



Figure 5: A Tonga homestead in Zambia
Source: Roodt, 2003: own drawing

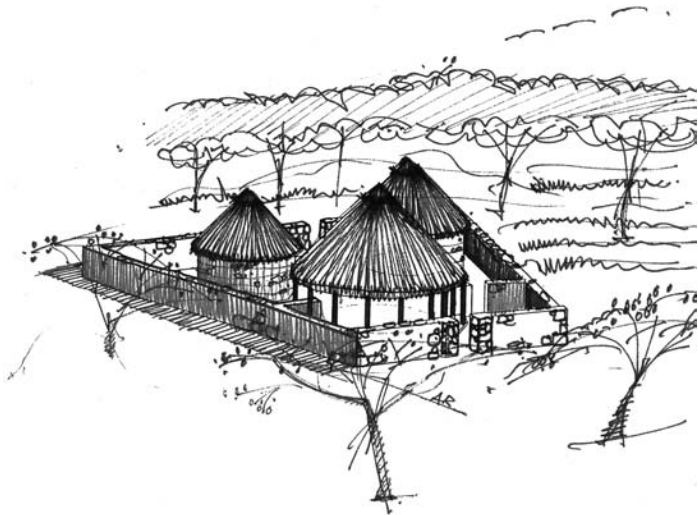


Figure 6: A Pedi bilobial homestead
Source: Roodt, 2003a: own drawing

4.2 Science

Talib suggests that both the African and Middle Eastern courtyards demonstrate ancient but lasting solutions to the problem of settlement in extremely hot climates (1984: 47) – hot-dry and hot-humid, respectively. Whereas houses in the Middle East became more complex with many rooms aggregated around courtyards, Africa retained the pattern of a number of separate single-room units around an open living space. Also, Middle Eastern houses were clustered on narrow, winding streets that ultimately created dense urban precincts, while African homesteads are only loosely related to communal paths. Both types of settlements grew organically and incrementally, but, significantly, they developed over centuries and are particularly responsive to the extreme climates in which they exist. As a matter of fact, while Rapoport suggests that climate is a modifying rather than form-determining factor (1969), Talib argues that climate, rather than culture, was initially the dominating influence in both Arab and African settlement (1984). The dense Middle Eastern settlement provides protection against the sun and dust in a hot-dry climate, while courtyards allow airflow and daylight. In hot-humid climates, however, cross-ventilation is the major concern, which the dispersed pattern of the African homestead addresses. In both climates, therefore, courtyards are not only settings for outdoor living, but are also climatic moderators.

5. Relevance

The spread-out African settlement seems more suited to a rural environment, while the compact Middle Eastern settlement is arguably primarily an urban type. Its biggest advantage is the ability to achieve relatively high densities with a high level of privacy – very much a contemporary concern. A significant consideration is that the ‘classic’ courtyard houses of antiquity have changed very little since the earliest times. They are still found and inhabited all over the Mediterranean, Middle East and Africa, and in South American countries colonised by Spain; in fact, in most regions where the climate allows outdoor living.

