

A MODEL FOR SOUTH AFRICAN URBAN DEVELOPMENT IN THE 21ST CENTURY?

RONNIE DONALDSON

Department of Geographical Sciences, Vista University, Mamelodi Campus, P/Bag X1311, Silverton, 0120

INTRODUCTION

'The victory over the apartheid state in 1994 set policy makers in all spheres of public life the mammoth task of overhauling the social, political, economic and cultural institutions of South Africa to bring them in line with the imperatives of a new democratic order' (Asmal, 2001). Because South African cities and towns entered the 1990s with an apartheid urban planning and development legacy, urban planners and managers, and politicians responsible for urban development were faced with the task of reconstructing the impression of a spatially segregated, highly fragmented and dispersed urban society. Restructuring, transforming, reconstructing, and integrating separate and divided cities pose pertinent spatial planning challenges. Where apartheid policies had meshed perfectly with modernist urban planning philosophies of 'the idea of progress and a belief in the power of rationality to overcome spatial chaos and disorder; the notion that, in order to bring into being a better world, control should be exercised by the state and its agents at virtually every level of society; the suppression of cultural and gender differences; and a belief in a homogenous public in whose interest the planner is empowered to act' (Brooks & Harrison, 1998: 93), new policies had to be formulated to move explicitly away from general urban planning to development planning principles. This presentation will focus on three aspects. Firstly, what urban related policies after apartheid wanted to address. Secondly, what the observed urban outcomes were during transition. Thirdly, how the policies and expected urban outcomes would be implemented in terms of future urban structure.

POLICIES FOR A NEW URBAN STRUCTURE

I am sure that all of you are acquainted with the spatial-historical development of the South African apartheid city and late-apartheid city models. In short, racially segregated suburbs, buffer zones separating suburbs, monofunctional land use, a dispersed city characterised through low density urban sprawl, racially divided urban growth patterns, all led to a highly fragmented city. The urban realities contributing to current impacts on the dysfunctional structure of the South African city are therefore numerous. The urbanization rate (55% in 1997) and the persistence of inequality and poverty, compounded by financial pressures in most municipalities, can be added to the list.

What complicates the South African settlement patterns further is the difficulty in categorizing settlement types. Due to separate development and apartheid policies, a unique set of settlement categories developed, unlike the familiar urban and rural differentiation. The White Paper on Local Government (1998: 33) lists 9 categories:

- C Urban core
- C Urban fringe
- C Small towns
- C Dense rural settlements
- C 'Betterment' settlements
- C Informal settlements
- C Villages
- C Agri-villages
- C Dispersed or scattered settlements

Each of these categories is 'complicated by variations in features such as land tenure systems'.

The so-called policy formation phase in the South African political landscape during the 1990s was characterized by the now infamous period of multi-party negotiations, policy formulation (in line with global trends), reconciliation (the desegregation of society in all spheres) and reconstruction (development and upliftment of underdeveloped and disadvantaged areas). Local government restructuring provided the impetus for other restructuring that followed. To pause for a second on this, though: it was in fact the restructuring of local government during transition that prevented integrated spatial development planning from taking place. During this transition period, according to Dewar (1998: 369), policies were formulated 'within discrete national line-function departments, with little reference to the activities in other departments', and this approach contributed to a fragmented and distorted urban planning and development phase. Dewar identifies the outcome of this period as the policies of certain departments conflicting with one another, which resulted in a confused, cumbersome planning system.

The vehicle used by the ANC-led government to rid the country of its apartheid past is based on their policy document, the RDP. This policy programme laid the foundation for other policy documents that followed, such as the Urban Development Framework, which was released by the Department of Housing in 1997. The UDF will be used as the basis for discussing new and emerging urban spatial structures in SA cities in this paper.

The Development Facilitation Act (DFA) would serve as policy that works with the UDF for restructuring of the spatial environment, and encourage general city-building principles planning for the emergence of compact cities that would prevent further urban sprawl, which according to international experience would promote the creation of sustainable cities (Emdon). Despite the obviously noble aims of the DFA it has evoked some criticism¹.

