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Introduction

South Africa contains substantial concentrations of extremely poor communities in remote, inaccessible villages and economically stagnant small towns. The land between major urban centers and small towns and villages is dominated by large-scale concerns such as mining and commercial farming. On the expanding peripheries of big cities the land is being consumed by large, low-density gated communities and huge RDP schemes.

The historical townships, also called Model Townships, were built during the early 1950's apartheid era as barrack-like, dormitory 'developments' outside cities and towns, lacking the basic amenities required for sustainable communities. Their designers and planners alluded to Garden City ideals (Calderwood 1962), but for politicians they were simply mechanisms to stabilize and control the black population (Minkley 1998: D11; Mills 1989: 65-74).

INTRODUCTION

a brief overview

Introduction

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Page 009:Figure 1-3: Photos of current townships along the outskirts of Mamelodi

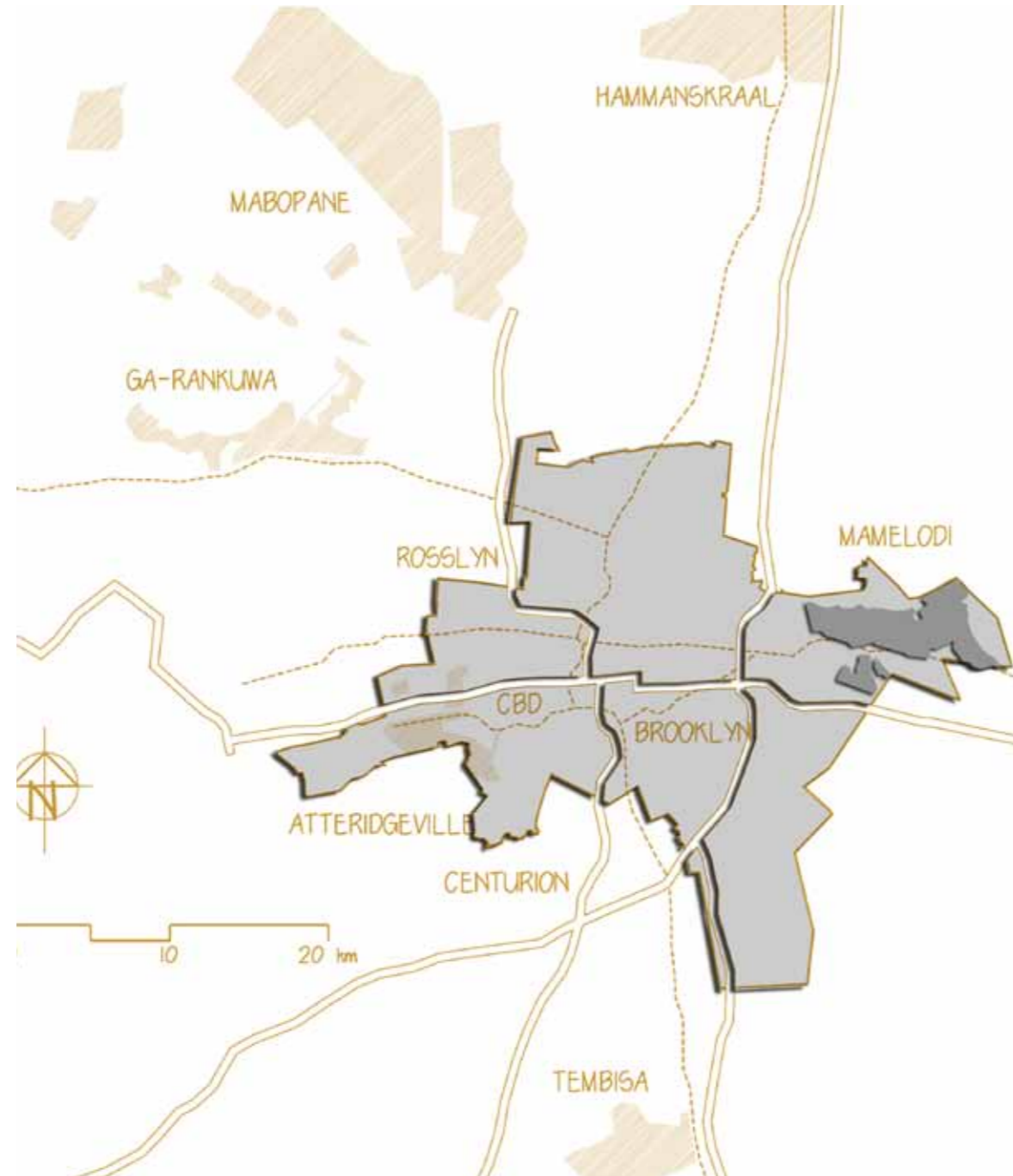
Page 013:Figure 6-11: Ching's diagrammatic exploration of linearity (Ching 1996: 198)

