

***A pattern language* as a tool for studying African urbanism using Malindi, Kenya, as a case-study**

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There is unquestionably an urgent need to study African urban entities, but the most appropriate method remains a controversial issue. This article was motivated by a speculative question: Could *A pattern language* (Alexander et al. 1977) not be used to analyse and interpret examples of African settlement in order to promote conservation and to plan more appropriate urban solutions? Malindi on the coast of Kenya serves as a case study.

Key words: Indigenous African architecture, Rondavel, conservation

***A pattern language* as ‘n instrument om Afrikastedelikheid te bestudeer, met die gebruik van Malindi in Kenya as ‘n gevallestudie**

Daar bestaan ongetwyfeld ‘n dringende behoefte om Afrika se stedelike entiteite te bestudeer, wat werklik die mees geskikte metode is, bly ‘n omstrede aangeleentheid. Hierdie artikel is gemotiveer deur ‘n spekulatiewe vraag: Kan *A pattern language* (Alexander et al. 1977) nie gebruik word om voorbeelde van Afrikanedersetting te ontleed en te vertolk ten einde bewaring te bevorder en meer geskikte stedelike oplossings te beplan nie? Malindi aan die kus van Kenya dien as ‘n gevallestudie.

There seems to be two reasons to survey and assess African settlements. The first is to record the rapidly disappearing pre-colonial architectural traditions, an intrinsic part of the sub-Saharan cultural and technological heritage. The second is to search for African-orientated solutions to Africa’s problems of rapid urbanisation and the increasing pressure on cities – mushrooming shanty towns and decaying infrastructure and fabric. Massive sprawl and fragmentation, especially endemic in the United States, are being addressed by new urban models informed by ecology, regionalism and history. This article is based on the key assumption that there are similar lessons to be learned from historical African precedent.

The most appropriate tool for studying – that is, recording, analysing and interpreting – African urbanism is, however, contentious. A methodology is needed that is quick but comprehensive, and allows comparison of urban entities, as well as interdisciplinary cooperation. A purely morphological taxonomy of, say, edges, paths and nodes is too iconographic. Even Norberg-Schulz’s eloquent description of Khartoum (1979: 113-138) does not tell us how it is actually used. The latest software, such as Digital Elevation Modelling (DEM), mostly focus on the geometry of the city and allows analysis and manipulation of parameters such as sight-lines, shadow casting and energy consumption (Ratti et al. 2003: 63-74). Rapoport’s agenda for analysis (1969) is very elegant, but its emphasis is the vernacular house, rather than current urban concerns. Lawrence’s seven “explanations” for vernacular architecture (1987:17) are fairly broad, including (1) aesthetic/formalist, (2) evolutionary, (3) social and geographical “diffusionism”, (4) physical, such as technology, site and climate, (5) social, such as defence, economy and household structure, (6) socio-cultural, including religion and “collective spatial images” and finally (7) typology. But these themes are essentially^a disparate and it would be very difficult to integrate data convincingly.

This article originated from a personal observation that many pertinent physical and behavioural qualities of relatively prosperous African settlements are similar to those mentioned in *A pattern language* (Alexander et al. 1977), albeit in a very different context. These settlements include some vibrant East African towns and cities such as Mombasa, Zanzibar, Lamu, Dar es Salaam and Malindi, as well as some of South Africa’s older, denser neighbourhoods, historic townships such as Old Mamelodi and even some vigorous squatter settlements. The question that followed was essentially whether or not *A pattern language* could be used to describe, analyse and interpret examples of African settlement in order to capture data for con-

servation, and also to identify particularly robust and resilient characteristics in order to plan more appropriate urban solutions? Malindi on the coast of Kenya is used as a case-study, not only because the author is relatively familiar with the town and its history (Steyn 2004a, 2004b, 2003), but especially because its historic core was transformed during the 19th century from a typical medieval Swahili town into a unique “modern” Afro-Arab settlement. This allows an evaluation of the impact of the time-space dimension, as well as of the integration of the pre-colonial settlement with subsequent urban development.

Introduction to Christopher Alexander and his work

Christopher Alexander, founder of the Center for Environmental Study in Berkeley, California, and an influential design theorist, has been progressively refining his theories over the last 40 years. Although most of the work was done with collaborators, his publications, projects and principles are colloquially referred to as “Alexander’s”. In the mid-1960s he introduced a wholly rational and scientific design doctrine, which he abandoned shortly after publishing *Notes on the synthesis of form* (1964), but which has been embraced by computer programmers. The shift became apparent when he declared that he believed in “careful empirical study of the psychology of space” (1972: 22). That position culminated in three publications, notably *A pattern language* (1977), the principal reference of this article, and *The timeless way of building* (1979), which is based on the fundamental principle that humans have evolved archetypal designs that solve recurrent problems. Alexander describes his 253 patterns as “timeless” and claims that they offer a practical language for building and planning based on natural considerations. Turner notes (1996: 23) that “as archetypes for good places, they have great theoretical importance ...” He also states that “with regard to the social aspect of design”, *A pattern language* is the most important book on architectural design published in the 20th century. While some critics might question that, the fact is that *A pattern language* remains, according to Amazon.com (the online bookshop), one of the best-selling books on architecture.

It was followed by a creative, incremental and holistic ideology of place-making (*A new theory of urban design*) in 1987, and more recently by his four books on *The nature of order*¹. This series follows on twenty years’ work to articulate and refine the underlying philosophy of patterns in the form of complex, interactive geometries, as the building blocks of the universe. As such, Alexander’s work is now considered closely related to complexity theory, fractals, neural networks and other cutting-edge aspects of science (Salingaros 1999). Of enormous value are also the current websites, which disseminate the ideas of Alexander and his collaborators: www.patternlanguage.com and www.livingneighborhoods.org.

