# Housing the Urban Poor in South Africa: Towards a New Typology

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#### Abstract

South Africa urgently needs new strategies to alleviate poverty and an associated reassessment of its problematic housing policy. Its poorer citizens live in either state-sponsored houses or in shacks, both types being seriously deficient, but in different ways. It is claimed that only China and India have built more low-cost houses than South Africa has since 1994 - an astonishing 2.8 million, identical, small, freestanding, box-like houses rolled-out as vast dormitory townships on the fringes of cities – cruel parodies of Western suburbia. They are given away for free, fostering a culture of entitlement, while their remoteness and lack of employment opportunities perpetuate social and economic marginalisation. Because of this factor, as well as boredom and low self-esteem, many young men turn to crime, obviously an untenable situation. Most of their occupants previously lived in shantytowns, which government promised to eradicate, equating shack-living with homelessness. These, however, continue to mushroom, some of which are particularly vibrant, socially cohesive and an inspiring testimony to resilience and innovativeness in spite of tenuous conditions, limited resources and health hazards. A new typology needs new concepts. Conventional Western urban and housing models have proved to be awkward settings for the urban poor of SA, and it will be argued that local and African vernacular patterns should be considered. A typology is proposed that relies on four interdependent, constituent elements: (1) urban integration and access to engineering infrastructure; (2) strategically located market streets; (3) reinforced concrete frames defining attached shop-front buildings; and (4) assisted self-help, drawing on the proven ability of deprived households to help themselves. The focus falls on conceptualising pertinent design criteria by re-interpreting the way shantytowns and villages in East Africa respond to socio-economic and technological realities, as well as to appropriate methods and materials of construction, while perhaps crucially, the emphasis is placed on the importance of community and locality in improving quality of life and economic self-reliance.

## 1 Introduction – Background

Nearly half of South Africa's population is officially poor, with the vast majority of them living in rural areas. The result is an unabated migration into the cities where a shack in a shantytown is often the only option for shelter. Government responded with its Reconstruction and Development Programme (RDP) and since 1994 has rolled out 2.8 million identical, small (less than 30 m<sup>2</sup>) freestanding, box-like houses as vast, low-density dormitory townships on the fringes of cities (Fig. 1). Stating that another 2.2 million were needed, it proudly announced that only China and India have built more low-cost houses than that during the same period [1].

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The houses are given away for free, fostering a culture of entitlement, while their remoteness and lack of employment perpetuate social and economic marginalisation, and contribute to crime, obviously an untenable situation. Most of their occupants formerly lived in shantytowns, which government promised to eradicate. These, however, continue to mushroom and some are particularly vibrant, socially cohesive and an inspiring testimony to their residents' resilience and innovativeness in spite of tenuous conditions and limited resources. Both Bill Freund [2] and Edgar Pieterse [3] recount cases where the recipients of free RDP houses illegally sold them (for far less than their real value), returned to their shantytowns of origin and continued practising their informal economic activities.

In fact, in 2006 André Ligthelm estimated that "close to 5 million people in South Africa sourced some or all of their income from the marginalised second economy" [4]. Even so, it has been suggested that our informal sector, which is likely to escalate in the future, is much smaller than those of other developing countries, partly due to a lack of infrastructure in the townships [5].



Figure 1: RDP housing in South Africa (Author's drawing)

# 2 Essential elements of the typology

The RDP is not functioning effectively, mainly because of spatial remoteness. Where such townships have been established close to transport nodes and, ironically, close to informal settlements (with their higher population density), there is also evidence of informal trading and letting of backyard rooms. It is clear, therefore, that locality and a sufficiently large customer population, followed by suitable buildings, are the essential prerequisites for an informal economy. These observations suggest that urban integration and densities high enough to support informality are preconditions for appropriate building typologies. My proposal is that these can be produced by fusing an innate capacity for self-help with government's commitment – however misguided at present – to alleviating poverty through capital investment.

