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HOUSING : A PERSPECTIVE ON DEVELOPMENT

Desmond Solomon Kaplan

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ABSTRACT

PART 1 is a broad overview of the context in which development takes place. Questions of man/environment and man/man relations are discussed in the light of the physical limits of the natural environment and man's physiological and psychological limits.

A number of key issues that affect development in general and housing in particular, are presented. For example, socio-economic, socio-cultural and housing transitions are shown to introduce dynamics in development over time in both 'developed' and 'developing' worlds that are not always taken sufficient account of in development programmes.

Attention is drawn to the important distinction that needs to be made between housing products and services, on the one hand, and housing processes on the other. This is related to the significance of local decision-making control in satisfying local preferences and priorities.

PART 2 includes a critical evaluation of particular aspects of policy-making affecting housing and focuses attention on shortcomings in the formulae currently used by government agencies in particular. These usually involve aspects of housing economics in as much as they deal with household size (minimum space standards), development cost (construction standards and the cost of particular standards), the cost of capital (loan finance terms) and income (what can be afforded, or rent propensity). These interconnected parameters are dealt with in terms of the set of approaches conventionally used (here called 'the conventional policy set') and the implications are examined in some detail.

In PART 3, two case studies are used to illustrate the need to plan for the dynamics of transition and change in housing and to take account of incremental development as a positive process in this regard. The two cases are at the household level and from different ends of the scale in terms of 'developing' and 'developed' worlds respectively. Features are identified that are common to the housing processes in both cases.

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PART 4 comprises descriptions of two development projects in the Southern African context that illustrate development principles, discussed in the earlier sections, actually put into practice.

The Ngangelizwe Project involves the upgrading and related development of an existing informal settlement in Umtata, Transkei. In 1975 when the project started it had a popul.tion of about 16 000. The major emphasis of the project is at the strategic level, involving community partic ipation in the decision-making processes. A range of issues affecting financial, legal, technical and administrative matters are also addressed. The basic strategy involved is one of providing both a physical and non-physical framework that facilitates development through local initiatives.

The kaNyamazane Project is primarily concerned with the role of the private sector in lower income housing development. It also deals with detailed planning and design at the household and group of households levels. It incorporates both house design and layout planning innovations to take greater account of changes and additions over time than the conventional approach. The project has been implemented as a new neighbourhood which is an extension of the existing town of kaNyamazane, near Nelspruit in the Eastern Transvaal.

It is concluded that, if the housing demand in low income communities is to be effectively catered for, a much greater role needs to be played by the private sector at all levels. This includes employers assisting employees and individuals and groups building on their own initiative. The role of the public sector needs to be expanded to include the facilitating of private sector initiatives. For example, it should ensure that land is acquired and provided with services infrastructure and assistance is available to local private sector groups to develop it according to local preferences, priorities and means through being able to exercise local control over decision-making.

PREFACE

My interest in development planning and housing originally grew out of a concern for the way in which man is behaving in relation to the limits of our natural environment. While still an undergraduate student of architecture at the University of Cape Town, I began to notice and understand striking relationships between evolution and adaptation in nature and the way in which people relate and respond to their environment in general and architecture in particular. Nowhere was this more apparent to me than in housing (where I found that people interact with and respond to their environment most visibly).

As a student I was mystified by the way that people appeared relatively happy in what, I was repeatedly told, was bad architecture. In attempting to understand this, I began to realise how many issues, other than those purely architectural, people take into account when choosing a place to live. This was really brought home to me in studies we made as students of squatter communities on the Cape Flats. These and subsequent experiences over the following few years led me to start valuing architecture not so much for what it is to architects but what it does for people. This approach, virtually by definition, demanded a more holistic view of architecture in relation to man's activities and the wider natural environment. In many ways it was a turning point in my attitude to architecture. I felt that I had begun to grow out of the syndrome that produces architecture for architects and found a new understanding of architecture as a product of a rich and varied range of processes that stem from man's striving for improved well-being that manifests itself in environmental modification. A growing awareness of these processes gave further new meaning to my perceptions of the built environment.

In my final years as a student I worked on housing projects ranging from proposals for people who were squatting to upgrading and rehabilitation of existing housing. This culminated in my thesis project which I produced jointly with Glynn Davies. With Paul Andrew as supervisor, we studied Hanover Park, an existing Cape Town City Council housing estate with a population at that stage of about

32 000 people (all of whom occupied rental housing). Problems included: frustrations by residents of not being allowed to improve or expand their houses, severe overcrowding and excessively large public open spaces that were undeveloped, badly maintained and dangerous. Taking responsibility for particular sections of housing and community facilities, respectively, Glynn Davies and I made proposals for the expansion and improvement of existing housing and facilities as well as certain infill development of new housing on parts of the little-used and 'wasteland' public open spaces to relieve existing overcrowding. Our proposals included the offering of security of tenure to residents to release local initiative and participation in the development.

Some of our ideas were later included by Paul Andrew in a memorandum by the University of Cape Town Research Group to the Theron Commission of Enquiry on aspects of housing for coloured people in the Cape Peninsula entitled: 'People Living Environments', 1975. We also discussed our proposals at length with the Cape Town City Council planners who were responsible for the area. Whether or not this had any direct affect is unclear but on a recent visit to Cape Town I discovered that the Cape Town City Council are in fact now working on a project of this kind for Hanover Park.

After graduating in mid 1975 I joined the National Building Research Institute (NBRI) of the Council for Scientific and Industrial Research in Pretoria. Housing research at the NBRI had been pretty much in the doldrums since the very active period of research and development that reached a peak in the fifties under Dr. D.M. Calderwood. Early in 1975, however, Ken Finlayson (who had joined the NBRI about a year before) managed to rekindle research activity in housing for low-income communities. I met Ken in Durban, in July 1975, at a housing conference where he presented aspects of the envisaged research programme and where Glynn and I presented our thesis work. I subsequently visited the NBRI in Pretoria and Ken invited me to join him there. He was working virtually alone at that stage and had just started preliminary work on the Ngangelizwe Project (described in this dissertation) as well as an investigation of Winterveldt, an informal settlement with a population estimated to be about 200 000 at that stage, located about 20 km

north of Pretoria. He had also managed to arrange a three-year research and development contract with the then Department of Bantu Administration and Development (now known as the Department of Co-operation and Development) that was to begin in the 1976/7 financial year. This contract included terms of reference for the study of squatter and informal settlements, private sector roles in housing, home-ownership in housing, upgrading of existing housing and an overview of low-income housing in South Africa. This framework formed the basis of our work for the period of my stay at the NBRI and resulted in the production of a series of papers and reports, many of which we based on the demonstration and pilot development projects that we set up for the purpose of research and development.

The first of these studies was that undertaken in Winterveldt. It highlighted aspects of the dynamics of urban growth and urbanisation and we completed it by October 1975. Soon afterwards we compiled a slide and tape programme on the study, at the invitation of the Commonwealth Association of Architects, for screening at the Habitat Conference in Vancouver, 1976.

We concentrated on the Ngangelizwe Project from late 1975 to early in 1977. During May and June 1976, however, I was able to pay short visits to Brazil and Peru where I looked at housing developments while on my way to attend the Habitat Conference. On my way back I visited Israel and development projects in that country (during the university vacation at the end of my fifth year of study I worked on sketch plans for a large public housing project in Israel; it was subsequently shelved in the wake of the 1973 war but I believe it has recently been revived). As a result of my trip to Latin America and the Habitat Conference, I was invited to prepare a paper on an international overview of squatting and informal settlements. I later used this material for an NBRI slide and tape programme on the subject.

Early in 1977 we began work on the kaNyamazane Project (also described in this dissertation). By the end of the year implementation was well underway and by April 1978 I could afford time off to take up a British Council Bursary to attend a three month special programme on 'Housing in Development' under the direction of John F.C. Turner (at the Development

Planning Unit, University College, London). This presented an outstanding opportunity as I was able to meet, and exchange notes with, course participants from many different 'developing' countries. This, combined with the course work, played a major role in helping me to consolidate my ideas as it was possible to 'bounce them off' on a range of people with wide experience in the field.

Apart from occasional small studies and work on reports and papers as part of research activities at the NBRI (most of these are listed in the bibliography), I was also involved in the first stages of a third demonstration project; it concerns the upgrading and extension of the existing Black residential area of Graaff-Reinet. In 1977 we investigated the area and prepared a preliminary report, after having been asked to make recommendations as to whether it should be demolished and rebuilt elsewhere or be retained and upgraded. We presented a strong case for upgrading that, by the end of 1978, was accepted in principle at ministerial level. We then began work on more detailed studies and strategy formulation. By the time I left the NBRI in mid 1979, a number of meetings had already taken place with the community representatives and implementation was due to begin.

In this dissertation, all references to work done by the NBRI was undertaken jointly by Ken Finlayson and myself under the auspices of the NBRI, unless otherwise stated. When working together as closely as we did, it is almost impossible to clearly draw the line between one person's contribution and another's, particularly at the level of negotiation with communities, officials, etc. and in overall strategy formulation. Nevertheless, I have attempted to define my own contribution to the two NBRI projects described in this dissertation where it can be more clearly identified. At the same time, I must emphasise that the end products were moulded, to no small degree, by the comments and other contributions of the communities concerned, colleagues and local officials.

With regard to the Ngangelizwe Project I was responsible for developing and preparing the bulk of the graphics and other communication tools used in the community participation exercises, including the 'budget planning game'. I also did the sketch plans for the market and

hous-shelter facilities, the school hostel (housing 200 students and 4 teachers) and two demonstration houses to illustrate very simple ways of expanding the standard 51/9 house-type (all of which were built). In addition, I prepared the draft of the NBRI report on settlement/neighbourhood upgrading that was based on this project.

In the kaNyamazane Project, I was responsible for the physical planning and design work, including the associated analytical studies. Based on these, I prepared draft reports on the layout planning innovations, house-types and cost-analyses of the house-types as well as general progress reports. I also took responsibility for the preparation of a slide and tape programme on the project.

Although aspects of both the Ngangelizwe and kaNyamazane Projects have been dealt with in the past, in papers and reports by either Ken Finlayson or myself (or jointly), the descriptions in this dissertation are the most comprehensive yet prepared in the sense that they cover, quite fully, most aspects of both projects. They represent my own interpretation of these projects and I have included a certain amount of as yet unpublished material from my work at the NBRI. I therefore owe thanks to the NBRI for permitting me to use it in this document.

To me, this dissertation has been an opportunity to reflect on my experiences of the past few years and to consolidate and articulate some of my ideas on housing and development planning. The document is divided into four basic parts. The first deals with a general overview of the context within which development takes place, the second addresses issues in housing policy, the third draws attention to the need to take account of the dynamics of transition and change over time and includes two case studies while the fourth and last part covers the Ngangelizwe and kaNyamazane Projects, respectively. I selected these two projects because I feel that, in many ways, they serve to illustrate the application of development principles discussed in the first three parts and therefore demonstrate them in practice. The two case studies in part three perform a similar role.

The first three parts are entirely my own work and I have noted my own specific contributions in

the two NBRI projects. I must, nevertheless, acknowledge the influences of Paul Andrew who, in many respects, first stimulated my interest in the field; Ken Finlayson, with whom I worked so closely while at the NBRI and with whom I also debated so many issues, John F.C. Turner, who originally opened my eyes to the vital differences between housing products and housing processes as well as the significance of local decision-making control; and Pancho Guedes who, as my supervisor, provided valuable comment. He also played an indirect role in making it possible for me to complete this dissertation by appointing me as a lecturer at the Department of Architecture of the University of the Witwatersrand.

I also owe a special word of thanks to Alpheus Cheune for printing the majority of the photographs.

Des Kaplan Johannesburg, November 1979.

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CREDITS FOR ILLUSTRATIONS

I took all the photographs in this dissertation except for a number which are from the NBRI slide library; these are indicated by: (NBRI).

The majority of drawings and other graphics were prepared while I was at the NBRI but I have given no special credits because I was responsible for preparing them.

PART 1 : WELL-BEING, LIMITS AND TRANSITIONS

In the broadest sense any assessment of man's environment, whether physical or non-physical, must be based on its ability to facilitate, promote and sustain human well-being, or happiness.

Well-being is subject to the biological and physical limits of the natural environment and the biological, technical, economic, social and psychological limits of man himself. Actions which fail to recognise or respond to the limits must invariably affect well-being.

The history of man is littered with the casualties resulting from sojourns beyond the limits. Equally well, evolutionary theory describes the survival of species, cultures and systems according to their ability to either prosper within the limits or adapt to changes in the limits over time.

The modification of the natural environment by man is obviously aimed at optimising and developing the conditions for well-being and, like natural systems, the modifications are subject to ongoing dynamics of transition and change, very often brought about through competing interests. Individuals and groups naturally tend to modify their environments in ways best suited to their own interests, very often at the expense of other individuals and groups and, equally often, at the expense of the natural environment and systems upon which their own survival ultimately depends (or at least that of future generations).

If one is to pursue the objective of facilitating well-being for all people, it becomes vital to identify what constitutes healthy environmental modification. In other words one has to understand and develop within, or adapt to, the limits of both natural systems and the wide diversity of people that exists.

Remaining within limits requires controls of various kinds. Legal systems, declarations of rights, cultural taboos and so forth have emerged in time but are characterised by the need for constant amendment and evolution. This is because limiting and controlling actions and devices cannot, at any one point in time, cope with all the possible complexities or varieties of actions that people pursue in

optimising their own well-being.

In exercising control there are two ends of the scale to be considered. The first is prescriptive control which involves the laying down in detail of what people must do. A building bye-law which specifies that all walls have to be fire-burnt brickwork is a good example of this form of control. The second form is proscriptive control which in essence defines the limits of what may not be done. An example of this would be performance specification for building walls that defines the limits in terms of load-bearing capacity, fire-retardation qualities, thermal performance, etc. Clearly the latter form of control is far more flexible and able to allow for new possibilities over time than the former. Proscriptive controls are therefore more likely to facilitate evolution through allowing options than prescriptive controls.[1.1]

Various phases of history have been characterised by dominant economic and cultural developments, each tempered by local environmental conditions, with accompanying sets of controls. In modern history, for example, the onset of the industrial revolution radically affected modes of production and settlement patterns. Modern medicine and changing economic orders combined to produce both the population explosion and a vicious cycle of supply and demand between population size, standards of living and productive capacity. This resulted in development patterns that severely test the limits of the natural systems upon which the whole cycle depends.

Urban growth on an unprecedented scale and the resultant poor environmental conditions in cities of the 19th century led to a proliferation of controls affecting city development, building and health. While still at a relatively small scale and a slow pace, in what are today referred to as the developed countries, urban development could be controlled relatively effectively by the new regulations. In the face of very rapid urban growth currently being experienced in most developing countries, however, these devices (which are largely of a prescriptive nature) are simply unable to cope with the demands and new alternatives are emerging; the more successful of these being proscriptive and responsive to specific local demands. For example, in certain site and services schemes people are permitted to live in structures which do not conform to

conventional prescriptive bye-laws (legally, they are regarded as temporary structures and they may build whatever size and shape of structure they choose so long as they stay within the setbacks of their sites.

Well-being, limits and controls are recurring themes in most discussions of development. In my experience, they are related to several key issues in development planning[1.2] and housing. The following pages focus on these.

1. POPULATION GROWTH

The population explosion itself contributes towards poverty simply by increasing the demand for limited resources. Fertility rates are higher among the poor and a cycle exists whereby the poor become poorer through contributing the most to population growth. While the high fertility rate among the poor is often connected with cultural traits such as a man displaying his 'manhood' through producing many off-spring (children are often also seen as an insurance policy for old age), a correlation has been discovered between improved socio-economic conditions and lower fertility rates[1.3]. From this, it can be concluded that a major part of the strategy for controlling population growth should be socio-economic development, to supplement family planning and the use of incentives for people to have smaller families.[1.4]

There are strong indications at this stage that the world population growth rate is in fact declining[1.5] but, despite this reason for optimism, it must be accepted that the existing population will still at least double in size before any levelling off or reduction can be

expected. The reason for this is simply that there is a population increase momentum to be expected because of the large proportion of children and young people alive today who will still bear children.

In the South African context, the total population is expected to reach at least fifty million by the year 2000. Of even greater significance, however, is that current urban growth trends indicate that as much as 30% of the population can be expected to be living in urban areas by then.[16] This implies a staggering three-fold increase in the existing urban population; in other words, an urban population increase of more than twenty-five million people in the next twenty years!

2 EARTH'S LIMITS

Man's well-being is ultimately dependent on the well-being of earth's natural systems. This dependency, together with a growing awareness of the fact that the supply of land, water, air and minerals is limited, is essentially a question of development economics. In other words, while the earth's resources are regarded as income, and disposed of as such, we are heading for bankruptcy. The earth's resources are capital items and it is poor economics to spend capital as if it were income. This fact is the strongest reason for optimism that our current problems of environmental degradation will be solved. For example, recycling of 'waste' is becoming increasingly common in commerce and industry.

The cries of the environmentalists and preachers of the earth's doom are nothing compared with the economic vested interests in maintaining stability in the natural systems. Those who have the greatest economic power are also those who have the most to lose and therefore have the strongest vested interests in earth's well-being. They are also those who are probably best equipped to develop the appropriate solutions.

While the planet was still relatively under-populated it was feasible for economic interests to exploit particular localities at enormous environmental cost and then move on to other areas. The economic feasibility of this type of behaviour is diminishing rapidly and alternatives must surely be forthcoming.

The development of alternative and 'healthy' modes of production is dependent on effective environmental impact analysis. More often, though, it takes very real crises to spur on the development of alternatives and the evolution of different perspectives on the problems. It took the reality of reduced oil supplies to bring home to people an appreciation of the meaning of limited oil reserves on earth, while many of the Western industrial economies have become casualties of the process. Equally well, disaster from the leaks from the Three Mile Island nuclear power plant had first to become a reality for people to really sit up and question the safety of nuclear plants. Whatever the process, however, an appreciation of and working within earth's limits will surely evolve over time even though there may be casualties along the way. The challenge is one of avoiding casualties as far as possible or, at least, to keep them to a minimum.

In the search for alternatives that constitute healthy development, we need to ensure that we apply ourselves to continuous monitoring of the effects of our actions so that we can benefit from the feedback as quickly as possible. The more effective we can be in this process, the smoother will be the evolutionary transition to what James Robertson has called a 'sane, humane, ecological' future.

While the planet was still relatively under-populated it was feasible for economic interests to exploit particular localities at enormous environmental cost and then move on to other areas. The economic feasibility of this type of behaviour is diminishing rapidly and alternatives must surely be forthcoming.

The development of alternative and 'healthy' modes of production is dependent on effective environmental impact analysis. More often, though, it takes very real crises to spur on the development of alternatives and the evolution of different perspectives on the problems. It took the reality of reduced oil supplies to bring home to people an appreciation of the meaning of limited oil reserves on earth, while many of the Western industrial economies have become casualties in the p ocess. Equally well, disasters like the leaks from the Three Mile Island nuclear power plant had first to become a reality for people to really sit up and question the safety of nuclear plants. Whatever the process, however, an appreciation of and working within earth's limits will surely evolve over time even though there may be casualties along the way. The challenge is one of avoiding casualties as far as possible or, at least, to keep them to a minimum.

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3. EVOLUTION OF WELL-BEING THROUGH CHOICE

If one recognises that there is a basic drive inherent in every person to optimise his, or her, well-being (in response to the specific context and time in which they find themselves) and that every individual has different preferences and priorities, then:

- access to a wide range of alternative options for achieving well-being, and
- the communication of the implications of each alternative

must facilitate each individual being able to optimise his, or her, well-being by choosing that alternative that he, or she, can identify as offering the best 'deal'.

Choice from among options can be seen to be a self-regulating process which allows each individual to respond to his, or her, own situation, preferences and priorities and the wider the range of options the better.

This process is akin to that of a market-place offering a wide range of goods and services, each having certain advantages and disadvantages for the individual concerned.

Not everyone can afford, or is even able, to have everything that they would like but if they can decide for themselves which sacrifices to trade off against which advantages or which priority to satisfy in place of another (according to their individual circumstances), they will often tolerate the lesser satisfaction of other priorities. This is because the decision to do so is their own.

In all areas of human activity trade-offs are constantly being made by individuals and groups. Housing is no exception in this regard. For example, a family may decide to live in rather poor, but inexpensive, accommodation in order to afford a motor car. They will give the acquisition of a car a higher priority than housing and trade off quality of housing in favour of having the car. Their psychological well-being might therefore be quite high in that accommodation as a result of it being their own choice and where they perceive the cost benefits. Physical discomfort, such as

poor heating in the house, is then more readily tolerated than otherwise and even solved by wearing extra pullovers in cold weather.

The lower tolerance levels, or limits, with regard to housing conditions are therefore flexible and open to change over time but will depend on the individual's perception of the condition, particularly when it is regarded as only temporary or exchanged for other benefits. If housing is second priority to a motor car, as in this example, once the car has been purchased, the family can afford to move to better accommodation and may well do so if no other priorities emerge in the interim.

The parameters of discomfort or disamenity tolerances and changing priorities over time cannot readily be included in conventional surveys. Well-meaning planners often fall into the trap of trying to establish preferences and priorities by conventional survey techniques. It is clear, however, that they cannot hope to satisfactorily achieve this. Survey questionnaires are subject not only to time-specific conditions but the relationship between the interviewer and the person being questioned This invariably results in a degree of misleading subjectivity. Furthermore, people's choice between alternatives, or from a range of options, is only meaningful when they really consider all the complexities of their own circumstances. We amply demonstrated this factor when working with the Human Sciences Research Council in assessing people's responses to a range of options over an extended period (see PART 4 : 2.3.4 Options, Choice and Decision-making Procedures).

A way of overcoming this difficulty is to learn from the 'market-place' where the process is one of interpreting demand via a range of techniques, from intuition to market research, offering a range of options, monitoring responses and supplying accordingly on an ongoing basis that forms a reiterative cycle.

The 'market-place' concept is a self-regulating one. It must be emphasised, however, that it cannot operate successfully without the people who are making the choices being in a position to understand the implications of the various options. Even when the implications are relatively well understood, however, 'mistakes'

are sometimes made.

Nevertheless, the importance of a degree of individual control over decision-making processes by the people affected is fundamental and is summarised in this quotation from 'Freedom to Build'[1-7]:

> 'When dwellers control the major decisions and are free to make their own contribution in the design, construction or management of their own housing, both this process and the environment produced stimulate individual and social well-being. When people have no control over, nor responsibility for key decisions in the housing process, on the other hand, dwelling environments may instead become a barrier to personal fulfilment and a burden on the economy.'

My own experience with housing bears this out. In fact, it is most often better to allow people to make so-called 'mistakes' than to impose solutions. Choice from among options that are adaptable (and therefore open to change), however, provides a means for people to exercise individual decision-making control while being able to cope with 'mistakes' and changing circumstances.

Architects and planners, however, very often regard dwellings and their immediate environments as wholly completed products, or commodities which must be provided in full. Those who think this way have failed to recognise that home-making and the very act of living is so much of a dynamic process of ongoing transitions that dwelling places cannot but be affected by being occupied and they fail to plan for the necessary adaptability (both physical and non-physical).

Among the growing wealth of evidence that supports this is the example of the much publicised Pruitt Igoe project in St. Louis in the U.S.A. Vandalism and environmental degradation in the scheme led administrators to the conclusion that there was no option left but to destroy the buildings. As a result the project was described as an architectural failure even though it received architectural

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awards when first built. Indeed, many fingers were pointed at the architectural profession for creating the 'monster'. Less well known, however, is a nearby project not dissimilar to the demolished scheme in the physical, architectural sense but where the problem was identified in a different way. This project was turned into a success by changing the management system from one administered by the local authority to one administered and controlled to a large degree by the residents themselves.[1.8] In other words, although the housing products were similar the processes by which they were acquired and used made a difference to the project's success and it made the difference between healthy and unhealthy development by virtue of the residents gaining different perceptions of their environment in terms of their powers to adapt it to their own preferences and priorities, in both the physical and non-physical senses.

This evidence not only reinforces the argument for dweller/user control but also draws attention to the need for differentiation between housing processes on the one hand and housing products and services on the other.

4. HOUSING: PROCESS, PRODUCTS AND SERVICES

As mentioned already, the act of home-making is an ongoing one for all families, whether it takes the form of actual physical changes to the dwelling fabric, maintenance work, or even just the arrangement of furniture and fittings, and includes the non-physical aspects of associated decision-making and management. It is in fact these actions controlled by the individuals concerned which one may call the housing process. John F.C. Turner summed it up when he described housing as a verb and not a noun: ' .. a verb that describes people doing things'.

Housing products, on the other hand, are the components and elements which people acquire, or make, and assemble as part of the housing process. Where they control the process but do not actually do it themselves, they make use of housing services. Housing products and housing services can therefore be identified as existing in the 'market place' or as noun

In wealthier communities a range of products and services are usually already combined and assembled

as dwellings when people acquire them, being by then products in themselves. Nevertheless the occupants add other products and services over time such as furniture, carpets, etc and often make structural changes as part of their housing activity and contributions to their own well-being. With changes and development, as a result of their occupation, the product they originally acquired will no longer be the same. The housing process will have made it a different product in the 'market-place' by the time they sell it. The additive (and sometimes subtractive) process by which occupants affect dwellings usually occurs in increments of various sizes over time. For example, in one year the occupants might buy paint and hire a contractor to paint the house. The following year they might b ar-port in kit form and erect it them

In this way dwellings mature and evolve over time, the degree of change being determined by its ability to absorb change, and respond to it, and the availability and access to products and services. In addition a major role is played by the occupants in terms of both their ability and willingness to affect the changes. In this regard, there are two non-physical aspects which play a major role. They are tenure and finance.

Before people will actively invest in their physical environment they require security of tenure that protects their investment by allowing it to be transferred, bequeathed or enjoyed for an extended period. This does not imply that there should be no rental accommodation on the market. Even in rental accommodation the housing process takes place although its physical manifestation may be less noticeable in the form of e ironmental modification; it often goes little beyond furnishing and perhaps minor decoration. There is always a demand for rental accommodation by those people who prefer the mobility it allows them.

Insecure areas where tenure is either illegal (such as in squatter settlements) or otherwise unstable are usually characterised by high investment by residents in movable items such as furniture, motor cars and so forth while the physical environment reflects minimal care and investment. It goes without saying, therefore, that if one is to expect people to have a positive and healthy attitude to their environment

they should enjoy access to conditions of secure tenure.

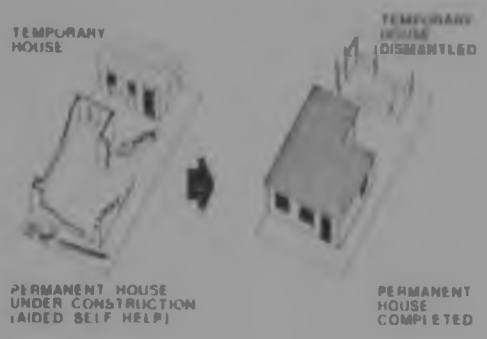
Security of tenure has in fact been identified as one of the most effective means of closing the gap between people's ability and their willingness to invest in their housing in situations where they have the ability to invest but are unwilling to do so because of the insecurity of the investment. (see PART 4 : 1.4.1 Security of Tenure).

The size of increment or product that can be acquired by a family will be determined by their ability and willingness to pay for it while the amount that can be spent will, in turn, be determined by either available savings or access to loan finance. Quite simply, therefore, access (or lack of it) to funds, and in particular loan finance, is a direct determinant of the speed with which development can take place.

While wealthy and relatively stable communities can afford a commitment to long-term mortgage financing and can therefore acquire large, highly developed products or increments of development, poorer communities who are transitional and relatively unstable are often unwilling to make a commitment to long-term financing. Having limited access to funds, therefore, they resort to only modest increments of development. For example, in a developing country, a poor family (who have acquired a site) will first erect a temporary dwelling. They will then gradually acquire materials and components to slowly assemble a permanent dwelling.

It is interesting to speculate that long-term mortgage financing may well in time become an impossibility because our current economic systems, which are growth-based and rely so heavily on credit financing, may well collapse or simply grind to a halt as inflation takes its toll. At that stage, development by small increments with small short-term credit may well become the norm in most cases.

The relationship between rich and poor has its direct parallel in the concept of so-called 'developed' and 'developing' countries. Both conditions demand attention, particularly because of the misleading nature of the definitions often employed.



1a Examples of incremental development.



1b. Winterveldt: Temporary dwelling next to the foundations of the permanent house.





1c. kaNyamazane: First stage of a house completed and occupied. To be added to at a a later stage.



1d. Rural Transkei: Roof on supports completed To be filled in later.



1e. Lima, Peru: Ground floor of houses completed in stages. Upper floors then added.



1f. Bogota, Columbia: Incremental upgrading of services infrastructure by residents of an informal settlement. (NBRI)



1g. Bras de Pina, Brazil: High priority for investment in the decorated front wall. The house itself being slowly upgraded.



1h. Winterveldt: Walls of the permanent house being erected around the temporary one which will later be removed. (NBRI)



1i. Winterveldt: Tents provide temporary accommodation while a permanent house is being built.

5. 'DEVELOPED' AND 'DEVELOPING' WORLDS

The conventional definition of developing countries is an economic one; it is related to the per capita gross domestic product. In the mid-seventies, for example, all those countries with a per capita gross domestic product of less than $500 were defined as developing countries.

Economic development is seen to be the solution to the problems facing developing countries because of the role that it plays in affecting population growth and because of the improved opportunities for achieving material well-being that it can facilitate. These reasons are indeed convincing and there is probably little question regarding the goals of economic development. However, there are serious questions about the means for achieving it.

The current definitions of a developed country do not describe the cost at which the development has taken place in terms of its negative environmental impact nor does it address the questions of cost to social and psychological well-being that are part of the so-called developed state (in the way it is achieved at present). While questions in this regard were first being asked by people such as Patrick Geddes towards the end of the last century, it is only now that the impact of the growth economics (at any cost) paradigm, with accompanying life styles, is being felt and identified as unhealthy development. This developed state paradigm has already penetrated, to varying degrees, the so-called developing countries (at least in terms of aspirations if only partly in reality). South Africa is a good example of the juxtaposition of developed country modes of production (and lifestyles) and developing country circumstances in the same country. It is therefore more appropriate to talk of these differing conditions as the 'developed' and 'developing' worlds respectively.

While the developing world is at present fighting the economic development/population growth battle with means supplied largely by the developed world, the developed world is questioning those self-same means because of the unhealthy development that they have contributed towards in the 'developed' state. The overall picture that presents itself is therefore one of <u>ongoing transitions</u> taking place in both developed and developing worlds.

6. ECONOMIC TRANSITIONS

The industrial revolution and accompanying changes in technology, modes of production and economic structures resulted in radical changes in settlement patterns, most notably in urban growth. Subsistence and semi-subsistence economies and associated cultures changed (and are still changing) to urban industrialised cash/credit economies and cultures. These changes have been so radical in the developed world that it resulted in the population balance between rural and urban dwellers shifting from 80% to 90% rural to 80% to 90% urban.

These changes in settlement patterns and modes of production have produced unprecedented environmental impact, as already discussed, and there are serious questions as to the extent of our ability to adjust to a more sane way of relating to the natural environment in particular without fundamental changes in the built environment of the 'developed' world. For example, it is doubtful whether massive urban concentrations will survive in their present form. The energy crisis alone is likely to lead to a whole new generation of settlement patterns and modes of production. The transition to these is just beginning to be felt.

Whereas the 'developed' world is now moving from an economic state that has been relatively stable for some time towards something new, the developing world has still to reach this transition stage. Aspirations have been firmly established by what is seen in the 'developed' condition, particularly with regard to the imagery and apparent success of the developed world. There is, therefore, a momentum in the developing world that emulates the developed world in terms of modes of production and economic structures that is unlikely to be diverted before the developed world has completed the transitions to a new order.

In the context of existing modes of production and conventional economic development practice, urban concentrations have shown themselves capable of economic expansion at a far greater rate than in other forms of development. It is therefore not surprising that the developing world is experiencing massive urban growth as a result of rural-urban migration to the opportunities offered there in the form of employment, health-care, education and a wide variety of goods and

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services.

A cycle of poverty and high birth rates and the inability of the rural areas to create enough employment opportunities to keep pace with population growth is further compounded by the economic necessity to develop the agricultural sector on a basis other than subsistence.[1.9] These factors combine to produce the classic 'push effect' from the rural areas. On the other hand, urban concentrations attract people ('pull effect') with the range of opportunities that they offer for improved well-being. Very often the better educated and skilled rural dwellers are lost to the rural areas because the urban areas offer a better market for their skills which, in turn, contributes to the problem of development in rural areas.

In the develcping world these effects have been so marked that urban growth rates far exceed the ability of the formal sector of urban economics to absorb it. This has led to a tremendous growth in 'informal sector' economic activity that takes forms such as petty commodity production, casual labour, vending and so forth; essentially it is a sector that provides a wide (2) variety of low order goods and services and operates outside of the formal institutions that register business enterprises, control their activities and collect taxes. In a sense they are therefore often illegal enterprises. Because of their low overheads, however, informal sector activities provide low threshold economic viability that is readily accessible to even the poorest and least skilled individuals thereby providing a very low rung in the ladder of upward economic mobility that is desperately sought by urban newcomers, in particular, who are trying to establish a foothold in the urban economy.

Urban growth has often been accompanied by an increase in the number of urban poor and urban areas have therefore been thought to contribute to poverty. On the contrary, however, urban areas have merely made poverty more visible through its concentration![1.10] In fact, one can be relatively sure that, in the eyes of many of the poor, the urban areas offer much greater opportunity for improved economic well-being than rural areas. This is borne out by the fact that there is virtually no evidence to indicate any voluntary reverse migration from urban to rural areas in the developing world despite a

variety of attempts to attract people to rural areas.

Many attempts have been made to control urban growth through rural development programmes, legal limits on migration to urban areas and decentralisation programmes but none have to date been really effective. [11] In fact a new direction is emerging that seeks to plan for urban growth rather than fighting only to control it. This approach is based on the recognition that urban areas are capable of creating employment opportunities at a far greater rate than rural areas simply because urban areas concentrate an enormous variety of economic multiplier effects that, in turn, facilitate rapid economic development. Furthermore, an increased urban population can be viewed as a concentrated resource made up of individuals and groups with initiative and resourcefulness directed at improving their own economic well-being and therefore willing to contribute to economic development in general. It can also be argued that the sooner people can be absorbed into the economy the sooner they will be contributing not only to the market of goods and services but also as consumers and tax-payers. Economists are therefore taking a new look at the informal sector as a valuable route for rapid absorption into the economy and attention is being focused on ways of both encouraging and legitimatizing it.

While economic transitions vary from region to region and while they exist at various stages from subsistence to urban-industrialised (which in turn is starting on a transition to something new that has less negative environmental impact) the transitions at a global scale are of little consequence to the individual whose primary concern is his or her immediate opportunities for improved economic well-being. A person in such a position perceives the solution to be in upward economic mobility for which he or she is willing to work (unless led to believe otherwise by politicians). The opportunities for directing this initiative must therefore exist if it is to be released. The alternative is frustration.

Whereas an unskilled newcomer to an urban area might start his path of upward economic mobility by way of odd jobs and casual labour in the informal sector, a newcomer to the labour market in a more developed situation might start as a junior clerk or an apprentice. Both are

essentially on the same path, merely differing in the starting point of the transition to improved economic well-being. The starting point does, nevertheless, determine both the realities and their perceptions of their respective ability and willingness to acquire housing products and participate in housing processes. If these are to be adequately catered for then each individual must be in a position to decide according to his individual priorities and preferences while the flexibility must exist for adaptation according to changing priorities and preferences (that will accompany changes brought about through economic transitions).

If the economic gap between the average individual in the developing world and the developed world is to be catered for in terms of affordable housing, a variety of lower order housing options that are accessible to the poor but are capable of adaptation and change over time need to be available. The existence of a range of adaptable housing options nevertheless remains as important in the developed world, though of a higher order, so that an individual can respond by choosing that option which he can identify as suiting his own particular socio-economic circumstances while being open to change over time for economic transitions are just as real in the developed world. For example, a family should be able to obtain a small basic house at a cost which suits their circumstances at the time but can be expanded and improved when their financial situation allows for additional investment (see PART 3 : 1.3 and 2.3 FINANCIAL).



2a Lima, Peru: Informal sector economic activity in the form of a shoe shine service



2b. Rio de Janeiro, Brazil: Cooking-pot repairs on a city side-walk.



2c. Cusco, Peru: Side-walk vending of curios.



2d. Berkeley, California: Side-walk market on a Saturday morning.



2f. Vila Kennedy, Brazil: Fruit stall at a bus-stop.



2e. Rio de Janeiro, Brazil: Fruit and vegetable vending. (NBRI)



2g. Lima, Peru: Side-walk vendors



2b. Jakarta, Indonesia: Transport contractor. (NBKI)



2i. Winterveldt: Water delivery contractor.



2j. Cusco, Peru: Sale of handicrafts (NBKI)



2k. Winterveldt: Barber. Open at peak hours only.



2l. Winterveldt: Chopping fire-wood



2n. Winterveldt: Roadside 'shop'



2m. Winterveldt: Marketing produce at a busy bus terminus.



2o. Winterveldt: Motor-vehicle repairs

7. SOCIO-CULTURAL TRANSITIONS

Economic transitions are paralleled by socio-cultural transitions in both developed and developing worlds. Socio-cultural patterns in the developed world have been relatively stable for some time. They have a profound effect on the developing world while in themselves undergoing slow transitions. For example, the Western industrial ethic and culture has spread to many parts of the world. It has been embraced with an almost missionary zeal by its exponents who have held it to be the promise of the 'good life'. Others see it as simple Western imperialism. Rather than debating the world political scene in this regard, it is sufficient to note the example of those countries in the developing world who have embraced the Western-industrial ethic. They aspire to the accompanying imagery and socio-cultural development and are on a transitional path from rural subsistence and traditional cultures and ways of life to that of the 'good-life' as expressed in Western-industrial cultures. On the other hand, there is a newly emerging transition within the Western developed world that indicates the start of a shift of values away from the Western-industrial ethic.

For example, the late sixties and early seventies saw the emergence of the 'counter-culture' movements. A new search for satisfaction and well-being became evident with the rejection of the 'plastic' world in favour of something wholesome and 'convivial'[112] This is largely based on a new recognition of the variety of negative socio-cultural effects of the Western-industrial way of life on health (both physical and psychological), man to man and man/environment relationships and the limits of material satisfaction or well-being. To an increasing degree people of the developed world, who to all intents and purposes are at the peak of the apparent 'good-life', are moving to smaller communities (often in rural areas) where they enjoy a lower material standard of living but live a healthier physical and psychological life.[113] Advances in telecommunications technology does make this more feasible but it could nevertheless represent a trend which, combined with the pressures on settlement patterns brought about by the energy crisis, might lead to new forms of development that include various forms of rural resettlement and changed socio-cultural patterns.

These emergent forces and socio-cultural

transitions in the developed world are, however, unl. ely to gain any large scale momentum in the short-term so that the developing world will probably continue on its current path of socio-cultural transitions for some time. In fact it can be argued that only real experience of the negative effects of the currently predominant developed cultures makes the next transition attractive. This is reinforced by a demand for economic and technological development to make a new order feasible for the developing world.

The economic forces which produce rural-urban migration and urban growth in themselves induce severe pressures for socio-cul ural transitions to accommodate the changed life-styles and it is this adaptation which one needs to refer to as urbanisation as opposed to confusing it with urban growth (as often happens).

The developing world, usually having strong traditional cultural and economic bases, displays symptoms of urbanisation, or acculturation, not taking place at the same pace as urban growth. For example, a newcomer to an urban area, though an urban dweller, does not necessarily see himself as a permanent urban resident but very often regards t[illegible] area from which he came as 'home' His perceptions of his situation in the urban area are therefore coloured by strong linkages with the home area. These in turn affect his decisions, priorities and preferences in housing He might well send money 'home' and regard housing conditions in the urban area as a low priority. When he goes home on visits he could feel that he must be seen to have become successful and will express this in his dress and with the possessions he brings back. In order to retain his new 'status', in the face of limited employment opportunities at home, he will probably return to the city before long. These economic 'realities' and the possibility of a growing attachment to the material and experiential benefit of urban living will often ensure that he spends most of his time in the urban area. He might well decide to bring in his family to share these benefits or even start a new family there, gradually consolidating his position. In time the ties with the home community become increasingly tenuous, particularly in the second and [illegible]-d generations of his urban family until even [illegible]y rural and traditional ties are virtually lost and urban-industrial values and mores absorbed and adopted 'and very

often adapted to his cultural background).

All cities of the developing world have populations displaying a wide cross-section of transition characteristics with the carry-over effect from the traditional cultures being quite strongly felt for many generations of urban dwellers. Hence the need to differentiate between urbanisation and urban growth.

Evidence of the socio-cultural transitions is most apparent in dress but also extends to eating habits and housing preferences not to mention sport, social activities, music, religion and aspirations related to the imagery of the 'good-life' as represented by films and other media forms. (3)

It appears unlikely that the new wave of transitions emerging in the developed world will have any short-term affect on the developing world although it is more likely in the longer term. Even ethnic consciousness and nationalism, for example, are unlikely to radically divert the currently operative socio-cultural transitions to an essentially Western-industrial ethic and life style in Western-orientated countries in the near future.



3a. Winterveldt: Socio-cultural transitions evident in the Western dress but carrying of a child and a load in traditional manner.



3b. Marabastad, Pretoria: Chic Western imagery.



3c. Downtown Pretoria: Saturday morning crowd A rich heterogeneous mix.



3d. Ngangelizwe, Transkei: Bill-board extolling the virtues of a Western-type drink. It is implied that foreign is better.



3e. Hammanskraal: Scenes from a wedding, Easter 1978. Traditional fertility symbols and dances.



3g. Bride and groom with male friends. Imagery is Western.



3f. Partaking of traditional beer. The men sit apart from the women.



3h. Western clothing and utensils but food is traditional.

8. HOUSING TRANSITIONS

The ongoing transitions which take place in housing are usually connected directly with socio-economic and socio-cultural transitions. One finds a continuous interaction taking place between such factors as the psychological demand for identity and historical continuity, images of the 'good-life', spatial demands and economic realities such as travelling costs, housing costs, etc.

One can identify the conflicts between these factors by simply observing the trade-offs that people make between them in relation to what they have access to. Individual priorities determine which of the factors play a dominant role while all of them are nevertheless evident to a greater or lesser extent in every case Furthermore, it can be seen that changing circumstances through ongoing socio-economic and socio-cultural transitions result in a continual flux in relation to various priorities. The net result is one of continuous change in housing that takes two basic forms, being actual physical changes to houses themselves on the one hand and housing mobility (moving house) on the other, with pressures for either varying in intensity over time

In the developed world where incomes are higher and there exists a relatively large housing stock and variegated housing markets, the transitions are usually quite well catered for. In a responsive housing market the housing filtration process, that is so necessary to cater for housing transitions, can operate relatively effectively but where the housing market is not responsive frustrations very quickly emerge. This is usually most visible in a comparison of housing solutions provided by the public sector as opposed to that offered by the private sector; the private sector is usually more responsive to demand simply because it is accountable to shareholders and investors in a fairly direct way and therefore usually performs better through learning very quickly from mistakes. The lack of responsiveness to effective demand by the public sector is usually more visible because this sector builds on a massive scale compared with the private sector and is less accountable to the market. In the developing as well as the developed worlds a failure to meet the effective demand is evident in the existence of projects not fully occupied.[14]

8. HOUSING TRANSITIONS

The ongoing transitions which take place in housing are usually connected directly with socio-economic and socio-cultural transitions. One finds a continuous interaction taking place between such factors as the psychological demand for identity and historical continuity, images of the 'good-life', spatial demands and economic realities such as travelling costs, housing costs, etc.

One can identify the conflicts between these factors by simply observing the trade-offs that people make between them in relation to what they have access to. Individual priorities determine which of the factors play a dominant role while all of them are nevertheless evident to a greater or lesser extent in every case. Furthermore, it can be seen that changing circumstances through ongoing socio-economic and socio-cultural transitions result in a continual flux in relation to various priorities. The net result is one of continuous change in housing that takes two basic forms, being actual physical changes to houses themselves on the one hand and housing mobility (moving house) on the other, with pressures for either varying in intensity over time.

In the developed world where incomes are higher and there exists a relatively large housing stock and variegated housing markets, the transitions are usually quite well catered for. In a responsive housing market the housing filtration process, that is so necessary to cater for housing transitions, can operate relatively effectively but where the housing market is not responsive frustrations very quickly emerge. This is usually most visible in a comparison of housing solutions provided by the public sector as opposed to that offered by the private sector; the private sector is usually more responsive to demand simply because it is accountable to shareholders and investors in a fairly direct way and therefore usually performs better through learning very quickly from mistakes. The lack of responsiveness to effective demand by the public sector is usually more visible because this sector builds on a massive scale compared with the private sector and is less accountable to the market In the developing as well as the developed worlds a failure to meet the effective demand is evident in the existence of projects not fully occupied.[14]

This failure to meet effective demand is very often connected with either a lack of appreciation of housing transitions or a mistaken interpretation of them. For example, the Mitchell's Plain development, in Cape Town, is aimed at inducing a filtration process from existing low-income housing estates to free these for occupation by people currently squatting without providing the option for people to stay where they are and improve their existing homes. When I visited Mitchell's Plain, I discovered that many of the houses were standing vacant, an indication of a slow response to the strategy (no doubt there are also other reasons).

In the developing world, housing transitions are particularly important because of the extent of the socio-economic and socio-cultural transitions that are taking place. In this context large-scale and rapid urban growth leaves little room for effective housing transitions in the formal sector. It therefore usually happens in the informal sector and is most visible in informal and illegal[1.15] developments where housing transitions start at the lowest level of socio-economic and socio-cultural development (in terms of 'modern' development).

As discussed under socio-cultural transitions, a newcomer to an urban area will very often not regard himself as being a permanent resident there, at least initially. This, of course, creates a tremendous demand for low-cost rental accommodation close to work opportunities and an individual will very often trade off a priority for high standard accommodation in favour of low cost or even good location. As his permanency becomes more apparent he will continue to stay there but starts to look around for alternatives. In time he might be able to acquire improved rental accommodation or perhaps a site to build. Having made a commitment to a site, for example, he will start a gradual process of capital accumulation by making incremental developments on the site and, through controlling the decisions, will be able to do it at a pace and in a manner which he can afford thereby responding to his own changing priorities. He will eventually either carry on investing in the same house or might decide at a particular point in time to sell it and move elsewhere. Someone else would then acquire his house as a housing product and make investments in it while he might acquire a house or another site and, in turn, make further investments in that, usually having

benefited by the capital accumulation from the first house.

These transitions and processes are in principle no different between the developed and developing worlds but are essentially an expression of a universal process of housing transitions and a demand for responsive housing, housing mobility and the housing filtration process. The major difference lies in the level at which it takes place. In the developed world it is pretty well institutionalised and at higher physical standards because of the level of economic development whereas the application of these same standards and use of the same institutions in the developing world forces the process into the informal sector. This is the major reason for the current interest in lower order forms of development and institutions for the developing world; forms which, like informal sector economic activity, allow for a lower rung in the ladder of development than exists in the developed world but which allow for incremental and gradual improvement over time while catering more effectively for the processes of housing transitions (4)

Housing transitions are also equally significant in terms of an individual's life cycle, aside from the socio-cultural and socio-economic transitions that apply to the transitions from developing to developed worlds. For example, a young couple may move from rented accommodation to a house which they purchase, improve and expand to accommodate a growing family. When their dependants leave home they should be able to choose whether to move to smaller accommodation or whether to subdivide and sublet part of the dwelling to provide income in their old age. There are, therefore, a wide range of parameters to housing transitions, each having its own demands over time.

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4a. Jarman Township, Port Elizabeth: Standard house as originally provided for rental.



4b. Jarman Township: Rental housing was sold. Owners then adapted the houses and altered them beyond recognition.



4c. Jarman Township



4d. Jarman Township



4e. Jarman Township.



4g. Jarman Township.



4f. Jarman Township.



4h. Port Elizabeth: Rental housing that may not be altered physically is nevertheless decorated by the tenants.



41. Belhar, Cape. Decorative walling added to basic houses.



4k. Los Proceres, Peru. Terraces enclosed and extra floors added.



4j. Los Proceres, Peru: A project designed for adaptation and additions. Incremental additions to rooftops.



4l. Los Proceres, Peru.



4m. Mitchell's Plain, Cape: Fences and decorations soon after occupation.



__. Cape Flats: Small basic houses designed for adaptation and additions.



4n. Devil's Peak, Cape Town: Victorian terrace housing adapted by occupants.



4p Cape Flats: Additions to the small basic house.