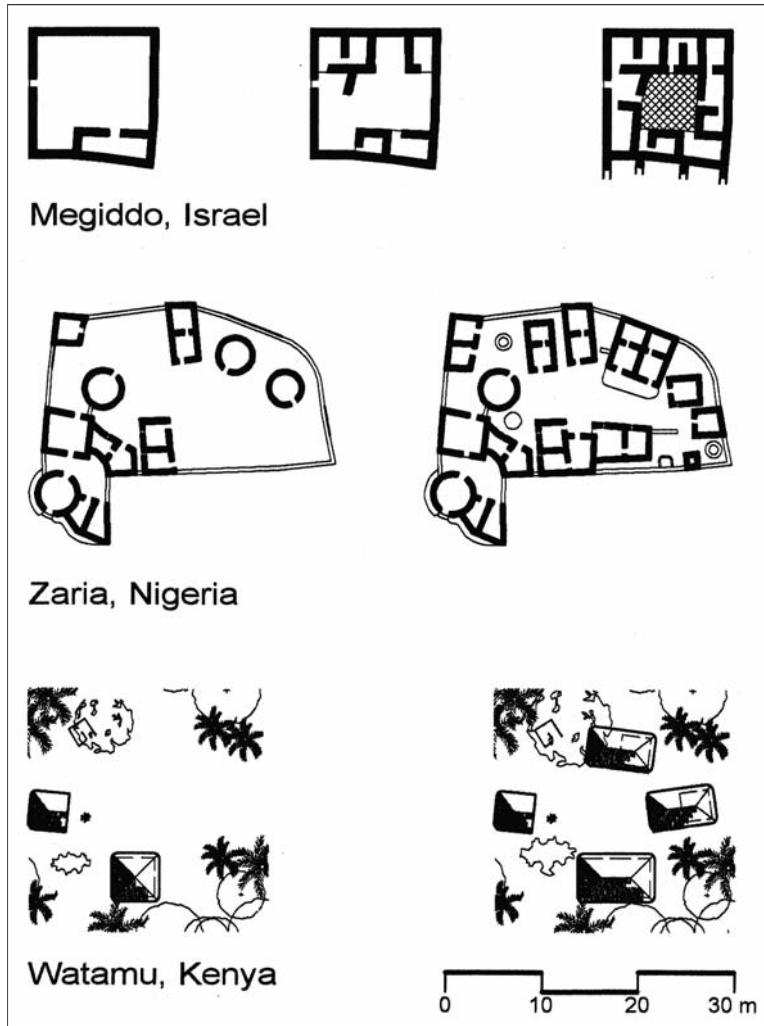


Figure 7: The growth of different types of courtyard houses
Source: Steyn, 2005b: own drawing

Since the traditional African courtyard dwelling is essentially a rural model, could it be reconfigured to suit contemporary urban demands or are there other appropriate models? Both options are theoretically feasible. The compounds of Zaria, Nigeria, convincingly demonstrate how a dispersed dwelling could be enclosed, compacted, aggregated and incrementally developed inside. The transition from round plan form to rectangular is noteworthy. This allows for better integration of the single units into compact houses and thus paves the way for densified urban structures (Bianca 2000: 59). As Denyer points out, in parts of Africa, for example, the Chad Basin, rural houses were traditional thatched round huts, while urban housing was cuboid. The risk of fire in a dense urban situation could, of course, explain this transition to a flat-roofed configuration (1978: 159-165). In South Africa most huts have traditionally been rondavel types (also known as cone on cylinder), but rectangular units have been built since the 1870s (Frescura, 1981: 81) and both forms are commonly found in the same homestead.

But there is another option too: adopting the 'classic' courtyard pattern (Figure 7). The characteristic irregular plan forms of sites in Zaria were probably the result of the need to create privacy in an urbanising situation by enclosing the originally rural compound with a surrounding wall. The 'classic' courtyard house also develops incrementally, but within a predetermined site, usually in a four-sided form, growing organically and incrementally into a distorted urban grid. It remains debatable whether Mapungubwe and Great Zimbabwe were large villages or small towns. The only pre-colonial urban precedent in eastern and southern Africa is, therefore, the settlements of the Swahili city-states, of which Lamu is the only surviving and functioning example. But it is inappropriately modelled after an Arab-Islamic city in a hot-dry region. Stone Town in Zanzibar, on the other hand, was rebuilt by the Omanis in the 1800s and is also a functioning historical city with a labyrinthine topology, but its layout reflects the demands of a hot-humid climate with much looser planning and wider alleys. Unique for Arab houses, windows to the street allow cross-ventilation (Figure 8).