## 2.1 Urbanism of access and services

Sprawl, fragmentation and low densities are the characteristics that make South African cities so notoriously dysfunctional. It is paradoxical that Kenya, with a much smaller economy, has a lower proportion of poor people. In Mombasa, a relatively prosperous city, we find dense concentrations of informal economic activities right next to the Business District and interestingly, along the major roads leading into the city. African cities tend to be elongated, but it is exactly this linearity that ensures maximum exposure to passing traffic. In addition, it is clear that the neatly defined compact European urban model is not valid here – the edges of African cities are frayed out into the adjacent countryside where small-scale farmers produce for the market. The first element of the proposed typology,

therefore, is one of allowing informal trading (and by implication, informal settlement) close to economic opportunities, close to places where people congregate, and close to major roads and streets (Fig. 2).



Figure 2: Urban patterns (Author's drawing)

### 2.2 Traders' routes

Market streets, also called traders' routes, emerged in ancient times as the suq of the Middle East and the Indian bazaar street, and it is significant that they still feature in current town planning in those regions. Indian merchants introduced bazaar streets to Swahili towns where they evolved into major circulation routes, forming "main streets" in Zanzibar, Lamu and Old Mombasa (Fig. 3); they remain functional to this day. Le Corbusier revived the quintessential Indian bazaar street in Chandigarh, as did Charles Correa in New Bagalkot, both in India (Fig. 4). Self-contained villages in sub-Saharan Africa were traditionally circular but, with the advent of external trading, the African market street evolved as a significant typology and organiser of urban space. It forms a distinct pattern with buildings facing a 'communication route' so as to benefit from passing trade. In rural villages, these streets are often 30 metres or more wide. In both shantytowns and the rural villages of Africa we find that shops on roadside edges serve passing external trade, while some of the inner lanes serve the resident population.



Figure 3: Indian shop-front houses in East Africa (Author's drawing)



Figure 4: Market street precedents (Author's drawing)

Considering their success in countries such as India, with similar levels of poverty, the establishment of market streets comprises the second element of my proposal. I envisage two types: Ward-sized face-blocks, and linear neighbourhoods. The face-blocks could serve to achieve pedestrian permeability in existing townships. By cutting perpendicularly through street blocks, they could provide links to train stations, bus stops and minibus taxi stands, and offer the merchandise and services commuters need: Fresh produce, bread, sit-down and take-away meals, hair styling, shoe repairs, bars for after-hours socialising, etcetera. Consisting of ten to twelve units, such a block would correspond to Christopher Alexander's 'housing cluster' [6], and Kevin Lynch's 'social neighbourhoods' [7]. Although the percentage of car ownership is low in townships (less than 10 %) parking should nevertheless be provided. Because a pedestrian-friendly route is essential, the street should be configured along the principles of the Dutch "woonerf" street, and could be connected to form a promenade that traverses the township (Fig. 5).



Figure 5: Face-block (Author's drawing)

Linear villages are found along many roads in East Africa. Although the pattern exists in Western planning theory, it has rarely been constructed (the mono-functional commercial strip is not the same!). Linear cities have a long history. Tony Garnier, Nicolai Miliutin, Soria y Mata and Le Corbusier all contributed theory and concepts. Kevin Lynch points out that some residents might be quite remote from public amenities (schools, clinics, recreation, public administration offices), but in Africa we find that a regular and cheap minibus taxi service could compensate for that. I do not, however, propose linear towns, but rather linear neighbourhoods not more than 400 metres in length (a 5 minute walk). But rather than lining busy national highways, they should straddle major access roads inside the urban boundaries. Due to the separation imposed by racial segregation such access roads often traverse buffer zones and these are ideal for redevelopment. Another option is to locate development along the periphery facing a ring road, which should provide convenient access to small-scale farming just behind it (Fig. 6).

