AN URBAN RESIDENTIAL QUARTER. WARWICK TRIANGLE. DURBAN

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ABSTRACT

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This thesis is not to be viewed as the solution to the so called "housing problem" in South Africa, or even in Durban, nor does it propose a definitive plan for the Warwick Triangle. It is, rather, an attempt to examine the opportunities that exist for the creation of a viable urban residential quarter that is not only rich and whole in itself, but contributes in some way to the richness and wholeness of the city. In pursuit of this I have looked at city-building, and housing in particular as an important part of city-building, as a process that is infinite and have tried to propose a development that facilitates this process and harnesses the creativity and resources of individuals in the making of urban environments.

It is important to note that my concerns are equally to do with the problem of creating urban housing that works and is appropriate, and that of making a positive contribution to the public realm. No urban development should be seen in isolation (it is that selfish attitude that has caused the barrenness of many urban centres) but as part of a growing organism, the city, where each organ has a part to play in the performance of the whole, and interdependence means that no part flourishes at the expense of another.

The proposal that results from these concerns, is for a high-density multi-use development. It is predominantly a residential development but includes shops, workshops and community space. These provide amenity, employment opportunities and reduce the potential for isolation of individuals living in the development. A reassessment of the housing process to include user participation and a mixture of ownership and rental opportunities ensures that residents can express their own identities as opposed to the facelessness of mass-housing schemes.

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PREFACE

"Cities are not designed by making pictures of the way they should look twenty years from now. They are created by a decision making process that goes on continuously, day after day. Instead of handing over city designs as an ostensibly finished product, designers should seek choices that shape the city within a framework that can be modified as times, and needs, change"

(J Barrett, GAPS, PLANNINIG March 1987.)

We are on the threshold of a new humanistic age, and after ten years of life in an intensely material world we are witnessing a swing away from a media-monoculture where greed is good and individuality of place is sacrificed to the urban sprawl, traffic congestion, urban motorways and mediocre and uniform architecture. There is growing world-wide environmental consciousness and an increased interest in the city as the centre of cultural life.

All over the world politics are more exciting than ever and reflect the changing attitudes in other areas. The dictatorships of Eastern Europe and South America have been dismantled and negotiation is the order of the day. Although the Middle East seems on the brink of war there is a new reluctance on the part of the super-powers to leap into the fray.

For South Africans this is a time of new hopes and new fears. No-one knows what will happen next, but we can be sure that the violence will not abate immediately, that urbanisation, and thus the urban housing problem, will continue to increase, and that demand for limited resources, especially land, will also increase.

Modern critics of town planning say that le Corbusier and the Modernists have a lot to answer for in laying down some of the first principles of modern town planning which favours rigid comparmentalisation and location of activities on the basis of function. These principles have been taken up with a vengeance resulting in cities where housing, industry, commercial areas and green spaces are separated and linked by huge transport networks. Exclusive suburbs have stimulated commuter traffic which is the root of many environmental problems that we must deal with today.

This problem is heightened in South Africa because most of the city's labour force has been forced to live on the periphery, necessitating massive commuting every day. Although environmental problems are not as obvious in their manifestations in South Africa as in Europe and America, there is still good reason for concern. Increasing urban residential accommodation close to existing employment opportunities, and proposing mixed use developments that create accommodation and employment opportunities together, are both strategies that can contribute to the reduction of pollution caused by vehicles. Needless to say and obvious spin off is the conservation of fuel resources.

The apartheid city has precluded the development of dense urban residential sectors as the urban poor are located forcibly on city peripheries either in suburban townships, or as informal dwellers or squatters at odds with the authorities in under serviced overcrowded environments. Urban residential accommodation that does exist caters either for a wealthy elite, a migrant labour force in singles hostels or, like Hillbrow in Johannesburg or Albert Park in Durban, houses middle to low-income residents, in spite of state efforts to prevent this. These examples have been cited as examples of what would happen if the Group Areas Act were scrapped, i.e. cities would become slums. The truth is that these areas were never meant to cope with the overcrowding that occurs as a result of pressure for urban accommodation, and inadequate services just break down.

It is important to note that people would still prefer to live in these slum-like conditions, with constant threat of eviction, to peripheral areas with better living conditions but fewer amenities and removed from employment opportunities. The only way to begin to solve some of these problems is to provide more urban housing, and the only way to do this and avoid urban sprawl, is to increase the density and flexibility of urban developments.

Increasingly, zoning is seen as inflexible, preventing the city from adapting to changing conditions, and there is growing tendency towards diversity of buildings and multiplicity of use. One of the most important architectural debates is to do with regionalism and an awareness of the importance of the uniqueness of place, and place-bound traditions, in creating environments that have meaning for the people who use them.

It is a result of an ongoing interest in the nature of cities, and a conviction that it is people who make cities vital, that I have chosen this rather unorthodox subject for my thesis. Housing does not lend itself to heroic architectural responses and I have not chosen to use a prominent site, both typical criteria for thesis subject choice.

My concerns are more basic, and I believe in our context, more relevant.

1) I am attempting to intervene in, and thus stimulate the repair of, a blighted urban area.

2) I am concerned with the protection and reinforcement of an existing residential community and the existing residential character of their neighbourhood.

3) I am particularly interested in the challenges involved in designing high density urban residential accommodation that responds sensitively to the various physical and metaphysical needs of its inhabitants.

"The fundamental message of architecture in the very basic existential expression : how does it feel to be a human being in this this world?"

(J Pallasmaa,AR May 1988)

INTRODUCTION

Durban already has a massive housing shortage, and is said to be one of the most rapidly growing cities in the world. Of its total population of around 3000 000, half of these live in informal or squatter settlements which are overcrowded, under serviced or unserviced and constantly under threat because residents have no security of tenure. A large proportion of the other half live in official townships such as KwaMashu which are also overcrowded, under serviced and removed from job opportunities. In the city there is a shortage of accommodation, even for those privileged enough to be allowed to live there, especially at an affordable level.

In a changing South Africa, hopefully without the restrictive Group Areas Act, already rapid urbanisation will increase and land as a resource will be at a premium. Housing, and most urgently inner city housing, is a key issue to be addressed and existing models for the provision of housing must be reassessed.

"The apartheid city must be turned inside out". (RRH 1990)

Although the concept of urban social housing is a familiar one all over the world there is no precedent for it in South Africa. Apartheid laws have negated the need for it as those who would otherwise form a large part of the target group for such programmes have been denied the right to live in the city.

It is these economically weaker sectors, including students and young people just starting out, of all population groups, that I have identified as my target market. This has led me to the choice of the Warwick Triangle - a metropolitan area close to the CBD, market-place (or informal CBD), major public transport networks and tertiary education institutions as an area of concern. There is land available there for development and a small but organised existing residential community. Their main concern is that the area should retain its residential character, (although it is accepted that higher densities are inevitable), and that they do not find themselves displaced i.e. overall gentification is to be discouraged.

I have dealt firstly with the issue of urban design and repair. If the modern approach to town planning is rejected as unsuitable an alternative is sought that allows growth to be spontaneous and opportunistic and yet preserves some ssense of order over all. I have examined David Dewar and Roeloff Uytenbogaardt Study of urbanism in Cape Town, and Christopher Alexanders' urban design theories in some detail here.

In Chapter Two I have looked at housing specifically, and have tried to suggest ways of stimulating the creation of residential environments where inhabitants are not excluded from the process.

The following chapter contains precedent studies in order to understand some of the criteria for the design of sensitive, humane housing.

Chapter Four deals briefly with the expression of the building and explores the notion of place bound architecture.

Chapter Five sets out some possible financing and implemenatation strategies and outlines a scenario that could apply to this project.

Chapter Six is a detailed analysis of the chosen site, including reasons for this specific choice.

Chapter Seven is a conclusion in that main aims and objectives are outlined and the findings of preceding chapters assimilated to form a brief.

The design and technical reports at the end of this document give an indication of the design processes followed and explain the principles behind the eventual decisions made.

CHAPTER ONE : TOWARDS WHOLENESS AND URBANITY

"Creating a development framework"

"Essentially the problem to be addresses is how to prepare a development framework that is robust enough to establish directions, instil confidence and elicit critical development responses, yet remain flexible enough to change through time, recognise new ideas, and exhort designers to greater heights of creativity"

(GAPS, PLANNING March 1987)

INTRODUCTION

The term wholeness is to be read with both its meanings : healed or sound as well as complete or undiminished.

"Urbanity is the generic term used here for those positive qualities which exist in urban areas. It is the quality of urbanity which distinguishes rich urban environments from urban agglomerations; the quality of 'cities' from 'suburbia'."

(Dewar and Uytenbogaardt)

These qualities, which cause cities to be enriching in our experience of them, are generally missing in modern cities. Current planning is preoccupied with the creation and implementation of plans and regulations. Growth is not opportunistic and unpredictable but rigidly controlled by preconceived notions and a contrived and over-simplified orderliness. Functional zoning regulations causing the development of unintegrated parts, are only one example of this. What is needed, and is usually found in unplanned urban areas, is a deep underlying order that can accommodate change and yet still be coherent in a way that is meaningful. Cities are complex things and must be dealt with in four dimensions, time, the fourth, being at least as important as the others.

Environments that are enriching and pleasant to experience are usually those that have grown out of a slow process of development and change in an unplanned way. These environments are never static but constantly changing, allowing, and indeed stimulating, people to accommodate their changing needs, express themselves in their individual ways and to use their own energy and creativity to enrich and improve their lives. The best of these environments have a quality of timelessness, layers of history showing adaptation to suit different generations, cultures and technologies and adding to their richness. It is this process that creates the quality that we call urbanity.

The process of city building cannot be completely arbitrary if legible, meaningful environments are to be created. This is especially important in the light of our consumer culture where everything is motivated by profit. Developers have little time for older structures that, although they may make a valuable contribution to the city's character and to the public realm, do not maximise development potential. Architects, pandering to consumer demands, create buildings that shriek out in their ignorance of their place in the city, creating a cacophony of "notice-me, notice-me". We do notice them but we also notice the death of the city as a civic place where the focus is on people living out their lives.

In order to avoid this destruction and to heal some of the damage already done, there needs to be some kind of guiding principle. Christopher Alexander (1987) says that wholeness must come from the process so that each new act of construction becomes related in some deep way to what has gone before. The whole created should be comprised of different parts in such a way that parts are whole in themselves but are integrated in subtle and complex ways that reinforce the total.

This means that city building must be approached as a process with a single goal : the creation of whole and timeless environments. It is easy for some aspects to outweigh others unless there is this goal, for example : modern cities are unreasonably biased towards the accommodation of vehicular traffic to the — detriment of other important functions. This goal is especially important then, where specialists with more and more knowledge about smaller and smaller parts are involved. A preoccupation with a special area may mean that the essence of the whole is lost.

In South Africa, and especially Durban, where urbanisation is rapid and increasing, and the imminent abolition of the Group Areas Act puts even more pressure on cities to expand, it is increasingly important to find ways to get the balance right. Undeniably there is too much pressure, for the growth process to be slow but this does not mean that future developments cannot contain elements that allow the process to be ongoing and eventually create the qualities we seek : timelessness, urbanity and wholeness. Enormous demands on resources means that input by individuals should be encouraged to allow for wider distribution of available resources.

In the Warwick Triangle, where I have chosen to concentrate my attention, the notion of wholeness as healed and sound is particularly relevant. Years of uncertainty with regards the future of the area and resistance to racial segregation have taken their toll in large scale demolition which has left gaping open areas and a destruction of the urban character of the street scape. it is one of the main priorities of this project to stimulate the restoration of this street scape.

DEWAR AND UYTENBOGAARDT

In pursuit of some guidelines in achieving urbanity and timelessness in cities, David Dewar and Roeloff Uytenbogaardt undertook a comparative study of urban areas in Cape Town. Three older unplanned areas were compared with three newer planned areas. The examples were chosen because they were representative rather than unique. Because they (DD and RU) were looking for underlying principles which go beyond any single generation, present users were not consulted. The evidence of the built fabric was considered to be more "eloquent".

Generally it was found that, as suspected, the older unplanned areas performed better than the planned "construct based" areas. Reasons for this are outlined as follows :

i)   Integration into the broader metropolitan area: Unplanned areas are often the result of logical responses to major metropolitan movement routes eg. Old Main Road in Cape Town, that allow stop start movement along them. Intense activities locate themselves along these. The routes serve many areas therefore activities needing more support than the local community are still viable. Concentration of these activities here protects the rest of the area. Legibility, in terms of the whole city is increased and a **focus** for the neighbourhood is created rather than a barrier that divides it. Facilities are conveniently located for inhabitants.

Planned areas are conceived of as separate entities surrounded by perimeter routes that act as boundaries. Evolutionary development does not occur within as no advantage is to be gained by through traffic. Separatist development, based on the assumption that housing is incompatible with other functions, limits the experience of the inhabitants, dispersed activity requires more movement by motor vehicle which is expensive, inconvenient for non car owners (cars are increasingly a luxury item), causes increased isolation for women at home with children, and contributes to the deterioration of the environment. In short they are illogical.

ii)   Number of people involved: Unplanned environments are the result of many small acts by individuals over a long time. These actions are influenced by what has gone before and by new opportunities that arise. (i.e. they are the result of real constraints unique to each situation) and are largely self determined.

Planned areas are designed by a few so called "experts" using standardised rules and theories, often based on foreign precedent. (i.e. they are the result of artificial constraints) and are usually delivered to the inhabitants complete.

iii)   Interface definition: The definition of the interface between public, semi public and private affects the functioning of all these zones. Clear definition prevents encroachment and enhances mutual respect between public and private. This definition may be an implied rather than a physical barrier, indeed a level of permeability enhances the richness of the environment in terms of our experience of it.

Continuity of interface protects the urban space even if individuals change their private properties behind this.

Unplanned areas show integration of different types of residences and uses. Different interface relationships as responses to different complex relationships create enriching diversity. There is a balance between private and social space.

Planned areas usually have so much private space that the quality of urbanity is completely destroyed. The social space, which is the primary experience of the user, is dull even if individual houses are different.

iv)   Multi-functionality of spaces: In unplanned environments, where uses are mixed, spaces are not compartmentalised for specific functions but are made to respond to different requirements. For example a shopping street in a residential area is not just for shopping and vehicular movement. The street has a social role as well as place for social interaction and recreation. This may detract from the optimal performance of individual functions but the overall quality of the environment is better. Areas with planned uni-functionality are often inefficient, inhibiting and dull.

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It has already been stated that it is impractical to suggest that there is no place for urban design and that environments should be left to evolve. There is too much pressure on cities to expand quickly. The above observations do suggest however, that environments must be designed to be flexible and must allow opportunities for people to make environments their own. Diversity and richness result from individual ingenuity.

Too much individual freedom may cause the public realm to be destroyed whereas too many restraints are inhibiting to the point that individuals have no control, eg. many mass housing schemes where units all look the same.

In older unplanned areas, constraints were often in the form of technological and material limitations. This caused continuity throughout. These limits are far fewer now, and guidelines need to be set down in a loose and flexible way to promote this continuity yet allow individual expression.

It also makes sense that major infrastructural decisions are made by experts and laid down. It is important though, that these experts are aware of factors affecting the quality of urbanity. eg. a street pattern based on a grid provides greater variety of routes and environmental conditions than a ring road with small cul-de-sacs. If the grid is slightly varied the range of options is widened further.

The complexity of human activity and the spaces needed to accommodate these must be acknowledged. Physical standards must be replaced by performance standards, and a consciousness about place related potentials.

ALEXANDER'S SEVEN RULES

Christopher Alexander in "The New Theory of Urban Design" has attempted to formulate some rules for the generation of wholeness in the city. These fall under what he refers to as "the one rule" : "Every increment of construction in a growing city must be designed to preserve wholeness at all levels, from the largest level of public space to the intermediate wholes at the scale of individual buildings to the smallest wholes that occur in the building details."

There are seven rules under "the one rule" that help to make the application of this "one rule" feasible. These must be adjusted to local context and in a real situation they need further refinement.

i)   Piecemeal growth : Developments should happen incrementally and no increment should be too large. There should be a reasonable distribution of different sized developments and different functions. The mixture would vary from community to community.

ii)   The growth of larger wholes : Each larger centre in a city should have a definite history - it is hinted at by other preceding developments, its outlines are pinpointed and completion. Each new increment should help to complete one major centre already defined, help pin down some less defined centre and hint at some new possibility.

iii)   Visions : Every project must first be felt and experienced as a vision.

"But to the extent that your inner ear is accurate, to the extent that you can listen to what the project in its totality is calling for, you will produce something far more wonderful than anything you could dream of by trying to be original."

(Alexander, 1987)

iv)   Positive urban space : Every building should create coherent and well shaped public space. Urban space should not just be the space left over by buildings.

v   Layout of larger buildings : The main elements of the building, entrance modulating elements etc. should all be consistent with the position of the building in the street in the neighbourhood.

vi)   Construction : The structure of the building must generate smaller wholes in the fabric of the building.

vii)   Formation of centres : Every whole must be a centre in itself and must also produce a system of centres around it.

Alexander tested these rules in an experiment conducted with the help of some of his post-graduate students. An area of San Francisco was used as a case study and development simulated on a scale model. The results were not as profound as he had hoped :

"Profoundness cannot itself be a product of any rules ... it must, instead, simply be a product of the depth of spirit in the makers, in the builders."

(Alexander, 1987)

The "one rule" was reformulated as follows : "Every building increment must be chosen, placed, planned, formed and given its details in such a way as to increase the number of wholes which exist in space."

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CONCLUSION

In principle Dewar's and Uytenbogaardts' approach is very similar to Alexander's in that both approaches reject the practice of functional zoning and the application of rigidly formulated planning regulations. Both advocate a mixture of uses and development types and sizes and insist that the success of cities is to do with enriching our experience of them by allowing the process of development to occur in such a way that many individual acts contribute to a layering effect, the histories of urban areas will be read and will contribute to the greater legibility and coherence of the city.

I have approached the urban design of the Warwick Triangle in this way. It should not take the form of a finite and therefore inherently sterile proposal, but rather respond to the existing context, which already has some richness of its own, and promote further enrichment. I have attempted to refer to the guidelines set up by both Dewar and Uytenbogaarts' study and Alexanders' theory. (Ref. fig. 5)

CHAPTER TWO : THE HOUSING PROCESS

"The workers - and this is the essence of the matter - see in the dreadful monotony of endless rows of identical houses and bungalows an assault upon their personality, upon their freedom, upon their humanity; this kind of housing turns one into a herd animal, a serf, a dependent."

Berlage in Habraken "Supports : An alternative to Mass Housing"

INTRODUCTION

Generally when we look at the so-called "housing problem" the most obvious solution appears to be a statistical one. If there is a lack of housing build more housing - simple! This approach leads to the construction of gigantic schemes characterised by uniformity, and insensitivity to the needs of the inhabitants beyond the physical dwelling. The idea is that repetitive construction on a large scale is cost effective but the larger the project the larger the administrative and maintenance costs. In addition to this there is a low acceptance, socially, of the housing, as summed up in the quotation above.

It is important to realise that the actual provision of dwellings is only a small part of the solution. As described in detail in the preceding chapter, we need to look at housing as part of a much larger process of creating living environments that cater for fundamental needs of people beyond the need for basic shelter. It is also important that this process is ongoing and for this to happen people need to feel that they can participate in the shaping of their environments, at the scale of the individual dwelling as well as within the community. Industrialisation of the construction process is often one of the excuses for the large scale of housing developments as it is only efficient where there is a large scale reproduction of particular elements. This repetitiveness further compounds the loss of individual identity in such developments.

In South Africa, there is a massive, and increasing, demand for housing, especially in urban areas. There is no local precedent for this type of development (other than barrack like townships) which means that it is important that the first steps are in the right direction, i.e. towards an appropriate housing process that does not make the same mistakes as many foreign housing programmes.

There is a large capacity in South Africa for conventional construction methods, although there is always room for a little ingenuity, and labour is readily available and relatively inexpensive as opposed to the costs of industrialisation here. Conventional methods have more potential for the accommodation of variety and differentiation which is further increased if the creation of housing is handled in smaller increments. Administrative burdens are also eased. In short we need to look at housing in a way that does not lose sight of the fact that it is human beings who are being housed.

COMMUNITY ARCHITECTURE :

"In a book written in the late 60's Phillipe Bouden described revisiting Pessac, a housing scheme designed by le Corbusier and built near Bordeaux in 1926, "the houses had been subjected to numerous conversions by their owners. Wide windows had become narrow, flat roofs pitched, colonnaded spaces filled in and decorations added. While these changes positively demonstrated an unforeseen flexibility, they also destroyed the principle architectural qualities of the development. The complete opposition between the architects vision and the means by which people express the reality of their habitation reflects and underlying political power struggle and throws into question the architects right ti impose and exclusive image, especially on a domestic programme."

(Blundell-Jones, foreward to Kroll, 1986)

The concept of community or participation, architecture implies that the people who inhabit buildings are involved in their creation and management. This seems to offer an antithesis to alienating housing schemes where the emphasis is on the right size and cost of the dwellings and the layout of the scheme as a whole is related to ease of movement on the construction site.