Page 013:Figure 12: 1882 – Linear city by Soria y Mata (Moughtin 2003: 198)

Page 014:Figure 13: Diagrammatic plan of Atlanta indicating multi nodal development

Page 014:Figure 14: Relating the multi-nodal development as possible solution for Mamelodi's fragmentation

Page 015:Figure 15-17: Mamelodi in relation to Tswahane Metropolitan area and indicating the internal fragmentation



Mamelodi in context

In relation to Mamelodi (Figure:4), situated to the east of the Pretoria CBD and along the eastern periphery of the greater Tshwane metropolitan region, its development as a so-called Model Township led to its segregation from the Pretoria CBD. Without the provision of basic and effective public amenities, such as proper schools and hospitals, Mamelodi could not successfully develop as an entity within itself. The result is that Mamelodi relies, and is still relatively dependent, on the Tshwane-CBD area regarding the provision of employment opportunities and basic amenities.

E.F. Schumacher (1989: 183) in 'Small is beautiful' avers that since "rural unemployment produces mass migration into cities, leading to a rate of urban growth which would tax the resources of even the richest societies; rural unemployment then becomes urban unemployment". This statement can be translated back to Mamelodi's current situation. The lack of an identifiable urban core and related need for economic growth accounts for Mamelodi remaining underdeveloped. Because work opportunities in Mamelodi are so restricted, almost 50% of its residents are unemployed and many more underemployed. In relation to Schumacher, Edgar Pieterse (2004/2005: 51) observes that the poor continue to find shelter opportunities mainly on the outskirts of cities with either no or limited essential services. He continues that impoverished citizens find themselves cooped up in badly built, poorly designed and distant RDP settlements that effectively amount to a ghetto of limited opportunities and stigmatization.

The result is an economic dependence on the city and industrial area, both remote from an envisaged urban core, yet there is no work available there either. All the same, residents still flock towards the city. The influx of rural inhabitants into Pretoria CBD leads to an unsupported and neglected local economy, leaving Mamelodi in no better state than that of a couple of years ago.

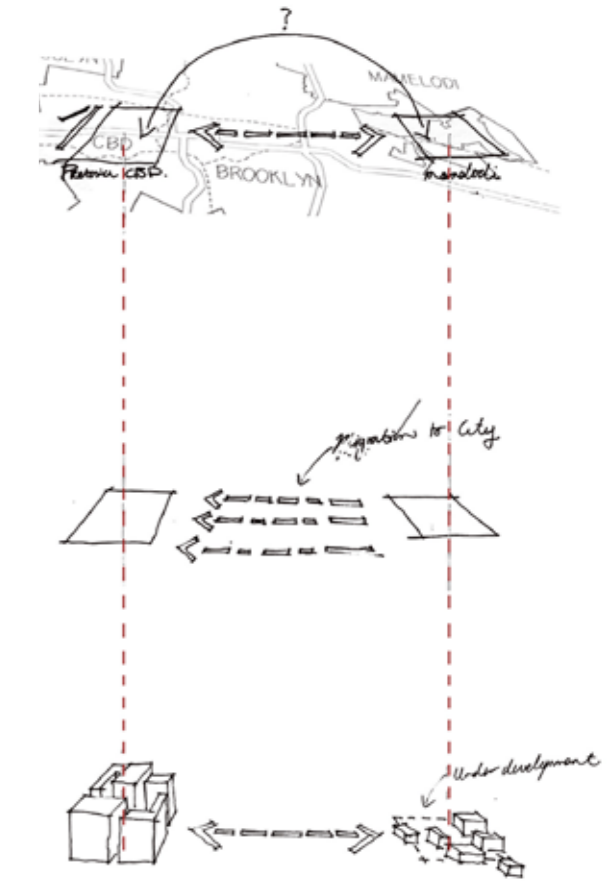
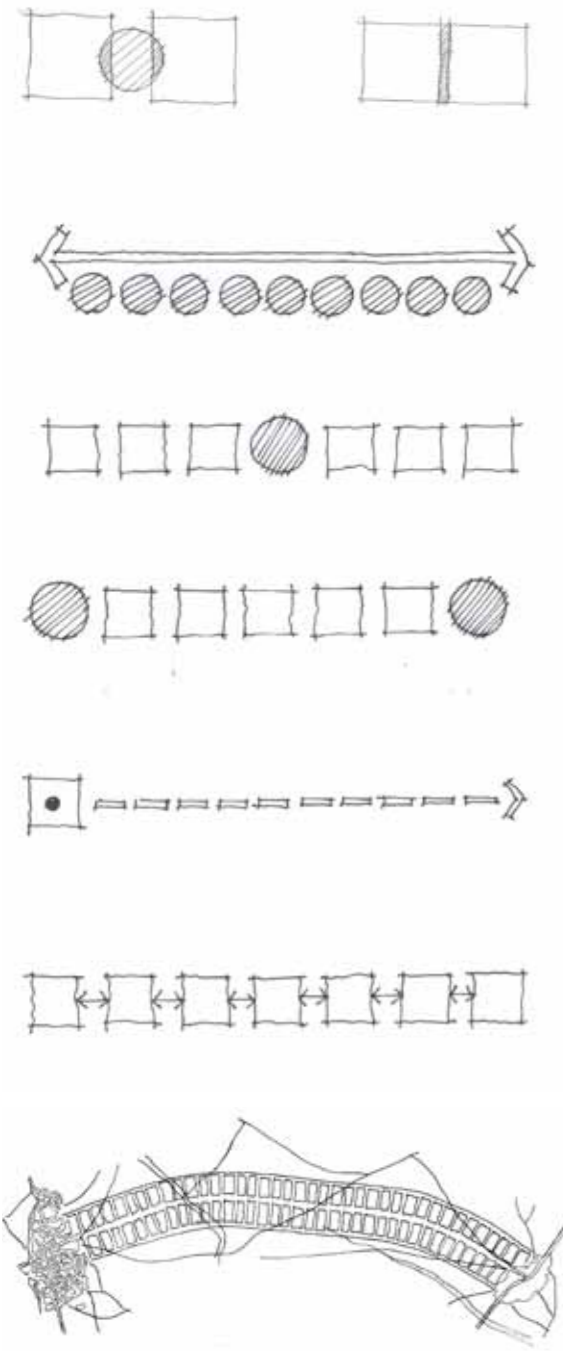