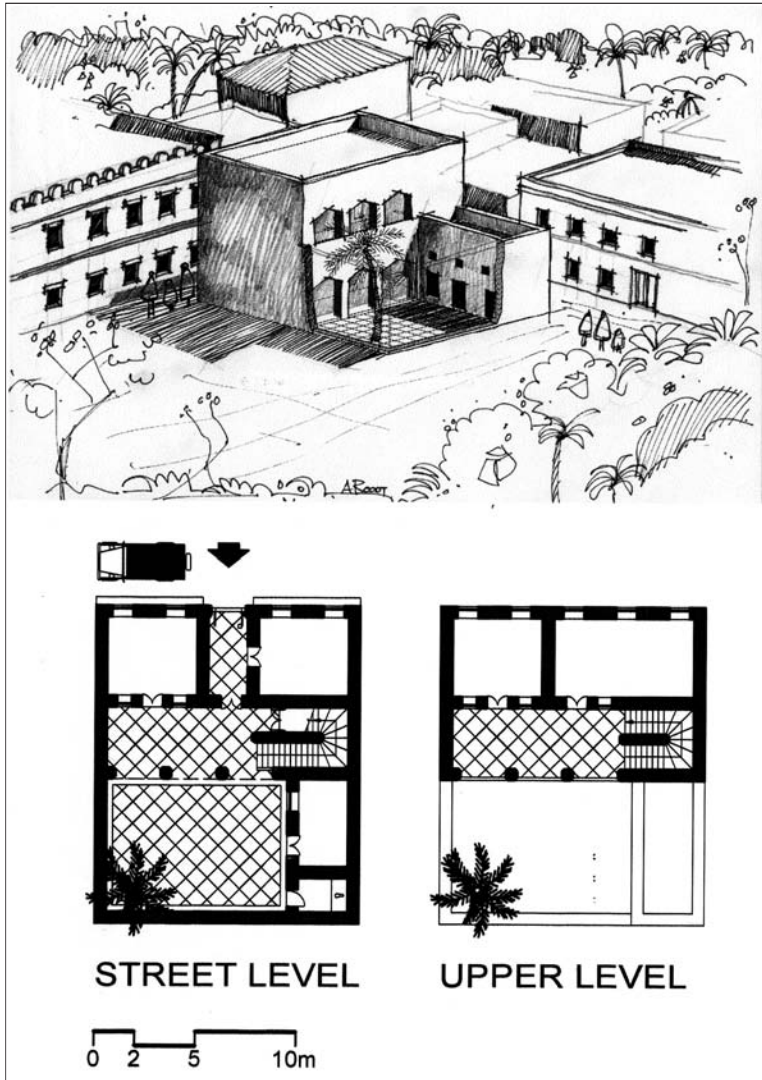


Figure 8: A typical 19th c. Omani house in Stone Town, Zanzibar
Source: Roodt & Steyn, 2002: own drawings

Zanzibar offers the exact antithesis of urban sprawl – the neighbourhood is eminently compact and walkable. Alleys are punctuated with small, intimate public squares. Barazas (built-in seating) allow easy socialising and conversation at street level. These, together with small, intimate squares and places where people meet informally for coffee, keep the Stone Town streets alive. The streets are generally only two to three metres wide and shield walls and people from direct sunshine, adding to street-level comfort during most of the day. Typical of Arab-Islamic cities, central streets form the spines for narrow alleys, which lead, labyrinth-like, into the various quarters or wards (Petherbridge 1978: 195). Called *mtaa* in Swahili, they allow groups with different cultural and economic backgrounds to co-exist (Allen, 1993: 224).

A comparison between the Omani and Pedi models reveals fundamental differences but also a number of elemental similarities (Figure 9). Their typologies reveal three very similar features that seem relevant from a contemporary perspective:

- the hierarchy of spaces;
- the value of outdoor living spaces and
- verandas.

The veranda is typologically identical to the *loggia* found in Omani houses. It protects against sun and rain, creates a transition between inside and outside and expands the area of an enclosed space. Apart from the veranda, other ways to provide open but roofed outdoor living space include retaining trees for shade and constructing gazebos.

What is the relevance of all this? While squatter settlements and previous and current formal mass housing schemes have been causing massive sprawl, functioning historic towns such as Stone Town on Zanzibar Island, Tanzania, and Old Malindi, Kenya, offer appropriate and proven settlement and land-use patterns which should be seriously explored for ideas to create an African Urbanism (Figure 10). From such patterns and the synthesis of historic precedent and custom, a paradigm of courtyard houses could be developed that would contribute towards much more compact, low-energy and socio-economically equitable neighbourhoods in the region (Figure 11).

