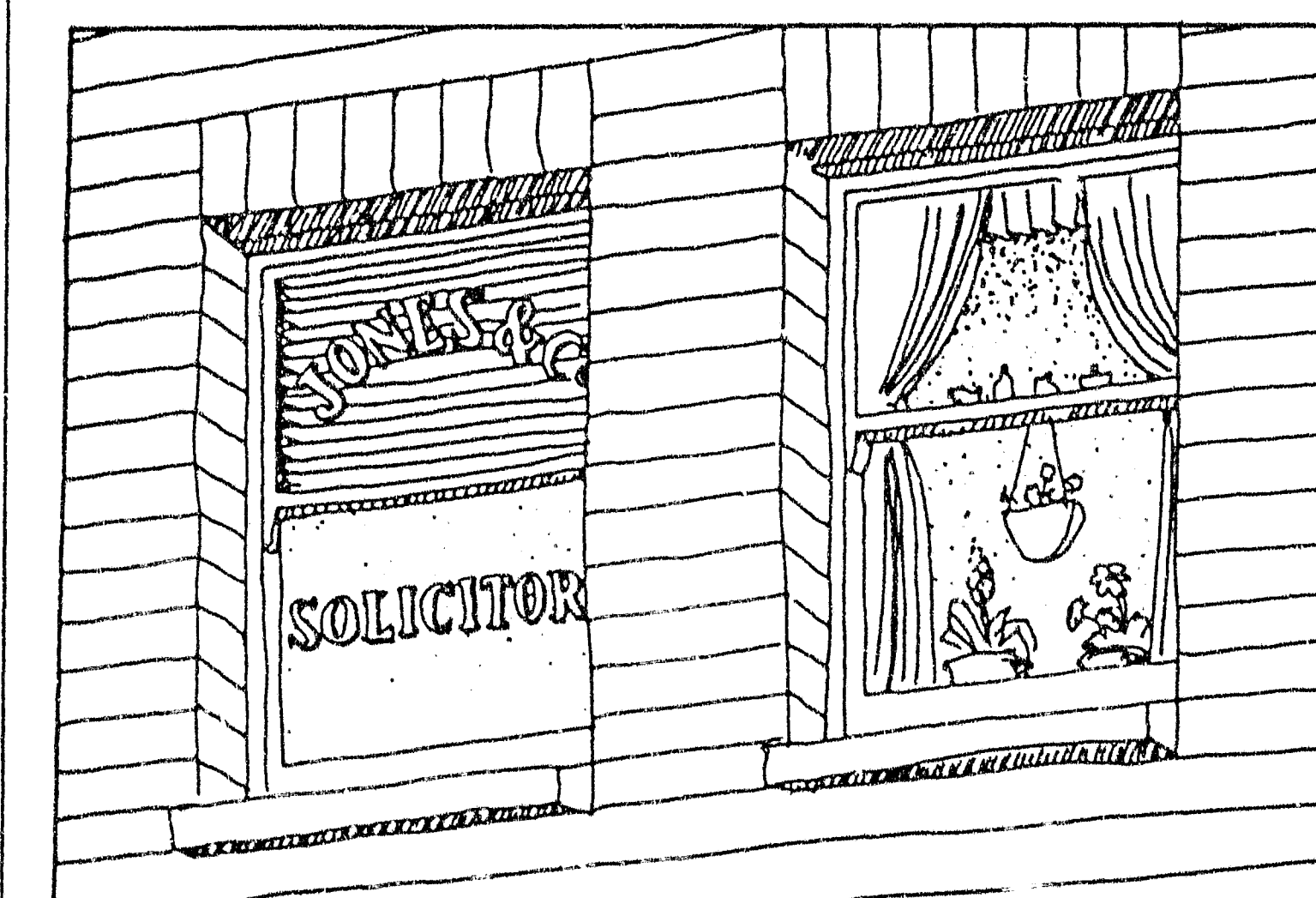**Richness, Source: Bentley et al., 1985:89**

Figure 5-10:   **Personalisation, Source: Bentley et al., 1985:99**

- A minimum service area and size. Comprising a 400m to 800m radius (5- to 10-mintue walk) from the neighbourhood centre to the edge; creating 10 to 50 hectares for each neighbourhood.

- A mix of uses, encompassing a combination of residential, institutional, recreational, commercial, limited-industrial, and agricultural uses; with open-space uses in a seamless arrangement. It also combines ground floor retail with second-floor apartments and / or offices in the town / neighbourhood centre.

- Park, open space and natural environment. Creates the green, square, or park to help "anchor" the town / neighbourhood centre; a system of "green spaces" in balance with the built environment and distributed within the neighbourhood; includes a "green edge" of open space to help shape neighbourhoods and towns; and provides a balanced pattern to the fabric of the community.

- A network system of interconnecting streets. Organises a block and pattern of lots; integrates with lanes, alleys, neighbourhood streets, avenues, and boulevards; promotes through traffic; street vistas terminate with public space, landmark structures, or civic buildings.

- On-street / parallel parking: Provides a separator between vehicular and pedestrian traffic; utilises cartway as an "aisle" (with "overflow" parking to the rear or side of buildings); promotes effective "traffic calming" by slowing down the speed of vehicles, especially along narrower streets.

- Lanes (alleys). Allows for preservation of frontage streetscape; moves vehicular access to detached garages in the rear; provides opportunities for access to an accessory apartment to the rear, or for deliveries; provides access for staging construction.

- Shallow setbacks enable the development of an "outdoor room" sense of space. These are lined with 2- to 4-storey buildings, typically 18m to 24m across from one another on both sides of the street; promoting a human scale relationship for the pedestrian as part of the public realm. The buildings are placed at a "build-to" line create a street wall (with up to 1.2m offset).

- Building types. It focuses on buildings designed by type, not solely by function, to allow for adaptations and changes in use (e.g., from dwelling to shop, to work place, to institution). This is most appropriate in the expression of regional / local style.

- Front porch / portico / colonnade. This serves as a transition

element from the private realm of the building to public realm of the sidewalk and street; provides shade; promotes a finer, more ornamental "texture" of the building; creates a comfortable place to sit, read, relax; provides outdoor room to greet and socialise with neighbours.

- Sidewalks / crosswalks / pedestrian paths / walkways. Serves to link uses, buildings, and lots together; accommodates a safer pedestrian circulation network; provides close-to-home opportunities for exercise, and enhances orientation and an appreciation of the neighbourhood.

- Shade trees, which provide (as street trees) the canopy / overhead plane to help create an "outdoor room"; and as shade trees, provides an "old shade" character.

- Other vertical infrastructure, which Includes fences, hedges, walls, street lamps, benches, gazebo, pavilion, pergola, monuments, clock towers, or like features.

In the final chapter in the book *The New Urbanism* (by Peter Katz, McGraw-Hill, 1994), Vincent Scully, the distinguished Architectural Historian and Critic, states that

> "The New Suburbanism might be a truer label, because the new theme that links these projects is the redesign of that vast area in which most Americans now live, sprawled between the metropolitan center, which is emptying out, and the open countryside, which is rapidly being devoured."

The New Urbanism approach is certainly not an all-encompassing approach and is centred on American values and life-style. However, certain of the principles promote inherently positive living environments, and with the correct adaptations, can be incorporated into an urban design approach applicable to the South African context. The New Urbanism approach outlined above is directly sourced from an article by Comitta (1999).

5.4.7   HOUGH AND SPIRN

The most well-known environmental planning and design protagonist who brought into focus the emerging philosophy that ecological processes provide an indispensable basis for planning and urban design, is Ian McHarg. The phrase "design with nature" is synonymous

with McHarg, and it aptly summarise his approach - not either design with nature by itself, but with; implying co-operation, partnership and integration to use to the fullest the potentialities of natural and urban processes and environments. Spirn (1984) and Hough (1984) have established urban design approaches that have incorporated the natural ecological processes, fundamentally proposing that urbanism should incorporate and take cognisance of urban ecological processes and natural environments, achieving balance, synergy and a sustainable urban system.