The notion, as an idea, is seductive and hard to resist and yet must be carefully examined.

"The theory is that if future residents ("users") were to be involved in this way in the decision-making processes of housing design and management, it would generate in them a sense of pride and responsibility (with respect to property at least) so that like good citizens they would commence to mow lawns and trim hedges on Saturday afternoons instead of wanting to attack buildings with spray-cans. Or humans with razor blades."

(Farrelly, AR March 1987)

Community architecture is mostly concerned with the process and the politics of building and less with the product of that process. It actually has little to do with architecture itself and much to do with the power struggle mentioned at the beginning of this section. Community architecture implies self-determinism, where the architect is in the role of "enabler" and "negotiator" rather than designer. It might be argued that we do not need architects or architecture at all and that environments created as part of a democratic process will succeed in giving people what they want. The fact is that the architects role is not merely to give people what they want, but to show them and offer them what they hadn't dreamt was possible.

John Habraken in his book "Supports : An Alternative to Mass-Housing" first published in Dutch in 1961 (English 1972) puts forward ideas for a flexible user participatory system of providing housing.

Habraken maintains that in order to begin to solve the "housing problem" it must be seen as a totality. Action on the part of any of the parties involved in housing achieves nothing without appropriate complementary action on the part of the other players. "Like all fundamental relationships the housing question is one of mutual relationships"

Mass housing as a housing process is so widely accepted all over the world that when one mentions housing, it is almost automatically assumed that one is talking about mass housing. It is necessary to question mass housing as a method.

Habraken proposes that people must be involved in the housing process so that instead of a few "experts" having to imagine what would happen if people were asked to participate (i.e. anticipate their needs) and having to guess and make many assumptions, people would in fact be able to make those decisions for themselves. He describes the "housing apparatus" as it is a "blind machine" reacting to a reality based on statistics, invulnerable because it is a "technical necessity" and based on "scientific research". Habraken also insists that the occupants environment should be "capable of constant renewal". One of the problems of the mass housing machine is that it causes constant migration. As new towns are built people move on and leave worn out ones behind. This prevents any opportunity for these neighbourhoods to develop any character over time.

He says that the coming of industrialisation has made the process of mass housing outdated and that the potential of industrialisation and standardisation can be realised when the role of the individual is returned to the housing process. Mass housing methods have nothing to do with people housing themselves, they are housed.

Habraken writes that although housing is uniform and repetitive, to make factory production really feasible projects (even massive single projects) are still too small. Society cannot stomach series large enough for feasibility. But, it is argued that if factories are used to produce uniform elements which (if they are part of an overall system) can be put together to allow an infinite variety of compositions then industrialisation is

made feasible.

Habraken proposes "support structures".

> "I propose this definition : A support structure is a construction which allows the provision of dwellings which can be built, altered and taken down independently of the others"

Habraken does not commit himself to a description of what a support system would look like but suggests that it would be similar to the skeleton of a framed building

> "It is brute construction, of the same order as bridges, viaducts, canals or roads .... which also withstand the centuries : the more robust, the more they repay the trouble of their construction".

Dwellings are seen as being completely prefabricated and only assembled in situ. Showrooms displaying elements of different design and price range and after sales services will be offered in much the same way that the motor industry operates today

> "Some people will doubtless consider it due to their wealth or position to house themselves in the very latest designs, and collectors may try to conserve a dwelling assembled from a vintage series no longer available."

The possible combinations are almost endless which means that no two dwellings need be the same.

Although I agree with Habraken's criticisms I find his proposal too extreme. The main problem with his theory is that the crux of the matter is that for industrialisation to occur on this scale, the system that is the basis of the idea is fixed, otherwise the factory produced elements will not be completely interchangeable. On a large enough scale, the scale of cities, he talks about, the repetitive nature of the system (the system is necessarily repetitive) will be apparent and cause an overall monotony albeit relieved by a potential chaotic variety in the infill. In addition any hand crafted quality is entirely removed from the environment. Buildings take on an instant, almost throwaway, quality, with all the potential for built-in obsolescence that characterises our consumer culture. This is not architecture.

In Holland architects who were also disillusioned with the mass-housing system set up the SAR (Foundation for Architectural Research) in order to investigate possible alternatives. The support structures idea has been examined and ways of trying to make the idea work have been looked at. An SAR module has developed to control the dimensions of elements, defining the space into which they fit and the relationships between them.

Lucien Kroll, known as a "pioneer in participation" has adjusted the SAR module to make it more tolerant and has done many projects using a basic modular system (this does not necessarily mean that there is a structural grid) and standardised infill components.
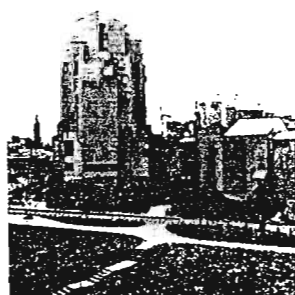
Future inhabitants were asked to participate in the infill process, creating environments that best suited them. Infill components should be easily assembled and dismantled so that the building can change as users' needs change.

"the building will pursue its own course of evolution." (Kroll, 1986)

I have described another of Krolls projects, Nieuwegein housing, in more detail in the following chapter.

It is interesting to note that, in spite of his dedication to the process of participation and the role he sees himself in as "orchestral conductor" who directs but does not impose his will, most of Krolls projects have an undeniable "Kroll" trademark that is instantly recognisable. It is even more interesting to note that although Kroll is usually fired before his projects are completed, because his ideas challenge the status-quo, apparently people who use his buildings really like them. Overall the projects bear the stamp of the architect but, it is important that they inherently flexible and that inhabitants had some say in their making.

"Kroll has said of his clients: 'without rigorous architects they would simply have repeated the immediate models and bleak alignment of lots that are believed inevitable'."
(Farrelly, 1987)

Ralph Erskine, similarly committed to "participation architecture", achieved similar results in his Byker redevelopment in Newcastle in England. The design is undoubtably based on his decisions but the needs of the community have been carefully taken into account and where they wanted changes, changes were made. usually these were on a small scale, such as a preference for separate kitchens as opposed to open plan. The architect still remains in control.It seems that participation is the incorrect word and that consultation is in fact more accurate.

"Architects finding themselves in an increasingly hostile environment, may begin once again to **listen** - not only to their clients, but to users of the buildings to social context, history and nature... Modernism failed because it scorned the mess and confusion of this world in favour of another more perfect.... But the architectural imagination engages itself less in conjuring other fantastic worlds than in trying honestly to understand - to listen and respond, with subtlety, to the complexities of this one."
(Farrelly, 1987)

Consultation (and observation of successful built environments as advocated by Dewar and Uytenbogaard) may be participation at its best. Less obviously democratic perhaps but at least as successful as more direct participation. What is required is sensitivity. (above all) The informal sector development is really a different kind of community architecture. it is not the result of people participating in a formal design process but each act of building, especially in already overcrowded areas, involves a series of complex negotiations with neighbours. The evolution of a government housing block in Delhi clearly illustrates this.
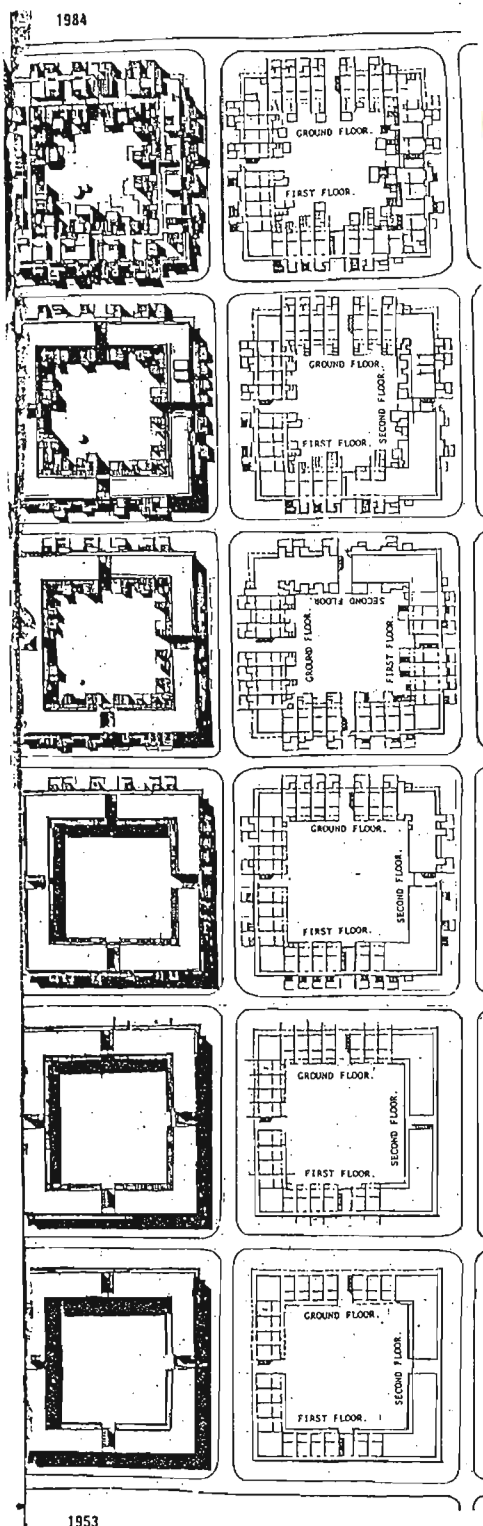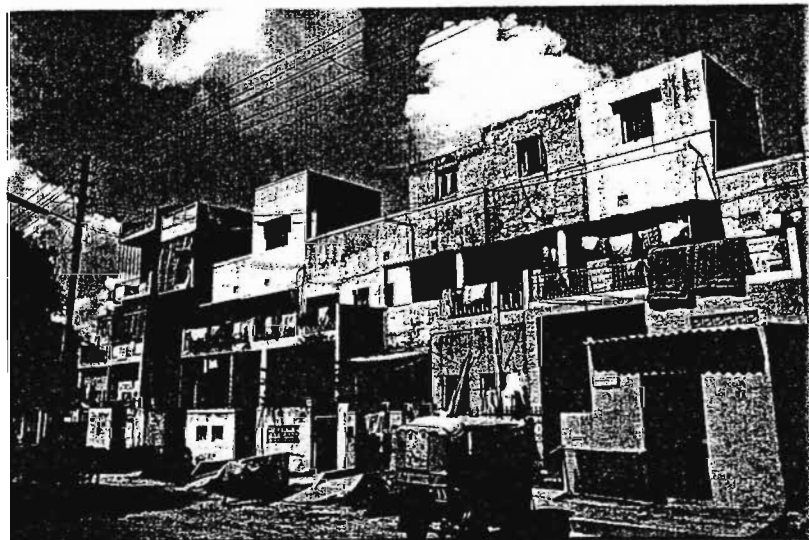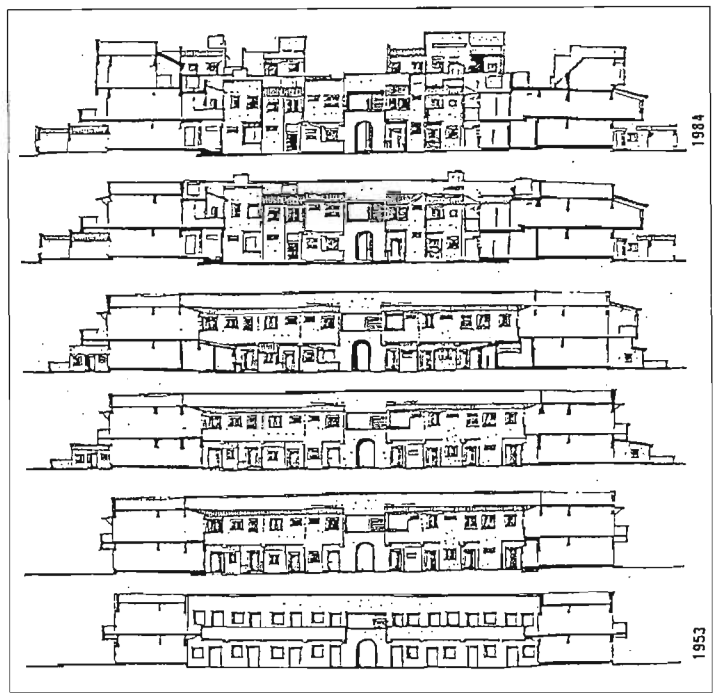
The inhabitants of Jangpura Extension using the informal sector, and without formal invention have transformed what was previously a rigid block into a building that provides a wide variety of living and working conditions. The complexity that has resulted reflects the histories of the inhabitants. Changes and additions are made by negotiation with neighbours and other occupants, and are each responses to specific constraints and needs.

Extra living spaces have been added as well as shops, workrooms, child-care centres and schools. Apart from generating income in the informal sector (reinforcing the whole cycle) amenities are improved for all inhabitants in an incremental way.

Promotion of this kind of community involvement is not necessary, but attitudes towards official building standards must be changed in order to allow it. A greater tolerance would enable people to help themselves in improving their environments without formal intervention.

PROPOSED STRATEGY

The strategy I propose accepts that participation, at a consultation level and as an ongoing process, is an important part of the housing process. Architects are not politicians, although housing has political implications, or enablers only. They are designers and as such should play a designing role. What Habraken proposes is not architecture and appeals little to the human spirit; direct participation in the initial construction process is impractical as it assumes that people have building skills which on the whole they do not; and the actual design decisions, although best guided by peoples needs and tested where possible as part of the consultation process, need to be made by architects.

The main objective in housing projects, especially where resources are limited, is to provide as much amenity for inhabitants and maximum positive impact on the total environment as possible, with minimum intervention and cost. Proposals must be flexible enough to allow for change and improvements over time, and indeed invite them, but this doesn't mean that only a framework is provided, and the integrity of proposals should remain evident.

I propose that the basis of proposals should be a structural and serviced framework that is flexible in that a number of different activities and dwelling types can be accommodated within it. This framework should not be prototypical but should be site specific so that buildings are inherently linked to their environments. This does not mean that the building should not be designed, spaces are defined etc, but that the most expensive and sophisticated components are fixed and can be provided by for example the state. It is important that there is an overall vision governing the design - ultimately positions of services and vertical access are more restrictive than the grid - and that the decision works in such a way that the flexibility is revealed.

In this way well designed accommodation is provided, but there is potential for the kind of evolution described with reference to the Jangpura Extension housing in Delhi, achieved through a process of small acts governed by negotiation with other inhabitants.

16

I believe that in South Africa, highly industrialised processes for creating housing are innapropriate. There are obvious advantages to using labour intensive techniques in terms of employment creation, and conventional construction initially is easy to add to and alter using those same methods.

An integral part of this kind of strategy is the reassessment of offial building and environment standards. Rigid regulations and their accompanying time consuming bureaucratic processes should be replaced by guidelines, and inspectors should take on the role of advisors, open to new and ingenious solutions.

CHAPTER THREE : PRECEDENT STUDIES

INTRODUCTION

In my analysis of precedents I have tried to choose polemical examples. They are drawn from different periods and different places and thus reflect different responses to their cultural and physical contexts. All of them deal with the specific problem of making dense urban residential environments although they succeed in different areas. Some of the examples are related to, or result from, the application of particular architectural or social theories, others relate more to the specific constraints of their context (eg. climate, culture, available materials and technology). I have not chosen to illustrate models that I believe are inherently unsuccessful.

THE ISLAMIC CITY

The form of the Islamic city and house has evolved as a result of physical and climatic constraints. The very high value placed on privacy determined the height of the whole city because

"To look over the neighbours fence would have been to steal from him his privacy".
(Warren and Fethi, 1982)

Houses are internalised, arranged around central courtyards which allow for particularly dense arrangements, (+/- 1000 people/ha). Most houses have three party walls. The privacy of the family is preserved while allowing outdoor living, and the courtyard helps to regulate the climate within the house. Street facades are blank, relieved only by glimpses into small entrance courts (the entrance into the main courtyard is always oblique), elaborate entrance doors and shanashils (screened windows which jetty out over the street). These provide opportunities for natural surveillance of the street.

Inside the house there are zones for men and women and the areas where access is permitted by visitors is clearly defined. The use of specific rooms is not defined. There is a seasonal migration from south facing rooms in winter to north facing rooms in summer. In summer there is a vertical movement daily. The hottest part of the day is spent in the rooms on the lower levels where the cooling effects of the courtyards (shaded and humidified by central pool) are most felt and at night people sleep on the roof. Badgirs (wind scoops and air shafts) are sometimes used to enhance ventilation.

The internalised courtyard model has many advantages but must be handled carefully. There are obvious problems where there is no tradition of communal family life and personal privacy is a priority. Most interesting is the way that the basic generic type of building has not changed significantly yet the cities are rich in the ranges of experiences they offer. This is because of the overall composition, variety of uses at street level and because of subtle changes over time resulting in a layering of textures which reflect some of their history
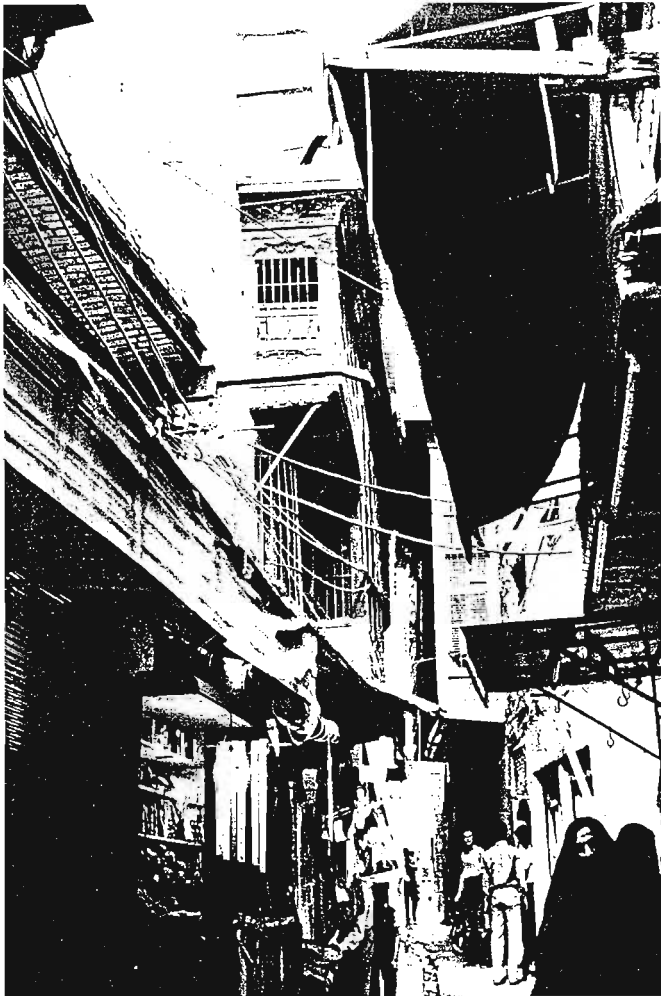
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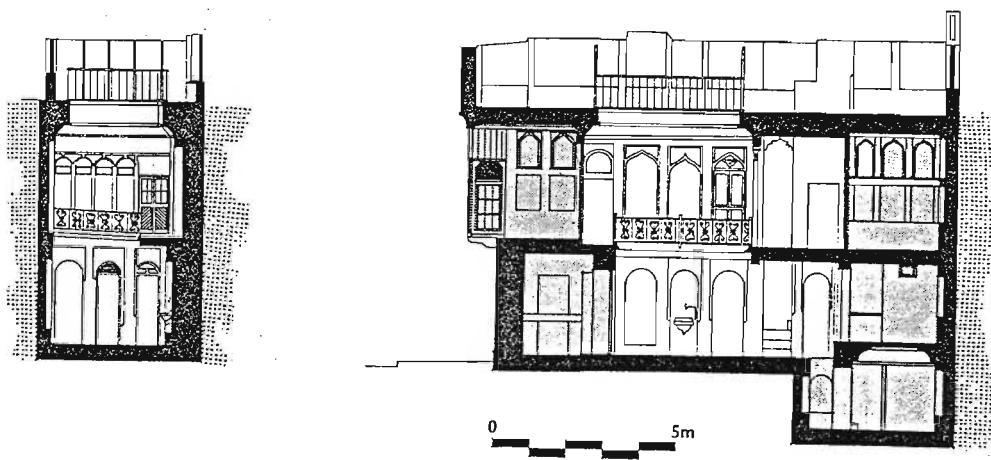
THE ENGLISH TERRACE

The development of English terraced housing was directly related to the industrial revolution. There was pressure to increase the density of towns and cities and roads were important for transport purposes (hence the unsuitability of an Islamic type labyrinthine arrangement).

Although the basic construction, simple cross-wall, and arrangement was similar, there were distinct classes of terraced houses. The lowest class was small, usually two rooms on the ground floor and two rooms above. (sometimes especially dense arrangements had one family on the ground floor and one above such as those demolished in favour of the Byker wall, discussed later, in Newcastle) These were arranged back to back, with small yards between, along narrow residential streets. Densities of up to 1500 people/ha were achieved, although living conditions at these densities were undesirable. The other end of the spectrum, the first-class terraces were large and grand in their architectural expression, laid out along wide streets or crescents, or around green squares. Each house had its own garden behind and often, especially in London had back access via "mews" as they were called to stables and accommodation for coachmen.