Essential elements and characteristics of Alexander’s pattern language

A pattern, in terms of Alexander’s approach, is “a morphological law, which establishes a set of relationships in space” (1979: 90). It is structured as a spatial configuration that resolves prevalent conflicting requirements in a specific context (Figure 1). Most patterns in vernacular architecture develop over a long time, until a physical configuration provides a good fit with the environment and with behavioural patterns. The bundles of interconnected patterns that make up a settlement or a building constitute a design language, with patterns representing words, connections and relationships representing rules of grammar and meaning, and buildings and places representing sentences (1979: 187). Patterns, like languages, are in a constant state of flux.

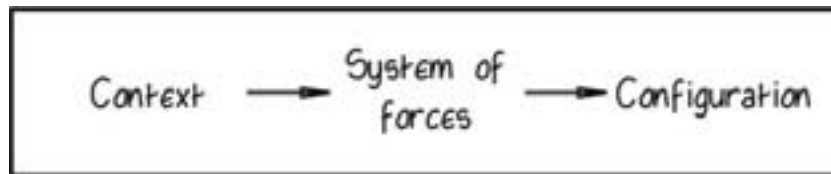


Figure 1
The generic form of a pattern (Alexander 1979: 253).

The names of patterns are typed in SMALL CAPS, conforming to Alexander’s writing convention. Some that are not self-explanatory are explained with end notes. He writes that the number of patterns making a town “is rather small”, with a city like London comprising maybe a few hundred (1979: 98). For a medieval Italian town he identified the following pertinent patterns (Figure 2): (1) CONNECTED BUILDINGS, (2) NARROW STREETS, (3) STREET BRANCHING, (4) FRONT DOOR TERRACES, and (5) PUBLIC WELLS AT INTERSECTIONS. It is significant that only CONNECTED BUILDINGS is mentioned in *A pattern language* (Pattern #108). This is purely a coincidence, but of great significance – the same pattern can obviously resolve different sets of conflicting forces in different social and environmental contexts. The others were derived from the specific context and configuration.



Figure 2
Layout of a medieval Italian town (Alexander 1979: 190).

Thus, in terms of this study, Alexander’s patterns are the 253 patterns identified in *A pattern language*, which seem to describe medium-sized, stable, established, walkable towns and neighbourhoods in temperate climates, inhabited by relatively affluent communities with values that could be broadly described as Christian-Judean and democratic. Alexandrine patterns, on the other hand, refer to patterns identified by applying Alexander’s methodology. Rowe associates *A pattern language* with positions with “an internally consistent architectural expression” (1991: 88), referring obviously to romanticism, expressionism, classicism, neo-classicism, constructivism, deconstructivism, modernism, post-modernism, and so on. He suggests that Alexander’s patterns are actually norms informed by behavioural determinism and “a popular view

of what is proper” (1991: 122). This seems a very narrow and simplistic view. Even so, not all patterns – whether popular or academic – are necessarily sustainable or even broadly satisfactory. For example, in many low-density dormitory suburbs the inhabitants resist the intrusion of small businesses, resolving their preference for quiet streets, but clearly not resolving the need for densification. Similarly, Le Corbusier’s columns represent a prominent pattern in a hugely influential language; the Modern Movement. But while columns resolve an avant garde need for a machine-age image and aesthetic uniqueness, they do not resolve the practical need for conveniently and safely carrying groceries, or the psychological associations with “home”. It is absolutely clear, therefore, that there are many different pattern languages around the world. But because Alexandrine patterns are rooted in custom, and user needs and preferences, they would tend to be more inclusive than the academically-orientated languages. Islamic Law for settlements and buildings is also such a language – one that was fully codified a thousand years ago and still enforced in some parts of the Muslim world (Figure 3). It is just as normative and pragmatic as Alexander’s, but less doctrinaire.

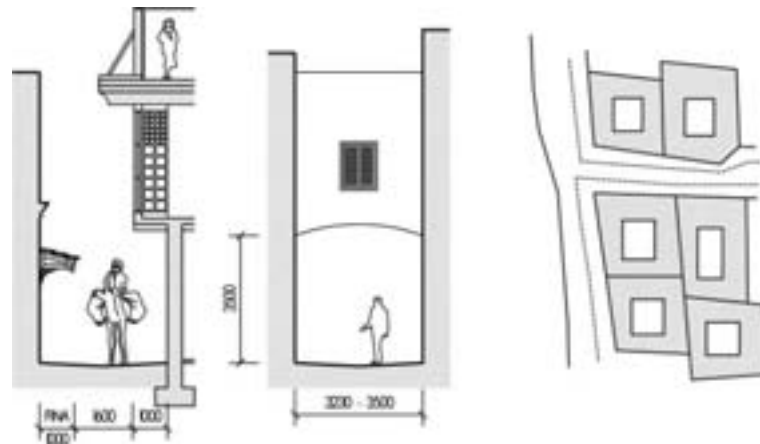


Figure 3
Islamic Law and the making of space (Drawing: Steyn after Hakim 1986: 21).

Whereas *A pattern language* seems to be generative and intended to contribute to “good” design solutions, its companion book, *The timeless way of building*, explains the structure of Alexandrine pattern languages. The patterns that make up such a language can be clustered under the following headings (Alexander 1979: 331-336):

1. The region (#1-7)
2. A town (#8-27)
3. Communities and neighbourhoods (#28-48)
4. Public land inside a neighbourhood (#49-74)
5. Private land and institutions in the neighbourhood (#75-94)
6. The broad layout of the buildings in a building complex (#95-126)
7. The building and its rooms (#127-158)
8. The gardens and the paths between the buildings (#159-178)
9. The smallest rooms and closets within the rooms (#179-204)
10. The overall configuration of construction and materials (#205-213)
11. The details of construction (#214-232)
12. Details, colour and ornament (#233-253)

To achieve the conciseness demanded by a journal format, this article provides some historical background to the case study, but investigates the application of *A pattern language* under just three headings: (1) urban and neighbourhood settings, (2) groups of buildings and the spaces between them, and (3) individual buildings and their construction.