5.4.7(i)   Anne Winston Spirn

Spirn's (1984) approach is based on the view that solutions to the problems of the city and its region must not be isolated, but rather co-ordinated and undertaken with as much understanding of the urban ecosystem as current knowledge permits. In this regard, and to establish a framework within which individual components are to be designed, the following principles should be applied:

- The efficient use of energy – i.e. the conservation of resources and minimisation of waste.

- Exploitation of urban waste – i.e. dispose of and reclaim waste economically, safely and aesthetically.

- Perceive the whole – i.e. to design parts of the system to serve more than one purpose, and realistically assess the costs. Energy may be conserved and resources utilised more efficiently, if individual parts of the urban ecosystem are designed to fulfil more than one purpose and function. This requires that up-to-date and correct information, with sufficient detail, is readily available, thus enabling a holistic picture of the city.

- Establish a comprehensive plan to manage the urban ecosystem. This plan should:
  - Address the city-region's most critical environmental problems exploiting opportunities to resolve more than one problem with a single solution, and to improve conditions in the most severely contaminated or most hazardous areas of the city.
  - Investigate energy and resource conservation measures and the feasibility of reclaiming energy and mineral resources from wastes, and explore settlement patterns, transportation networks, and water and sewer systems, which would facilitate implementation of such measures.

- Encourage industry to devise plans for the safe storage of toxic wastes until they can be economically recycled or safely assimilated.

- Link natural processes and features to health, safety and welfare, so that social cost and benefits related to the natural environment may be weighted against other social, economic, and political concerns.

- Every new building and park should be designed to require the minimum input of energy and materials, to generate minimal wastes, and , whenever possible, to serve more than one purpose. Every project should:
  - Address the place of the site within the urban ecosystem as a whole, including its relationship to the city's most critical problems.
  - Respond to the problems and the opportunities posed by the site and its immediate neighbourhood.
  - Design buildings and the landscape to conserve energy and reduce waste.
  - Exploit the site's distinctive microclimatic, geological, hydrologic, and biological character.

Only by viewing the entire urban natural environment as one interacting system can the value of nature in the city be fully appreciated. Only when the social values of natural processes are recognised can priorities be set, and conflicting and complementary values be resolved or integrated. Only then can urban form fully reflect the values inherent in nature as well as other social values.

5.4.7(ii)   Michael Hough

Hough (1984) views the current unrewarding urban environment as the opportunity to create a better urban environment. His focus is the integration of urbanism and ecology achieved through the design and planning process. The seven principles which achieve this are:

a.   Process:
Processes are dynamic, and the patterns of the landscape are subject to processes (or forces) which shape and form the landscape. In this regard our current view of the landscape must be seen as a mere instant point in time along the continuum of natural processes, which are forever changing and re-shaping the natural environment and associated processes.

Similarly cities are also dynamic. Urban form is the consequence of a myriad of forces fuelled by economic, political, demographic and social change; of new buildings replacing old and old buildings being adapted to new uses, of shifting and changing neighbourhoods, of urban decay and renewal. This concept of process also has radical implications for the city's landscape, namely also changing - never static.

Consequently, human and / or natural processes are constantly modifying the land.

b.   Economy of means:
From an ecological perspective this could be called the principle of least effort - ie. the greatest or the most significant results that spring from an undertaking usually come from the least amount of effort and energy expended (rather than the most). This principle involves the idea that from minimum resources and energy, maximum environmental, economic and social benefits can be achieved.

c.   Diversity:
The diversity principle deals with health. In the context of the city, diversity has biological and social relevance. Quality of life implies, among other things, being able to choose between one environment and another, and between one place and another. As an experience, it implies interest, pleasure, stimulated senses, and sensory enrichment. Cities need natural and urban wilderness places. Cities also need hard urban spaces, busy plazas and markets, noisy as well as quiet places, cultivated landscapes, and formal gardens. Their differences enhance each other.

d.   Connectedness:
Connectedness is based on Barry Commoner's well-known principle that "everything is connected to everything else". Consequently, to understand a local place requires an understanding of its larger context, the watershed and bio-region in which it lies.

e.   Environmental Education & Awareness:
Environmental literacy strikes at the heart of urban life and consequently the way we think about and shape our cities. The perception of the city as separated from the natural processes that support life has long been a central problem in environmental thinking. It is critical that nature is seen as a whole, and understanding the interrelationships and connections between human and non-human life. The aim is thus, in reshaping the city, to recognise the existence and the latent potential of natural, social and cultural environments to enrich urban places.

f.   Human Development and Environmental Enhancement:
Design thinking must enable human development processes that positively contribute to the environments that are changed. Habitat building - creating those conditions that permit a species to survive and flourish - is a basic motivation of all life forms. Environmentally sensitive design thus involves the creation of new landscapes - a mix of the natural and the human that may not have existed before, but that recognises the interdependence of people and nature in the ecological, economic and social realities of the city. This includes:

- The consideration of recycling energy and nutrient flows - which are common to all ecosystems – and implicate the design of human environment. The unwanted products of the life cycle become the requirements for another, for example the recycling of organic products restores soil fertility; and thus facilitates environmental enhancement.

- The consideration of ecological restoration - bringing natural systems back to a state of ecological health and re-establishing bio-diversity and resilience. Bio-diversity is also linked to cultural history and with restoring both human and non-human habitats in larger bio-regional contexts (Hough, 1995).

g.   Making Visible the Processes that Sustain Life:
Much of our daily existence is spent in surroundings designed to conceal the processes that sustain life and which contribute, possibly more than any other factor, to the acute sensory impoverishment of our living environment. For example there is the opportunity where urban open spaces are seen to perform a productive and environmentally responsible role (eg. community gardens and urban

farms where food-production occurs in full view of the public; as well as providing food for the needy and providing employment); in addition to its traditional recreation and aesthetic functions. Thus it may be said that making processes visible is an essential component of environmental awareness and a necessary basis for environmental action.

5.4.8   MARK FRANCIS

"The decrease in plurality of public space, as shaped by current practices or urban design, and the growing trend of privatisation, together create a troubling gap between the social goals and manifest results of current design and development initiatives. A broader and more holistic concept of 'good' streets is needed" (Francis in Moudon (ed), 1987)

Francis proposes the concept of "democratic" streets, which incorporates principles of pedestrian and liveable streets, emphasises the notion of public use, and recognises the streets larger social, economic, and ecological role in the urban environment. According to Francis, a democratic street:

- reflects the history and the socio-economic diversity of the larger neighbourhood and city;
- is friendly to pedestrians;
- is liveable for residents;
- reflects social justice, economic health, and ecological vitality;
- strikes a balance between all street users such as motor vehicles, cyclists and pedestrians;
- emphasises the access and needs of many different people;
- provides "opportunities for discovery and challenge, and actively encourages user manipulation, appropriation, and transformation" (Francis in Moudon (ed.), 1987);
- is based on the concept of *publicness*;
- has "eyes on the street" enabling a sense of place and security;
- supports contact, safety and child use; and
- interpreting from Lynch's *A Theory of Good City Form* (1981) there are five basic public space rights: presence, use and action, appropriation, modification and disposition.