Figure 5: Diagrammatical illustration of Mamelodi's current situation



Urban scale intervention

Figure: 5 illustrate the dispensation of segregation (connectivity) and under-development diagrammatically. It is very evident, however, that the first step towards exploring a possible solution to Mamelodi's current detachment from the Pretoria CBD lies on an urban scale, that is, the development of Mamelodi as a self-sustaining economic entity as well as the establishment of an economic, spatial and movement corridor connecting Mamelodi to the Pretoria CBD (Figure: 6-11).

Although the concept of linear development is a prevalent un-planned urban phenomenon in Africa, it has a long history. First conceived by the Spanish transport engineer, Arturo Y Mata, who proposed his Ciudad Lineal in 1882 (figure 12), it represents "a continuous pattern of urban growth stretching through the countryside on either side of a rapid-transit spine route, incorporating both old and new urban centers" (Risebero 1997: 233-238).

The same concept has proved enormously successful in according order and structure to first-world cities such as Atlanta, Georgia. In relation to this, a founding principle of Cooper Carry, from Jerome Cooper Architect, points out that Atlanta comprises nodes of development, each of which has special characteristics and makes its own individual contributions to the city as a whole (Carabet 2008: 04). He continues: "Like a string of pearls these nodes are connected by interstate highways and rapid transit and are separated from each other by some of the finest single-family neighborhoods in the world" (Figure 13).

The same principle of a multi nodal linear development can be applied on a smaller scale to Mamelodi in an attempt to 'stitch' together its fragmented urban fabric (Figure: 14). This enables an opportunity to create both a more defined urban core together with a sense of place and a series of economically-sustainable communities as well as to provide the foundation for envisaged linear development. In relation to Jerome Cooper's description of Atlanta, one of the key pillars of the Tsosolosa Program is the concept of the "Strengthening activity linkages". This government document states the following: "The design of the activity spines and streets and their public environment is of vital importance because they require people to continuously move past them whilst enhancing their convenience, enjoyment and safety. However in the promotion of certain activity linkages the need for permanent 'forces of attraction' is paramount as they will further the sustainability of the economic activities along the street as well as the benefit from developing a conducive public environment" (City of Tshwane Spatial Development Strategy, February 2007: 3).





Intervention

E.F Schumacher (1989:178) opines that development, as a possible solution to poverty, does not begin with goods, but with education, organization and discipline. He continues by explaining that education stands as one of the three pillars of society.

