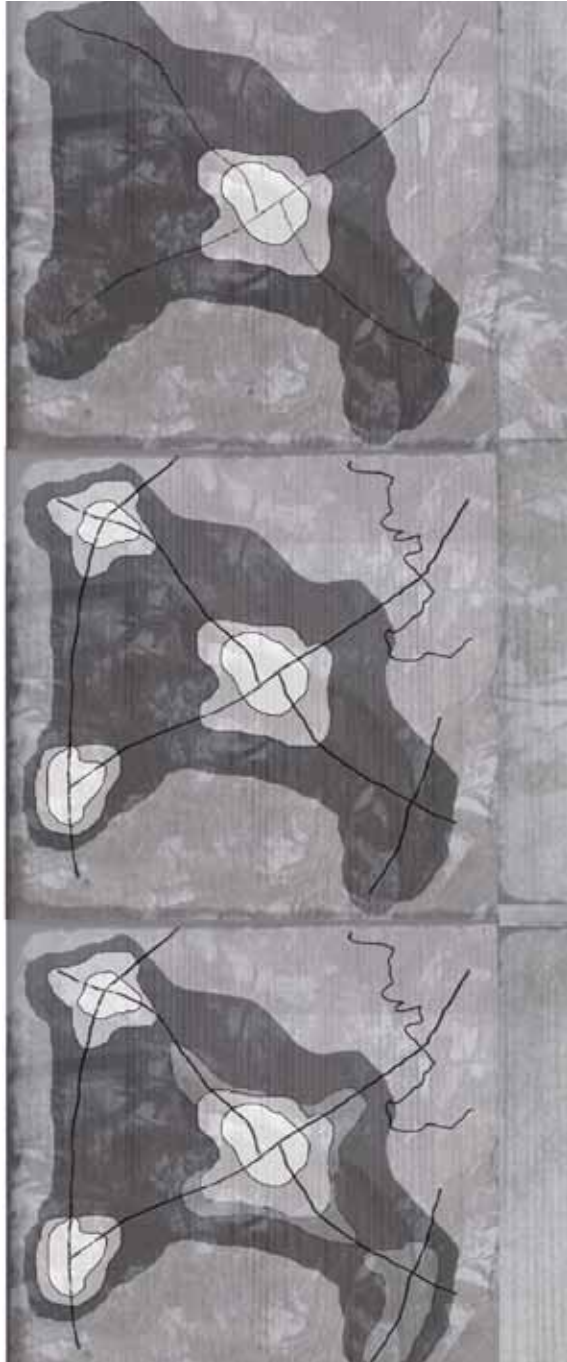


It has been mentioned that linearity is a prevalent unplanned urban phenomenon in Africa, yet in order to apply this concept to a local intervention, either urban or architectural, it needs to be better understood in terms of pattern formation.

Arturo y Mata's Ciudad Lineal and the spatial layout of Atlanta are examples relating to linear and multi nodal existence, yet although noble ideas, they remain Western in origin and applicable to a different set of rules from those of African rural development.

CHAPER THREE

understanding african space



Movement as space generator and Feedback system

The current formation of a settlement in Kenya (figure: 66-68) would be a pattern more appropriate to this context. Similarly, while the core principles deal with connectivity between established nodes, a more chaotic, informal and self-organizing pattern is derived from African linearity.

The pattern of informal economic development is not well understood except for the fact that its being is born from a system of dependence on interaction between commuters and product, as well as its ability to adapt to an environment dominated by constant movement between significant points.

Feedback is a defining characteristic of any self-organizing system and is the main driving force behind complexity. It can be broadly described as parts interacting with the whole. As mentioned earlier, the creation of informal markets, although seemingly chaotic, still remains successful in many ways. This implies an underlying sense of order fitting its rural context. These informal markets rely on constant feedback from consumers in order to ensure survival. In turn, the consumers rely on the formation of informal markets, located along and around movement corridors and transport interchange nodes and drop-offs, for the provision of necessities and fresh produce.

Invisible Urbanism

“Invisibility seems so analytically central to thinking about the contemporary African city” Vjayanthi Rao (2007: 87).