AN URBAN DEVELOPMENT FRAMEWORK FOR NEW SPATIAL STRUCTURES

¹ Pycroft (1998: 157-158) identifies the following four criticisms. In the first place, the fluidity of the municipal environment would create a gap between the identified needs in the Land Development Objectives (LDOs) and the changing needs of the community. Secondly, the timing of the LDO process is ill-considered as it coincides with the reorganization and restructuring of municipalities, moreover, in terms of the boundary demarcation according to the new Demarcation Act. The third criticism is that the flexibility of implementation of the LDOs is questioned and the fourth is that the limitations of the DFA in providing a planning framework are acknowledged by the fact that Integrated Development Plans for municipalities have to be incorporated into an Integrated Planning Framework.

Would it be possible to construct a model of the South African city of the twenty-first century? The notion of a model would arguably seriously concern postmodernists. The idea in this presentation is not to propose a model but rather to superimpose the expected and observed urban outcomes after apartheid onto the well know model of the apartheid city (Figure 1). It is clear in any case from the African Solutions Conference held in 2000 that ‘there is no universal answer and no model for a sustainable African city’ (Local Agenda, 2000: 2). Cities vary in terms of shape, form structure and historical legacy. However, through a dialectical interpretation of the relic of the apartheid city (apartheid city model) and the proposed and planned (according to national and local legislation and policy) outcomes after apartheid, an eclectic approach to understand and interpret contemporary South African cities can attempt to create a way of interpreting place and space within the context of a twenty-first century South African city identity. Hence there is a complete shift from the labels *apartheid city*, *modernized apartheid city* or *post-apartheid city*. Emerging new spaces (for example from desegregated suburbs to buffer zone developments) constitute the basis for the twenty-first century South African city and will replace the apartheid city model of Davies (1981). In other words, the areas formerly known as white, coloured, Indian, and black group areas now become new urban spatial outcomes.

Implementation of the UDF focuses on four key programmes: (1) integrating the city; (2) improving housing and infrastructure; (3) promoting urban economic development; and (4) creating institutions for delivery. I will briefly review and debate some of the ideas and concepts of the first two key aims. Each focus area illustrates emerging new spatial urban structures.

(i) Integrating the city

The UDF specifically refers to the following urban restructurings to integrate the city:

- C integrated planning;
- C rebuilding and upgrading the townships and informal settlements;
- C planning for higher density land-uses and development;
- C reform of the urban and planning system;
- C urban transportation; and
- C environmental management (Department of Housing, 1997).

Integration is perceived to be achieved through a combination of compaction and integration with development corridors and transport routes, with mixed-land use along these routes (refer to Figure 1). Compaction policies promote a range of principles, such as urban regeneration, revitalization of the inner city, preventing of urban sprawl, higher densities (mainly residential), mixed land-use, promoting public transport nodes, improved access between employment, housing and services, corridor development and urban infill, which are the fundamental elements of contextualization. Internationally, the theoretical understanding and implementation of compact city policies have not only suggested higher densities as the Department of Housing understands it, but also includes corridor or integration development and mixed land-uses. But how should or would these practices be implemented in South African cities?

Decentralized nodes that have been developed as suburban shopping centres since the 1970s are becoming a characteristic feature in most cities. Compaction, mixed land-use and urban infill are evident in these areas that have developed and grown to such an extent that they are regarded as cities-within-cities. Absolute decentralized areas are thus far only to be found in the former white group areas of cities. The emerging trend of shopping malls and office node development outside the CBD has led to a decline of inner city areas. Referring to his study on Johannesburg, Beavon (2000) goes so far as to argue that 'so massive has the growth been that what might be termed the new 'Johannesburg-in the North' may well be able to lay claim to some sort of 'world city' status, but it is also in danger of effectively becoming a neo-apartheid city.

On the contrary, decentralized nodes in the former black, coloured and Indian townships are developing differently to those of the former white areas. These areas should be perceived as areas of opportunity spaces because of the lack of any normal urban development during the apartheid era. Here the degree of private-public initiative and investment (especially from black empowerment groups) will determine the degree of successful urban growth. Specific proposed local government policy such as that propagated, however not yet legislated, in Johannesburg, that sought to stem development applications in the edge cities such as Sandton and to concentrate development in the inner city (or in formerly disadvantaged areas) may also contribute to redistribution and redevelopment. Secondary cities that were previously located near homeland-border towns have incorporated the dispersed former ethnic towns - for example Pietersburg has been administratively amalgamated with three former homeland towns through the municipal demarcation process - and these towns have the potential to develop into decentralized nodal centres. Absolute decentralized areas will be linked to each other by integration and development corridors linking all previously separated parts of the city.