History of Swahili towns and Malindi

Swahili cities and their buildings were, from their establishment in about the 10th century until Portuguese intervention in 1502, very much alike, in spite of intense political and commercial rivalry between them (Figure 4). Early Swahili towns were evidently similar in scale, layout and architecture (Ghaidan 1976: ix). In fact, Garlake writes that the major elements still visible at the abandoned sites "...are so similar to each other as to be valueless in a typological study" (1966: 5). They were compact, walled towns, with narrow, winding alleys, small, intimate public squares, and stone houses surrounded by mud-and-thatch huts. Swahili walls seem to have served to demarcate territory, rather than being erected for defensive purposes, and were the setting in which purely African and Arab-influenced architectural traditions co-existed. They were all shaped by a common codified system, probably based on the laws of Islam, addressing privacy and interdependence between neighbours, and dictated simple, unassuming exteriors, a hierarchy of spaces, and privacy for women and families (Hakim, 1986: 15, 95).



Figure 4
Portion of the Gedi ruins.

In his essay, *A city is not a tree* (1966), Alexander suggests that natural cities that grow over time are the "most appropriate containers" for the complex forms of social relationships. Malindi on the coast of Kenya is such a place (Figure 5). It is one of the string of Swahili towns that appeared about 1 000 years ago, but whereas most Swahili towns are now ruins, Mombasa is a modern Western-style city, and Lamu and Zanzibar are both World Heritage Sites to protect their respective 19th century Swahili and Omani physical qualities. Malindi seems to be responding reasonably well to contemporary economic and demographic pressures while maintaining a distinctly tropical African atmosphere and appearance. It seems eminently suitable as a case study, since its evolutionary development can be studied from its codified medieval base, to sets of patterns that emerged under 19th century Omani occupation, to patterns imposed by British intervention, to current patterns that are evolving from an internal dynamic and external opportunities.

Malindi is investigated in terms of the three physical levels of human settlement: (1) urban and neighbourhood settings, (2) groups of buildings and the spaces between them, and (3) individual buildings and their construction. To achieve a relatively comprehensive profile, each level is broadly described in terms of space, typology and tectonics. Since a sustainable settlement is in a constant state of flux, the overriding question when assessing elements in each of the nine fields is: How responsive and adaptable is it really? For that reason, each field compares the historic fabric of Lamu with Malindi as it exists now, with a focus on its historic core.

Under each heading distinctive features are explored and significant patterns – both physical and behavioural – cross-referenced with those of Alexander².



Figure 5
Locality map.

Description of Malindi using *A pattern language*

A map of Kenya shows an EVEN DISTRIBUTION OF TOWNS (Pattern #2) throughout its fertile inland regions and along the coast. Malindi is situated 95 km north of Mombasa and 130 km south of Lamu. It is the second largest Kenyan coastal centre after Mombasa and relies on tourism, furniture manufacturing and agriculture. With 35 000 inhabitants it is a small city rather than a COUNTRY TOWN (#6), but it exists in symbiosis with THE COUNTRYSIDE (#7) that provides fresh produce, meat and fish.

Urban and neighbourhood settings

The built-up area within the municipal boundaries measures approximately 1 600 hectare (ha). It has a radial or fan-shaped form with Old Malindi located roughly where the main streets converge, forming an ECCENTRIC NUCLEUS³ (#28). The edge is frayed, blending gradually with the evenly dispersed rural villages surrounding it.

The British demarcated the two neighbourhoods of Old Malindi with a ring road and expanded the town with a typical zoned Garden City master plan (Figure 6). It features an INDUSTRIAL RIBBON (#2) along the Mombasa road past the airport. A substantial portion of seafront land to the north and south of Old Malindi is allocated to resort development (189,3 ha or 11,6%), and while 687,2 ha (42%) is zoned for general residential areas, an astonishing 588,0 ha (36%) is reserved for “high-income residential” neighbourhoods. These accommodate mostly free-standing villas, some of which are permanently occupied by retired British and Italian expatriates, but most are holiday homes. The density is probably no more than 4 to 5 dwelling units per hectare (du/ha), increasing in the resort areas and culminating in a density of about 35 du/ha in the Muslim quarter of Old Malindi, creating DENSITY RINGS (#29). The Muslim population density is about 270 to 330 people per hectare (p/ha) due to the prevalence of extended families

of three and sometimes four generations per household. Some relevant patterns are LIFE CYCLE⁴ (#26), HOUSEHOLD MIX (#35), OLD PEOPLE EVERYWHERE (#40), CHILDREN IN THE CITY (#57) and THE FAMILY (#75). Old Malindi and its adjacent neighbourhoods collectively form a LOCAL TRANSPORT AREA (#11), between 1,4 and 3,4 km across and defined by another ring road.