The main advantage of the terrace was that each multi-storey house had its own front entrance on the street and a yard of some sort behind. This allowed houses and neighbourhoods to have their own identity, variety was achieved through use of architectural detailing, and allowed for some alterations and additions to be made independent of neighbours. Additions to the back of these terraces were very common, while the integrity of the street front was usually preserved.


FRONT ELEVATION

"I many years ago... I throw into the confused discussion of styles, fashions, snobberies, this argument which was a "knock-out", "the house is a machine for living in". A thousand staves have been produced to beat me with for having dared that utterance. But when I say "living" I am not talking of mere material requirements only. I admit certain important extensions which must crown the edifice of mans' daily needs. To be able to think, or meditate, after the days work is essential. But in order to become a centre of creative thought, the home must take on an entirely new character. And that necessitates for its realisation a change in the entire layout of the city, a new arrangement of transport, a new and daring concept of space relationships, a new method of construction for human habitation."

(le Corbusier, in Dunnet, AR Oct 1985)

I have quoted le Corbusier at length because in order to understand his Unités d'Habitation it is important to understand the ideas surrounding its invention and the new kind of city that it was supposed to fit into.

The Unités d'Habitation is one block but as part of le Corbusiers vision other blocks were to be laid out in a new type of city where vehicular transport could move with ease and the spaces between were landscaped. The city was to be greened.

City for 3 million Inhabitants,le Corbusier, 1922
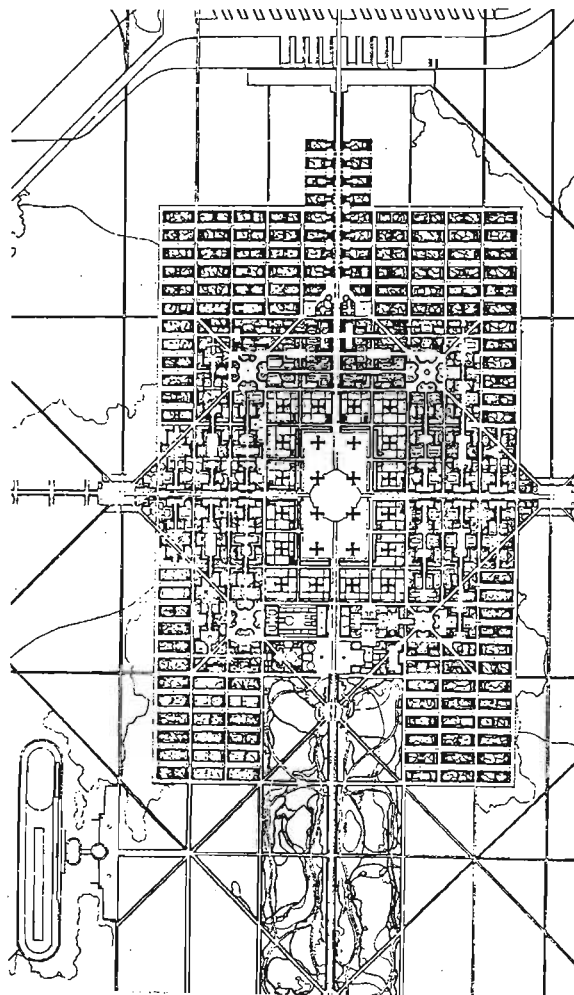
It was inspired by the Carthusian Monastery at Ema in Tuscany, Italy, where each monks cell was his private place for meditation within a wider community which supported him in his spiritual endeavour. In the Unités every tightly planned apartment was centred around a large double volume living room where the orthogonal geometry and austere detailing would create an atmosphere of calm and spaciousness and light which was controlled by the use of Corbs' famous brise-soleil sunscreens. Apartments were separated from each other acoustically and looked out on the sky and greenness of the landscape below.

Access was via a central corridor which occurred on every third level. To make home life less onerous, apartments were supplied with communal domestic services like those of a hotel.

Although Corbs' design is the result of a strong social theory and the Unités apparently works for those who now inhabit it, it is an expensive solution, and one which puts so much emphasis on individual privacy that opportunities for social interaction and civic life are reduced to the extent that they hardly exist. It is the complete antithesis of community architecture, it is the architecture of isolation.
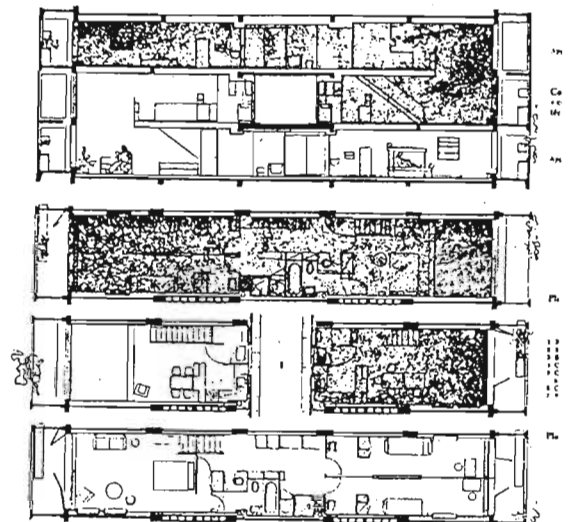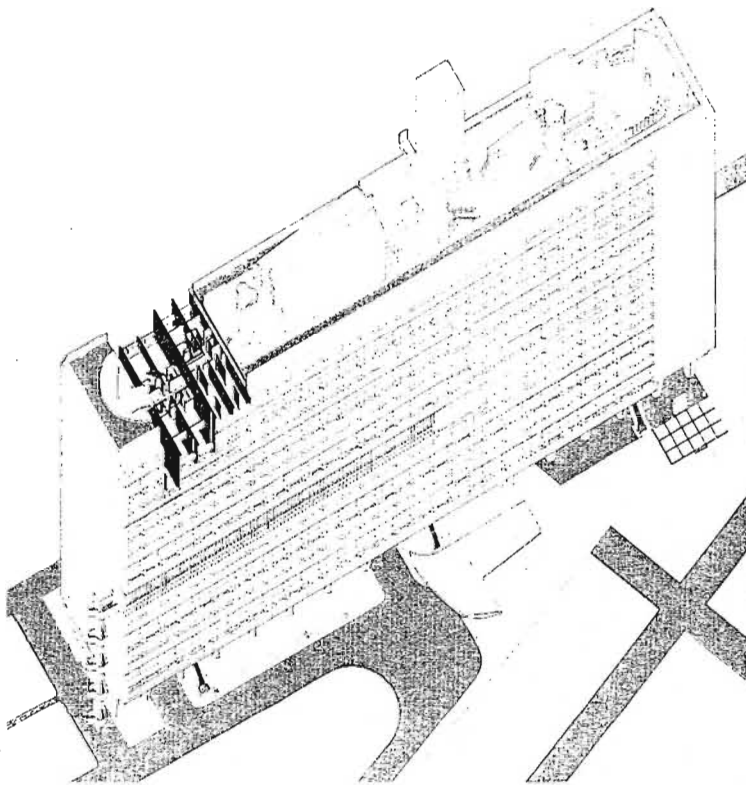
KANCHANJUNGA APARTMENTS. CHARLES CORREA. BOMBAY. 1970-83.

Although I have rejected the high-rise model as a solution for my thesis, I have included this luxury apartment block by Correa for its careful response to climate, and his use of climate control devices to modulate the form of the block.

The vernacular bungalow arrangement, where principal living and sleeping spaces are protected from the elements by verandahs and bathrooms, has been adapted so that verandah is interpreted as double volume terrace garden which protects, allows outdoor living and assists cross-ventilation by acting as a wind-scoop. The double volume of the terrace allows extraordinary views over the city. Manipulation of the section in the units provides an endless variety of spaces.
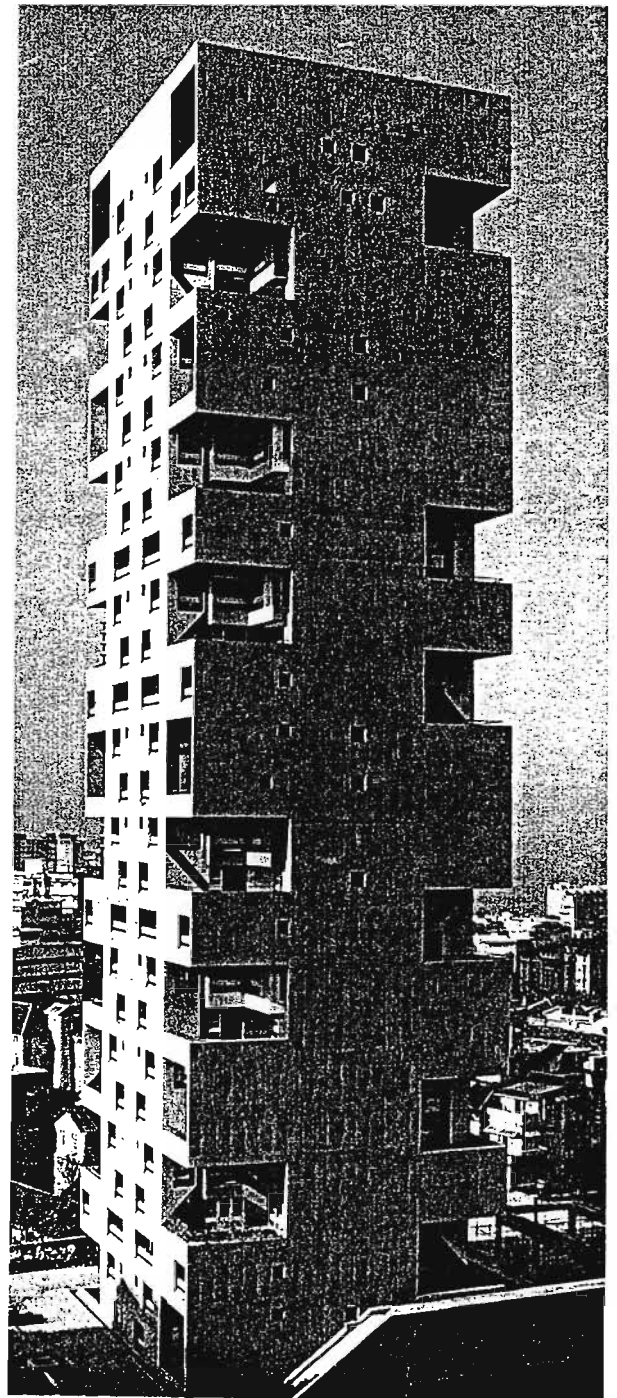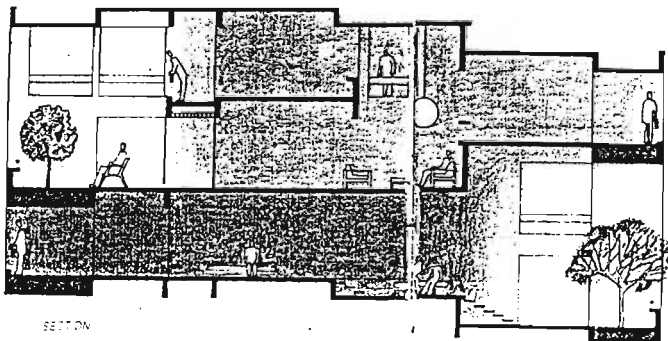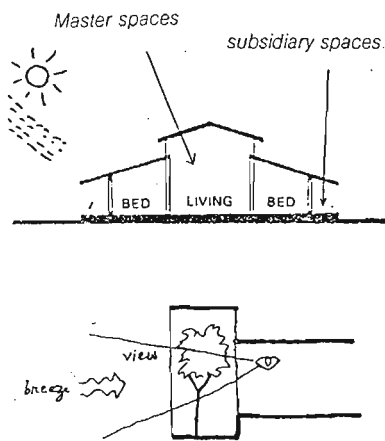
TARA GROUP HOUSING . CHARLES CORREA . DELHI . 1975-78

In this scheme Correa had to accommodate 2 and 3 bedroom apartments at a density of 125 units/ha. In order to avoid high-rise construction and the associated costs of lifts and sophisticated construction he arranged double storey units stepped back in section so that the roofs of the lower ones provide terraces for the upper ones. Arranged in two rows a central space provides circulation and community space.

Units are arranged in long narrow bays and 3 bedroom units interlock so that they use one bay width on one level and two bays on the other. Every unit has a terrace partly protected by a pergola.

SECTION

SITE PLAN
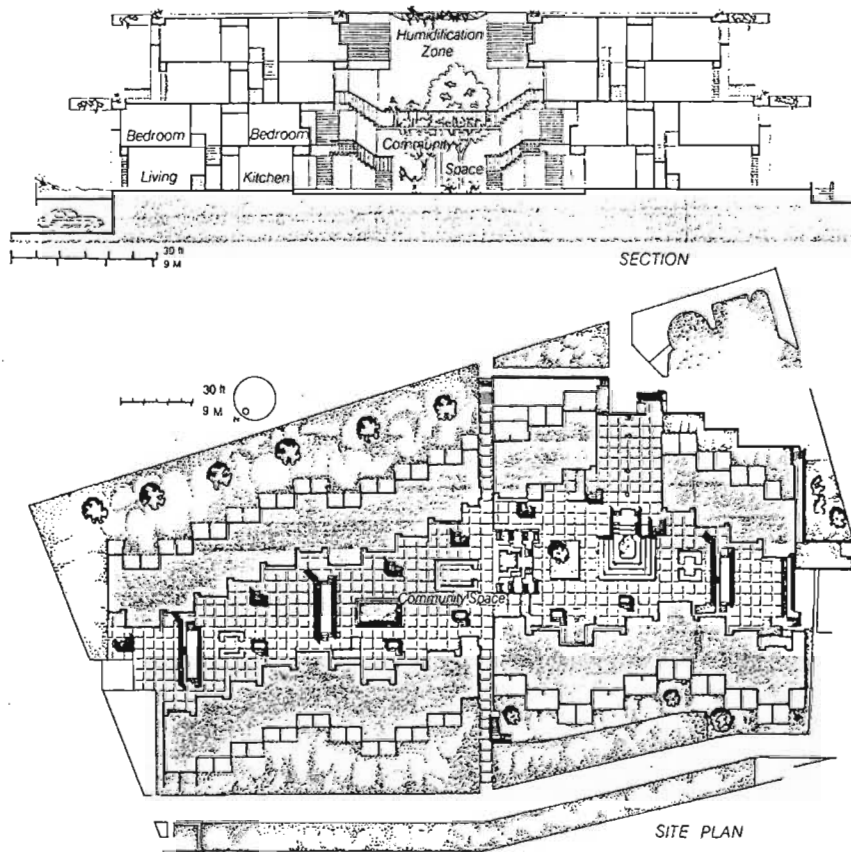
BYKER WALL . RALPH ERSKINE . NEWCASTLE UPON TYNE. ENGLAND. 1980-

Density +/- 250 people/ha

Erskine was approached by the city of Newcastle in 1980 to help to reappraise an outline plan for the clearance and rebuilding of Byker, an area of hard streets and small Tyneside flats that were overcrowded and believed to be beyond rehabilitation. One of the main objectives was to try to retain the social cohesion of the resident community while undertaking a comprehensive redevelopment.

Early on it was established that there would be a need for a noise barrier block on the northside along a proposed motor-way (which is still unbuilt). This block makes a strong architectural statement as a solid 8 storey wall that "embraces" the majority of the scheme which is low-rise terraces arranged on the slopes to the south of the site.

Erskine wanted, from the beginning to initiate participation of the inhabitants and set up an office on site in a converted funeral parlour. He invited residents to visit the office to find out what they wanted. The dilemma of participation is that users lack the skills to design and build their own housing. What happened at Byker accepts this and participation is at the level of consultation. The first thing to be built was a pilot scheme. Modifications suggested by the first occupants were included in subsequent designs although they obviously did not benefit theses initial users. Dwellings were allocated to residents in advance so that friendly neighbours were able to stay together and residents took an interest in their dwellings before they were completed.

There is no doubt that at Byker the architect has designed the scheme, but clients needs have been taken into account in a way that is seldom achieved without participation. The perimeter block is an architectural solution to a noise problem, necessarily imposed by the architect. At ground level 70% of the total accommodated have a village feel and small neighbourhood precincts have their own identity. Variety and identity are achieved by use of tacked-on balconies and access galleries, criticised for their flimsiness, but they achieve a liveliness that is often lacking in social housing. Windows are placed according to functions which consequently read from the outside.

Participation has been successful in retaining a sense of community and in giving them community and individual identity. Residents feel as if they have had a say in their destinies and have a stake in their housing. The real participation is ongoing in the landscaping and adaptation of the scheme over time.

> "Byker was not designed for an existing community but as a community. The intention is that its inhabitants should play an active public role rather than being merely recipients of housing restricted to roles of passive consumption."
> (Buchanan, AR Dec 1981)

Byker, Newcastle upon Tyne, Ralph Erskine.

SITE PLAN   N ⬆
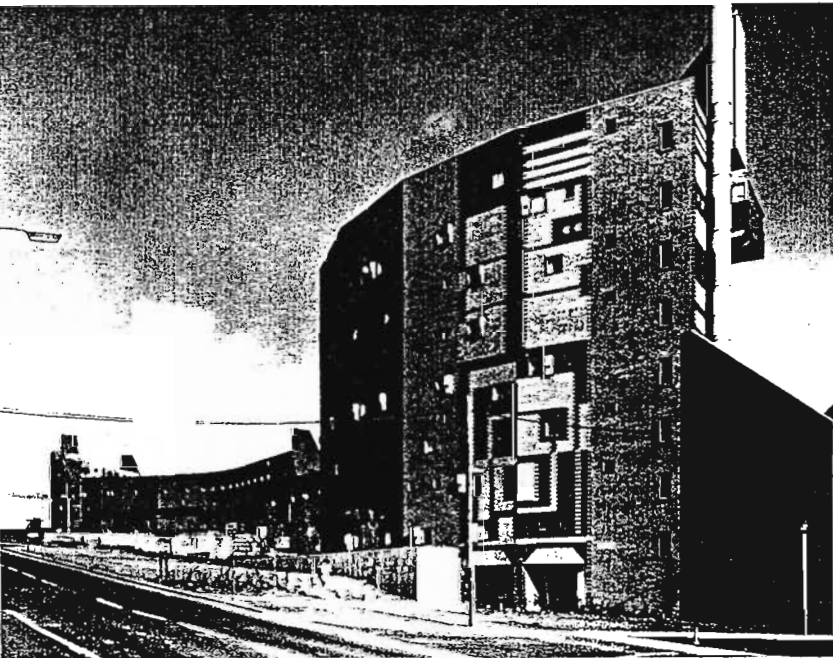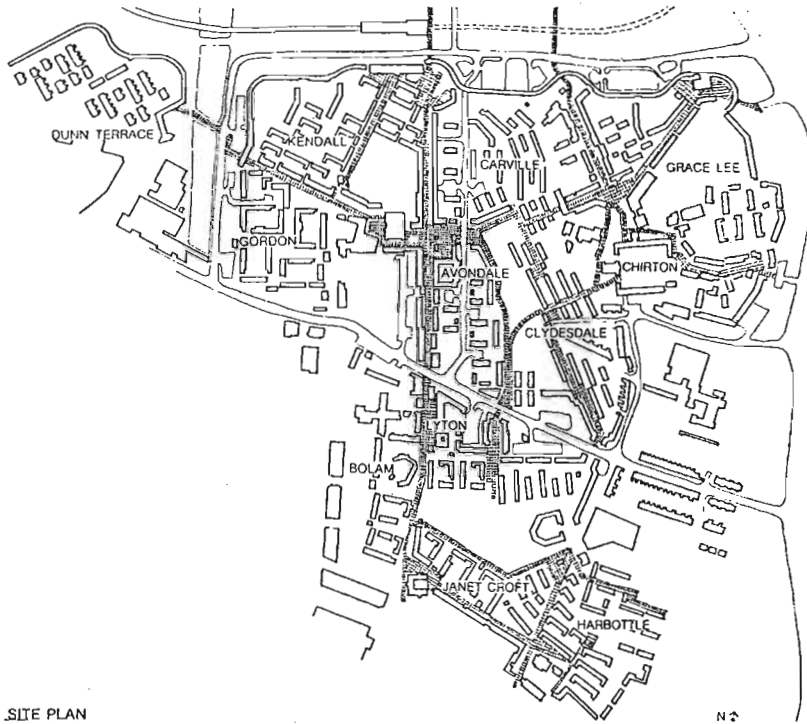
## NIEUWEGEIN HOUSING . HOLLAND . LUCIEN KROLL . 1979- UNBUILT

The municipality of Nieuwegein and Bouwfonds,a housing association, appointed Kroll to do a project for around 60 dwellings, involving the participation of future occupants. The brief was for tall narrow town houses on the Old Amsterdam model, if possible with gardens and flats with balconies or terraces. Some ground floor accommodation was to be for shops and meeting places.

