

Patterns for people-friendly neighbourhoods in Mamelodi, South Africa

Prof. Gerald Steyn

Department of Architecture (Pretoria Campus)
Tshwane University of Technology, South Africa
e-mail: SteynGS@TUT.AC.ZA

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Abstract

Current housing patterns in South Africa are unquestionably contributing towards unsustainable environments. Strictly zoned single-use dormitory suburbs, “security estates” and so-called townships are not only causing urban sprawl, but also spatial, social and economic fragmentation. This paper offers seven tentative and conceptual patterns aimed at restructuring such areas into good, sustainable neighbourhoods. In Mandela Park, a rapidly growing shantytown in Mamelodi, adjacent to Pretoria, we found clear evidence that the urban structure and setting were compounding the prevalence of poverty, making it eminently suitable as a case study.

1 Introduction

Mandela Park, a huge shantytown in Mamelodi, is, like most informal settlements, probably not the most unsustainable overall (golfing estates arguably are!), but this is where even modest intervention could improve the quality of life of a large number of people. A brief delineation of the research approach precedes an overview of contextual issues – physical and socio-economic, which is followed by short descriptions of the diagrammatically illustrated proposed patterns.

These patterns evolved through generative design, informed by four sources of data: an analysis of the needs of residents as determined through interviews [1], fused with key morphological characteristics of their squatter settlement and elements derived from pre-colonial East African urban precedent [2, 3], as well as current Western trends, such as Christopher Alexander’s Pattern Language [4] and the New Urbanism [5 & 6].

The study was based on four broad assumptions:

1. Economic empowerment and the reduction of poverty are the main goals.
2. The plurality of our cities is a fact.
3. Shacks and shantytowns are here to stay.
4. Western (re)thinking of urbanism and good neighbourhoods is relevant.



Fig.1 Mandela Park, Mamelodi

Built environment professionals – fascinated by the vibrant atmosphere of many informal settlements – often adopt a romantic attitude towards housing the poor, focusing on imagery perceived as appropriate to Africa and neglecting other fundamental needs. Our theory is, however, that a good African neighbourhood would certainly differ from a good European one in terms of appearance and character, but should essentially have the same configuration and characteristics: compact, walkable and mixed-use, with a high level of economic self-sufficiency. Authoritative sources agree that settlements (and by implication housing) that ignore these requirements do not adequately integrate broader urban, social, political and economic issues, and their viability must be questioned [7 & 8].

2 Context

While Old Mamelodi, a 1950s model township, relates directly to the major industrial districts of Waltloo and Silverton, Mandela Park is simply too remote from such employment opportunities. It has arguably the same – or maybe even stronger – politico-social ties with its rural hinterland than with the adjacent township. We also found a diversity of demographic profiles and a range of reasons for living there, but shantytowns tend to be amorphous conglomerations of similar shacks.

A rapidly increasing portion of South Africa's population is living in such shantytowns; mostly in shacks they built themselves. Shantytowns can grow from both site-and-service schemes and illegal land invasion. Contrary to popular belief, not all shack dwellers are rural immigrants in search of employment. Some households are forced into informal settlements due to a very real housing shortage. Some individuals have regular jobs in the city but commute to their rural ancestral homes over weekends, choosing a shack over a more expensive apartment. Many young adults from rural areas are attracted by the excitement of city life, while for others a temporary sojourn in the city is an initiation in adulthood. Illegal immigrants prefer the relative anonymity of the shantytowns where they are protected by what locals call a "debt of honour". Some households that have achieved affluence sometimes prefer to stay in the community, sometimes even in opulent villas.



Fig 2 Mandela Park from the air



Fig 3. Shacks and mansions

Our surveys showed that inhabitants appreciated the cheap shelter and the ubiquitous minibus-taxis. Most respondents considered the streets safe for children, many enjoyed the community spirit and associated street life, and some commented on the low levels of crime. Nearly all, however, complained about the lack of economic opportunities, civic amenities and services. Many complained about long walking distances and others commented on the lack of trees and parks. Surprisingly, very few commented on the quality of shelter in spite of an almost uniform low level of climatic comfort. Also, very few respondents seemed aware of the health hazards caused by the lack of clean energy or fully understood their devastating impact on the environment (informal sprawl, low building quality and pollution). The seven patterns described below would conceivably offer a physical setting that not only enhances the positive aspects of life in Mandela Park, but also responds to the stated concerns that are directly related to the built environment, such as long walking distances to amenities and jobs.

3 Seven patterns for a better built environment

Seven tentative patterns were consequently framed at urban, neighbourhood and building scales, loosely reflecting spatial, morphological and technological concerns. We define patterns as configurations of the elements of the physical environment that can be applied to accommodate and support social and economic activities. Since physical patterns are evolved from behavioural ones, the social dimension is embedded in the approach.

3.1 Pattern 1 – medium-sized compact cities

There can be no doubt that compact forms today not only limit the costs of roads, services and transportation routes, but also preserve increasingly scarce agricultural land. The prevailing sprawl must be stopped by setting limits to peripheral expansion.

3.2 Pattern 2 – urban villages in superblocks

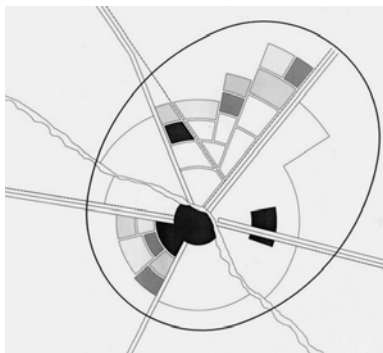
Ideally a city should grow organically. The provision of services and amenities, however, requires capital budgeting and forward planning. Superblocks, would allow communities to grow democratically and organically within this predefined space. Such a street system also forms “subculture boundaries”, “identifiable neighbourhoods” and a “web of public transportation”. Alexander points out that these subcultures are not intended to be “tribal or closed”, but are rather based on shared values, lifestyle and choice.