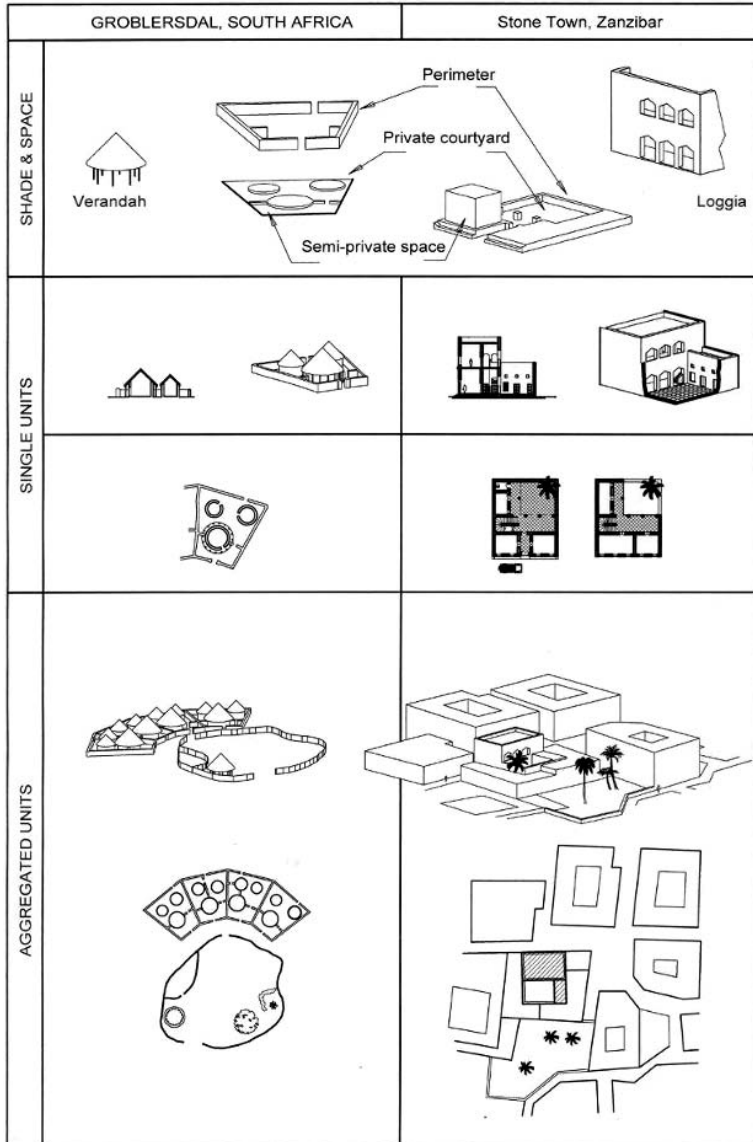


Figure 9: A comparison between Pedi and Omani settlement models
 Source: Steyn, 2005c: own drawing