Based on the work of Jacobs, Lynch and Appleyard, Francis (in Moudon ed., 1987) proposes thirteen principles to achieve democratic streets:

a.   Use and User Diversity

- A lively and successful street requires a balanced mix of different user groups and activities, as opposed to being designed for one user group and one particular function.
- It needs to enable users of different backgrounds to co-exist, without one group dominating the other.
- It needs to enable people to watch, as pointed out by Whyte (1980), as well as to walk, talk, eat, etc.
- The deliberate redesign of the street space to foster user diversity, an example in residential environment being the *woonerf* concept.

b.   Accessibility

- Degrees of publicness are crucial for classifying space, which is achieved by determining accessibility.

c.   Participation / Modification

- Direct participation of street users in the design and management processes will help people establish an *ongoing* attachment to streets.   Appropriate participation should therefore be enabled within the design process.
- Modification by users to suit different activities throughout different times of the day. For example "elements brought out by residents or merchants, for example, moveable chairs and planters, can contribute a sense of local control and responsibility for the street environment.

d.   Real and Symbolic Control

- Enabling control over streets by either merchants or residents. "Control is real for residents who maintain the sidewalk or street trees; it is symbolic when residents feel that their private space, such as front yard or entrance, extends into the public environment.

e.   Traffic Management

- Traffic management required during the dominance of the motor vehicle over other street activities.   By managing the traffic, other users will be enabled to utilise the streets.

f.   Safety / Security

- Streets require to be safe and secure from a crime perspective, as well as in terms of physical hazards and obstacles (Francis does not outline how).

g.   Ground Floor - Street Relationship

- A public street has a dynamic and interactive relationship between the semi-public and private activities in the adjacent buildings. Whyte (1980) advises that "dead" uses, such as businesses without display windows, banks, offices, parking garages and storage areas with blank walls, should not be placed along the street.   Uses such as news-stands, street vendors and restaurants enhance street life. In residential areas lived-in spaces overlooking the street such as kitchen windows, as well as building elements such as verandahs and ledges also contribute to enhance the social life of the street and improve a sense of safety.

h.   Comfort

- Comfort requires adequate protection from the natural elements, such as shading from hot summer sun, and warmth during the colder seasons. Facilities such as seating and public amenities are also included.

i.   Ecological Quality

- A democratic street is an environmentally healthy one.   This is based on the work of Hough (1984) and Spirn (1984), encompassing air and noise quality through vegetation and plant materials, which contribute to clean air, buffer noise, and add visual relief,

    "thus trees, plants and animals need to be reintroduced to street environments to help create greater user comfort and saturation" (Francis, in Moudon, 1987).

j.   Economic Health

- A democratic street enables economic activity, that promotes business success and secures land values, without letting the business dominate or take over the street.

k.   Environmental Learning and Competence

- Democratic streets are places where people learn to deal more competently with everyday urban life; communicating about the economy and social structure of the latter.

l.   Love

- When people "love" streets, it encompasses aspects of meaning and memorability, rich with associates and the history of the place.

m.   Conflict

- Part of a democratic street life is conflict, because by the definition, democracy requires greater user participation and negotiation.

5.4.9   DAVID CRANE

5.4.9(i)   The Dynamic City

Crane (1960a) in outlining his urban design approach in "The Dynamic City" views the city in terms of three interrelated aspects:

- the city as volume of motion (city on wheels);
- the city as volume of time (of chance and permanence); and
- the city as volume of building participants and processes (the "City of 1000 Designers").

In this context Crane (1960a) views the street as a city builder or destroyer, and must therefore be considered holistically in any design approach, as follows:

- Carrier: vehicles and goods and people (mechanically efficient and safe movement thereof).
- Shelter: providing different kinds of public living rooms.
- City Builder: creating land values, uses and architectural scale (or destroying these).

- Communicator: visual impressions and meaningful signals.
- A connector: bringing disparate elements together in a cohesive city fabric and connecting them.

The "capital web", the public land, streets, roads, utility infrastructure, public open spaces and public buildings make up 40% to 55% of the city. It structures the development and growth of the urban environment. For this reason it forms the key element of the urban design approach. The "capital web" elicits development responses and investment by the "1000 designers" in response to the public investment that is made into it. The manner in which this capital web can be structured is threefold:

- Generic: utilising programming and typologies to extract and define the typical elements of the city.
- Systemic: designing and outlining the systematic systems of the city, such as transport systems, land subdivision and parcelling, and the implications of legal, industrial building and other systems thereon.
- Unique: establishing the special places and parts of the structure.

From the above Crane (1960a) discusses five ideas with regard to "townbuilding" or the design of the urban environment:

a.   Predictability

The aim is to introduce sufficient predictability in the undermentioned elements in order to enable private investor and development responses:

- definite location of land units (for development);
- establish the capital web; and
- generality of use (definite range or cycle of alternative uses).

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b.   Symbolic Place

Give a special meaning and permanence to places for different confluences of city events, such as at major nodes, gateways and interchanges. This includes aspects relating visual symbolism and of utilitarian value.

c.   Malleability

Enable flexibility; additions and modifications. Assess long and short-term probabilities and requirements. Important to keep a reserve of unused or underused land.

d.   Electability

Provide choice to people, what is not found in one place must be found elsewhere or nearby, e.g. choice in residential for all income levels, choice in facilities and activities, enabling the 1000 designers to design.

e.   Connectivity

Establish both physical and transportation based connections, as well as visual, symbolic and spatial ones.

"The dynamic City depends for its dynamism upon generality and flexibility of parts, strong and permanent locational rhythms, less permanent superimpositions, and a dynamic balance of mass" (Crane, 1960a:231).

5.4.9(ii)   The City Symbolic

In the "City Symbolic", Crane (1960b) argues that the city is a complex artefact, which tells and reflects the values of society. These are realised in the meanings shown by buildings, spaces or other artefacts, the location of spaces and elements, and through memorable sequences of physical events.

There are three levels of symbolism within the city:

a.   generic- the typical or generally accepted, and relates to typology;

b.   specific- the symbolism applying to one group only; and

c.   personal- that symbolism unique to each individual.

City design should incorporate the culture of the social environment in the way it structures the growth and change of the urban environment.

In this regard the following four principles should be achieved in the design of the built environment:

a.   Symbolism.

The available elements are:

- symbolic locations (what should be happening where);
- heraldic elements (flags, signs, monuments etc.);
- systematic use of rhythm; and
- intersections and gateways within the city.

b.   Space-shelter continuity.

Functional shelter must include climatic protection and activity containment in outdoor space; i.e. a continuum of functional shelter whereby buildings, open spaces and streets are merged into a single unified system. After all, for some tropical societies the "living room" is in the street and the home offers only sleeping and storage facilities.

c.   Generality of Structure:

Enable the establishment of multi-functional, mixed-use, diverse (to enable adaptability, and intelligibility of urban parts) uses and activities, as opposed to specialisation of land uses and therefore compartmentalisation. In this regard Crane (1960b) promotes the concept of "service belt", "community centre", "public belt", to include all public and private service functions (instead of scattered pattern). For example: grouping of community facilities, could be a landmark and catalyst for private development; a school next to park can be used interchangeably as community facility or park also for sportsfields, etc..

e.   Systematic Rhythm

The geometric or topological order of logical city conceptions in organising the ground plane of the city (the symbolic locations and street in particular, as the street is viewed as a channel of symbolic intelligence).

5.4.10   KEVIN LYNCH

5.4.10(i)   The Image of the City

Kevin Lynch was one of the first coherent analysers of the urban scene in Empirical terms. Lynch focused initially on the image of the environment, in particular the visual quality of the (American) city, by studying the mental images of the city as held by its citizens.

"Every citizen has had long associations with some part of the city, and his image is soaked in memories and meanings

...........Moving elements in the city, and in particular the people and their activities, are as important as the stationary physical parts" (Lynch, 1996).

Orientation and location within the city requires the build up of a workable image of each of the city's parts. These images will comprise:

- identity - the recognition of its particular *"individuality or one-ness"* within the city as a whole;
- the recognition of its spatial pattern or relationships to other parts of the city and to the person; and
- the particular meaning for each individual person, whether it be *"practical or emotional"*.

(Broadbent, 1990)

Imageability is defined by Lynch as

".......that quality in a physical object which gives it a high probability of evoking a strong image in any given observer .... (effected by) shape, colour, or arrangement which facilitates the making of vividly identified, powerfully structured, highly useful mental images of the environment" (Lynch, 1960).