3.3 Pattern 3 – appropriate boundaries and streets

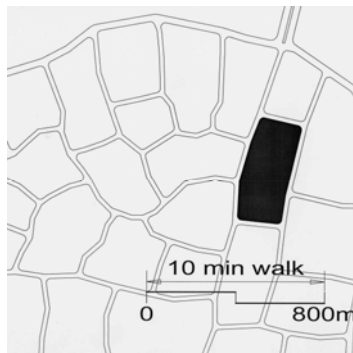
The boundaries should be clearly identified to create a sense of belonging, and could conceivably consist of parks, recreational facilities, civic amenities such as schools and hospitals, and, of course ...

streets. But with about 60% of our population classified as “poor” and with less than 10% owning cars, it seems meaningful to limit investment to essential roads, thereby encouraging public transport, as well as bicycle and pedestrian lanes. The focus of public spending should be on the provision of comprehensive community facilities and, much neglected to date, public space.

About 4% of the residents of Mandela Park own cars. Most of them (35%) rely on walking. Other modes are trains (14%), public buses (13%) and the ubiquitous minibus-taxis (27%). The poverty level in Mandela Park is so high that many young people simply do not have the money to go anywhere to search for employment ... or even recreation. The elderly and the young are also trapped in the settlement.



Pattern 1



Pattern 2



Pattern 3

3.4 Pattern 4 – mixed-use main streets as interfaces

Like the Arab *souq*, the African market street organises urban space, with buildings facing a “communication route” to benefit from passing trade. Since about one quarter of South Africa’s economically active population relies on the informal economy, mixed-use neighbourhoods and self-sufficiency are prerequisites and it seems meaningful to encourage market streets as some of the superblock boundaries in association with civic amenities, public transport and other nodes. The market street as interface between two neighbourhoods then effectively becomes a shared main street, whether pedestrianised or not ... a true community core or “downtown”.

3.5 Pattern 5 – self-sufficient, walkable neighbourhoods

Whereas the Swahili urban fabric tends to be tightly aggregated, like those of the Middle East, pre-colonial West African market towns, as well as rural South African villages and shantytowns, tend to be more loosely clustered. The single outstanding feature of the traditional sub-Saharan dwelling is the use of a hierarchy of courtyards. More appropriate contemporary forms could be developed using this principle.

The most appropriate pattern, therefore, seems to be that of open compounds capable of incremental expansion clustered around private and communal courtyards. Non-hazardous home industries should be allowed throughout the neighbourhood, while some trading should be encouraged along its interface, maybe as part of a shared market street. Civic amenities, which would conceivably be shared with adjacent neighbourhoods, should also be located along the periphery. Vehicular through traffic should be avoided. Interior circulation should consist of narrow streets (like the Dutch *woonerf*), lanes and footpaths, connected by squares and courtyards.

To understand the spatial needs in a neighbourhood, one must study the atmosphere and activities in a shantytown – For many it is “home”. The streets, alleys, spaza shops and shebeens are the true social spaces. Urban agriculture could be an important factor in self-sufficiency.

3.6 Pattern 6 – low-rise, medium density, robust with courtyards

It seems necessary for the architectural profession in South Africa to reconsider its obsession with the aesthetics of Western-style housing and rather facilitate the development of relevant building types in a pragmatic manner. In South Africa, local needs for densification, cross-ventilation and orientation, home industries and lettable rooms are all easily achieved with thin houses, only one room deep, and even more so if the interior spaces are directly connected to courtyards, which then serve as important open-to-sky functional and social spaces.

3.7 Pattern 7 – small-scale and local/self-help and semi-skilled

Shack construction is not inherently a fire hazard; the use of wood for cooking and heating, and paraffin and candles for lighting, is. Increased use of clean electricity would greatly reduce this danger. Similarly, comfort, health and safety levels, and sustainability by implication, would be vastly improved with the use of insulation, better substructures and the placing of openings in walls to allow cross-ventilation. To allow greater participation by communities, the indigenous knowledge of both informal and traditional construction should be reconsidered. Both technologies are inherently sustainable, since they rely on recycling and renewable resources. The solution ultimately lies, most probably, in a combination of traditional and industrial vernacular technologies with the latest sustainable materials and methods. The fact that there are many excellent examples of houses internationally – especially in the United States and Australia – that use fundamentally the same construction, is convincing evidence that shack technology has potential.



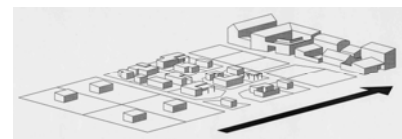
Spaza shop



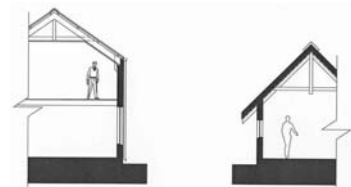
Pattern 4



Pattern 5



Pattern 6



Pattern 7

4 Conclusions

The seven identified patterns are not unique: they were observed in Mandela Park and along the East Coast of Africa, and they were substantiated by New Urbanism projects and Alexander's Pattern Language. The process of delivery must be interactive between communities and Government, with researchers and professionals facilitating that dialogue. In conclusion, it is hoped that the implementation of such patterns, combined with economic empowerment, would eventually contribute towards reducing poverty and environmental degradation. Such patterns could, in fact, improve sustainability across the socio-economic landscape.

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