In Kinshasa: Tales of the Invisible City, Filip De Boeck (2007: 77 Journal) refers to this interaction between people and their environment as forming part of a city’s non-material infrastructure. He explains: “In spite of the fact that an analysis of the different physical sites through which the city exists and invents itself helps us to better understand the specific ways in which the materiality of the infrastructure generates particular sets of relations in the city, I would submit that in the end, in a city like Kinshasa, it is not, or not primarily, the material infrastructure or the built form that makes the city a city. The city, in a way, exists beyond its architecture... the infrastructure and architecture that functions best in Kinshasa are almost totally invisible on a material level.” Furthermore, De Boek (2007: 87) elaborates on the invisible infrastructure as comprising urban networks and the manner in which people move through the city, make use of the city, and how they create and generate the city while doing so.

It can be argued that this interaction between supplier and consumer is the best functioning form of infrastructure in Mamelodi. It establishes a link between nodal points and on a theoretical basis replaces the lack of urban fabric, or physical “built form”, with the energy and movement required to keep Mamelodi alive.

In this case, movement can be considered as a ground floor activity within an urban environment, shaping its own self-organizing urban and social space through a general feedback system. These activities or infrastructure mainly determine and are responsible for Mamelodi’s current amorphous form.



Figure 69-70: Market development along main routes in Kenya

Page 037:Figure 66-68: From top to bottom: Indicating the growth of a settlement pattern in Kenya as movement patterns



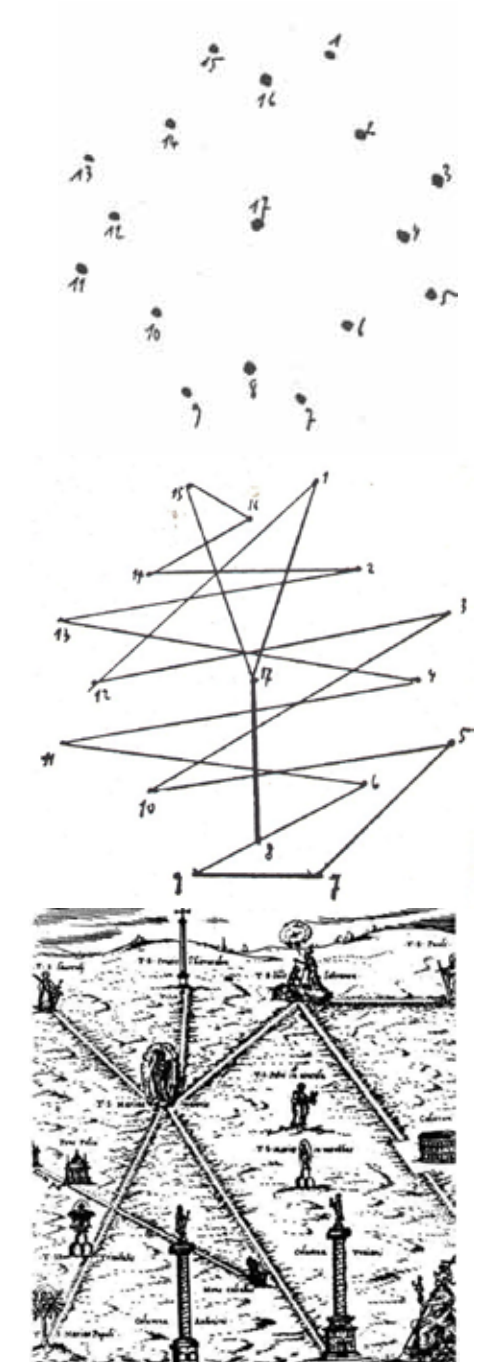
Movement as a tool for organization

By means of the brief investigation of the peripheral formation of a settlement in Kenya and basic observation of the informal trade in Mamelodi, one can deduce that movement, as a method of connectivity between well established nodal points, is a possible basic organizational tool.