Dutch regulations for space standards were used and 9m^2 added to each unit. Residents were to decide amongst themselves whether they wanted this extra space for use as a study or office or whether they wanted to combine with neighbours to create larger communal spaces. These optimal rooms always connected to the mosst public parts of each unit.

A co-ordination system similar to the SAR (Chapter Two) was adopted and because of cost constraints was based on a standard framework of identical spans in two directions. The standard in Holland is 5.4m but Kroll was able to devise a system where two dimensions could be adopted, 5.4m and 4.5m. This created potential for 24 variables which residents could choose from, and reduced the 'new-town' uniformity. The design allowed for extensions to happen front and back, promoting further variety in a more spontaneous manner.

At this stage the housing industry in Holland slumped and the project was shelved.
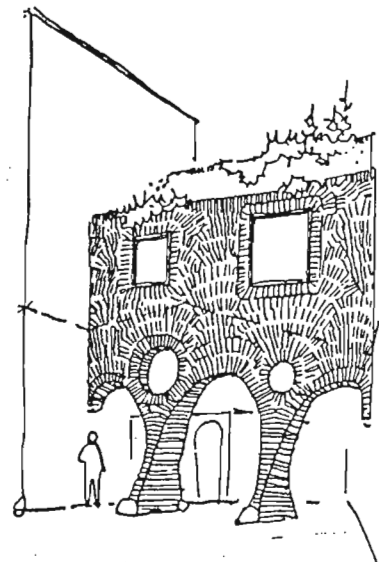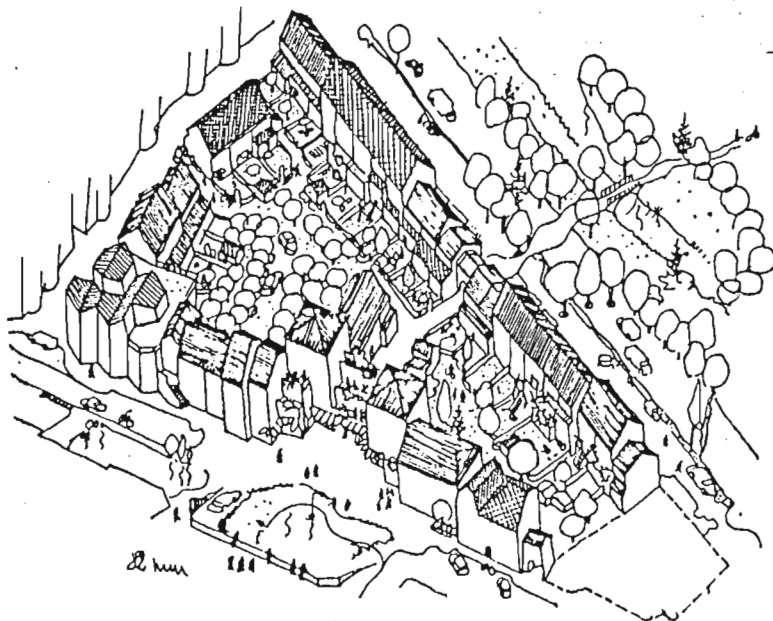

An entrance made by craftsmen

HOUSING LINDENSTASSE. BERLIN. HERMAN HERTZBERGER

The IBA (Internationale Bausstellung) in Berlin, set up in 1979, aimed at "rescuing a clapped out city" is the most comprehensive attempt to relate architecture to existing city. The main objective was to recreate the blocks and streets which were destroyed in WW2 and by subsequent planning the project included new building and rehabilitation and involved architects from many different countries. Most responses are highly specific to Berlins' existing fabric, topography and living patterns and could not be transferred from there, but the essential lessons are in the commitment to inner-city living and its processes of planning and realisation.

I have chosen to illustrate Hertzbergers' Lindenstrasse housing because it is significant in its response to the urban context, and because it clearly demonstrates one of Hertzbergers' ongoing concerns : the relationship between urban housing and the public domain.

> "It is always a question of finding the right balance, to enable the residents to withdraw into privacy when they want to, but also to seek contact with others. Of crucial importance in this respect is the space around the front door, the place where the house ends and the living street begins. it is what the dwelling and the living street have to offer each other but determines how well or how badly they will both be able to function."
>
> (Herman Hertzberger)
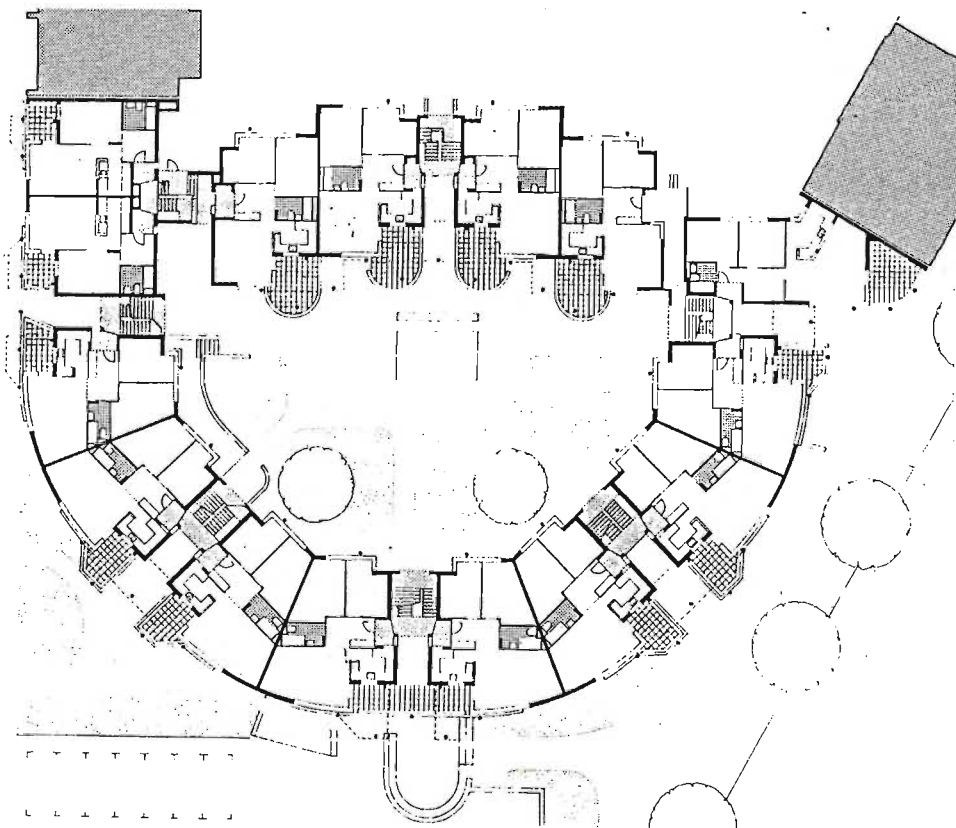
The block is a "necklace" of three and four storey row flats linked by common stairs. The block creates a new courtyard on the corner which links to an existing courtyard behind. The ratio of height to open space ensures that the courtyard will be sunlit in all seasons and the courtyard is large enough to allow private and semi-public gardens. The building was handed over when these were incomplete so that occupants could participate in the final shaping of their environment.

The linking staircases are a developement of ideas that Hertzberger has explored before in another development at Kassel, Holland, where an arrangement of double front doors, one solid and one glazed, allows the stair to be overlooked from the kitchen when the solid door is open. This allows children to be watched if they play there, and for the staircase to be subject to natural surveillance. A common space on the roof is accessible to all whose units open onto the stair. The balconies of the individual flats continue the theme of carefully designed interface between public and private. Each is partially covered and therefore private and partially open and overlooked. These efforts are in order to stimulate the formation of communities, but still allow individuals choice about their participation in communal life.
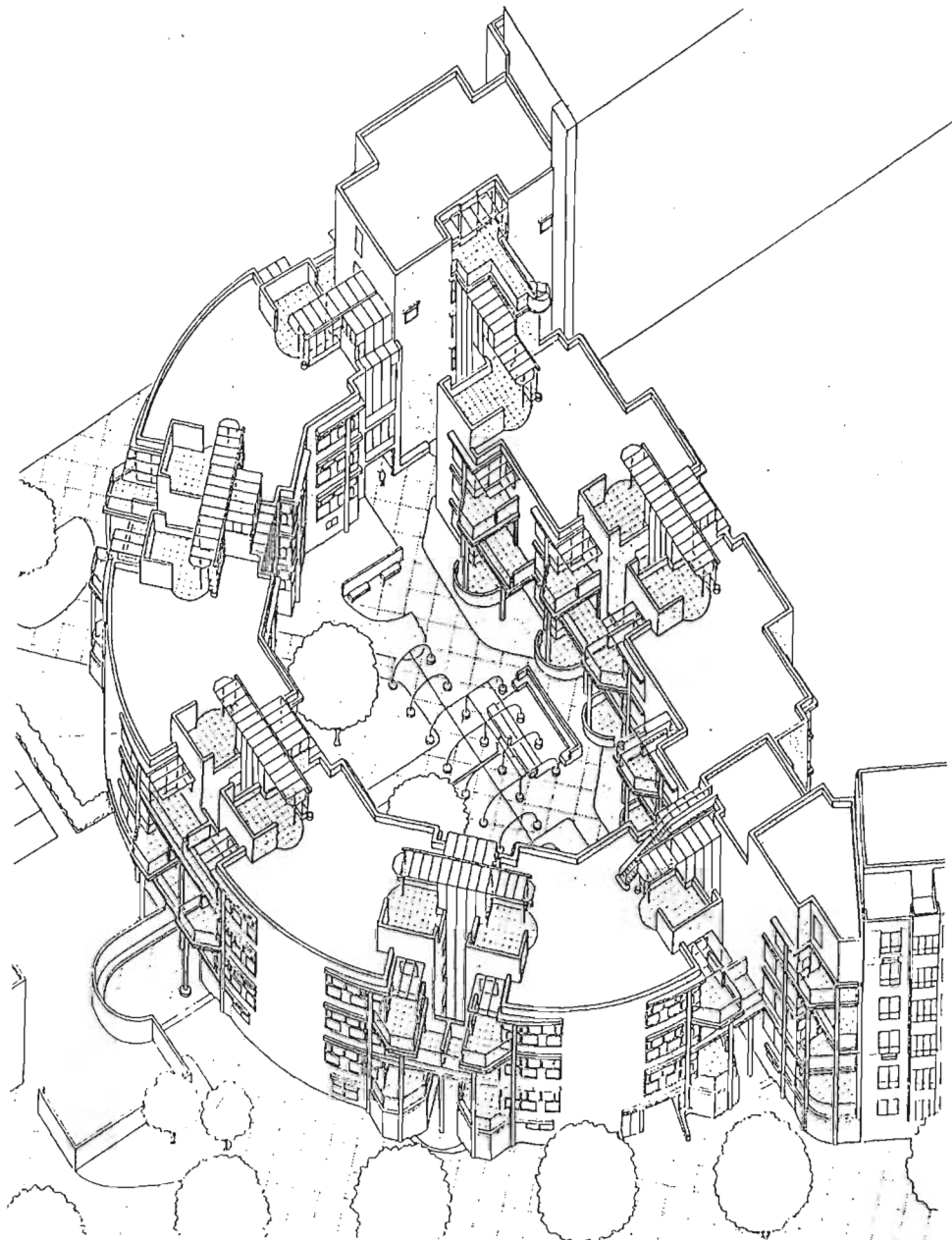
CHAPTER FOUR : REGIONALISM AND SOUTH AFRICAN ARCHITECTURE

INTRODUCTION

The number and diversity of architectural styles prevalent at the moment raises the question : What is an appropriate expression for the building I propose, and is there an answer to the quest for a South African Architecture?

I have included this chapter because I believe that it is important to try to make sure that the architecture that I propose is not inappropriate. There is a growing world-wide interest in a "return to roots: which is paralleled by a growing awareness of environmental issues; hopefully indicative of a gradually changing view of the world. It seems to me that Critical Regionalism comes closest to finding a way of developing a place-bound architecture invested with meaning and integrity.

What follows is a summary of an essay I wrote in 1989 for Architectural Theory. I have included selected references in the bibliography of this document.

CRITICAL REGIONALISM

There are many things that contribute to a sense of genius-loci: topography, geography, local materials, skills and cultural patterns, but it is impossible to separate these elements and borrow some of them. Culture is something that comes out of experience - it must be lived - it is to do with facts and beliefs in history and the present and cannot be manipulated. Hence authentic culture - specific or place-bound architecture must arise out of authentic patterns of culture and cannot come out of fashionable ideals in design. The failure of most attempts at "Regionalist" architecture is due to literal use of historical reference and one dimensional motif.

> "Without continuity of an authentic tradition even a well-intentioned use of surface elements of regional character is doomed to sentimental scenography, to be a naively shallow architectural souvenir."

> (Pallasmaa, AR May, 1988)

Kenneth Frampton introduces to the debate the term "critical regionalism". He sees the concept of local culture as paradoxical and regionalism as something that has to be seen as "locally inflected manifestations of world culture." We need to look beyond the issues of style and address the issues of place creation starting with a critical redefinition of the built environment.

The problem is that what we need is authentic cultural and social development but global modernisation continues to undermine all forms of traditional culture (we still regard economic development in terms of the modernist definition of capitalism of those nations that are underdeveloped as desirable) which means that everything that was authentically traditional has been perverted, so anything that recalls a previous naivety must be self-conscious. The way out of such a dilemma is criticism.

Critical regionalism is regional in that site-specific factors are emphasised - topography, climate, the play of light which is the agent by which architecture is read, and is anti-universalism in that it rejects the tendency towards mechanised (especially air-conditioned) buildings, that could be placed anywhere. It is a marginal practice that is critical of Modernism but uses the progressive aspects of the Modern, and where appropriate, modern industrial technology. It deals with the idea of place making, with emphasis on the territory defined by a structure on a site rather than focusing on the structure itself as a free-standing object.

It deals with tradition and history by means of "reinterpretation and assimilation" sometimes of foreign elements. Most importantly Critical Regionalism is based on the idea that the environment is experienced through sensations other than visual sensations, all the senses play a part in our reading of environment, and lastly, Critical Regionalism opposes

> "the tendency in an age dominated by media to the replacement of experience by information."
> (Frampton, 1985)

Perhaps the most successful example of Critical Regionalism close to our borders is the regionalism of Lain Louw in Lesotho. Situated on the edge of South Africa, the physical context is similar, but the political context is less fraught with obstacles to authentic expression. Louw's school projects are based on a prototype that is appropriate in terms of availability of resources, and is adaptable to suit the topographical and climatic conditions of each individual site. He makes reference to traditional planning principles, but uses industrial technology to suit. The result is a solution to a problem achieved by traditional and modern means.

Low trained at Cape Town, a centre of liberal white thinking, emerging with strong ideological and social sensibilities. His vocabulary depends largely on Botta, whose formal concerns are underpinned by the development of vernacular masonry techniques. This is an appropriate model for an architect working in Lesotho, with its own vernacular masonry construction. Low uses concrete block, brick, and rubble stone infill according to availability. His work powerfully expresses the rationalization of construction techniques, giving a dignity and presence to buildings in a context devoid of civic or institutional traditions. And he does this with the most meagre financial resources. The significance he imbues his school buildings with is an important factor to a people whose existence is minimal, and who therefore depend increasingly on education to improve their lives.
Low's rationalism is not just a matter of developing a vocabulary of forms; it goes to the core of how to make cheap buildings, how to use unskilled labour and in the process transform them into skilled artisans, how to provide maximum space with a minimal budget, how to build up an architectural style based on constructive logic – which can be copied and introduced into the local vernacular. It also allows him scope to play and experiment.
His work demonstrates what can be accomplished from very limited resources with a clear theoretical/ideological position, clear formal concepts, a willingness to experiment, and a cogent understanding of environmental factors. This is a sound basis for critical regional practice.
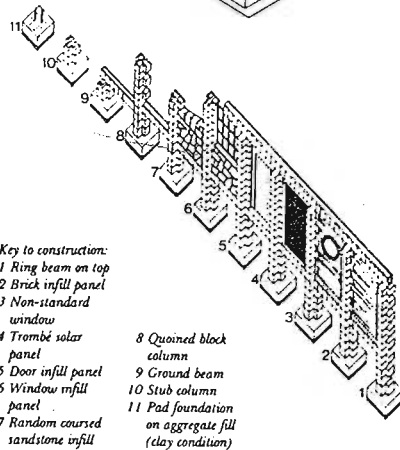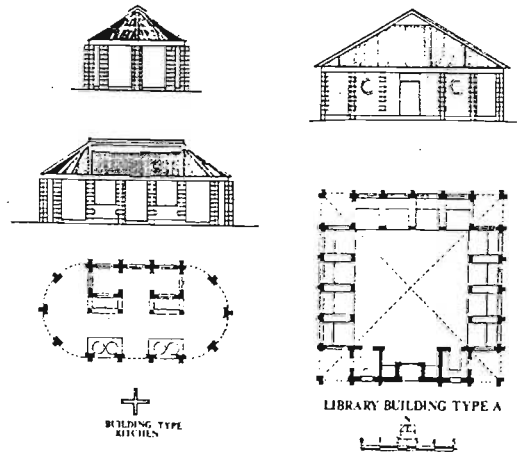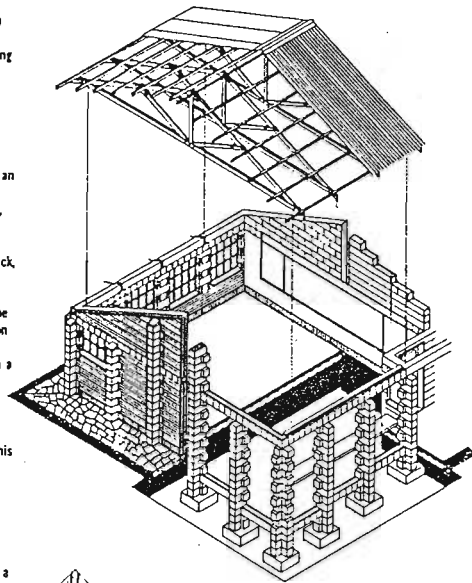
Key to construction:
1 Ring beam on top
2 Brick infill panel
3 Non-standard window
4 Trombé solar panel
5 Door infill panel
6 Window infill panel
7 Random coursed sandstone infill
8 Quoined block column
9 Ground beam
10 Stub column
11 Pad foundation on aggregate fill (clay condition)

BUILDING TYPE KITCHEN

LIBRARY BUILDING TYPE A

CONCLUSION

In terms of the definition of Critical Regionalism given here, it must be clear that until there is a revolution of the status-quo in South Africa, there cannot be an architecture that is relevant and reflective of our needs and aspirations, culturally, spiritually and politically. Architecture that is lasting and meaningful must be firmly based on human experience. It must not only be rooted in its physical sites, suited to topography and climate but create places that have significance for us in our memories, in our present and in our dreams of the future.

Maybe it is exactly in the realm of housing for the poorer population that this process will be facilitated. People may aspire to what they are persuaded by the media is desirable but quite simply they cannot afford it. Their architecture will be made rich by use of their own ingenuity, re-cycling of materials, and alternative uses of conventional materials.

CHAPTER FIVE : FINANCE AND IMPLEMENTATION

"**Housing** is recognised as making a valuable contribution. While options for promoting housing are included it is considered desirable yet uneconomical. Strong social, environmental and political reasons exist for including a substantial housing component, but if it is included it will have to be heavily subsidised, whether overtly or by cross-subsidisation of the residential component by office and retail uses. If the latter approach is to be adopted it is possible that incentives such as bonus bulk may not be enough and that major concessions such as tax relief would be needed."

(GAPS, PLANNING March 1987)

The preceding quotation sums up the problems of financing residential developments. The bottom line is that housing is not profitable and thus it is not easy to motivate the private sector to get involved.

STATE INVOLVEMENT

At some level it is inevitable that the government (whoever the government is) becomes involved in solving the so-called "housing problem". This does not preclude the involvement of the private sector, both formally and informally, and indeed there is a strong case, as I propose, for the state and private sector to work together. The key here, I believe, is the **extent** of involvement of the state in housing programmes.

In many developing countries, especially those in an immediate Post-Colonial transition, the state promises to take on the responsibility of housing "the people", and this approach is seldom, if ever, successful for a number of reasons.

i) Enormous resources are required to achieve this and are usually not available.

ii) Housing programmes (in urban situations) usually involve the delivery of a completed dwelling to the user which means that the valuable resource of the users themselves are not exploited at greater cost to the state.

iii) Housing provided, although it may be built to high physical standards, often does not meet the metaphysical and other important needs (such as increased employment opportunity) of users, especially if foreign agencies are called in to implement such programmes (QUOTE J.F. TURNER) "Housing by People"

iv) Housing provided in this manner may still be unaffordable in terms of maintenance and running costs, so unless the state takes on long term responsibility, either the housing does not reach the target group of users, or becomes run down and slum-like.

v)   When the state takes on the whole responsibility of housing and then cannot afford to put this into practice, people's expectations have been raised unrealistically - this could serve to aggravate an already volatile situation. People end up being dissatisfied, especially the militant youth, when their demands are not met.