Lynch identified five key elements in terms of which people construct mental images of the city:

a.   Paths (refer **Figure 5-11**)

The channels of movement, which people regularly, occasionally or potentially take. They may include paths, streets, walkways, bus or tram lines, canals, railways and so on. As Lynch says, we observe the city as we are moving through it and for many people, the paths themselves, and those elements of the city they perceive as they move along them predominate in their images of the city. They are, as Lynch put it "co-ordinate axes".

b.   Edges (refer **Figure 5-12**)

Linear elements which people do not use as paths. They perceive them, rather, as linear breaks or boundaries of some kind. They may be physical boundaries such as walls, railway cuttings, canals, shorelines, or they may simply be boundaries between adjacent developments. Whilst not so dominant as paths such boundaries are
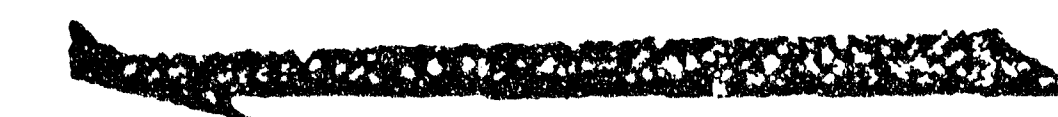

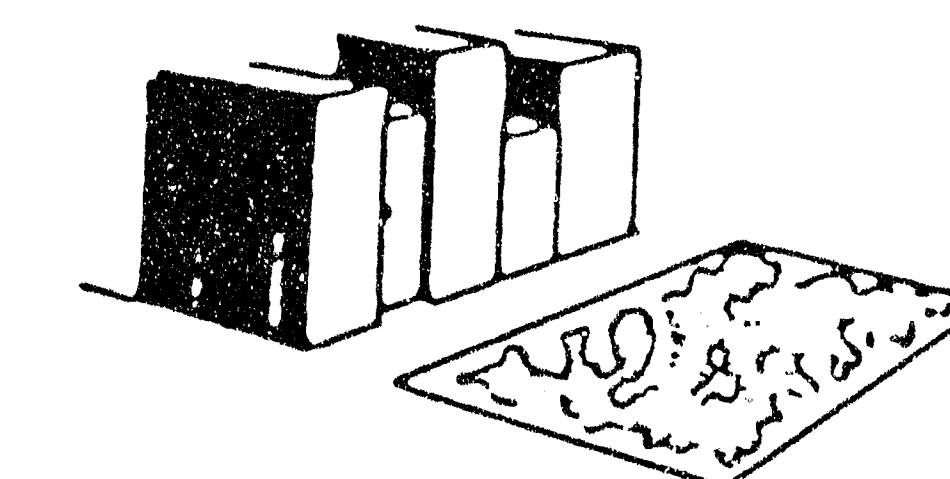Figure 5-11:   Paths, Source: Lynch, 1960:47

Figure 5-12:   Edges, Source: Lynch, 1960:47

"important organising features" for many people especially when, in the form of, say, water or city wall they play the role of "holding together generalised areas".

c.   Districts (refer **Figure 5-13**)

The medium to large sections of the city which people visualise as having two-dimensional extent. Not only do they form districts on the map, they are also recognisable, especially from within, as having some common, identifying character, which indeed may be so strong that one has a distinct, mental impression of entering "inside of". This may be recognisable also from outside. Most people, according to Lynch, find this idea of district to be most important in building up their "Image of the City". Indeed, according to the city - and the individual perceiver - they may be more important than paths.

d.   Nodes (refer **Figure 5-14**)

Nodes are strategic points within the city to or from which the observer travels.   They may be crossings or convergences of paths, junctions, places where one changes from one mode of transport to another. Or they may be concentrations of some kind, which are important because of their physical form: such as urban squares, street corners. They may be condensers of particular uses. Some, nodes in fact, will be "the focus and epitome of a district, over which their influence radiates and of which they stand as a symbol".

e.   Landmarks (refer **Figure 5-15**)

These are reference-points which the observer does not actually use. They consist, rather, of "simply defined physical objects" such as a building, a sign, a store or even a mountain. A landmark in this sense will be a physical object which, because of its form, may be singled out from the surrounding environment.   They may be large, man-made objects such as a tower, a spire or a dome, soaring over the rooftops and acting as a radial reference from many points within the city. They may be distant mountains which serve a similar purpose; the sun itself, even though it moves, may act as a landmark in this sense.   Its movement, after all, is slow and its directions known. Landmarks also occur at smaller scale: a tree within an urban square, a particular sign, a shop front, a door or even a doorknob. These, and other urban detailing fills in the image (for) most observers.

As Lynch suggests we make frequent use of such clues in our search for the identity of elements within the city and even for our understanding of urban structure.   What is more we seem to rely on them more and more as our journey becomes increasingly familiar.

The use of these elements in the process of design is summarised by Lynch in the use of general physical characteristics.

> *"These are the categories of direct interest in design, since they describe qualities that a designer may operate upon"* (Lynch, 1960).

They comprise:

- *Singularity* or figure-background clarity: sharpness of boundary enclosure; contrast of surface, form, intensity, complexity, size, use, spatial location.   The contrast may be to the immediate visible surroundings, or to the observers' experience.   These are the qualities that identify an element, make it remarkable, noticeable, vivid, recognizable.

- *Form Simplicity:* clarity and simplicity of visible form in the geometric sense, limitations of parts.

- *Continuity:* continuance of edge or surface; nearness of parts; repetition of rhythmic interval; similarity, analogy, or harmony of surface, form or use.

- *Dominance:* dominance of one part over others by means of size, intensity, or interest, resulting in the reading of the whole as principal feature with an associated cluster.

- *Clarity of Joint:* high visibility of joints and seams; clear relation and interconnection.

- *Directional Differentiation:* asymmetries, gradients and radial references which differentiate one end from another; or one side from another; or one compass direction from another - used extensively to structure at the larger scale.

- *Visual Scope:* qualities which increase the range and penetration of vision, either actually or symbolically (e.g. vistas, panoramas, articulating elements, concavity, etc.)

- *Motion Awareness:* the qualities which make sensible to the observer, through both visual and the kinesthetic senses, his own actual or potential motion.

> *"Since a city is sensed in motion, these qualities are fundamental"* .... And are used as structuring elements.
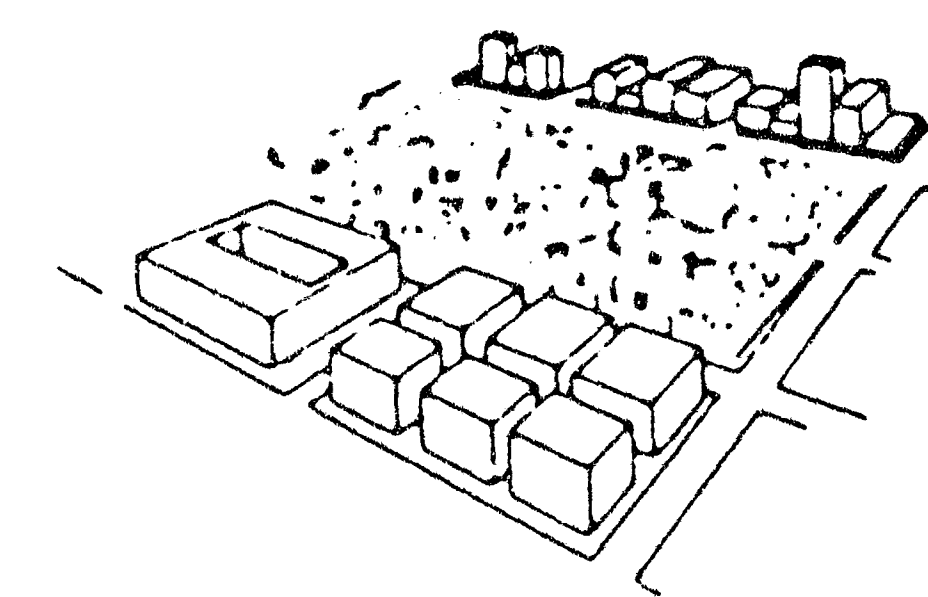