Edmund Bacon (1968: 114) refers to the work of Paul Klee with regard to the flow of lines of energy along the veins of a leaf being comparable to the movement of people. Reflecting on Klee's water-color painting (Figure: 71), Bacon describes it as adding another dimension to the structural movement of energy within the city and interprets this as, "the creation of fields of quality at the points of convergence of movement systems".

He writes that, "Since the veins of a leaf or the branches of a tree are comparable to the channels of movement of people and goods within a city, we see the parallel between organic structural form and the city movement system, their sequential effect on the sensibilities of the people who move over them, and the resulting effect on the appearance and character of the city adjacent to them." (Bacon 1968: 114) Relating to movement as a tool for organizing space, Bacon mentions that movement and the interaction of the people that move through it have an effect on the character of the city, or place, adjacent to these movement patterns.

Comparing Klee's painting to Figure: 72, it is evident that the same "dimension of structural movement" (Bacon 1968: 114) is applicable to the settlement formation of current Kenya (Figure 68). Bacon's described fields of quality at the points of convergence of movement systems becomes a prominent aspect in the formation of African space and place.



Domenico Fontana, when commissioned by Pope Sixtus V to restructure the city of Rome in 1585, conceived it as a network, rather than as "a static controlled object". Francescato believes that such a network can serve as a framework for incremental growth and change, as a generator of urban form when responsive to communications and circulation, and as a means of managing spatial organisation.

The nodes and webs of connections are then given "spatial presence" through the architectural control of elements. He does not acknowledge Kevin Lynch, whose approach to imagining a city through the elements of paths, edges, districts, nodes and landmarks is considerably more comprehensive than his, and is still widely used as an analytical technique (1960), but cannot be used to reliably predict the dynamics of a city either.

Page 039:Figure 71-72: Water-color painting by Klee (Bacon 1968: 115) relating to current Kenya settlement pattern formation

Page 040:Figure 73-75: Fontana's plan for restructuring Rome, 1585, by Bordino (Bacon 1968: 124-125)

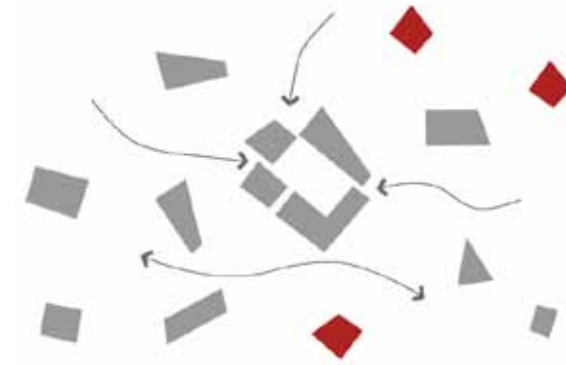


Figure 76: Frederick's diagram indicating positive and negative space (2007: point 6, author's image)

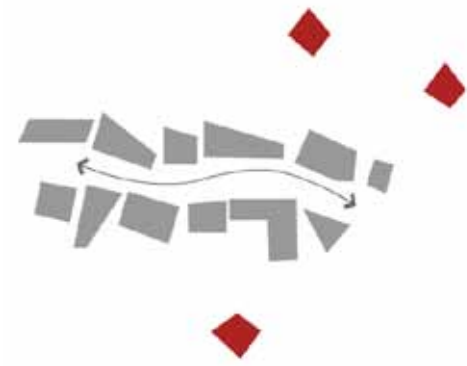


Figure 77: linear movement as positive space

Matthew Frederick states (2007: point 6): "The shapes of architectural spaces greatly influence human experience and behavior, for we inhabit the spaces of our built environment and not the solid walls, roofs and columns that shape it. Positive space is almost always preferred by people for lingering and social interaction, Negative space tends to promote movement rather than dwelling in place." (Figure: 76)

Relating these statements back to Mamelodi, its character and identity is one born from the interaction between movement and people and in turn between people and their needs. The 'veins of a leaf', as referred to by Bacon, essentially become veins of movement which keep Mamelodi alive. It is the combination of negative spaces, as a promoter of movement that creates positive space. Thus movement and its constant interaction with people creates place (Figure: 77).