It is obvious that the state taking on the role of housing agency is not a viable strategy, and that this role should be more that of enabler than provider. It must be recognised that the informal sector has a very important role to play, as does the formal private sector but most importantly, in all housing programmes it is essential for users to have some stake in their housing. Participation programmes ensure that users are involved at some level of the decision making process and that local resources are exploited. In this way people will be prepared to invest time and energy in their dwellings.

The example of Egypt:

Nasser's administration in Egypt (1952 - 64), which saw itself as socialist, saw the responsibility of providing housing as primarily a government one. Egypt had no foreign debt and could therefore devote a large proportion of the state budget to huge housing campaigns. As a result people and housing agencies accepted that housing is a state responsibility. This attitude still affects Egyptian professionals, politicians and the expectations of the urban poor.

From 1965 - 1972 Egypt suffered a resource scarcity and strict regulation of the construction industry was implemented. Building permits were granted after time-consuming bureaucratic application which gave access to subsidised building materials. Illegal trafficking in both permits and materials was inevitable.

In 1973, Sadat's administration and his "open door policy" encouraged the entry of foreign aid and worker remittances into Egypt with the main consequence being the burgeoning of informal sector housing. Foreign aid programmes generally involved too much research and too little action.

The Egyptian government (in 1985) was responsible for as little as 6% of all housing, the formal (i.e. subsidised) private sector for 15% (mainly serving an upper income small group because strict rent control means that the market favours housing built for sale) and the vast majority of housing, 69%, is the product of the informal sector.

It is also found that although building codes are ignored in the informal sector, standards differ little from official formal sector.

TENURE :

In order for user participation to occur there needs to be some sort of co-hesive community, or else usually a target market of buyers so that they have some incentive to invest their own time and money in their dwellings. In South Africa, in fact in any country with a housing back-log, it is important to include the rental market in any proposal. This could happen in a number of different ways;

i)   A portion of the development is completed and reserved for rental at subsidised rents.

ii)   Private developers are allowed to buy up a potion of the development (the number of units should be limited to retain the element of user participation by individuals in the total development) which may be rented out at controlled rents to avoid exploitation of residents.

iii)   Initial residents may become socially mobile and move on (and indication that the scheme has worked is increased social mobility of users) and their units may become available for rent.

Where ownership is the form of tenure, the advantages of freehold ownership and leasehold must be examined, because although free-hold ownership is generally preferred in subsidised or "social" housing it is not necessarily the most appropriate form. Long lease-hold, is essentially the same as free-hold ownership and it is mainly a question of education of the public in order for this form to become more accepted. In a situation where dwellings are arranged in blocks or in rows, the need for formal sectional titles (a very expensive operation) is removed, and the division of responsibility for private and common space, and building maintenance is very clear cut. The free-holder (in this case the state) is responsible for all common space and maintenance of infrastructure, the lease-holder is responsible for the individual dwelling. In this way legal costs and delays in maintenance and repair are reduced as are costs to individuals.

SUBSIDISATION :

Subsidised or social housing programmes do not preclude the involvement of the formal private sector in setting up the initial framework and infra-structure. Direct state involvement is only one method.

Private developers could be encouraged to get involved in the construction of the housing framework by being offered subsidies or concessions by the government. The end price to the user must be controlled, but incentives such as bonus bulk on other developments, and tax concessions could be offered.

It is important that the design of housing does not exclude opportunities for smaller construction companies to get involved, thus distributing the benefits of the programme as far as possible.

Cross subsidisation could be used by the government to reduce its total outlay, in a mixed use development. Commercial activities on the site, which have a captive market in the residents of the development, contribute, in the form of higher rates and taxes, to the subsidisation of the scheme. In situations where shop or business owners are also residents of the development the self help nature of the programme is taken one step further in that money generated in one part goes back into the cycle to pay for another part.

CONCEPTUAL STRATEGY

It seems that the ideal situation is one where the most expensive and specialised components of housing are provided by the state and are the responsibility of the state or some state subsidised agency in terms of maintenance and repair, and the resources of the private sector, informal and formal, are exploited in the completion of dwelling units. This concept is identical to existing "sites and services" programmes already successfully implemented in South Africa, except that the context is the inner-city as opposed to the city periphery. This affects the application of the theory in that the provision of a "site" for each user or group of users is unsustainable in an urban context.

It is important to note here that this strategy does not mean that each person must actually get involved in the construction process, although this is possible if in individual cases this is desirable, but it means that small construction companies who employ labour locally get involved, and therefore generate employment where it is most needed... : "in the bazaar..." (Correa, 1982) It means that individuals have a say in the decision making processes of their housing and many add to and/or alter their dwellings in the manner that best suits them, for example incrementally to suit their incomes.

As a strategy this also does not mean that all that is provided to the end user is a serviced framework. As described in Chapter Two 2.2 participation may be successful at the level of consultation at brief stage and evolutionary change and growth as an ongoing process. it does mean that the state and private sector, both formal and informal, can work together to create housing that actually goes a long way towards satisfying the needs of users.

CHAPTER SIX : SITE SELECTION AND ANALYSIS

INTRODUCTION

Because of the nature of my thesis subject, although my proposal is site specific in its manifestation, the principles outlined in previous chapters could, and I believe should, be applied to any urban development that includes a residential component.

I chose to work in the Warwick Triangle because of the specific opportunities that it offers.

i) There are open sites available, although on the fringe of the CBD the area is unmistakably urban.

ii) The area already has a small (350 families) but close knit multi-racial residential community who are resistant to move and have fought to remain in the area in spite of various attempts by the government to prevent this. This community is strongly in favour of the area retaining its residential character.

iii) The Warwick Triangle with its history of resistance to racial zoning has now been declared a "free settlement area" and with the scrapping of the Group Areas Act imminent it presents an opportunity to become a model urban residential quarter.(ref. Appendix i)

iv) There is already a mixture of uses, including commercial, community/cultural and some industrial uses. This mixture which generates urban richness will be further stimulated by increased population and traffic.

v) The area is close to major transport networks, station, buses and taxis and there are a number of pedestrian routes through it. This makes it an ideal location for people who do not own private transport.

vi) Situated close to tertiary education institutions it is ideal for student type accommodation.

SITE LOCATION

The Warwick Triangle is situated on the fringe of Durban's CBD slightly to the west. It is bounded by Berea Road to the south-west, Old Dutch Road/Eilat viaduct to the north and Warwick Avenue to the south east.(fig. 1)

fig.1 Locality Plan

fig.1 Locality Plan
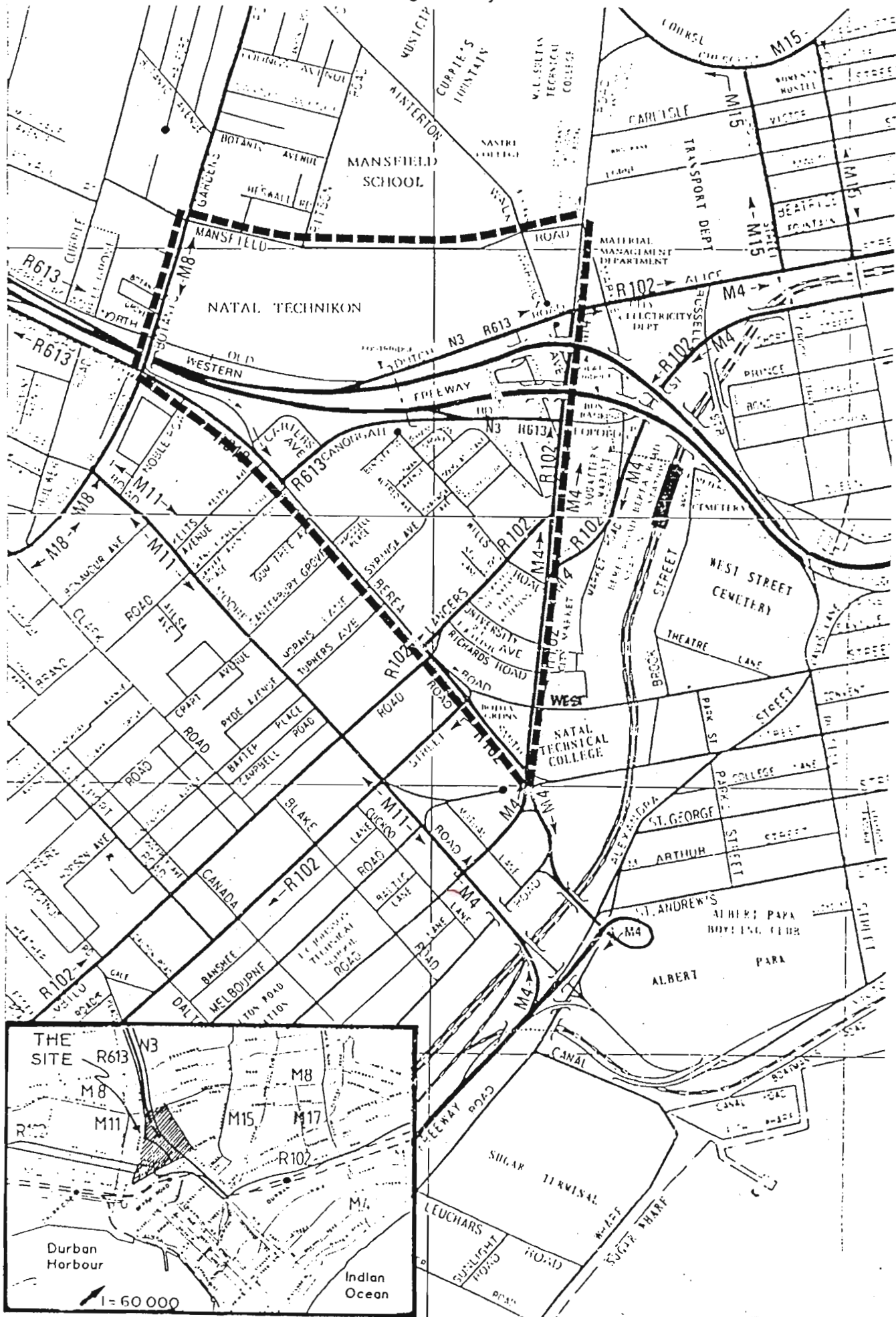
ACCESS

Direct vehicular access from the N3 freeway is possible from both directions, and from Berea Road. The main roads through the area are Lancers Road, linking Berea Road to the freeway, and Wills Road which penetrates the triangle. Wills Road used to be a through road which joined up with Cannongate Road to give access from the site directly to Berea Road. Since Wills Road has been closed off, Syringa Avenue is used as the main exit from the area. This is unsatisfactory as one can only turn left into Berea Road from Syringa Avenue, and because when the whole area is redeveloped and the number of residents significantly increased, Syringa Avenue will have the status of a through route which is innapropriate in terms of its width and residential nature. I propose that Wills Road be re-opened at Cannongate, but should be narrowed to discourage fast moving through traffic. Small residential streets and lanes service the blocks within the Triangle. (fig. 2)

Pedestrian routes are generally along the main vehicular routes, originating at major public transport nodes, The CBD, the Warwick Avenue markets and to a certain extent neighbouring residential areas and places of employment. (fig. 3) In keeping with my proposal for "living streets" I do not propose to create separate pedestrian routes but to accommodate pedestrians alongside vehicular traffic, widening and shading pavements where necessary.

fig. 2 Traffic Flow (Naaidoo, 1988)
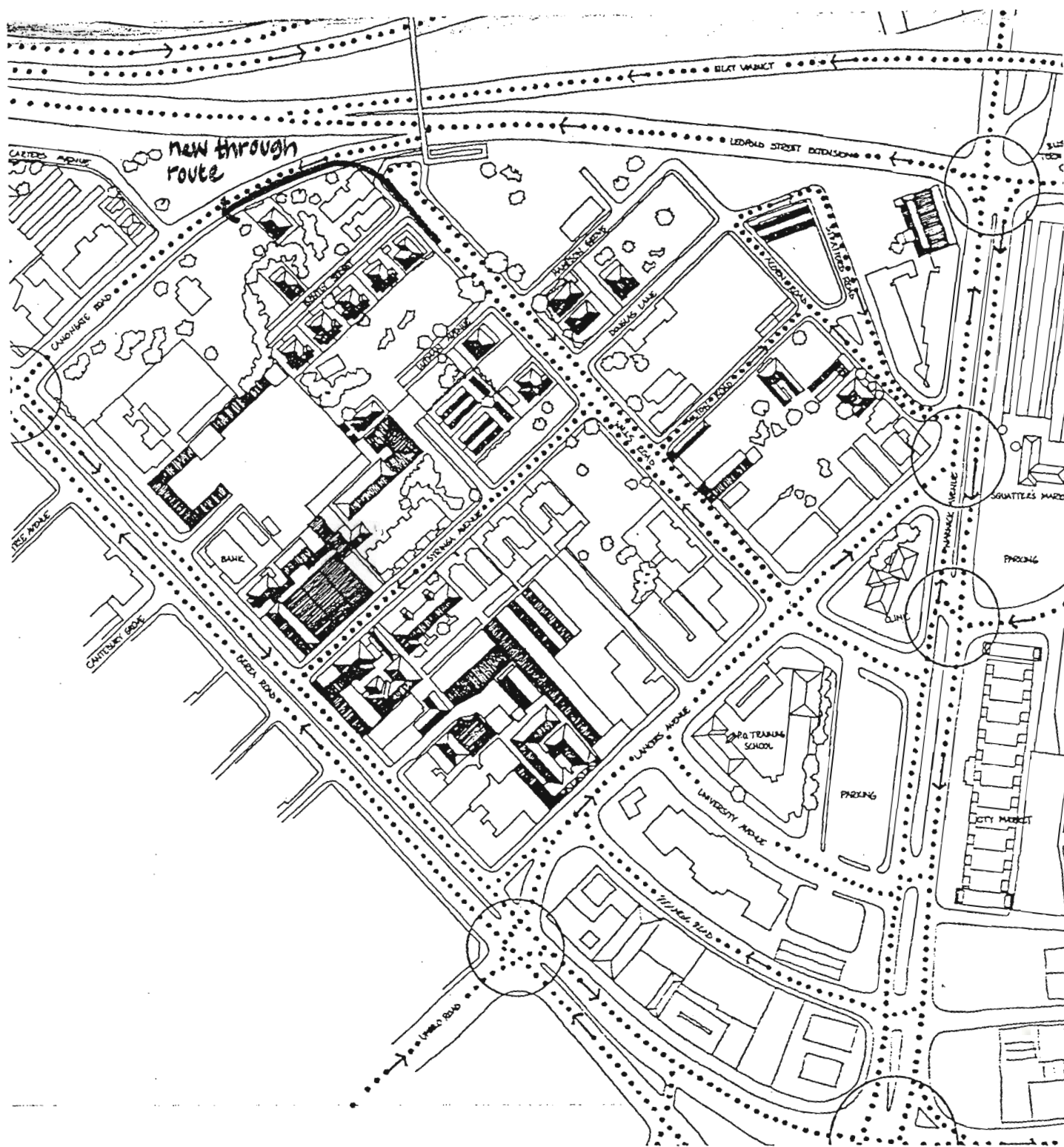
•••→•••• Traffic flow and directions

◯ Major junctions

fig.3 Pedestrian Flow (Naaidoo, 1988)

.... Pedestrian Movement

—— — New Pedestrian routes

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EXISTING FABRIC

There is a unique existing character in the area that has survived in spite of successive demolitions and lack of maintenance. In order to retain this and make sure that new developments contribute to a healing process, a wholeness, these should happen as part of an initial process.

The central part of the area consists largely of single houses, built close to the street with gardens or courtyards behind. Along Lancers Road and Berea Road are low-rise commercial buildings interspersed with taller residential buildings. The density increases further up Berea Road. The E.M. Paruk building on the corner of Warwick Avenue and the N3 on-ramp is reminiscent of Grey Street with its colonnaded pavement and ground floor shops with residential accommodation above. Alongside this, on Warwick Avenue returning along Acorn Road is a newer building which functions similarly, and leads one into the triangle towards an open space in front of some existing small warehouses bounded by Stratford Road and Acorn Road. (fig. 4)

Andy Makin in his design thesis 1989 has proposed that the site bounded by Douglas Lane, Milton Road and Wills Road be developed as a media centre, and that the above mentioned warehouses are re-cycled as craft workshops fronting onto a public piazza-type open space. I have chosen to accept this proposal as if it were part of the existing fabric as it contributes to the wholeness of the area in the ways that I have identified as important. I propose to design a fountain as a focus for this piazza, to create a visual link from Wills Road along Milton Road, and to be glimpsed from Warwick Avenue.(fig. 5)
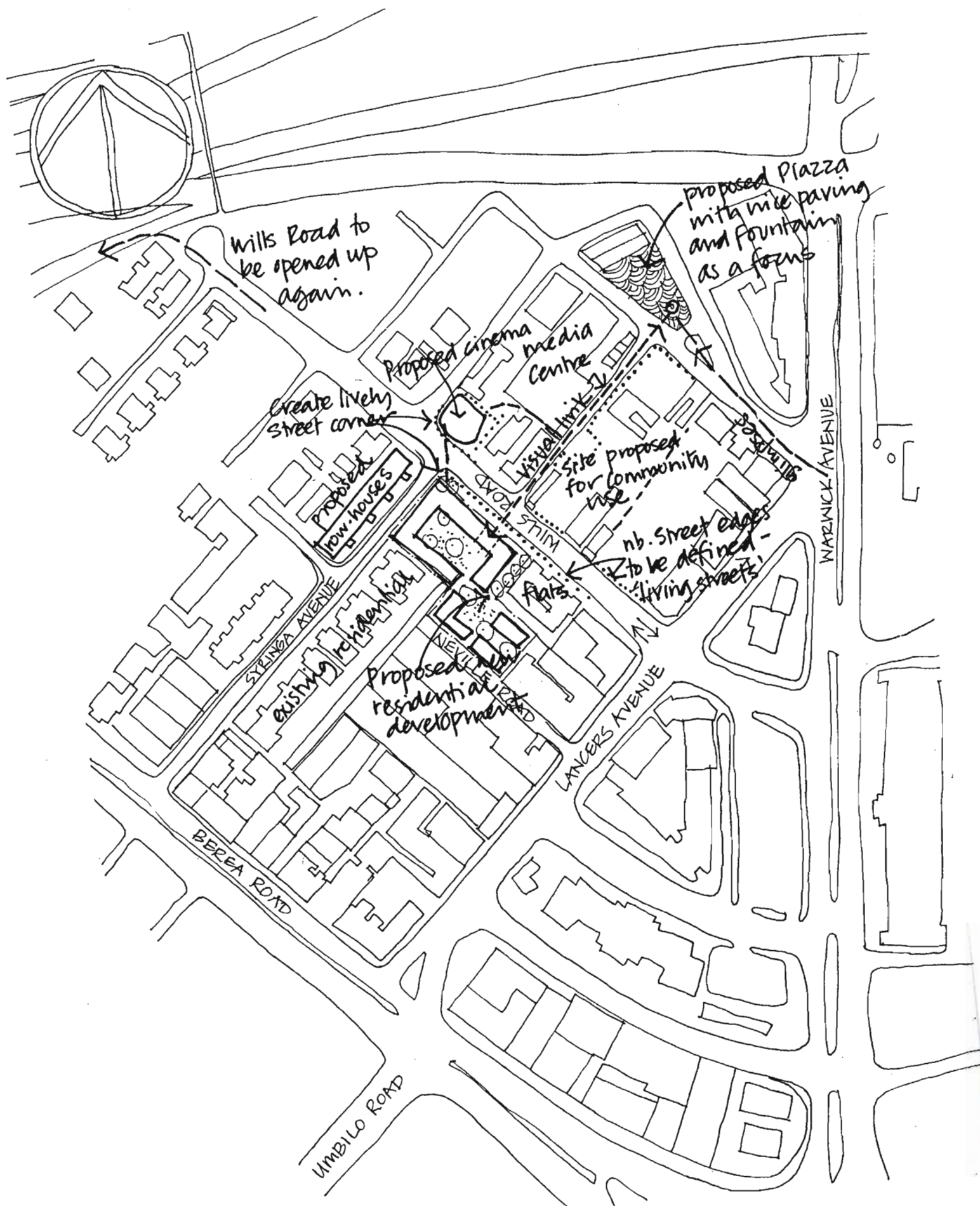
New developments should refer to this existing fabric in order to retain some continuity through the area. Street patterns should be retained and reinforced, street edges should be redefined, the scale of new developments should be appropriate.