PART 2 : HOUSING POLICY

Regardless of the context, housing policy revolves around ends, ways and means. As already discussed the ends are self-evident in the sense that they are primarily focused on well-being of all people. Most housing policies therefore vary only in terms of ways and means. In reality however, the means are very often seen as ends in themselves and it is suggested that a good deal of our policy problems arise out of a confusion between ends and means.

A classic example of this is the debate on standards. Standards are set in an attempt and as a means to ensure physical health and safety in housing. Policy- and decision-makers, however, often point to particular strategy proposals as being unsuitable when they require a 'lowering' of standards. They make the mistake of regarding the standards as ends in themselves without due consideration of the real ends and without remembering that standards are only one of a number of means for achieving the desired ends.

If one is to come to grips with problems, it is essential to constantly reappraise the chosen ways and means for achieving well-being and be quite certain that one clearly differentiates between them and the agreed ends otherwise the 'tail wags the dog'.

At any point in time housing policy is developed to a relative degree for each context and it is important to understand what exists for proposals and alternatives to be developed that can be implemented in an evolutionary and peaceful manner. The importance of this way of approaching housing policy issues can be readily appreciated if one considers the nature of the decision-making processes which policy-makers use. It consists primarily of a system of evaluating a new idea in terms of the comparative difference between it and the existing policy. In other words, if a new strategy, for example, can be related to an existing strategy and can be shown to offer a better performance, the chances of it being accepted are very good. On the other hand, if the idea cannot be readily compared or is not demonstrated as an improvement it is unlikely to be employed in the policy. This way of policy change or development is usually further complicated by the fact that different people are responsible for different policy aspects so that

comprehensive policy amendments are seldom made in one go but rather by small increments of change in different sections at different times[2.1] The significant point about this process is that it can be identified not so much as an insurmountable problem but rather an opportunity because once the process is understood, it can be usefully exploited for achieving the evolution of policy.

The basic point is that proposals for changes or alternatives have to be both comparable and compared with policy precedent and shown or demonstrated to be better. This approach, or way, is illustrated in the description of the kanyamazane project in particular (see PART 4 : 2) where particular areas of concern were focused upon in terms of the activities and policies for which respective decision-makers were concerned. For example, the section dealing with layout planning was aimed at the planners, the section on house-types and technology at the architects and the one on choices, etc. at the administrators. The success of this way of tackling housing policy is evident in the success of the project and the interest that it has attracted from a range of policy-makers.

Existing housing policy probably suffers most from the fact that it is essentially static in the sense that it takes little account of the dynamics of a society in transition. Furthermore it relies on a series of assumptions that include the following:

a) Efficiency of production and control of housing development can be best achieved by centralizing decision-making through the public sector.

b) Finance gathered to the centre and then redistributed will be more equitably spent.

c) The way in which the funds are spent should be determined by the holder of the funds. As it is held centrally, it should be controlled by the centre. Standards and norms are the means for control and are seen as the cornerstone of 'good housing'. They are also relatively easy to administer from the centre.

d) Houses are finished <u>commodities</u> (or products) to which everyone should have access.

The implications of the above assumptions are largely apparent from earlier discussion, particularly with regard to the arguments in favour of local decision-making, the need to take account of the dynamics of economic, socio-cultural and housing transitions as well as the need to differentiate between housing products and housing processes. Nevertheless, they are also expanded upon here in an examination of conventional policy with regard to housing economics because this usually comprises a fixed relationship between set parameters. I have chosen to call this: 'the conventional policy set'.

1. EXAMINATION OF THE CONVENTIONAL POLICY SET

The conventional policy set revolves around four basic parameters:

1.1 Household Size - this is used as the determinant of how much accommodation is required by applying minimum space standards.

1.2 Development Cost - this determines the cost at which the necessary accommodation can be provided, using minimum building standards.

1.3 Income - this determines how much the household can afford to pay for the accommodation (sometimes called rent propensity).

1.4 Cost of Capital - this determines the amount per month required to service the loan of capital for the abode dwelling.

The most common problem encountered in the conventional approach is one of matching paying capacity with the development cost because most low-income families simply cannot afford the conventional minimum standard accommodation. In

the South African context minimum standards have been established[2.2]; parameter one is therefore fixed. Building costs are pretty well at a minimum at existing standards so the second parameter is also fixed. Direct improvements to income are beyond the normal scope of housing policy-makers so that the third parameter is fixed as well. That leaves only cost of capital as a variable and, indeed, this is the area most commonly used to 'solve' the problem. Subsidy of capital requirements and interest rates are seen to be the only solution and the 'problem' is identified as being one of finding sufficient funds to both finance and subsidise those who cannot afford to pay the economic repayments. By more detailed discussion of each of the four parameters it can be seen how misleading this type of problem statement actually is.

1.1 HOUSEHOLD SIZE

While household size is used to establish the amount of accommodation required through applying the laid down minimum standards, there are a number of problems in its application. They include the following:

a) As a result of a house being regarded as an end product, or commodity, which does not change and is not expected to change, little account is taken of the transitional characteristics of the housing process. For example, a family may choose to live in somewhat lower space standards than the minimum allows in exchange for economic benefits and may also tolerate the apparent discomfort during that period. This is quite common in public housing projects where families sublet part of their accommodation even though they should be using it all to satisfy minimum space standards. Usually that accommodation was made accessible to them through subsidy yet they choose to use it differently! It can be appreciated that enforcement of the legal requirements regarding space standards becomes quite

hopeless in that kind of situation and administrators are virtually forced to turn a blind eye to the practice.

b) The standards for space requirements were derived from an assessment of man's physical and biological needs. Although a great deal of research has gone into the assessments there still remain many open questions about their real validity simply because nobody has yet actually proven beyond doubt that they are a true reflection of man's physiological limits. For example, aside from the point that man has not been tested to destruction as one might test the limits of products, there is a wealth of empirical evidence in the form of buildings that do not comply with the minimum standards being occupied for hundreds of years without any ill effects on the inhabitants. Traditional African housing is a good example in this regard.

Besides the more readily conceived standards for dealing with physical health and safety, little account is taken of the social and psychological parameters of man's limits. One might well expect these to play an even greater role than the physical parameters for a society in transition.

It therefore remains imperative that space and related standards are constantly reviewed and not simply accepted because they were derived from an apparently scientific basis. In reality the question of limits of human well-being is still a relatively new area of study. The current emphasis is on an attempt to understand it in terms of what is popularly called 'quality of life'.[1]

c) A further problem area is to be found in attempting to define a household. In the developing world, in particular, the existence of large extended families and related kinship patterns makes the definition of household size (as a fixed parameter) very difficult. Attempts to impose Western notions about nuclear families in such a context can even lead to social disruption and adversely affect people's well-being. Even in the developed world the concept of the nuclear family is undergoing change where multi-family households and multi-household

families have emerged in the process of socio-cultural transition. The emergence of so-called 'communal houses' is more than just a question of economic expediency; it also involves new ideas and benefits from a social and psychological viewpoint.

These three broad areas of concern merely serve to highlight the need to reappraise the current accepted norms and remind us that the rather simple formulae applied in housing policy cannot be assumed to be valid for all circumstances over time but require constant questioning.

Also related to the question of household size is that of high fertility levels among low-income people. As discussed under population growth, it has been observed that economic development appears to play a significant role in the reduction of family size.

Despite attempts to reduce the demand for housing space through family planning, there is little apparent success being achieved with low-income communities experiencing major socio-cultural transitions. It can therefore be expected that large families will remain a significant demand factor until such time as socio-economic development starts to have its effect.

The primary consideration with regard to household size in housing policy must therefore be one of striving for a greater open-endedness that permits more flexible controls that take account of local priorities but are open to and responsive to changing demands.

1.2 DEVELOPMENT COST

When, as in conventional housing policy, the assumption is accepted that a household of a particular size requires a commodity or product in the form of a house that must conform to certain fixed minimum standards, there is only one approach possible; one has to develop the cheapest way of building a minimum standard house.

This way of achieving physical well-being for people led, in the early fifties, to an intensive research and development programme by the National Building Research Institute which resulted in a rationalisation of the design and construction of minimum standard houses. The results of this effort are still being applied today with considerable success in relation to the terms of reference inherent in the assumption. In other words the standard house-types developed by the NBRI do still provide the best 'value for money' in terms of the conventional problem statement. The fact that this way of approaching housing policy is based on questionable assumptions is, however, where problems exist with the conventional policy.

Despite the problems inherent in the assumptions, the search for cheaper development costs is a relevant one. It is as well to discuss the main areas where cost reductions are being attempted:

1.2.1 Cheaper Building Technologies

Although cheaper building technologies are being continuously researched, the original conclusions reached by the NBRI more than twenty years ago appear to remain valid. These findings indicated that best cost-effectiveness could be achieved by using relatively conventional technology that incorporates standard components such as bricks or blocks, windows, doors and roof sheets that are produced in factories on an industrialised basis but are assembled on site in a relatively labour-intensive manner. The key to the success of this approach is that on-site assembly is handled on an industrial assembly-line basis. In other words labourers or teams of labourers are assigned specific tasks in the building process; tasks which they can be trained to do in a relatively short time without having first to complete the conventional apprenticeship usually required of artisans. This 'task system'[2.1] as it is called, represented a significant

breakthrough for the building process and is still in use today. While it was pioneered by the public sector, many private sector building firms now use it with considerable success. It has the added advantage of being a system that also allows for easy absorption of unskilled labour into the building sector while at the same time being an in-service training programme.

Industrialised systems were at one time seen to be the solution to cheaper building but they have yet to prove their worth. It was argued that they would really come into their own in large scale building projects. Even then they have failed to compete with conventional technology. For example, a number of firms offering industrialised systems failed to compete with firms using conventional technology in tenders for the construction of 4 000 houses at Mitchell's Plain in 1977[20]. Furthermore it must be remembered that industrialised systems were originally developed in post-war Europe for housing projects that had to be completed with great speed in a context where there was a tremendous shortage of labourers as well as skilled artisans. Cost comparisons with conventional techniques were therefore impossible at the time. Industrialised systems are particularly inappropriate in a situation where one has a large pool of unemployed or underemployed people with minimal skills. The capital-intensive nature of industrialised systems therefore makes bad economic sense in the developing world.

South Africa is well-advanced in the use of well-managed, conventional building technology for low-cost building and is probably unrivalled in its performance with these on large building programmes.

A major breakthrough on cost reduction through cheaper building technologies is highly unlikely and the battle is more one of combatting inflation (an estimated minimum of 15% for 1979) which effectively cancels out any technological advance that could be made in that year even if such advances had been possible.

1.2.2 Self-Help

At one time self-help was thought to be a panacea for reducing building costs. It was usually interpreted as being self-build whereby the labour

contribution by the people to be housed would make significant savings through replacing the greater part of the normal labour input. This misconception can be quickly dispelled by pointing out that the unskilled labour input in standard low-cost houses, as built in South Africa, is probably between 10% and 15% of the total development cost[2.7]. If one bears in mind that the use of part-time unskilled labour requires increases in overheads for supervision and management, the small savings possible can be quite easily cancelled out. Furthermore, if the development is financed out of a loan over a long repayment period, the small percentage saving possible will make an almost negligible difference to monthly repayments. These factors combine to prove a less than significant reduction in development cost if self-help is regarded only as a labour-cost saving technique[2.8].

On the other hand considerable savings can be made in larger houses, finished to a higher level than conventional low-income standard houses by a form of self-help where the householder acts as the main contractor, subcontracts much of the basic work and does a good deal of the expensive finishing himself. Grindley has estimated that about 160 000 houses per year are built in the United States in this way[2.9] and that savings of more than 30% can be achieved. I know of cases where similar savings have been made in the South African context on houses in the R20 000 plus cost bracket but they diminish at the lower cost levels where the dwellings have more basic finishes but similar space standards. This also goes to explain why there are so few speculative developments at the lower cost levels; a contractor's overheads can often be similar for a R15 000 house and a R25 000 house so the profits are usually smaller on the cheaper house.

There is little statistical evidence in South Africa to support the claim that few so-called self-help developments are, in fact, largely owner-builder rather than self-built processes. Nevertheless my own observations in the Southern African context indicate that the greater proportion of houses in urban areas, built by the people occupying them, have included substantial inputs from contractors working on a piece-work, usually labour-only, basis.

This is of particular importance because it serves to illustrate that self-helpers identify that they are not always equipped to build themselves and prefer, if possible, to earn cash by doing other work. They then hire unskilled and skilled workers (mostly informal sector contractors) to assist them. If people have some form of wage employment, their time is usually more cost-effectively spent at it than in building work. (6)

Further than being a direct way of reducing development costs to an household, self-help can offer a way for people to invest in housing in a manner and at a pace that suits their individual circumstances. In this way indirect cost savings can be made. For example, a family may be able to get access to used building components and materials through their informal networks of friends and associates, or pick up bargains here and there. They may also be able to achieve savings through bartering skills and services with friends. None of this would be possible in an organised self-help scheme where only labour costs are taken into account.

If individuals use a self-help process to control the decisions, pace and use of personal resources in developing their housing, the question of standards once again becomes an issue and needs some elaboration.

While recognising that standards of construction and space requirements play a role in health and safety, it has also been pointed out that existing standards are open to question, particularly in relation to the needs of people experiencing major and rapid transitions. If one recognises housing as a process, the achievement of desirable standards becomes more a question of how the standards are achieved and even bettered, and at what pace, than how to pay for them at the outset.

With the unprecedented pressures of urban growth and the associated demand for housing, the resources available to supply and pay for it are already stretched beyond the limits of conventional policy. The question therefore arises as to whether it is better to leave many thousands of people to wait until adequate resources are available to supply housing at current minimum standards or to distribute the limited resources wider by offering interim

standards that take care of basic needs for health and safety that is then improved through self-help. This is, of course, an extremely sensitive political issue unless the decision rests with those affected by it.

From a technical point of view, it can be strongly argued that most areas of the developing world have mild enough climatic conditions to allow for fairly rudimentary shelter to be effective for extended periods without endangering the health of occupants. What is of far greater importance to health and safety is access to potable water and reasonable sanitation. Therefore, one might argue that the supply of water and sanitation facilities to land on which people can erect their own shelter (of even the most basic kind) can provide a minimal operative level for interim standards. If one accepts this as a transitional first stage, it becomes possible for people to gain a first foothold in the housing process at considerably lower cost to both themselves and the country than if existing minimum standards were adhered to. Furthermore this type of operative starting point allows for the full advantages of indirect cost savings to be made through self-help processes. This approach is not an untried one; in fact there exist a number of quite successful developments in Southern Africa which have employed it (see, for example, PART 3 : 1. 'DEVELOPING' WORLD CASE STUDY and PART 4 : 1. THE NGANGELIZWE PROJECT). (7)

The approach does not necessarily mean that one is lowering standards as such but rather deals with standards in a different way by reaching and surpassing them through a gradual process that starts with a minimal operative level of health and safety which is then specifically designed to be gradually improved by means of self-help, aided and supported by development agencies; the form and nature of assistance being determined in close collaboration with the community concerned.

For self-regulating processes regarding preferences and priorities to be effective, a variety of options at various levels needs to exist and be offered, each with their own cost implications. This can vary from basic land subdivision with shared waterpoints and a night-soil removal system to higher levels of service and small basic expandable houses.

In each case households should have the possibility to select from the options according to their own assessment of their ability to pay and other priorities. (8)

Self-help is a way of distributing development cost in a way that suits individual demands over time, creates opportunities for savings through bargain hunting and relieves initial capital outlay costs to the development agency while allowing for further investment at later stages by both public and private sectors as and when resources become available.

1.2.3 Reduction of Space Standards

This is, of course, the simplest way of reducing building costs but, while houses continue to be regarded as finished commodities, the minimum standards will remain in force and further reductions in space standards become counter-productive. Examples exist where the reduction of space standards have been taken to extremes. In Delhi, India, for instance there are development projects where site sizes for owner-builders have been reduced to only $25m^2$ in an attempt to keep costs to a minimum![2.10]

The reduction of space standards with the concomitant reduction in initial capital outlay only really makes sense when the smaller dwelling can be acquired as a cheaper product which can be readily extended even if only in temporary materials in the short-term. In this way the problems of overcrowding can be avoided in the short-term and higher standards achieved through self-help in the longer term.

1.2.4 Reduction in Levels of Finish

In houses in the R20 000 plus bracket up to 40% savings can be made by leaving out most of the finishes. They can then be gradually upgraded over time by means of self-help. In the standard minimum houses that are currently built in South Africa, however, there is little room left for further reductions in levels of finish as they already are pretty basic. In fact the upgrading of finishes is a common form of home-improvement in large public sector housing projects in South Africa[2.11] (9)

1.2.5 Changes in Layout Planning and Land Utilization

In South African low-income housing projects the

cost of land, site preparation and services networks amount to an average of between 35% and 50% of total development costs (depending on topography and soil conditions). By allowing increased densities and with judicious layout planning this cost can be considerably reduced. In particular, the percentage of total land allocation to public uses can be reduced thereby increasing the land available for housing. In addition, a greater site coverage allowance of say 50% instead of the standard 30% would greatly improve the cost-effectiveness of available infrastructure

Apart from investigations in this regard for the kaNyamazane Project (see PART 4 : 3.1 LAYOUT PLANNING), I did a study for the Graaff-Reinet Project where it was shown that the existing 80 hectare neighbourhood could hold a theoretical maximum population of 9 000 (at 113 persons/Ha) if one planned for 45% of the area to be used for housing, allowed site coverage of 30%, employed a space standard of 12m² per person and built single storey housing (conventional norms for South Africa). On the other hand, if one planned for 60% of the land area to be used for housing and allowed 50% coverage per site (norms feasible for layouts similar to the kaNyamazane Project layout), the theoretical maximum population could be more than doubled to 20 000 (250 persons/Ha) in the same land area. The cost savings for roads and stormwater drainage alone would be enormous with these changes from the norm.

There remain, therefore, a number of areas in which development costs can be reduced and these need to be continuously and rigorously explored. While inflation remains with us, however, we will continue to fight a losing battle against rising costs. This is compounded by the increasing demands for urban land and building products thereby forcing up costs further in the face of limited supply. This is particularly important as far as land is concerned and reinforces the argument for acquiring land for urban development well in advance of need.

1.3 COST OF CAPITAL

The subsidy of interest rates, coupled with long repayment periods on capital loans, is probably the most common technique used to make minimum standard houses affordable to low-income households. One of the reasons for this is probably related to the fact that subsidies are relatively easy to administer centrally and are therefore attractive to central government administrators and policy-makers.

In the South African context it can be seen that the current subsidy policy has staggering cost implications. Calculations based on data supplied by Skeen[2.1] indicate that current formulae would imply a subsidy of approximately R600 million per annum for housing and services and a further R500 million per annum for community facilities (where these are assumed to be supplied at no capital cost to low-income communities). This annual cost of approximately R1 100 million per annum is based on 1977 prices and takes into account catching up with backlogs as well as catering for new demand.

Bearing in mind that subsidies are forms of investment which provide no direct financial returns, one can expect only indirect returns in the form of stimulation of the building industry, which in turn plays a role in employment creation, and the boosting of the measured gross domestic product. Cost benefits are also hoped for in terms of improved social welfare and productivity of workers.[2.1]

Skeen argues that the subsidy is therefore justified and that it should be provided by a combination of the public sector and private sector employers with the private sector contributing far more than it has done in the past (see PART 4 : 2.1 NEED FOR INCREASED PRIVATE SECTOR ROLES).

Whether or not the funds can be made available every year for this huge subsidy remains an open question. Even if it were available, the manner in which it is invested will determine the real cost benefits to be gained. It can be strongly argued, for example, that public sector investment, whether subsidized or not, should be primarily directed at the development of land, services infrastructure and essential community facilities if maximum cost-benefit is to be achieved. This

type of investment can then form the basis upon which private sector initiatives can be mobilised and directed and where both informal and formal economic sectors can operate thereby generating the maximum economic multiplier effects from the initial investment. Groups and individuals who have access to serviced land with appropriate security of tenure can also use it as the basis for their own economic development through the construction of dwellings for sale or to let, small business enterprises, home-based industries, etc. Furthermore, because economic activity at this level is generally small-scale and low order it can provide a wide variety of opportunities for small-scale entrepreneurial activities that can contribute to the supply of goods and services demanded by development while creating opportunities for local economic development and upward economic mobility.

The judicious use of subsidies cannot be overemphasized because serious problems and disincentives can be brought about if they are badly directed. For example, the existence of highly subsidized rental accommodation creates a disincentive for higher income people to vacate them and move to unsubsidized housing (which they can actually afford). Furthermore, where subsidies are linked to income, employees have been known to ask employers not to increase their wages purely because it would force them either to move into more expensive accommodation or to pay more for their existing housing thereby cancelling out the increased income.

Countries which cannot afford to provide subsidized housing for all, but invest the little money they have in a few higher standard subsidized houses rather than many serviced sites, invariably end up with massive overcrowding in the housing that they do manage to build. Equally common is the situation where higher income people acquire the subsidized housing through 'paying-off' the people living in them. The housing programme then does not even reach those for whom it is intended and they remain no better off than before.

Jorgensen, amongst others, uses arguments such as these to criticise the use of subsidies and presents a convincing case for the virtual removal of all subsidies in favour of making investments that facilitate upward economic mobility at a grass roots level via the promotion of small-scale entrepreneurial activity, such as

the subletting of rooms, in conjunction with access to loan finance at market interest rates.

1.4 INCOME

The setting of minimum wage levels in an attempt to ensure that people have sufficient income for their basic needs for shelter, food, clothing and so forth poses severe problems for the developing world in particular because of difficulties in implementing such measures.

The economic reality of a large proportion of people being employed in the informal sector puts them beyond the influences of minimum wage measures. Furthermore, the relationship between productivity and labour costs determines the economic viability of enterprises. Therefore, when labour costs are pegged to poverty datum lines (that are set at relatively high standards), but the productivity of the labour does not justify the cost, various implications become apparent. For example, the high demand for employment opportunities results in employees being prepared to offer their labour at lower rates than the set minimum. This acts as an incentive to illegal and informal employment practices. While it is precisely this problem that is the major concern of trade unions, the realities of supply and demand cannot be ignored entirely. The existence of a high demand for

employment at wages less than the set minimum does mean, for example, that the viability thresholds of many enterprises can be reduced. More enterprises can therefore exist and in turn contribute to economic development in general, ultimately expanding the job market. When these enterprises are forced to exist in the informal sector as a result of controls, they will also not be contributing taxes thereby often compounding the problem. On the other hand, where employers are unable to by-pass the controls and are forced to pay wages that they feel are not justified by productivity, they will tend to make their enterprises as capital intensive as possible. This results in a reduction of job opportunities and, concomitantly, the income earning possibilities for people. The employment of domestic servants is a common example. When they demand wages that are too high, people stop employing them and invest in dishwashers, washing machines, etc.

Unemployment and underemployment can become a serious threat not only in terms of ability to pay for housing but also to political stability in general. It is therefore imperative to recognise the dynamics of income and employment generation in both the informal and formal economic sectors. Where a gap exists between viable wage levels and the poverty datum line it can theoretically be bridged through subsidizing income and unemployment benefits can theoretically be paid to those who are out of work. However, it is clearly not the kind of action that can be afforded in a poor country. Even the most limited opportunities for income generation need, therefore, to be encouraged even if it sometimes means turning a blind official eye to the existence of certain informal sector activities in terms of conventional standards governing small-scale commercial activities.

The commonly used rule that fixes the maximum that should be paid for housing at 20% or 25% of the income of the head of household does not take sufficient account of varying household composition. In fact total household income is usually of more relevance to paying capacity. Even then, however, fixing the limit at say 25% also does not take account of the transitions being experienced by households and individuals. For example, a family newly arrived in an urban area may be prepared to pay much more for housing

than the set 25% of income because they may still have strong sources of supply of food (for example) from their 'home' area; in other words they might be able to cater for a number of basic needs without having to lay out cash. Jorgensen describes cases of low-income households paying as much as 40% of income for housing without suffering unduly. Effective demand may therefore be quite different from household to household. At the other end of the scale, where people are totally dependent on a cash economy and the formal sector for their basic needs, they may suffer real deprivation by paying even 15% of their household income for housing. This is particularly important in the lowest income groups who are long-urbanized. The crucial factors revolve around the degree of dependency on the formal sector and their ability to be productive enough in their employment to justify sufficiently high incomes.

Solutions therefore need to be sought through increasing people's abilities to take care of their own basic needs. This could be through increased access to informal sector or similar low threshold economic activities or via increased productivity in the formal sector. This economic development approach relates back to the population growth and family size problems where it can play a role in reducing fertility rates.

While income may be increased over time or may even be high enough to afford housing in terms of 20% or 25% limits, it must be borne in mind that what people are actually prepared to spend on housing determines the real effective demand. Effective demand is essentially a function of individual household's priorities in relation to the variety of investments they have access to. In other words, although a family may, for example, be theoretically able to afford 25% of income for housing, they may be unwilling to spend that much because they might prefer to invest in a motor car or other consumer good. It is therefore not uncommon to find a gap between ability to pay for housing and willingness to do so, as discussed in an earlier section where it is also argued that security of tenure can be used as a means of providing an incentive for people to invest in their housing thereby contributing not only to improved housing environments but also their own capital accumulation. In this way the housing process can be an important contributor to

economic development and demands closer examination.

2. ECONOMIC DEVELOPMENT IN THE HOUSING PROCESS

Building work is one of the variety of activities with which an unskilled newcomer to the labour market can easily become involved. My own experience of informal settlements and self-help building operations is that this form of economic starting-point plays a significant part in the absorption of newcomers (whether from rural areas or elsewhere). An example of the process of upward economic mobility is the case of a man who is taken on by a family to do digging and similar unskilled manual labour for them in exchange for food and shelter. He may later acquire rudimentary skills and be able to offer his services for cash as well thereby entering a cash economy. Over time he might upgrade his skills and therefore his earning capacity while changing from barter of services for food and shelter to actually renting accommodation from a family, until such time as he can acquire a site or alternative accommodation of his own. The family who provides him with rental accommodation benefit from the additional income and might well invest all or part of it in improving their own home. In fact the subletting of accommodation has been identified

by Jorgensen and the NBRI as very often forming a major source of additional income for urban families. This is a particularly significant form of informal sector activity in the context of rapid urban growth where effective demand for rental accommodation is very high and where it provides a valuable service for newcomers, at certain stages of the transitions they experience, while contributing to the economic development of the more settled people who are offering the services.

These informal sector activities, be they barter or simply unregistered cash transactions, are seldom recognised for the role that they play simply because they do not get included in the normal gross domestic product statistics. Nevertheless, they should not be underestimated as to the contribution that they make at a grass-roots level. The lessons from informal settlements are clear in this regard. When people in various stages of transition come together in large numbers they learn from one another, employ one another, purchase from one another, barter and trade and set up a wide range of low viability threshold economic activities and cycles which constitute a variety of low level starting-points for upward economic mobility that are accessible to even the poorest and least skilled.

Aside from the continuous high demand for building work (because most building takes place on an incremental, or progressive, basis in informal and self-help settlements) and rental accommodation, other forms of domestically based economic activity include small shops and offices (11) (for family use or sub-letting), repair services and home industries such as knitting, weaving and so forth, all of which form an intrinsic part of the housing process while at the same time contributing to social policing and general liveliness of residential areas which, in turn, contribute to the development of the kind of environments so admired in traditional vernacular and other older urban contexts where there exist rich mixtures of commercial and residential activities.

4 SUMMARY OF MAJOR ISSUES

When a home is seen as a completed consumer commodity rather like a motor car that is a basic necessity for every family, there remains no option but to manipulate the four parameters (5) independently in order to make the commodity or product affordable. Indeed, the easiest solution to making it affordable is most often seen to be one of finding enough money to be able to build and subsidize it. This might appear to be a reasonable approach, at face value, for those countries which can afford it. However, in countries which have a poor population comprising about 80% or more of the total, the situation appears quite hopeless. The impossibility of pursuing that approach is clearly visible in the form of massive over-crowding in existing housing and the rapid development of large informal settlements in and around urban areas of the developing world. (12)

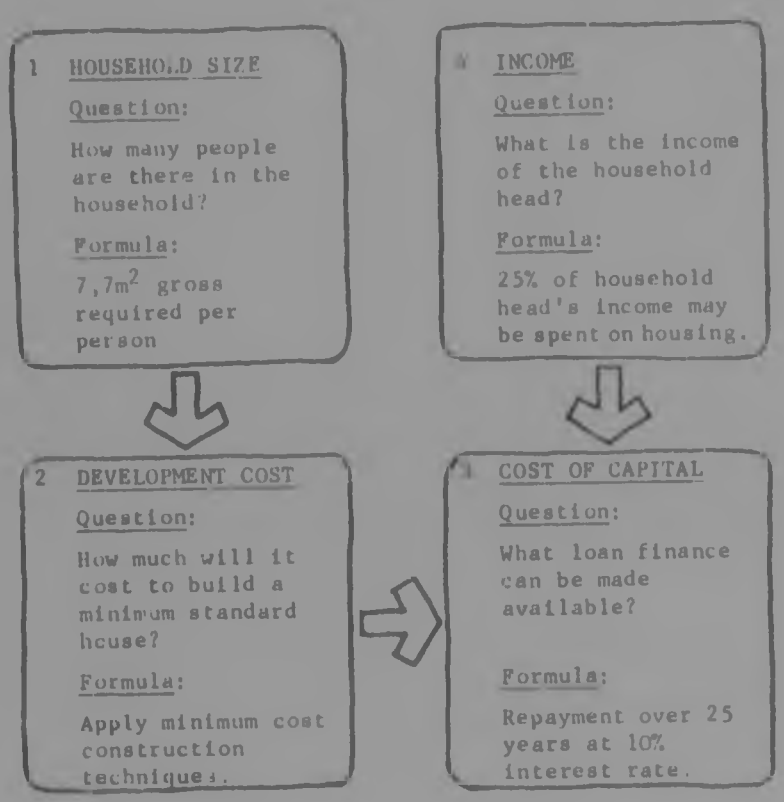
Current thinking is therefore being directed at a somewhat different approach for a society in transition. Focus is shifting from concern for the home as a product, or commodity, to a view of housing as a dynamic process which can in fact become the very vehicle of development. This has quite dramatic implications in terms of the physical planning and architecture of housing as well as the way in which minimum standards are regarded. Effectively, therefore, housing policy has to be able to take account of the dynamics of transition and the current ways and means of achieving well-being need to be reappraised at every level, encompassing socio-political, financial, legal, administrative and technical issues as well as those pertaining to implementation strategies and techniques. In relation to these basic issues there are a number of key questions pertaining to each and which need to be asked in relation to any policy. They include:

SOCIO-POLITICAL: Who controls decisions?

ADMINISTRATIVE: What organisational and administrative means are employed?

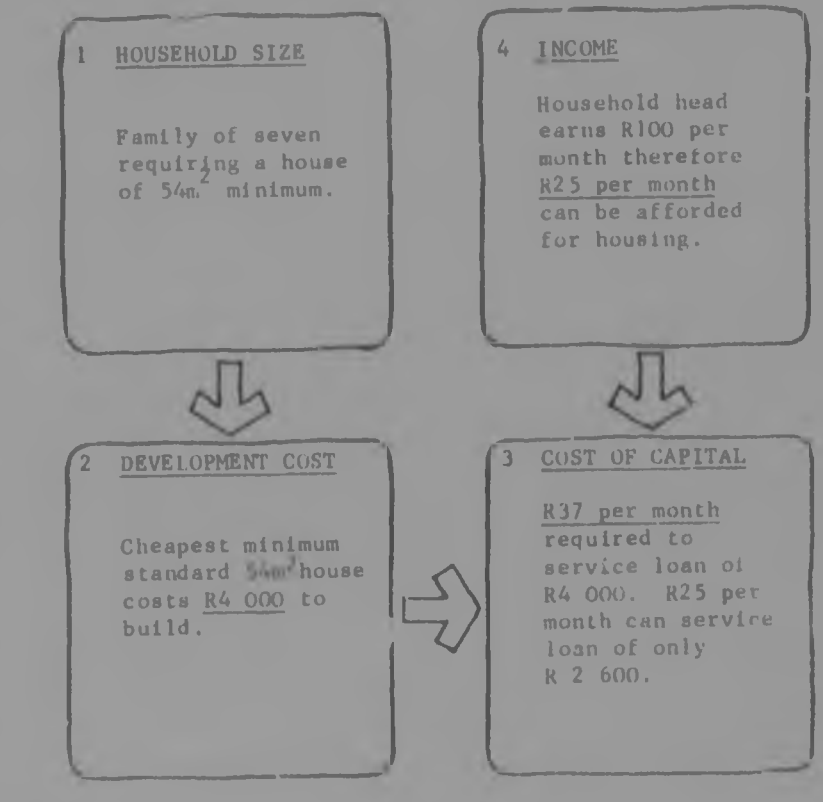
FINANCIAL: How is development financed?
What economic effects will result?
What economic opportunities

	...g offered?
LEGISLATIVE	What are the limits, controls and regulations employed?
TECHNICAL	How is it designed and built? What are the features of the design and technology? How does it relate to its environment and what effect does it have on it?
IMPLEMENTATION	Who develops it? How does what, where and when?



5a. The conventional policy set comprises four basic parameters.

Each parameter revolves around a basic question. The information given in response to the questions is then applied in formulae devised for each parameter. Commonly used formulae are illustrated above.



5b. Example of the conventional policy set applied to the circumstances of a typical low-income household

The obvious mismatch between the household's ability to pay and the payments required for a minimum standard house is most commonly 'solved' by policy-makers through providing a subsidy on the interest rate and by extending the repayment period.



6a. Winterveldt: Member of the household assisting a contractor with building a rammed-earth wall.



6b. Winterveldt: Labour-only building contractor.



6c. Winterveldt.



6d. Winterveldt: Contractor hired to make sand-cement bricks next to the building-site.



7a. Mtsulu, Eastern Transvaal: Successful site and services project. House being expanded.



7b. Mtsulu.



7c. Klipgat, Bophuthatswana: Site and services scheme.



7d. kaNyamazane, Eastern Transvaal: Owner-builders in the site and services part of the township.



7a. Klipgat: Owner-built house.



8. Matrix of options at various levels for both house size and services infrastructure.



9a. kaNyamazane: Improvement of finishes to standard house-type.



9b. kaNyamazane: Bigger windows have replaced the originals. Benches built against the walls either side of the front door.



9c. kaNyamazane: A member of the household assists a contractor to build a bench against the front wall of a standard house-type. The windows were changed from those originally provided with the house.

OPTIONS	Percentage of total land area used for residential sites	Permissable coverage on residential sites	Total Floor area possible	MAXIMUM POPULATION POSSIBLE WITH SINGLE-STOREY CONSTRUCTION			
				@ 7,7m^2 per person (gross)	GROSS DENSITY	@ 12m^2 per person (gross)	GROSS DENSITY
1	45%[b]	30%[b]	108 000m^2	14 026 people	175 pers/Ha	9 000 people	113 pers/Ha
2	45%[b]	40%	144 000m^2	18 701 people	234 pers/Ha	12 000 people	150 pers/Ha
3	45%[b]	50%[c]	180 000m^2	23 377 people	292 pers/Ha	15 000 people	188 pers/Ha
4	50%	30%	120 000m^2	15 584 people	195 pers/Ha	10 000 people	125 pers/Ha
5	50%	40%	160 000m^2	20 779 people	260 pers/Ha	13 333 people	167 pers/Ha
6	50%	50%[c]	200 000m^2	25 974 people	325 pers/Ha	16 666 people	208 pers/Ha
7	60%[c]	30%	144 000m^2	18 701 people	234 pers/Ha	12 000 people	150 pers/Ha
8	60%[c]	40%	192 000m^2	24 935 people	312 pers/Ha	16 000 people	200 pers/Ha
9	60%[c]	50%[c]	240 000m^2	31 169 people	390 pers/Ha	20 000 people	250 pers/Ha

10. Table of Housing Density Variables (Population, Land Utilization and Density for 80Ha)[d].



a. Standard 51/9 house-type (51m^2) occupied by a household of seven

b. In common use by the Departments of Community Development and Co-operation and Development.

c. See PART 4 : 2.3.1 Layout Planning

d. This is from a study that I undertook, while at the NBRI, to check on the capacity of an existing residential area (in Graaff-Reinet) to absorb population growth The existing population was approximately 9 000 people at the time



11a. Winterveldt: Home-based weaving industry.



11c. Bras de Pina, Brazil: Shop attached to a house.



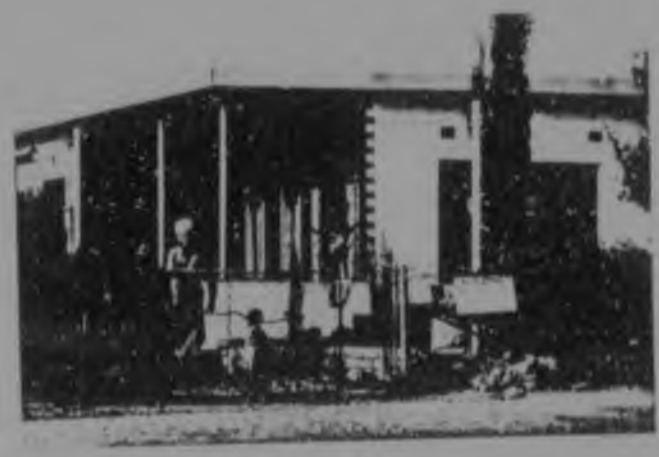
11b. Observatory, Cape: Small shop built onto a house.



11d. Vila Kennedy, Brazil: Houses built on an upper level. Space below used for expanding accommodation or economic activity.



11e. Winterveldt: Back-yard mechanics. (NBRI)



11g. Mabopane: 'Building planner' offering services from home.



11f. Winterveldt: Home-based welding and steel-window manufacturing business.



11h. Winterveldt: Backyard furniture manufacturer. (NBRI)



11i. Lima, Peru: Garage converted into a cafe.



11j. Lima, Peru: Garage used as a shop.



11k. Rio de Janeiro: Housing above, shops below.



11l. Brighton, England: Mixed residential and commercial uses Houses being adapted over time.



12a. Winterveldt: An informal settlement with a population estimated to exceed 300 000.



12b. Cape Flats: People 'squatting' for lack of better housing opportunities.



12c. Nelspruit: Family in an informal settlement adjacent to the industrial area



12d. Rio de Janeiro: Hillside squatter 'favela' very close to the employment opportunities of the central city.



12f. Lima, Peru: Squatter 'barriada'. Several thousand people organised an 'invasion'. They settled the area in just one night. (NBRI)



12e. Buenos Aires, Argentina: Informal 'squatter' settlement adjacent to a government housing scheme. (NBRI)



12g. Lima, Peru: Government assisted programme to upgrade services infrastructure in a 'barriada'. (NBRI)

PART 3 : PLANNING FOR THE DYNAMICS OF TRANSITION AND CHANGE

Whereas the conventional policy set discussed in the previous section is based on a logical framework, the primary difficulties with its application are a result of shortcomings in dealings with the changes and transitions that people experience in their lives over time. Recognition of the need to take fuller cognisance of the dynamics of change is reflected in what may be regarded as two key recommendations of the 'Vancouver Action Plan'[31]:

- Recommendation 16 in section B under the heading: 'SETTLEMENT PLANNING' reads:

  'Planning at all scales must be a continuing process requiring co-ordination, monitoring, evaluation and review, both for different levels and functions as well as feedback from the people affected.'

- Recommendation 4 in section C under the heading: 'SHELTER, INFRASTRUCTURE AND SERVICES' reads:

  'The choice of designs and technologies for shelter, infrastructure and services should reflect present demands while being able to adapt to future needs and make the best use of local resources and skills and be capable of incremental improvement.'

For any development programme to be effective in this regard it needs to comprise an overall framework within which a variety of approaches and solutions can be tested and adjusted. This is of particular importance to physical planning because experience has proven the shortcomings of detailed masterplans that attempt to predetermine all the finer points of development. In the United Kingdom, for example, the concept of structure planning has now replaced master-planning in order to facilitate changing demands over time.[32] The structure plan provides an overall physical framework within which a variety of different options can be developed while allowing for easy adaptation and change. It can then be supported by a wide range of development briefs dealing with detailed development possibilities within the overall plan. The briefs need to be performance orientated and deal with broad objectives while also proscribing what may not be done, thereby setting out limits without

prescribing the details of development. In this way a good degree of flexibility can be achieved so as to more readily take account of changing circumstances.

The move away from masterplans to structure plans has its equivalent in architecture, more particularly in housing architecture, which requires more flexibility and open-endedness to be able to respond to (and be adapted by) individual households if the ongoing transitions that have been discussed are to be adequately catered for. One needs to view housing architecture in terms of the housing process. Various types of development should be made possible within a form of structure plan that operates at various levels. The equivalent of development briefs are of equal importance in housing architecture to take care of the non-physical aspects, in particular, and provide as wide a variety of options as possible with regard to financing, tenure, supporting institutions and so forth; each option having built-in potential for adaptation and change. An example would be that of offering housing for rental with an option to buy.

This range of options, in both physical and non-physical terms as discussed earlier, needs to be as wide as possible to cater for the wide diversity of demand that can be expected in low-income communities, in particular, and even more so in communities experiencing quite major socio-economic and socio-cultural transitions. People need to be placed in a position where they can choose from the range of options with as full a knowledge as possible of the implications of each choice. If demand is carefully monitored then the more popular options can be identified and responded to in much the same way as occurs in the 'market-place'.

The two case studies that follow are at different poles in terms of developing and developed worlds, respectively, yet both enjoy the benefits of developing in an incremental, adaptive way that is not only sensitive to changing circumstances but also allows for errors of judgement that so often occur in development to be readily responded to.

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INCREMENTAL DEVELOPMENT (Housing as a process combining products and services)	FINITE DEVELOPMENT (Housing as the production of finished commodities)
A range of products as starting points for development. These are at no less than an operative level In other words, products that are able to offer a tolerable point of departure while being able to be readily adapted and improved.	Finished products at set levels that cannot be readily adapted or changed.
An operative level starting point allows for participation in the housing process without requiring a major capital outlay from the beginning. Further investment can take place according to occupants preferences, priorities and means.	Requires relatively high initial capital outlay. Only possibility for change is through housing mobility (usually restricted in a context of high demand).
Leaves development options that can respond to changing circumstances and 'mistakes'.	Decisions made from the outset and cannot readily be amended.
Promotes development and use of local resources and recycling.	If local resources are unavailable at the time of construction, they have to be imported. Investment therefore has fewer local multiplier-effects.

13. Comparison of INCREMENTAL and FINITE, or 'instant', development approaches.

1. 'DEVELOPING WORLD' CASE STUDY

The Sibiya household comprises Mrs. Sibiya (household head), aged about 45, a son of 22 and two daughters (18 and 24 respectively). Mrs. Sibiya has a common-law husband but is only one of three wives and effectively gets little support from him, although he shares her accommodation at her place of work. Between her two daughters, neither of whom is married, there are three small children. In addition they often support several young cousins, nephews and nieces. Effectively, therefore, the household varies between 6 and 11 persons.

Mrs. Sibiya is at present the major breadwinner as she is the only one with regular employment (earning R65-00 per month plus board and lodging as a domestic servant). The rest of the household contribute on an irregular basis.

They have acquired a site in a site and services development about two hours travelling time from Pretoria (where Mrs. Sibiya works). They have chosen to locate there for several reasons:

- It is within reasonable travelling distance of Pretoria for weekly commuting. Sleeping accommodation during the week can usually be obtained from employers or relatives.

- The settlement they have chosen is considered to be a 'nice' place compared with Pretoria townships. Although they had the opportunity to rent a house in a Pretoria township they thought it would be too insecure and even dangerous whereas the settlement that they have chosen to live in has a strong community policing organisation. This organisation operates a patrolling system that checks on the carrying of dangerous weapons, drunk and disorderly behaviour and even provides escorts for unaccompanied women from bus-stops to their homes (at night). Having been born and brought up in the Pretoria urban area, all members of the household are particularly sensitive to the question of personal and family security.

- The settlement offers an 'operative' starting point that can be afforded. There are minimum controls over development and they can build in a manner and at a pace that suits their circumstances. It therefore offers a 'stake' in something of value and a secure long-term

investment opportunity.

The household's starting point is a 600m^2 lot in a scheme laid out by the public sector. It has a pit-latrine at the back of the site, communal water points and a refuse removal service. They spent a weekend erecting a temporary building out of timber poles and second-hand corrugated-iron sheets that they had accumulated over time. These were then transported to the site together with their other household effects.

Having quickly and relatively cheaply obtained an 'operative' level of health, safety and shelter they are now in a position to undertake further development on their site at a gradual pace without having to rush into high additional expenditure and can take their time evaluating various development options.

One can consider in more detail the overall framework within which they are developing as follows:

1.1 SOCIO-POLITICAL

Decision-making control is essentially at the household level. The household decides what, how and when to develop although they will certainly be affected by social pressures exerted by neighbours and the community at large; this can be expected to vary from time to time.

1.2 ADMINISTRATIVE

A small local office represents the public sector. Its main function is to supervise the management and maintenance of services and to collect service charges for these. This office also ensures that people keep to the minimum side spaces and set-backs (see 1.4 LEGAL).

1.3 FINANCIAL

The capital cost of the site, the pit-latrine, water supply and roads was subsidized by the public sector to the extent that the household was able to obtain secure tenure for a total payment of only R40-00, payable in small instalments; the capital subsidy by the government is estimated to be about R350 per site. Aside from the capital subsidy, there is also a subsidy on the services so that the only other contributions required by the household are R1,00 per annum towards water and refuse removal and R4,75

per annum per child for schooling. In addition small, ad hoc payments are expected for using the clinic facilities while small contributions are also made to the church fund. The costs of occupying and securing the site are therefore almost nominal. This makes it possible for the household to have larger cash surpluses every month for actual site development. The most costly part of occupying the site was in fact the R100-00 paid to the cartage ntractor for transporting household effects and materials for the temporary building to their site

The pace at which they can develop the site is, of course, a direct function of the amount of ready cash which they can afford to invest at any point in time as they do not, at this stage, have access to loan finance other than very small short-term loans from employers, friends and relatives. Although there are informal sector money-lenders who might provide larger loans, they are reluctant to use them because they fear exploitation (probably with justification) On the other hand, they have identified their site as having potential as a basis for economic activity to supplement their income. The son, for example, is in the process of setting up a small poultry business on the site and Mrs. Sibiya, an accomplished seamstress, sees potential for running a full-time tailoring business from home. At present she does this kind of work on a part-time basis to supplement her wages.

They have discussed and are further investigating the possibility of the son, who has had difficulty finding regular employment, setting himself up as a building contractor by first gaining skills through assisting the contractor who will be hired to do the first-stage building work on their permanent house Because everyone in the neighbourhood is building on an incremental basis, there is a considerable ongoing demand for building contractors. They have also noticed that many neighbours have opened small shops on their sites and will stay on the lookout for the possibility of opening one themselves if the potential for competing effectively w th other shops becomes apparent. As the settlement is located some distance from the major employment centres they do not anticipate any demand for rental accommodation as a supplementary source of income.

They are, therefore, constantly seeking entre-

preneurial opportunities to bring in extra cash while saving whatever they can to be able to hire a contractor, on a labour only basis, to do the first stage of work on their permanent house. In addition they are saving in the form of materials and components purchases, gradually building up the required inventory for the first stage of building. In this regard they have already stockpiled a number of bricks, some door and window frames and a number of second-hand corrugated-iron sheets. Because they are in no special hurry to proceed with building the permanent house they can afford the time to look around for bargains and usually have enough ready cash, or can take a small short-term loan, to acquire a bargain when it presents itself. For example, they were able to acquire a number of corrugated-iron sheets at very low cost when a friend of Mrs. Sibiya's employer demolished an old shed at his hom

1.4 LEGAL

The legal controls are essentially proscriptive and consist only of building lines and setbacks within which the household can develop pretty well as they please.

Informal controls exist in the form of social and cultural norms and pressures which are exercised by neighbours and traditional leaders; these affect such aspects as the cleanliness of the site, noise and other obnoxious activities. In time, however, it can be expected that the community will themselves formalise controls into bye-laws or their equivalent. Essentially, though, these developments are under the control of the local community and are therefore sensitive to local demands and capabilities.

1.5 TECHNICAL

This can be loosely divided into technology and design, or form-making, because of the range of technologies that can be used to build basically similar forms.

1 .1 Technology

As already mentioned, they are at present living in an 'operative' level temporary dwelling and are in no immediate hurry to build their permanent home. They have therefore decided to build it to a relatively high technical standard even though it will cost more and consequently take longer

to complete. Their choice of technology is affected by the availability of materials and components, on the one hand, and access to local building skills on the other. Precedent in the area has already provided most of the clues that will inform their decision-making so that they already have a fairly clear idea about what they will use. The following elemental breakdown is a summary of their preliminary conclusions: (14)

- Foundations: Stones, broken bricks and rubble cemented with a weak mix of mud and portland cement in a shallow trench; the work is to be carried out by members of the household with occasional assistance from friends and hired labour.