Allocating such prime land to the poor means that government must protect them from pressures by land speculators. All South Africans will just have to become used to low-cost housing in the shadows of corporate skyscrapers, as in India. If given sufficient time the inhabitants should not remain poor forever. It must be emphasised that it is government's responsibility to provide potable water, clean electricity, sewage disposal, paved roads and sidewalks, and street lighting. Using the typologies under discussion as small, sharp interventions to stitch together the urban fabric means that it would not only be possible to tap into existing infrastructure and service networks, but also that population density may, hopefully, be sufficiently increased to justify a system of public transport economically.



Figure 6: Linear neighbourhood (Author's drawing)

The poor offer many services that affluent people need, but to achieve this delicate symbiotic balance we want a fine-grained social, economic and building morphological mix, with impoverished communities evenly spread throughout the city. Since large concentrations of poverty cannot achieve that, size is a crucial issue. Counting both owners and renters, a face-block could comprise 20 to 24 households, a sufficient number for social cohesiveness, with everybody knowing one another. A linear neighbourhood could consist of nearly 200 households, which, containing 500 to 600 people, could constitute a significant voice in municipal politics.

Community participation is essential. Rather than new green-fields projects, the focus should fall on interventions in existing townships and squatter colonies. Where buffer zones are filled in, nearby squatters can be persuaded to relocate there. Poor people are very suspicious and resentful of top-down projects. On countless occasions award-winning buildings have been cannibalised and stripped for building materials within months. In South Africa underprivileged communities, even illegal squatters, are not ungovernable and anarchistic, but live according to strict rules set down by consensus, enforced by ward committees. The solution is not to "sell" a project to the community, but to involve its members in the design, obviously a time-consuming process, but one that can be immensely rewarding.

# 2.3 Building configuration

The building typology must combine the advantages of a freestanding single house with the ability to achieve sufficient densities. The potential for the incremental development of the site and of individual dwellings is considered essential. The potential for practising some urban agriculture is likewise highly desirable. Choice is a key consideration – not all plots need be the same size or accessible to vehicles, but should still be large enough to accommodate expansion and a vegetable garden.

The need is broadly for new types of compact, affordable ground-level housing; types that can be clustered or aggregated along traders' routes into wards or linear villages, that are robust and flexible, and that can be built by small contractors or the people themselves. After considerable research and reflection I have arrived at a set of design criteria: (1) Does the plan form allow rooms for subletting and/or home industries, and expansion for extended families? (2) Does the configuration allow horizontal and vertical extension while retaining cross-ventilation and privacy? (3) Does the building typology achieve appropriate levels of densification? (4) Does the form offer private outdoor living space? (5) Is the use of front and back yards in the area well-understood? (6) Is on-site parking desirable? (7) Is the technology suited to self-building and subsequently to upgrading, and is it climatically appropriate? (8) Is the aesthetic idiom compatible with the inhabitants' image of a 'house'?

The third element of the typology is one that allows choice and opportunity within safe limits – a serviced site with a modular concrete frame that can be filled in by the occupants. This is not an original concept. Le Corbusier's Dom-ino system of 1917 allowed the frames to be filled in with rubble and prefabricated steel windows and doors, while the Dutch architect, John Habraken, propagated "support structures" in the early 1960s to encourage "Inspraak" (owner participation). My greatest inspiration (and corroboration for my argument), however, came from East Africa. In 1944 Ajit Singh, an Indian architect in Zanzibar, designed a standardised low-cost house for poor households in neglected areas outside Stone Town. He based his design on the typical, wattle-and-daub Swahili house, but planned it with reinforced columns and a larger courtyard at the rear (Fig. 7). The walls between the columns could subsequently be filled in with coralline stone or rubble, as was the technology then (and still is). What is so utterly remarkable is that a house intended for mass production by a colonial regime was subsequently widely accepted and that the framed configuration was adopted by local builders all along the East African Coast, and is popular – to this day [8]!