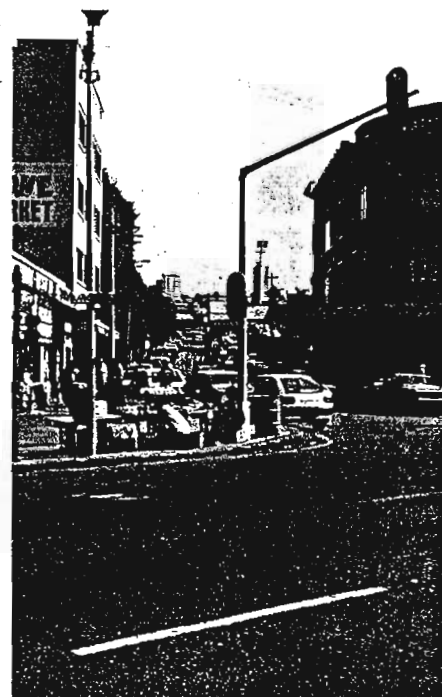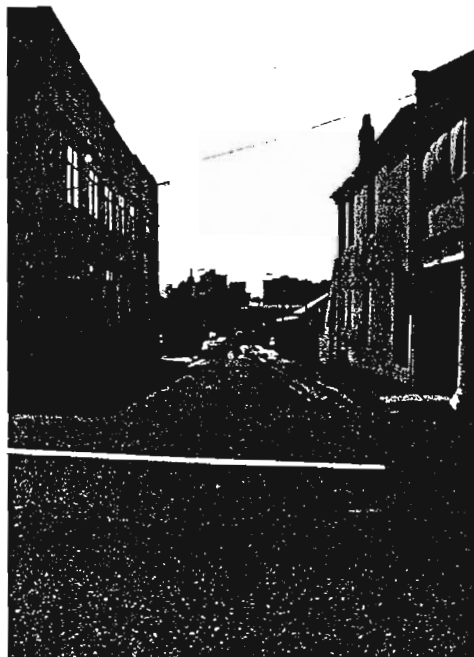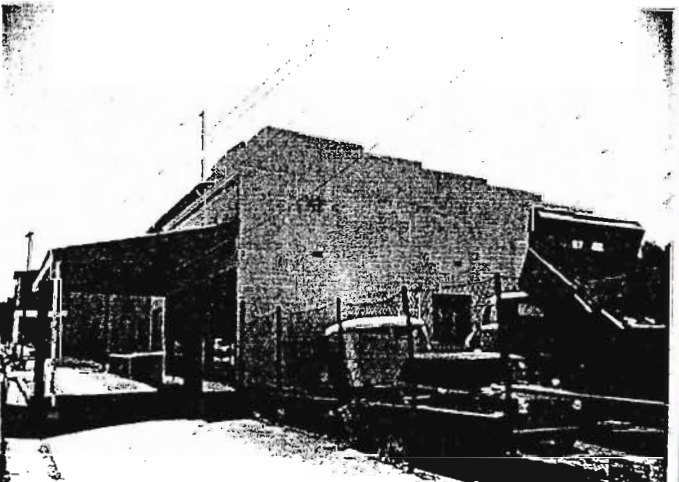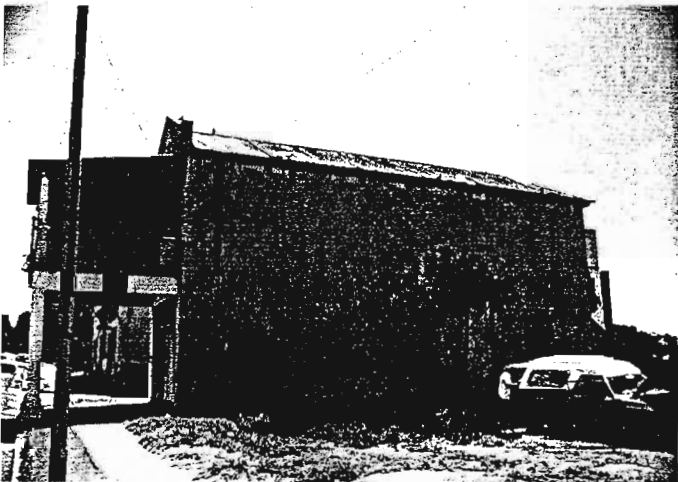fig. 4 Existing Land Use. (Naaidoo, 1988)
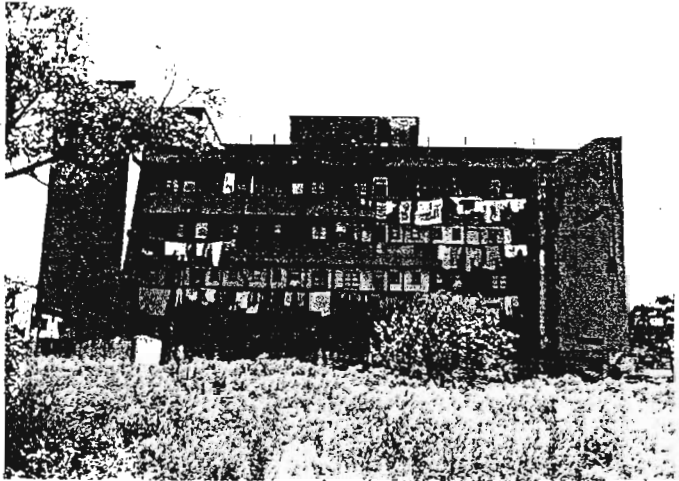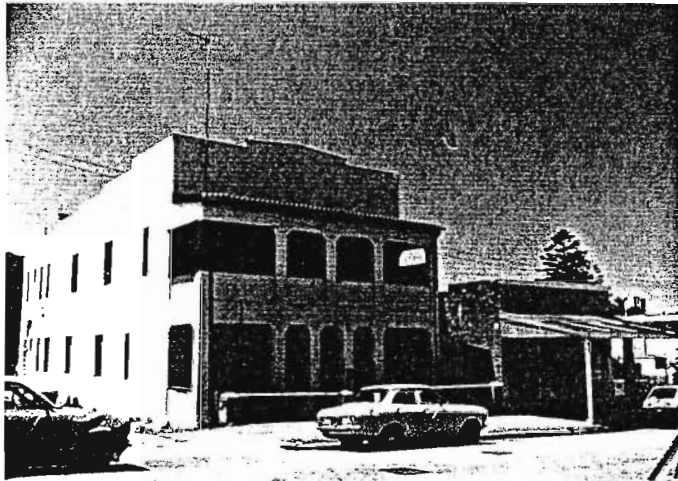

3 Commercial Fringe

2 Residential 2-4 Storeys

1 Light Industrial / Warehousing

fig. 5 Urban Design Sketch Proposal.

Wills Road to be opened up again.

proposed Plazza with nice paving and Fountain as a focus

Proposed cinema media Centre

Create lively street corner

visual link

Site proposed for community use

nb. Street edges to be defined - living streets!

proposed row houses

existing residential

Flats.

Proposed residential development

SYRINGA AVENUE

WILLS ROAD

NEW LINK ROAD

LANCERS AVENUE

WARWICK AVENUE

BEREA ROAD

UMBILO ROAD

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CLIMATE :

Durban's coastal sub-tropical location means that summers are warm and humid with a period in mid-summer that is fairly unpleasantly so, and winters that are generally mild with the occasional cold snap. This means that during mid-summer ventilation and shade are most important and in winter sunshine is at a premium.

The architectural implications of this are orientation, sun-control and ventilation.

Our climate allows many opportunities for outdoor living, and this should also be designed for.

SPECIFIC CHOICE OF SITE

I have chosen the site on the corner of Wills Road and Syringa Road, including the pan-handle site on Neville Road.(FIG. 6)

Cadastral description (FIG. 7): All lots of sub 11 block C of Townlands.

		NO 1737
Wills Road :	LOT E	$574m^2$
	LOT D	$556m^2$
	LOT 1/E	$418m^2$
	LOT A/2/E	$419m^2$
Syringa Avenue :	LOT 6/P	$451m^2$
Neville Road :	LOT TRUST	$1473m^2$
Total area :		$3890m^2$

The site is centrally located in the area and fronts onto two of the main streets. Reinforcing these two streets as living streets will maximise the impact of the development in terms of creating what is most needed in the area : positive urban space.

All the buildings on the site were demolished in about 1980, having been acquired by the government, and the site itself has been as a rubbish dump and hiding place for local drug dealers.

There are a large number of trees on the site still, which should be retained if possible, especially the fruit trees. There are cleared sites on both opposite corners of this site, one of which has been fenced as a children's play ground and the other levelled as an informal soccer pitch.(fig. 8)
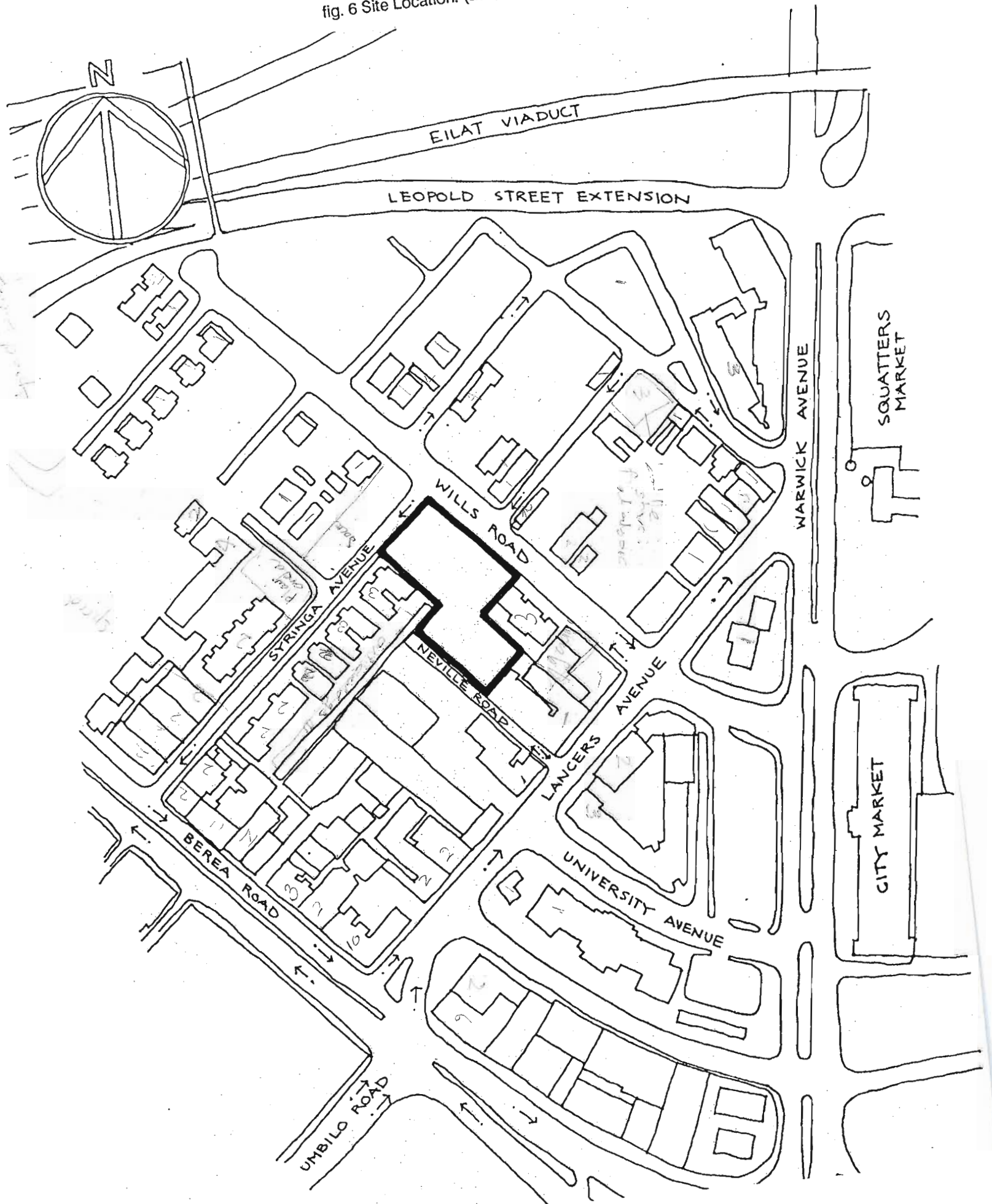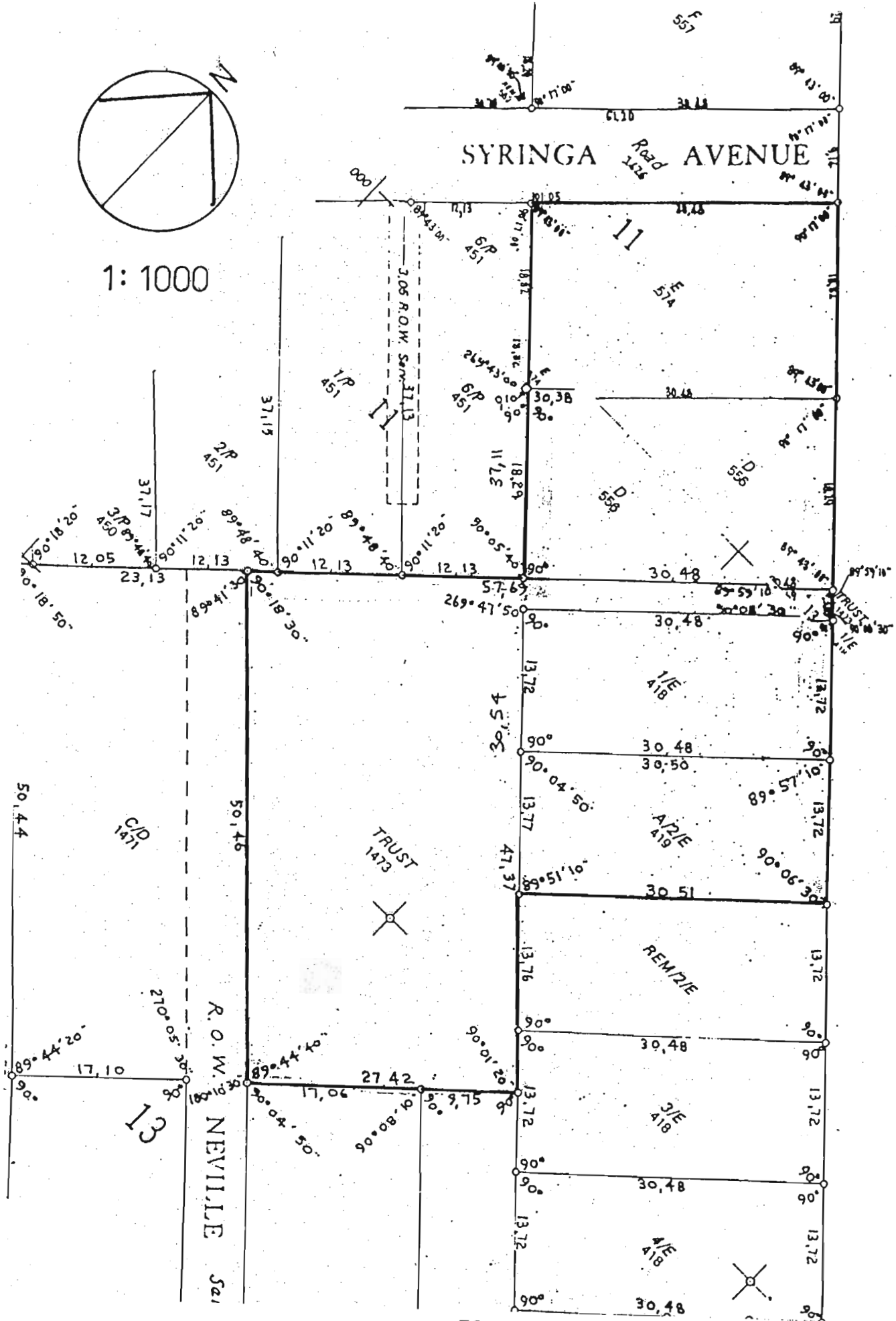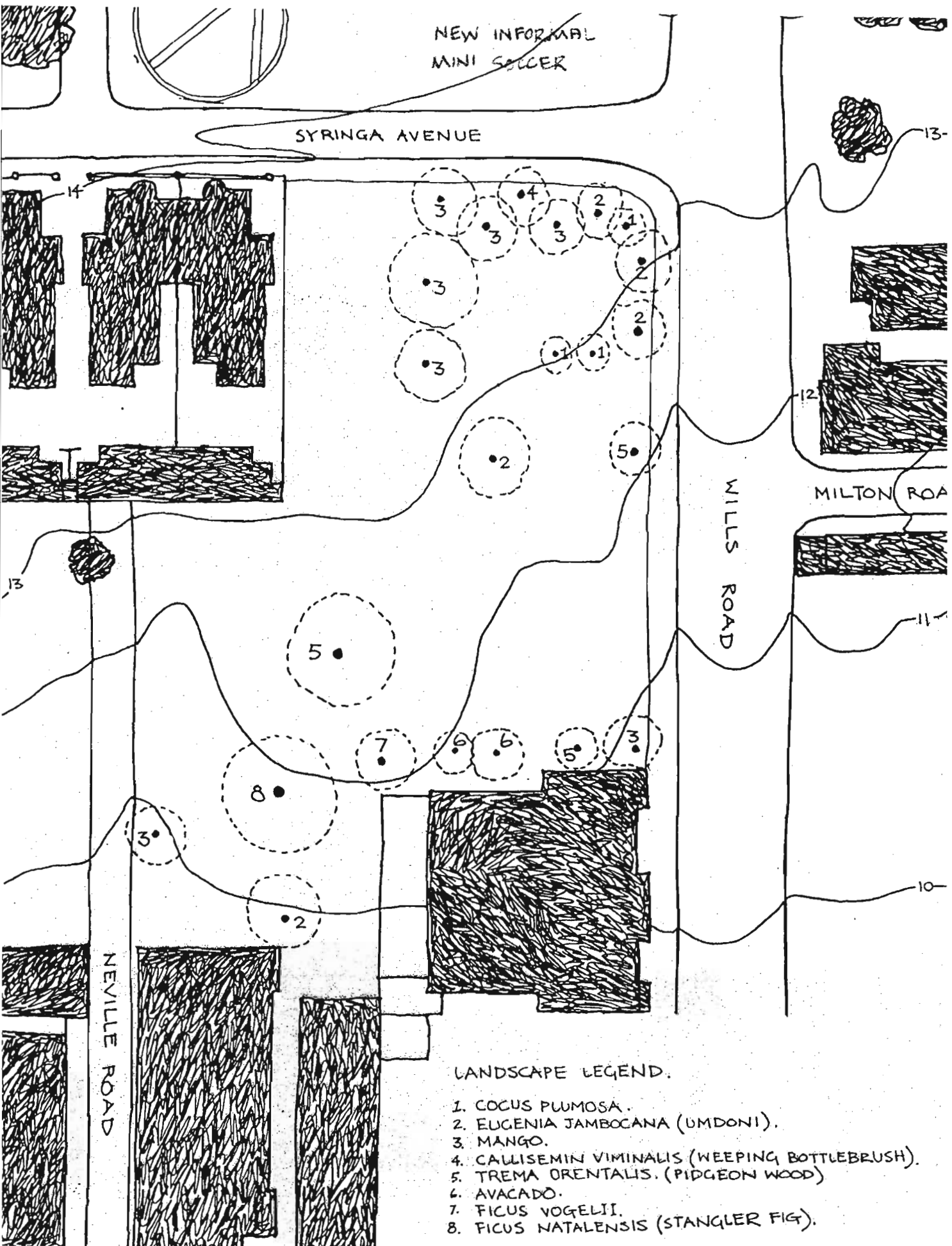
fig. 6 Site Location. (Lee, 1989)

fig. 7 Cadastral Description.

1: 1000

SYRINGA Road AVENUE

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fig. 8 Topography and Existing Vegetation. (Lee, 1989)

NEW INFORMAL MINI SOCCER

SYRINGA AVENUE

NEVILLE ROAD

WILLS ROAD

MILTON ROAD

LANDSCAPE LEGEND.

1. COCUS PLUMOSA.
2. EUGENIA JAMBOCANA (UMDONI).
3. MANGO.
4. CALLISEMIN VIMINALIS (WEEPING BOTTLEBRUSH).
5. TREMA ORENTALIS. (PIDGEON WOOD)
6. AVACADO.
7. FICUS VOGELII.
8. FICUS NATALENSIS (STANGLER FIG).

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There is a slope of 2.5m from north-west to south-east across the site.

Views from the site are predominantly eastwards towards the CBD. These emphasise its urban location.

The site is predominantly orientated north-east and north-west on the street fronts. (fig. 9) Although north orientation is preferable generally and there may be a way of developing the site to a high density where most of the building faces north, defining and reinforcing the street edge is a higher priority. If further developments across the road respect the scale of this, and existing buildings, then because of the widths of these roads, the site is unlikely to be overshadowed. Trees on the northernmost corner provide shade and should be retained where possible.