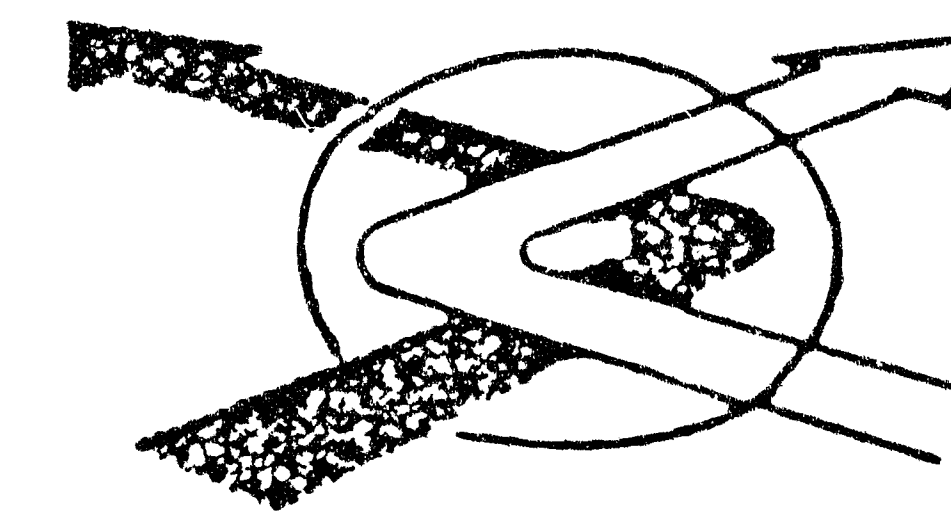**Figure 5-13:   Districts, Source: Lynch, 1960:47**

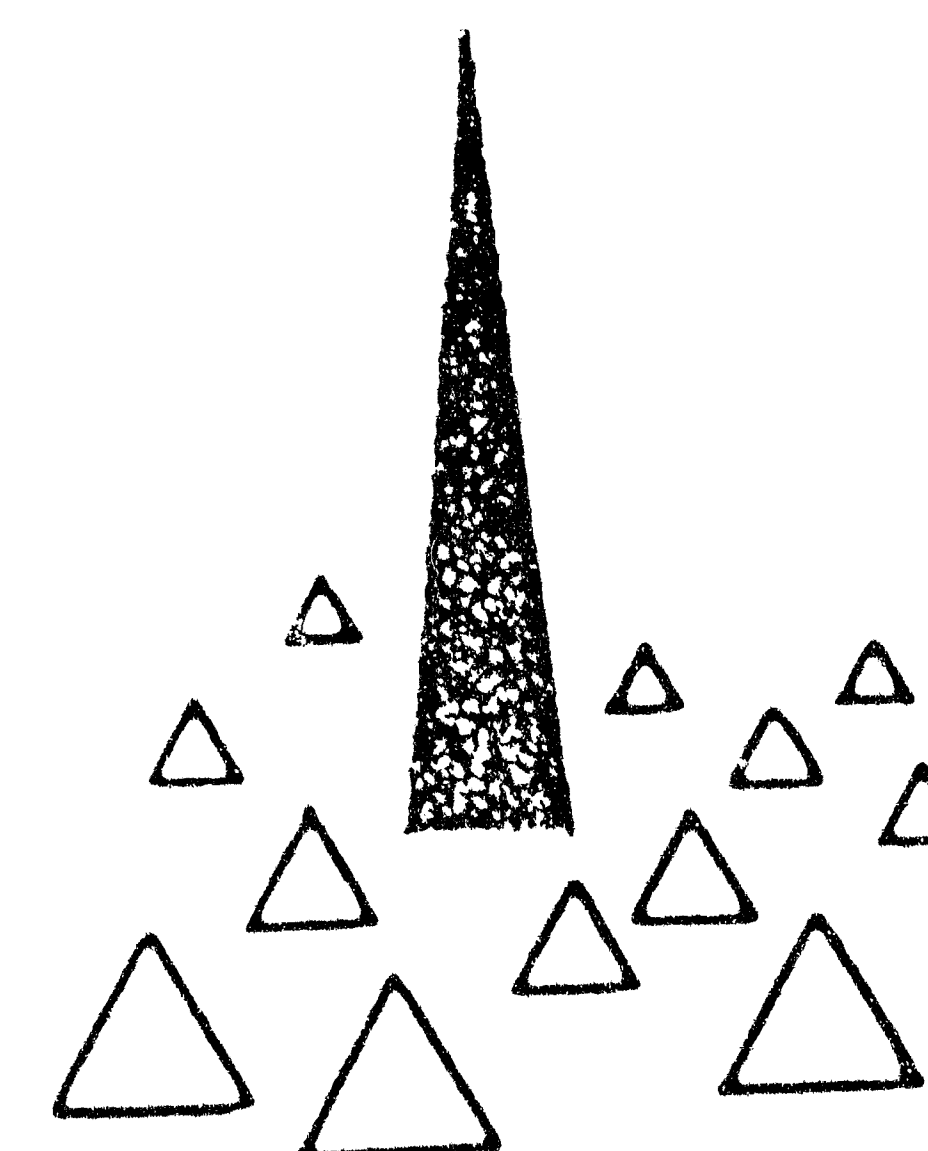**Figure 5-14:   Nodes, Source: Lynch, 1960:47**

Figure 5-13:   Landmarks, Source: Lynch, 1960:48

- *Time Series:* series which are sensed over time, both simple item-by-item linkages and those melodic in nature.

- *Names and Meanings:* non-physical characteristics which may enhance the imageability of an element (e.g. names, but also meanings and associations based on social, historical, functional, economic or even individual aspects).

The above qualities are interrelated and overlapping. The various element types require to be interrelated to form a whole.

In conclusion, Lynch (1960) contends that

"Above all, if the environment is visibly organised and sharply identified, then the citizen can inform it with his own meanings and connections. Then it will become a true place, remarkable and unmistakable".

A further element has been added to Lynch's elements by Crane (1960), the *gateway*, followed by Thiel (1961), the *port*, and by Norberg Shulz (1971), the *gate*. A special type of "break" in an edge, denoting the transition from one area to another. A place from where a new vista is perceived, or which specifically distinguishes the transition through physical demarcations, manmade or natural features.

Th approach of Lynch has proven effective in designing fc the imageability and legibility (ease of way finding) in the urban environment and buildings. The incorporation of these urban elements enables vic organisation of the city environment, as well as place making (refer **Figure 5-16**). However, they were not intended, nor can they be the basic elements of form that deal with all aspects and issues of designing the urban public environment (Lang, 1994). The latter is achieved in Lynch's seminal work entitled "A Theory of Good City For ".

5.4.10(ii)   A Theory of Good City Form

Lynch (1931) establishes in this text a general statement about

"the good settlement, one relevant and responsive to any human context, and which connects general values to specific actions. ... between human values and the spatial, physical city ..." (Lynch, 1981:1).

Lynch's (1981) "statement" is a normative theory that outlines what a good city should be. It is based on assumptions of how a city works. This makes his approach "partial", but then he contends his approach is

"... as partial in its way, then, as the prevalent functional theories so unconsciously are in their own peculiar ways" (Lynch, 1981:2).

Lynch contends, there had been no systematic effort to state general relationships between the form of a place and its value, states Lynch. He argues that there are general goals, which can be only achieved through performance dimensions. The latter are

"... certain identifiable characteristics of the performance of cities which are due primarily to their spatial qualities and which are measurable scales, along which different groups will prefer to achieve different positions" (Lynch, 1981)

These performance dimensions are very general and should therefore be important for most persons and cultures. Ideally the dimensions should also include all the qualities which any people value in a physical place. However, the latter was considered too a severe criterion. Lastly the performance dimensions should, as far as possible, embrace all the issues of form.