The proposed criteria are sufficiently open-ended to encourage a wide range of design possibilities (Fig. 8). With on-site professional advice the units could be single or double storey, with either a narrow or medium frontage. The preference should be for semi-detached and row houses with reasonable densities. Remember Charles Correa's advice: "What [poor] communities need is not just our compassion, but our professional, (i.e. visual and topological) skills" [9]. Architectural graduates should, like the medical doctors in South Africa, also be called up to do community service. They will be surprised by the hospitality there and willingness to cooperate: Residents of shantytowns accept that mutual support, communal responsibilities and collective political clout greatly enhance their well-being when confronted with challenges, as well as when offered opportunities.



Figure 7: Traditional Swahili house reinterpreted as Ajit Singh's Utility House (Author's drawing)



Figure 8: Reinforced concrete frames for assisted self-help (Author's drawing)

#### 2.4 Methods and materials

The fourth element of the proposed typology is assisted self-help. South Africans in rural villages have a long history of building their own homes. They do the same in shantytowns, relying not on mud and thatch, but on the products of industrialisation: Timber frames with weatherboarding or corrugated iron sheeting for walls and roofs, being so standardised that one would expect a set of codes. If the reinforced concrete frames and suspended floors could be erected by semi-skilled but supervised labourers, then the owners could fill them in themselves, using methods and materials with which they are totally familiar (Fig. 9). This could be good business for "shack factories" that are already manufacturing prefabricated panels consisting of timber frames from recycled industrial crates covered with galvanised sheet iron. It should be emphasised that corrugated iron for walls and roofs is not inferior in any way (it is extremely popular in the Australian Outback), but that it needs proper insulation, cross ventilation and the shading of wall openings to achieve thermal comfort. Cement bricks are also popular for improving a house.

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Figure 9: Shack technology is useful (Author's drawing)

## 3 Conclusion

Without stopping urban spread, repairing the fabric and allowing poor communities to settle in strategically advantageous localities, all initiatives to improve their predicament will be futile. Current functional zoning favours the needs of national retail franchises and I can foresee resistance to informal market streets such as those in the proposed typology, which are found in Kenya and Tanzania. But can we afford not to support the informal economy that appears to be a poor household's only means to survival except for social grants? I am convinced that if communities are fully involved and requirements are considered from the bottom up, then function and use, aesthetic expression as well as the relationship of housing to the urban entity as a whole will result in a typology that is partly informed by established African patterns and Western theories of good urbanism, yet is still intrinsically rooted in the South African condition. Such a typology could promote safer streets, self-reliance and civic pride, and enrich the urban experience for all.

#### References

- [1] South African National Department of Housing. *We are Making Headway*. Statement issued on 25 October 2007. http://www.housing.gov.za/Content/Media (09/05/2009).
- [2] Freund, B. The African City: A History. Cambridge University Press, New York, 2007, p.194.
- [3] Pieterse, E. *City Futures: Confronting the Crises of Urban Development*. University of Cape Town Press, Cape Town, 2008, p.57.
- [4] Ligthelm, A. *Measuring the Size of the Informal Economy in South Africa*, 2004/05. Bureau of Market Research, UNISA, Pretoria, 2006.
- [5] Brown, S. and Fölscher, A. (Eds) *Taking Power in the Economy: Gains and Directions*. Institute for Justice and Reconciliation, Cape Town, 2004, p.60.
- [6] Alexander, C., Ishikawa, S. and Silverstein, M. A Pattern Language: Towns, Buildings, Construction. Oxford University Press, New York, 1977, p.202.
- [7] Lynch, K. A Theory of Good City Form. MIT Press, Cambridge, Massachusetts, 1981, p.402.
- [8] Myers, G. Verandahs of Power: Colonialism and Space in Urban Africa. Syracuse University Press, New York, 2003, pp.89-91.
- [9] Correa, C. *The New Landscape: Urbanisation in the Third World*. Butterworth, London, 1989, p.112.