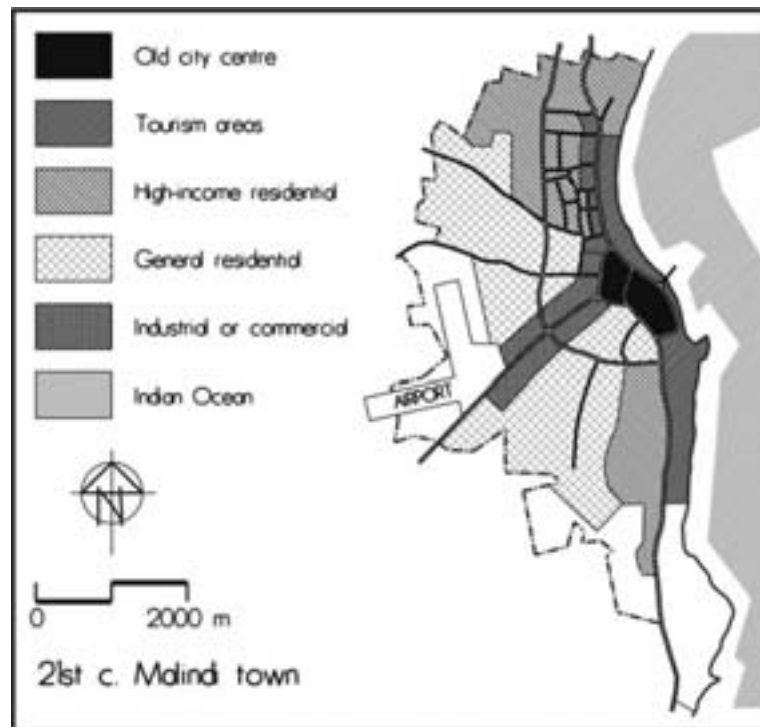


Figure 6
Present-day Malindi.

Old Malindi comprises about 50 ha and consists of a non-Muslim (32 ha) and a Muslim (18,6 ha) neighbourhood, the latter being the subject of this study (Figure 7). By way of comparison, the area within the outer walls of Gedi (c. 1300 to 1700) is 20 ha and that within the walls of Pate (c. 1200 to 1800) 23 ha. Present-day Lamu is 35 ha but its 19th century stone-house precinct only 11 ha. Zanzibar City has an area of 65 ha, but Stone Town, which became the capital of the Omani Sultanate in 1840, has an area of 29 ha. The population of the Muslim quarter is estimated at about 6 000 people, compatible with COMMUNITY OF 7000 (#12). Alexander is adamant that “Individuals have no effective voice in any community of more than 5 000-10 000 persons” (1977: 71), a view supported in most contemporary literature on New Urbanism.

Each of the two neighbourhoods that make up Old Malindi consists of clusters of wards; a system for social ordering called *mtaa* in Swahili, which allows groups with different cultural and economic backgrounds to co-exist. These wards are described as “... an ancient and ubiquitous phenomenon in Islam”. They are based on kinship, and are shared by rich and poor (Petherbridge 1978: 195), clearly forming a MOSAIC OF SUBCULTURES (#8).

In spite of being rebuilt in 1861 by the Omanis, who ruled from Zanzibar, Old Malindi displays none of the Arab qualities that gave Stone Town in Zanzibar City its distinctive character (Figure 8). In fact, typologically and in terms of land use it is remarkably similar to the typical linear Ashanti towns of Ghana, with their wide public plazas demarcated by courtyard homesteads, a pre-colonial tradition (Oliver 1987: 198). Rather than becoming a dense, aggregated urban entity like Zanzibar or Lamu, it became an urban village.



Figure 7
Zanzibar City and Swahili urban footprints.

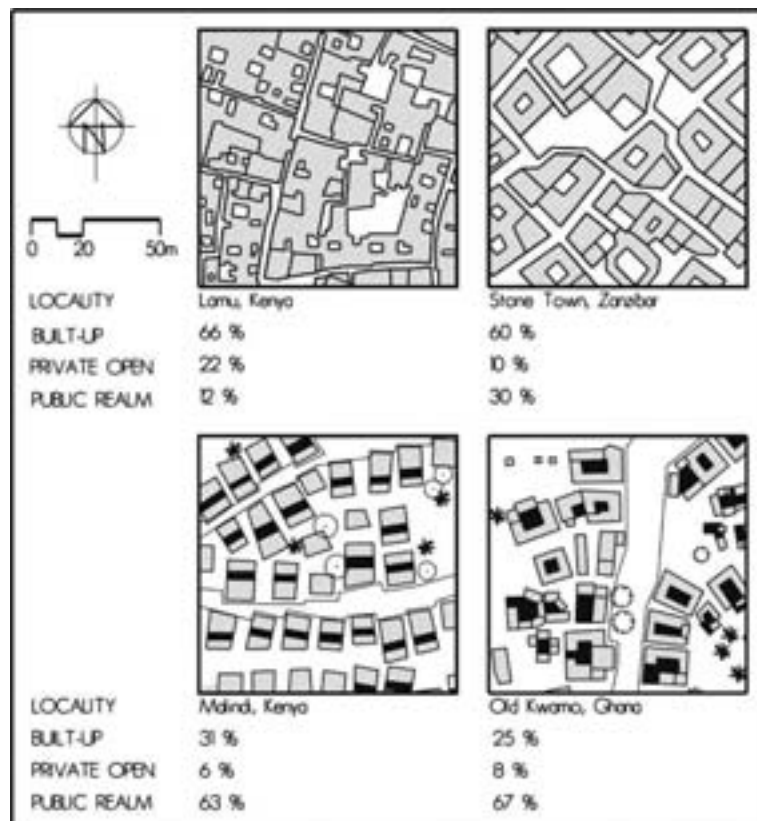


Figure 8
Typological and land-use comparison.

The British-built RING ROAD (#17) defines the neighbourhood and demarcates a superblock of about 400 to 500 metres across; a comfortable five minutes' walk (Figure 9). Old Malindi's street block conforms in most aspects to Alexander's patterns for successful neighbourhood

patterns. The inherent stratification of Swahili society resulted in an ancient system of wards. The superblocks are now simply delineating them, allowing a MOSAIC OF SUBCULTURES (#8), IDENTIFIABLE NEIGHBOURHOODS (#14) and a WEB OF PUBLIC TRANSPORTATION (#16). Alexander points out that these subcultures are not intended to be “tribal or closed”, but are rather based on shared values, lifestyle and choice (1977: 48). Since the ring road is paved while the lanes inside the block are irregular, only roughly linear, mostly unpaved and shared by vehicles, bicycles and pedestrians, traversing the block is simply not a practical option for motorists not travelling specifically to a neighbourhood. It is, consequently, largely relieved of through-traffic. A few easily identified entry points form MAIN GATEWAYS (#53).