- Walls: To be built with locally manufactured sand-cement bricks which are readily available from local entrepreneurs. If they choose, they can also hire a local person to make bricks for them. They could then supply the cement and sand themselves. There are therefore a number of ways of acquiring bricks and they will be stockpiled for use in small quantities by a hired artisan, the volume of work being determined by available funds. The son will assist the hired man and hopefully be able to eventually phase him out by being able to do it himself.

- Floors: Rammed earth will be used initially but they hope to be able to cover it with a thin cement screed soon after occupation because that would make the floors both easier to clean and less exposed to vermin.

- Windows and Doors: These will be acquired from a variety of sources, being the subject of bargain hunting. There are several local merchants and manufacturers who can supply these components although bargains are usually found in the established urban areas where there is a greater supply of cheap used items.

- Roof: They have access to a cheap local source of wattle poles for use as roof members and will probably use these although they are also collecting wrot pieces of timber when they can acquire them at the right price. They are not in the least bit interested in a thatched roof and favour corrugated-iron the most because it is universally available, both new and used, is easy to transport without damage and can be

readily twisted and bent for fixing to uneven roof members like poles. Although asbestos-cement roof sheets are cheaper than metal, they have the disadvantage of being heavy to transport while also being quite brittle and subject to fracture. If they were offered a quantity at a low price they might be tempted to use it, though, despite the disadvantages.

- Finishes: They would like to have high order finishes throughout the house at some stage but will decide on an ad hoc basis which walls to plaster and paint, where to put in ceilings, how to finish floors in various spaces, etc.

- Plumbing Fittings and Fixtures: The building of a fully fitted bathroom and the installation of plumbing in the kitchen area is regarded as a particularly low priority by the Sibiya household at this stage as they are satisfied with the performance of the existing arrangements for the short and medium term. They like to know, however, that it will be possible at a later stage to install plumbing arrangements to full Western standards if they so desire.

The technology described above is all readily accessible to them and already in wide use in the area. They are therefore in a position to draw from the experience of friends and neighbours.

1.5.2 Design

At this stage, before making final decisions, they have thought about a preliminary brief for the development of the permanent house and the site as a whole. They summarized their basic objectives as follows:

- Site Development:
  - Small front garden and the presentation of a good 'face' to the street which they can easily decorate and maintain.
  - On site vehicle parking.
  - Large back-yard.
  - Vegetable garden.
  - Chicken run.

- House:
  - Four bedrooms
  - Large kitchen and informal living room

- Dining/work room
- Formal living room
- Small wash-room that can later become a bathroom
- Front verandah.

- Imagery: They would like to have a flat or almost flat roof as they find it presents an attractive image. They would also like simple rectalinear forms that are cheap and easy to make while also being inexpensive and easy to decorate. In any event they will spend some time thinking about it, will observe what neighbours are doing and evaluate the costs of various options.

They appreciate that they cannot have everything that they would like at once and the form of the house should therefore facilitate additions and changes.

The accompanying illustrations give an idea of (15) one way in which they can respond to their brief. I have also used them successfully as a basis for discussion with the Sibiya household. They were enthusiastic about the principles and are using the site-diagram for setting out the house.

1.6 IMPLEMENTATION

There are a fairly wide variety of implementation strategies already in use in the area. They are almost all based on a temporary structure as a starting-point combined with one or more of the following approaches:

- Build a large new house in front of a temporary house.
- Build a small permanent house to be added to later.
- Build foundations only then the rest room by room.
- Upgrade a temporary dwelling slowly bit by bit.
- Add permanent additions to a temporary dwelling.
- Combinations of the above.

The Sibiyas are eager to build a new structure separate from the existing temporary one but are not sure which process they will actually follow.

This is not a problem as they can change from one to another on an ad hoc basis. Mrs. Sibiya was concerned that if they started with a small basic structure, that they could then move into, they would 'run out of steam' and not build the rest as they would really like to. For this reason, they are setting out the full extent of their 'dream house' from the beginning to ensure that they keep reminding themselves about what they are aiming for. This will have the added advantage of helping to plan the garden to take account of later additions. They will also be able to show neighbours and friends just how big the house will be some day in the future. It will also make it easier for them to show a contractor where they want walls built and so forth without having to show a plan because contractors in the area are known to charge more if they have to work to a plan.

With a basic framework set out for the development of their home, they enjoy the opportunity to build at a pace and in a manner that can easily change and adapt over time, in increments that will suit their circumstances and priorities. If the performance of the many hundreds of other households building in the area is anything to go by, the feasibility of this approach is already established. Nevertheless, there are a number of things which could be done to further facilitate this already successful approach. These include:

- Technical assistance programmes.

- The introduction of a loans scheme. For example, materials loans could be made available in small quantities with the first materials used on a building becoming security for a further loan and so on, until enough security is obtained for quite large and long term loans, where they are desired.

- Encouragement of private sector initiatives to provide a wider range of goods and services to this market. For example, companies could be encouraged to provide various kinds of package deals that include financing. Such packages could be for various kinds of assemblies such as roofs supported on poles that people could then enclose themselves, small expandable houses, larger shed-like structures which could be subdivided and finished off at a later stage and so forth. The variety of combinations possible is virtually infinite.



14a. Kwaggafontein: The settlement where the Sihlya household is building. Local precedent provides many ideas. Each house in this row is being built by means of a different process.



14b. Valschfontein (near Kwaggafontein): Local brickmaking. (NBRI)



14c. Valschfontein: Small-scale steel-window manufacturer. (NBRI)



14d. Kwaggafontein: This household have built themselves a type of core-house.



14e Kwaggafontein: Adding-on to the first completed room.



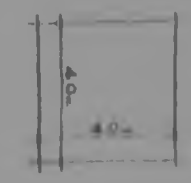
14f. Kwaggafontein: Temporary house at the back, new house being built in front and bricks being made in the foreground.



14g. Kwaggafontein: Mrs. Sibiya in front of her temporary house.







A room with a square shape has an efficient ratio of materials used to volume enclosed.

4,0m is an effective span for readily available timber purlins that can support roof sheets above and a ceiling fixed to the underside of the purlins

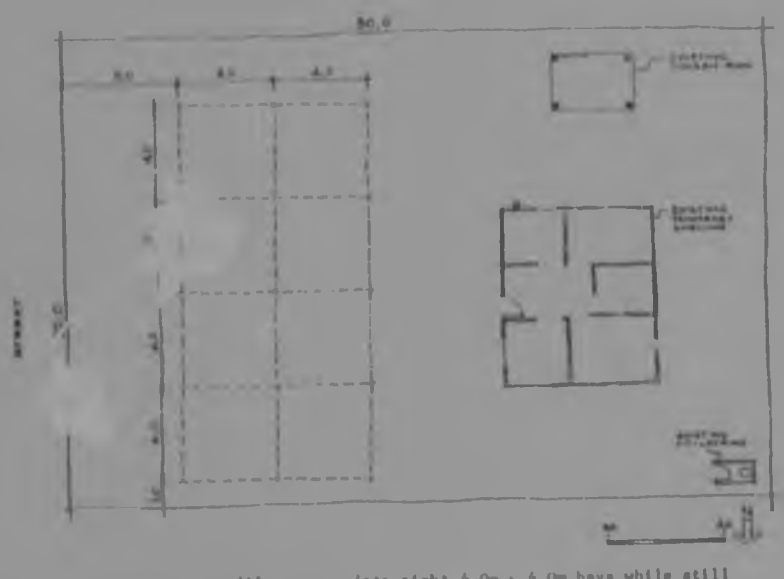
A room of at least 4,0m square facilitates flexibility, particularly with changes in use brought about by extensions. Circulation can take place through it on at least two sides and still leave over sufficient usable space.

If it is used as a walk-through room there is enough space to be able to set back the doors from the corners. This leaves room between the circulation path and the wall which is useful for furniture and storage

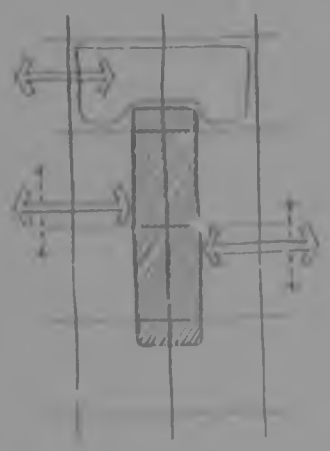
If the circulation is kept against the walls, there is enough space left over in the room for the remaining area to be enclosed and separated from the circulation area.

Walk-through and sub-divisable rooms are particularly useful in houses which are to be extended and where the spaces are likely to change use. Therefore, the use of minimum room sizes should not be considered without taking account of the later demand for effective circulation to new extensions.

15a. Rationale for a minimum planning grid of 4,0m by 4,0m.

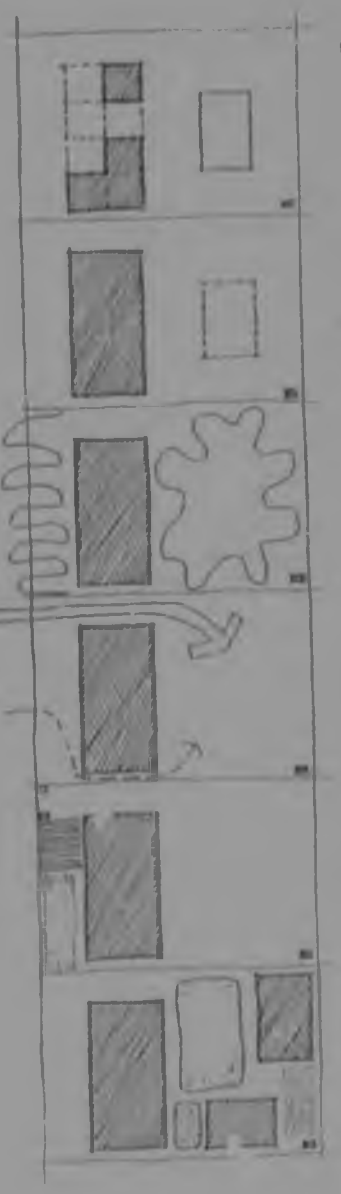


The site can readily accommodate eight 4,0m x 4,0m bays while still leaving enough space on either side for service access and vehicular access respectively



There are a number of options for routing internal circulation down the centre of the building while access from there to the outside can be in a variety of different positions.

The building can have a number of larger interleading spaces or can be divided into independent cells that can have separate outside access, as might be useful if part of the building is used for commercial purposes



With the temporary dwelling at the back of the site, the permanent building can be built in front of it.

When sufficient permanent accommodation is available the temporary building can be dismantled and the materials re-used

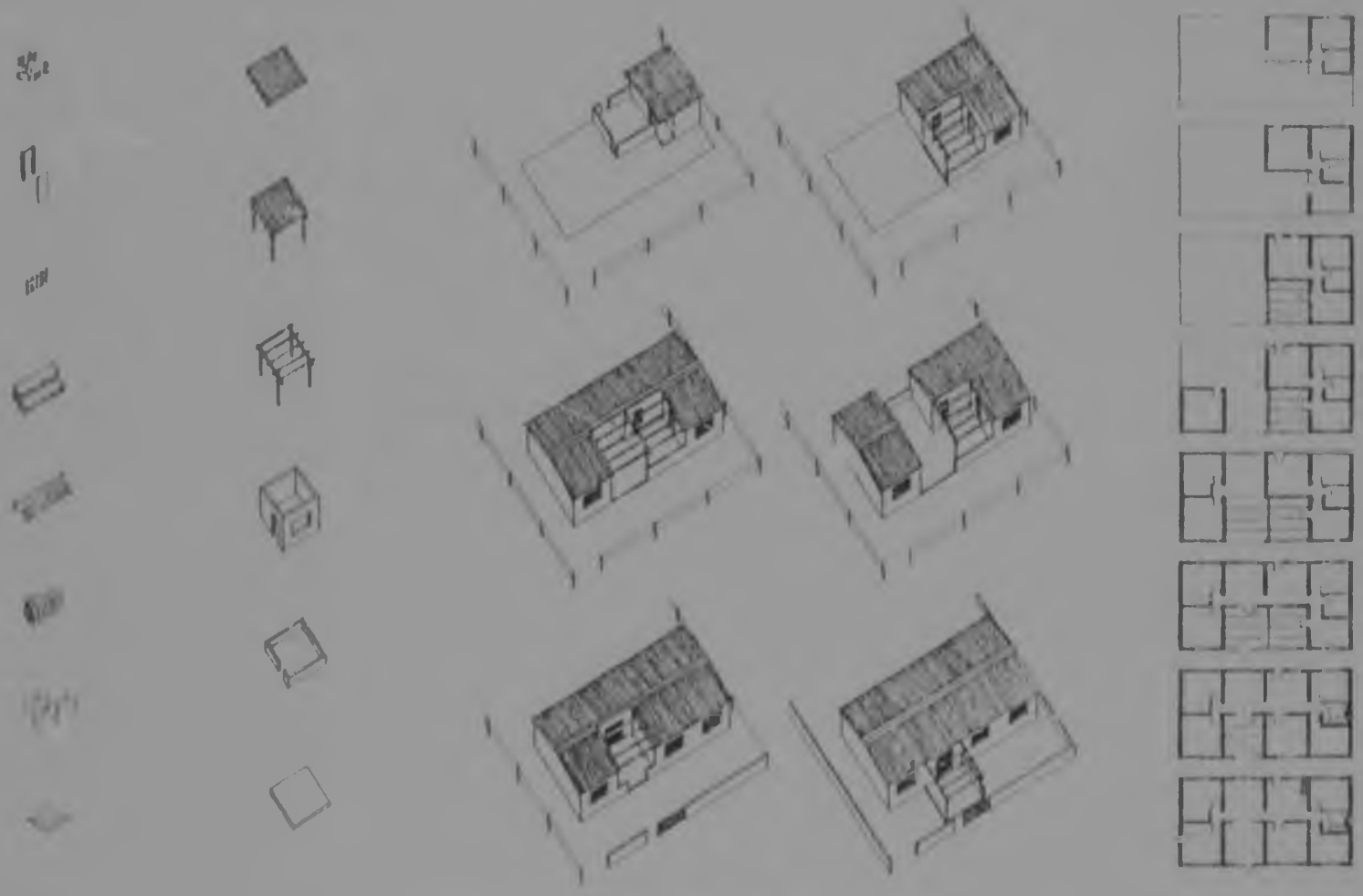
By building across the front of the site basic public and private domains are established This can be achieved in the early stages by demarcating the full extent of the building in some way without having first to complete the entire structure

Vehicular access is retained to the more secure rear of the site while there remains sufficient space on one side to build a garage or car-port Some form of open access to the rear is retained for services and as a fire-break (on the other side)

The public 'front' is kept small and therefore easy to make and maintain to a high standard This 'face' can be developed in a variety of different ways

The rear of the site is large enough to accommodate a wide range of different use-option and sub-development

15b. Ideas for development discussed with the Sibiya household



15c. Various readily avail ble materials and components can be combined in small assemblies which can be incrementally added to the house.

2. 'DEVELOPED WORLD' CASE STUDY

Mr. and Mrs. Blatcher bought an old farmhouse that had become part of a Pretoria suburb when the farm was subdivided for township development about fifty years ago. At the time of purchase, early in 1974, they were newly married and as yet without any children. Their choice of the house included the following factors: (16)

- A good position in a desirable neighbourhood.
- They identified the house as having a good potential for improvement.
- The price was low enough for them to afford the mortgage-bond repayments with the income available at the time.
- It had an established and attractive garden with several mature oak trees.
- It had considerable charm and 'character' for them (one could ascribe a lot of the 'character' to the fact that it was an old house which had been lovingly developed and altered over several generations by various owners. It had therefore matured rather well.)

Since occupation they have made a host of small changes and alterations to improve the house and (17) one larger improvement in the form of a studio-workshop which is built at the back of the site. All of these changes have happened on an incremental basis over the last five years and have been strongly influenced by the birth of two children, on the one hand, and on the other, by the expansion of the home-based silk-screening business that is their major source of income.

2.1 SOCIO-POLITICAL

Their choice of house and decisions about improvements were all under their own control and were therefore responsive to their own preferences and priorities. Although the house as it was when they moved in was not wholly to their liking, they happily tolerated discomforts and inconveniences at the time because they appreciated that, in time, they would be able to adapt the dwelling to better suit their own needs. In making decisions about improvements they are in a good position to explore the implications in their own time without having to commit themselves to major changes in a hurry. They also have a wide circle of friends and contacts to draw on for advice and assistance in dealing with improvements. The media also plays a role in this regard. For

example, they have access to home-improvement ideas in popular journals. Home improvement is regularly discussed as an integral part of normal ongoing household affairs; new ideas are therefore constantly debated.

2.2 ADMINISTRATIVE

They are solely responsible for administering their own affairs in home improvement but are subject to the framework of local authority services and restrictions.

2.3 FINANCIAL

As mentioned their source of income is a home-based silk-screening business. At the time of initial occupation it provided a relatively modest income although it has subsequently expanded into a very successful business.

They were able to afford the initial bond repayments on income at the time of buying the house but were assisted by family in making the required deposit. Subsequent small improvements were financed entirely out of available cash surpluses. These became available every so often when business conditions were good. As the business expanded and income improved they extended their mortgage-bond and built the studio-workshop as a larger increment of home-improvement. This coincided with the birth of their first child when an increased demand was made on space in the house itself. (20)

They enjoy a variety of economic benefits as a result of working from home. The business overheads, for example, are tax-deductible. This serves to reduce the overheads of the home itself as it contributes to costs of the mortgage, the telephone, water, electricity and so forth. Commuting costs are nil and there are the further cost advantages in not having to rent premises for the business. Other benefits of working at home include improved family life and better supervision of the children, particularly when they are still very young.

Interestingly enough, the previous owner of the house had also used it as a basis for economic activity. She was an elderly, single woman who supplemented her small income by renting out rooms to students at the nearby university.

With regard to the Blatchers' situation, however, one can identify that the key financial factors affecting the acquisition, adaptation and improvement of their home were:

- Ability to make regular bond repayments for the first stage (approximately R140-00 per month on mortgage-bond of R15 000)
- Availability of family assistance in putting down the required deposit (R5 000 deposit; R20 000 purchase price).
- Availability of cash surpluses for small-scale, ad hoc improvements.
- Ability to get additional loan finance for further major improvements when they could afford the additional repayments. They were able to pay the R8 000 for the studio/workshop by increasing their R15 000 bond to one of R23 000 (total repayments of approximately R 220-00 per month).

2.4 LEGAL

While they are subject to the local municipal bye-laws, the small-scale improvements were not affected by them directly. They had to get planning permission only in the case of the studio/workshop. The carrying out of a home-industry from a residential site is permitted in their neighbourhood but has to comply with certain regulations such as those relating to noise and other nuisance controls.

It is a rather old house that has ceiling heights and wall thicknesses in some rooms that do not comply with building bye-laws but these were waived when the house became part of a suburban subdivision. However, new structural changes and additions need to conform to the regulations.

2.5 TECHNICAL

2.5.1 Technology

While, in most cases, the small-scale changes involve technology that is easy to use and can be carried out by the Blatchers themselves with minimum skills or with the use of unskilled and semi-skilled hired labour, the studio/workshop was built as a package deal by a company specialising in small-scale additions. It was built with the use of a modular system especially suited to quick and easy erection. It has a minimal disruptive effect on normal household

activities and there is little damage to the garden. The structure itself is largely a shell within which later subdivision can take place. It has also been added to since first built; a 'temporary' store for silk-screens was built onto the back of it.

The Blatchers initially considered building the studio/workshop with the use of sub-contractors, acting as main contractors themselves (i.e. the same kind of process as that contemplated by Mrs. Sibiya), but decided against it after discovering the package deal possibility. This change was also influenced by their improved income by that stage; they would certainly have been able to make a cost saving of at least 35% over the package deal by overseeing and organising the work themselves but would have suffered other disadvantages such as an extended and untidy construction period.

2.5.2 Design

The design of improvements has been born out of lengthy and detailed discussion, often involving friends and relatives, each small change receiving a great deal of attention. In the case of the studio/workshop, I assisted them informally (being a family friend) by helping to prepare a sketch plan during a Sunday afternoon social visit. We also discussed building processes and development possibilities. For example, they agreed that the design should be flexible enough to allow for the structure to be easily converted at a later stage into a flatlet, guest cottage or the like as this would enhance the value of their property for resale at some point while also maintaining a value for the structure if the business became too large and had to be moved to other premises. After preparing a sketch plan, they retained an architectural draughtsman to prepare 'Council Drawings' for them and to take care of the planning permission aspect. This service cost them R120-00. (15)

The design process for additional changes is an ongoing one that is a natural extension of normal household activities and circumstances. For example, the birth of their second child, combined with the fact that their business is now doing quite well, has started them thinking about adding a new bathroom and an extra bedroom to their house. (16)

Although less explicit as an architectural design change, they have been able to make very successful changes in space usage within the house over time. For example, while the business was still small and before any children were born a front bedroom was used as the studio/workshop. Business expanded, the dining room was taken over as additional space for business use and the dining table moved to the entrance-hall. With the birth of the first child, plans were made to build the studio/workshop. In the interim, the small room next to the bathroom became the baby's room. With the completion of the new building, all business activities moved out of the house itself, the front bedroom (formerly the studio) was redecorated and fitted out as child's room and the dining room reinstated as such. When the second child arrived he occupied the small room next to the bathroom. By this stage, however, the business was still expanding; the dining room was once more taken over, this time as an artwork studio and office; actual production activities were kept in the outbuilding. The dining table was once more moved to the entrance-hall. This is how things stand at present. (19)

The building of the studio-workshop had a profound effect on the way in which outside spaces are used Before its construction the back-yard was rather unattractive and outdoor living was concentrated in the front garden. The new building, however, formed a backdrop to the back-yard and made a very attractive space between it and the house. This has now become a favourite spot for outdoor living. The children play there very happily while being easily surveilled from the kitchen, the studio and the workshop.

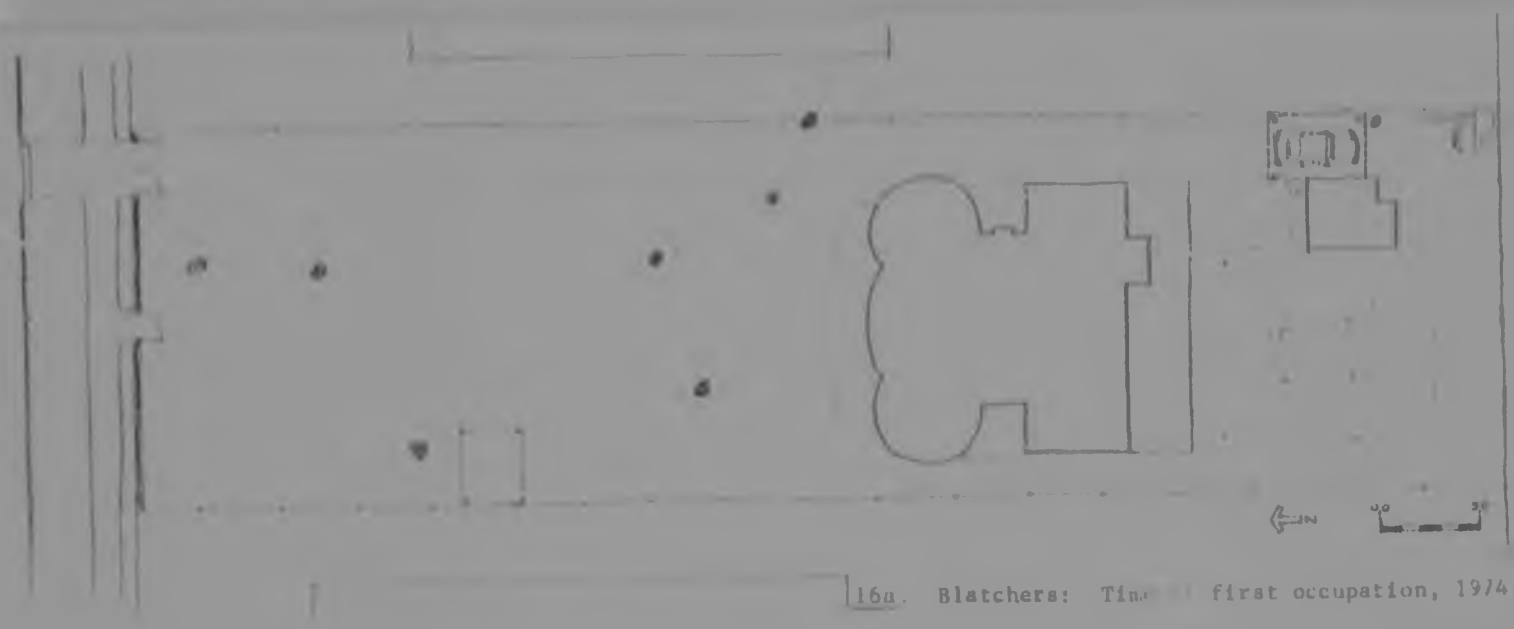
A point of interest, in terms of design decisions, developed over a choice between air-conditioning the studio/workshop and taking some other measure to control heat build-up as a result of it being north and west facing with extensive glazing on those two sides. While it was originally thought that the existing trees would provide sufficient shade in summer, it was found to be less effective than anticipated. They were already in the process of ordering expensive and high energy-using air-conditioning equipment when I persuaded them to rather try shading the building with pergolas and to supplement this with two low-energy extractor fans to remove heat given off by the production machinery. This idea proved particularly successful and was implemented at a quarter

of the capital cost of the air-conditioning, not to mention running costs. The pergolas were made in such a way as to allow the existing trees to pass through them in a number of places. When the trees lose their leaves in winter, these places become holes through which the winter sun shines to provide a comfortable interior temperature. Curtains on the windows provide a degree of control over this when it becomes necessary because even in winter the Pretoria climate can sometimes cause too great a heat build-up.

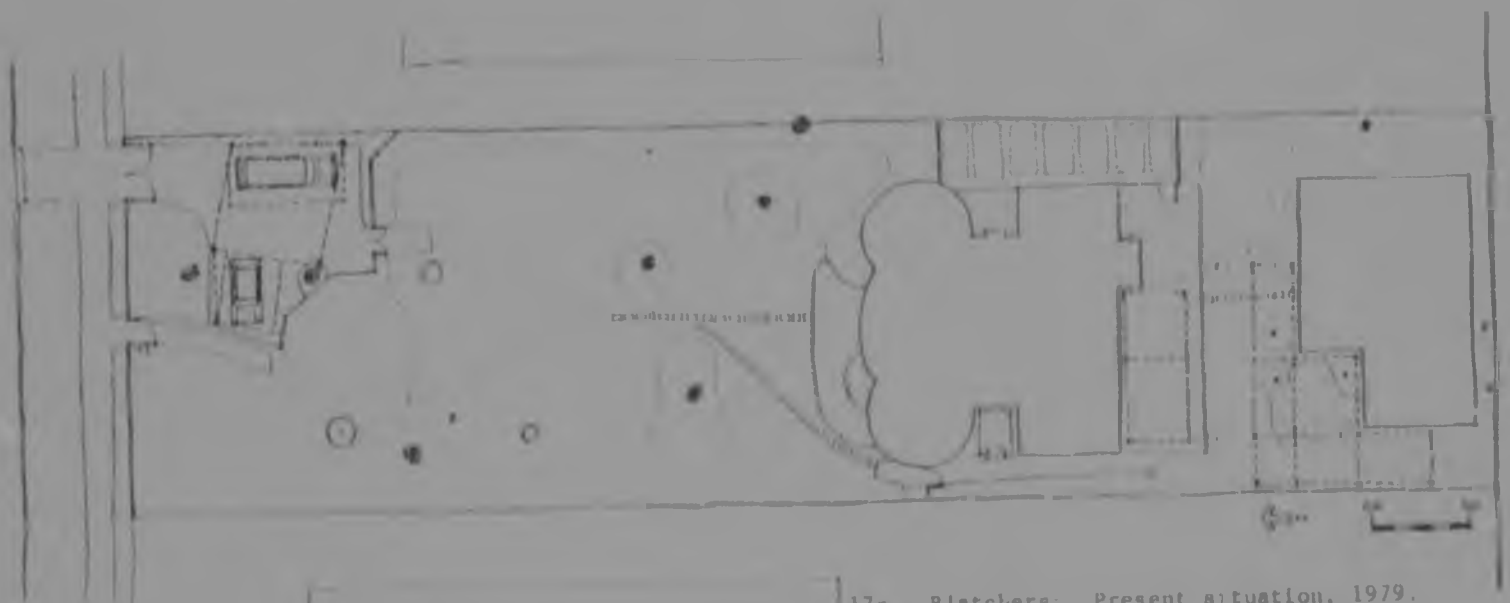
The pergolas have also made a tremendous contribution to the outside spaces as they are very pleasant to sit under in both summer and winter. The Blatchers have also enjoyed hanging children's swings from them, growing creepers up them and using the supports for hanging ferns in baskets. The effect of filtered sunlight in summer and that of the low angled direct winter sunlight has influenced visiting friends to the extent that this approach is now also being used by them on their own homes.

2.6 IMPLEMENTATION

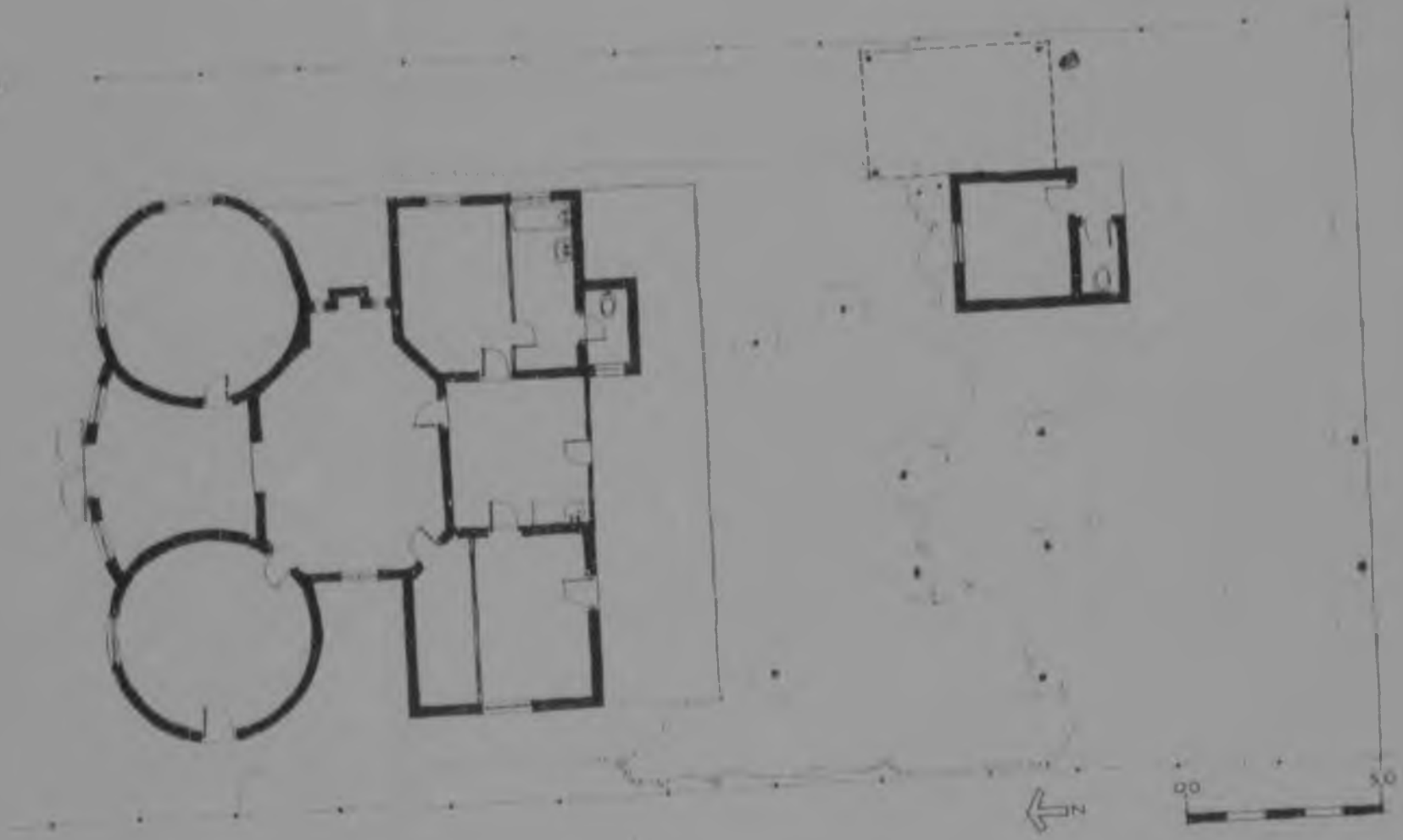
Aside from major work such as on the studio/workshop, small increments of development and change are made from time to time, most often with the use of hired labour on a labour-only basis, with the Blatchers buying and issuing materials as and when they are needed. For example, an unskilled casual labourer, who works in the neighbourhood doing odd jobs for people, was employed to dig a storm-water channel on one side of the house. He was shown how to mix the concrete with which to line the channel and was then able to proceed with the rest of the job by himself. Because the Blatchers work from home, it is very easy for them to supervise this kind of work during the week and they are, therefore, not confined to work only over weekends.



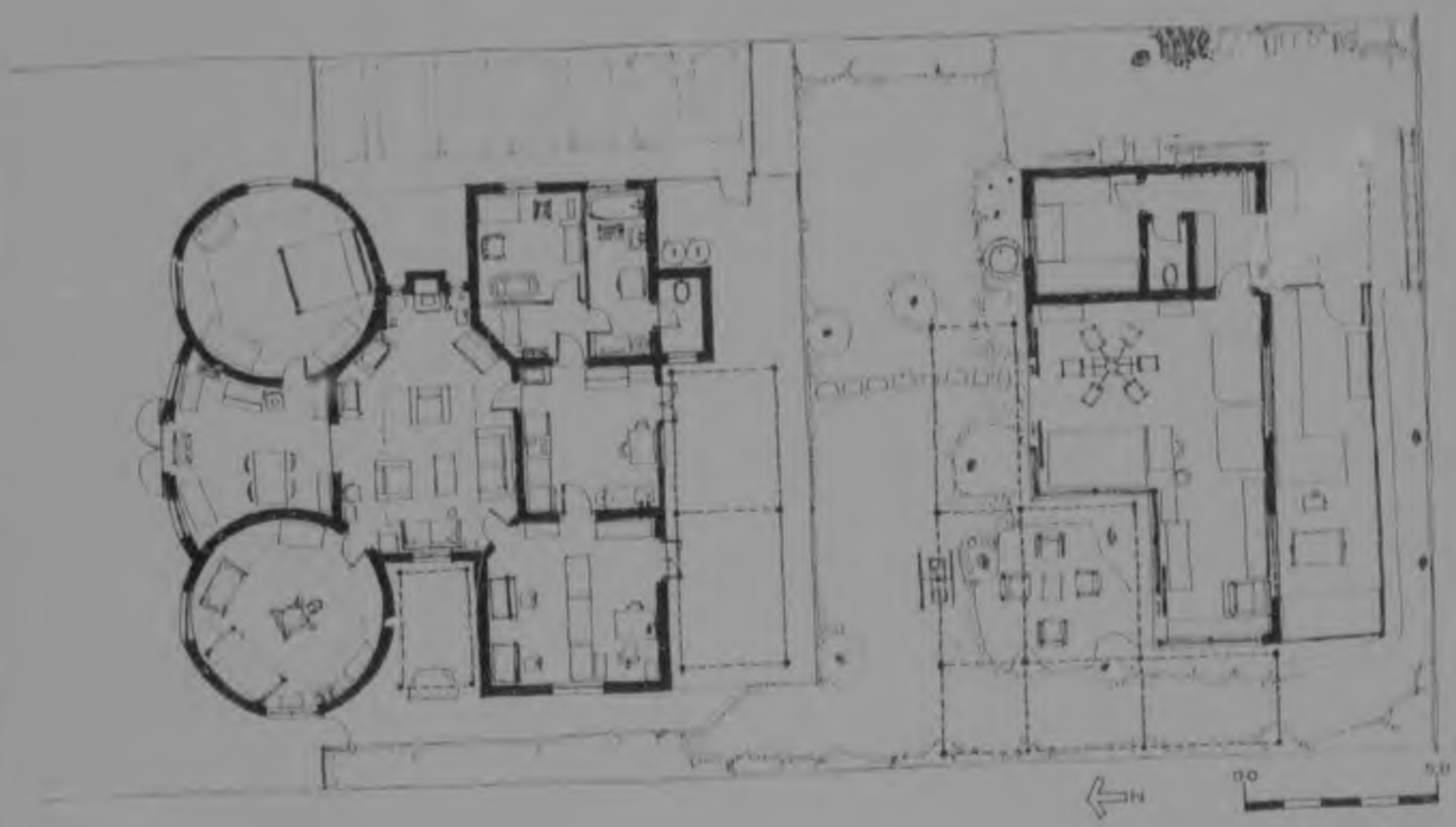
16a. Blatchers: Tim[illegible] first occupation, 1974



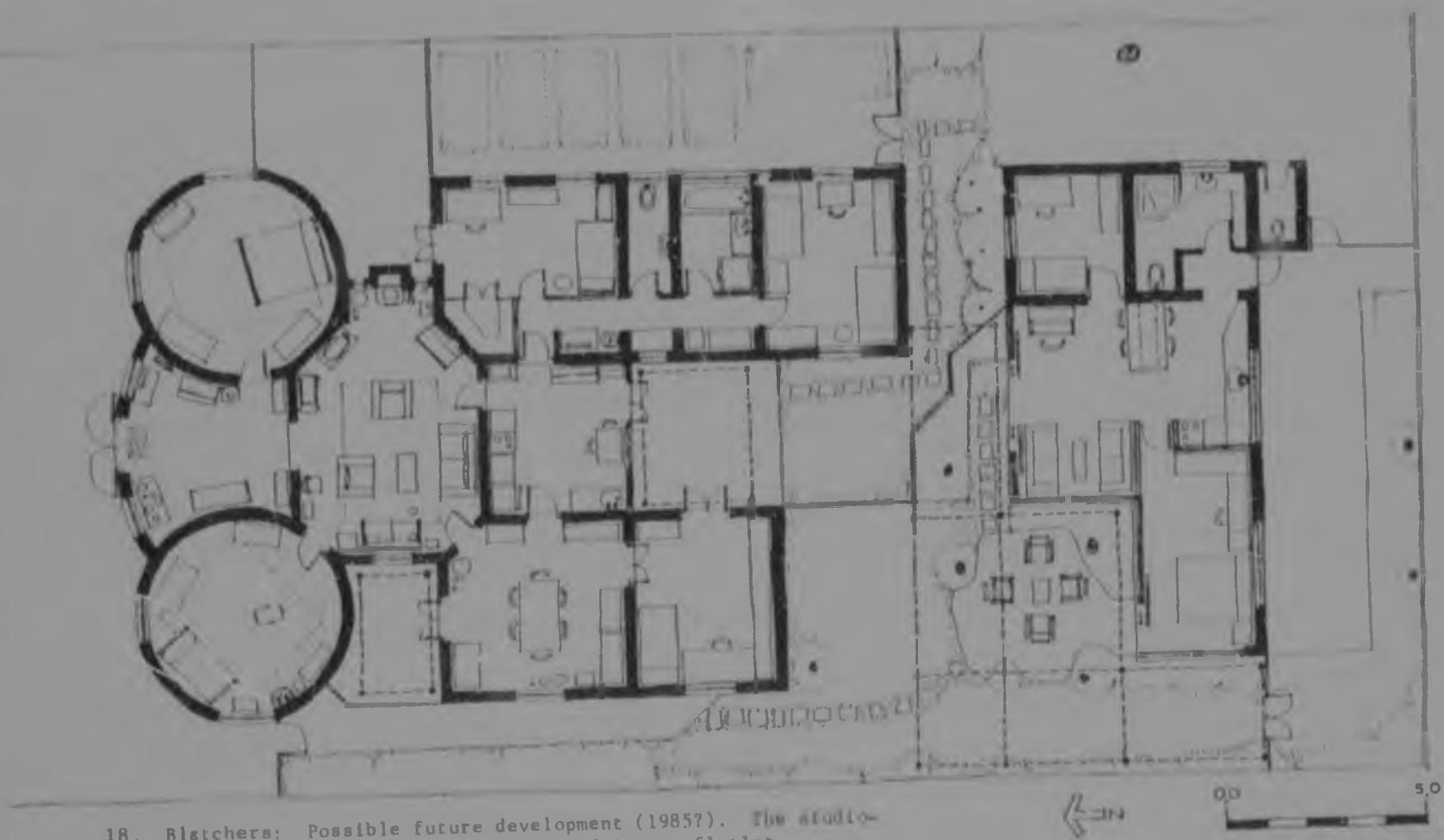
17a. Blatchers: Present situation, 1979.



16b. Blatchers: Time of first occupation, 1974.



17b. Blatchers: Present situation, 1979.



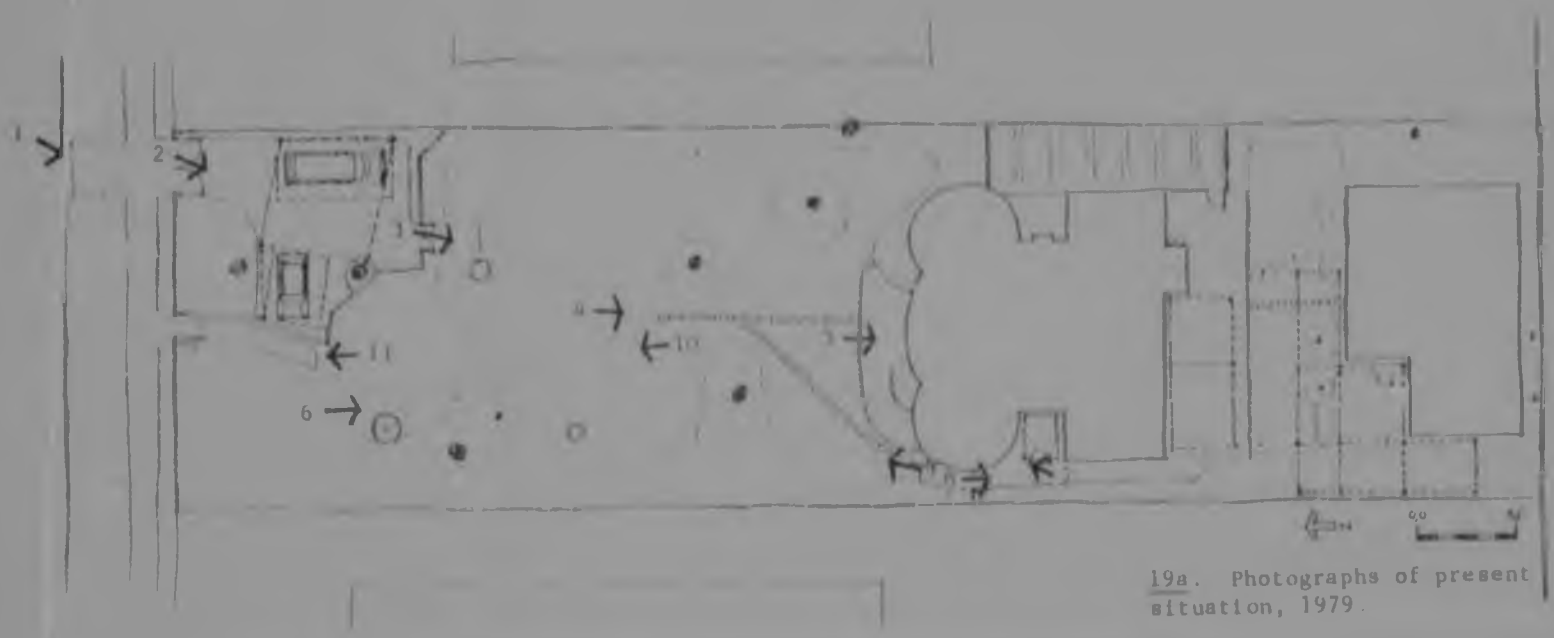
18. Blatchers: Possible future development (1985?). The studio-workshop is shown as having been converted into a flatlet.



Street-front.



Entrance to car-park.



19a. Photographs of present situation, 1979.



View from car-park into the garden





Front entrance to the house



Alternative entrance-way from the street



S'de court-yard.



side-access to the studio-workshop

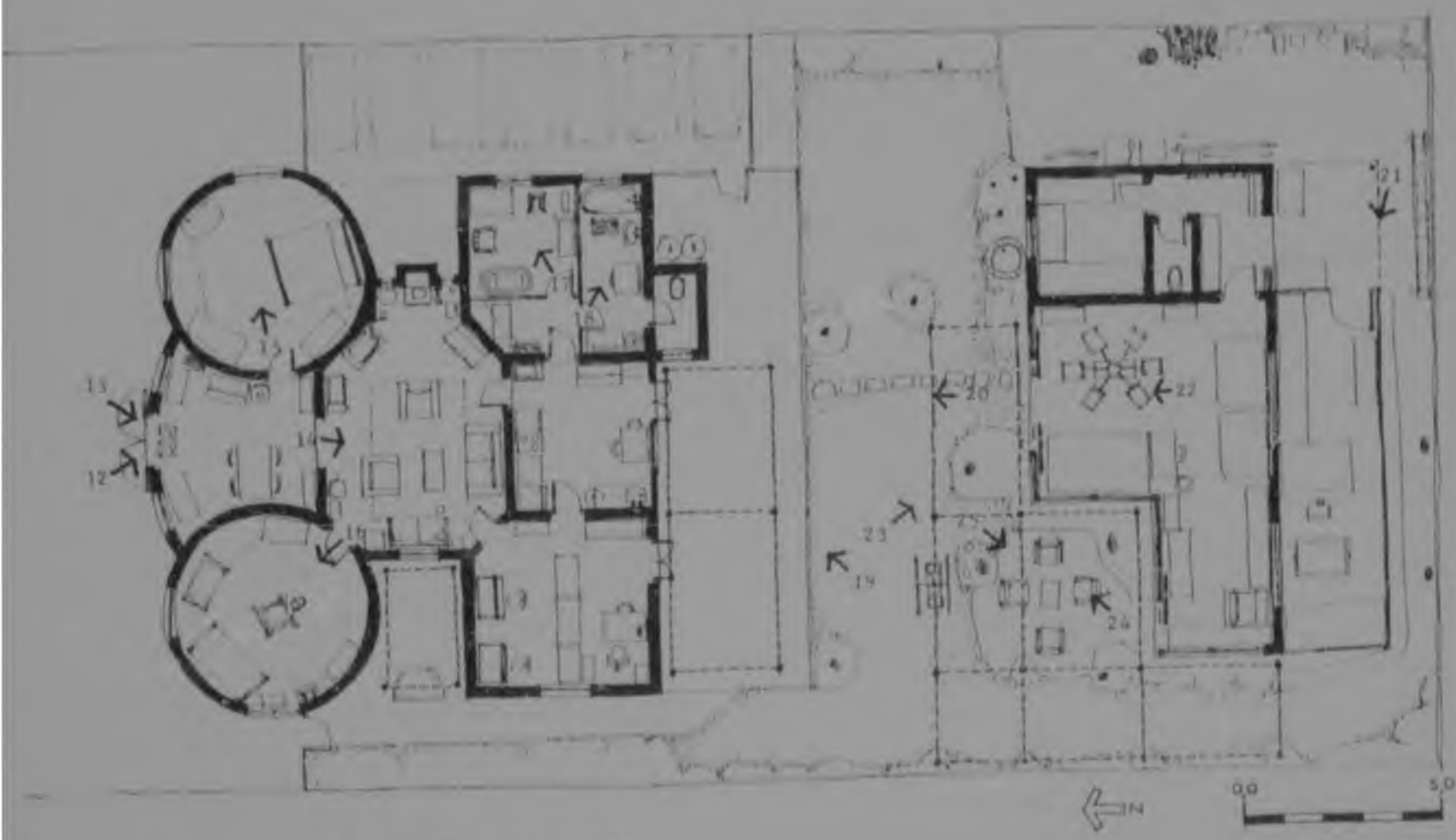


View to the front from the side-access.





The alternative entrance way from the street



19b. Photographs of present situation, 1979.



Entrance-hall.



Dining-room furniture in the entrance hall.



Living-room.



Main bedroom.



Child's room (formerly a work-room for silk-screening)



Baby's room



Bathroom



19



21

Silk-screen store behind the studio-workshop



20

Kitchen entrance.