Although an eclectic land-use policy is followed, cities will basically continue to be separated into areas of mixed land-use and specific land-use. The former non-white group areas will mostly have mixed land-use (and mixed income) to cater for the legacy of no control in these areas. This includes home-based business, backyard shacks, street trading, squatting amidst formal dwelling areas and urban agriculture. Mixed land-use in the former white group areas will be restricted, through control measures, to the absolute decentralized nodes and along the integration transport development corridors. No-control areas obviously *de facto* because authorities are still turning a blind eye.

Integration and development corridors

Structural deficiencies in the former apartheid city resulting from segregation and low-density sprawl resulted in long-distance work-travel patterns. Using transport routes to integrate urban areas and to create activity spines would enhance the economic potential of predominantly low-income areas (Dewar, 1994), if approached in accordance with a holistic policy framework². I will briefly refer here to the outcomes of the LDO and IDP process in Pietersburg as a case study (Donaldson, 1999). In this secondary city, the process has, to some extent, been based on national planning guidelines,

² The main argument underpinning strategies of corridor and multi-nodal development is that they serve to build up thresholds and thus create locational opportunities for business. Densification of residential development around these corridors and nodes will serve to increase thresholds, as will a concentration of public investment in these areas. Characteristically, development corridors connect major nodes, creating purposeful interaction, requiring high-density development - both residential and commercial - along the route. It is therefore believed that a multi-modal transport system would determine the success of a corridor.

i.e. to be in line with the proposed model for urban development (refer to Figure 1). Measures such as mixed land-use areas, compaction and urban infill are planned to be implemented in an attempt to restructure the distorted spatial picture of the apartheid city. The integration of the separated sections of the city is expected to be achieved by a private vehicle development axis, an integration corridor and a development corridor. Strategic development areas and functional development areas have been identified to promote efficient urban development. Activity node development and spine development will greatly enhance efficiency in, for instance, Seshego the former homeland-border township. The development framework model differs markedly from the apartheid city model (refer to Davies, 1981). Planning for low-income residential developments nearby and adjacent to middle-income and high-income suburbs is also included. The sustainability of the objectives has, however, not been explored. A serious shortcoming in the Pietersburg development framework is that, despite the multi-disciplinary approach that has been adopted, planning and development are confined to the city's area of jurisdiction. The omission of the functionally dispersed entities surrounding Pietersburg (Mankweng, Lebowakgomo, and rural towns) pose certain problems for the urban development process. Despite the good intentions, the LDO process has experienced some weaknesses. An inappropriate LDO public participation plan was subverted by the non-participation of civil society before the final adoption of the LDO. Lack of experience in involving the public in urban planning is evident. The fact that the project team mainly comprised persons and organizations from outside Pietersburg is another weakness, although it could be argued that, as outsiders, they were unbiased and that their commitment to making the city work in an efficient and sustainable way was not affected by the fact that they were not residents of the town.

The second key focus area of the UDF relates to housing and infrastructure. As will be seen from aforementioned focus area, the second component should be seen as integrated with the first.

(ii) Improving housing and infrastructure

Improving housing and infrastructure to create habitable and safe communities is the second programme aimed at restructuring the urban past. The Housing Act of 1997 provides the basis for this key programme. A gap exists between the overall aim of sustainable development and the achievement of the aims for housing delivery: it is arguably this policy that contradicts the UDF most.