Figure 9
A lane in Old Malindi.



Figure 10
The ring road as a shopping street.

A significant characteristic of many African settlements is the market street, which, like the Arab *suq*, is a significant typology and organiser of urban space. Oliver classified it as a distinct pattern with buildings facing a “communication route” to benefit from passing trade (1987: 46). The market square in Lamu is a Portuguese creation and whereas Old Malindi has no market square within its perimeter, the ring road forms lively SHOPPING STREETS (#32), which serve the broader community and offer tourists a MARKET OF MANY SHOPS (#46), STREET CAFES (#88), and TRAVELLER’S INNS (#91). It also forms SUBCULTURE BOUNDARIES⁵ (#13) in association with public transport and other public nodes, in this case a bus and *mutatu* park (BUS STOP #92). A *mutatu* is a MINI-BUS taxi (#20), the ubiquitous and flexible system of public transport throughout sub-Saharan Africa. Since car ownership seems relatively low, provision certainly does not exceed

NINE PER CENT PARKING (#22) and is limited to SMALL PARKING LOTS (#103) at public facilities (Figure 10). On the eastern edge the ring road separates Old Malindi from the beach, forming a PROMENADE (#31) and creating ACCESS TO WATER (#25). QUIET BACKS⁶ (#59), ACCESSIBLE GREEN (#60) and a soccer field for LOCAL SPORTS (#72) are located within walking distance further down the coast.

Figure 11 shows that internal lanes are defined by the BUILDING FRONTS (#122), resulting in informal PATH SHAPES (#121), which, together with the built-in benches discussed below, create true social spaces with a high PEDESTRIAN DENSITY (#123). Buildings are mostly freestanding in COMMON LAND (#67), constituting a NETWORK OF PATHS AND CARS (#52). Houses located behind these are accessed with footpaths (DEGREES OF PUBLICNESS #36, GREEN STREETS #51, PEDESTRIAN STREET #100). Community facilities, including schools and religious institutions, are scattered throughout the block (ACTIVITY NODES #30). The majority of small businesses serving the local economy are run from the front rooms of private homes, which accommodate SCATTERED WORK⁷ (#9), form a WEB OF SHOPPING (#19) and accommodate a WORK COMMUNITY⁸ (#41). There are also CORNER GROCERIES (#89) and FOOD STANDS (#93). There are a number of SACRED SITES (#24): The mosques are considered HOLY GROUND (#66) and there are a number of sacrosanct GRAVE SITES (#70), all with HOUSING IN BETWEEN (#48).

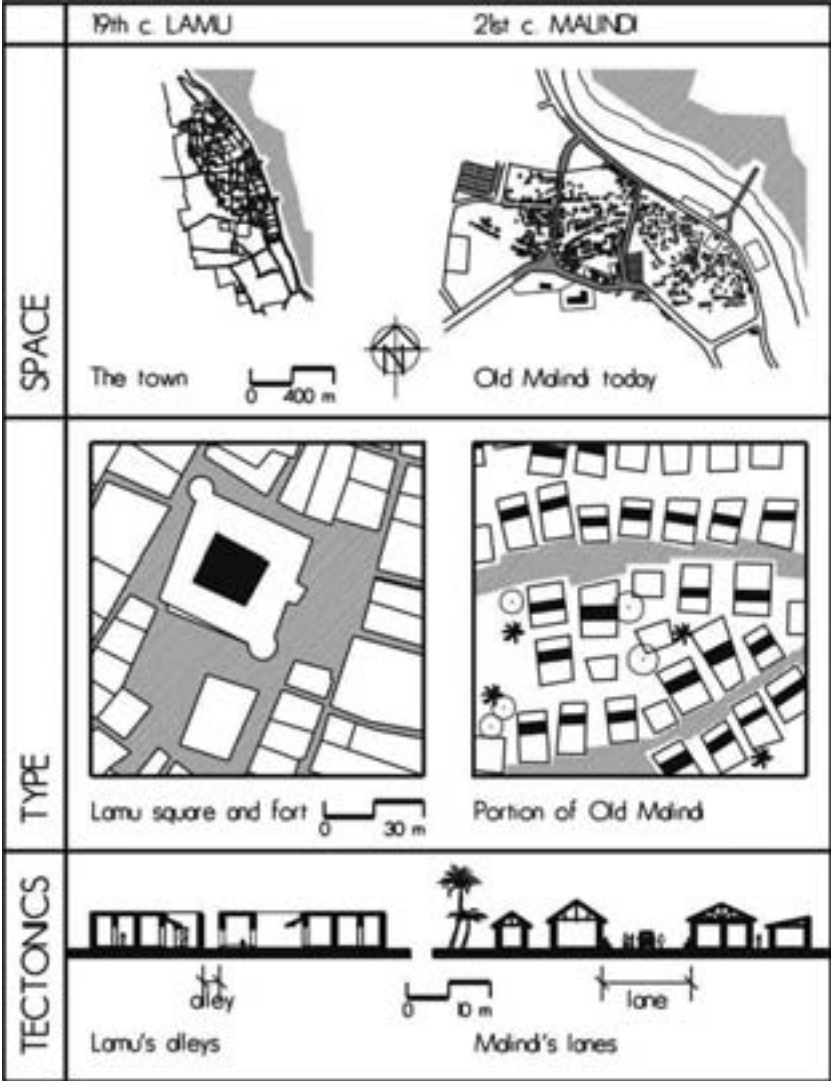


Figure 11
Urban patterns.