One then arrives at a better understanding of these seemingly "chaotic" patterns of formation so that the possibility exists for organizing and designing an intervention in order to ensure its survival through the interaction and constant feedback between people and their surrounding environment and those between people and building.

Scale and surroundings

Colossal, over-scaled buildings tend to be uniformly ugly, and managing the massing and scale of a big building in a fine-grained context, like a township or informal settlement, is always a challenge. A big, elegant, monumental building can, however, bring presence and civic pride to a poor community, and if it draws visitors it can provide significant employment opportunities and other spin-offs. An example is the Museum of Struggle in Port Elizabeth by Jo Noero and Heinrich Wolff (Figure: 78). Completed in 2005 and the first of five buildings to form the Red Location Cultural Precinct (Figure: 79), it is a big (nearly 8,000 square metres) building. Whereas the interiors and exhibitions are hauntingly disturbing, the typology points to the intention to create an asset with which the community can associate itself. At a physical level, the materials reflect those of the surrounding areas. Socially and economically the building is intended as a backdrop for community activities, with the eastern edge being reserved for informal traders, described as a "habitable wall". Similarly, the entrance pergola is a public gathering space, while a generous grassed area inside the L-shape footprint features a large screen and provides an outdoor cinema for 2,500 people. The street on the eastern side offers access to a row of houses, and is configured to favour pedestrian traffic.

The concept of large-scale buildings within a finer grain urban fabric as a community focus is one that dates back in time. Just like the Museum of Struggle the Mosque in Timbuktu (Figure: 80) stands tall above all of its surroundings. In spite of the views of certain social scientists to the contrary, contemporary cities, their buildings and public spaces are no longer expected to be expressions of culture in an ethnocentric manner. They should rather constitute manifestations of contextual characteristics, economic realities, existential necessities, aspirations and expectations, and choice.

Culture as a life-style is embodied in the dynamics of townships and informal settlements. Taste is reflected in a preference for nostalgically-historical, neutral, modernist or avant-garde aesthetics. And at the very highest level, culture provides clues, whether intentionally or not, to the ideals and hopes and fears of a society.

What we desperately want to avoid are buildings that are coded to signal "only for poor black people".



Conclusion

It is evident that movement, or the commuting of people on a daily basis, in a rural context exerts a large impact on how an environment is shaped. It is this invisible infrastructure of interaction and energy that proves to be the most efficient urban network and creator of rural urban space. In Mamelodi, these linear urban spaces are a result of human beings' behavior and their interaction with the surrounding environment. By means of connectivity between new and existing nodes, one can establish an integrated system of movement as well as functional and social urban spaces, creating a 'spine' of economic opportunities connecting the town of Mamelodi.

As is the case with changing technologies, so too should the physical environment be adaptive for change and flexibility. It is my opinion that only through the fusion of a functioning non-material and architectural environment is it possible to arrive at a truly social facility belonging to the people of Mamelodi.

The creation of public space and architectural form should not be an expression of culture and its surroundings, but should rather adapt a series of guidelines in order for those spaces to fit within its context. This does not imply an aesthetic quality, but rather an adaptation to a specific lifestyle so as to enhance current circumstances. By means of theoretical and physical investigation one can conclude that for an architectural intervention to serve as a catalyst within a community, it has to be grouped together with a series of functions and placed within a context compatible with the characteristics of Mamelodi. Reaction to context, in essence, is a reaction to an outdoor environment where four principles play a determining role: linearity as a network for shaping African cities; movement as a tool for organization and source of energy for connectivity; movement as a requirement for interaction between people in order to create both infrastructure and to shape social positive space; the provision of a series of formal economic and civic programmes whilst ensuring flexibility for adaptation, self-organization and ownership within a community and neighbourhood.

Page 042:Figure 78: The Museum of Struggle from the air
(Digest of SA Architecture, 2005/2006: 12)

Page 042:Figure 79: Museum of Struggle as part of the Red
Location precinct (Noero 2009: 99)

Page 042:Figure 80: Mosque in Timbuktu