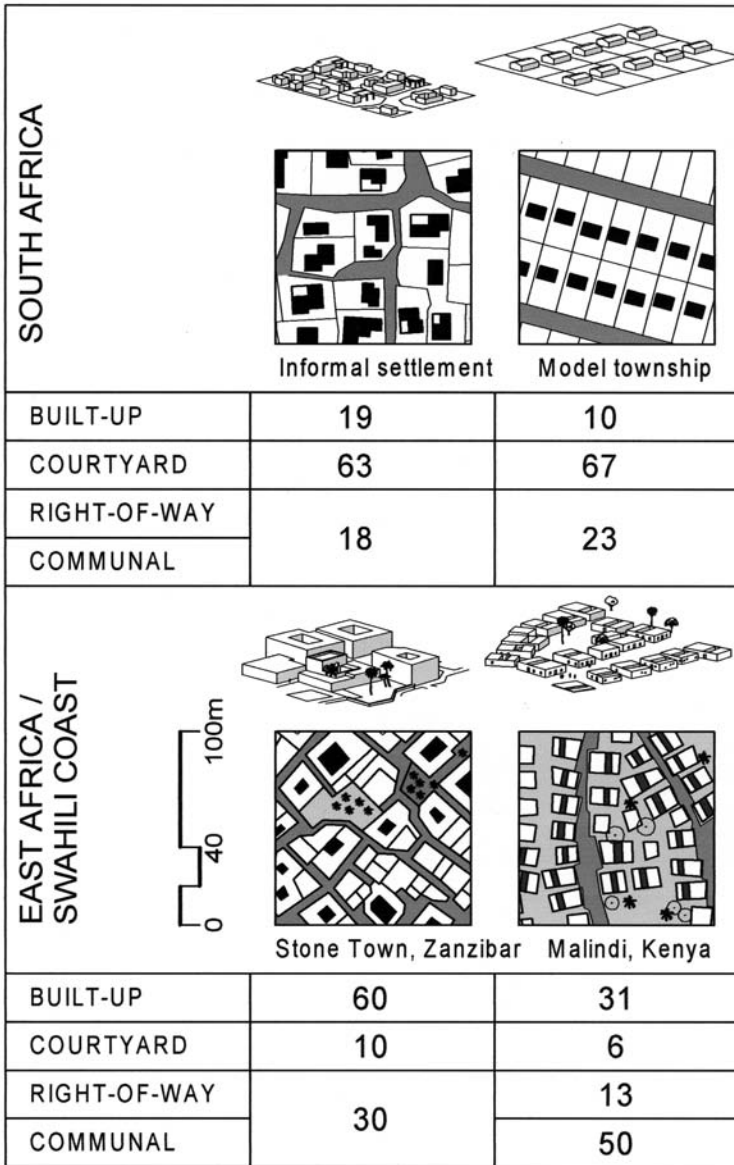


Figure 10: A comparison of land-use patterns showing percentage cover
 Source: Steyn, 2005d: own drawing

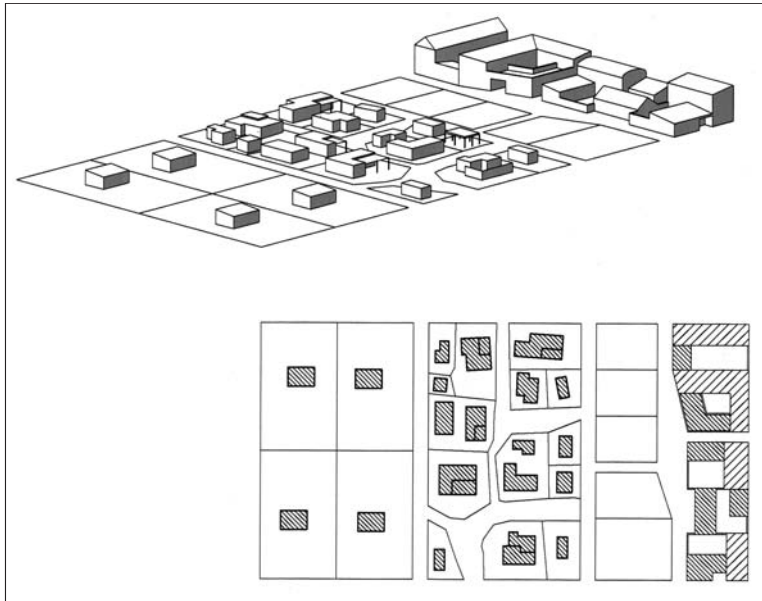


Figure 11: A new courtyard paradigm
Source: Steyn, 2005e: own drawing

6. Conclusions and recommendations

This cursory review of the typology, art and science of traditional sub-Saharan dwellings seems to substantiate that many are courtyard configurations, a concept eminently relevant to current thinking on higher urban densities. Just as the Arab-Islamic Renaissance resulted in a revival of interest in traditional building forms, so the introduction of courtyard housing could reinforce the African Renaissance with architecture with an African identity and character. The African – Afro-Arab Swahili – Middle-Eastern Omani Arab settlement paradigm seems to offer the historical justification, the theory and the built examples from which contemporary solutions could be evolved.

This was essentially a baseline study and focused on simplistic spatial issues. It revealed a number of themes for further investigation:

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- The history of African settlement – who built what, where and when, with relationships between them and external influences, where applicable.
- The expansion of the morphological matrix into a three-dimensional model in order to include a larger number of representative examples and to also classify them in terms of style.
- The spatial hierarchy at settlement and building scales, intimacy gradient, and functional and gender separation.
- Response to climate.
- The continuum from rural compound through urban shacks to alternative forms of housing.
- Frameworks for the integration of urban structures and sub-cultures to eliminate the prevailing fragmentation.
- The nature of an appropriate African Urbanism and its coding.

The low densities of South Africa's residential areas offer tremendous opportunities for restructuring. In particular, many of the older apartheid-era townships and the more recent informal settlements contain coherent community structures and vibrant informal economies that could be enhanced by lessons learned from traditional courtyard architecture. There now is clearly a need to develop an Afro-centricity in the way we shape the built environment, which should not be ignored!

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Acknowledgements

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