Groups of buildings and the spaces between them

As in Lamu, a clearly organised HIERARCHY OF OPEN SPACES (#114), from public, semi-public, and semi-private to the private spaces in courtyards is made possible by the placing and typology of the buildings (Figure 12). Figure 13 illustrates the more haphazardly laid-out non-Muslim neighbourhood with its variety of houses and buildings, including some apartment buildings, apparently with a FOUR-STOREY LIMIT (#21). In the Muslim neighbourhood there are mosques and small public buildings, and a small number of Omani houses (similar to the prevalent type in Stone Town), sometimes arranged as ROW HOUSES (#38) and as CONNECTED BUILDINGS (#108), but the NUMBER OF STOREYS (#96) seldom exceeds two. In fact, the fabric is dominated by the single-storey so-called Malindi or Swahili houses. While Lamu houses were tightly aggregated, Malindi houses are clustered to define streets and rough squares (HOUSE CLUSTER⁹ #37; SMALL PUBLIC SQUARE #61; PUBLIC OUTDOOR ROOM #69; ACTIVITY POCKETS #124). The neighbourhood is totally permeable to pedestrians. Its walkable size and especially the conspicuous silhouette and the figural quality of its nodes, such as the mosques (Figure 14), create CIRCULATION REALMS (#98), not only making orientation easy, but also creating a fine-grained network of PATHS AND GOALS (#120) with GARDENS GROWING WILD (#172) in between. The narrow, labyrinthine alleys of Lamu tend to hide entrances to houses, but in Malindi a large number of houses are visible at any point, revealing a FAMILY OF ENTRANCES (#102) enhancing the legibility of the place.

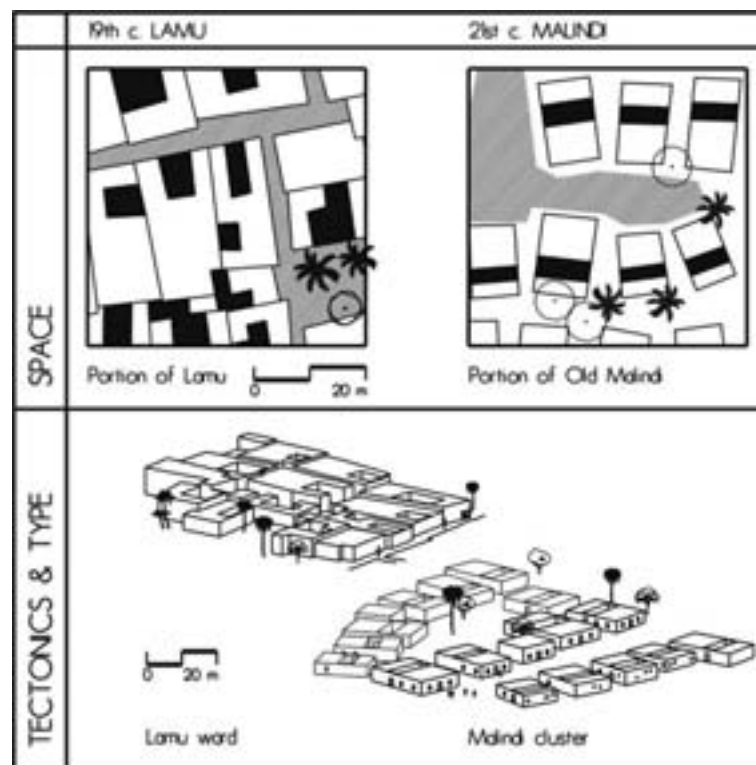


Figure 12
Building patterns.



Figure 13
The non-Muslim part of Old Malindi.



Figure 14
An Omani mosque in Malindi.

While most Zanzibar and Lamu houses have an ENTRANCE ROOM (#130), an exterior lobby (*daka*) where men meet, many houses in Malindi – Swahili as well as Omani – have a stone bench adjacent to the entrance door on the street (*baraza* in Swahili), which actually forms an

OUTDOOR ROOM (#163) and allows easy socialising along the street, as shown in Figures 15 and 16 (FRONT DOOR BENCH #242). Contrary to the blank walls of the Lamu houses, Malindi houses have STREET WINDOWS (#164). The OPENING TO THE STREET (#165) is much more welcoming, since the importance of the indirect entry associated with Islamic planning, is considerably reduced, and the MAIN ENTRANCE (#110), usually in the centre of the street façade, is through a 1,2 metre wide carved double door, similar to the doors found in Stone Town, leading through a SHORT PASSAGE (#132) to a courtyard. This is a private cooking area and a space for women (POSITIVE OUTDOOR SPACE¹⁰ #106, COURTYARDS WHICH LIVE #115). A front room is often used for home industry and others are for rent. This configuration provides both an ENTRANCE TRANSITION (#112) and an INTIMACY GRADIENT (#127).