My premise is that architecture, in an underdeveloped environment, can serve as a facilitator of knowledge transfer whilst also serving as a catalyst for community upliftment.

The conditions of the prerequisites are both physical and metaphysical. Physically, the intervention should be fully integrated with a public realm and civic infrastructure. On a metaphysical scale the intervention should promote accessibility and association with the community in order to ensure ownership.

The nature of the proposed intervention introduces a multi-functional information and resource centre, as part of a series of public, civic and economic programmes proposed by the government to constitute a new urban core surrounding the Eerste Fabrieke train station, located in ward 40 on the eastern side of the City of Tshwane Metropolitan Municipality (City of Tshwane Spatial Development Strategy, February 2007: 3). Ward 40 is adjacent to the township of Mamelodi and includes the low-income residential area of Nellmapius.

Apart from its displacement from the city, Mamelodi itself consists of a fragmented urban fabric, mainly because of the lack of a defined urban core within the recently established area of Mamelodi-East. The above mentioned development aims to fulfill this role, providing the necessary facilities in order to maintain a self sustaining community whilst contributing to economic and social growth within the Eerste Fabrieke area (Figure: 15-17).

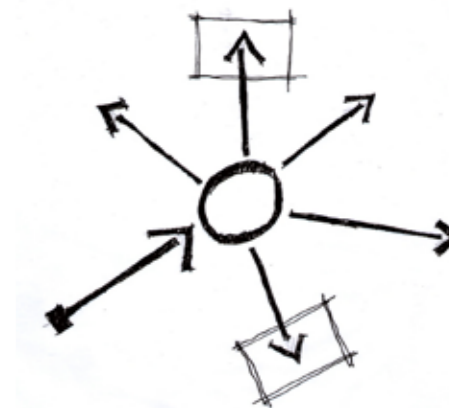
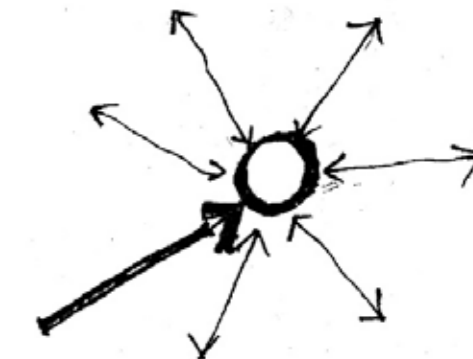
Knowledge as catalyst

The purpose of the proposed building type, an information and resource centre, is the distribution of knowledge, both in an intellectual and physical manner, and to serve as a catalyst for neighboring communities to inspire community upliftment. Intellectually, the intervention aims to achieve this by encouraging public accessibility to a variety of information resources such as books, journals, newspapers and educational methods, as well as through the provision of IT and multimedia facilities. It also aims to achieve educational connectivity through the physical distribution of educational materials, mainly books, journals and newspapers, to schools within the greater area of Mamelodi and Nellmapius. It then represents a functional centre of education and knowledge, filling the void between Mamelodi and Nellmapius, not merely in terms of urban fabric, but also with respect to accessibility and distribution of basic knowledge.

Knowledge itself can be viewed as a catalyst; a method of congregating a variety of people in search of information. The architectural intervention becomes a vessel, or container, for such activities and thus it must also comply with the requirements of the social realm, establishing itself in the community as a symbol of a free world where every individual has the choice to learn.

The library as knowledge container

The role of the library, in the conventional sense, as a container for knowledge and a vessel for books, is currently in question. The supremacy of the book is now being challenged owing to the introduction of advanced information technology (IT). The question is whether or not the library, as a building type, has any reason to survive when the media it holds have undergone such profound transformation. Brian Edwards (2009: 151) argues that the library should no longer be viewed as a functional container, but rather as a cultural icon and social symbol; a centre of community interaction and a place to celebrate learning. Therefore, essentially, in its function, the library has morphed from being a place for books to one for people.