Residential blocks adjacent on Wills Road and Syringa Avenue provide good reference points in terms of their scale and location right on the pavement. Opposite, on Wills Road, small shops with residential accommodation above reinforce ancient patterns of urban development.

fig. 9 Orientation. (Lee, 1989)
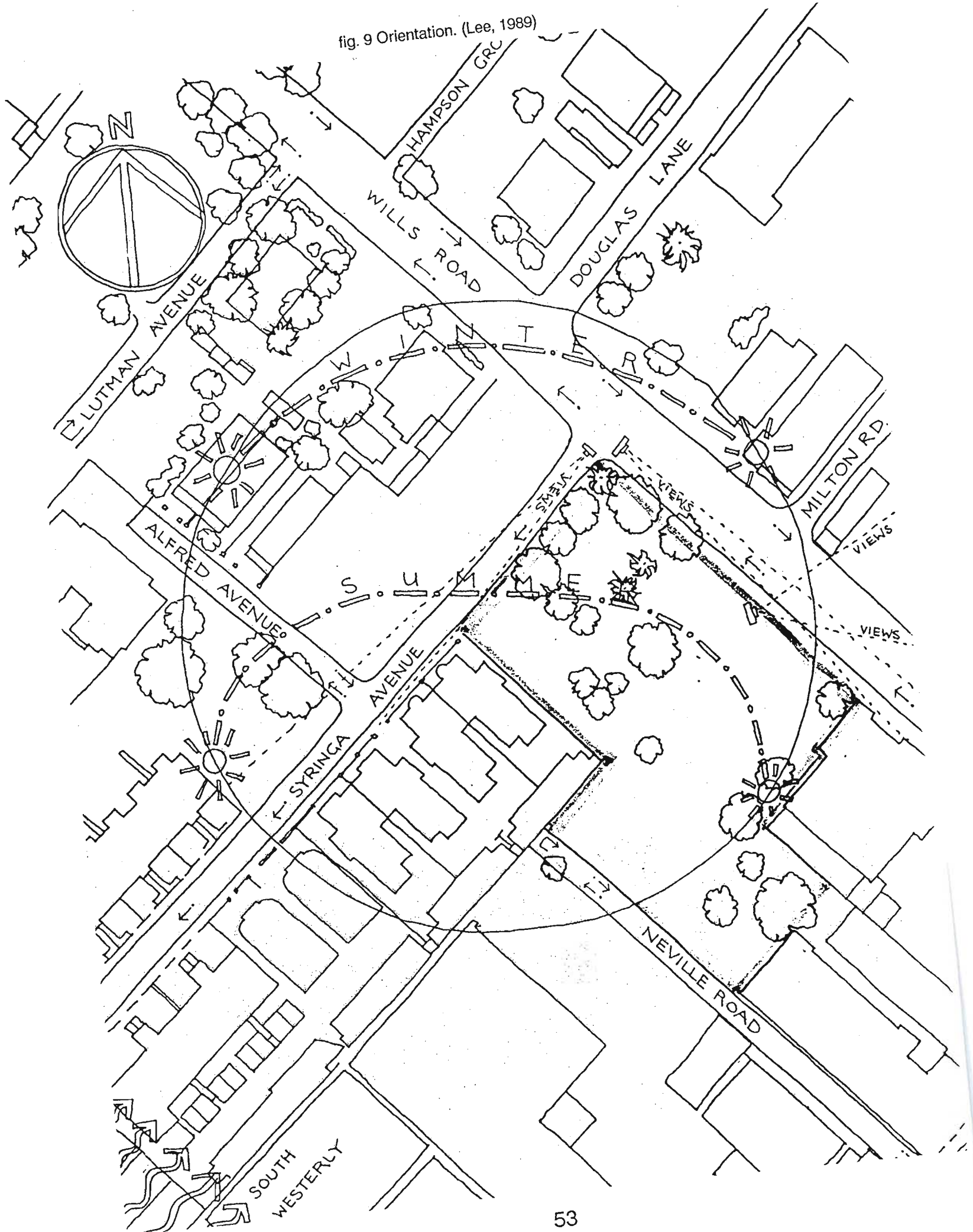
CHAPTER SEVEN : DEVELOPMENT OF THE BRIEF

INTRODUCTION

This may be seen as an assimilation of the preceding chapters. The overall aim of this thesis is to create a living environment in the city, an urban residential quarter, that does more than merely house its inhabitants. The whole proposal must have some lifr-enhancing qualities, for example : increased opportunities for social interaction, employment etc. This means that the residential accommodation should be carefully integrated with other functions, and this should be integrated with other functions, and this should be integrated into into the urban fabric as a whole.

Richness and variety are seen as important and can most effectively be created by stimulating individuals, or groups of individuals, to contribute their own creativity and energy in the making of their own environment. The notion of process is important, although this should not be an ad hoc process but be guided by what has gone before. The underlying order of the initial scheme must provide the opportunity for complex individual responses in a manner that does not destroy the overall legibility of the buildings and spaces.

This has led to a brief for a multi-use building containing shops, workshops, community facilities as well as residential accommodation.

URBAN DESIGN

i)   The street edges, or street-scape, of both Wills Road and Syringa Avenue need to be reinforced. This is seen as a priority.

ii)   Functional zoning should not apply. New developments should "capitalise on the uniqueness of place" (DD and RU)

iii)   The interface between public and private should be clearly defined, and on street edges should give a sense of continuity.

iv)   The urban fabric as a whole should be reinforced.

PUBLIC ZONES

Ground Floor Shops Along Wills Road

Allow +/- 500m^2

i)   Shops should vary in size based on the structural module, which is chosen in accordance with the residential component above as this is more sensitive to the size of this module. Very large shops should be discouraged. 25m^2 to 100m^2 is a desirable range.

ii)   Shop frontage should be maximised, and it is assumed that the Grey Street pattern of displaying wares on the pavement is likely to be adopted.

iii)   Shop entrances should be small. Keepers of small shops, often run by one person, prefer this for security reasons. The shop keeper is usually to be found standing in the doorway keeping watch over the goods on the pavement and simultaneously guarding the shop and enticing people to come inside.

iv)   Service from the main road is preferable. A second service entrance is seen as a security risk.

v)   Ablutions should be accessible to all shop keepers, arranged so that facilities are shared. 3 wc's and 3 wash-hand basins are sufficient.

vi)   Each shop should have storage and display space, although this would typically be fitted by the shop owner.

vii)   Electrical layout should provide for lighting and at least two plug points (not adjacent)

Eating House

(area included in commercial component)

i)   Seating space indoors, allow 50m^2

        Seating space outdoors, allow 50m^2

ii)   Kitchen, allow 60m^2 total to be divided into storage, preparation and serving spaces.

iii) . Service access, allow separate entrance from Syringa Avenue.

iv)   Ablutions, allow 1 male wc and wash hand basin and 1 female wc and wash hand basin.

v)   Refuse, allow yard 10m^2

Workshops

(allow +/- 500m^2)

i)   Zoning of workshops on Neville Road allows easy access and workshops provide surveillance during the day for residences above in potentially the most isolated part of the site.

ii) As for the shops, workshops should vary in size according to the structural module. The minimum size should be 18m^2 (i.e. a single garage)

iii) Each workshop should accommodate storage space workbench/es, an open central workspace and should have access to some outside space.

iv) Ablutions, allow 2 male wc and wash hand basins and 1 shower and 1 female wc and wash hand basin and 1 shower. Ablutions should be shared between all workshops.

v)   There is no need for separate service access if the workshop yards relate to their entrances.

Parking

i)   It has been assumed that many residents will not be car-owners, therefore on-site parking is not a priority.

ii) Wills Road should be narrowed, both to slow down through traffic and to allow extra parking on the street. Some street parking is available on Syringa Avenue.

iii) Parking is to be provided on site in association with the workshops.

Offices

i)   Office space has not been specifically designated but the first floor on Wills Road is suitable for office use if desired. The structural module for domestic accommodation is suitable for offices.

Telephones

i)   At least two public telephones should be provided on the site.

Open space

i)   The general public should have access to some of the open space on the site. The interface between public and private must be well defined.

ii) Existing pedestrian routes across the site must be preserved.

SEMI PUBLIC ZONES

Laundry

(allow 30m^2 and 60m^2 outside drying area)

i)   The laundry should accommodate wash troughs, washing machines, dryers, ironing boards, tables, drying racks and open shelves

ii)   Drying lines may be accommodated on the roof.

iii)   Water supply must allow for machines to be plumbed in. Plug points must be provided for all the machines.

Access staircases and corridors

i)   Common staircases for small blocks should be secure and accessed via a gate. An intercom or bell system would allow access by visitors.

ii)   Opportunities for natural surveillance should be provided wherever possible.

iii)   Long corridors or galleries should be avoided. As many units as possible should have individual entrances, shared entrances should serve as few units as possible. Where corridors are unavoidable there must be opportunities for surveillance along the way.

Fire escape routes

i)   All units must have access to at least two means of escape.

Gardens

i)   A portion of the common open space must be defined (this does not necessarily mean fenced off) for the use of residents only.

ii)   Ground floor units may have small private gardens which must be clearly defined especially adjacent to public space.

PRIVATE DWELLINGS

Types

i)   A combination of different types of units should be accommodated. it is consistent with my general approach not to define an exact combination but to allow for flexibility within the overall structure. it is important that there are units for single people, families, extended families and adults sharing eg. student commune. the way that all these types can fit in must be illustrated.

Identity

i)   Rows of identical looking units without individuality is unacceptable. Different unit types must be expressed and there must be opportunities for individual expression.

Scale and Density

i)   High rise residential accommodation is regarded as unacceptable. Four storey walk-ups, if carefully arranged, achieve densities equable with high-rise developments. Five storeys are acceptable if the top unit is a duplex.

ii)   A density between 150 and 200 dwellings/ha or 600-800 people/ha is acceptable for a development of this nature. This implies a total number of dwellings between 60 and 80 on this site, depending on the mix of sizes. Obviously the more large units there are the more people that can be accommodated, but fewer individual units.

iii)   Where possible, large units should be designed to include a room on the entrance level that may be used either to run a small business, or let out separately to boarders. Where this is the case, a wc and wash hand basin must be provided on the same level.

iv)   Flexibility of spaces is paramount, eg. a large living space may be adapted to include study space or even a sleeping alcove separated where necessary by a curtain.

v)   Individual units must respond to orientation so that living spaces have advantage over sleeping areas. Climate control is fundamental to the design of the units.

vi)   Every unit must include some outside space, either balcony or terrace. This should include, where possible space to hang washing.

TECHNICAL REQUIREMENTS

Structural framework

i) The structural framework must be simple and of a repetitive nature in order to be cost efficient.

ii) The structural module is to be based on what suits the residential accommodation as other functions are more adaptable. A tartan grid which allows 220mm for primary structural elements and 3m between, works well. This is a reasonable room dimension for residential accommodation and allows functions such as bathrooms to be 2m with 1m for adjacent circulation.

iii) The framework should be designed to suit specific site conditions. On steep slopes the first level may even be raised off the ground.

iv) Vertical circulation should be designed as part of the primary structure.

Service zone

i) It is most convenient if services are accommodated in ducts at regular intervals which can be installed with the primary structure. In this way, the most expensive elements of the project can be built first and maybe provided by the State, allowing a private sector and/or other housing agencies to complete the development.

Infill

i) Infill of conventional construction (brick or block work) is to be encouraged as opposed to high tech or highly industrialised methods, although in certain cases this may be more appropriate eg. corrugated iron may be used as cladding panels.

ii) Additions and alterations should be easily accomplished. This is facilitated by the use of a sturdy structural frame that will tolerate reasonable additional unforeseen loads. The use of conventional construction methods further facilitates this.

Floors

i) The use of pre-cast floor systems must be provided for as this is easy and quick to erect. Systems such as concrete hollow-pots are the most cost effective.

ii) Mezzanines and internal staircases may be constructed in timber although pre-cast systems may also be used.

<u>Roof</u>

i)   The roof structure should allow for the addition of clerestory windows and roof lights. A simple mono-pitch structure covered with tiles or corrugated iron best suits this application.

ii)   Some of the roofs will be needed as usable open space eg. for washing lines, terraces, roof gardens etc. These should be constructed using the same precast system as the floors and suitably drained and water-proofed.

<u>Building elements</u>

i)   A range of standard elements may be used specifically chosen by residents. But a simple range of elements that could be constructed on site to suit various situations is preferred because it contributes to the process that produces variety throughout the scheme, and employment opportunities on the site.

An Urban Quarter. Joanne Lees

CHAPTER EIGHT: DESIGN REPORT AND TECHNICAL REPORT

I believe that to a large extent the objectives set out in this document have been achieved.None of the objectives changed during the design process.

Because I advocate a participation process at the design stage, which would best be handled using a large scale model with interchangeable parts and arrangements, complete with scale furniture, (Rodney Harber uses this method with a high degree of success) it is obvious that the proposal presented together with this report is not definitive. Within the framework that I set up in the beginning(and this may also change as the result of participation although I believe that the one I have used is successful) I have tried to demonstrate the kind of richness and variety that can be achieved, not only in terms of the appearance of the building, but in function and spatial experience as well. This means that although I have presented a complete proposal, it is only one configuration out of possible thousands.

My proposal responds clearly to specific site conditions and to my specific concerns with regards urban design, and includes what I believe to be a viable mixture of accommodation, but primarily is a demonstration of how a rich mixture of accommodation may be provided within a simple structural framework with rationalised services. Another important thing to realise is that although the buildings presented here are site specific, the process that generated them is not and may be applied to any site where housing is part of a proposed development. Indeed, I strongly recommend its application.

Consistent with Chapter One, at the large scale I have not proposed a finite urban design scheme for the Warwick Triangle, but in pursuit of wholeness (meaning both whole and healed) I have tried to reinforce the existing fabric and create opportunities for future developments to further contribute to the healing process.

The pedestrianisation of Milton Road, and the creation of foci at each of its ends not only reinforces the places at the ends but creates opportunities for specific kinds of activities along the street.I have accepted Andy Makin's 1989 thesis proposal for a Media School and Production Centre on the North side of Milton Road, as an existing building because of the positive contribution it makes in terms of the criteria I have outlined as important.It benefits from this pedestrianisation as it is a semi-public building with routes through it and a related public space on the other side of the road, and I strongly propose that the whole site on this the South side of the road be developed as another community or cultural centre.

The open corner at Wills Road and Douglas Lane is ideal for the development of a small cinema, related to the Media Centre but independent of the large cinema chains. This begins to suggest an activity node at this intersection between Wills Road, Douglas Lane and Syringa Avenue. I have reinforced this idea by placing the most active functions in my brief at this intersection. The other corner is already used as a mini soccer pitch and should remain so.

The remaining open sites along Syringa Avenue should be developed as low-rise residential accommodation to complete the low-scale residential street that already exists. This is reflected in my building as well.

It is proposed that Wills Road be opened up to join Cannongate at the North-West corner of the Triangle to encourage through-traffic which will reinforce the activities along Wills Road; I have discussed the use such routes as generators of urbanity in Chapter One with reference to Dewar and Uytenbogaart's study of urbanism in Cape Town.

THE FRAMEWORK

The assumption is that the structural framework, integral vertical circulation and service ducts and services would be erected by the state or some state housing agency. I chose to adopt a framework of columns and slabs of in-situ reinforced concrete as opposed to steel, which is too high-tech, or a system of fixed party walls, which is too inflexible. The flexibility of the frame is clearly demonstrated in the use of a staggered party wall arrangement in some of the units. This plan form allows two units to be accommodated within a 9m frontage without compromising the size of individual rooms. Adjacent units have either one room in front and two at the back, or vice versa.

Column and slab thicknesses have been kept to a minimum, which is facilitated by the use of a small module. A small module is a better generator of variety than a large module allowing subtle modifications to occur at frequent intervals. The module I have chosen relates to the scale of domestic spaces which I have given priority over other functions which are more easily adapted to any module. A tartan grid which allows 220 mm for primary structural elements and 3 m between works well. 3 m is a reasonable room dimension and allows functions such as bathrooms to be 2 m with 1 m for adjacent circulation. In addition to this, standard domestic fittings, windows etc. are usually based on a 300 mm module and may therefore be easily accommodated. The vertical dimension - floor to floor (except ground floor) - relates to minimum ceiling heights, slab depth, and concrete block sizes. The bias towards the block module rather than any other material is because blocks are the most difficult of possible options to accommodate in a framework that they do not fit. This does not mean that block is the only material that may be used, brick or dry-wall construction may work equally well, although I have chosen to assume blockwork construction for the purposes of this proposal.

ARRANGEMENT OF BUILDINGS ON THE SITE :

There are a number of factors that generated the basic form and layout of buildings on the site.

Density :

Martin and March, 1972 , investigated the distribution of buildings and open space in various configurations in relation to density in their " urban space and structures " and found that perimeter block arrangements achieve higher densities than either detached point buildings or rows.In my proposal the size of the internal space in relation to the height of the buildings is determined by the amount of sunlight coming into the space on a mid-winters day :

The worst part of the site, assuming a perimeter arrangement, has been zoned as a small boarding house where residents are likely to be staying on a temporary basis.

Street-scape :

In keeping with my policy of contributing positively to the urban space, a perimeter arrangement along Wills Road and Syringa Avenue is the best solution. This reinforces the decision to use this arrangement. The ground floor of Wills Road is zoned as shops, leading up towards the active node at the intersection with Syringa. The concept of interface, discussed in Chapter One, is important and has been dealt with by making a colonnaded veranda-type pavement with an upper level sort of piano-nobile which may be enclosed or used as a veranda. This creates continuity whilst allowing variation of shop-front on the ground floor and accommodation above. Above, this variation occurs at all levels, governed by the system of the framework. Small front gardens with low walls define the interface on Syringa Avenue. On Wills Road, the more public of the roads, the idea of interface is also reflected in the raising of the residential accommodation to the first floor. The pavement experience is enriched by glimpses into stair-wells giving access to upper floors. These are controlled by day by surveillance from above and by gates (which may all be different) at night. The whole central space can be secured by gates at night.

Orientation :

Although North orientation is desirable, the reinforcement of the street-scape is considered more important. The residential block at the back of the site is arranged at an angle to improve the open space both in front of it and behind it, and to allow it better orientation. Buildings are all scaled to allow maximum penetration of sunlight into the spaces hence the low scale of the Wills, Syringa corner. The steps in the building are also used to create a break-down of scale and a variety of visual and spatial experiences. The buildings have a height limit of four storeys, except where top units are duplex units, to prevent the need for lifts, and because I have a strong belief that high-rise residential buildings are inhumane.

Inactive corner :

The Southern corner of the site is potentially the most inactive part of the site with security problems because of the servitude Neville Road. Instead of turning its back on Neville Road, I have proposed that the scheme incorporate a new road along the Southern boundary adjacent to Wills Court which links Wills Road and Neville Road. This reduces the potential of Neville Road to be a dark alley, and at the same time allows the row of existing trees, mainly fruit trees, to be retained along the edge of the site. The buildings in this corner accommodate studio / workshops of various sizes on the ground floor which open out onto work yards. This allows continued surveillance during the day, thus securing the residential units above.

LANDSCAPING

I have given priority to retaining existing trees on the site which are well established. Many are fruit trees with obvious advantages in a residential quarter.

Where possible, I have allowed ground floor units to have some small defined private garden space. This assists in the creation of interface definition on Syringa Avenue and along the front of the residential block along the back of the open space.

The open space has been divided into two main zones - one public, which allows existing pedestrian routes across the site to be preserved, and one less public grassed area which would generally be used by residents. This is not divided by a physical barrier but is defined by a change of level and surface treatment.

BUILDING EXPRESSION

The main inspiration for the expression of the building, apart from work such as Charles Correa's, described more fully in Chapter Three, has been the old buildings in Durban with similar functions, especially those in the Grey Street area, and the small fairly typical apartment blocks found on the Berea. These demonstrate a sensitive response to climate and the solid and void articulation of verandas causes endless variety in the play of light and shade on the buildings.

The use of different sized windows, breeze-blocks and wall textures continues the theme of variety within a given framework. Block walls are mostly bagged and painted, the use of colour is desirable, and windows and doors have a plaster surround continuous with lintels and sills.

DEFENSIBLE SPACE

The notion of defensible space was a main generator of the arrangement of access and circulation routes. Where possible, units have individual entrances, and otherwise access galleries and landings are shared by as few units as possible. On Wills Road, entrances are off large landing/terraces shared by four units each. These could be used as outdoor living common spaces and it is hoped that residents would take pride in them and enrich them with plants etc.

The long block at the back of the site is designed so that ground and first floor units have their own entrances and above that duplex units are arranged either over two floors or overlapped over three, so that from the central staircase there is only one access corridor on each side.

INDIVIDUAL UNITS

The configuration of unit types is not fixed, but I have tried to demonstrate a variety of types. I have included small one bedroom units, and a large number of two- and three-bedroom units and where possible have included a separate room, sometimes with associated toilet and whb. which may be let out seperately by residents as small office or bedroom space, as an income generator. This assists in the broad distribution of the amenity of the development as well as in affordability for individuals.

There is a bias overall towards larger units as these allow a greater density of persons/ha in the development and make the overall development more economical. Some of the units, Type I (see Drawing No.2), are designed specifically with extended families in mind.

The actual configuration and density is described in detail on Drawing No.2.