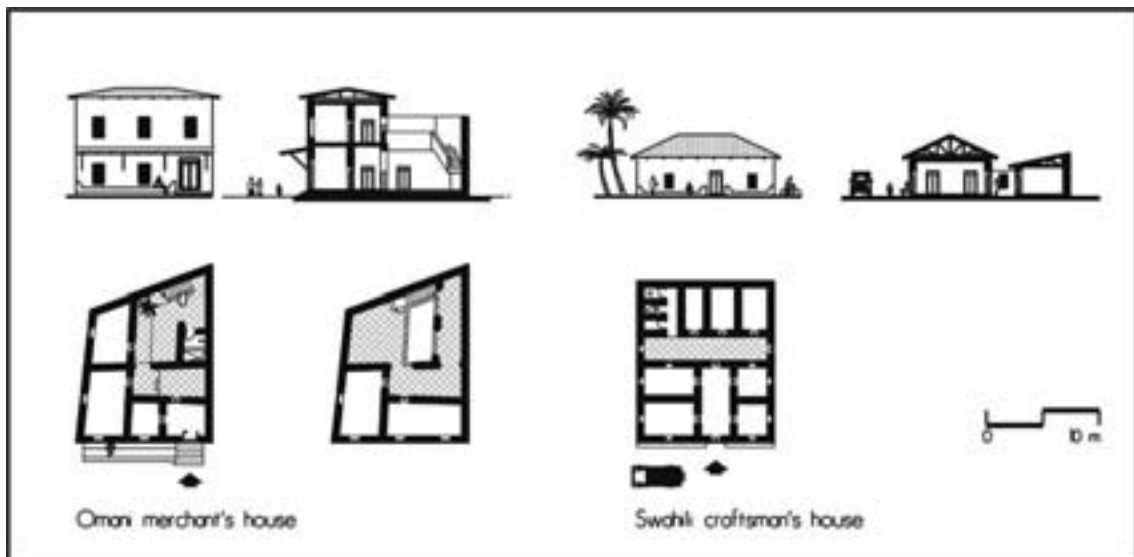


Figure 15
A comparison between an Omani and a Swahili house surveyed in Malindi.



Figure 16
An Omani house in Old Malindi with built-in bench.

Individual buildings and their construction

The Malindi house seems a transformation of the standard Lamu house, featuring a central-corridor/rear courtyard pattern (Figure 17). It accommodates local needs for home industries and lettable rooms, with a private courtyard for cooking and washing, and a separate building for

ablution and storage. The model obviously evolved from a collective consensus of what was appropriate: The type is now prevalent along the coast of Kenya and Tanzania, pragmatically constructed of the most appropriate materials available, whether thatch and mud or metal sheeting and blocks. This is an amazing example of how a house type can be regionally adopted if it satisfies collective values and needs.

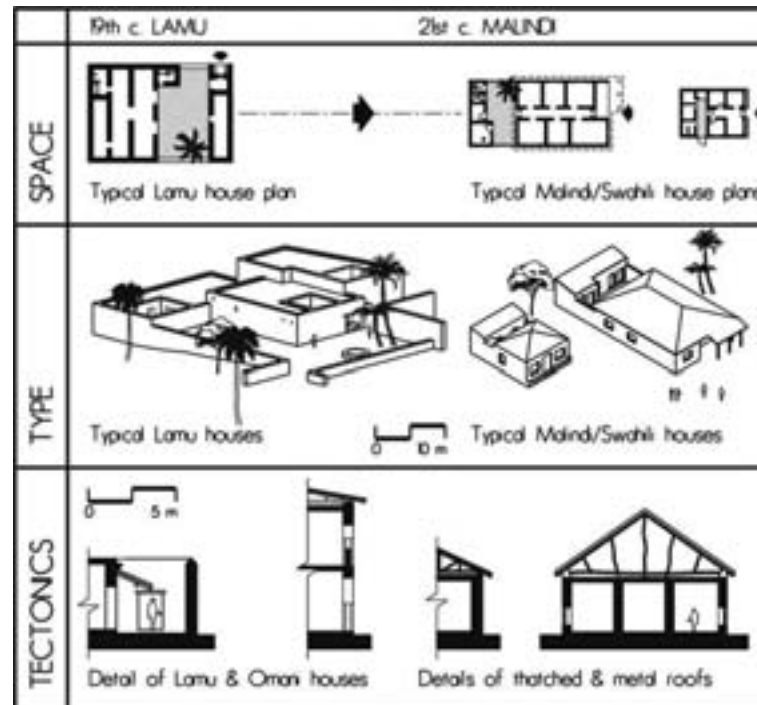


Figure 17
Construction patterns.

The loggias of the Omani houses, the interior courtyards and the built-in benches enfronting streets and alleys are examples of well-used open-to-sky functional and social spaces. Room sizes in all types rarely exceed 12-14 square metres, which accommodate sleeping, living and work activities, reflecting **STRUCTURE FOLLOWS SOCIAL SPACE** (Pattern #205). In Malindi the same suite of construction tectonics is used for the vast majority of building types. Not only does this ensure a harmonious built environment, but it is also a set of tectonics that developed evolutionarily and democratically over more than a thousand years into the most efficient system to enclose space in terms of structure, materiality and response to contextual variations. Equity is achieved, since the houses of the rich and the poor differ in scale, rather than in construction. This reflects Pattern #206, which recommends that the **MOST EFFICIENT STRUCTURE** should be designed for a given set of spaces and activities.

Pattern #207 states simply that **GOOD MATERIALS** should be used, explaining that these should be low-energy, recyclable and *in situ* workable. In Malindi, coralline limestone blocks are still the preferred material for wall construction, usually finished off with whitewashed smooth lime plaster. Many buildings have flat roofs and suspended floors consisting of closely spaced mangrove poles supporting roughly dressed coral blocks with coral lime concrete over. The planning module is based on the span of these mangrove poles and rarely exceeds 2,4 metres. Thatched roofs, called *makuti* roofs, remain popular and consist of “tiles” woven from palm fronds over mangrove pole trusses. Many roofs are covered with corrugated iron sheeting, often protecting original suspended flat roofs. The wall and roof construction technologies are the same as in Lamu and Stone Town. These are labour-intensive small-scale technologies and support the

local building industry, since craftsmen (*fundi* in Swahili) can do most of the work required ... from repairs to a house to participating in the construction of a luxury villa or resort.



Figure 18
A holiday home on the beach.