From the broad criteria, Lynch formulated the following five basic *performance dimensions* (refer **Figure 5-17**):

a. Vitality
The degree to which the form of the settlement supports the vital functions, the biological requirements and capabilities of human beings - above all, how it protects the survival of the species (includes aspects such as sustenance, safety, consonance, health, and stability of the ecological community);

b. Sense
The degree to which the settlement can be clearly perceived and mentally differentiated and structured in time and space by its residents and the degree to which that mental structure connects with their values and concepts - the match between environment, our sensory and mental capabilities, and our cultural constructs.

c. Fit
The degree to which the form and capacity of spaces, channels, and equipment in a settlement match the pattern and quantity of actions that people customarily engage in, or want to engage in - that is, the
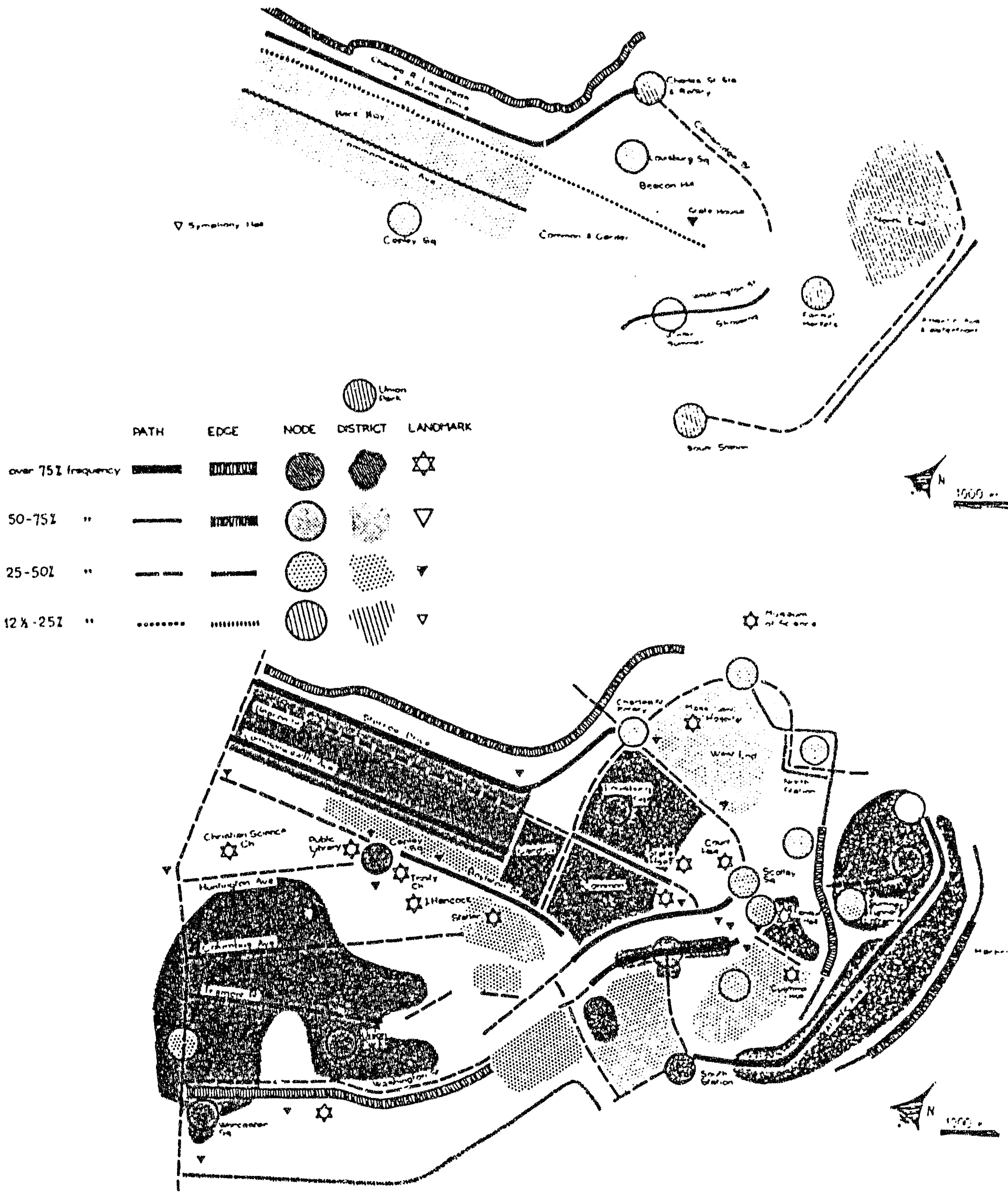

Figure 5-16:   The Distinctive Elements and Visual Form of Boston, Source; Lynch, 1960:146

		Vitality	Sense	Fit	Access	Control
Society is:	rich	important for both, but	generally more highly valued	easier to achieve but more complex future fit less critical	substitutes available; diversity is valued	
						important for both
	poor	more critical where margin is narrower	but symbolic meaning valued even when poor	simpler but more critical	crucial, especially to basic resources	
Society is:	homo-geneous		easier to achieve	easier to achieve	less important?	less impc ant?
	hetero-geneous	important for both	more difficult, but richer	more complex	important to avoid alienation	important
Society is:	stable	easier to accomplish	easier to achieve	easier to achieve	less important	less important
	unstable	more difficult to maintain	more difficult	present fit more difficult to maintain; future fit is crucial for survival	crucial for survival	crucial
Society is:	centralised	easier to attain via standards and technical knowledge	used to express and support dominance	less likely to be achieved; formal adaptability is valued	critical for control	local control suppressed
	decentral-ised	more difficult to achieve except via stable customs	expresses diversity	more likely to be achieved; manipulability is valued	less critical	local control favoured

Figure 5-17:   Hypothetical application of the Performance Dimensions to Varying Social Conditions, Source: Lynch 1981:234

adequacy of behaviour settings and linkages, including their adaptability to future action.

d. Access
The ability to reach other persons, activities, resources, services, information or places, including the quantity and diversity of the elements which can be reached.

e. Control
The degree to which the use and access to spaces and activities, and their creation, repair, modification, and management are controlled by those who use, work, or reside in them.

Further Lynch adds two meta-criteria to the principal dimensions of settlement quality. They are:

f. Efficiency
The cost in terms of other valued things, of creating and maintaining the settlement, for any given level of attainment of the environmental dimensions listed before.

g. Justice
The way in which environmental benefits and costs are distributed among persons, according to some particular principle as equity, need, intrinsic worth, or power.

Justice is the criterion, which balances the gains among persons, while effectiveness or efficiency balances the gains among differing values. These meta-criteria are distinct from the five criteria that precede them. First, they are meaningless until costs and benefits have been defined by specifying the prior basic values. Second, the two are involved in each one of the basic dimensions, and thus they are by no means independent of them. They are repetitive sub-dimensions of each of the five.

Lynch (1981:119) states that
> "… these five dimensions and two meta-criteria are the inclusive measures of settlement quality".

Groups and persons, although they will value different aspects of them, and assign differing priorities to them, will be able to judge the relative goodness of their place, and would have the clues necessary to improve or maintain that goodness. All five can be defined, identified, and applied to some degree, and this application can be improved (Lynch, 1981:119).

Lynch in a way attempted the impossible in "good city form". The reason being that cities are too complicated, too far beyond our control, affect too many people and are subject to a wide variety of cultural variations to allow a rational answer. However, he argues the fact that decisions about urban policy, or the allocation of resources, or where to move, or how to build something, must use norms about good and bad. Values, even if they are short- or long range, broad or selfish, implicit or explicit, are an inevitable ingredient of decision-making. Undoubtedly Lynch's contribution has been invaluable to urban design and the making of liveable urban environments.

The approaches of various urban designers, practising in the South African context, are briefly reviewed, as it is considered that they have made relevant contributions to urban design practice, in particular Dewar and Uytenbogaardt.

5.4.11   STEVEN THORNE (URBAN SOLUTIONS)

Thorne (1995) adopts a framework approach. A framework is exactly what it implies, a framework within which various development options can be evaluated. It is a set of guiding principles, images, and policy suggestions established in order to achieve a holistic vision and approach to the development of land. A framework is only successful if it is able to adapt to changing conditions.