Inside the studio-workshop



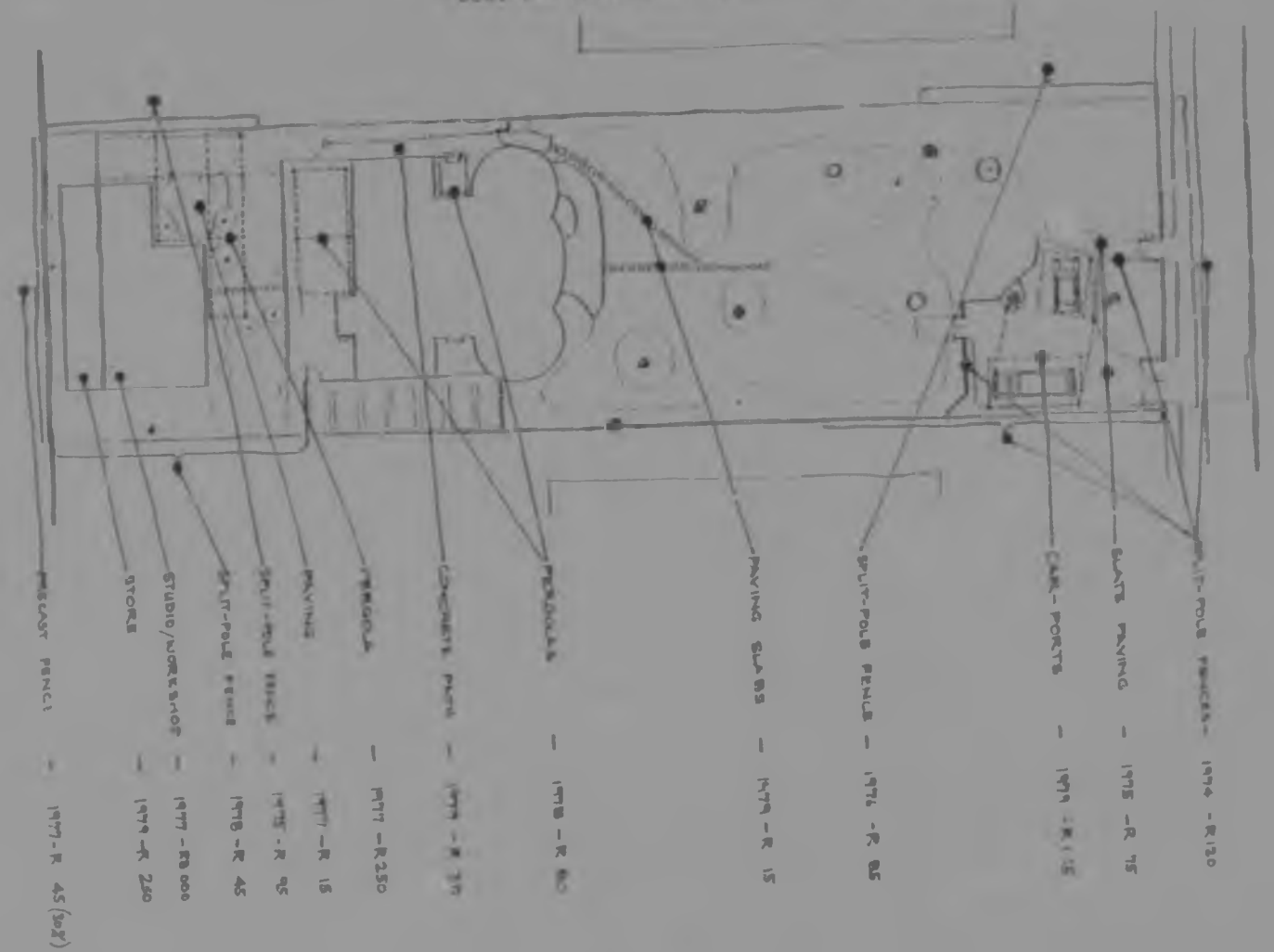
Studio-workshop main entrance.



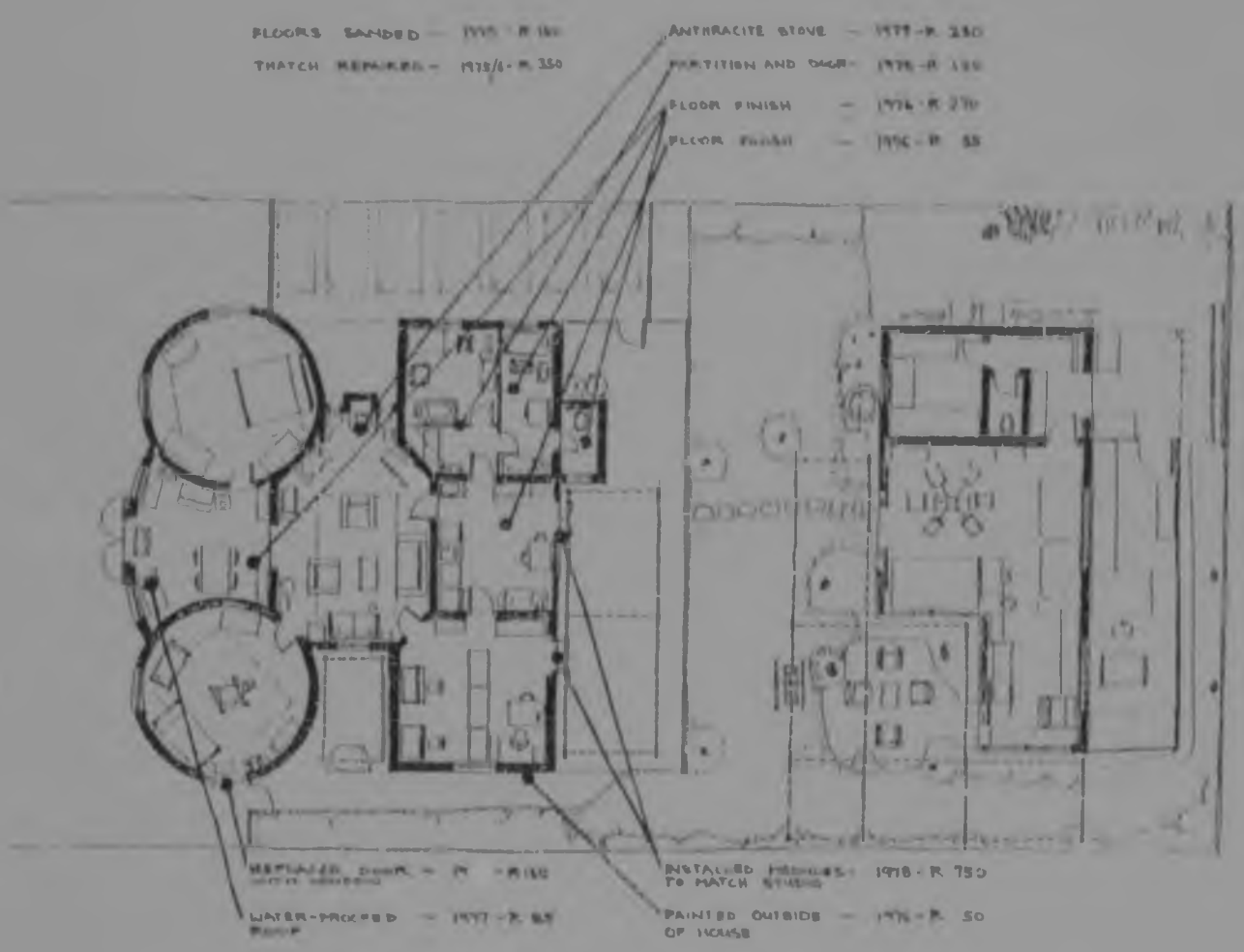
The outdoor sitting area.



Gap in the pergola that is closed in summer by the trees getting their leaves. Open in Winter, shaded in Summer.



214. Improvements made by the Blacklers between 1974 and 1979.



20b. Improvements made by the Blatchers between 1974 and 1979.

5. THE HOUSING PROCESS AND INCREMENTAL DEVELOPMENT

These two cases from 'developing' and 'developed' worlds respectively, are not intended to be either models or necessarily typical cases but they serve rather to illustrate something of the range of development dynamics and issues with which individuals are faced in the housing process. They also illustrate how incremental development can and does take place to produce environments that are appropriate to diverse individual demands over time. The layering of processes over an extended period produces richnesses of character and meaning that can be felt and enjoyed. In fact the buildings and their surroundings are 'alive' by virtue of the constant adjustments and renewals that take place, in what amounts to an essentially organic process.

The two cases also illustrate how the basic processes and concerns in the 'developing' and 'developed' worlds are quite similar; both display characteristics of patterns and parts of patterns that one can observe in a wide spectrum of housing at various levels. Indeed, one can often identify the degree to which various housing solutions are 'alive' in terms of the way in which the inhabitants respond to them. By understanding the processes, one can go a long way towards identifying the differences between healthy and unhealthy development.

Architects have for some time been aware of the value of 'personalization' of housing by residents as a positive aspect. It has usually only been seen as an expression of identity through applied imagery though and insufficient attention has been paid to the wider sphere of issues and processes that affect people's perceptions and cognition of their environment. Incrementalism, when recognised and actually planned for and encouraged, is a very real means to cater for individual priorities and preferences at a pace and in a manner that occupants themselves control thereby automatically taking into account a range of complexities that go far beyond 'personalization' as only an expression of identity. It goes without saying that the better the access that people have to supportive networks and technology that makes it possible for them to have control, the better can be their responses to their environment. Incrementalism can therefore be seen to be a process that plays a very valuable role in the adaptation of their

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environment by people and concomitantly in the evolution of their well-being through the various transitions that they experience over time.

In physical as well as non-physical planning one needs to be able to facilitate individual and group responses to that which is provided and ensure that they have the means to do so. Individually controlled changes, by whatever size of increment, will surely be more appropriate to the diversity of demand over time than anything that could be totally preplanned in detail from the beginning.

Architects are very fond of moving into existing, often old, houses which they then convert for themselves. They present strong arguments as to their reasons for doing so; these usually revolve around the character of the building brought about by the many layers of habitation stamped on it by previous occupants. The houses therefore enjoy a degree of attractive maturity. This and other arguments are probably less significant than the fact that the complexity of decision-making that is involved in the housing process is so great that they enjoy having had many of the decisions already made for them. They can then concentrate their energies on resolving fine details that are very often too difficult to resolve quite as well when designing an entirely new building. By moving into an existing house of their choice, they can live with the situation for some time while cogitating over how, where and when to make changes and improvements. They then often do produce a much finer degree of resolution of details than they might otherwise have done. For example, one is in a much better position to decide about improvements to a room that one is standing in than one which only exists on paper or in model form. Whether these architects would admit to it or not is another matter but one needs only to see them in action for their deeds to speak louder than any words which they might use. Were architects to better understand the housing process they would be able to place themselves in a better position to actually design for it and facilitate responsiveness in the physical environment; responsiveness that opens up a variety of paths and options within which individual users can express and enjoy well-being in their own way by being able to participate more fully in the housing process.

If one is to establish a healthy housing market within which these processes are to take place then clearly it needs to contain:

- Choice from among a variety of diverse options as starting points (i.e. variety of housing products)
- Possibilities for each option to be adaptable to a greater or lesser degree.
- The possibility for people who have entered the market, made a choice and adapted it as far as they could, to re-enter the market once again and repeat the process (i.e. housing mobility).
- A wide range of supportive products and services.

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PART 4 : DEVELOPMENT PLANNING IN PRACTICE : TWO PROJECTS IN THE SOUTHERN AFRICAN CONTEXT

The two projects described in this section are considered to be of particular interest in terms of planning for the dynamics of transition and change that have been discussed thus far. The two projects are:

1. THE NGANGELIZWE PROJECT: It deals with the upgrading and related development of an existing informal settlement. The major emphasis is at the neighbourhood level and deals primarily with strategic issues.

2. THE KANYAMAZANE PROJECT: While it is mainly concerned with the role of the private sector in housing and development, it also focuses on detailed planning at the individual house and group of houses levels in a new neighbourhood that is an extension of an existing formal settlement.

The development principles in both projects incorporate the same basic concern for the existence of a viable housing market that operates at a variety of levels and offers choices from among a range of options which are both adaptable and clearly understood. Economic development is seen as an integral part of the housing process and it is recognised that no individual or group can predetermine the full range of complexities and implications of a particular policy or strategy at any one point in time. Learning by doing with continuous monitoring and feedback within an overall development framework, is therefore seen to be imperative.

1. THE NGANGELIZWE PROJECT

Ngangelizwe is a neighbourhood of Umtata in Transkei which, prior to independence in 1976, was a residential area specifically set aside for occupation by Blacks in terms of the Bantu Urban Areas Act of the Republic of South Africa. In other words it was not subject to conventional municipal ordinance.

By 1975 the population of the neighbourhood had reached an estimated 16 000 souls, or about 65% of the total population of Umtata.

Ngangelizwe functions quite successfully as an urban reception area for newcomers from the rural areas. As such, it has a variety of 'entry-points' to the housing market that allows for newcomers to find a place to live that suits individual priorities; this takes the form of a wide range of largely rental accommodation of various standards and in various positions. It contains an extraordinary variety of examples of the ongoing transition-characteristics, already discussed, in terms of both physical form and socio-economic and socio-cultural conditions. One can see buildings ranging from traditional huts to 'modern' Western-type houses with associated technology while the population itself comprises a wide cross-section of people ranging from newcomers with strong traditional ties (who work mostly as unskilled labourers) to highly urbanized professionals such as doctors and teachers. (21)

By 1975, when the NBRI first became involved in the area, more than 90% of the existing buildings had been built by private sector means, mostly through small-scale informal sector subcontracting by site occupants, on sites of various shapes and sizes (allocated by the local authority in collaboration with local leaders). At that stage there were some 1 200 of these sites in an area of approximately 122 hectares. (37)

Access and services were rudimentary and each site 'owner' had a right of occupation recognised by the municipality. Site charges of R2-00 p.m. were collected to cover the costs of water and sanitation services; some sixteen standpipes provided the source of water for the neighbourhood, a night-soil and refuse service took care of sanitation and main roads were occasionally graded. The roads and accessways,

however, were very poor and became virtually impassable in wet weather, making sanitation services difficult to maintain.

Whereas the services infrastructure was relatively poor, the community had invested a considerable amount in housing and facilities. If the area were to be demolished and redeveloped by the government, it would require considerable capital outlay not only for replacement of existing accommodation but also to compensate people for what would be demolished. This economic factor, combined with the social cost of demolition and clearance (strongly resisted by the community and their representatives), played a major role in persuading the government to accept recommendations that the area be retained and upgraded Consequently, the government body responsible for development in the area (The South African Development Trust - SADT, known at that stage as the South African Bantu Trust - SABT) agreed to finance, in the form of a grant, the capital cost of upgrading the services infrastructure to a more effective 'operative' level so as to take care of the immediate demand for improved health and safety. In addition, they agreed to provide additional serviced sites and housing in a new extension adjacent to Ngangelizwe as well as a number of additional communal facilities in both the new and existing areas. The fact that the government was prepared to make grant finance available was largely a result of the desire to boost Umtata's development as a decentralised growth point combined with the aim of assisting its development as the capital of independent Transkei.

The research and development role played by the NBRI was one of collaborating with and advising the Umtata Municipality and the agents of the SADT (and their consultants) in problem identification, strategy formulation, technical matters and implementation. This role was financed by the Department of Co-operation and Development (known at that stage as the Department of Bantu Administration and Development) of the South African Government as part of its research and development contract with the NBRI.

The primary decision-making forum which controlled the grant finance to Transkei was a special committee set up for this purpose. It was called the Transkei Townships Co-ordinating Committee (TTCC) and represented the interests of the South

African Government, the Transkei Government, the Umtata Town Council and the Transkei Townships Board. As the name implies, its sphere of interest went beyond Ngangelizwe itself and dealt with all of South African Government assisted urban development aid to Transkei.

It was in this forum, therefore, that agreement to upgrade Ngangelizwe was first reached and a basic physical planning framework accepted in principle. The first stage of services infrastructure development was agreed upon and implemented as follows:

- ROADS AND STORMWATER DRAINAGE: The road connecting the centre of Umtata with Ngangelizwe was tarred and provided with stormwater drainage, as was the major road leading into the neighbourhood and back (forming a major road loop through the area). It was decided to develop these roads to a high standard because they are used by the buses and heavy vehicles that serve Ngangelizwe as well as the fact that they are nearly all roads that run up and down relatively steep slopes. A high level of development therefore minimises stormwater damage and maintenance to these essential routes. Most other roads in Ngangelizwe run along the contours and were graded, gravel-surfaced and provided with stormwater channels. (22)

  This upgrading of roads was essential to the satisfactory operation of the sanitation services (night-soil and refuse removal). It also improved private access while reducing damage to buses and other vehicles.

- WATER SUPPLY: The entire neighbourhood was reticulated with a water-supply network that provided a stand-pipe to every site. A communal tap to every ten or twenty houses might have been adequate but, as the SADT were prepared to pay for this relatively high level of service as a grant, it came as a bonus. (24)

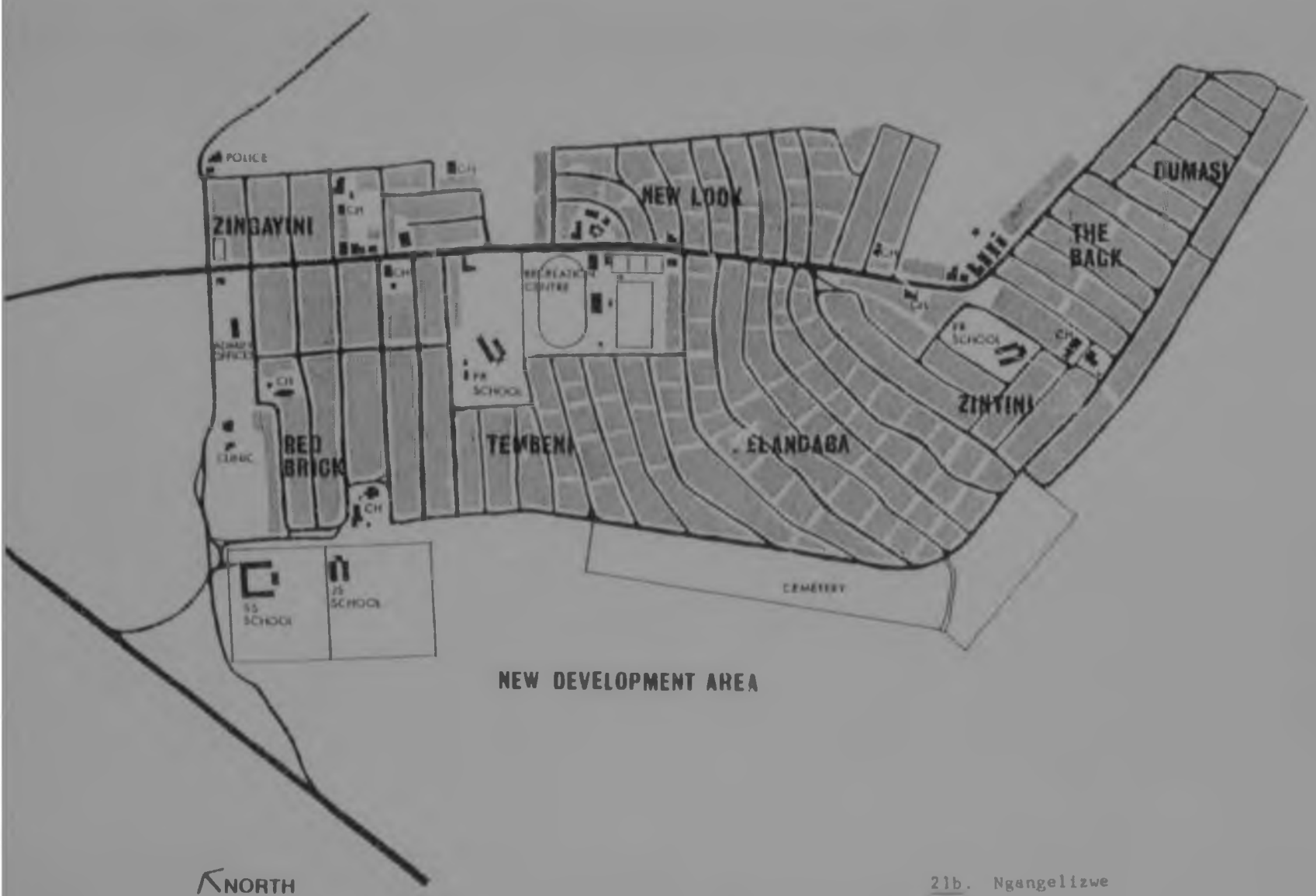
- ADDITIONAL SERVICED LAND: Eight hundred additional serviced sites for housing and facilities were developed in and adjacent to the existing area to create options for housing mobility and cater for population growth. (23)

These three primary actions took care of the most immediate demands for improved health and safety while creating the physical framework within which incremental development could take place.

From the more detailed descriptions which follow it can be seen that in almost all cases the development approach employed did not try to replace outright the policies, procedures, processes and activities that were already operating in the area but sought rather to identify positive features which could then be built upon and developed. This approach played a major role in determining the feasibility and viability of development work in that context. This also meant that existing institutions could see that they had something to gain by collaboration rather than feeling that they were threatened by outside influences.

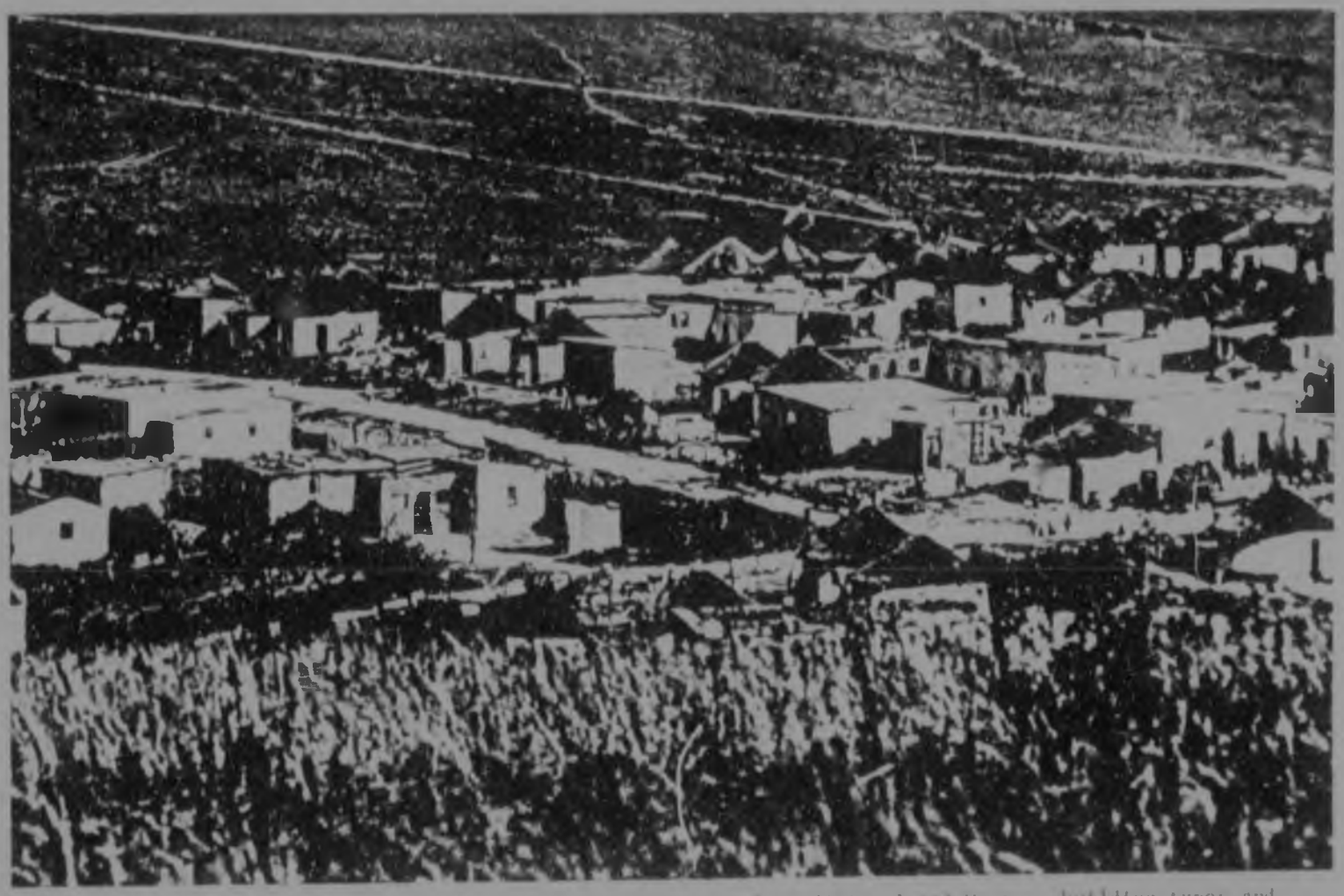


21a Ngangelizwe in relation to the City of Umtata



NEW DEVELOPMENT AREA

21b. Ngangelizwe



21c. Ngangelizwe: Note the range of built form. Mixtures of traditional and Western building-types and technology. (NBRI)



21d. Ngangeliewe: Overview of part of the settlement. Government-built infill houses in the centre-left of the picture. The roads were in the process of being upgraded when this picture was taken.



21e. Ngangelizwe: General view of range of built form. (NBRI)



21g. Ngangelizwe: New development area (top-right) before building started.



21f. Ngangelizwe: Beerhall in the centre and recreation facilities centre-right.



21h. Ngangelizwe: Primary school in the foreground.



22a. Main bus-route through Ngangelizwe tarred and provided with stormwater drainage.



22b. Minor roads graded, surfaced with gravel and provided with open, lined stormwater channels.



23. Foreground: Housing in new development area. Centre: The school hostel Background: Two schools



24. Water stand-pipe to each house Service lane between houses for night-soil removal.

1.1 SOCIO-POLITICAL.

An elected representative body, with five members plus a secretary, existed in Ngangelizwe for some time prior to the start of the upgrading programme and it was through this group of representatives that the NBRI first made contact with the community. The body's credibility in the eyes of the residents was found to be very good and, on this basis, they became the key people in decision-making.

Although the representative body was a duly constituted subcommittee of the Umtata City Council, they had no de jure executive powers and could only make recommendations and act in an advisory capacity to the City Council. In fact, at that stage, the body was called the 'Advisory Board'. However, it was unusual for the City Council to reject their recommendations, therefore, de facto, they actually did have an effective say in decision-making. This was borne out by the credibility the representatives enjoyed in the eyes of their electorate. This was due in no small way to the sensitivity of the municipal officials and City Councillors responsible for Ngangelizwe.

In carrying out their duties, the representatives were influenced not only by individual members of their electorate but also by interest groups in the community such as those representing religious groups, businessmen, sports bodies, welfare groups and so forth, all of whom exposed them to a considerable degree of lobbying. Furthermore, it is interesting to note that their election 'platforms' ranged from the conventional party-political lines to those related to tribal and traditional affiliations. The Advisory Board forum was, therefore, an existing and operating basis with effective communication networks already established. It was also well-evolved as a vehicle for problem identification, priority determination and decision-making on matters affecting the residents of Ngangelizwe, not least of all the upgrading programme.

After Transkei's independence in October 1976, two members of the Advisory Board were elected to the Umtata City Council but the rest of the members stayed on to serve the residents of Ngangelizwe (together with these two councillors) in an informal 'ward development committee'. More recently, a third member of the former Advisory Board was elected to the Council. It was also decided to form an Estates Subcommittee

to provide a formally constituted body that looks after the development of the neighbourhood; in effect, this is an upgraded 'ward development committee'. This, together with the fact that one of the former Advisory Board members has recently been elected deputy-mayor of Umtata, supports the original observation that the Ngangelizwe representatives enjoyed high credibility at the time and that their performance as representatives during the early stages of the upgrading programme was appreciated by their electorate.

While the bulk of the available budget during the 1975/76 financial year was spent on the first-stage basic infrastructure, already discussed, some R2 million was made available for further development in the 1976/77 financial year. It was at this stage that more detailed budget allocation was required. The representatives found themselves having to debate just how to allocate the available funds. During this period (involving a long series of meetings), Ken Finlayson and I, together with officials of the Umtata Municipality and members of the City (25) Council, made ourselves available to the Advisory Board to assist in determining priorities and with technical matters. Representations were also heard from various individuals and interest groups in the community. The series of meetings culminated in a set of recommendations. These were then tabled at the budget meeting of the Transkei TownshipsCo-ordinating Committee in April 1976. Except for minor amendments, the recommendations were accepted and implemented during that year. This set a precedent in South Africa as it was the first time that a community of this kind drew up and had implemented its entire annual budget.

1.1.1 Communication Problems and Informed Decision-Making

During the period of meetings and discussions on the budget allocation, we developed a number of communication tools as well as a budget-planning 'game' that proved particularly successful in assisting the representatives with their discussions and decision-making. The need for these tools had become apparent when discussions revealed that some of the representatives had difficulty in grasping the technical and cost implications of certain decisions. Some also had problems with reading plans and maps. It was

therefore quite difficult for them to both understand them and to communicate their implications to their electorate and other interested groups. Our response to these problems included the following exercises:

1.1.1.1 Eliciting and Recording of Concerns

Discussions with representatives in meetings, on walks through the neighbourhood and during slide-shows of parts of Ngangelizwe led to the raising of a wide range of issues and concerns by individual members of the Advisory Board. These were listed on sheets of paper and stuck on the walls of the meeting room for easy reference. The concerns raised by each representative were listed next to his name and each was free to add to or (26) subtract from these lists. This form of minuting meetings proved very useful to the representatives because they could refer to them continually and also show them to members of their electorate to illustrate what issues were receiving attention. For example, one of the representatives, Mr. Luwaca, was concerned that playgrounds should be developed as safe places for children. This was listed under his name as 'playgrounds'. Anyone interested in them or in what Mr. Luwaca had been expressing concern about could therefore see that he had registered it as an issue.

Once these lists had been finalised they were summarised to avoid repetition and then divided into two categories. The first of these listed those items which could actually be purchased and therefore budgeted for e.g. a school The second category listed non-purchasable items e.g. the concern for people to be allowed to let out (27) accommodation to supplement their incomes. This second category could not be budgeted for but required legal and administrative action that would have to be recommended to the City Council and lobbied for.

This process made possible a relatively high degree of success in problem identification as it generated a good deal of debate and discussion about what actually constituted problems. An example of the kind of action that resulted out of the debates is that relating to the vendors selling fruit and vegetables along the main roads; it originally emerged as a concern after some of the vendors had complained that they were being harassed by the police for operating without the necessary hawkers' permits (and

therefore in the informal sector). The City Council were eager to house them in a centralised market place. However, discussion soon revealed that many of them located along the roads because they were close to bus-stops and therefore passing trade while others were also very close to their homes; they were therefore able to keep an eye on their children and carry on with household chores between busy periods. It thus became quite apparent that a centralised facility would not suit them all and another strategy had to be evolved. The solution comprised aspects in both the budgetable and non-budgetable categories and consisted of a budget allocation for vendors' shelters to be erected at strategic points along the main roads. These were also to be combined with bus-shelters (for which there was also a demand) where appropriate. In most instances, therefore, the shelters were to be located either on the same spot or very close to the places where vendors usually located anyway. The non-budgetable category required a recommendation to the City Council that the vendors be allowed to register themselves and obtain licences thereby obviating the problem of police harassment.

1.1.1.2 Communication of Cost Implications

Using the list of items to be budgeted for, the approximate cost of each one was recorded. Because of the large sums involved in many of the items, however, it became difficult to relate the different values of each. It was therefore decided to equate monetary value with a known item. The standard 51/9 house-type, of which a number existed in Umtata (where they were known as 'Pretoria houses'), was selected for this purpose, it was a useful choice because the construction of houses was high on the priority ratings of most of the representatives.

A clinic costing R30 000, for example, was said to cost six 'Pretoria houses' (one standard house on a serviced site cost R5 000). In this way the relative values of various kinds of investment were more readily appreciated.

1.1.1.3 Development of a Budget-Planning 'Game'

Because the available funds were not sufficient to purchase all the desired items on the list, it became necessary to decide on priorities for budget allocation. To assist this process a

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planning 'game' was developed. It consisted of a large board divided into compartments; in each compartment one of the items from the list (e.g. a school) was recorded together with its purchase price in monetary terms while its price in terms of houses was represented by drawing the appropriate number in the compartment. For example, (29) the compartment representing a school costing R100 000 had twenty houses drawn in it. This made it possible to see at a glance how many 'house-equivalents' it would cost. In other words, if they wanted the school, they would have to sacrifice the provision of twenty houses. The available funds were represented by cardboard 'chips' of various denominations, each with both monetary and 'house-equivalent' values marked on them. A chip of say R50 000 value would, therefore, have R50 000 noted on it as well as a drawing of ten houses. These chips were placed in a box, or 'bank', from which funds were drawn for purchases on the board.

Each representative 'played the game' according to his individual priorities and a record was kept of each distribution. They then, as a group, 'played the game' with each individual having a chance to show the others his own budget priorities. After a series of meetings and gaming sessions, consensus was reached and the budget distribution finalised.

The allocation of the budget was accompanied by considerable discussion and debate during which members of the community and representatives of various interest groups were invited by the Advisory Board members to attend as observers and make comment. The time between meetings was also used for lobbying and canvassing of opinion.

During the period preceding final budget decisions, a number of items on the list were reappraised. For example, some representatives pointed out that it was not necessary to build an entirely new clinic as they could manage quite well if the existing one was slightly expanded and improved. In this way, they managed to economise by accepting a lower order solution than they had originally thought desirable; this made available additional funds for other priorities.

The budgeting process also exposed the need for certain statistical data which the representatives themselves then researched in order to back up their arguments for particular purchases. For

example, the case for building additional schools and classrooms was backed up by one representative who had gathered statistics on the existing shortfalls and was therefore able to present a strong case to his colleagues. Similarly, a motivation was prepared for the construction of the school hostel for girls who were living as lodgers in Ngangelizwe. This had the positive effect of ensuring that priorities for facilities were established at grass-roots levels instead of being decided upon by planners and administrators as being 'good' for the community.

1.1.1.4 Communication of Technical Implications

An example of communication problems in the understanding of technical matters was that relating to the reason for services infrastructure being so expensive. A series of [illegible] was prepared to illustrate how services operate and the differences between [illegible] kinds of solutions. For example, some people did not understand that waterborne sanitation was not just a hole in the ground but required relatively complex networks of water supply, drainage, pumps and treatment works. Graphics were used to explain this and other issues; all were prepared with a silhouette technique of drawing rather than with three-dimensional drawings so as to obviate problems that might be encountered with three-dimensional depth perception in the reading of drawings.[4.1] (30)

The graphic tools were supplemented by slide-shows, site visits and discussions. These were also attended by officials from the Municipality and members of the City Council when the need arose. The graphics, pictures, etc were also stuck up on the walls of the meeting room so that they could be shown to members of the community by representatives wishing to explain particular points.

1.1.1.5 Introduction to Map and Plan Reading

Starting with pictures of Ngangelizwe seen from surrounding hills and moving to oblique views seen from a low-flying aircraft, the representatives were gradually introduced to aerial survey photographs on which the basic outline of the settlement could be readily identified. This was translated into graphic form which, in turn, was subdivided to show the neighbour-

hoods within the overall shape. Other important features were then added to the graphics until a pictographic map of Ngangelizwe had been built up. It was then a relatively small step to translate that into the more conventional form of plan. (31)

By making comprehensible the abstractions used in plans of the area, it became possible to discuss the location of various development options and so forth. This exercise also helped to de-mystify some of the activities of professionals and thereby helped the representatives to better understand, and therefore evaluate, the performance of consultants.

Having become accustomed to the use of maps and plans, they were in a much stronger position to actually participate in and make physical planning decisions. For example, they were able to decide about the placing of houses that they had budgeted for in relation to sites for owner-builders by judging between several drawn-up options. The fact that they were able to fully understand these drawings facilitated an evaluation of the pros and cons of each of the options. (32)

1.1.1.6 Cognitive Mapping and Essay Writing

Pupils from the junior secondary and senior secondary schools were invited to draw maps of their neighbourhood and/or write essays about it. (33) This was organised as a class activity by the teachers as part of environmental studies. The exercise not only helped to stimulate debate about the neighbourhood both at school when they discussed it and at home with their families but also provided valuable clues to issues and concerns felt by the children. For example, many of the responses referred to the noise and drunken behaviour around the beerhall, identifying it as a dangerous place to walk past on the way home from school. Others indicated popular play areas which had not been noticed before. Their maps drew attention to those parts of the neighbourhood which had strong imagery in their eyes and were therefore significant orientation points; many of these were later included in the pictographic maps that were made of Ngangelizwe. The maps also helped to identify the boundaries between neighbourhoods as perceived by the children.

1.1.2 Community Participation in Decision-Making

Community involvement and participation in decision-making is seen to be a major contributor to accurate problem identification and appropriate solution formulation but it must be emphasised that participation needs to involve control of decision-making for it to have any real significance in the eyes of the community.

The experience in Ngangelizwe highlighted a number of factors that need to be taken account of if successful community participation in decision-making is to be achieved, especially when it involves representatives of a community. They are summarised as follows:-

a. The community concerned should have a viable socio-political structure.

b. This structure should have, at its various levels, representatives who have a clear mandate to make decisions on behalf of the people they represent.

c. All parties involved need to be able to identify that co-operation and collaboration between them will lead to fruitful action.

d. The credibility of all parties cannot be in question as it relies on mutual trust and respect, reinforced by accountability to one another and the community at large.

e. The roles and responsibilities of each party have to be understood and acceptable to all. These need to be clearly stated in terms of reference.

f. A forum, or forums, should exist where issues, concerns and problems (both physical and non-physical) can be recognised, debated and, where possible, resolved.

g. Viable networks and techniques for communication (both formal and informal) are required to ensure that informed decision-making is possible.

1.1.3 Benefits of the Participation Exercises with the Representatives of the Ngangelizwe Community

In assessing the participation exercises and

involvement of the Ngangelizwe community, through their representatives, in the upgrading programme, the following benefits were noted:

1. A methodology was developed and implemented for more accurately identifying and responding to a community's needs, preferences and priorities than the conventional approach that involves surveys followed by planning work in isolation of community dynamics.

2. The use of the methodology proved to be an educational experience for the community, its representatives and, not least of all, the planners and administrators involved. At all levels this experience served to modify various individuals' perceptions of what was desirable, possible and viable.

3. The community gained a greater degree of control over matters affecting them than had previously been possible. This directly enhanced their ability to promote their own well-being.

4. A greater understanding of the technical, financial, legal and administrative aspects affecting them promoted informed decision-making and made it possible for them to become more self-reliant. This also promoted their self-esteem and self-confidence.

5. The development agencies concerned were able to enjoy the support and commitment of the community in implementing development work; the situation became one of development agencies working 'with' rather than 'for' the community concerned.



25a. Assistance provided at Advisory Board meetings by municipal officials and the NBRI



25b. Discussion of the implications of providing waterborne sanitation.

MR MANUKWANA

CLINICS AND SOCIAL SERVICES REQUIRED

LOCAL CONTRACTORS SHOULD NOT LOSE JOBS

PEDESTRIAN REQUIRES PROTECTION FROM TRAFFIC

SITE AND SERVICE PLAN NECESSARY

PENSIONERS RENT OUT ROOMS - SITE OWNERS FEAR LOSS OF INCOME

MR MAZWANA

BOYS AND GIRLS LIVING TOGETHER

LACK OF EMPLOYMENT OPPORTUNITIES

COMMUNITY FACILITIES REQUIRED

ADVISORY BOARD TO MAKE DECISIONS

COMMUNITY NEEDS SOCIAL WORKERS

26. Examples of sheets used for recording and posting the minutes of meetings.

EMPLOYMENT OPPORTUNITIES
ENVIRONMENTAL IMPROVEMENT
ROOMS FOR RENT
IMPROVEMENT LOANS
SECURITY OF TENURE
AVAILABILITY OF BUILDING MATERIALS
ACCESS TO TECHNICAL SKILLS
COMPENSATION
SITE IMPROVEMENT
HOUSING ALTERNATIVES
ACCESS TO DECISION MAKING POWERS

27a. Example of a summary of non-purchasable items.

TARRED STREETS (PER 500m x 6m)
CHILDRENS PLAY AREAS
PEDESTRIAN CROSSING

WATERBORNE SANITATION

HOUSES

HIGH SCHOOLS
PRIMARY SCHOOLS
SCHOOL HOSTELS

MARKET
BUS SHELTERS
LIBRARY
HALL
POLICE STATION
MEETING ROOMS

ELECTRIC LIGHTS (STREETS)
PUBLIC TELEPHONES

PLAYGROUNDS
SPORTSFIELDS

27b. Example of a summary of purchasable items



28a. Standard 51/9 house-type ('Pretoria house').

1⅛ = R 7 500 TARRED STREETS
½ = R 1 000 CHILDRENS PLAY AREAS
1/10 = R 500 PEDESTRIAN CROSSING

240 = R1200 000 WATERBORNE SANITATION

1 = R 5 000 HOUSES

30 = R150 000 HIGH SCHOOLS
20 = R100 000 PRIMARY SCHOOLS
40 = R200 000 SCHOOL HOSTELS

10 = R 50 000 MARKET
½ = R 150 BUS SHELTERS
10 = R 80 000 LIBRARY
30 = R150 000 HALL
70 = R350 000 POLICE STATION
⅛ = R 8 500 MEETING ROOMS

80 = R400 000 ELECTRIC LIGHTS (STREETS)
10 = R50 000 PUBLIC TELEPHONES

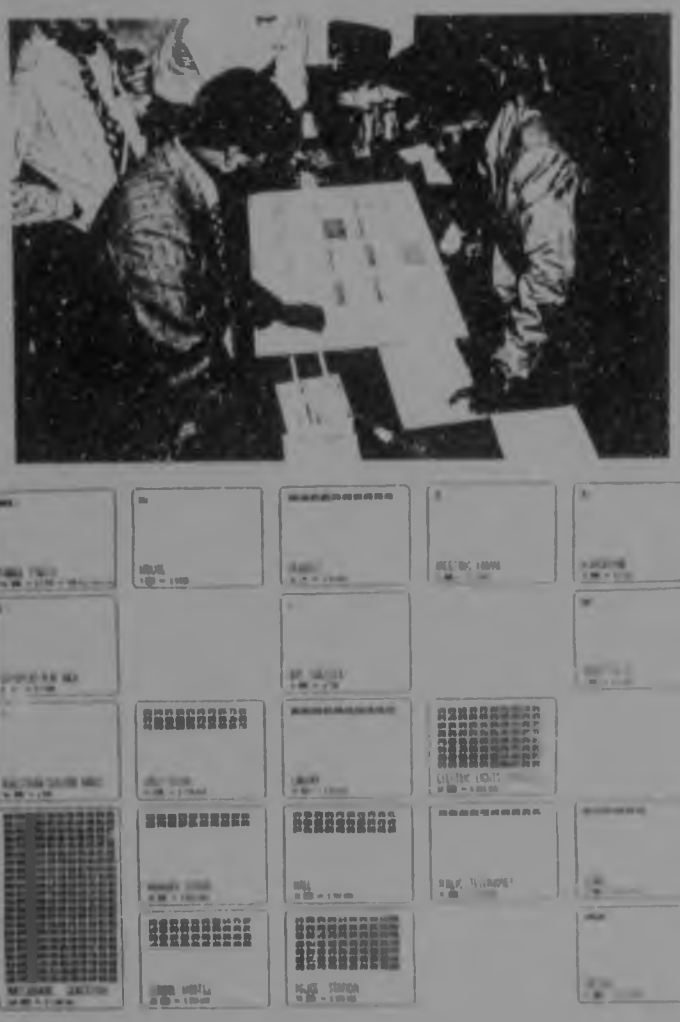
½ = R 2 500 PLAYGROUNDS
1 = R 5 000 SPORTSFIELDS

AMOUNT AVAILABLE = R 2 000 000

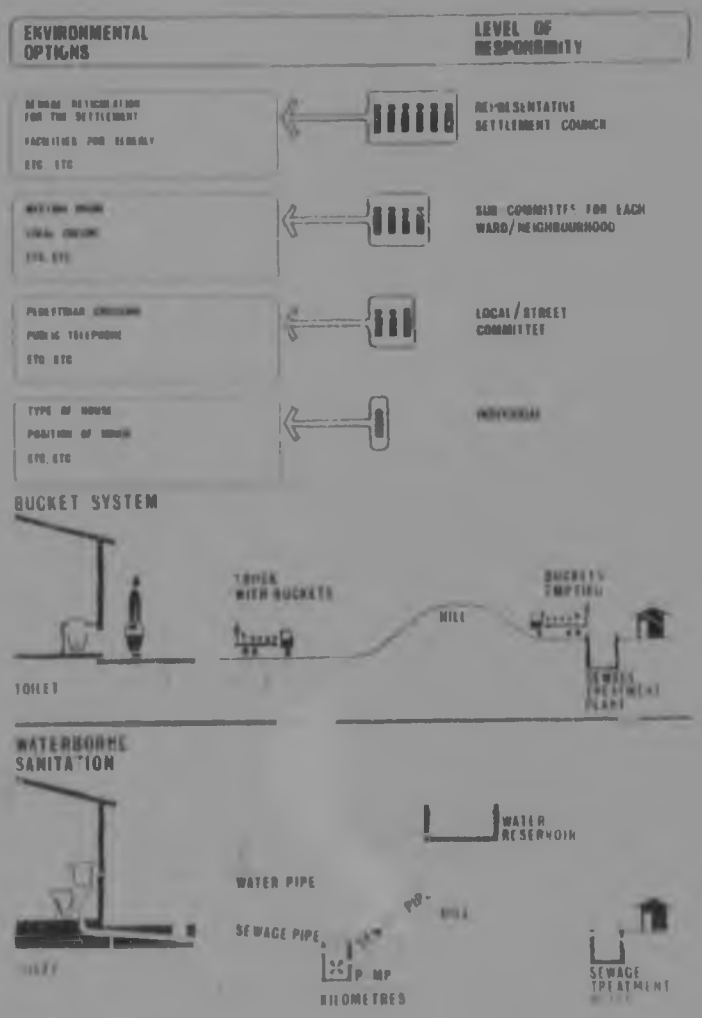
1 'PRETORIA HOUSE' = R5 000

400 'PRETORIA HOUSES' = R2 000 000

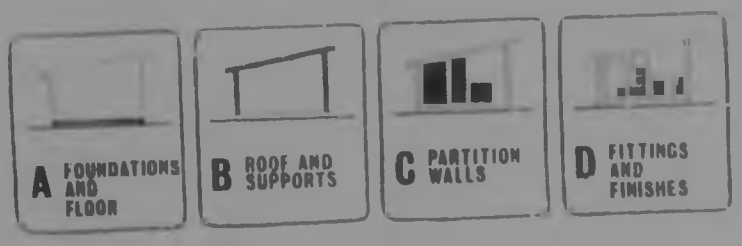
28b. Relating the available budget to the cost of purchasable items by way of house-equivalents.

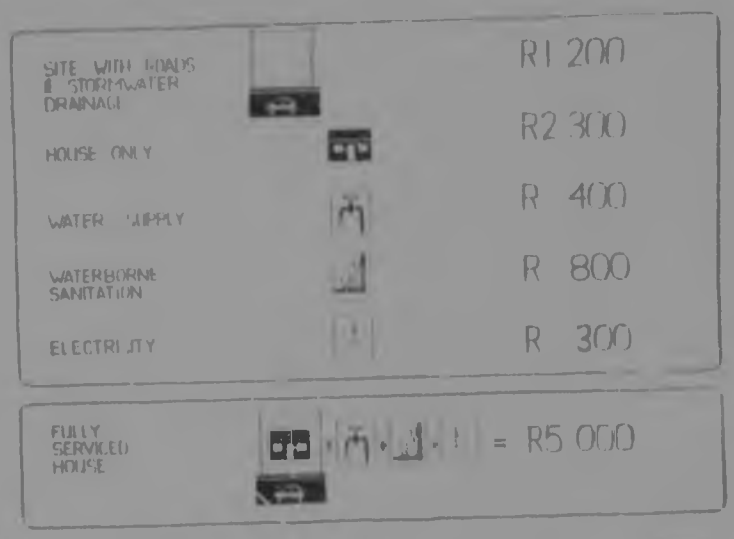


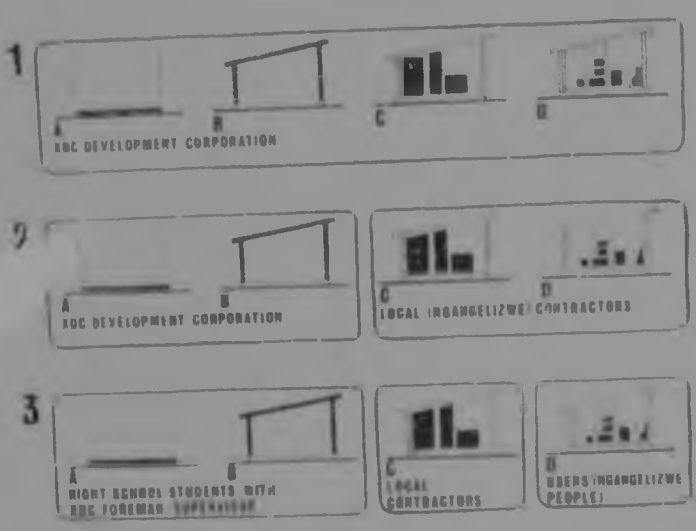
29. The budget-planning 'game'



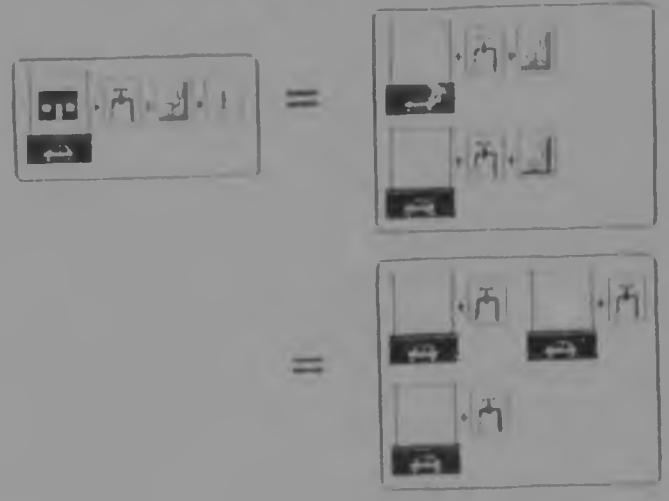
30a. Above: Graphic to explain appropriate levels of decision-making. Below: Comparison of night-soil removal and waterborne sanitation.