To briefly retreat into history, I refer you to an article of Mills (1989:66) in *Ekistics* entitled *Space and power in South Africa: the townships as mechanism of control*. He stated that the 'position of the black majority and the basic features of their living environments remain unchanged since the colonial era, the only real changes to have occurred are in the aesthetic and technological details of their housing. Indeed, the socio-spatial blueprint, or dream, has remained constant, only the style of expression has varied'. In the ten years since this statement was made, much has changed in the political arena. Yet, in terms of black townships not much has changed with regard to quality housing provision and the creation of sustainable urban designs of low-cost RDP housing developments. Whether it is the orthodox township or the reformist or post-apartheid township, the architecture remains integrated with the forms of political power. The current housing provision programme, which is somewhat removed from the broader densification and compact city principles of the UDF, cannot be divorced from what Mills's (1989: 71) explanation that 'the design of the township can be best comprehended in relation to the political ideas and practices that are disclosed in its spatial configuration'. Are RDP

housing development projects designed and carried out in a sustainable manner and do they reflect official policy? Are these new designs not just a political tool that is being used to propagate political ideas and practices instead of to create sustainable spaces? An aerial view of these developments resembles the apartheid architecture and spatial configuration of townships at its worst. Dangor (1998: F10) describes the RDP housing estates as having the 'same "Housing Standard" feel as the old apartheid "matchboxes", except that they are even smaller because of a lack of funds and the great number of people who need shelter. The lack of infrastructure and amenities, so characteristic of the past, continues to be a feature of these settlements. No clinics, no schools, not even a patch of veld cleared to offer some compensatory sense of leisure'. A survey done in Bloemfontein indicated that residents living in public houses built in the 1960s are just as satisfied with their dwellings as those who built their own houses through self-help schemes. The latter group's houses are usually larger, and they experiment with architecture. This study relates to what Gilbert (2000: 27) stated regarding RDP housing: 'The quality of the solutions being delivered has disappointed many in terms of both the size of the units and the quality of construction', and that the beneficiaries 'feel that they are worse off in their new circumstances than they were before' - noting that many of them resided in self-help housing. In both cases, housing development, however, exacerbates low density sprawl: especially since houses in RDP developments are single dwellings, and the fact that few self-help areas can develop into safe double storey buildings.

The UDF (1997: 31) propagates urban densification projects 'aimed at moving away from the "one household one plot" scenario'. Dewar (1998: G6) agrees that these housing schemes are 'largely mono-functional...low density..social and commercial facilities and other vibrant urban activities are notable mainly by their absence...Buildings are isolated events in a sea of space'. He goes on to say that 'it is usually impossible to discern any social, economic or environmental concerns in the making of these schemes, which seem to have been ordered simply by question of engineering efficiency' (Dewar, 1998: G6). Although these schemes defy official compact and sustainable city development principles, these planned and developed spaces soon transform and change after households have moved in. Home-based businesses of all types are soon in operation and street corners become informal nodes of business activities, which seem to bear a striking resemblance to the old township areas.

However, a known success story is that of Springfield Terrace in Woodstock, a high-density infill housing scheme consisting of 133 units. The units were divided into three segments with two of these for people who qualify for different forms of state subsidy (Dewar, 1998). Densification through compaction and imploding growth through urban infill are perhaps unfamiliar and unpopular concepts among civil society in most South African urban areas. The solution seems to lie in educating people about the benefits of densification, including the fact that it would increase land values. In this context, densification also does not necessarily mean high-rise apartments. Structures of three to four storeys are ideal. Other options include the subdivision of residential property, in other words reducing space standards set by town-planning schemes, and properly utilizing poorly used open spaces. Overdensification should be prevented, and in certain areas such as Alexandra there is a need for densification to be toned down (King, 1995). Stand sizes of 60-100 square metres or, 'as a rule of thumb, gross densities of approximately fifty dwelling units per hectare', are adequate for habitation' purposes (Dewar & Uytendogaardt, 1995: 56). International experience has shown that by imploding growth, as was done in Sao Paulo, for example, would result in the affluent still occupying safe high-density areas that are well

serviced and established, with low-income communities still occupying peripheral areas without the necessary opportunities and services. The Curitiba (Brazil) scenario, which is, according to the Cape Metropolitan Council (1996) and Lubisch *et al.* (1996), the 'what-works-best scenario' involves 'high-density residential corridors with buildings reaching up to 25 floors ... situated along the main transport spines and [consisting] of a healthy mix of shops and residences. The surrounding residential areas consist of mainly low-density, single residential development with little commerce or industry' (Lubisch *et al.*, 1996:11).³

The third and fourth focus areas of UDF will not be covered in this paper: *(iii) creating urban economic development* *(iv) creating institutions for delivery.*