The assessment

In spite of vastly different cultural and geographic contexts, about 80 of Alexander's 253 patterns were clearly evident in Malindi and more were discreetly present, or present in a derivative configuration. Of interest is that 54% of Alexander's urban patterns, 22% of the patterns that define groups of buildings and the spaces in between, and only 10% of the patterns relating to individual buildings and their construction were matched. This is evidence that the qualities of good settlement tend to be universal at an urban scale, but increasingly culture-, resource- and site-specific towards the construction end. As Figure 19 serves to show, the decrease in the number of matching or corresponding patterns clearly implies an increase in the number of unknown patterns that remain to be identified and described. That would have taken this study to a logical conclusion, but is outside its scope.

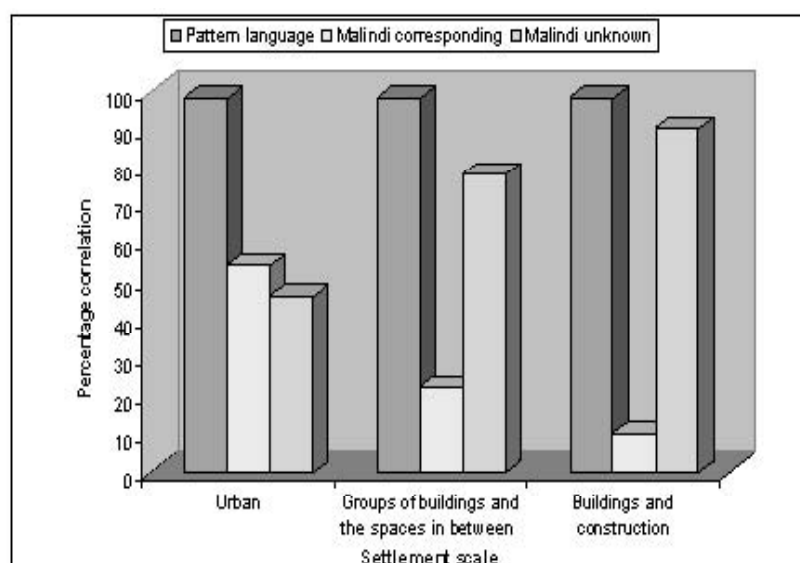


Figure 19
The larger the number of patterns that do not correspond with those in A pattern language, the more intensive the search to identify and describe patterns.

A pattern language, therefore, offers a simple and straightforward way of describing a settlement in terms of its 253 patterns, which are based on eight years of research and are generally considered credible and comprehensive. There should be a particularly high level of correspondence in Western-type settings, but a surprising number of these patterns also seem universal and relevant in extremely diverse and disparate contexts. But the pattern language approach as a whole allows two additional approaches. One is to determine why certain of the 253 patterns are not present, or are present in a fundamentally different form. If that cannot be explained – and appropriate patterns formulated – by describing the nature of variables, it might point to an inherent weakness in the settlement system. These variables include politics (INDEPENDENT REGIONS #1), traffic patterns (PARALLEL ROADS #23), culture and religion (NIGHT LIFE #33; DANCING IN THE STREET #63; BEER HALL #90), topography (HOUSING HILL #39), family customs (HOUSE FOR ONE PERSON #78; CHILDREN’S HOME #86), vernacular architectural tradition (WINGS OF LIGHT #107; LONG THIN HOUSE #109; ROOF GARDEN #118), climate (INDOOR SUNLIGHT #128; SUNNY PLACE #161) and technology (ROOF VAULTS #220). For example, Old Malindi has no beer halls because it is a Muslim community, but it has many coffee shops where men congregate. And there are no houses for one person because of the customary extended family. Similarly, there are courtyards rather than long, thin houses because of the need to ensure privacy for women.

A more laborious, but also more creative approach would be to scan an environment in search of recurring patterns, as in Figure 2, and to describe them (and the relationships between them) according to the protocol set out in *The timeless way of building*. The twelve headings listed earlier could be helpful. All three approaches allow an urban entity or a building to be described as either an artefact, or as a setting for activities. Particularly distinctive and durable patterns can also be codified as design principles so that new developments at the site under study, or in a similar physical and social context, could achieve continuity.

Conclusions

With this review of Malindi it was demonstrated that *A pattern language* is not only a useful tool for **describing** a settlement, especially when used in conjunction with *The timeless way of building*, but is also a valuable tool for **prescribing** desired normative urban strategies. The last option would, however, require the pragmatic but imaginative interpretation of the recurring patterns of the place the intervention is planned for. It is hoped that this article would be a “primer” – to create an awareness, not only of pre-colonial African settlements as sources of ideas and inspiration, but also of the value and power of Christopher Alexander’s methods as tools for analysis and synthesis of African precedent.

Notes

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| <p>1 These are <i>The phenomenon of life</i> (2003); <i>The luminous ground</i> (2003); <i>The process of creating life</i> (2003); <i>A vision of a living world</i> (2004).</p> <p>2 All photographs, drawings and surveys are by the author. Maps are based on information provided by the Municipality of Malindi, Lamu Museum and the Stone Town Conservation Authority.</p> <p>3 Higher density community cores often develop off-centre and closer to a neighbourhood boundary.</p> <p>4 A good community tends to have a balance of people of all ages.</p> | <p>5 Each subculture has its own ecology and needs to be physically separated.</p> <p>6 Quiet paths or alley-ways that lead to pools, streams or green areas.</p> <p>7 Workplaces should be scattered throughout the city, rather than concentrated in zones.</p> <p>8 A collection of 10 to 20 workplaces.</p> <p>9 Alexander suggests clusters of 8 to 12 households.</p> <p>10 Positive outdoor space is achieved with enclosure and perimeter definition.</p> |
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