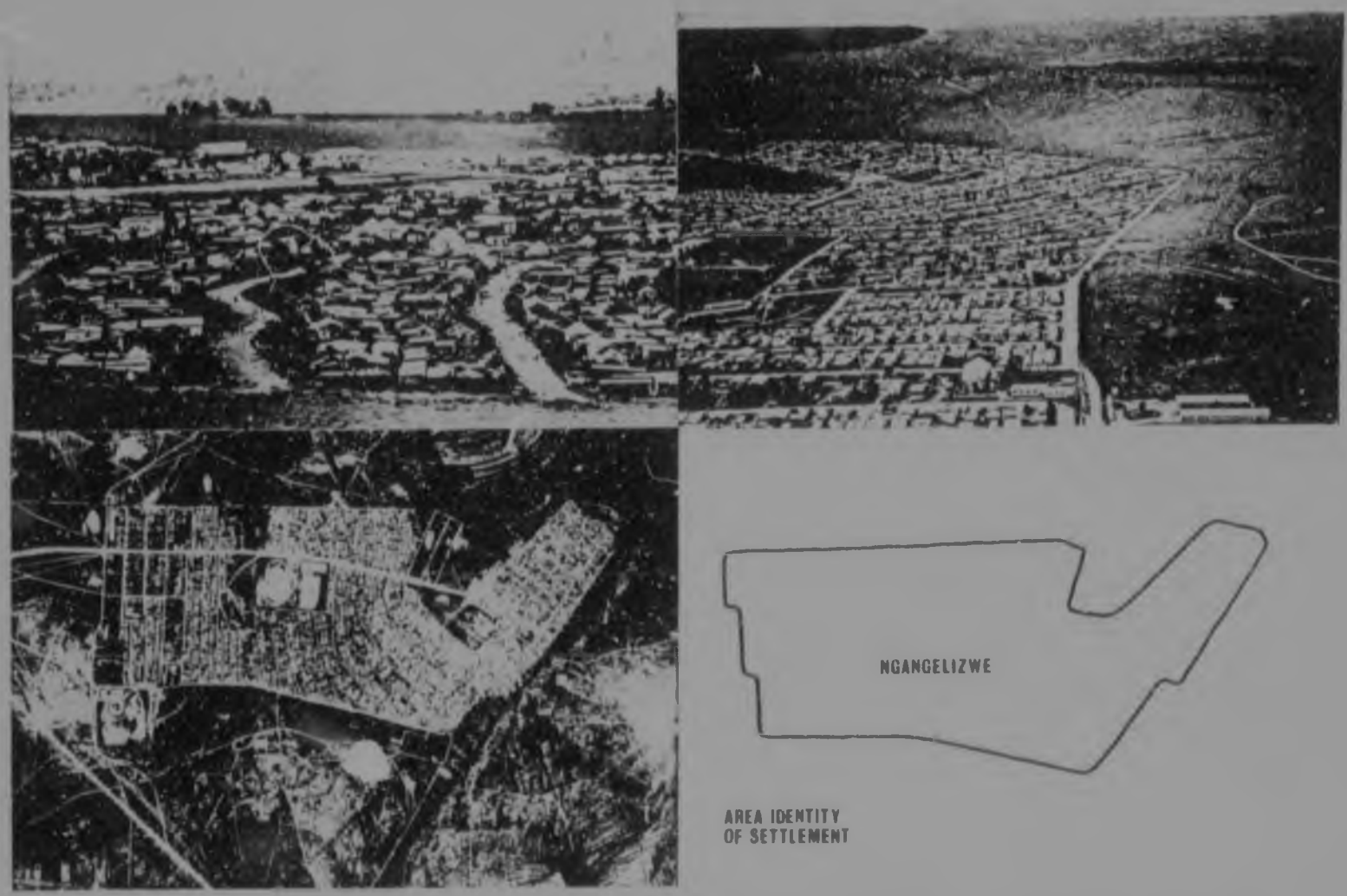




30b Graphic to describe alternative development strategies for the building of a meeting room.

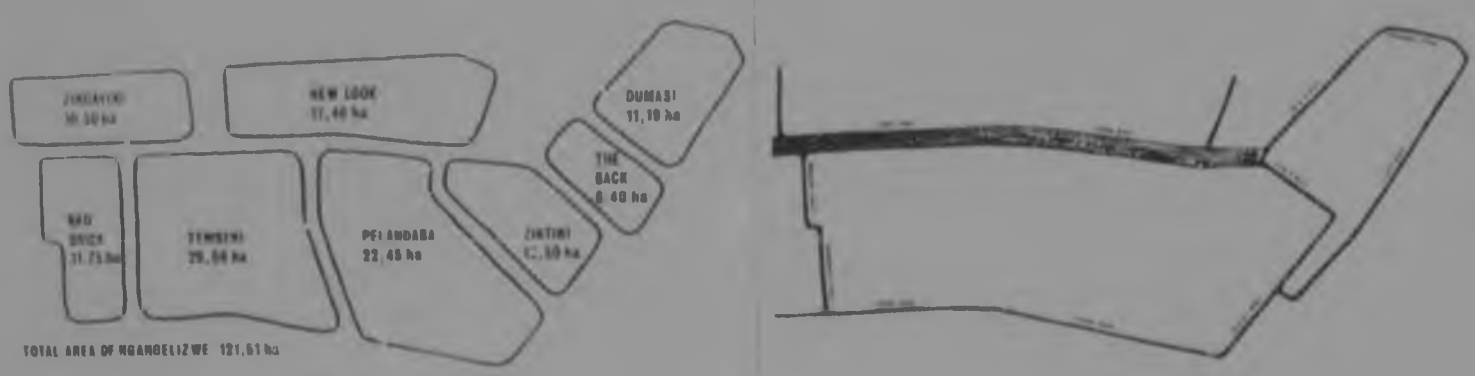


30c. Graphic describing the cost breakdown of elements and their trade-off values.



31a. Introduction to map and plan reading. Starting with oblique views from surrounding hills then views from a low-flying aircraft, an aerial survey photograph was introduced. From this the overall shape of Ngangelizwe could be identified.

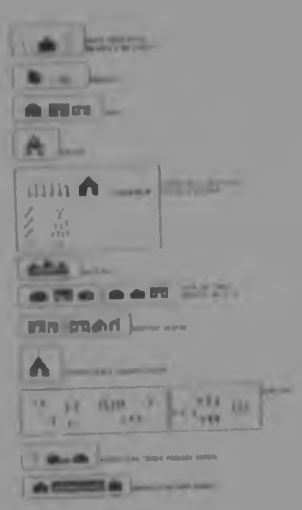


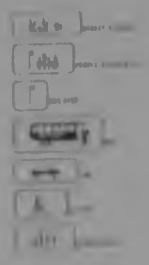


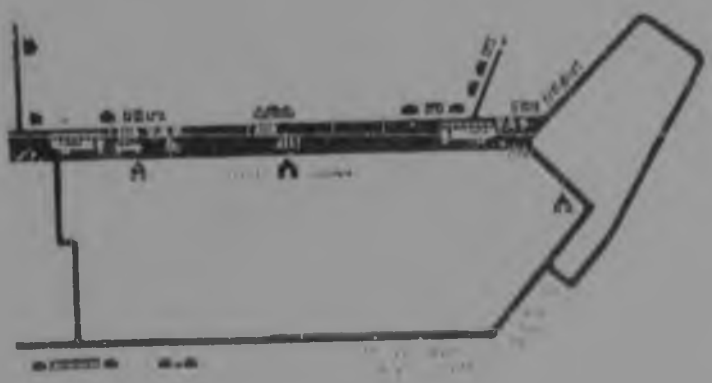
AREA IDENTITY WITHIN THE SETTLEMENT

31b. The shape of Ngangelizwe was broken up to show the neighbourhoods and the main routes.











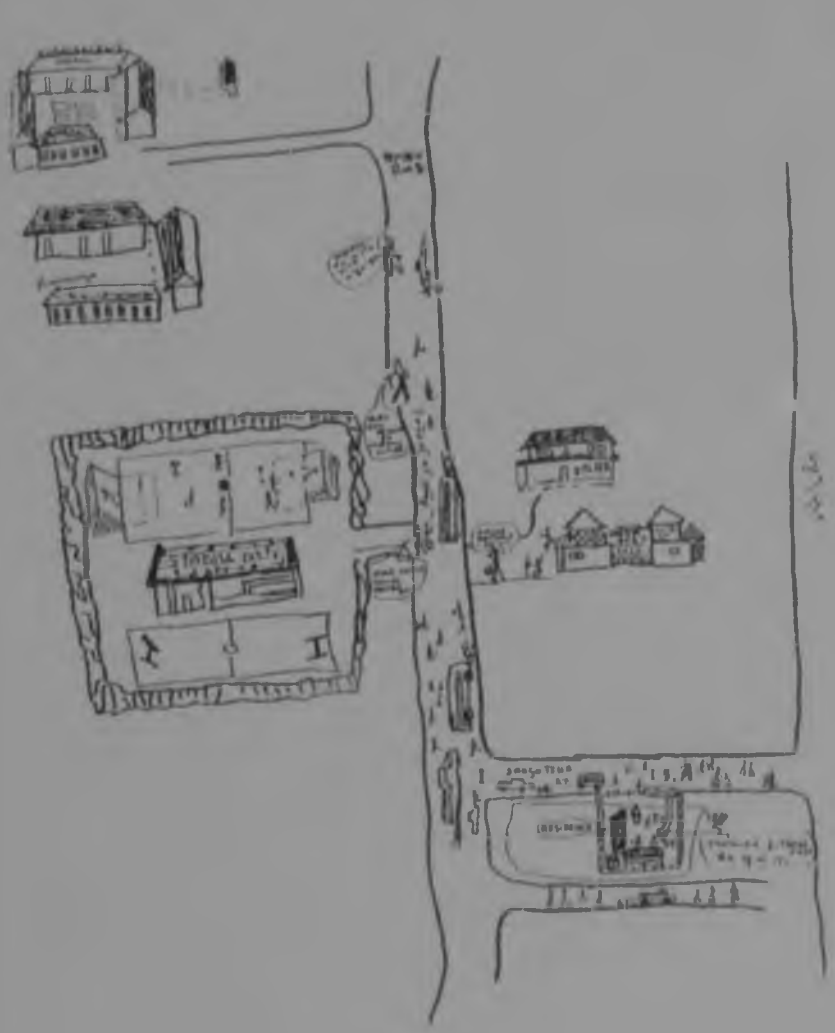
31c. Various detailed elements and facilities were introduced and a pictographic map built up.

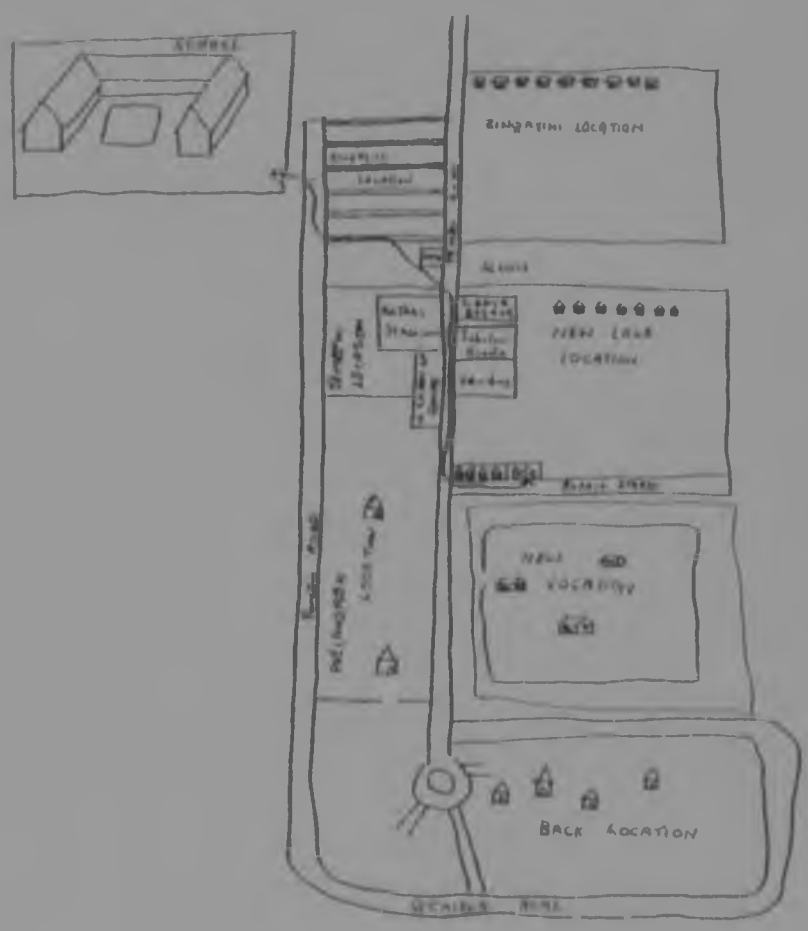






32. The jump from a pictographic map to a conventional site-plan was relatively small. The map and plan reading skills became useful in making physical-planning decisions and in evaluating the work of consultants.





33. Cognitive mapping exercises were undertaken with school children. These are two examples of maps drawn in response to the request : 'Draw a map of your neighbourhood and the route you take to and from school'.

1.2 ADMINISTRATIVE

While the Umtata Municipality is responsible for day to day administration of Ngangelizwe, the administration of major development work is taken care of by the development agencies concerned. For example, the installation of the water-supply network was carried out by contractors under the supervision of consultants; both were responsible to the Transkei Development Corporation which was, in turn, the local agent of the South African Development Trust. On completion of the capital works involved, it was formally handed over to the Umtata Municipality for administration, running and maintenance. The Transkei Townships Co-ordinating Committee ensured that work was carried out satisfactorily and that the necessary co-ordination was effected.

The Municipality has a local administration office in Ngangelizwe from where assistance had for some time been provided to residents on an informal basis. We recommended that this service be formalised and expanded into a fully fledged 'community aid facility' offering assistance on technical, financial, legal and social matters with the major emphasis being on home improvement. We also recommended that this facility operate as an extension to the activities of the 'ward development committee' and be directly responsible to it. At this stage, although the services offered are perhaps not as comprehensive as one might hope, they have been expanded and fall under the Estates Subcommittee of the City Council. It also plays a valuable role as:

a. The local base from which the continuing administration, running and co-ordination of local development activities take place while it also monitors the effects of development implementation and ensures that feedback is taken account of.

b. The meeting place for representatives and local interest groups.

c. The centre where information with respect to local development is made available and communicated.

d. The mediating institution between residents and the authorities and agencies responsible for development.

It goes without saying that the successful performance of any mediating institution, or municipal administration for that matter, is heavily dependent on the sensitivity and commitment of the officials and other people involved in running it. In this regard Ngangelizwe was and still remains very fortunate to have officials and administrators of a high calibre. It is due in no small way to the very good rapport between these officials and the community that healthy development has been facilitated. One cannot stress the significance of this aspect too heavily.

1.3 FINANCIAL

1.3.1 Demand for Funds

Development funds for Ngangelizwe can be regarded as falling into three basic categories of demand.

i. Major capital works (e.g. services infrastructure and facilities).

ii. Minor capital works (e.g. development of homes and immediate surroundings).

iii. Ongoing funding of administration, services and maintenance.

1.3.1.1 Major Capital Works

As discussed, the South African Development Trust made substantial grants which covered most of the short-term demand for major capital works in both the existing part of Ngangelizwe and the adjacent new extension.

We recommended that this investment be .egarded as a resource and a form of seed capital for the establishment of a revolving development fund that could be used for further capital works. This could be started through a combination of selling and letting of serviced land and houses in parts of the new extension to people with relatively high incomes. Because of the demand in this sector of the market it would provide a fairly high return with which to get the revolving development fund going. By using funds for both profitable development and, where appropriate, subsidized development, the profits from the one can be used to cross-subsidize the other. In this way a development budget can be recycled without having to inject additional subsidy funds from another source. An advantage of being able to recycle the grant funds is that the Umtata Municipality can have an independent source of capital without having to rely entirely on outside sources as these usually have strings attached. Having their own funds thus allows them to decide locally, and therefore more sensitively, about priorities in the spending of money whereas the providers of outside sources of capital usually demand a direct say in how it is spent.

The advantages of an independent revolving development fund are demonstrated in the Vaal Triangle Region of the Transvaal[4] where the

freedom from solely external sources of funds has proved its value in allowing greater freedom for local decision-making.

The idea of cross-subsidy in development projects has been implemented with considerable success in both Taiwan and South Korea[4.4] where the auctioning off of serviced land has provided sufficient profits to subsidize the capital cost of land and services infrastructure for low-income people. In Delhi, India, some housing co-operatives use a similar principle; the co-operative develops a housing area for itself but leaves open a number of commercial sites. By the time the housing development is occupied and a few years have gone by, these business sites have acquired considerable value. They are then sold at a handsome profit and the funds are used by the co-operative for improvements to its housing development.[4.5]

1 3.1.2 Minor Capital Works

Whereas major capital works such as services infrastructure and facilities are controlled and developed by the public sector, we recommended that development and improvement work at the domestic level should be carried out and financed by the private sector wherever possible so as to promote local entrepreneurship and economic development. Various ways of facilitating private sector roles include development programmes that involve:

- Employers assisting employees
- Private developers as entrepreneurs
- Welfare and aid organisations
- Financial institutions
- Co-operative organisations, savings and loan societies, etc.
- Individuals' resources e.g. personal labour and savings plus loans and other assistance from relatives and friends
- Suppliers and contractors (who can also provide loan finance).

As discussed in the case-study of the Sibiya household, there is usually a demand for short-term, small loans among families who have irregular incomes. Whether it is made available by the public or private sector, this form of loan finance plays an important role in helping low-income families with incremental home-building and improvement. The Umtata Municipality

is at present inveatigating this aspect with a view to making available loans in the form of materials purchased in bulk at minimum cost.

1.3.1.3 Ongoing Funding of Administration, Services and Maintenance

Prior to the upgrading of inf.astructure and services in Ngangelizwe, the Umtata Municipality provided the rudimentary sanitation services and water for an average cost of R2-00 per site per month. With inflation and the marked improvement to the infrastructure, maintenance and running costs (excluding capital redemption on the SADT grant) went up to about R10-00 per site per month by 1979[4.6] This is made up as follows:

Water	approx. R	55-00 p.a.
Refuse removal	approx. R	20-00 p.a.
Night-soil removal	approx. R	20-00 p.a.
Administration, street lighting, road maintenance, etc.	approx. R	25-00 p.a.
Total :	approx. R	120-00 per annum
or	approx. R	10-00 per month.

Neither the municipality nor the central government could afford to subsidize the increased cost indefinitely so increases were phased in gradually. By 1979 the gap had almost been closed and by 1981 it is expected that ongoing expenditure will be fully covered by income. In the meantime, the Transkei Government is subsidizing the difference. This sensitive approach to increasing the costs to households in Ngangelizwe has contributed to its successful implementation. The fact that the community is both involved in the decision-making and experiencing real benefits as a result of the increased payments, also plays a significant role. Furthermore it is estimated that few households are paying more than 15% of their household incomes for these municipal charges and, in any event, residents experiencing difficulties with payments are free to apply for special consideration by the Municipality. An indication of the success of this aspect of the development is apparent in the very low incidence of defaults in payments[4.7]

1.3.2 Funds Generated by Local Economic Activity

1.3.2.1 Longer Term Strategy

If the longer term strategy is to be as successful

As one might hope, both national and local authorities need to encourage economic development programmes that will increase people's abilities to pay for housing and related services. Such programmes would aim to promote:

a. An expansion of the wage-employment sector of the economy through providing incentives that attract industry, investment and commercial activity to Transkei.

b. The development of local small-scale industries, commerce and other forms of economic activity by facilitating access to financial assistance, technical expertise and entrepreneurial guidance. The Small Enterprises Development Corporation (SEDCO) in Swaziland is a good example of an organisation that provides such services.

1.3.2.2 Short-Term Action and the Role of the Informal Sector

In the short term, the major contributor to the supplementation of people's incomes is the local informal sector in Ngangelizwe. It has been able to continue operating and has received assistance in some cases. Informal sector activities include the following: (34)

a. Street Vending: as described, the vendors of fruit, vegetables, etc. were permitted to register themselves and were provided with shelters. (35)

b. Letting of Accommodation: Site 'owners' have erected a wide range of lettable accommodation on their sites. Rentals vary from R3-00 per month to R20-00 per month and more for a single room. The price charged varies according to the quality, size and position of the accommodation. (36)

Ngangelizwe is estimated to have a sub-tenant population of at least 40% of the total. This is based on there being a total of 16 000 people on 1 200 sites with an assumed average household size of nine persons.

A significant number of the lodgers are newcomers to the Umtata urban area. The existence of low-cost rental accommodation provides them with a valuable service that assists in their absorption into the urban

economy and culture. This contributes to Ngangelizwe's function as an urban reception area.

The income derived from letting accommodation plays a valuable role in supplementing earnings and in some cases (e.g. elderly widows) it represents the only source of income. In ne case we investigated in 1975, the site 'owner' had an income of R50-00 per month at that stage from the eight rooms she had built for letting. She was also suspected of running an illegal liquor outlet (a 'shebeen') but this could not be confirmed at the time. If one considers that an unskilled labourer was often earning less than R40-00 per month in 1975, an income of R50-00 per month from letting rooms was relatively good, especially if it was supplementing other income.

In order for rental accommodation and sub-letting to be of benefit to a community, and not a negative form of exploitation by unscrupulous landlords, it should exist only as an option for those who want it. The wide range of the rental accommodation in Ngangelizwe, together with the development of new areas where people can choose to locate, ensures that there is a sufficiently broad market to avoid undue exploitation It can therefore be considered a relatively healthy rental market.

c. Home-Industries and Retailing: The wide variety of home-industries existing in Ngangelizwe provides not only a source of income but a range of goods and services to the community while contributing to local economic development. Knitting, weaving, furniture-making, motor-repairs, etc. are very much in evidence throughout the neighbourhood.

d. Contracting: A wide variety of small-scale contracting services are offered and in demand. Building contractors and subcontractors offer a range of skills (usually on a labour-only basis) for home-building and improvement using a wide range of technologies. For example, some use traditional wattle and daub while others use more Western brick and blockwork. (See 1.5.1 Technology) Transport contractors are also very much in demand as one would expect in a situation

where continuous incremental development is taking place. As mentioned, the greater part of building work in Ngangelizwe has been carried out by these small-scale contractors.

Although no detailed measurement was made of the number of Ngangelizwe residents actively employed in the local informal sector, as opposed to the formal wage and entrepreneurial sector, indications are that at least 50% of households are involved in some form of income supplementation in the informal sector, often with gradually improving skills that facilitate upward economic mobility.

While at this stage the informal sector rental market, home-industries and contracting operations have not been actively encouraged by the Municipality, they have also not been discouraged unless complaints have been lodged against them by neighbours. The Municipality does, however, try to encourage the informal sector to enter the formal sector by becoming registered with the local office through which they can gain access to assistance (as in the example of the street vendors).

34a. # INFORMAL SECTOR ACTIVITY



A MECHANIC
B FIREWOOD SUPPLIER
C TRUNK MAKER
D SHEBEEN
E WATCH REPAIR MAN
F CART CONTRACTOR
G TAXI MAN
H HERBALIST
I FURNITURE MAKER
J BRICK MAKER
K EVANGELIST CHURCH

VENDORS
BUS STOP
TREES
SHOPS

NORTH

0 25 50 75 100 m



34b. Rooms for hire and a furniture-making workshop.



34d. Rooms for letting to lodgers.



34c. Inside a carpenter's shop.



34e. Fruit and vegetable vendors.



34f. Knitting pullovers for sale



34g. Knitting-machines in a home-based 'factory'



34h. Steel trunk manufacturers



35a Bus-shelter



35c. Larger market-hall/bus-shelter combined



35b. Vendor's kiosks (sometimes combined with bus-shelters and located at strategic places along main routes).



35d. Inside the market-hall. It is also used for gatherings.

1.4 LEGAL

Whereas Ngangelizwe was proclaimed as a residential area under the Bantu Urban Areas Act, this act was repealed when Transkei became independent in 1976 because it contained legislation which the Transkei Government found unacceptable (particularly with regard to racial discrimination). Connected with the repeal of this act, was the deproclamation of Ngangelizwe as a township. In many respects, this proved a blessing in disguise because it has permitted the development of an interim legal framework for the neighbourhood that would be more sensitive to the transitional characteristics of the area than the existing Umtata bye-laws and planning regulations. Therefore, instead of immediately reproclaiming the area in the conventional manner used in the rest of Umtata, Ngangelizwe has been administered under common-law principles and the ground on which it is built is considered municipal commonage.

The decision not to impose existing bye-laws and regulations was largely influenced by the tremendous cost and hardship this would cause to residents. In fact they could in all probability only be implemented with the use of force, a politically unacceptable action for the Transkei Government as well as the City Council.

While the area will in due course be proclaimed and subject to regulations, the residents are in the interim being encouraged to build all new buildings to conform with municipal controls and to obtain planning permission. Although it is not being enforced, the response is proving very good. In fact, there is a certain status attached to 'higher standard' buildings.

The interim legal framework facilitates the sensitive implementation of essential controlling devices which ensure that reasonable levels of health and safety can be maintained. Furthermore, it opens the way to the evolution of a new legal framework that will be appropriate to local conditions, thereby influencing existing bye-laws and regulations in the longer term. In any event, these require review in relation to their appropriateness for the African context, having been largely imported and transplanted from Western Europe. An example of action in this regard is the recent approach made by the Umtata Municipality to the NBRI to evaluate traditional

building techniques and to make recommendations on their appropriateness (and the possibilities for improving their performance).

1.4.1 Security of Tenure

Security of tenure, which ensures the protection and transferability of individuals' investments in site improvements, is essential to release people's initiative in home building and improvement. This is amply demonstrated in Ngangelizwe where people began building much more than before, usually to significantly higher standards, after the threat of demolition was removed and security of tenure made possible

In the early stages of the programme, before much discussion of the issue had taken place, the representatives were very eager that freehold title should be granted Once they realised the implications, however, they were happy to accept a leasehold form of security of tenure as part of an interim legal framework. In order for freehold title to have been offered from the outset the neighbourhood would have had to be proclaimed a township with the accompanying implications of enforced bye-laws and regulations.

At a later stage, once it is proclaimed with accompanying more sensitive controls, freehold title will become possible however. We recommended that a range of different forms of tenure be made available once this takes place and that the types of tenure be linked to building standards. In other words, people wanting freehold title would have to conform with the planning and building regulations. In this way an incentive is created for people to build to a high standard. This principle has been successfully employed in Lilongwe, Malawi, in site and services schemes; residents obtain a short-term leasehold if they build temporary dwellings, a longer term lease if they build what are called 'semi-permanent' buildings (i.e. wattle and daub or sun-dried mud-brick structures) and full tenure if they build with bricks or blocks. Full tenure in Malawi is 99 year leasehold as there is no freehold title (this is an attempt to avoid land speculation through the government remaining landowner). It has advantages for low-income people as they also do not have to carry the legal costs associated with freehold tenure (e.g. survey and transfer costs). In Ngangelizwe, for example, the legal costs of obtaining freehold title would be about R250-00 per site.

Because freehold title is the most common form of tenure in South Africa, it is often regarded as being synonymous with security of tenure and has led to confusion in discussion of the principle of secure tenure. In fact, secure tenure can be offered without it having to be freehold title. A good example of this is the 'Ridge' at Clifton, in Cape Town, where people have built enormously expensive houses on ground which is on a 99 year lease from the Cape Town City Council.

1.5 TECHNICAL

Whereas infrastructure works and facilities are developed in a relatively conventional manner (i.e. designed to Western norms by consultants and built by large contractors), the more interesting technical aspects occur at the domestic level:

1.5.1 Technology

House construction techniques vary considerably; (36) walls range from traditional wattle and daub and sun-dried mudbricks to fire-burnt bricks and cement blocks while roofing materials range from traditional thatch to sheet materials such as corrugated-iron. Windows are often simple framed openings with timber shutters while steel- and timber-framed and glazed windows are rapidly becoming the most common form of fenestration. Similarly, there is a wide range of doors and door frames. Floors vary from rammed earth to cement slabs and screeds, often with 'lino' finishes.

There are a number of successful intermediate technologies in use. For example, the performance of sun-dried mudbrick walls is often greatly improved by plastering them with cement-based rendering which is then usually painted. Another common walling technique is an upgraded form of wattle and daub whereby the core of the wattle framework is tightly packed with broken bricks, stones and rubble then, instead of the traditional mud-plaster on the framework, a cement-based plaster is applied and afterwards painted. Very often these two walling techniques produce end-products that are indistinguishable from plastered brick or block walls. Many existing thatched roofs are upgraded by covering them with galvanised sheet-metal similar to that used by plumbers for flashing. Both new and second-hand corrugated-iron as well as flattened paraffin tins are also used for this purpose. There are also a few examples of thatched roofs being upgraded by plastering over the thatch with a sand-cement plaster; this produces a type of shell-structure which appears to be quite effective.

At this stage in the upgrading of Ngangelizwe, there are clear indications that traditional technology is rapidly giving way to more Western techniques as residents replace old buildings. Intermediate technologies are, however, in common

use for improvement to existing buildings that do not warrant total replacement

In both new building work and upgrading there is a sufficiently wide range of technologies available to provide a very healthy market which caters well for the diverse demand for variety in terms of cost, technique and ability to be improved by small increments over time. This market is, as described, supported by an equally wide range of small-scale contractors who offer their skills and services in carrying out building and improvement work.

1.5.2 Design

Built form in Ngangelizwe is usually an independent variable in relation to technology and many variations of both traditional and Western forms are built with a wide range of technologies. One often finds mixtures of forms and technologies combined in one building whereas, in many cases, forms and technologies also vary for separate structures on the same site. In fact, most sites have buildings that demonstrate transitions from the traditional to the more Western building forms and technologies.

There is usually more than one building per site. The site 'owner' and his, or her, immediate family often occupies the whole or part of the main building while the rest of the structures are occupied by extended family and lodgers. (37)

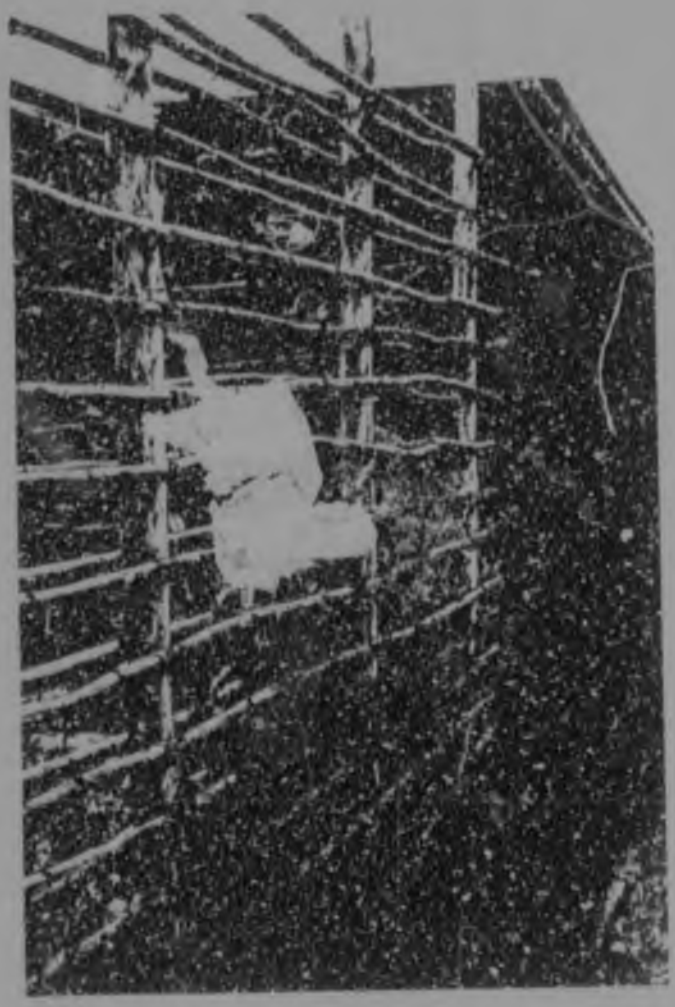
A common form of site development is that seen in many parts of Africa. A row of rooms is built at the back of the site, some of which are occupied by the household, the rest being let out to lodgers. The main building is then built in the front, usually to a higher standard and therefore more slowly. In the old parts of Ngangelizwe, however, a row of 'rondavels' (traditional circular buildings) is often built across the front of the site and a row of rooms, or 'flats', at the back and/or the sides. These buildings form a kind of courtyard and outdoor living space in the middle, with access from the street being between the row of 'rondavels'. This results in an attractive privacy gradient from the street to the courtyard and then into the buildings. In many cases, however, these 'rondavels' in front are being replaced by bigger, new structures that take after Western forms. (38)

A common adaptation of the circular rondavel is the hexagonal plan form. This shape is more readily added to with a lean-to structure than the circular form and demonstrates a concern for being able to extend buildings. The hexagonal plan form is also easier to roof with sheet materials. The most often used form for easy addition is, however, a simple rectangle with a mono-pitch roof. This permits very simple lean-to additions on at least three sides. Some people have even built quite sophisticated core-type houses for themselves, using this principle.

The extensive range of built forms in Ngangelizwe is another indication of the diversity of demand and characterises the transitional nature of the neighbourhood while actually being supportive of the transitions. On the other hand, where housing has been built by the public sector with a stereo-typed house-form repeated over and over again (without allowing the occupants to make changes) the richnesses apparent in Ngangelizwe cannot develop and frustration emerges. This is graphically visible in the part of Ngangelizwe where a few houses were built for rental by the Municipality some time ago. One can read the difference clearly in a plan of the area which shows the juxtaposition of the municipal rental scheme and adjacent owner-built houses. (39)

As an input for those people living in standard 51/9 house-types ('Pretoria' houses), it was agreed that two 'show houses' would be built to demonstrate easy ways of expanding them. (40)

A further aspect of housing that we looked at was the design and construction of a school hostel. Instead of the conventional multi-storey hostel, we successfully used groups of houses clustered around courts. This reduced costs and provided an environment that is less institutional than conventional school hostels. (41)



36a Traditional wattle and daub construction
An addition to an existing structure.



36b. Women plastering a wattle and daub structure. (NdRI)



36c. Cement-based plaster improves the performance of a wattle and daub structure. (NdRI)



36d. A woman assisting a contractor with erecting a wattle framework



36f. Conventional brick construction.



36e. Sand-cement blocks replace a piece of mud-wall that collapsed after heavy rains



36a. A timber framework is built over a thatched roof in preparation for covering it with sheet-metal.



36h. Second-hand corrugated-iron sheets on a roof structure of wattle poles.



36i. Old corrugated-iron sheets laid over a thatched roof



36j. Thatched roof plastered with sand-cement plaster forming a shell-structure.



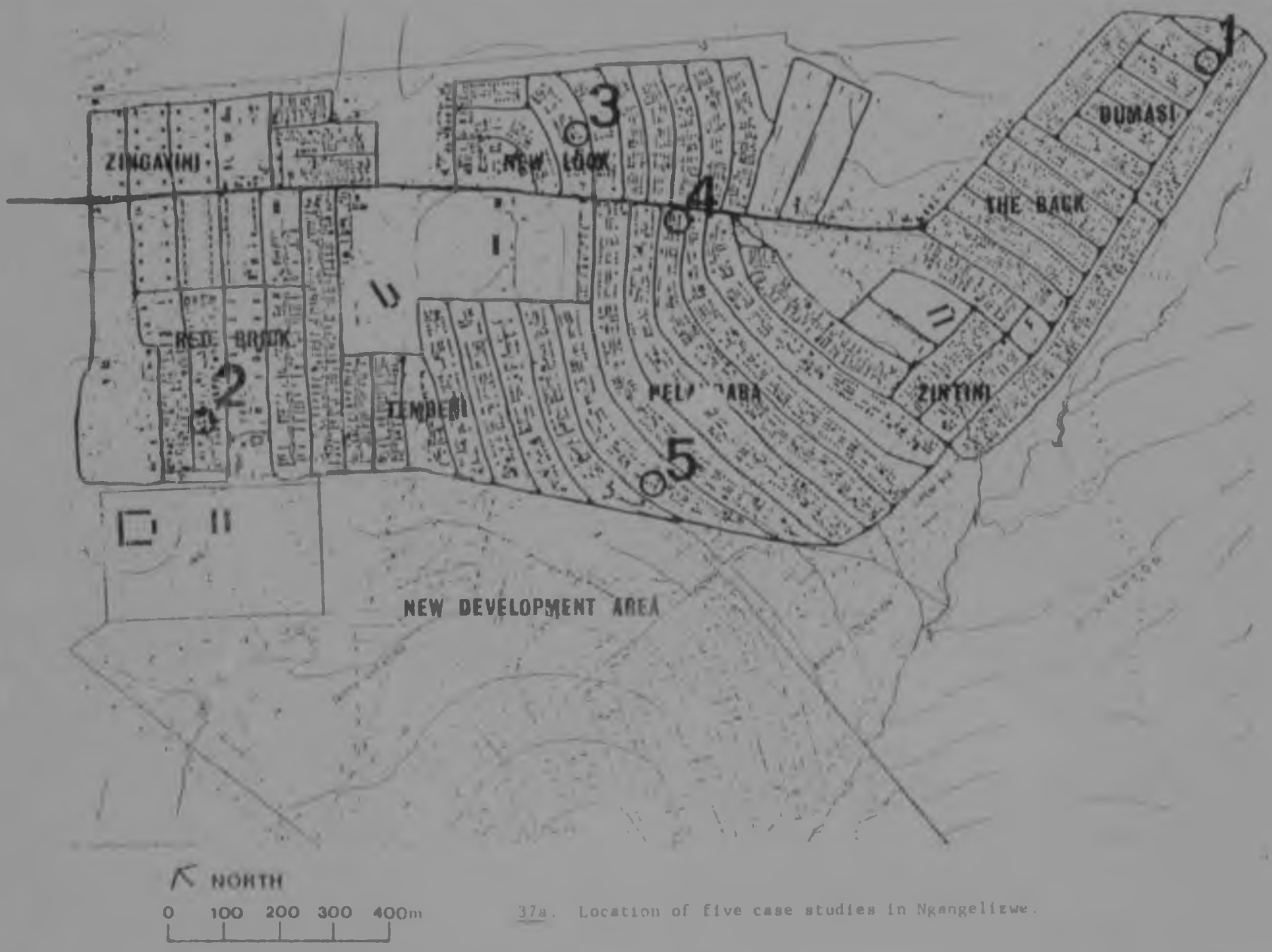
36l. Western forms and technology influencing rural traditions.



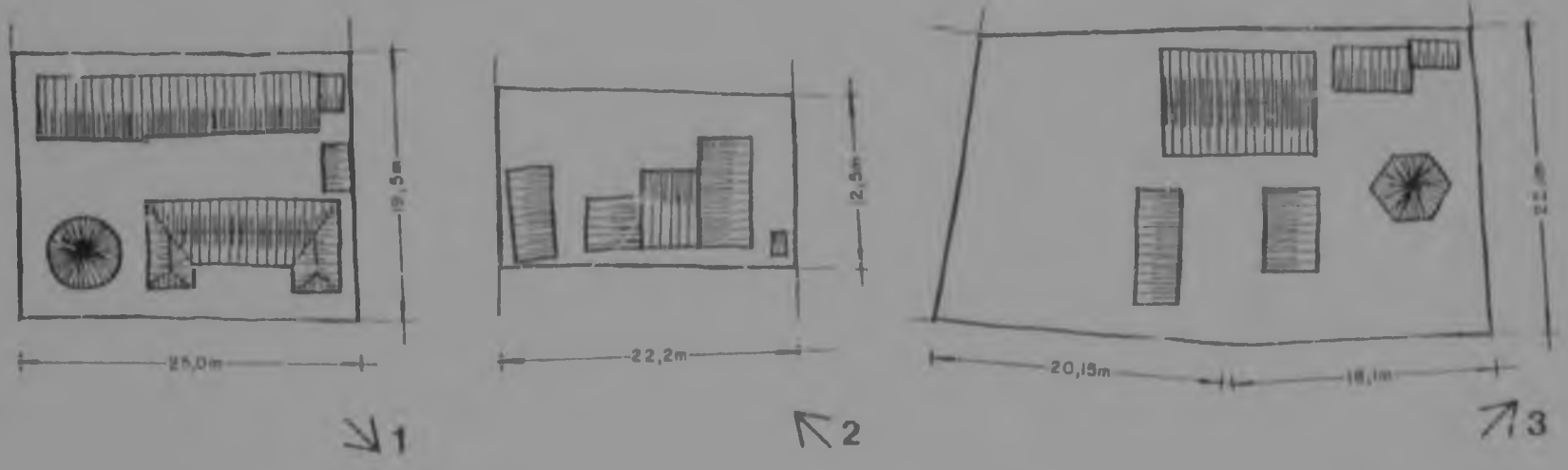
36k. Rural Transkei: Corrugated-iron 'skirt' under the edges of a thatched roof. Prevents usual deterioration at the eaves

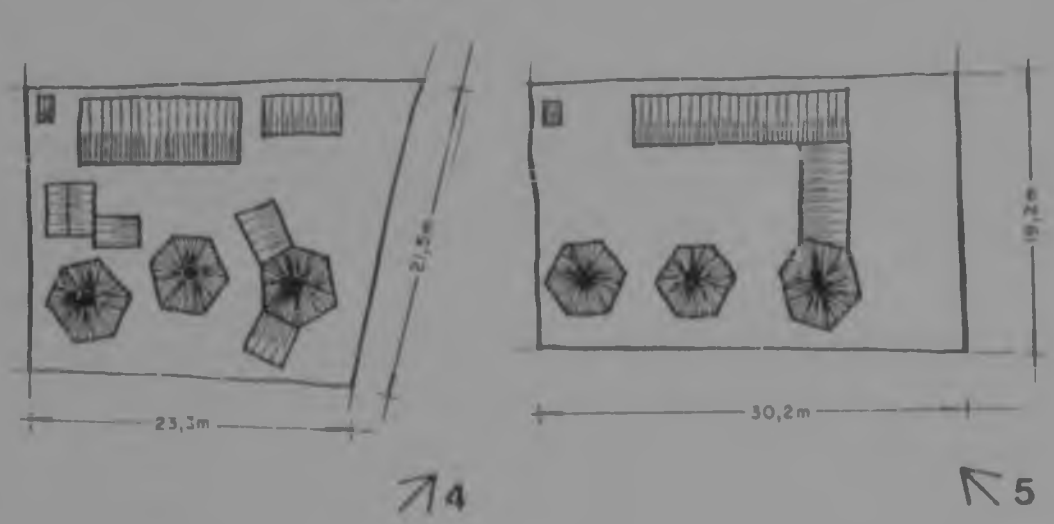


36m. Range of built forms and technology in present-day rural Transkei.



37a. Location of five case studies in Ngangelizwe.

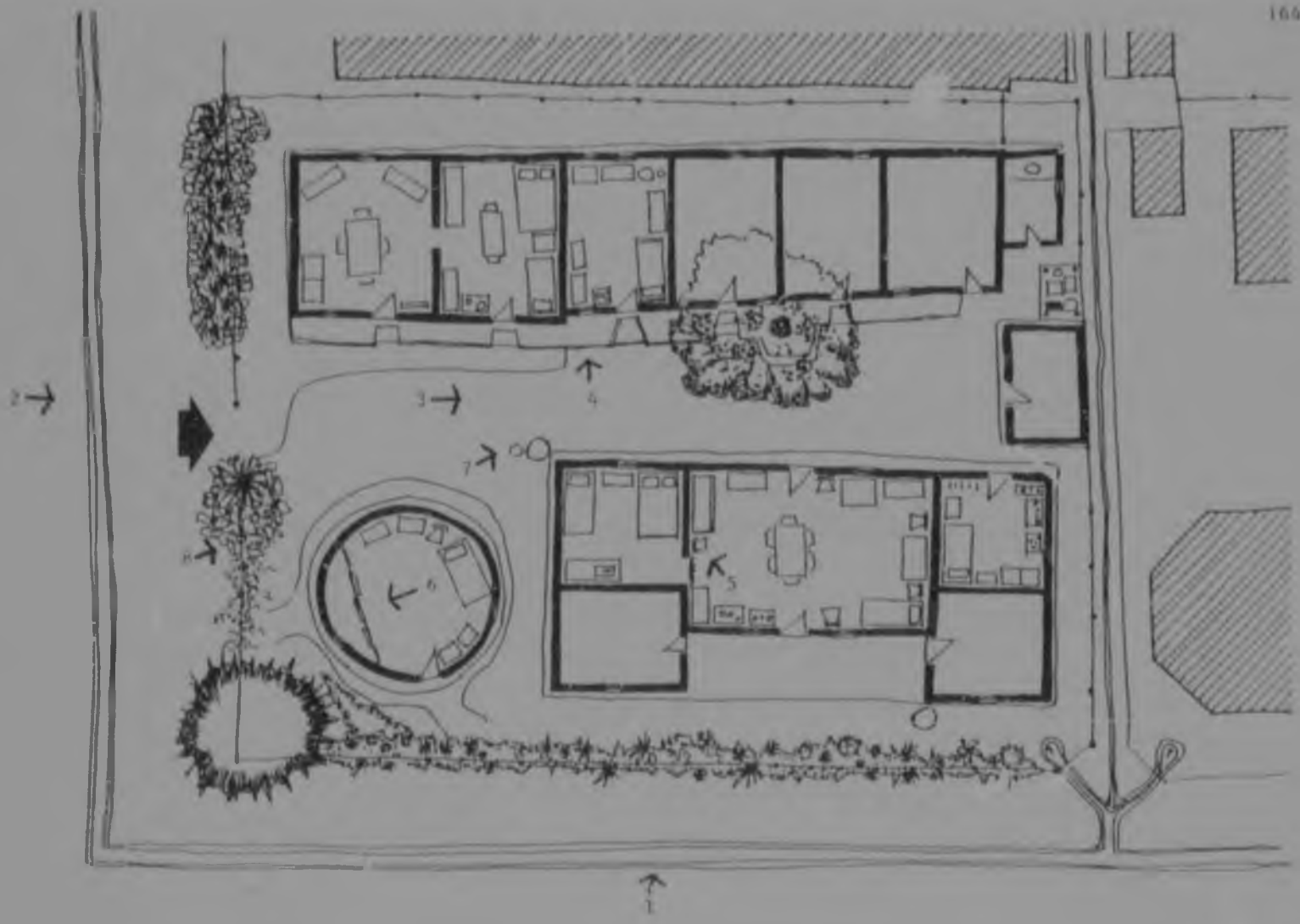




37b. Comparative site plans of the five case studies. Note the range of site sizes, shapes and building configurations.