TECHNICAL

Structure :

This has already been described as a reinforced concrete structure of columns and slabs on a grid, with in-situ concrete staircases. The precast floor system meantioned in the brief was rejected as impractical since a system of colomns and beams is more trouble to build than columns and slabs anyway. The depth of floors in pre-cast systems is also greater than in-situ.

Services :

Service ducts have been rationalised into bands so that service runs are simple and straight. The number of ducts has been reduced where possible by back to back arrangements, although where this is at the expense of light and ventilation of spaces, these have been given priority.

Roofs :

Roofs are simple mono-pitches against parapets on timber rafters, covered with corrugated iron-sheeting. Where possible, roofs have been used to help break down the scale of the buildings.

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APPENDIX I

HISTORICAL CONTEXT OF THE WARWICK TRIANGLE (CASBAH)

In seeking to avoid mistakes of the past, any future decision making or re-development will have to incorporate the historical background and the symbolism of the area. One needs to be able to understand the background of the statement "I wouldn't move out until they throw me out _" by a resident.[1]

The Casbah was originally an extension of the Indian Grey Street complex. It became regarded as a residential area somewhere towards the end of the 19th Century. Despite opposition from White "colonialists" of the time, the area developed as a mixed residential area right from its earliest days. Around the 1930's with the building of the railway station and the market, as well as the development of bus services, the Casbah area became a desirable and convenient residential and business zone. The area retained its "grey" status despite attempts in the 1950' and 1960's to remove people under Group Areas legislation. The 1960-1970 removals and threats of evictions were the start of trouble. The residents staying behind organised themselves into an Action Committee and began to make their opinions heard with the Department of Community Development. The D.C.R.A. (Durban Central Residents Association)protested removals and groups of individuals were involved in court actions. With the introduction of the new Tri-Cameral Parliament in 1984, all eviction notices were withdrawn by the Department of Community Development. The indecision on the part of the Local Authorities and the inability of the Tri-Cameral Parliament to bring about any finality on the future of "grey" areas has meant that residents live in a state of uncertainty.

Development in the area has been frozen. The Casbah is presently occupied by 350 multi racial families. Indecision of the future is evident in the stark landscape of vacant plots, scattered housing, and a few high density flats. Years of struggle have resulted in a closely knit community, working together to solve their problems.

Extract from Design Thesis by Karuni Naaidoo, 1988

The Casbah, now a free settlement area, becomes officially unfrozen at the end of November 1990. There is still no official town planning scheme for it, and until there is the effect is the same as if it were still frozen.

Legend:

Proposals

1 Restaurant / Take-Away
2 Shop
3 Boarding House
4 Laundry
5 Studio / Workshop
6 Work yard
7 Private garden
8 Public telephones
A 2 bedroom flat
B 3 bedroom flat

Existing

9 Walk-up residential
10 Shop / office and flat(s)
11 House
12 Media centre
13 Shop
14 Light industrial

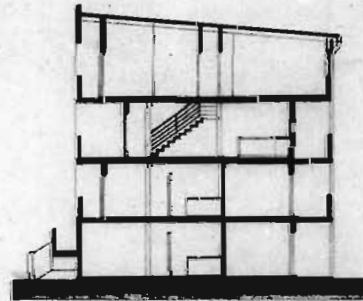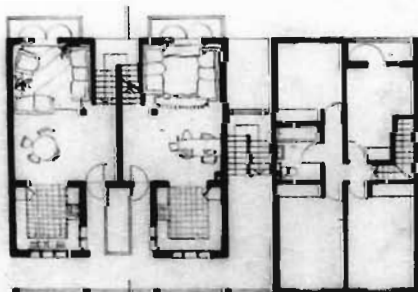# 3 GROUND FLOOR PLAN
1:100
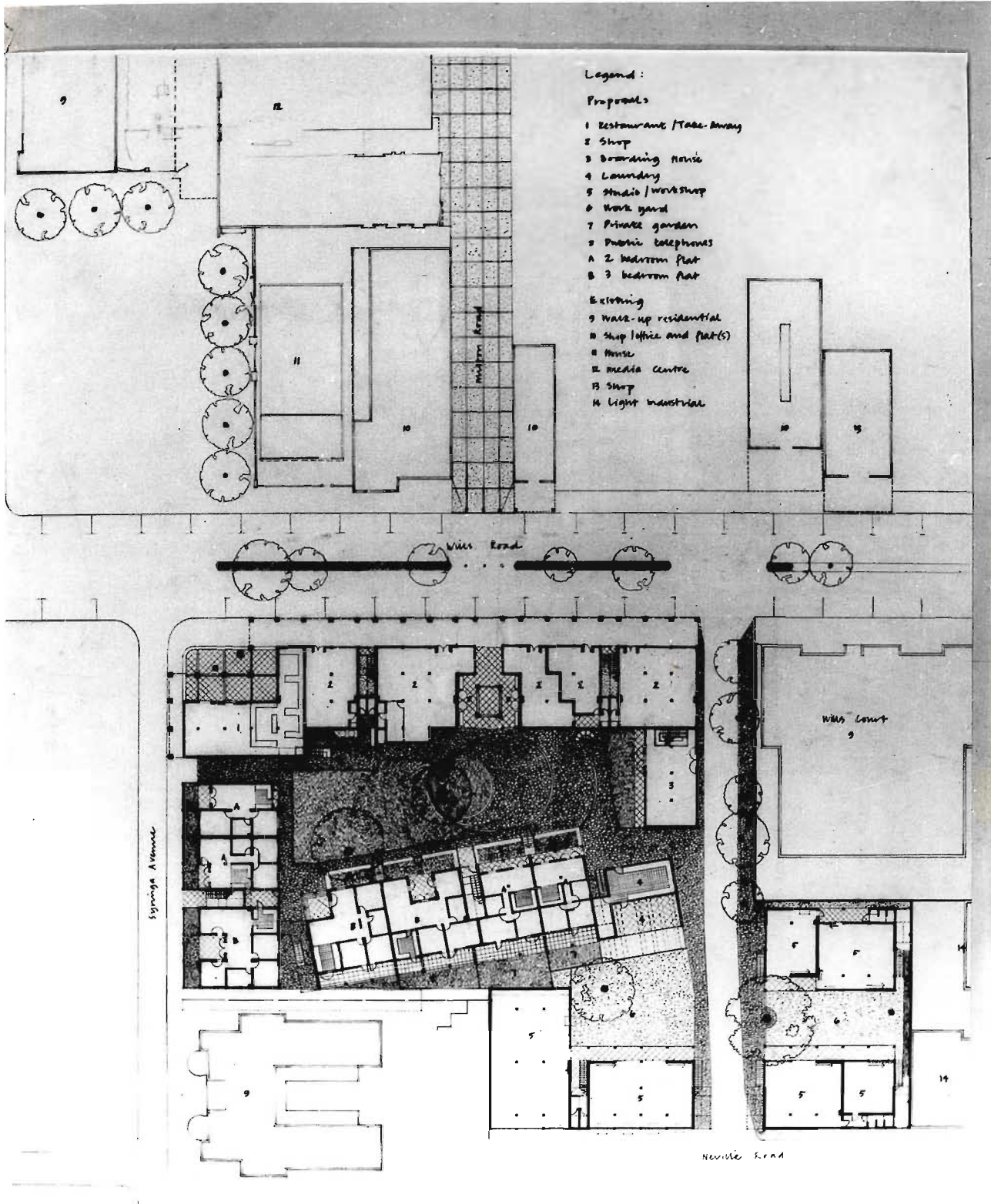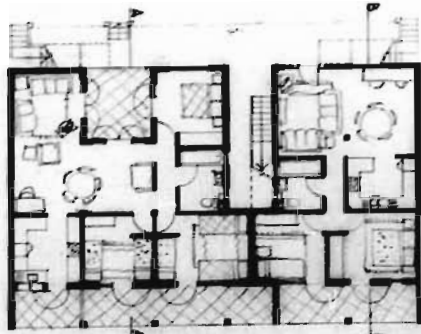
Ground floor plan

Fourth floor plan
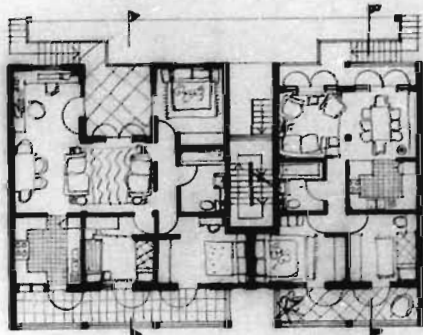
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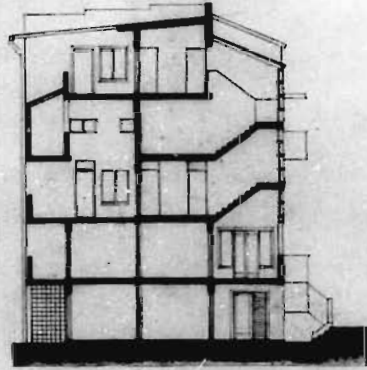
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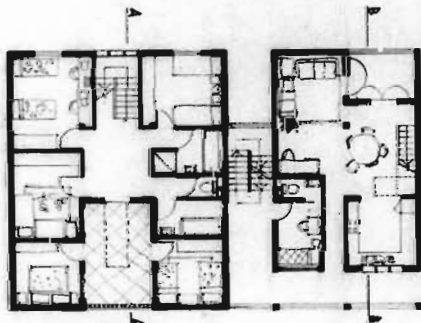
Second floor plan

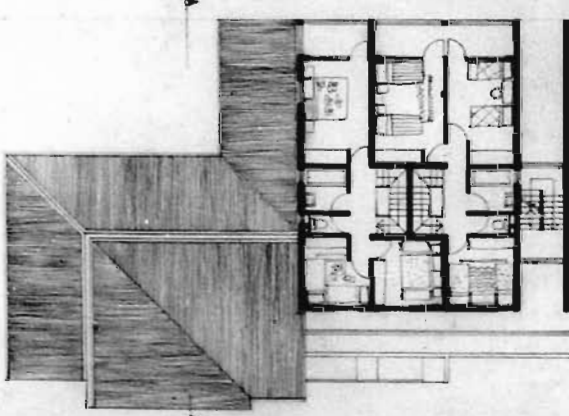Section B·B

Third floor plan

Elevation

7 DETAIL AREA 2
1:100

Legend:

Proposals
1 An urban Quarter
2 Plaza with fountain
3 cinema
4 walk-up residential
5 Pedestrianised streets
6 Wills Road opened
7 Site for community use

Existing
8 Walk-up residential
9 Industrial
10 media centre
11 Shop below, flats above
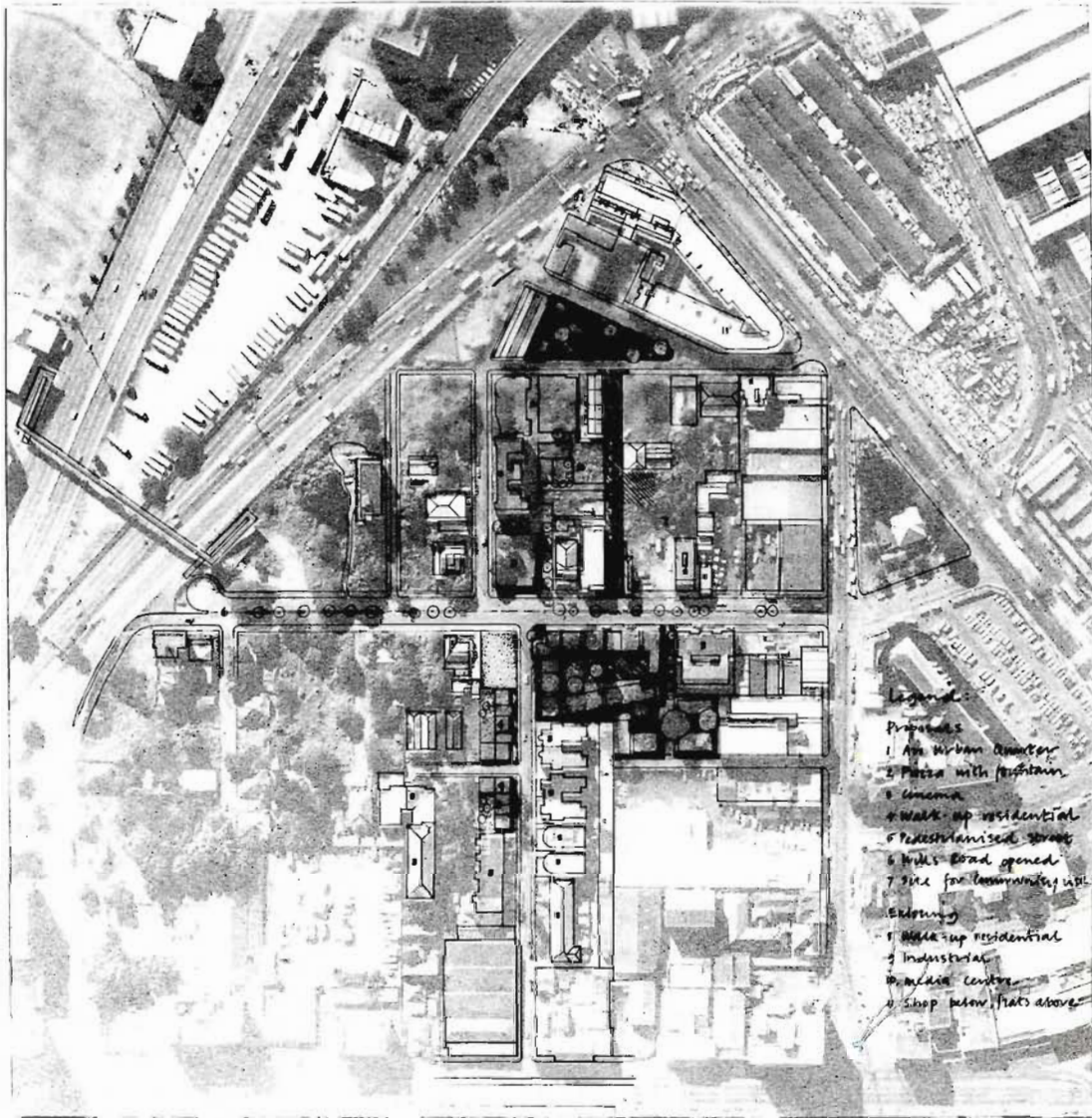
AN URBAN QUARTER

Joanne Lees

1990
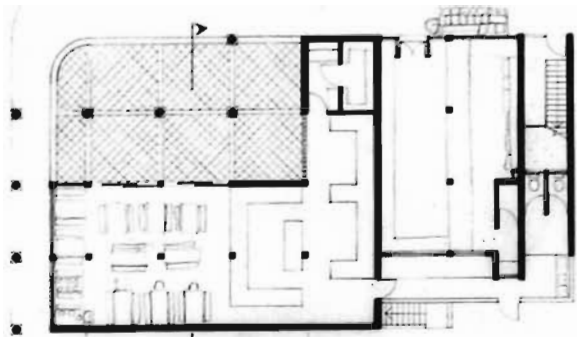
Ground floor plan
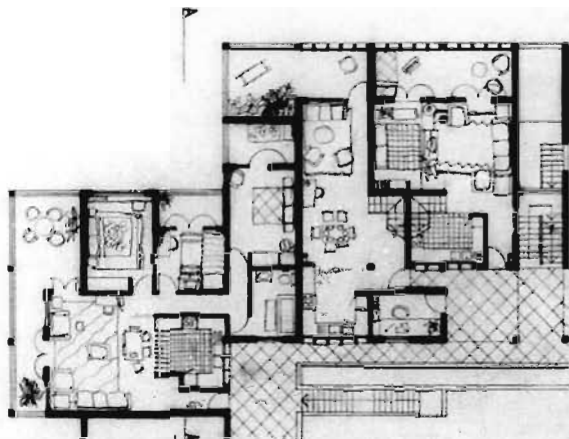
First floor plan

Second floor plan
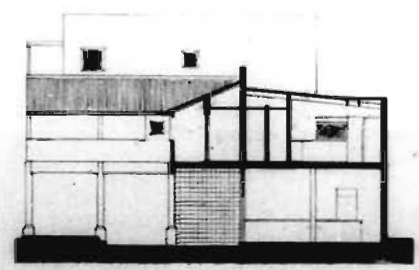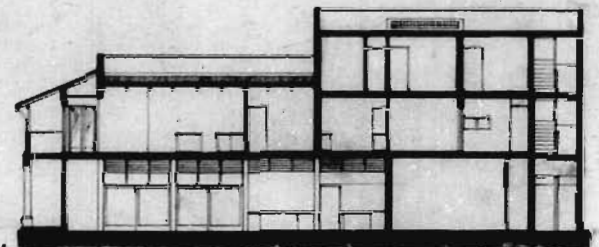
Section A-A

Section B-B

6 DETAIL AREA 1
1:100
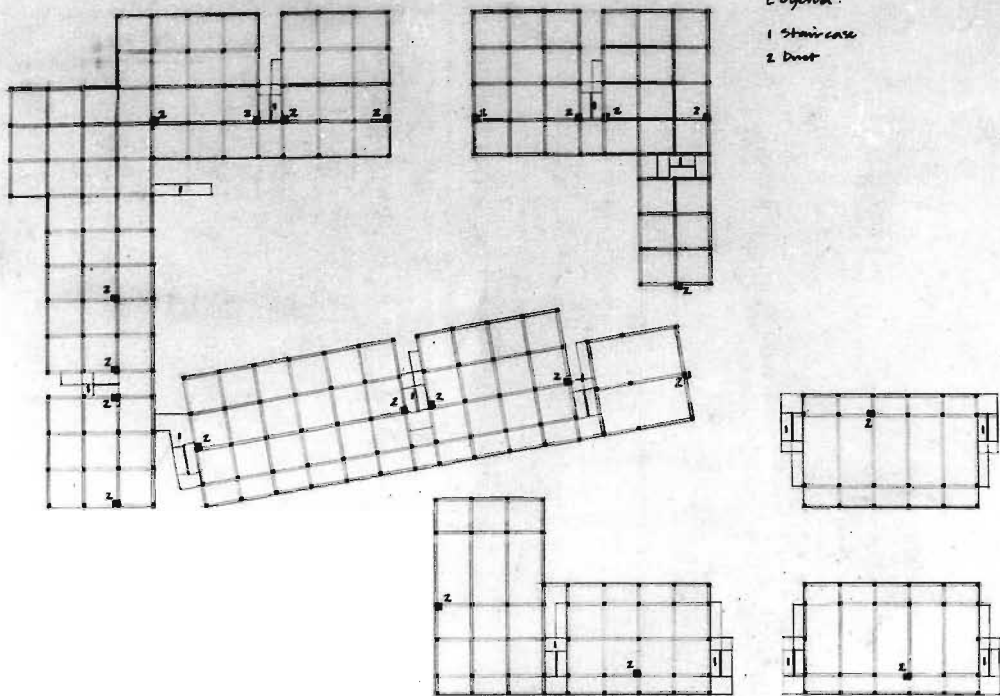
Phase One: STRUCTURE AND SERVICES

Legend:

A 2 bedroom flat
B 3 bedroom flat
C 3 bedroom duplex
D 2 bedroom duplex
F 1 bedroom flat
G 3 bedroom duplex with lettable room
H 4 bedroom flat

4 FIRST FLOOR PLAN ⊘
1:200

Section A-A
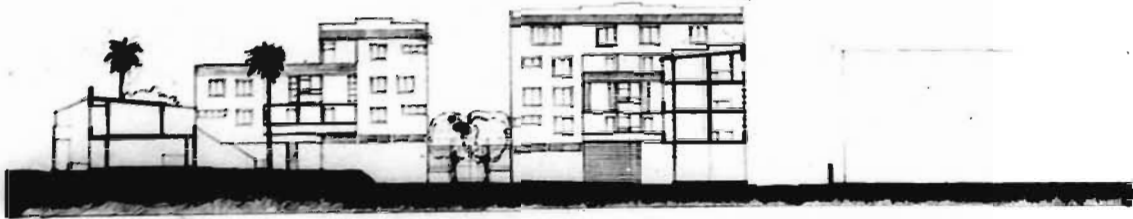
Section B-B

Section C-C

Section D-D

North-West Elevation
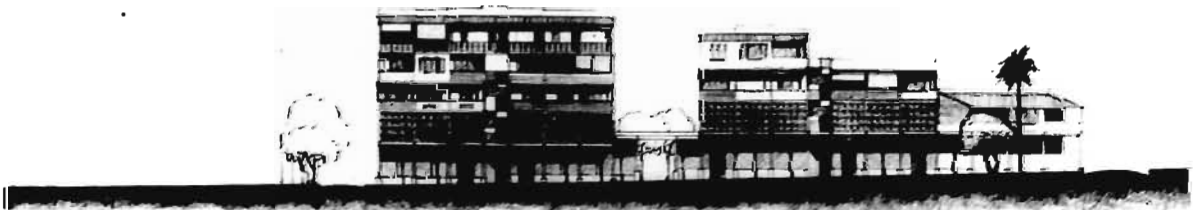
North-East Elevation

5 SECTIONS AND ELEVATIONS
1:200