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Building as a symbol in a community

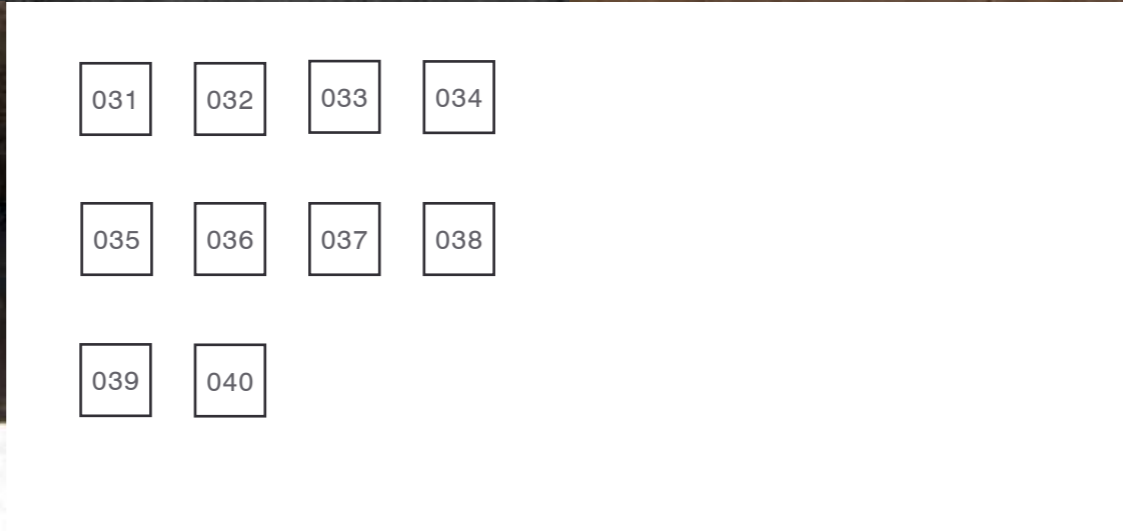
In terms of architecture and tectonic expression, the projected building can be viewed as an object composed from a variety of physical elements and created with different components. These are a combination of materials, construction methods, the space it defines and contains and the function or functions it serves. Through the articulation, expression and celebration of these materials, spaces and its related functions and form, the building reveals itself to the public. It stands as a symbol of its time and as a metaphor for equality, every human being's right to information, the freedom to learn, and to share and celebrate both education and civic services.

With regard to the building as an object within a community, the response to climatic and topographical conditions, expression and incorporation of local art, labour, craftsmanship, informal trade and materials may strongly reflect an identity relating to the community, its people and physical surroundings. The building should constitute an expression of a liberated, multicultural, progressive yet tradition rich nation.

Page 016:Figure 18-19: Diagrammatic representation of how knowledge can serve as a physical catalyst

Page 016:Figure 20: Building as a physical container of knowledge

Page 017:Figure 21-30: Examples of arts, crafts and trade as characteristic to Mamelodi



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Providing for informal trade

Located within an envisaged urban core, the establishment of informal trade is surely inevitable and thus needs to be taken into consideration and provided for. As viewed at the bus station in the Denneboom precinct, roofed provision was made for local trade, yet non-utilisation of these structures has left them standing desolate and abandoned while a more successful, yet completely informal, market was created right next to the previously mentioned structures. (Figure 41-43). By means of observation it has become clear that within a rural, informal trading society the provision for local economic opportunities requires more attention and a more creative solution rather than merely providing single storey, domino-like face brick buildings with corrugated roof sheeting.

The topic of appropriate materials should also be carefully revised in this context. If indeed informal traders choose to locate themselves on their own terms, the materials and applied building method should be of such a nature that they can be re-used and re-worked in order to be successfully replaced and rearranged. By implementing this strategy of adaptive re-use one can avoid abandoned structures becoming breeding grounds for the homeless and for illegal immigrants. Roger Trancik (1986: 3) describes the deterioration of the environment and buildings that do not serve their intended purpose as being "lost space / anti space" and elaborates that this is caused by a failure to connect elements in a coherent manner, as seen in the photographs of the old dormitory (Figure 31-40) - and Denneboom bus station structures (figure 41-43). The result is the desolation of not only an internal environment, but also the negatively shaped spaces around it. Figure 31-40 depicts the degradation of the internal and external environment of the hostels.



Page 019:Figure 31-40: Abandoned dormitories as lost and deteriorating space

Page 020:Figure 41-43: Desolation and abandonment of the trader stalls at the bus station vs. the lively self-developed trader's market in Mamelodi

Research methods and methodology

The methodologies employed for this study are both qualitative and quantitative and stem from the literature and precedents as well as observation in the field and photo surveys. More particularly, an investigation is undertaken into the manner in which rural environments are shaped and into the effect of a commuting and predominantly informal-trading society on the creation of urban space.

Limitations: In terms of ethical considerations I refrained from interviewing members of the community in order to avoid raising false expectations. In a real life scenario, the design would be informed and supported by extensive public participation and consultation with the envisaged end users. For example: When designing the very successful Metro Mall in New Town, Johannesburg, for example, Ludwig Hansen (former head of Urban Solutions) convened approximately 150 meetings with the public.