Case Study No.	Site Area	% of site area used for vegetables	% of site area for covered storage of 'junk'	% of site area built on	% of built area occupied by 'owner'	Composition of 'owner's' household	Composition of 'lodger' population	Total income from 'lodgers' (in 1975)
1	487,5m^2	0,0%	0,4%	45%	22%	widow	four men six women two boys five girls	R35,00 pm
						1 person	17 people	
2	277,5m^2	0,0%	0,65%	33%	75%	man wife boy	one woman three girls	domestic service in lieu of rent
						3 people	4 people	
3	805m^2	29%	0,6%	24%	47%	man wife daughter son-in-law boy	six men two women one boy one girl	R22,00 pm
						5 people	10 people	
4	517,6m^2	0,0%	1,3%	35,6%	36%	widow two boys two girls	nine men two women one boy	R51,00 pm
						5 people	12 people	
5	580m^2	21%	0,6%	27,5%	28%	man wife four girls one boy	five men two women one boy one girl	R21,00 pm
						7 people	9 people	

37c. Table of data on the five Ngangelizwe Case Studies.



NORTH

0 1 2 3 4 5m

374. Case study number 1.

1







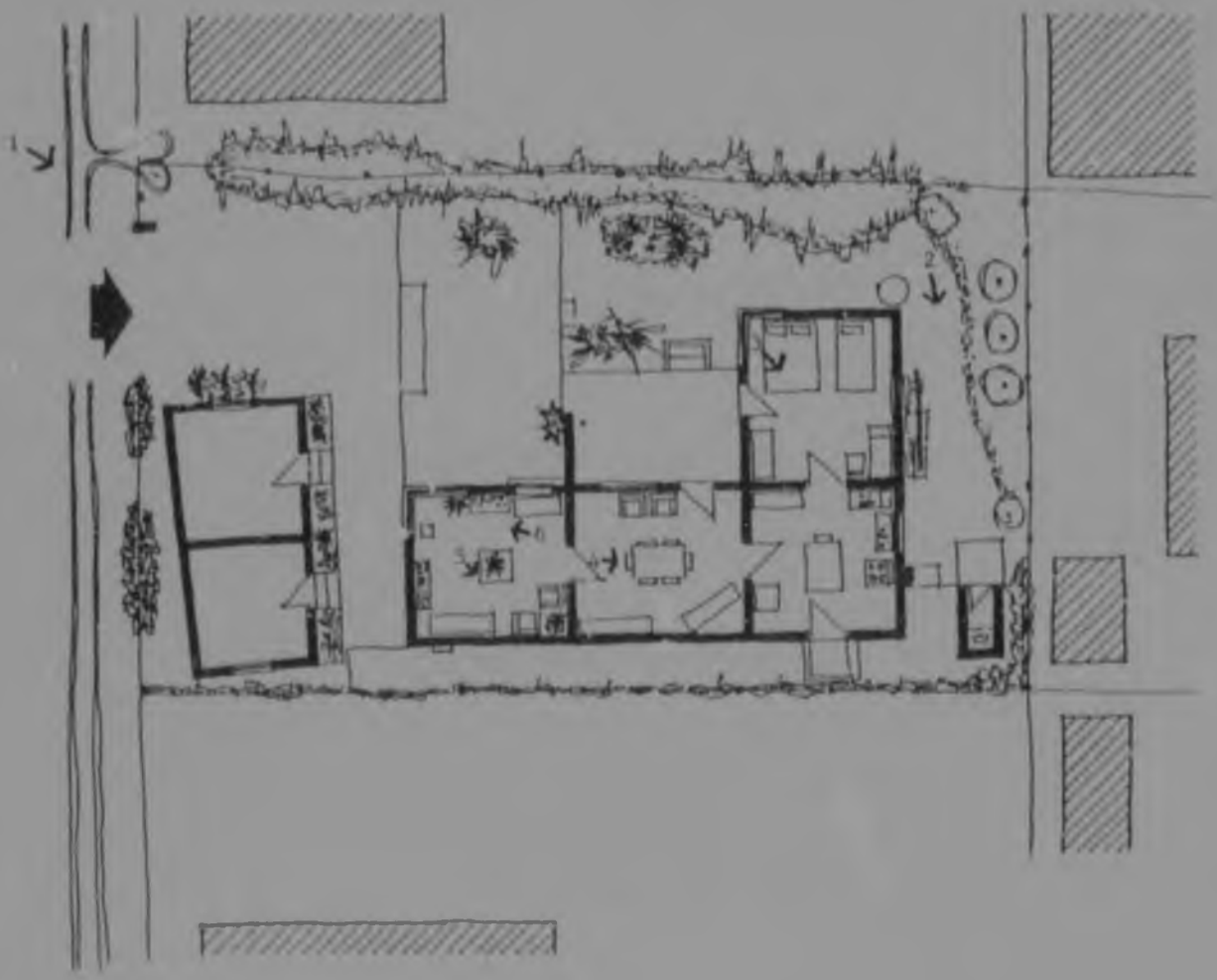


Case study
number 1.





Case study
number 1.



NORTH

0 1 2 3 4 5m

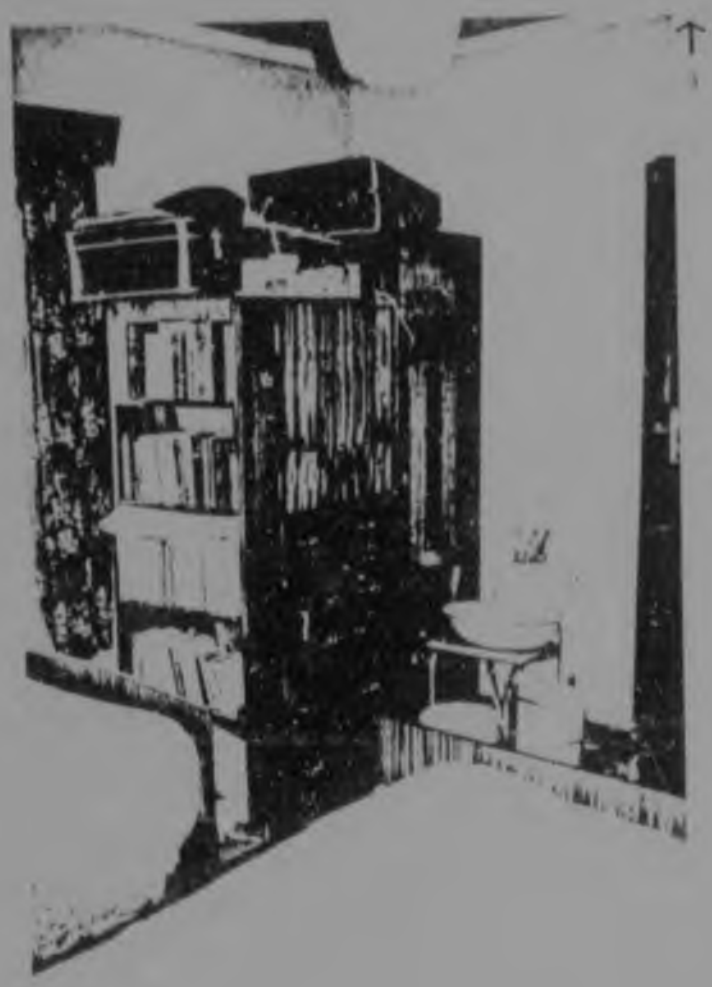
37a. Case study number 2.

2





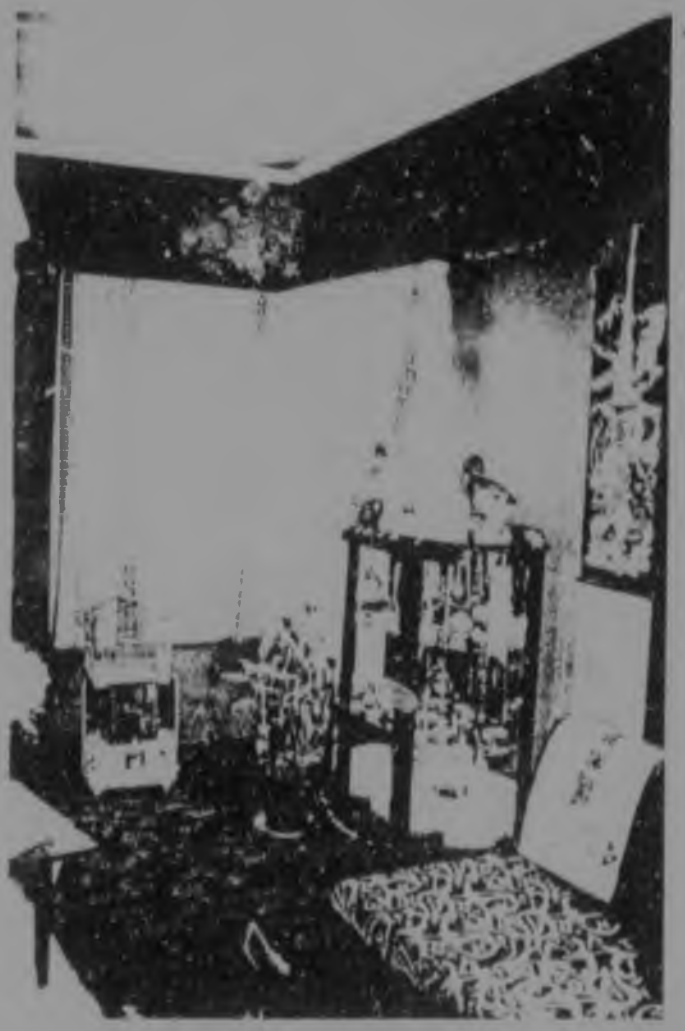
Case study
number 2.





Case study
number 2.





Case study
number 2.



37f. Case study number 3.

3


1


3


2


4

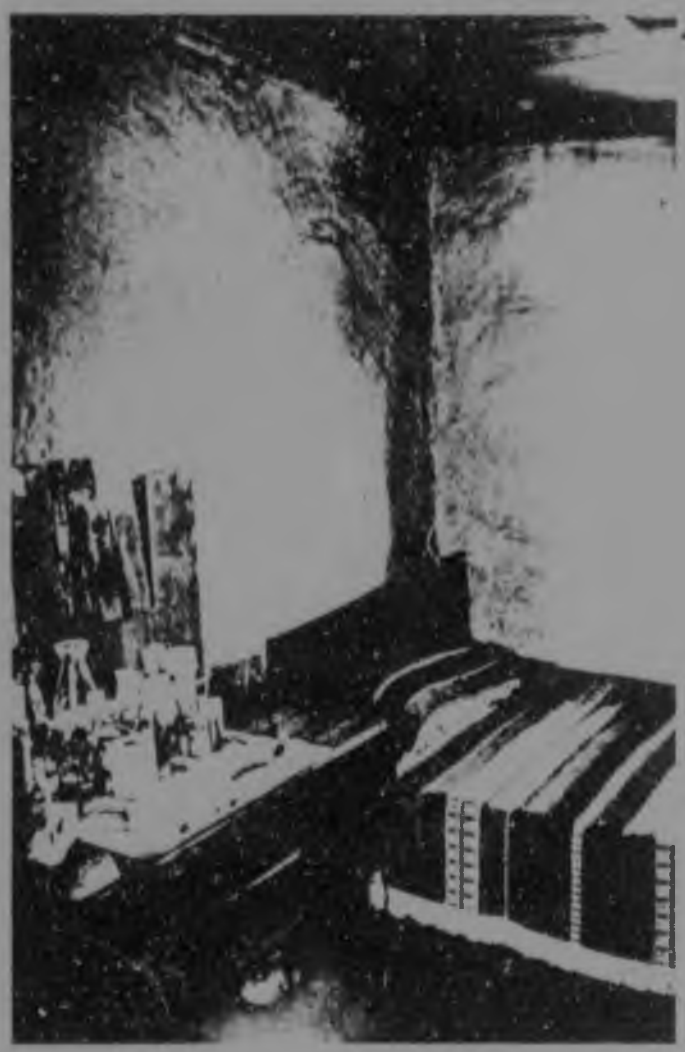
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number 3.





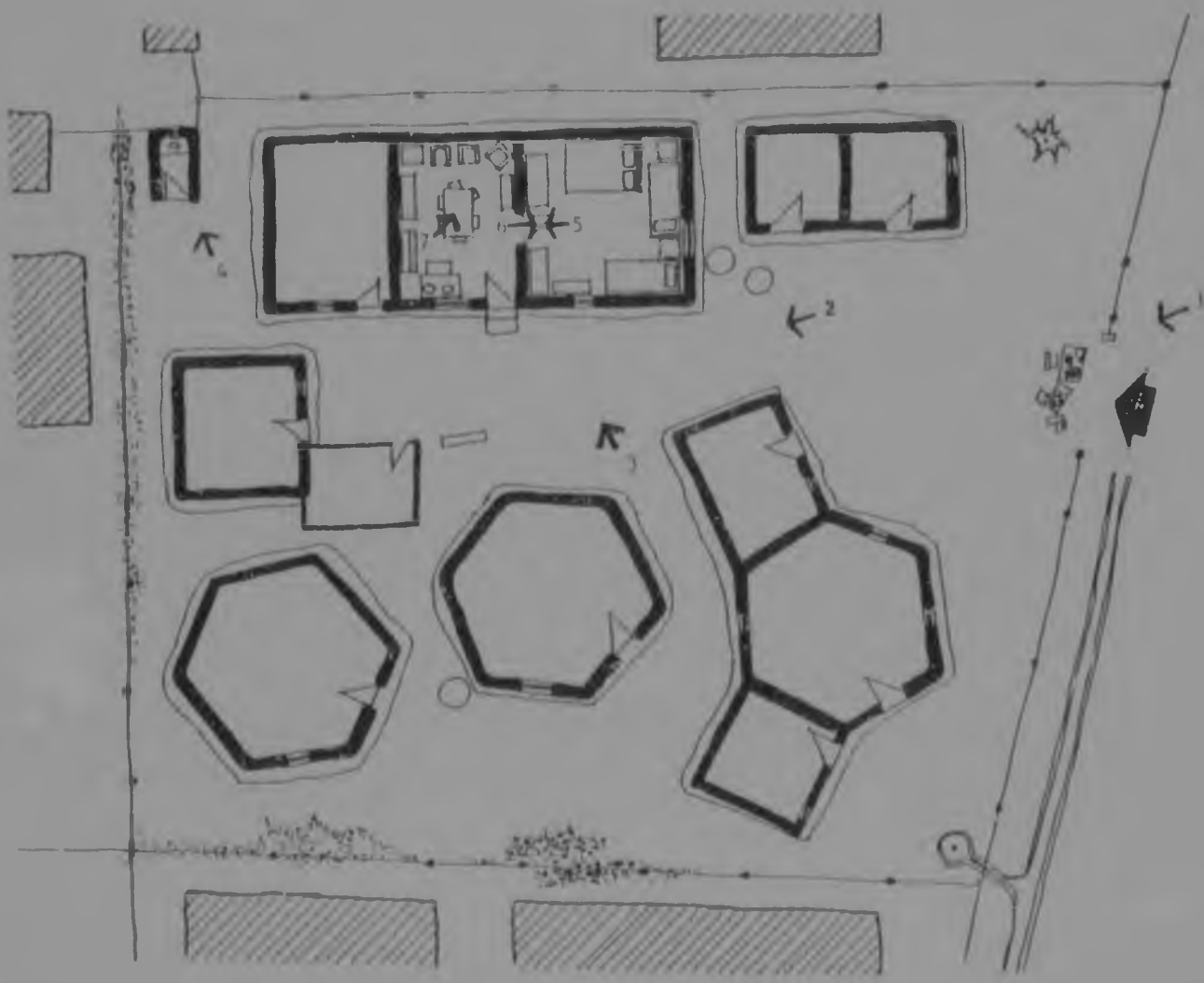


Case study
number 3.





Case study
number 3.



37g. Case study number 4.

4









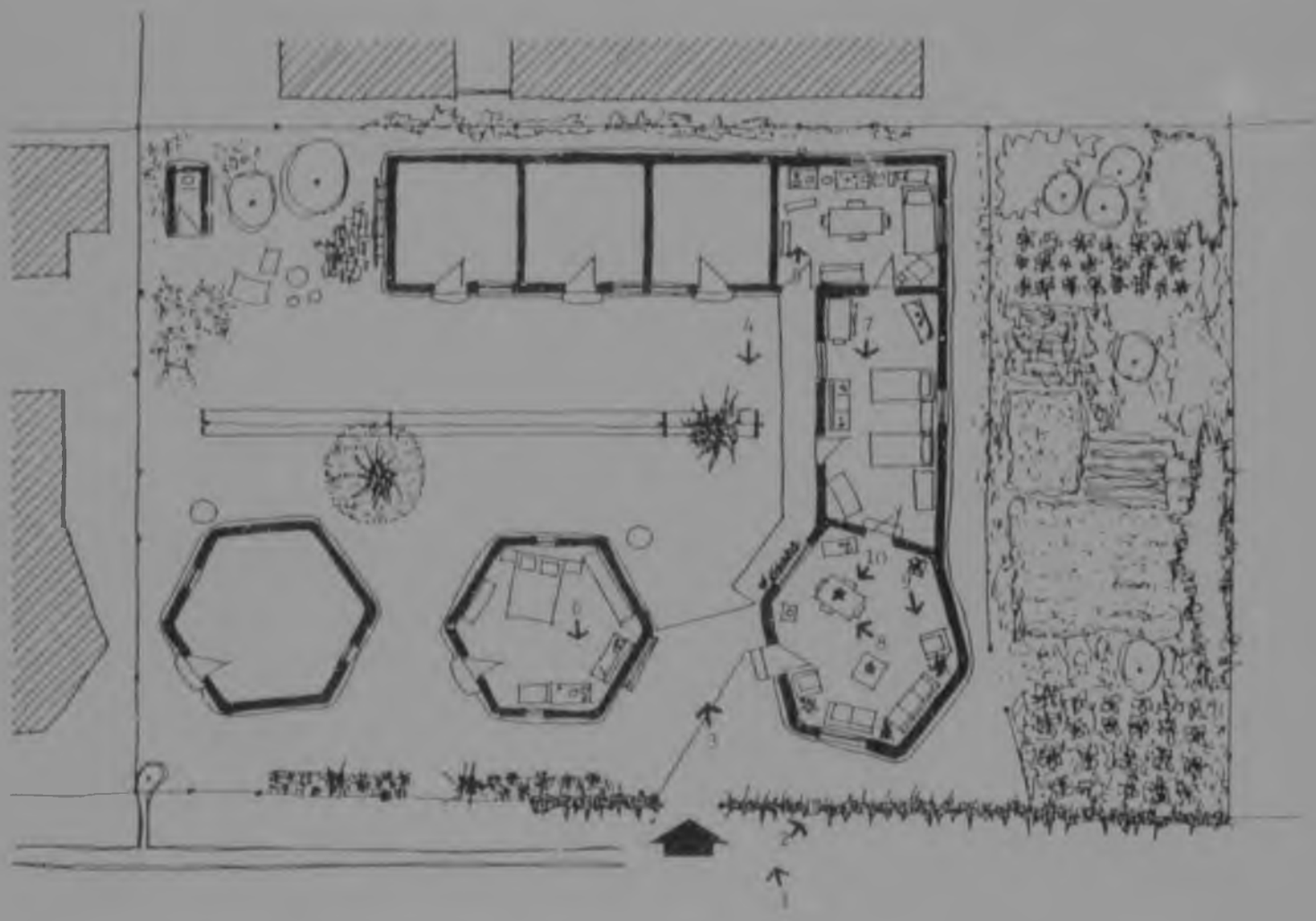
Case study
number 4.







Case study
number 4.



NORTH

0 1 2 3 4 5m

37h. Case study number 5.

5

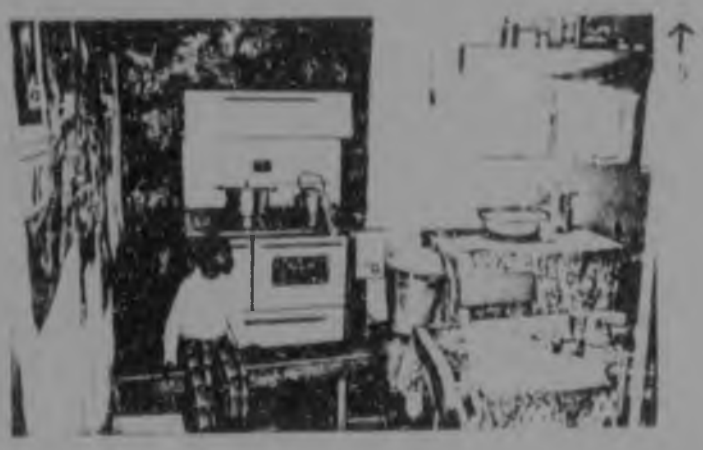








Case study
number 5.







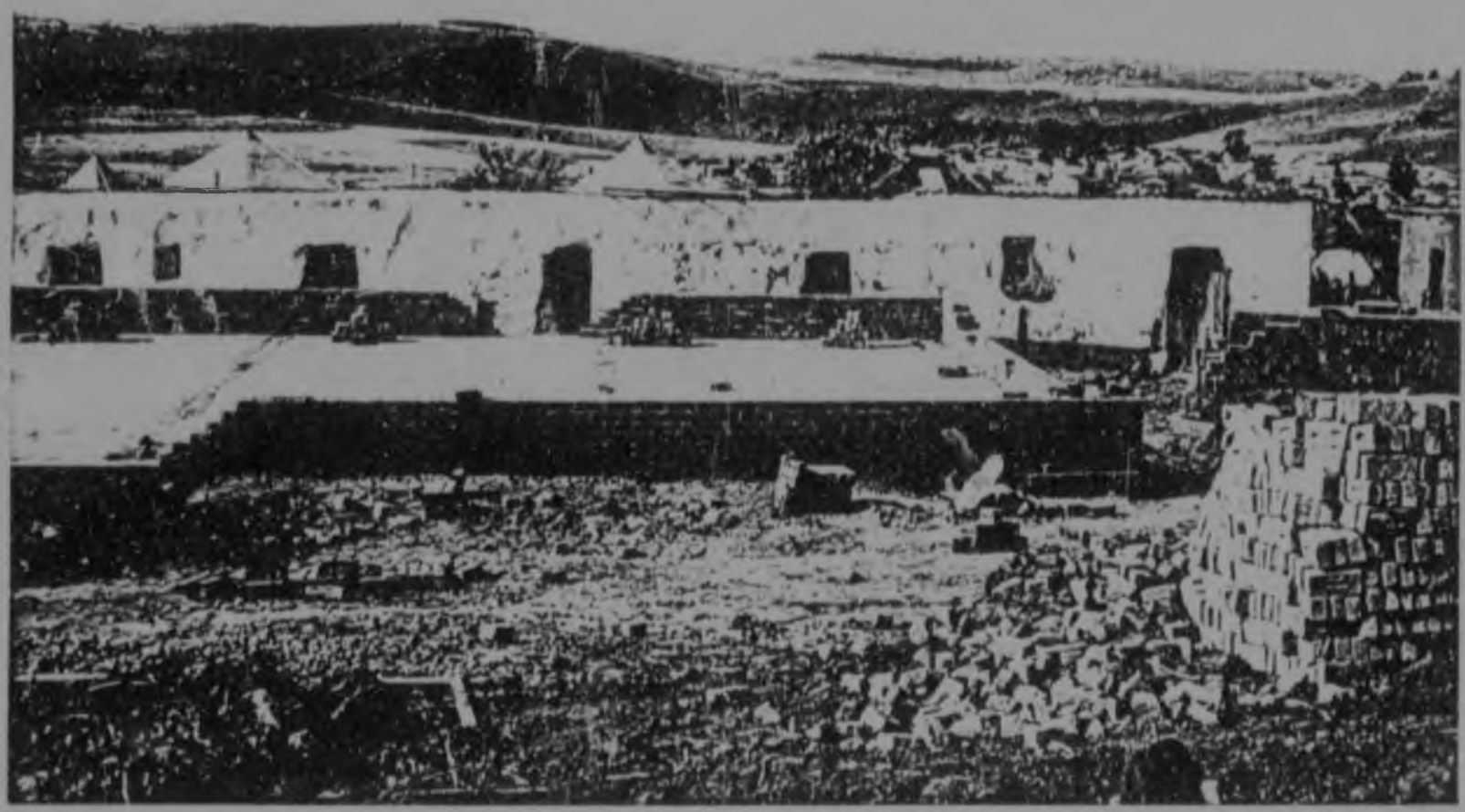


Case study
number 5.

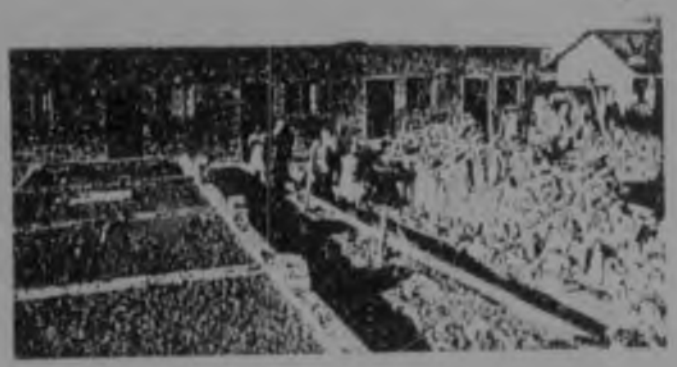




Case study
number 5.



38a. Row of wattle and daub 'flats' which are let out to provide an income. One is occupied by the site 'owner'. He is in the process of erecting a large 'modern' home in the front of the site



38b. High standard 'flats' at the back of the site. A new building going up in the front



38d. Site on left has 'flats' at the back. Site on the right has an owner-built core-house.



38c. Similar to above but of an even higher technical standard.



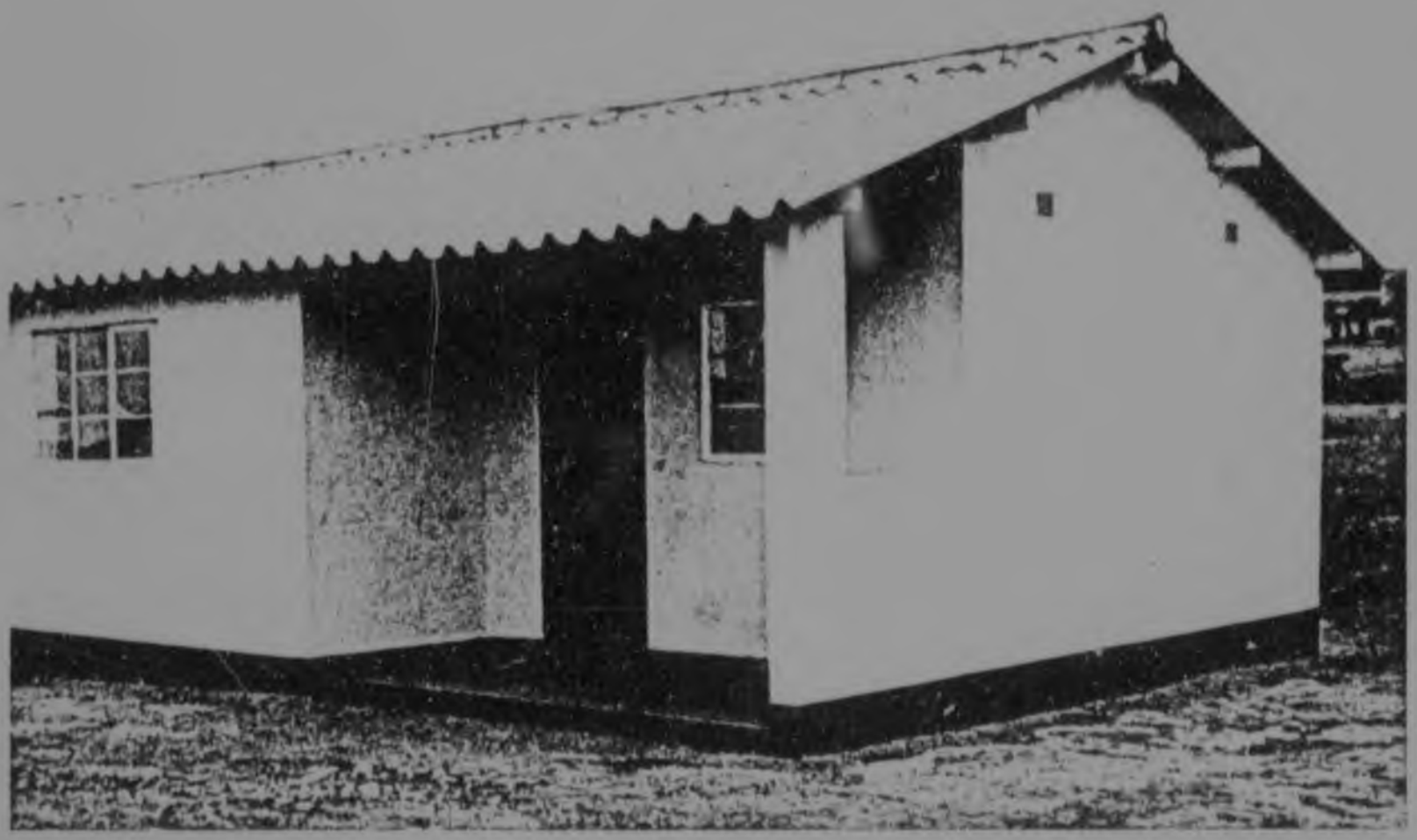
38e. A traditional mud hut being demolished by the owner to make way for a 'modern' house.



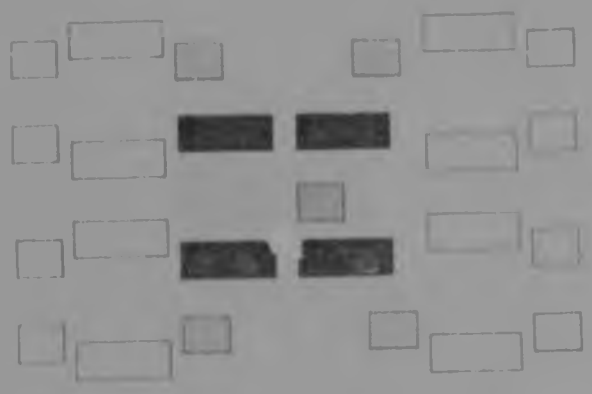
39. Difference in the development pattern between the owner-built housing (right) and the adjacent municipal rental housing (left).



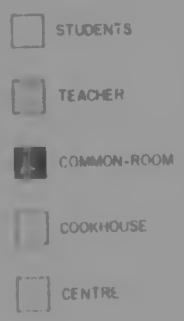
40a. Demonstration of an addition to a standard 51/9 house-type with the use of a single sheet of 'Canalit' as a box-gutter.



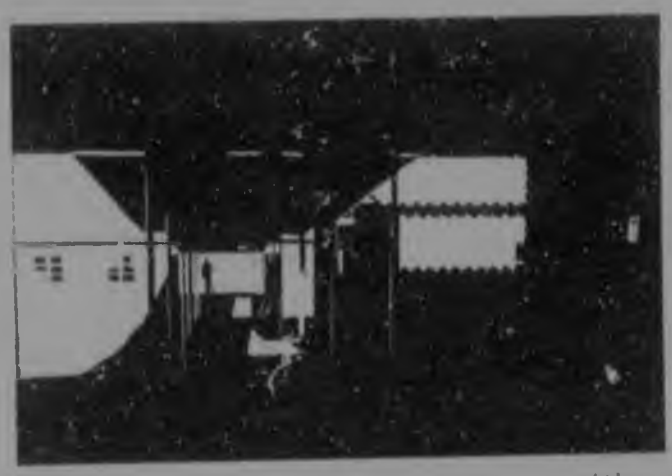
40b Simple addition of a new living-room and terrace to a standard 51/9 house-type by extending the existing roof laterally.



4la. Diagrammatic layout of the school hostel. Each 'cluster' houses fifty students and one teacher.



4lb. Key to the above diagram. The 'centre' is an open area where a large hall will be built at a later stage



4lc. Covered way linking the cookhouse with the common-rooms.



4ld. Inside a common-room. The whole complex is made up of adapted, easy to build standard houses.

1.6 IMPLEMENTATION

The Ngangelizwe upgrading programme is a clear and operating example of how project implementation can achieve a high degree of sensitivity in relation to the infinite complexities of transactions and change in development. This is being achieved through an overall ordering framework that is both physical and non-physical. It allows finer nuances of development to take place within it through promoting local accountability, problem identification, priority determination and decision-making. In other words, a form of self-regulating process has been instituted that is supported by continuous monitoring and feedback. Implementation is seen as an ongoing dynamic process of response and counter-response, constantly flexing and adjusting over time to new inputs and priorities and not as a one-off development exercise into which people are then fitted!

There is little doubt that failure to implement this kind of ongoing programme will result in people being forced to resort to informal and illegal action. In Umtata's case, for example, many of the residents of Ngangelizwe, together with newcomers to the urban area, would probably have been inclined to develop illegal squatter settlements in and around the city if Ngangelizwe had not been retained and improved in the way described.

2. THE KANYAMAZANE PROJECT

This is a project that focuses attention on the role of the private sector in lower-income housing development. In doing so it also emphasises areas of concern in relation to existing public sector housing projects.

2.1 NEED FOR INCREASED PRIVATE SECTOR ROLES

Worldwide, particularly in countries experiencing rapid urban growth and where the majority of people have low incomes, it is rare to find a situation where a government can rely solely on public sector resources to provide fully and directly for the housing needs of all its people. Long waiting li ts for housing, overcrowding in existing housing and the growth of informal settlements are symptomatic of the situation.

Strategies are therefore having to be developed whereby private sector (i.e. non-government) resources can be released and employed in ways that both supplement and complement public sector efforts. In South Africa (and elsewhere) the involvement of the private sector in government housing programmes has for many years been limited to the participation of contractors, suppliers of materials and components and professional consultants. Recently, however, new interest has been generated in the roles that might be played by private sector financial institutions, voluntary and non-profit organisations, employer bodies assisting employees and, most importantly, to the personal initiatives of individuals and groups building for themselves (e.g. as demonstrated in Ngangelizwe and in the case study of the Sibiya household).

2.2 PROJECT INITIATORS

In recognition of the demand for increased private sector roles, the Department of Co-operation and Development included this aspect in their research and development contract with the NBRI. Therefore, when a large Nelspruit company[4.10] approached the NBRI to advise them on matters relating to housing assistance for their employees, an ideal opportunity presented itself for a pilot and demonstration project specifically aimed at facilitating private sector contributions, while bringing together the public and private sectors in a collaborative project.

The company's interest was originally awakened after workers, through their liaison committee, had brought to the attention of management that many of them were experiencing housing problems. These included very poor conditions in existing informal settlements in some cases and doubling up with relatives in existing formal housing areas in other cases. In addition, a number of employees though living in 'reasonable' houses were eager to expand and improve them.

The company responded by setting up a housing committee as a forum for employees to discuss housing difficulties and strategies for overcoming them. In order to facilitate action, the company approached the NBRI for advice and a project co-ordinating committee was appointed. It consisted of representatives from the company, the government (i.e. the Eastern Transvaal Administration Board, who were its local agents) and the NBRI.

2.3 RESEARCH AND DEVELOPMENT

In close collaboration with the company (both management and employees) and the government (Department of Co-operation and Development Head Office in Pretoria as well as the local agents), we adopted an approach based on modifying the existing public sector way of providing housing in order to take greater account of private sector initiatives and be more sensitive to locally perceived problems, opportunities and priorities.

The Administration Board made available a piece of land for the pilot project in kaNyamazane, a large government sponsored housing development about 20 km east of Nelspruit. This land had been set aside for a new neighbourhood of some 330 houses as an extension to kaNyamazane and had already been planned, surveyed and pegged for the purpose although actual development work had not yet begun.

We conducted a series of investigations into various aspects of existing development activities in kaNyamazane. These studies were then used as a basis for new initiatives which were incorporated into the pilot project. They fall into the following five categories:

- Layout planning
- Technology and construction procedures
- House-types
- Options, choices and decision-making

procedures

- Demand for assistance with home development and improvement.

Using these categories as headings, the studies and actions which were taken in relation to them are outlined in the following pages:

2.3.1 Layout Planning

In the conventional layouts all roads carry through-traffic and are public spaces accessible to any strangers. This causes a number of concerns among residents. It affects their security, the safety of their children and is responsible for considerable discomfort as a result of dust raised by fast-moving vehicles.

There is minimal variation in terms of a range of environmental conditions in the conventional layout and it does not facilitate the development of local group identity. These factors contribute to residents taking little or no interest in their environment beyond the boundaries of their individual sites. (43)

In addressing these and related issues, we also investigated land utilisation, land subdivision and infrastructure planning. This culminated in the design of a revised layout for the neighbourhood set aside for the pilot project. In redesigning it, the basic form was retained. This made the revised and original layouts readily comparable. The amount of resurveying and repegging was kept to a minimum and cost only R3 000. This was paid for by the company as they were eager to support experimentation with alternative planning even though only thirty of their employees would be living there.

The following layout-planning studies and analyses describe the approach to the revised layout and compares it with the original 'ayout:

2.3.1.1 Land Utilization

This form of analysis defines the land area of a neighbourhood in terms of responsibility for control, development and maintenance. For the purposes of this project four basic categories of land utilization were employed in the analytical studies[4.11] These are defined in the following table:

Land Utilisation Type	[illegible]	Responsibility for Control, Development and Maintenance
[illegible]	[illegible] and industrial sites	Private individuals and corporate bodies
[illegible]	Private courts shared by several households	Limited private [illegible]
[illegible]	Schools, [illegible] and hospitals	Community with public and private institutions/bodies
[illegible]	Public open spaces and public thoroughfares	Public institutions

This analysis is important to understanding the boundaries of responsibility for land areas. If they are not properly defined and understood, there is always a danger that the ill-defined land areas become a form of 'no-man's land'. This also happens in cases where responsibility is allocated to a group or institution which is unable to exercise adequate control. A common example of this is the provision of excessively large public open spaces or parklands in low-income neighbourhoods where there are simply not enough funds available to either develop or maintain them. They then become dumping grounds for garbage and are generally unsafe places to use. When this happens, these large areas (which look very nice coloured green on planners' drawings) become an actual disamenity for residents of the area. Another common example of excessive public space provision is in the planning of roads and circulation routes where the actual road carriageway may be only 6,0m whereas the road reserve is made 15,0m. In cases like this, there is a heavy burden on the local authority to develop and maintain the continuous 4,5m verges on either side of the carriageway unless residents have a clear mandate to look after the verge in front of their houses. (43)

In order to study land utilization in the experimental neighbourhood a 16 Ha sample measuring 400m by 400m was taken of both the existing layout and proposed layouts. In the final analysis, the original layout was shown to have an allocation of 54,1% of the land area to public land utilization whereas the revised layout, as implemented, had an allocation of only 34,5% of the area. While the original layout had no provision for semi-private areas, the revised layout had 13,7% of the area allocated for this purpose. In terms of calculating open space allowance per person these semi-private areas are included although they actually have mixed use compared with pure parklands, for example. (44)

The significance of the shift of emphasis from public to private land utilization lies principally in the shift of responsibility for the development, maintenance and control of shared land areas. Small groups of people sharing relatively small open areas are in a good position to contribute to their development as opposed to relatively poor local authorities trying to develop and maintain large tracts of open land. Indeed, the semi-private spaces, as implemented in the fore-court concept in the revised layout, offer

considerable amenity to the groups to which they belong; small groups around the semi-private forecourts, which they regard as their own, can maintain and develop them according to their own preferences and priorities (at considerably lower cost than local authorities can, with their high overheads). Furthermore, because semi-private areas are exclusive in the sense that there is no free public access to them, employers are more willing to assist with their development than they would be if it were just a section of public road or a park that was accessible to anybody. This is simply because contributions are usually that much more readily forthcoming for defined and visible areas where the benefits can be more specifically directed to those people for whom it is intended than otherwise. The reduction of public land was therefore achieved in a way which facilitated increased private sector roles in the development and maintenance of shared spaces thereby reducing the load on limited public sector resources while at the same time encouraging local responses by residents that reinforce local identity within the neighbourhood. (45)

2.3.1.2 Land Subdivision

The conventional form of subdivision used in the original layout is made up of individual sites, each served by a public road. This makes it necessary not only to invest a great deal in the substantial expense of road-making but also to allocate a high proportion of the land area for public use as roadways. The original layout had a total of 26,8% of the land area allocated for public road reserves whereas the revised layout reduced this to only 8,6%. (44)

Instead of the conventional single site for a single family form of subdivision, the revised layout is made up of larger land parcels with a few individual sites occurring only along the main route. The larger land parcels are for multi-household use. Semi-private access connects the larger land parcels with the main route. This main route is a public road which loops through the neighbourhood and carries bus and services traffic; it is developed to a high standard by the public sector, being tarred for heavy traffic use, readily capable of dealing with stormwater drainage requirements and is easily maintained 4.13

Low car-ownership in low-income communities such as this results in a relatively low demand for high order vehicular access to each individual site. Those with cars can either choose sites along the main route or if on a site in a larger land parcel, develop and maintain the semi-private space to as high a standard as they choose for vehicular access, in doing so they can use their own labour and resources or apply for assistance. This concept naturally makes individual sites along the main route better served and therefore more valuable in the initial stages and people need to be charged proportionately more for them.

While the individual sites in the revised layout are similar to those in the original layout, the larger land parcels can be developed in a variety of different ways (e.g. flats, row housing, detached houses, etc.), to a variety of different densities and with options for types of tenure (e.g. rental, sectional titles, group housing, etc.). Where they are made available to the private sector, they can be developed through a variety of means e.g. entrepreneurs for speculative development, employers for employees, housing co-operatives, etc. In this way opportunities are created for private sector investment in services infrastructure, surveying and so forth. (46)

In the kaNyamazane context, when the experimental neighbourhood was being developed, it was considered appropriate to subdivide the larger land parcels in a way that would provide individual sites. This made the revised layout directly comparable with the original layout (rather than introducing more radical departures from the norm at that stage). This decision resulted in the use of the forecourt concept for subdividing the larger land parcels. The sites in the forecourt were kept similar in size and shape to those in the original layout. This form of subdivision, combined with the increase in private land utilization, allowed for twenty more sites to be accommodated in an area which previously had only accommodated 330 sites. This increase in density also helped to lower overall infrastructure costs. (47)

Although the larger land parcels were subdivided in this particular way from the outset, they still retain their boundaries and therefore their integrity as larger units for purposes of administration as well as decision-making control by residents. This offers several advantages which include the following: (48)

a. Administration costs and work is reduced through dealing with corporate entities via

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a. Administration costs and work is reduced through dealing with corporate entities via

their representatives instead of with each individual household.

b. Decision-making and control regarding development within the larger land parcel remains with the group involved thereby ensuring a more sensitive response to local priorities.

c. Local control facilitates social policing and therefore improves local security.

d. The necessity for combined group action has a local community-building effect and plays a role in developing local group responsibility.

2.3.1.3 Infrastructure and Services

The revised layout concentrates infrastructure and services on a major route (the main loop road) which serves defined groups of dwellings along it. Although in this particular development water and sewer reticulation was provided to each individual site from the outset, the larger land parcels could have been reticulated later by private sector initiatives. The principle inherent in the approach is nevertheless clear for the other services. For example, only the main road is fully made up whereas access through the forecourts to individual sites was only cleared in the first stage; the rest of the forecourt development is carried out by the residents. Similarly, only the main road has street-lighting and electricity reticulation while distribution kiosks are provided at the entrance of each forecourt. Individuals can then decide as and when they are ready to connect up to the main electricity supply network. This concept has the obvious advantage of keeping the main infrastructure networks minimal in the early stages of development while providing an operative level of service; this also allows for individuals to link up at a level they choose when they so desire and when they can afford the outlay. The revised layout permits this kind of development far more rea than the original layout which requires v. ly the whole neighbourhood to commit i f to the higher level of service before in als can connect up to it.

Despite the fact that relative y minor changes were made to the original layout so as to avoid the cost of fully resurveying and repegging the

entire neighbourhood, considerable savings were made in the initial capital outlay for infrastructure and services, particularly regarding road lengths (costs of road-making, stormwater drainage and maintenance can be substantial). Although these savings have as yet not been finitely calculated, an idea can be gained from the area and length measurements involved; the road length per site is less than half that of the original layout main electricity reticulation is similarly reduced and water and sewer mains are reduced by almost 10% per site (an important contribution in an area where the ground is rocky, often requiring blasting and therefore expensive to excavate). (49) (50)

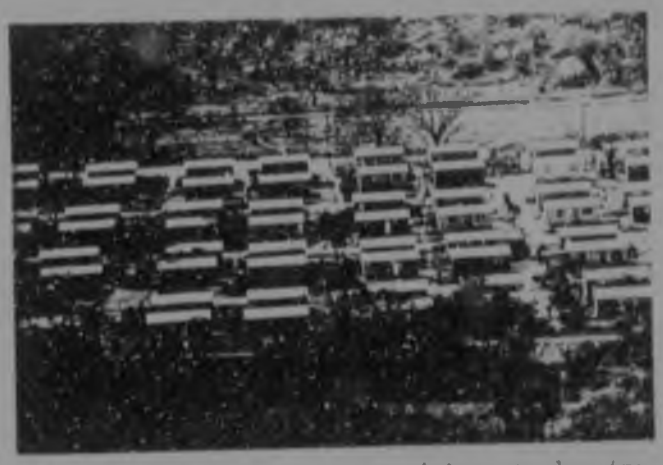
By designing major infrastructure networks to an appropriate factor of safety one can cope with late[illegible]ases in density (increases which can at [illegible]stage be readily anticipated because of the economic demands for it in the longer term). This applies particularly to pipe-runs which are difficult and expensive to upgrade at a later date and where the cost of increasing capacity in the early stages is small compared with the cost of excavation and laying. Sewage treatment works, water reservoirs, pump-stations and so on are, on the other hand, relatively easy to expand and upgrade incrementally as demand grows.

The demand for increased densities is growing steadily; the land and energy costs of lower density living are pricing it out of reach for most people. It therefore makes good economic sense to plan for density increases in both new and existing areas. However, in order for density increases to be acceptable to people, it must be perceived by them to have advantages.

For example, people should be able to choose between access to higher density living at lower cost for land, services, transport and so forth and more expensive lower density living. This point is of particular relevance in considering subsidy policy for infrastructure for lower income communities; a typical problem in this regard exists in kaNyamazane where infrastructur capital costs are subsidized by almost 100%. There is, therefore, little economic incentive for people to choose to live at higher densities. This was a major factor in the decision not to offer appreciably higher density living in the revised layout. Instead it has been planned to cater for later increases in density.



42a. Hanover Park, Cape. Excessive public open space creates a 'no-man's land' between the houses.



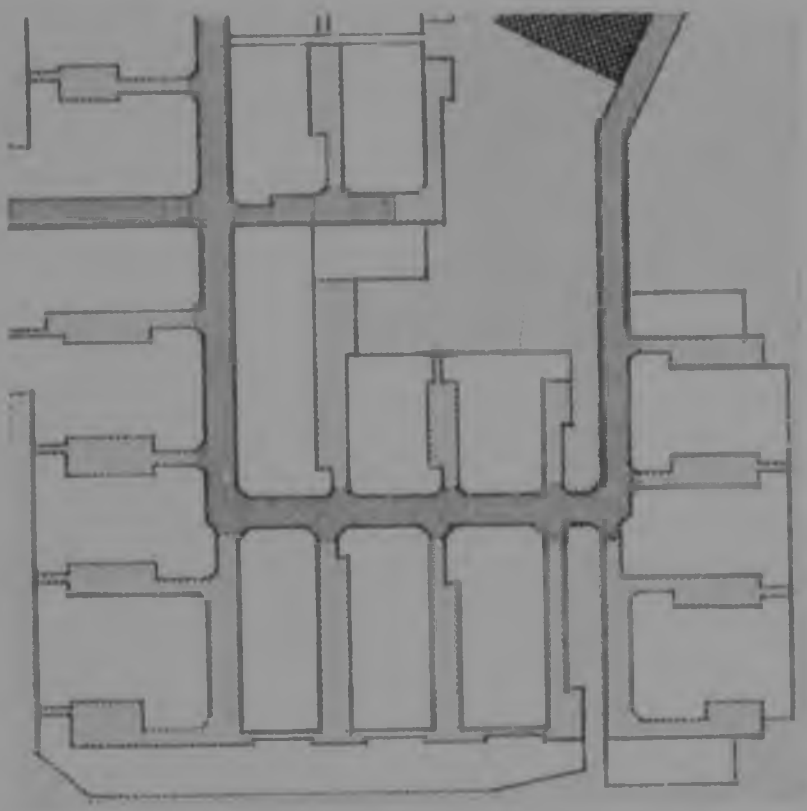
43a. Conventional stereotyped layout planning.



42b. Hanover Park, Cape: Unkempt public open space.