The principles underpinning an urban design framework approach within the South African context are:
- Development should be directed within the broad outline of "compact city" solutions, for social, economic and ecological benefits derived from this approach to land development.
- Primary land uses (residential and commercial) should be integrated, and not separated by zoning. This applies on individual sites as well as between sites. "Good mixed-use town" is the objective, promoting a mix ranging from employment, recreation space, public transport, education, culture and other city functions.
- A democratic spatial system giving people easy access to the facilities of the city must be developed and protected. The grid is the most democratic structure, as it gives greatest choice of

movement and increases the permeability of the urban environment.
- The relationship between urban components and the "movement lines" (the full range of modes) within the environment determines the location and structuring of activities, uses and functions. Thorne (1995) bases his work on "The Social Logic of Space" (Hillier, 1983), namely that there is a social logic to location within the urban system in direct relation to the movement system, which a development framework must anticipate and incorporate.
- People should be empowered by the city structure, by making all basic needs accessible within five minutes walking distance from where they live. This is achieved by structuring urban form and integrating the various land-uses. It empowers the young, the elderly, many women and those without access to private transport to partake in the full experience of urban life.
- Public transport provision should form a focus in urban environments, because it promotes the sustainability of living environments.
- The detailed design of the public realm must be such that it promotes social, cultural, ecological and economic sustainability in any given area, enabling an overall better living environment.
- The improvement of security is an important component, and is based on the concept of "Security through Community" as opposed to "Security through Isolation".
- The relationship of land use to line of movement is critical to the proper functioning of the city.
- The integration of isolated and disconnected areas into the wider spatial and functional urban system is a primary objective. Local development is directed by viewed in terms of it's contribution to the regional objective

Specific objectives in the South African urban township context are:
- To provide a coherent, holistic vision of integrated and sustainable development.
- To achieve a high level of consensus through following an inclusive people-driven process.
- To integrate the urban mix (including existing land uses) in such a way as to provide social, economic and ecological sustainability.

This environment requires to be balanced in terms of the ability to attract developer finance, provide job opportunities, exchange opportunities, public open space, green space, recreation facilities, and a liveable residential environment.

- To correct the distorted spatial pattern of the apartheid city by reversing separation and creating regional benefits from a local area development vision.

- To provide a strategic planning tool to evaluate present development proposals in the context of a long term vision.

- To establish parameters and guiding principles to development.

- To develop urban form that is more democratic in that it empowers people to access the city and its facilities, rather than be separated from these.

- To identify and optimise the development opportunities which exist in this strategic area, and link these to reconstruction initiatives closely related to the described needs of Participants and Stakeholders.

- To identify key "early start" initiatives and interventions.

- To identify development options related to key strategic interventions.

(Source: Thorne, 1995)

5.4.12 ERKY WOOD (GAPP ARCHITECTS AND URBAN DESIGNERS)

Through the work encompassed in "An Interim Strategic Framework for the Central Witwatersrand" (1993), Wood identifies a number of parameters, which must be taken cognisance of in a spatial development framework within the South African urban context. The latter comprises dysfunctional urban environments, being inequitable in terms of access to opportunity and unsustainable in terms of environmental, social, capital and operating costs. To turn around this situation, a complex city structure should be sought, focusing primarily on making sense of existing patterns, integrating disadvantage and accommodating accelerated growth. The advantage in the situation is the high level of existing infrastructure investment within South African urban environments, and the inherent capacity to get more out of these systems (albeit that in some areas these have greatly deteriorated). In this context, the parameters are:

- A response to and addressing the *geography of poverty* as the basis for urban re-integration.

- An understanding, consideration and incorporation of *post-apartheid spatial dynamics* whereby communities were forced to establish coping mechanisms and social networks that glue much of the urban society together.

- *Mixed use activity nodes* are the primary indicators of where urban systems are healthy and working well. They need to be encouraged, consolidated upon and nurtured as anchors of the urban system.

- *Activity spines* have historically been the basis on which local economies form and collectively define the logic of the overall urban economy.

- Where activity spines act in concert with more complex sets of movement routes (both public and private transport related, with a range of high-order movement systems) *urban corridors* become the backbone of urban structure.

- *Accessibility* must be an essential basis for restructuring ensuring that due attention is paid to capitalising on existing infrastructure, linking routes through disadvantaged areas and predicating future urban patterns on sensible and sustainable public transport.

- The *existing patterns of the urban economy* must be enhanced and encouraged to work more effectively, the pattern of the urban system should be consolidated around these and linked back into areas of disadvantage. Thus close proximity to work opportunities is an important factor; and related are the walking distances to such work opportunities or alternatively affordable public transport.

- The *pattern of social installations* highlights where spare capacity exists, where provision is inadequate and thus how wider urban consolidation patterns must shift and remedial intervention must be directed.

- *Discontinuities in the urban fabric* create dislocations in the urban logic, exacerbate marginalisation and separate whole sectors of the system and yet define areas of opportunity, as the reasons for discontinuity decline and are overcome.

- Existing *patterns of infrastructural investment* indicate where capacity exists, where additional capacity can be achieved with marginal input and where infrastructure is inadequate or non-

existent. This directs how urban consolidation must take place and where remedial programmes are most acutely required.

- The *environmental resource* (and in particular open space) of regions and sub-regions must create as prominent a spatial structuring element as the movement system and provide a basis on which sensible and sustainable intensification, compaction and densification of the urban system takes place.

- Broad *patterns of geotechnical constraint* are instructive in establishing wider patterns of urban structure yet need to be understood at more local levels as well with regard to which areas can be safely and efficiently used to achieve wider restructuring intentions.

(Source: ISF, 1993)

Within this context Wood (1993) identifies the following principles with regard to urban restructuring:

a. The need for intensification, densification and infilling of the existing urban pattern:
Ensure that the existing pattern of development becomes more intense and fills in well-located but under-used pieces of land close to the mainstream of urban life, in particular the close proximity to employment opportunities.

b. The judicious assimilation of vacant land into the urban system:
Bring additional vacant land into the logic of the existing urban system judiciously and use the development of this vacant land to shape a coherent city form.

c. The upgrading and renewal of those parts of the urban system that are under stress:
Embark on a programme of upgrading living environments that are inadequate in terms of shelter, services and social facilities, address areas of existing and potential urban blight, and integrate areas that have previously been excluded from the urban system as natural extensions of the system.

d. Reinforcing the urban economy and promoting those spatial patterns that enable complex networks of urban opportunity to

develop:

Ensure that initiatives reinforce the objective of creating complex urban activity patterns in which economic opportunity is spawned, nurtured and underpinned with social infrastructure and housing options.

e.   Making more of the existing investment in transportation and directing future investment in this regard:

Follow development policies based on reducing the need to travel, making better use of existing and upgrading transport infrastructure, and ensure that further investments in transportation promote a coherent city form.

f.   Making more of the existing patterns of investment in service infrastructure and directing future investment in this regard:

Follow development policies based on making better use of existing investments in social facilities and service infrastructure, and ensure that further social facilities and service infrastructure are provided in a sustainable manner.

g.   Ensuring the provision of balanced and integrated community planning and social development:

Follow balanced and integrated community development policies that make better use of the capacity in existing investments in social infrastructure and ensure that further facilities provision is based on eliciting maximum benefit for the resources invested.

h.   Ensuring that all development leads to an urban system predicated on a quality of life achieved within a sustainable environment:

Reserve, as an integral part of the urban system, a cohesive system of open space that preserves the strategic needs of a growing urban population together with an environmental management framework that embodies sound ecological principles of upgrading, resource usage and sustainability.

(Source: ISF, 1993)

5.4.13   DAVID DEWAR AND ROELOF UYTENBOGAARDT (URBAN PROBLEMS RESEARCH UNIT, UCT)

The urban design practitioners that have risen to the greatest prominence through their work in and approach to the South African urban context (in both theory and practice) are Dewar and Uytenbogaardt, through their establishment of the Urban Problems Research Unit at the University of Cape Town.