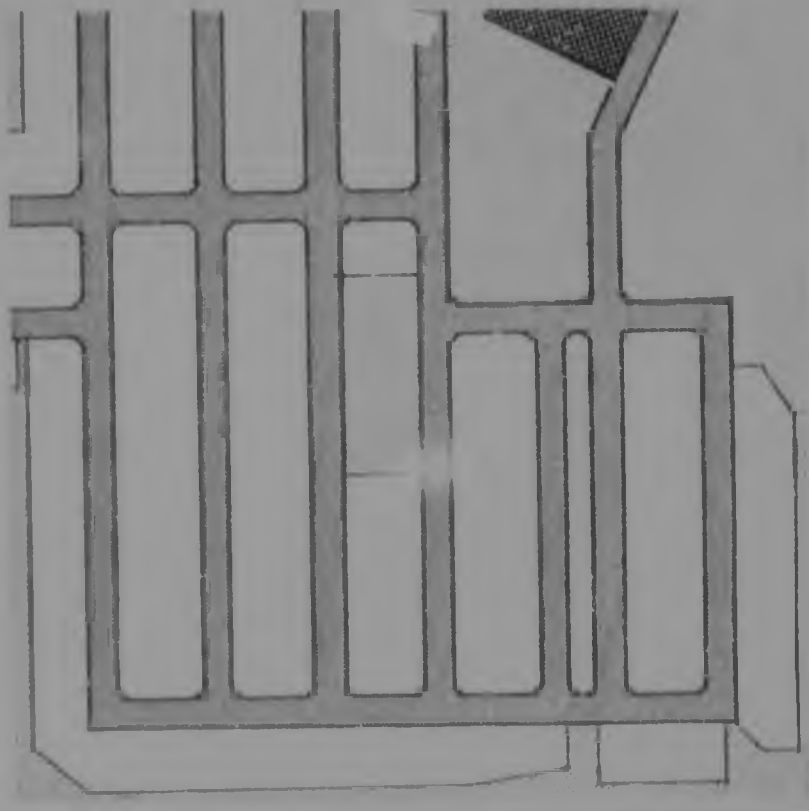
43b. Buses on the gravel roads cause severe dust pollution.



PUBLIC	ROAD RESERVES	13 700 m²	8,6 %	32,6%	34,5%
	PUBLIC OPEN SPACE	38 360 m²	24 %		
SEMI-PUBLIC	CHURCH	1 800 m²	1,1 %	1,9%	
	KINDERGARTEN	1 300 m²	0,8 %		
SEMI PRIVATE	FORECOURTS	21 932 m²	13,7 %	13,7%	65,5%
PRIVATE	RESIDENTIAL SITES	82 908 m²	51,8%	51,8%	
	TOTALS	160 000 m²	100 %	100%	100%

REVISED LAYOUT LAND UTILIZATION ANALYSIS 16 Ha SAMPLE

44a.



PUBLIC	ROAD RESERVES	42 830 m²	26,8%	52,5%	54,1%
	PUBLIC OPEN SPACE	41 095 m²	25,7%		
SEMI-PUBLIC	CHURCH	1 350 m²	0,8%	1,6%	
	KINDERGARTEN	1 300 m²	0,8%		
SEMI-PRIVATE	NONE	———	—		45,9%
PRIVATE	RESIDENTIAL SITES	73 425 m²	45,9%	45,9%	
	TOTALS	160 000 m²	100%	100%	100%

ORIGINAL LAYOUT LAND UTILIZATION ANALYSIS 16 Ha SAMPLE

44b.



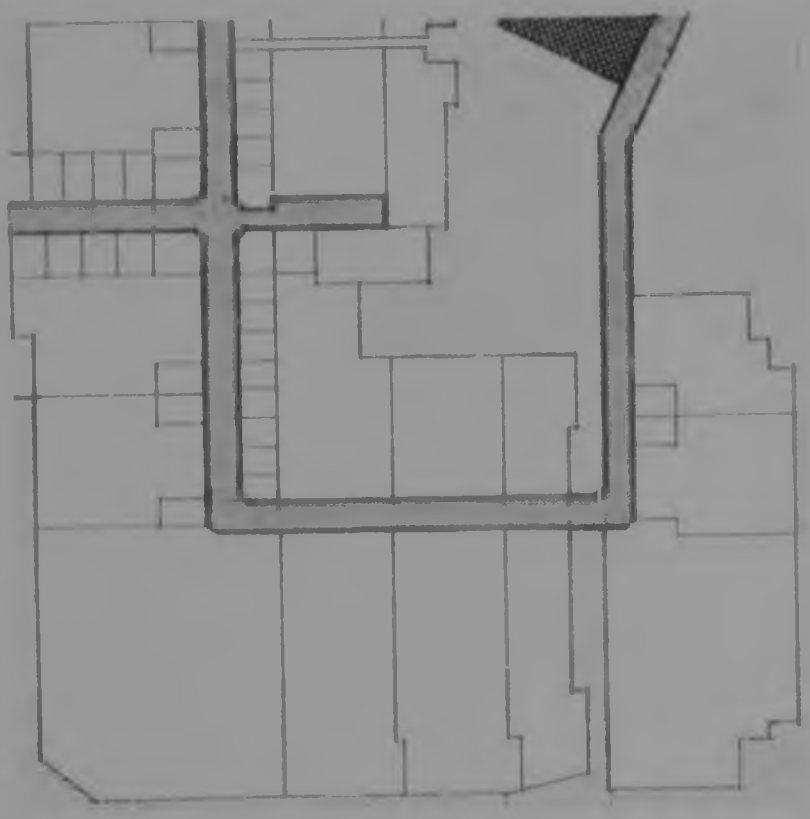
45a. In kuNyamazane much of the public shared space is used for vegetable and maize cultivation



45c. The group sharing the semi-private space maintains and develops it with their own resources



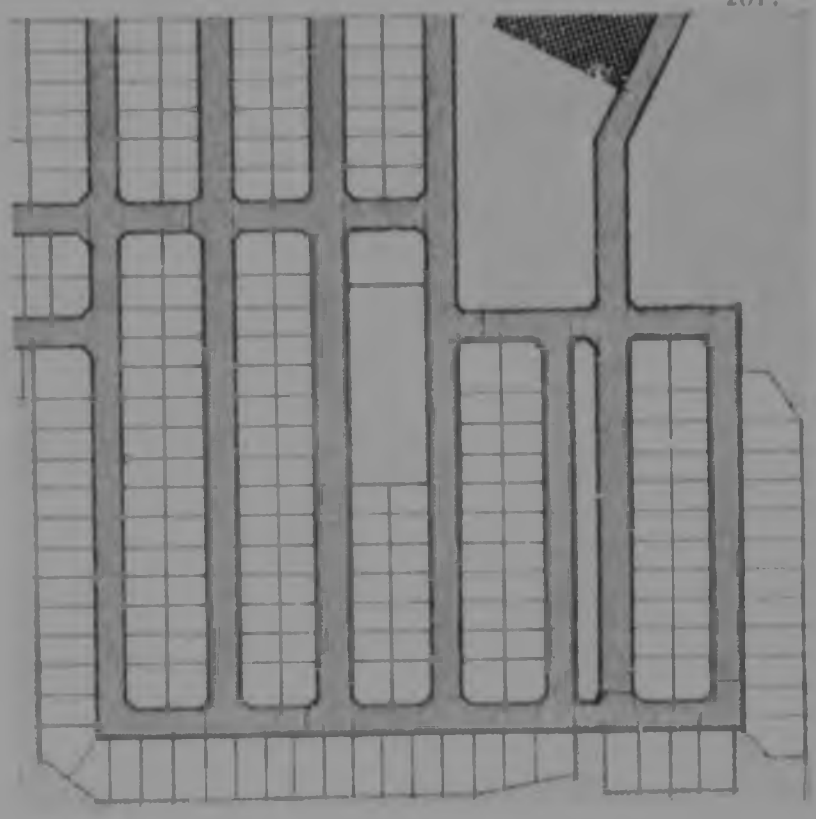
45b. Example of a forecourt. It has a shared semi-private space in the middle.



REVISED LAYOUT ALTERNATIVE RESIDENTIAL LAND SUBDIVISION

46a.

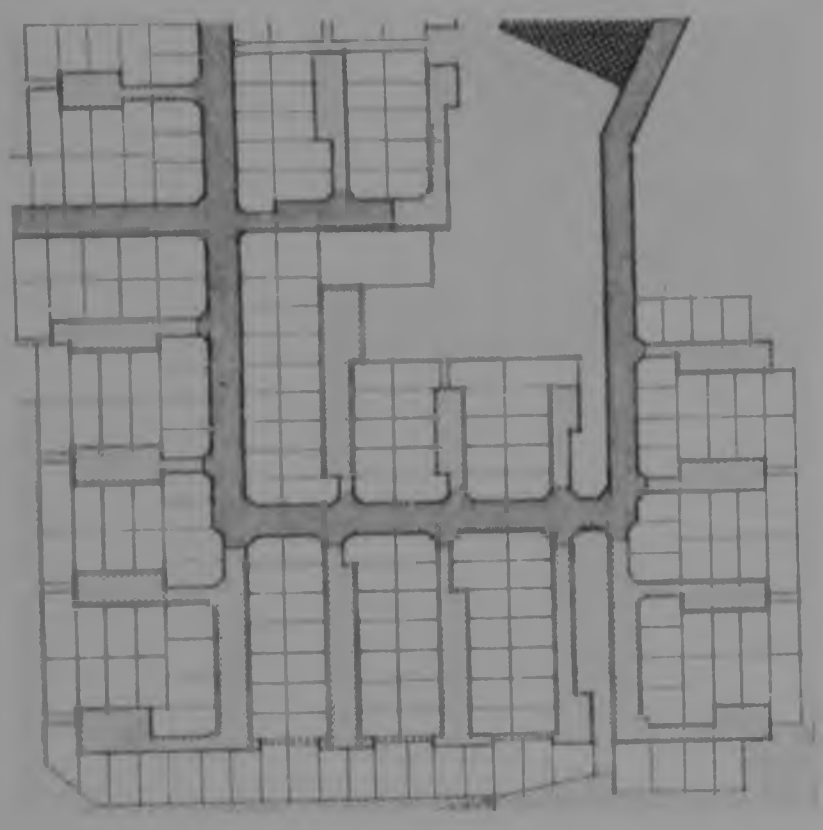
- THE USE OF A COMBINATION OF LARGER LAND PARCELS AND INDIVIDUAL SITES ENABLES A WIDER RANGE AND DIVERSITY OF SECONDARY SUBDIVISION AND DEVELOPMENT FORMS THAN THE CONVENTIONAL LAYOUT ORIGINALLY PLANNED



ORIGINAL LAYOUT CONVENTIONAL RESIDENTIAL LAND SUBDIVISION

46b.

- BY ONLY PROVIDING INDIVIDUAL RESIDENTIAL SITES A MUCH GREATER PROPORTION OF INITIAL CAPITAL INVESTMENT IS REQUIRED FOR INFRASTRUCTURE BY THE PUBLIC SECTOR THAN THE ALTERNATIVE FORM OF SUB DIVISION WHERE THE PRIVATE SECTOR ASSUMES MORE RESPONSIBILITY

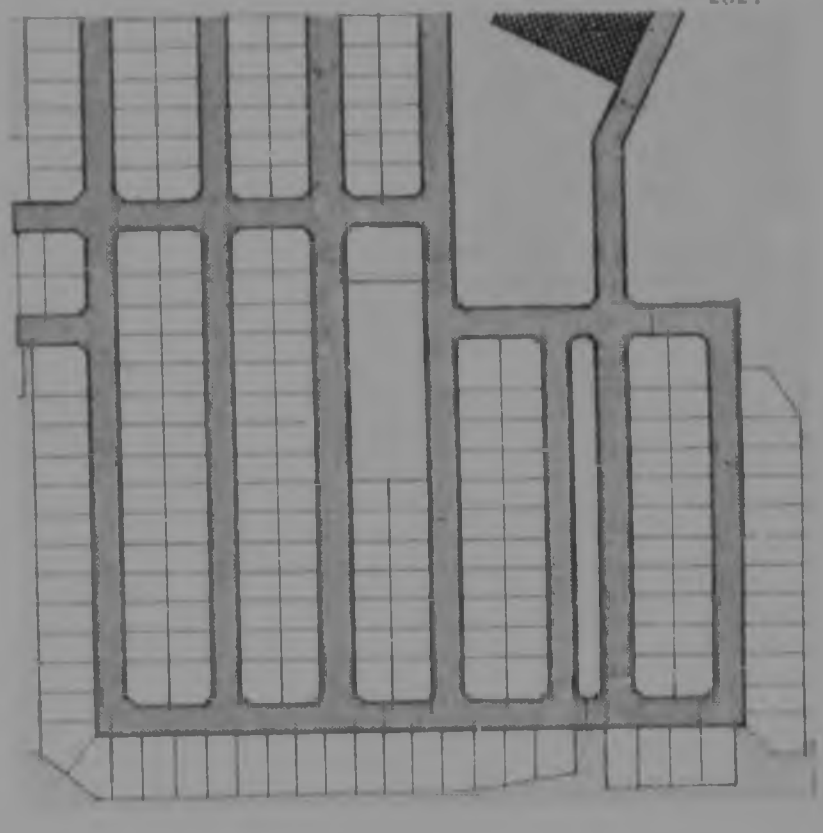


REVISED LAYOUT

FORECOURT CONCEPT USED FOR RESIDENTIAL LAND SUBDIVISION

47a.

- USING A MINIMUM SITE SIZE OF 325 m^2 A TOTAL OF 223 SITES ARE ACCOMODATED IN THIS 16 Ha SAMPLE AREA THUS ACHIEVING SAVINGS IN INFRASTRUCTURE COSTS THROUGH HAVING A HIGHER DENSITY

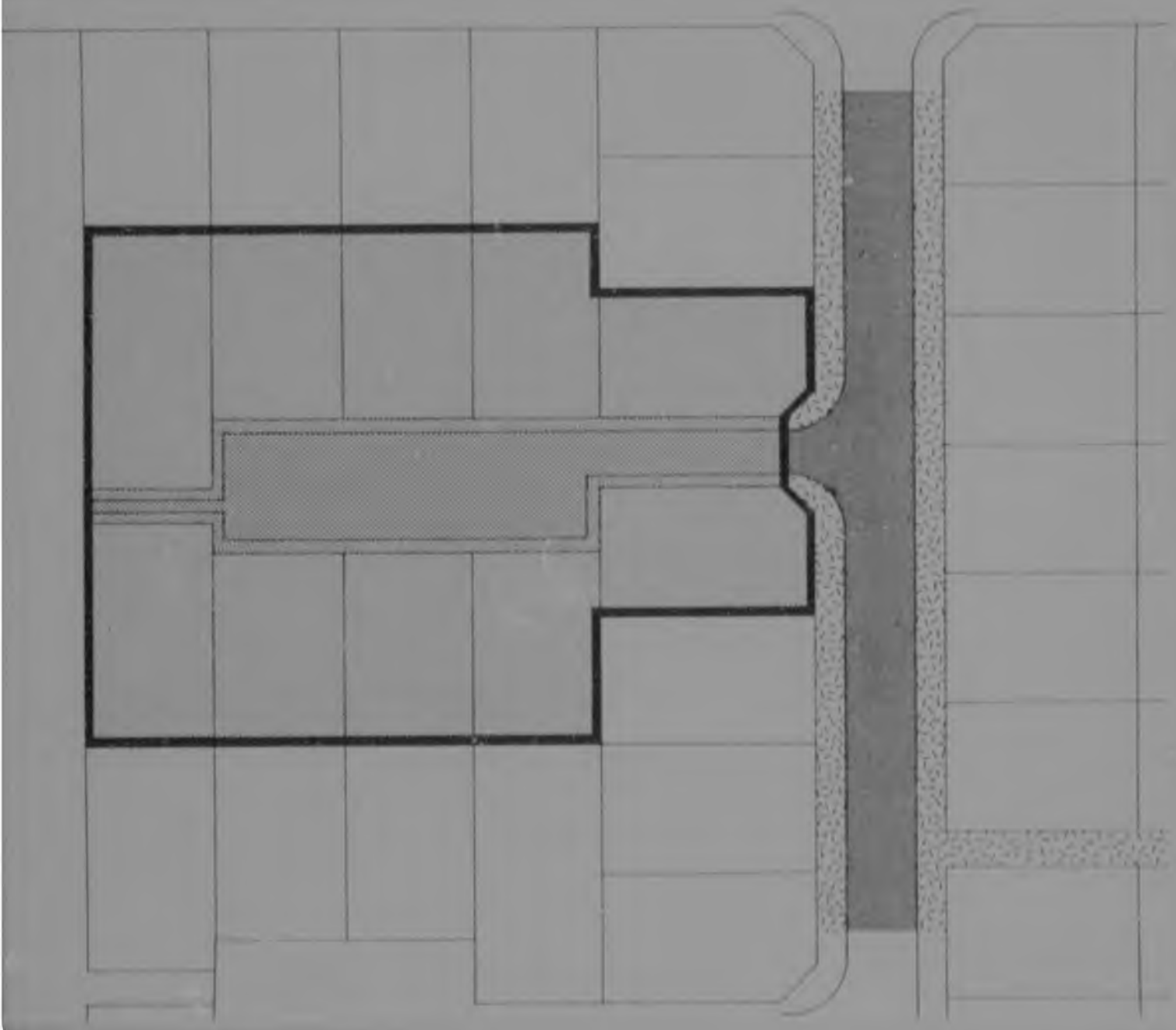


ORIGINAL LAYOUT

CONVENTIONAL RESIDENTIAL LAND SUBDIVISION

47b.

- USING THE SAME SITE SIZES ONLY 209 SITES ARE ACCOMODATED IN THE SAME AREA (16 Ha)


LAND UTILIZATION COMPONENTS IN THE FORECOURT CONCEPT
ROAD AND MAIN SERVICES (PUBLIC)
ROAD VERGE AND SERVICES (PUBLIC)
EDGE OF LARGER LAND PARCEL
FORECOURT BY PRIVATE GROUP (SEMI PRIVATE)
EDGES BY ADJACENT INDIVIDUALS (SEMI PRIVATE)
INDIVIDUAL SITES (PRIVATE)

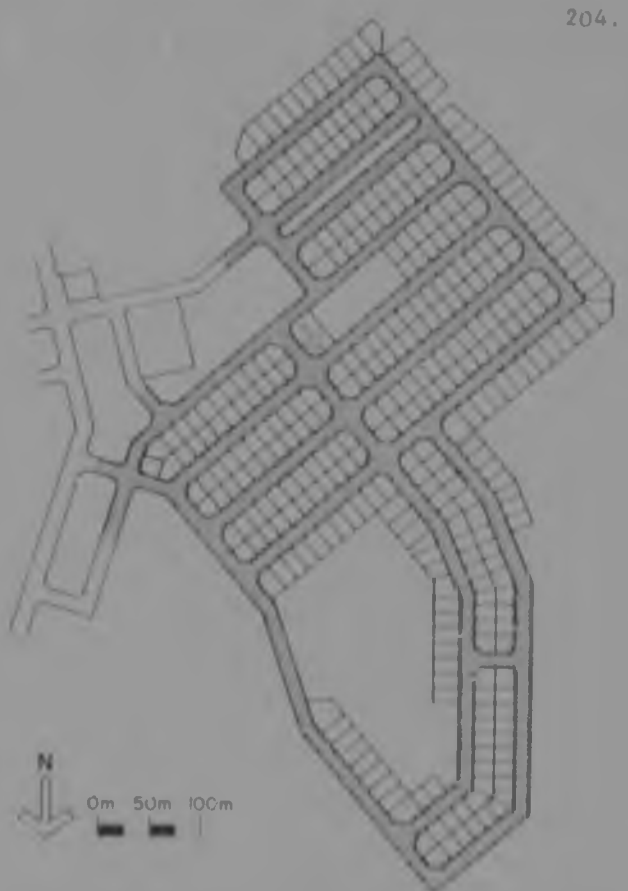


REVISED LAYOUT

ALTERNATIVE AS IMPLEMENTED

49a

ROADS	2 110m	4 250m 12,1m/SITE
	6,0m/SITE	
FORECOURTS	2 140m	
	6,1m/SITE	
NUMBER OF SITES (MIN 325m²)	350 SITES	



ORIGINAL LAYOUT

CONVENTIONAL REVISED BY NBRI

49b

ROADS	4 790m	4 790m 14,5m/SITE
	14,5m/SITE	
FORECOURTS	NONE	
NUMBER OF SITES (MIN 325m²)	330 SITES	

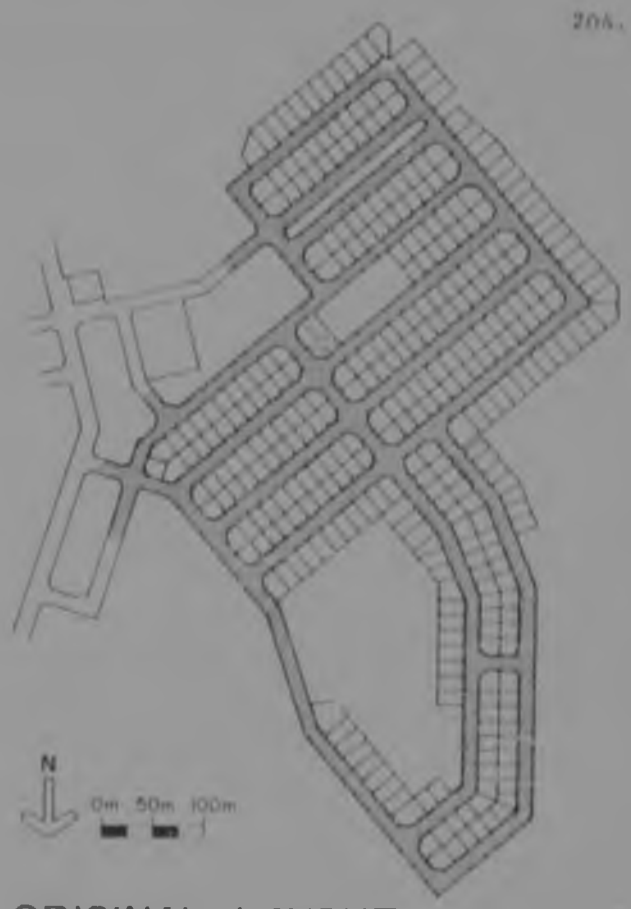


REVISED LAYOUT

ALTERNATIVE AS IMPLEMENTED

49a.

ROADS	2 110m 6,0m/SITE	4 250m 12,1m/SITE
FORECOURTS	2 140m 6,1m/SITE	
NUMBER OF SITES(MIN 325m²)	350 SITES	

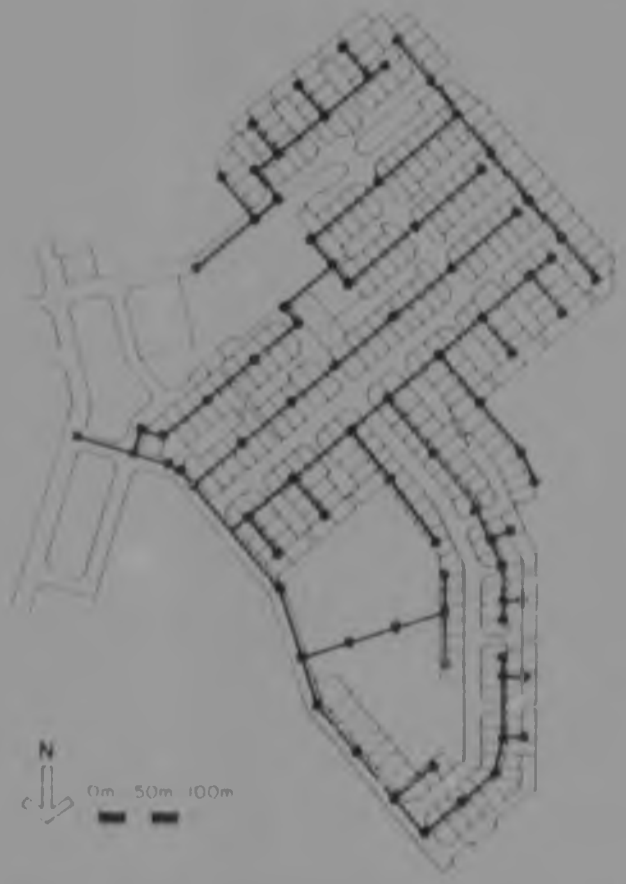


ORIGINAL LAYOUT

CONVENTIONAL - REVISED BY NBRI

49b.

ROADS	4 790m 14,5m/SITE	4 790m 14,5m/SITE
FORECOURTS	NONE	
NUMBER OF SITES(MIN 325m²)	330 SITES	

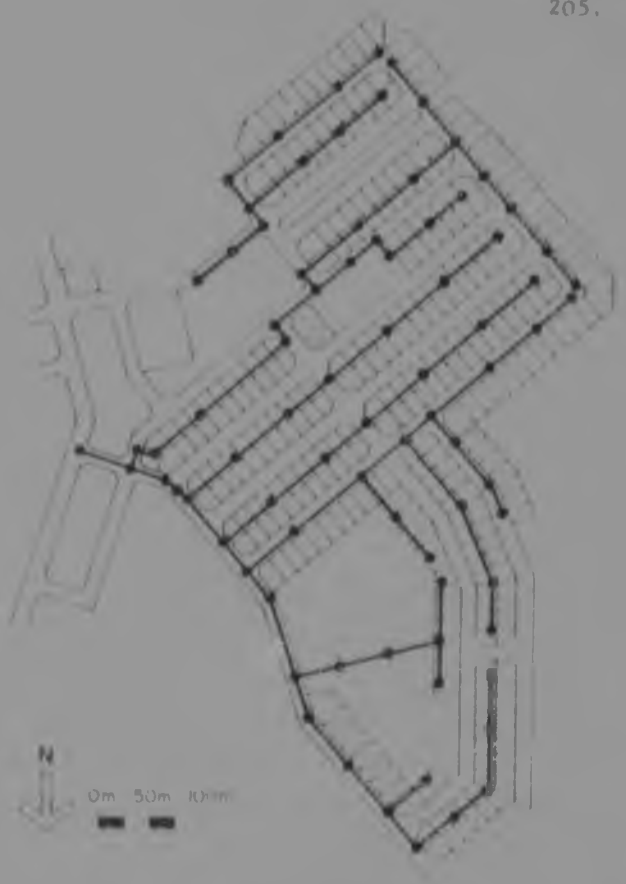


REVISED LAYOUT

ALTERNATIVE A
MOVEMENT

50a.

SEWERS AND WATER MAINS	4 405m	12,6m/SITE
MANHOLES	84	0,24/SITE
NUMBER OF SITES (MIN 325m²)		350 SITES



ORIGINAL LAYOUT

ORIGINAL
REVISED

50b.

SEWERS AND WATER MAINS	4 575m	13,9m/SITE
MANHOLES	84	0,25/SITE
NUMBER OF SITES (MIN 325m²)		330 SITES

2.3.2 Technology and Construction Procedures

With the development of kaNyamazane, the Eastern Transvaal Administration Board trained and used small-scale local contractors and conventional technology for building the government sponsored housing. This approach has proved most successful and makes a positive contribution to the development of the local building industry. For this (51) reason, it was decided to incorporate it in the building of the pilot project and to develop it further where possible.

Major features of the approach include the following:

a. Under the management of the Board, sand/cement bricks are made in kaNyamazane, using local river sand. This constitutes an important local industry that provides jobs for both skilled and unskilled local residents.

b. Other materials and components are purchased in bulk and stored in a depot from where it is supplied to the contractors.

c. The transport contracts for materials and components are let to local private sector contractors thereby making available opportunities for local entrepreneurship.

d. Actual building work is carried out by small-scale local contractors, as mentioned. It is handled on a labour-only basis where set rates are paid for specific set tasks. Therefore, the more that a contractor can produce, the more he will earn. These rates are under constant revue by the Board to ensure that they remain viable.

Aside from actual building work other contractors do plumbing, sewer- and water-main laying and painting and glazing respectively.

Each contractor is allocated a fixed quantity of work at a time. For example, the builders are usually responsible for the completion of five houses at a time. The frequency of allocation is determined by each individual contractor's performance.

e. The Board manages the supply of materials,

use of heavier equipment (e.g. concrete mixers and large power tools), co-ordinates the activities of the contractors and controls the quality of workmanship.

f. The contractors train and manage their own work teams. Some operate on a 'task system' while others pay their teams wages. In all cases the building programme offers opportunities for local unskilled workers to acquire skills. In fact, most of the contractors operating in kaNyamazane today started out as employees of other contractors and gradually worked themselves up to full contractor status.

While at this stage the Board does most of the management work, it is envisaged that in future, as the contractors become more experienced, they will be able to take over many of the functions at present handled by the Board thereby reducing the public sector roles in favour of private sector initiatives. For example, it may be possible for the brick-making plant to be taken over by a co-operative of local contractors. Similarly, a co-operative could become responsible for running the materials bulk-store.

The basic approach used here is a version of the 'task system' (discussed in PART 3 : 1.2.1 Cheaper Building Technologies). The use and development of small-scale local enterprise through this system is more than proving itself in kaNyamazane where it is demonstrated by the efficiency and economy with which work is proceeding (for a breakdown of materials quantities, costs and labour rates on a standard 51/9 house-type built in kaNyamazane in the 1977/8 financial year, see the Appendix).

This approach has the added advantage of boosting local economic development through more widespread local multiplier effects than might be expected if a large contractor from Johannesburg, for example, were to do the building work; not only would labour be imported with the result that their wages would mostly be spent elsewhere but profits would also be paid elsewhere. This kind of problem was evident in one of the large contracts let for the construction of houses at Mitchell's Plain in the Cape; the contractor who won the tender was not Cape Town based and imported labour from Natal thereby adversely affecting the local labour market and the local spending of wages and profits

It must be stressed, however, that the efficiency and economy of the kaNyamazane building programme relies on the calibre of the officials administering it. Without the necessary management skills, a large-scale development programme of this kind [illegible]t run into difficulties. For example, the [illegible] actors rely on the Board to maintain a smooth [illegible]ow of materials and components. Delays in this regard can radically affect the contractors' profit margins if they are not adequately compensated. This can make a substantial difference to the cost-effectiveness of the system.



51a. Local brickmaking yard.



51b. Transport contractors.



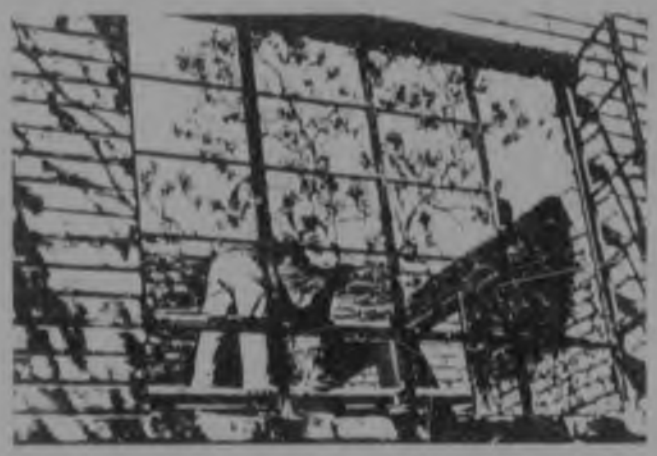
51c. Contractor involved with setting out houses on the site.



51d. Some contractors have their families working with them. This contractor has his wife digging foundation trenches.



51e The Administration Board supplies concrete for foundations from a mobile concrete mixer.



51g. Bagging internal walls. External walls have raked horizontal joints.



51f. Completing a plinth. Contractors train their own work teams.



51h. While a brick-laying team completes its work on one house, a roofing team works on the one next door.



51i. Sewer- and water-mains laying. Rocky ground makes excavation expensive.



51j. Plumbing contractor



51k. Painting and glazing contractor

2.3.3 House-Types

Before the pilot project began, there were two basic forms of housing existing in kaNyamazane, the most common being the standard 51/9 house-type (54m²) financed by the government. There were also a limited number of owner-built houses on serviced sites. (52)

As the company involved was eager to offer ready-built housing as an employment incentive, they opted to build a number of houses as th major part of their assistance programme wh' at the same time also offering assistance to those employees who were either building their own homes elsewhere or wishe to improve exis dwellings. This decision was reinforced by attitude of the Eastern Transvaal Administration Board who preferred ready-built housing to owner-builder schemes. In both cases the motivation was doubtless affected by the fact that housing which is already built has a higher 'inaugurability value'[14] than owner-builder projects. As it turned out, this was not an imposition on the company employees as they still had the choice as to which type of development they preferred and, except for those who already had their own sites and were building on them, all those who might have chosen an o ner-builder solution opted for the built houses once they realised what was being offered and the value of the favourable terms available through the company.

We had not yet become directly involved in the company assistance scheme when their housing committee decided to build twenty houses as a first phase. On behalf of the employees, and with minima consultation, the committee decided that all of these houses should be an improved standard 51/9 type; the Board made available sites in kaNyamazane for this purpose.

The improvements to the standard 51/9 type comprise' larger front windows, ceilings, internal plaster, internal doors, an improved grano floor finish, a small covered verandah and electricity reticulation. The total cost of these improvements added 60% to the cost of the standard type

We became direct'' involved with the company soon after the es were first occupied and tested the responses of occupants to what they had acquired. It soon became clear that the people living in them were concerned that only

improved finishes had been considered by their housing committee. They felt that it was unfortunate that all the houses were of one stereotype and would have preferred to decide for themselves on an individual basis what improvements they wanted rather than having all the houses improved in exactly the same way. They were also worried about the fact that the house-type did not appear to be very easy to expand. (53)

This led us to initiate a somewhat different approach for the second phase of the company scheme, involving a further 30 houses (by then the revised layout had been prepared and this part of the programme could be implemented in the experimental neighbourhood). Using the same budget limit as that determined for the first phase, a range of different house-types were designed. The basic costs of these varied between 2% and 17% more than the standard 51/9 house-type (without electricity and higher order finishes). These types comprise three basic 'series', or families, of house-type, all specifically designed for easy expansion and improvement. (54)

Because they all cost less than the available budget, an amount was available for each individual to use according to his own preferences and priorities. This amount, called a 'bonus', varied according to the house-type chosen. As all the participants wanted electricity installed, this cost was first deducted from the 'bonus' while the rest of it was available for them to spend at a later date, in most cases only after occupation. The available 'bonuses' were therefore as follows:

'Series' type	'Bonus'	Purchasing Power (Examples)
1	R300	materials for an extra room or finishes to the same level as the first 30 houses
2	R200	ceilings and internal plaster
3	R100	ceilings or internal plaster

While the basic house-types differed to varying degrees from the standard type in form, they used the same technology and similar floor areas thereby

keeping costs comparable. Because a standard range was used, economies of scale could still be achieved, while the existence of the 'bonus' ensured that individual adapatation of each house was possible quite soon after occupation. In the longer term, further adaptation and improvement was possible as the occupants started to invest their own savings, labour and initiative in developing their homes. This process is an ongoing one that naturally takes place according to individual preferences and priorities at a pace that each individual household decides for itself.

Apart from improving finishes the families may build on extra rooms and flatlets, small shops, workshops, garages and even offices for their own use, for their extended family or for letting purposes. In the case of accommodation for letting or commercial purposes, it forms a basis for local economic development but does require some form of control. This is achieved by a combination of approvals from both neighbours and the local authority to ensure that neighbours are not adversely affected by activities on any particular site. This <u>local</u> control facilitates the satisfaction of local priorities at the group of houses level. (56)



52a. Owner-builders in kaNyamazane.



52c. Owner-builders.



52b. Owner-builders.



52d. Owner-builder



52a. Owner-builders.



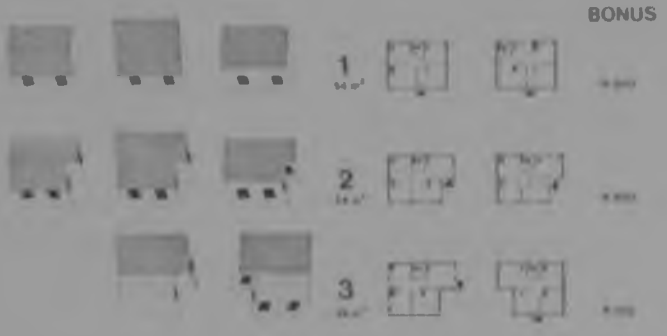
53a. Improved standard type. Twenty were built in the first phase of the company scheme.



52f. Standard 51/9 house-type (see the appendix).



53b. Discussions with occupants of an improved standard type. They were concerned that they were all the same and difficult to extend.



54a. The range of new types. The bonus is the difference between the available budget and the construction cost. It is available for individually selected improvements.



54b. Some of the new types on a model. All are designed for easy expansion and improvement.

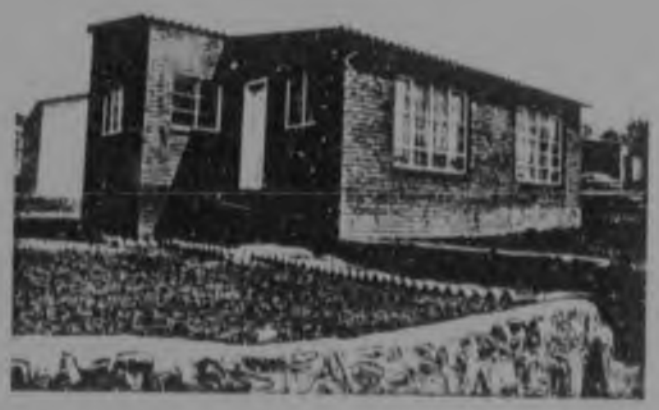




54c. Examples of series one house-types



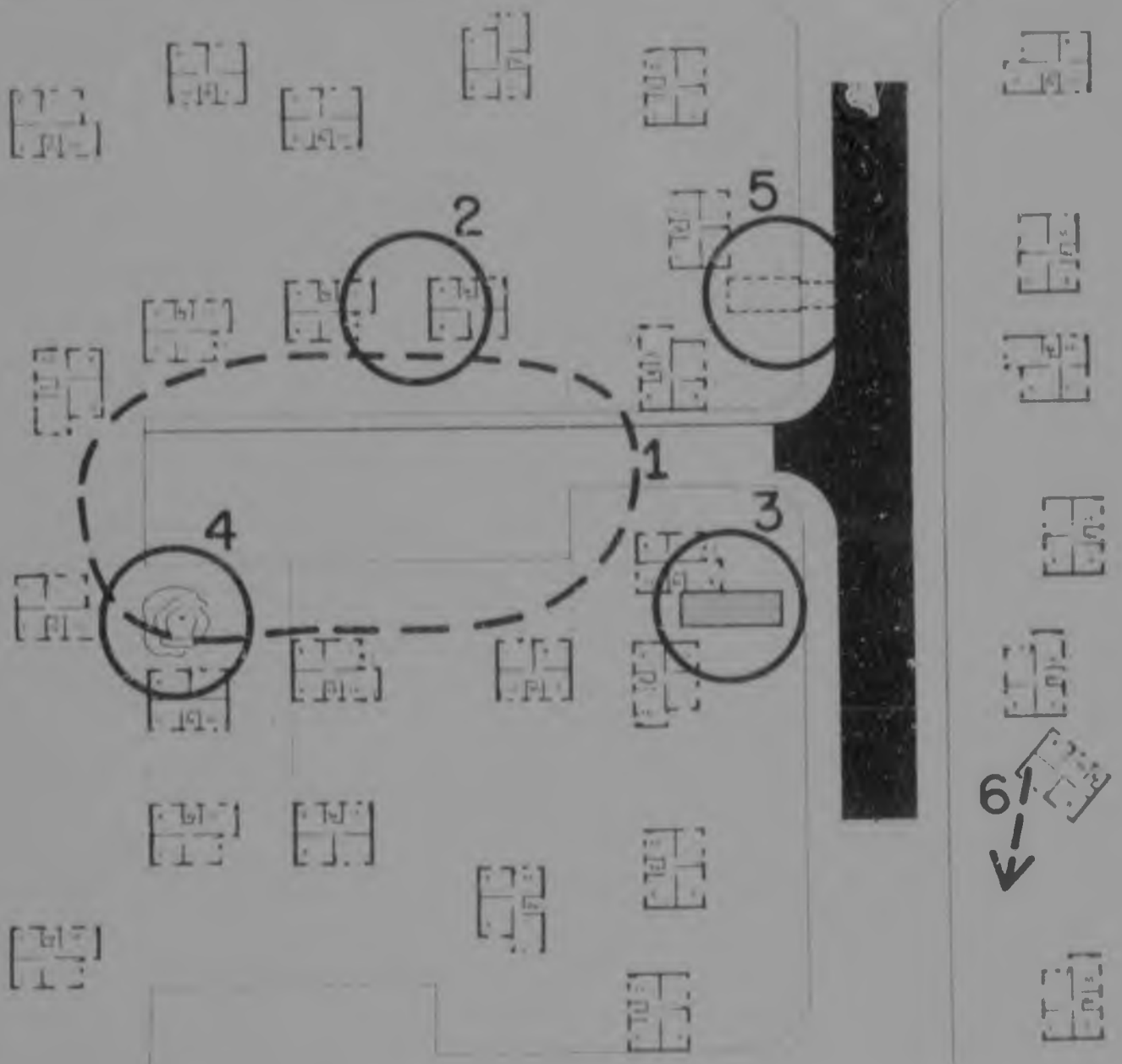




54d. Examples of series two house-types.



54e. Examples of series three house-types.



EXAMPLES OF BASIC - HOUSE SITING CRITERIA

1 PLACE BUILDINGS TO CREATE A SENSE OF ENCLOSURE

2 BUILD ON ONE BOUNDARY TO PROVIDE MORE SIDE SPACE FOR EXPANSION AND A BOUNDARY WALL FOR THE NEIGHBOUR

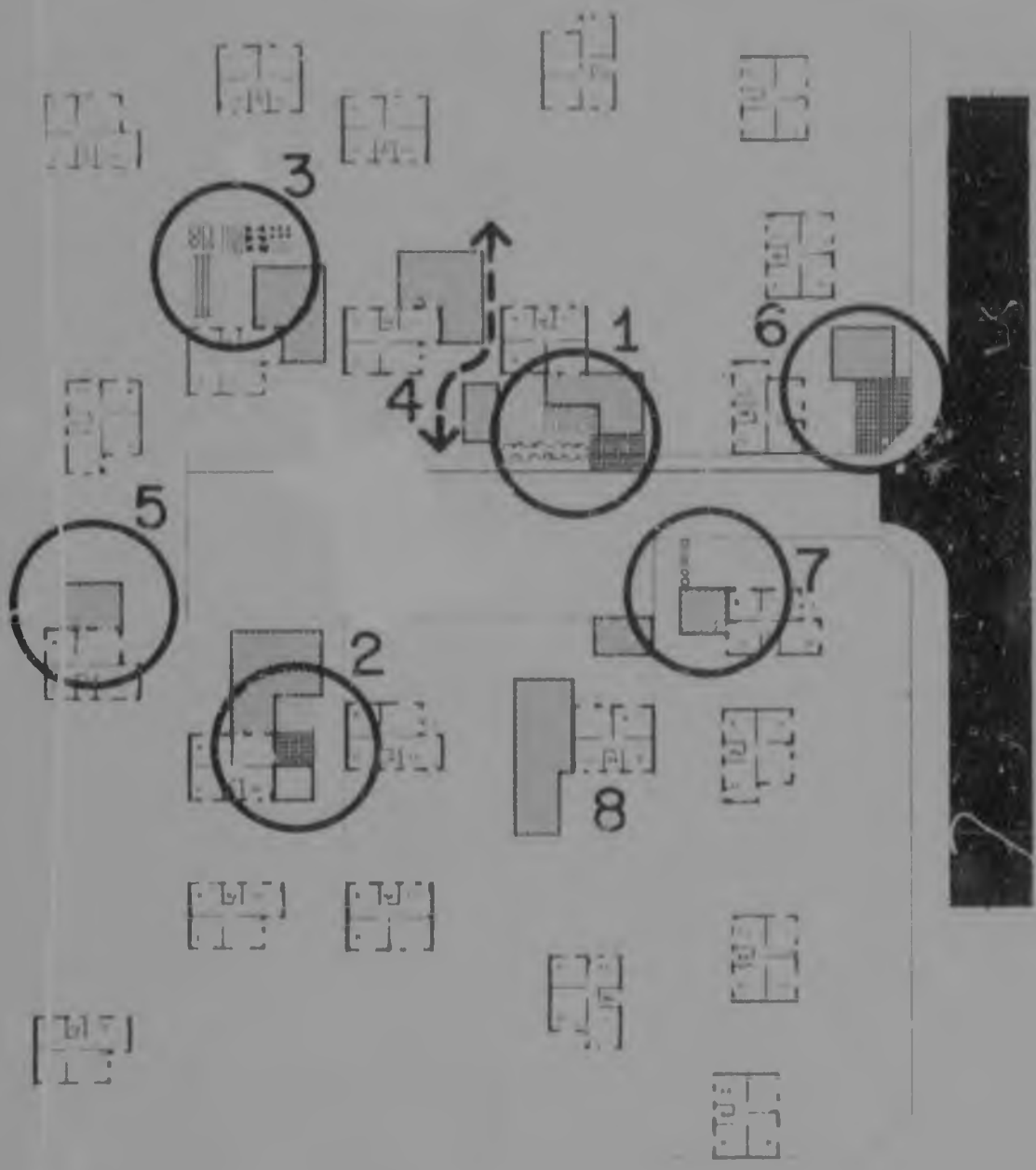
3 BUILD AT A DISTANCE FROM THE BOUNDARY SUFFICIENT TO ALLOW EITHER REASONABLE EXPANSION OR A MINIMAL PASSAGE

4 PROTECT EXISTING TREES

5 ALLOW FOR ACCESS BY VEHICLES AND AND ON SITE PARKING

6 ARRANGE FOR ADEQUATE SURVEILLANCE OF PUBLIC AND SEMI PUBLIC SPACES

54E.