In "South African Cities: A Manifest for Change" (1991) Dewar and Uytenbogaardt set out their urban design approach.   Many of Crane's principles are brought to bear in the South African context, in particular theories from "City Symbolic", the "City on Wheels", and "The City of a Thousand Designers", primarily because Uytenbogaardt had worked with David Crane in Philadelphia.

In the assessment of the typical South African urban environment, Dewar and Uytenbogaardt (1995) state that they are:

- coarse grained environments reflecting the uncompromising rigidity and simplicity of the engineering projects which determined their form and structure;

- human and social concerns which have informed the making of these environments are not evident, and

- conclude that

"... there is no (or limited) evidence of the complexity which is the hallmark of positively performing environments" (Dewar and Uytenbogaardt, 1995: 4).

The cause of this, Dewar and Uytenbogaardt (1995:4) argue, are in part the

"relentless historical applications of the ideological principles of apartheid",

which have exacerbated the urban problems in the South African context.   The core of the problem are the principles of the conventional modern town planning approach, which inform and direct the planning, development and growth of South African urban environments.

The inappropriate planning approaches also do not assist in remedying the urban problems being brought about by urbanisation and rapid urban population growth; in fact the problems emerging from the latter

are being exacerbated. Furthermore, the dominant demographic growth trend in South Africa is increasingly toward a younger and impoverished urban population. The implications of this "urbanisation explosion" in the major cities are high levels of poverty, illiteracy, unemployment and inequality.

Dewar and Uytenbogaardt's manifesto is to create qualities of "city" as opposed to "suburbia", because suburbia is considered to be an imported city building concept that is dependent on expansive areas of land, private cars and other expensive, resource wasteful technologies that are inappropriate in the South African context. In addition current planning solutions that are based on the first world context have failed and are inappropriate in the context of developing countries such as South Africa. They are based on concepts of:

- The "good life" is based on an anti-urban orientation, promoting sub-urban, as opposed to urban, values.

- The belief that technology is the end all and be all. It will set society free, both from material shortcomings and all other human ills that have emerged.   This assumes that technology is available in the first place and that it is equally accessible to all.

- Urban development focused on the free-standing object in space, instead of the collective public environment.

- The emphasis on planning was on the parts and <u>not</u> on the whole, characterised by

"escalating levels of specialisation in terms of the disciplines associated with the built environment.   The essential realisation that the quality of settlements is determined by how the parts are brought into relationship with each other has been forgotten" (Dewar and Uytenbogaardt, 1995:5).

Dewar and Uytenbogaardt's approach is based on two pillars.

The first is humanist, as the art of urban planning and urban design is concerned with the making of human settlements (Dewar and Uytenbogaardt, 1991).   These should be of high quality that enriches the living conditions of all people (both rich and poor).   They are enabling environments encapsulating timeless qualities that positively accommodate the lives of people and successfully meet human needs.

The second pillar is that of a "conservation ethic", in the broadest sense of the term, encompassing three principles:

- *"The first is that of dynamic balance ... between man's activities and the resource base upon which those activities take place. In any human action on the land, there are ecological considerations and determinants which must be respected"* (Dewar and Uytenbogaardt, 1991:13).
- The second is that of "regionalism", which recognises

    "... the inextricable interdependence between the characteristics of place, people's activities in that place and the emergence of cultural expressions and forms" (Dewar and Uytenbogaardt, 1991:13).
- The third is that of a

    " ... sensitivity to resources and the need to utilise these wisely" (Dewar and Uytenbogaardt, 1991:13).

The approach of Dewar and Uytenbogaardt (1991) is structured on four sequential concepts of *need, programme, idea* and *context,* that

"... derive from the methodological sequence which underpins any physical design decision ....." (Dewar and Uytenbogaardt, 1991:15).

a.   Need

This refers to human needs and requirements, of which there are four sets, that

"...are particularly important and which need to inform fundamentally the management of growth" (Dewar and Uytenbogaardt, 1991:16).

- *Urban Generation* – Enabling the urban system to generate the economic, social, cultural and recreational opportunities and facilities which are expected from its inhabitants.
- *Access* – Enabling ease of access by inhabitants to the urban opportunities and facilities, both in a spatial and a-spatial context. The spatial context is the cost of physically overcoming the friction of distance. The least costly is movement which

    "should define the primary scale of development" (Dewar and Uytenbogaardt,1991:17),
- Public transportation and compaction of the urban system in order to make the former viable.
- *Promotion of Collective Activities and Contact* – This relates to the need of enabling social contact and interaction. Promoting through management and appropriate design collective activities, social ties and networks and more intensive cities, assists in meeting this need.

- *Individual Needs* – Meeting individual people's needs such as physical needs, social needs, psychological needs and sensory needs.

b.   Programme

Programme develops out of need.

"It establishes some of the constraints within which ideas must be developed and reflects an expression of the nature of environments within which urban life must be lived" (Dewar and Uytenbogaardt, 1991:15).

There are two levels of programme that are identified, *performance expectation* and *urban qualities.* The latter can be elicited from the human needs and requirements that must be achieved through urban development. The focus of urban design should be on *urban quality* and *performance expectation* should play the secondary, supportive role, never the leading role. The *urban qualities* that should be sought, Dewar and Uytenbogaardt (1991) argue, in order to form the critical base in terms of which urban plans and urban design proposals are to be evaluated, are:

- *Balance* – First, the balance between "society and cosmos", a concern with wholeness.

    "Integral to this quality is a sense of "place": a recognition and a celebration of the natural, cultural and historical uniqueness of different places and times. It is this uniqueness which provides cognitive landmarks to the users of those environments" (Dewar and Uytenbogaardt, 1991:18)

    Second, the balance between the settlement and nature, ensuring that people have access to nature and that human actions and activities are compatible with and sensitive to the natural environment. Third, the balance between urban opportunities, affording people easy access to the full range of activities, facilities and services that urban life affords. The latter informs the level of urban performance:

    "... the way in which urban structure (the primary elements of which are places, spaces and channels of movement) accommodates, promotes and enhances the activities and events which define urban life" (Dewar and Uytenbogaardt, 1991:19).

- *Freedom and Complexity* – Designing for opportunity that enables the interplay of structured public actions and freedom of individual actions. As a result those environments that perform successfully are complex.

"They contain a variety of overlapping conditions and activities, they provide the opportunity for the spontaneous and the unexpected to occur, and they accept conflict" (Dewar and Uytenbogaardt, 1991:20)

- *Equity* – Positive urban environments are equitable. They enhance and promote urban activities and the processes of urban life such that all people have equitable and easy access to the full range of urban opportunities, in a manner that that no individuals or groups are unfairly advantaged or disadvantaged over others (Dewar and Uytenbogaardt, 1991).

- *Intensity and Diversity* - Positive environments are characterised by intense and significant population support and a wide diversity of activities and functions. The aim is to enable an appropriate intensity of development that achieves the required convenience and viability.

- *Integration* – Positive urban environments have a high degree of integration and interdependence between different precincts and elements of the urban environment (Dewar and Uytenbogaardt, 1991). This is enabled by establishing a mix and overlap of activities and locational synergy, i.e. activities and facilities differ but complement one another and derive mutual benefit from location in close proximity.

- *Continuity* - To develop a continuity in the urban fabric, as opposed to fragmentation; particularly with regard to the housing / residential fabric, and the continuity of the public environment by ensuring that built form defines and encloses streets and public spaces.

- *Clarity* - Positive urban environments express clarity in two facets:
    - Structural clarity, i.e. being easily legible to users and sending clear and unambiguous signals to decision-makers.
    - Clarity of definition of the interface between public and private space. This definition

        "determines the degree to which public activities impose on private space and it affects patterns of responsibility for the maintenance of space" (Dewar and Uytenbogaardt, 1995:14).
- *Community* – Positively performing urban environments enable the development of community , through:
    - fostering social interaction through appropriately designed places, which affect processes of urban socialisation, sense of identity and richness of urban experience (Dewar and Uytenbogaardt, 1991);
    - assisting in the development of social ties; and

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