EXAMPLES OF SPACE DEVELOPMENT OPTIONS

1 PRESENTATION OF A PERSONALISED, FORMAL 'FACE' TO THE MORE PUBLIC DOMAIN

2 PRIVATE OUTSIDE SPACE

3 SPACE FOR LAUNDRY DRYING, VEGETABLE GROWING AND OUTSIDE STORAGE

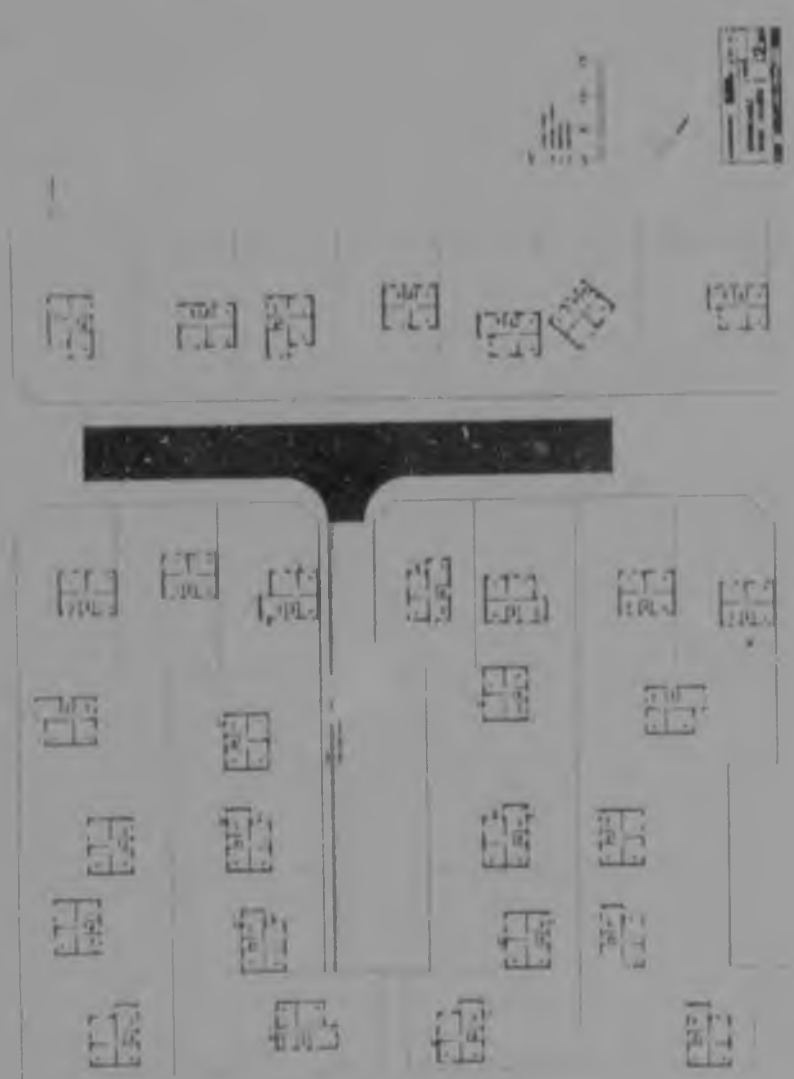
4 OPEN ACCESS TO REAR FOR STORM WATER AND MOVEMENT OF GARBAGE CANS etc

5 USE OF FORECOURT BOUNDARY AS A BUILDING LINE

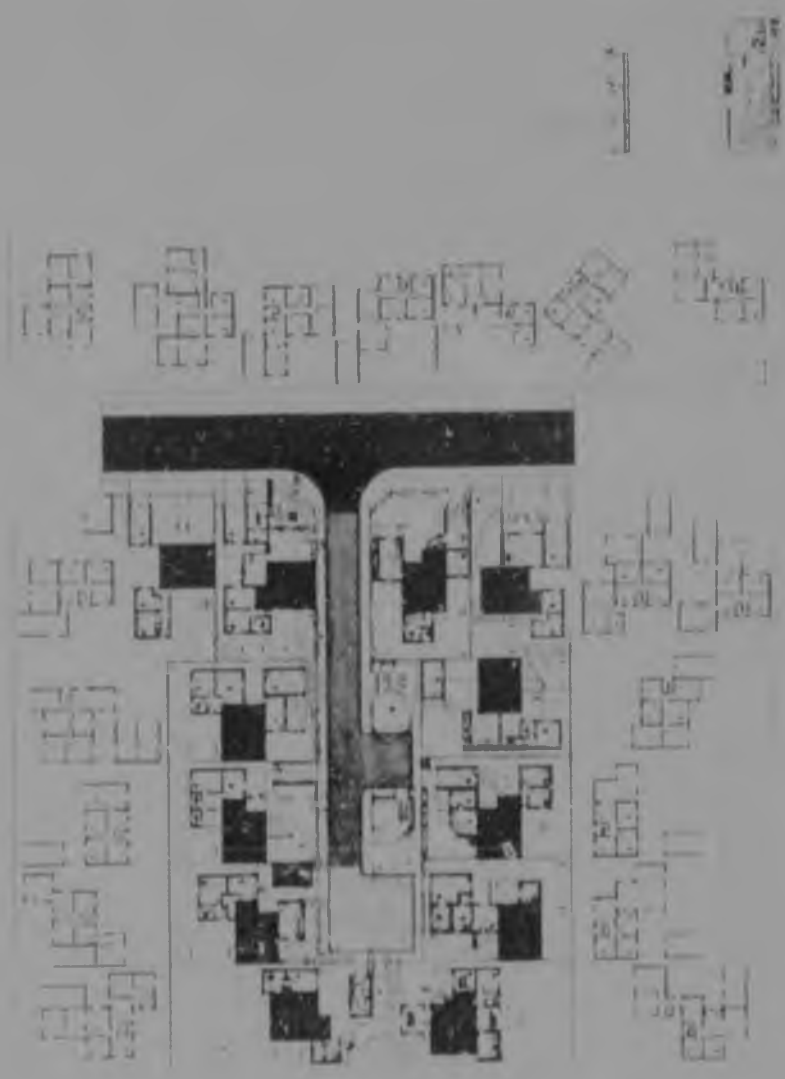
6 HIGH COMMERCIAL POTENTIAL eg SHOP

7 LIMITED PUBLIC ACCESS eg OFFICE

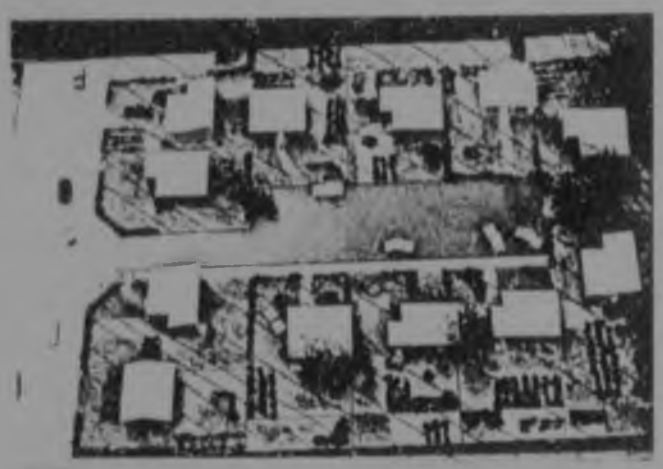
8 SITE COVERAGE OF UP TO 50% FEASIBLE



54h. Examples of basic houses as built



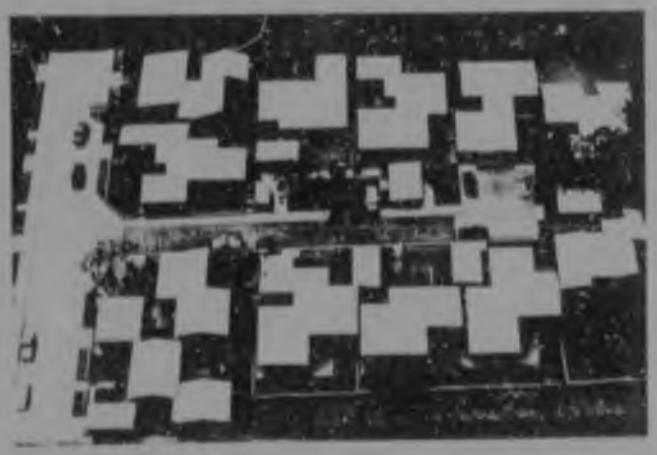
54i. Examples of basic houses expanded and improved. Also an example of forecourt development



54j. Model of houses as built.



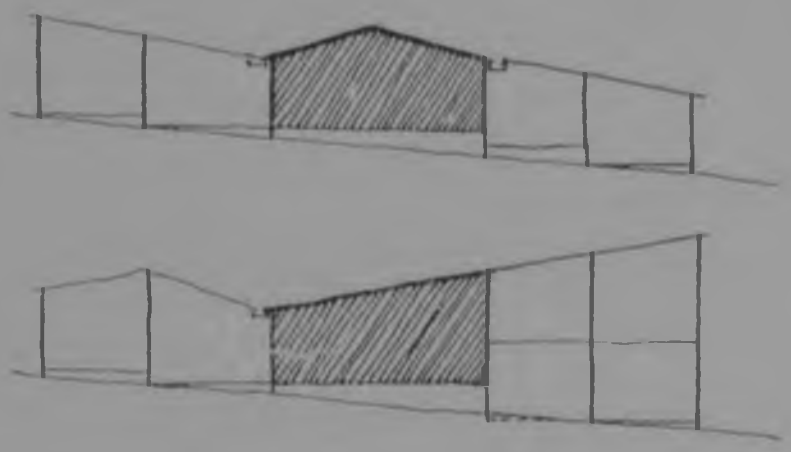
54l. As built.



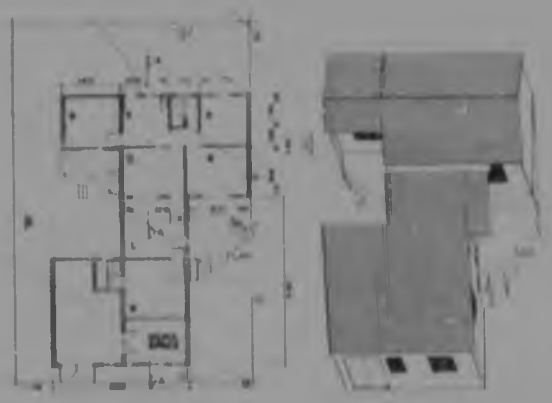
54k. Model of examples of expansion and improvement.



54m. Example of expansion and improvement.

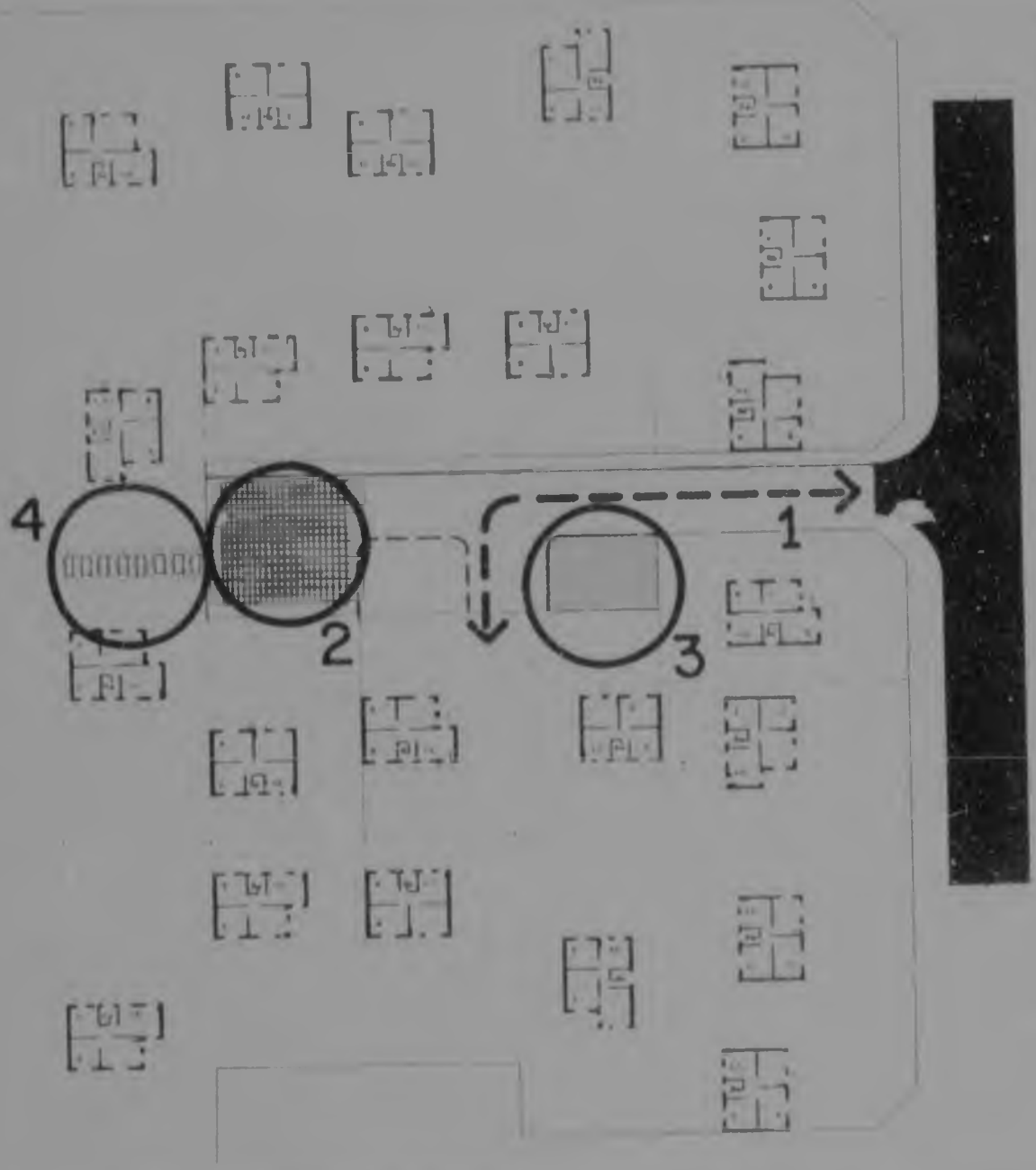


54n. Sections illustrating how the roofs can be extended and advantage taken of the slope.





54o. Examples of basic-house expansion. It can be done in stages.



EXAMPLES OF FORECOURT DEVELOPMENT OPTIONS

1 VEHICULAR ACCESS TO EACH SITE

2 SURFACED PLAY AREA FOR CHILDREN

3 SPACE FOR SHARED FACILITIES

4 CONTROL AND DEVELOPMENT OF THROUGHWAY

55a.



55b. Discussion of forecourt development by those who share it.



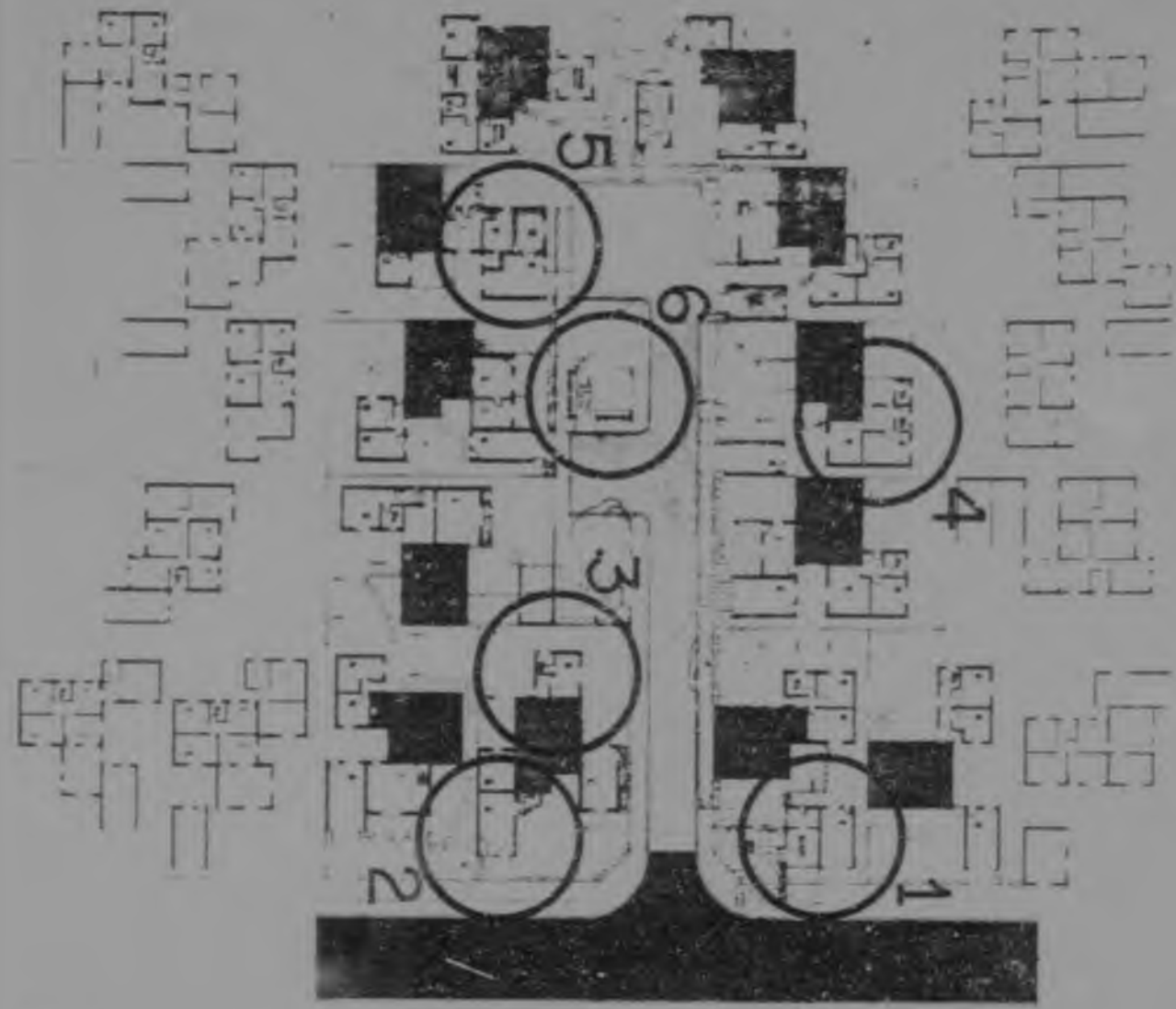
55d. Same forecourt in October 1978.



55c. Forecourt shared by ten employees of one company shortly after occupation, May 1978.



55e. Same forecourt in September 1979. Stones have been delivered for improving the edges and lining of stormwater channels.



EXAMPLES OF DEVELOPMENT FOR ECONOMIC ACTIVITY OPTIONS

1 SHOP FOR PERSONAL USE OR RENT

2 GARAGE FOR RENT

3 OFFICE FOR PERSONAL USE OR RENT

4 FLATLET FOR RENT

5 HOME INDUSTRIES WORKSHOP

6 PART-TIME MARKET



56b. Driving-school run from a private house



56d. Tailor operating from a garage



56c. Barber-shop in a garage



56e. Shop in a garage

2.3.4 Options, Choices and Decision-Making Procedures[1.16]

In dealing with this aspect we used an approach based on 'market-place' principles, discussed in earlier sections. The existing market in the wider kaNyamazane region was investigated; it was found to consist of the following:

a. Plots of land are relatively easy to come by in nearby tribal authority administered areas. They are allocated by local chiefs in the traditional way at a cost to the family of only a few rand per year. Services infrastructure is minimal and comprises rudimentary roads and pathways and scattered communal water-points. Schools and other facilities are of a very low order although they are being constantly upgraded through the efforts of the community itself. Transport services, however, are almost as good as those in kaNyamazane. Development controls are largely informal and people are allowed to keep livestock whereas in kaNyamazane proper they may only keep a limited number of chickens in an enclosure that has to conform with local health regulations.

b. There are a limited number of highly serviced sites for owner-builders in kaNyamazane itself but there is a long waiting list for them. Buildings have to conform to fairly stringent bye-laws and regulations. The Board is reluctant to increase the supply of this type of site because they claim that very few people can afford to develop them to a 'high enough standard'. This attitude is likely to change in future as kaNyamazane is due to be taken over by a locally elected council who will undoubtedly be more sensitive to demand and less concerned about the appearance of the houses.

c. Standard 51/9 house-types, built with government funds on serviced sites, are available for rental with an option to buy. Both rental and purchase are subsidized to the extent of at least 50% of the capital costs; this varies according to formulae based on the age of the houses. There is a high demand for these houses and there are also long waiting lists for them.

By financing the building of houses for their employees, the company was able to offer not only a short-cut to housing opportunities in a high-demand serviced housing area but were able to offer a variety of house-types and a choice of sites to their employees. They therefore increased the local housing market for their employees by supplementing the existing market.

With regard to the thirty houses built in the experimental neighbourhood, a series of choices was made available. Employees had first to decide whether or not they wished to participate in this aspect of the company assistance scheme. Those wanting to participate registered themselves with the housing committee who then selected thirty employees for this phase according to a number of criteria (e.g. length of employment with the company, special family or housing circumstances and so on).

The second area of choice for this group involved deciding whether or not they wished to be grouped together in one area of the neighbourhood or to be dispersed among other residents. After lengthy discussion on the subject the thirty participants split into two schools of thought; ten wanted to live together around one forecourt while the other twenty wanted to be dispersed. Ten prototype houses, representing examples of the whole range of types, were therefore built around one of the forecourts and twenty sites, randomly dispersed, were reserved in other parts of the neighbourhood. (571)

It was decided to actually build the first ten houses as prototypes from which people could choose; also because it was found that plans and models were not wholly adequate in communicating the basic options.

Having built the prototypes, the ten people who had opted to live together were invited to view them and decide on an allocation system. Three possibilities were raised by the group; the first was a straight allocation by the housing committee, the second involved a ballot system and the third required a form of negotiated choice. All three systems included an option to withdraw from the group if unsatisfied with the outcome. By a majority vote, the third system was accepted. It comprised each family having a chance to view the houses being offered

(this included the site of course) and understand the bonus implications and expansion possibilities (models were used for this) of each type. They then expressed their preferences in terms of first, second and third choices. Where there were no cases of more than one first choice for (58) a particular house, it was allocated to that person who had wanted it as a first choice. This process was repeated twice again before the allocations were completed.

Needless to say, this process generated a good deal of discussion and negotiation between the ten participant families and resulted in the majority obtaining their first choice while the rest managed to get their second. One family withdrew at that stage for reasons which were never clearly established although it was suspected that the rest of the group had put pressure on them to pull out because they belonged to a religious sect of which the group did not approve.

It had originally been hoped that the second group of participants (i.e. the other twenty) would be able to choose their house-types independently of their choice of site but, because of a necessary increase in the pace of the building programme to avoid rising costs due to inflation (an estimated 1,5% per month at that stage), it was decided to build the houses on these twenty sites before having the chance to complete a first stage choice procedure. Nevertheless, the house-types selected for these sites were based on an informed assessment of demand for certain types. This was based on the monitoring of responses to the ten prototypes.

The choice and allocation procedure chosen by the second group was similar to that used with the first group. This was no doubt influenced by the success with which it had already been employed.

Interestingly enough, many of the second group (who had chosen to live away from other company employees) later regretted that they had chosen not to form a close group of their own once they recognised the advantages that the first group enjoyed through knowing their neighbours well from the outset. Apart from the obvious advantages of being able to co-operate on joint decision-making, the group living together were also able to enjoy the security of well-known neighbours who could be trusted at an early

stage of occupation. This is clearly demonstrated by the fact that the forecourt shared by the company group was the first to be developed through joint effort and still remains one of the better kept and more attractive forecourts in the neighbourhood, having got off to a good start.

This experience became useful when a second Nelspruit company became interested in assisting their employees and made available finance for the building of thirty houses in the same neighbourhood. Their employees were able to visit the area, see the sites and house-types and discuss problems and opportunities with the residents. As a result, they chose to build all their houses in groups and also had the benefit of choosing their sites first. They only then selected their house-types from among those available.

As far as the employees of these two companies were concerned, four market situations were opened up in the new neighbourhood and they were able to influence each to a greater or lesser extent. By way of summary, they can be listed as follows:

i. Choose from among a range of ready-built houses with known neighbours.

ii. Choose from among a range of ready-built houses with strange neighbours.

iii. Choose a site in an area with known neighbours then choose a house-type to be built on it from among a range of known types.

iv. Put your name on a waiting list and then accept the allocation made to you (system administered by the Board).

Included in all of the above options is the choice of either renting or buying and, if bought, all the situations available can be readily adapted and improved by occupants according to their individual preferences, priorities and means.

Choice from among available options, each having an element of adaptability, offers a very real means for participation in the housing process, particularly when large-scale development projects are being undertaken by single agencies and there is limited scope for being able to

provide individualised services to each family at a sufficiently low cost. Choice is a means for individuals to control elements of the initial decision-making so as to suit their basic individual preferences and priorities at the time of first occupation whereas adaptability makes it possible to adjust their environment in accordance with the changes and transitions they experience over time as well as facilitating the satisfaction of short-term demands for improvement. If housing mobility is also possible, it further facilitates this process.

With regard to the question of what to provide in the initial stages, there are two basic approaches that we used in combination. Firstly preliminary studies which evaluated existing situations and gauged the demand for various types of options and secondly a range of small-scale prototypes and pilot schemes based on the first studies which were then evaluated once again in terms of responses and demand. If this cycle is repeated on an ongoing basis, the effective demand at various points in time can be monitored and responded to.[4.18]

As discussed earlier, surveys on their own are generally to be regarded with suspicion simply because they tend to be time-specific and cannot take account of transitions over time. They are subject to communication problems in the phrasing and interpretation of questions and answers and cannot hope to cope adequately with the complexities of the real world situation with which people are actually faced when making a decision about their housing (particularly with regard to preferences and priorities). This was amply demonstrated in the kaNyamazane project where people were questioned about their preferences with regard to sites on the one hand and house-types on the other (before they had actually seen the development or knew much about it). They were shown layout plans and site models from which to choose a site as well as plans and models of house-types and asked to select which site and which house-type they would prefer. This exercise was repeated several times with the project participants on an individual basis as a way of familiarising them with the issues at stake and their expressed preferences were monitored at each meeting. Even though the sample group was relatively small and the issues quite specific, it was found that most of those interviewed changed their minds about preferences

from one interview to the next. Indeed, when they did make their final choices of actual houses and sites, it was found that only half the participants were consistent with their final choice before seeing the actual development and, even then, they were consistent only with regard to one of the variable namely the house-type. Clearly there is, one cannot rely to any major extent on survey data alone, especially from a once-only interview

Another aspect which was highlighted in the kaNyamazane project, was the difficulty with which people perceive situations with which they are unfamiliar. For example, all the participants were familiar with and could readily relate to the standard layout and house-type in kaNyamazane but could not conceive of the reality of the forecourt concept and the alternative house-types until they had actually seen and experienced them. Similarly, this was clear from the later regrets that employees had about not choosing to live together when they had the chance to, even though the advantages had been discussed with them. Significantly though, they appreciated that the choice and the 'mistaken' decision had been their own and they therefore tolerated it quite readily. Given the chance for housing mobility, however, those who are most unhappy would be able to do something about it.

I know of surveys which have been conducted in Black residential areas of South Africa in which people are asked whether they would prefer to live in a detached house on ground level or a flat at the top of a ten-storey block. It is hardly surprising that most people indicate a preference for the detached dwelling but it is presented in all seriousness by well-meaning researchers as evidence of the preferences of the community in question and therefore a guide to policy-making! The folly of this approach is clear when it is borne in mind that not only is the interviewee's experience of living in a flat at the top of a ten-storey building likely to be either non-existent or at least minimal but the question does not include any reference to the advantages and disadvantages of this kind of environment, its cost or location. In other words there is virtually no real basis for expressing a preference and the circumstances under which these questions are asked are often such that the interviewee can see no real advantage to be gained by answering it in any other

way than what is thought to be the answer that the interviewer most wants to hear.[4.19]

Returning to the kaNyamazane project however, where a range of starting-point options were provided in the form of a type of market and where the adaptation of houses was facilitated by the existence of the 'bonus', it was found that people tended to want to live in the houses for some months before deciding what improvements to make with the 'bonus' funds although in the early stages most residents did spend a small part of it on internal doors. Nevertheless, many site development activities such as gardening and the building of boundary walls were begun soon after occupation, usually financed out of personal savings. Some people even started planting trees on their sites before the builders had quite finished off the houses. This activity was given a boost some six months after occupation when the company offered a number of cash prizes for a gardening competition that proved very popular. (10)

Apart from individual action in home choice and further development, the groups sharing forecourts began to discuss ways of improving and maintaining them quite soon after occupation. In the initial stages, priorities for forecourt development were quite low in relation to those each family had for improving their individual homes. Nevertheless, they did take early action with regard to more immediate issues such as stormwater control and cleanliness. As discussed earlier, this necessary action played a positive community-building role by bringing together neighbours around a point of common concern.

Although action has been predictably slow regarding further development of the forecourts, a number of small projects are being considered. For example, the first group of ten company employees sharing a forecourt are planning to plant trees, lay paving and put in curbing to improve stormwater drainage. Some members of this group are even discussing the possibility of building a small shop in the forecourt but first have to persuade the rest of the group that they can all benefit from it. (5)



51. Location of the thirty houses in the company scheme.



52a. Recording of first, second and third choices of house.



52b. Explaining the expansion potential of a particular house.



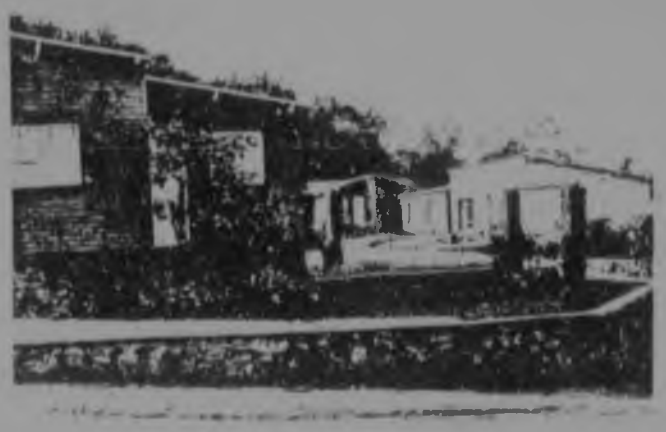
59a. Building a garden wall.



59b. Soon after occupation people build boundary walls, plant vegetables and import top-soil for their gardens.



59c. Landscaping of the site.



59d. Prize-winner in the gardening competition.

2.3.5 Demand for Assistance with Home Improvement

The preliminary investigations in kaNyamazane indicated a strong demand for assistance in technical, legal, financial and even social matters with regard to home development. This demand was reinforced by a proliferation of home expansion and improvement activities that began soon after the option to buy houses had become available and many people were experiencing difficulties in implementing improvements effectively. (60)

Two functioning forms of assistance existed. On the one hand, the Eastern Transvaal Administration Board officials provided a form of informal advisory service on an ad hoc basis while a number of architectural draughtsmen in the area provided a kind of 'professional' service on the other.

While the NBRI recommended to the Board that they establish a 'community aid facility' similar to that in Ngangelizwe, the first company involvement was prepared to establish an in-house one of its own. The second company responded in a similar way. Nevertheless, negotiations have begun to find support for the 'community aid facility' for all the residents of kaNyamazane by getting collaboration between the Board and the various local private sector companies interested in assisting their employees. The separate facilities operating within the two companies at present will continue to function as pilot schemes until this other facility gets going.

The 'community aid facility' established by the first company had begun operation as an informal extension of the activities of the company housing committee in the early stages of the project. It gradually expanded its activities, with our assistance, to deal with the various aspects of problem identification, priority determination, strategy formulation and implementation as the project progressed. This facility was also responsible for collecting data on the project participants, assisting with decision-making procedures and processes and advising participants with regard to the implications of the various options open to them. (61)

The facility also plays an ongoing role in assisting employees with home improvement ideas

and the acquisition of furniture and fittings at lower cost through bulk purchases while also offering assistance and advice on such matters as hire-purchase agreements. Indeed, on moving into new houses, often from temporary accommodation, families are frequently stimulated to acquire new furniture and fittings to suit the level of their new surroundings. The substantial expenses involved are considered by them to be necessary investments and usually enjoy a high priority; this is an aspect of the housing process that is often underestimated.

(62)

The facility is manned at this stage by members of the company staff from the management, personnel and technical divisions on a part-time basis. The fact that it does interfere with their normal duties is an additional incentive for the company to collaborate with other employer bodies so as to be able to afford to employ full-time people to provide the necessary services on a shared basis. No doubt this will come about when the combined 'community aid facility' is established.

Aside from the factors already mentioned, it is vital that problems and issues are identified and appropriately dealt with as they arise; the 'community aid facility' plays a significant role in this monitoring function and has to remain well-equipped to do so on an ongoing basis if its longer term performance is to remain useful.



60a. Stockpiling of bricks prior to building extra rooms.



60c. A garage with extra accommodation above. Built behind a standard 51/9 type.



60b. A standard house in kaNyamazane altered beyond recognition.



60d. Addition of extra accommodation in front and a g. age on the side.



60e. Additions to the side of a standard house-type.



60g. Larger windows installed and materials stockpiled for additions, 1978.



60f. Transformation of the front of a standard house-type.



60h. Same house as above after one year with additions partly completed.



61a. Using models to explain the improvement and expansion potential of the new house-types.



61a. Using models to explain the improvement and expansion potential of the new house types



61b. Discussing the extension of a series three house-type with the owner.





61c. Using large-scale models of house-types to explain how a particular house can be extended.



61d. Lima, Peru. A property development group displays models and drawings of a wide range of house-types. People can choose one 'off the shelf' or have one individually designed.



62a. Moving into a new house



62b. Furniture and fittings bought on hire-purchase.



62c. Assistance is provided with bulk purchases to achieve savings as well as with the legal aspects of hire-purchase agreements.

CONCLUSION

According to Skeen's statistical analysis of the low-income housing situation in South Africa, there is an annual demand of more than 200 000 houses and, in order to provide these within the framework of current housing policy, it would require (as discussed earlier) an estimated R600 million per annum at 1977 prices for housing subsidies alone! In the 1978/9 financial year a total of less than R500 million was budgeted for housing (subsidized and otherwise) and it is unlikely that budgets can be significantly increased by the public sector in the future[4.20] This factor, combined with spiralling building costs, points to the need for critical re-assessment of current practice in providing housing opportunities for low-income groups if we are to adequately cope with the growing demand.

The realities of socio-economic, socio-cultural and housing transitions, being experienced by low-income communities in particular, mitigate against trying to solve the 'housing problem' only by means of spending more money. Even if the funds are available, it does not guarantee that people's housing problems will be solved. The issues associated with people being able to achieve well-being, or happiness, are related to their being able to have a sufficient measure of control over their own situation by being directly involved in problem identification, priority determination, strategy formulation, decision-making and implementation.[4.21] For this reason, a wide diversity of housing options are necessary so that participation in decision-making can be achieved through the exercise of choice as well as through more direct local action.

In the absence of sufficient public sector resources to adequately cope with the demand, the roles that can be played by the private sector have to be increased at all levels. For example, not only by larger employer bodies assisting employees but also by small-scale local entrepreneurs and small groups and individuals who have both the ability and a willingness to contribute. In the case studies and projects described it is clearly demonstrated how private sector roles in the construction and further development of homes and their immediate surroundings has enabled the public sector to divert its limited resources into forms of

development that are more difficult for the private sector to undertake on a large scale, not least of all to the acquisition and preparation of serviced land.

In order to achieve a shift or emphasis from the conventional approach (which involves the public sector playing the major role for all aspects of development) to one which involves much greater collaboration and use of private sector initiatives, app opriate planning frameworks are required as well as housing policy that incorporates the necessary organisational structures, procedures and incentives. The operation of facilities such as the 'community aid facilities' in both Ngangelizwe and kaNyamazane are vitally important in this regard as they function as necessary mediating institutions between the public and private sectors. Because they are locally based, they can respond to local demands, problems and opportunities. These facilities also contribute in no small way by assisting people to help themselves through informed decision-making thereby facilitating grass-roots development and aiding in the transitions which people are constantly experiencing.

Most important of all is the need to constantly experiment with new ideas and processes through pilot and demonstration projects like those carried out in kaNyamazane and Ngangelizwe so as to be able to evolve new ways and means of facilitating the achievement of improved human well-being. The benefits of these projects are mostly in their demonstration effect not only for the policy-makers and administrators but also for the communities concerned through exposing them to new opportunities and monitoring the responses. In the kaNyamazane project, for example, benefits included:

a. Experimentation with alternative physical development in layout planning and house-types.

b. The direct involvement by participants through their being able to choose from among available options which they are then able to adapt and modify according to their own preferences and priorities. This enables them to achieve a high measure of control over the decisions that affect their environment thus achieving a much closer match between their individual needs and what is actually supplied than had previously been possible while also taking account of future changes in their individual circumstances.

c. The building programme provided a boost for local employment opportunities as well as the development of skills which could later be offered in the further expansion and development of the houses and their surroundings. Therefore, the approach used contributed to the development of local entrepreneurship and local economic development.

d. The additional capital from the private sector (through employers assisting employees) that was spent in kaNyamazane increased the local demand for building services, components and materials which in turn contributed to local industry and job availability.

e. Enhanced living conditions for employees benefited employers through higher productivity by reducing absenteeism and labour turnover. This was particularly true for the first company involved in the experimental neighbourhood. They reported a reduction in labour turnover of 400% since starting their assistance scheme.

f. The success of the first company assistance scheme stimulated other private sector companies to start similar programmes. A snowball effect was therefore achieved.

g. Development agencies and local authorities have been able to take note of the innovations in the project. For example the East London Municipality and the Vaal Triangle Administration Board have begun using the layout principles demonstrated in the experimental neighbourhood.

If one is to consider the role of the architect in housing development, this dissertation is an attempt to highlight the necessity for an holistic approach to development where the line is clearly drawn between housing processes and housing products and services. It is for the architect to ensure that, within the context of a host of housing processes with which people are involved, they have access to as wide a range of appropriate products and services as possible and to demonstrate opportunities available in various types of assemblies. The two case studies described in PART 3 serve to illustrate how an architect can provide guidance to people (who are otherwise very capable of managing the improvement and development of their homes) without necessarily having to design it for

them to the last detail.

Buildings should not be seen as ends in themselves which are designed, built and completed for all time but need to respond to the transitions of the people who use them. For example, in ka-Nyamazane, the physical development which exists today is by no means the end of the story. One can expect the houses and their immediate surroundings to continue developing over time through gradual, incremental changes. Indeed, the environment has been specifically designed to respond to these changes and to the dynamics of locally perceived needs and priorities. By monitoring longer term developments, valuable feedback will be provided for the planners, administrators and others who have contributed - not least of all, the people living there!

APPENDIX

COST ANALYSIS OF THE STANDARD 51/9 HOUSE-TYPE AS BUILT IN KANYAMAZANE IN THE 1977/78 FINANCIAL YEAR

Item	Quantity	Rate	Amount
MATERIALS			
Foundations (concrete footing)			
To internal walls	18,51	59c/m	10,92
To external walls	28,68	86c/m	24,66
Brickwork			
Foundation walls 110mm	10,00	R 2,18/m^2	21,80
230mm	15,49	R 4,31/m^2	66,76
Superstructure 110mm	46,81	R 2,17/m^2	101,58
230mm	64,66	R 4,30/m^2	278,04
Brickforce	142	8c/m	11,36
DPC 114mm	19	8c/m	1,52
229mm	29	16c/m	4,64
Airbricks	6	45c each	2,70
Surface bed			
Floor	53,95	R 1,32/m^2	71,21
Bagging			
Walls	161,18	7c/m^2	11,28
Doors			
External (Chawl)	1	R21,50 each	43,00
Frames (internal	4	R 7,70 each	30,08
Windows (standard)			
C2H	2	R 8,00 each	16,00
C3H	2	R 9,70 each	19,40
NG3	1	R 5,40 each	5,40
D522H		R18,33 each	

APPENDIX (Continued)

Item	Quantity	Rate	Amount
Glass			
Clear 3mm	4,81	R 3,20/m^2	15,39
Obscure	[illegible]	R11,79/m^2	6,37
Putty	12	27c/Kg	3,24
Paint			
Enamel : windows	9,64	24c/m^2	2,31
doors	15	24c/m^2	3.60
Cemwash	4	R 4,68/bag	18,72
Roofing			
Timber 50mm x 152mm	36	65c/m	23,40
50mm x 76mm	18	36c/m	6.48
'Big Six' 3,300mm	20	R 6.39 each	127,80
ridge piece	10	R 2,65 each	26,50
Precast concrete planks (over passage)	5	R 1,50 each	7,50
Plumbing			
Cold water only plus drainage		R86,72	86,72
Sundries			
Nails, screws, bolts, steel rods, wire ties, etc. plus breakage and wastage		R70,00	70,00
MATERIALS SUBTOTAL			R1 118,38

APPENDIX (Continued)

Item		Quantity	Rate	Amount
2. LABOUR				
Substructure				
Excavations		47,37	24,277c/m	11,50
Concreting		47,47	16,9939c/m	8,05
Brickwork		41,09	50c/m^2	20,55
Corners		4	R 5,00 each	20,00
Superstructure				
Brickwork	110mm	45,22	50c/m^2	22,61
	230mm	64,66	R 1,00/m^2	64,66
Corners		4	R10,00 each	40,00
Roofing				
Timber		6	R 2,29 each	13,74
Ridge		10	50c each	5,00
'Big Six'		20	50c each	10,00
Finishes				
Plaster Bathroom			R11,50	11,50
Painting and Glazing			R17,25	17,25
Plumbing				
Cold water only plus drainage			R28,75	28,75
LABOUR SUBTOTAL				R 273,61
3. OVERHEADS				
Supervision			R50,00	50,00
Plant, transport, insurance and miscellaneous			R200,00	200,00
OVERHEADS SUBTOTAL				R 250,00
GRAND TOTAL				R1 641,99

APPENDIX (Continued)

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2. LABOUR				
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OVERHEADS SUBTOTAL				R 250,00
GRAND TOTAL				R1 641,99

TIPE/TYPE 51/9



Woon/Living ..... 11 916 m²
Kombuis/Kitchen ..... 8 732 m²
Badkamer/Bathroom ..... 3 581 m²
Slaapkamer 1/Bedroom 1 ..... 11 704 m²
Slaapkamer 2/Bedroom 2 ..... 8 742 m²





51/9 house-type of the kind built in kaNyamazane (also in vast numbers throughout South Africa). The type-number is derived from the year 1951 (51/--) and '9' refers to the type-number of the series developed in that year.

(The illustration above is reproduced from a booklet: 'How you can Help Your Black Employee move into a Secure Home'. Johannesburg : Johannesburg Chamber of Commerce, 1977.)

FOOTNOTES AND REFERENCES

1.1 John F.C. Turner often refers to the oppressive nature of prescriptive law while arguing strongly in favour of the liberating qualities of proscriptive law. KAPLAN, D.S. Course notes from Special Programme : Housing in Development, Development Planning Unit, London 1978.

1.2 The word 'planning' (verb: 'plan'), as used in this dissertation, denotes the combined processes of analysis and creative synthesis. In other words, 'planning' is seen to be synonymous with designing.

1.3 For elaboration on the poverty/population growth cycle see : DEWAR, D and ELLIS, G. Low Income Housing Policy in South Africa (P.21) Cape Town : David Philip, 1979.

1.4 In India, for example, attempts were made to encourage men to have sterilisation operations in exchange for transistor radios.

1.5 By 1977, this trend was already evident. In South Africa the percentage population growth-rate was 3,1% per annum for the period 1960-75 whereas between 1970 and 1975 it was 2,6% per annum. World Bank Atlas (P.14) New York : World Bank, 1977.

1.6 DE VOS, T.J. 'Housing in South Africa : The Challenge of the Future'. Barclays Bank Review, Dec. 1975. (PP. 12 - 15).

1.7 TURNER, J.F.C. and FICHTER, R. ed. Freedom to Build (P.241). London : Collier-Macmillan, 1972.

1.8 KAPLAN, D.S. Course notes from Special Programme : Housing in Development. Development Planning Unit, London 1978.

1.9 On a recent visit to Ciskei, a rural development planner with the Ciskei Department of Agriculture indicated to me that, in his estimation, their rural population would have to be reduced by about 70% if efficient, 'modern' agricultural techniques were to be introduced throughout Ciskei on a 'viable' basis. On the other hand, other kinds of production techniques and ways of looking at economics could present a different

picture. See for example : SCHUMACHER, E.F. Small is Beautiful. London : Abacus, 1974.

1.10 KOENIGSBERGER, O. 'The Absorption of Newcomers in the Cities of the Third World' (P.4). Institute of Development Studies, University of Mysore. January 1976. (mimeo)

1.11 Ibid.(PP. 4-6)

1.12 ILLICH, I. Tools for Conviviality (P.12) Glasgow : Fontana 1975.

1.13 ROBERTSON, J. The Sane Alternative (P.44). London : James Robertson, 1978.

1.14 An example of a public housing project in South Africa still not fully occupied after many years is the Algoa Park scheme in Port Elizabeth.

1.15 Illegal in terms of overcrowding as defined in the Slums Act or in terms of building and planning regulations.

2.1 This process of policy development has been very neatly articulated by Charles E. Lindblom in an article: 'The Science of Muddling Through' which appeared in : Public Administration Review, Spring 1959.

2.2 For a description of how minimum standards in South Africa were developed, see : CALDERWOOD, D.M. Principles of Mass Housing (P.37). Pretoria: Council for Scientific and Industrial Research, 1964.

2.3 'Quality of Life' is the current 'jargonese' that refers to an holistic view of man's well-being. It relates very much to how people perceive things and their values at any point in time.
See: RAPOPORT, A. Human Aspects of Urban Form (PP. 24-31). Oxford: Pergamon Press, 1977.
also:
MARANS, R.W. 'Evaluation Research and its uses by Housing Designers and Managers'. Paper from the Institute of Social Research, University of Michigan. Ann Arbor, 1979.

2.4 Early use of the 'task system' is described in : CALDERWOOD, D.M. Native Housing in South Africa (PP. 164-173). Pretoria: Council for Scientific and Industrial Research, 1955.

2.5 Fred Harris, for example, a successful Cape Town building contractor, uses a version of the task system for housing contracts.

2.6 ANDREW, P. and JAPHA, D. Low Income Housing Alternatives for the Western Cape (P.117) Cape Town : David Philip, 1978.

2.7 Based on my own estimates of unskilled labour costs in Mabopane, Umtata and kaNyamazane.

2.8 Experience in self-help projects indicates that people often hire labour to do their share of the work; this labour is less accountable to the project organisers and problems often arise. In a U.N. project in Mbabane, Swaziland, that I visited, the costs of overheads in this regard were enormous. It took them over five years to build just over one hundred core-houses. Sometimes there were as many as five professional UN men supervising the work!

See also : CALDERWOOD, D.M. opp. cit. (P.105).

2.9 TURNER, J.F.C. and FICHTER, R. ed. opp. cit. (P.3).

2.10 From discussions with Dindayal Mathur of the Municipal Corporation of Delhi, London 1978.

2.11 In kaNyamazane, the improvement to a 51/9 house-type by plastering and painting internal walls, putting up ceilings, hanging internal doors, improving floor screeds, building in of larger windows and providing a small verandah added 25% to the cost of the house.

2.12 SKEEN, C. 'Provision of Housing for the Low Income Group'. Paper to the International Futures Conference: 'The Road Ahead', Grahamstown, July 1978.

2.13 For an assessment of the benefits of housing investment on social welfare, capital formation, income creation, external accounts and domestic price levels, see: JÖRGENSEN, N.O. Housing Finance for Low Income Groups; 2nd ed. (PP.38-47). Rotterdam : Bouwcentrum, 1977.

2.14 Ibid. (P.88)

3.1 From HABITAT : United Nations Conference on Human Settlements, Vancouver, Canada, 31 May -

11 June 1976; Recommendations for National Action. A summary entitled : 'The Vancouver Action Plan' appeared in Habitat International, 1977, Vol. 2, No. 5/6 (pp 409-414).

1.7 LAWLESS, P. 'Strategic Designs' Architectural Design, 10/76 (PP 624-625).

4.1 FINLAYSON, K.A. 'Implications of Depth Perception on Blacks'. Pretoria: Unpublished Memorandum, National Building Research Institute, 1974.

4.2 A summary similar to this was included in recommendations by the NBRI to the then Department of Bantu Administration and Development via the Low-Cost/Income Housing Research Steering Committee. Called 'Principles for Development with Community Involvement', the recommendations were approved in principle for wider use, 1976.

see also: FINLAYSON, K.A. 'The Role of Community Involvement in Low Income Housing'. Paper to the South African Institute of Housing Management Biennial Housing Conference, Durban, September 1977.

4.3 Aspects of the Vaal Triangle Administration Board's approach are described in : KNOETZE, J.C. 'An Economic Rationale for Urban Development as Applied in the Vaal Triangle'. Paper at the NBRI conference: 'Towards Viable Communities', Pretoria November 1978.

4.4 WOOLERY, ARLO. 'New Methods for Financing Urban Growth'. Paper to the conference: 'New Trends in Urban Planning', Tel Aviv, December 1977.

4.5 KAPLAN, D.S. opp. cit.

4.6 From officials of the Umtata Municipality, September 1979.

4.7 Ibid.

4.8 We conducted a random survey of rental accommodation in Ngangelizwe during 1975.

4.9 I visited there in April 1979.

4.10 Delta Manganese (Pty) Ltd.

4.11 These categories are similar to those used by Caminos. See: CAMINOS, H. and GOETHERT, R. Urbanization Primer. (P.92) Cambridge, Mass.: MIT Press, 1978. While in London, in 1978, I attended a seminar given by Horacio Caminos where we used the kaNyamazane Project as a case study for land utilization analysis.

4.12 Ibid.

4.13 At the time of writing the tarring and stormwater drainage contracts had not yet been implemented although a budget was set aside for it in the 1979/80 financial year.

4.14 This is an expression used by JORGENSEN. Opp. Cit. It refers to the desire of politicians and the like to be able to show what 'good work' is being done. Fully developed, high order projects have much more value in their eyes as something that can be inaugurated (with the cutting of ribbons etc.) than site and service schemes where appearances tend to be less dramatic.

4.15 For detailed drawings of each of the house-types see: 'The kaNyamazane Project : House-Types, their Location and Examples of their Expansion and Improvement'. Pretoria: NBRI Report (mimeo), 1979.

For the detailed costs of each of the house-types see: 'The kaNyamazane Project : Cost Analysis of the House-Types'. Pretoria: NBRI Report (mimeo), 1979.

4.16 With regard to this aspect of the project, the Human Sciences Research Council was invited to assist with monitoring peoples' responses to options and choices. Features of this exercise are contained in a report:

SMEDLEY, L.N., FINLAYSON, K.A. and KAPLAN, D.S. 'Choice in Housing'. Pretoria: South African Human Sciences Research Council, Research Finding No. S-N-158, 1979.

4.17 Vinto Minerals (Pty) Ltd.

4.18 In the Mitchell's Plain Development, Cape Town, a marketing approach based on that used by private sector property developers has been used with some success.

(viii) This survey was undertaken for a government department by an otherwise reputable research group. At this stage, it is still cor

(ix) Recent announcements about a massive l. icome housing programme in the next twenty years have not as yet dealt with how the funds will be provided See for example: '. Million Houses to be Built'. The Star, Nov. 13 1979 : 1, col. 1.

(x) In this dissertation, I have not attempted to address directly the question of specific policy and related legislation in the South African context which conflicts with or inhibits the development approach discussed here (this would have to be the subject of another study or dissertation). Nevertheless, where this situation does occur, criticism is implied. For example, the idea of promoting residential mobility and choice is affected by the Group Areas Act which restricts it for non-white population groups in particular.

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