The Department of Housing is currently in the process of establishing a reference group to review the UDF. This resulted from a direct complaint from the four metropolitan councils in SA, which questioned the value and role of the UDF in the context of the unsustainable housing delivery process, and the lack of a spatial integrated plan for rural-urban and urban core and urban-periphery integration. The Department of Housing furthermore claims that the vision statement fails to take into account the LDOs and IDPs, and they admit that the four strategic programmes have inadequately responded to new urban realities. It is however recognised that albeit somewhat outdated, the UDF is still seen as a valuable reference document for other plans and policies that emanated from this such as Municipal Systems Act, Environmental Management Act, etc.

By the end of the decade - 'the period that might have been an urban planner's dream' - the new policies and new political order's concern with the 'well-being of the majority of the population' have, according to Dewar (1998: G6), 'been marked by disappointment, and in many cases by disillusionment'. The DFA and LGTA, as driving forces behind the urban restructuring process have shown that, 'while the intentions have changed for the better, in practice it has been business as usual' (Dewar, 1998: G6). This is more especially so in terms of segregation of society.

SPACES OF SEGREGATION, RESEGREGATION, AND INTEGRATION

Manifestations of socio-spatial restructurings are increasingly related to urban form through social polarization. The most prominent studies are those by Marcuse (1995, 1993, 1989) who employs the same concept - the dual city - in various forms in, for example, the quartered city, and the divided city. If his interpretation of divided cities is applied in the context of South African cities then Parnell's (1996: 42) statement that 'as a caricature of the social divisions that now plague cities across the 'Western' and 'non-Western' worlds, the apartheid city experience served as a worst-case scenario of persistent social and economic inequality and clearly shows that our cities preceded postmodern outcomes of divided cities in advanced countries'. Here, too, we have enclaves of luxury and security areas of gentrification, suburban city life mostly confined to former white suburbs but now emerging in townships, a tenement city of rental accommodation in

³ The opponents of high-density developments are usually reluctant to highlight the benefits of such developments. These include the fact that such developments reduce engineering infrastructure costs and the fact that mixed land-use, where employment and residence are easily accessible, reduces the need to make use of the expensive, and often dangerous, taxi transport system. The housing delivery process enhances rather than hampers delivery (currently under pressure to eradicate the backlog) as well as urbanism, where urban life and urban space are perceived as a separation between suburban life and the work place. Housing development and corridor develop should thus work together.

inner city and former under-serviced overcrowded townships, and the abandoned city area where squatting and homelessness can be said to be the norm. Social polarization in cities of advanced countries is evident in the growth and size of the gentrified and abandoned-city areas. In South Africa the increase occurs mainly between enclave and tenement and abandoned city, which is 'evidence of new and powerful forces of fragmentation, represented by the suburbanisation of forms of economic activity' (Mabin, 1995: 194) with the development of edge cities and continual mushrooming of informal settlements on the urban edge.

Primarily, the former black townships remain racially segregated from other residential areas. Having experienced some form of residential desegregation, former whites-only suburbs are becoming the primary resegregated spaces because of an increasing social polarization. Walled suburbs and estates, and the centralization of decentralized areas (absolute decentralization nodes develop into edge cities) form the foci of socioeconomic resegregation. This statement is aptly summed up by Bremner (1998: B2) where she says that in an: 'attempt to protect and preserve the image of the middle-class prosperity in the face of increasing socio-economic diversity...the gap between the worlds of the township, the inner city and the suburbs are widening. The chances that the people of the city will develop a sense of shared space, of shared destiny grow slimmer by the day' and the spaces between walled enclaves are 'simply movement channels along which the body must pass in moving from one insulated enclave to another. The city is further fragmented, dispersed and divided'.

This scenario is the exact opposite of what new urban development policies propagate, namely integration of separated areas. Socioeconomic resegregation will also continue to take place in former black suburbs in the development of zones of affluence in townships. These areas, known for their heterogeneous spaces, will increasingly experience the benefits of property value and the property market. The introduction into these areas of real estate as an industry since the 1990s has further stimulated this development. Already upmarket areas are being developed with a distinct middle to high-income status. RDP spaces (areas formerly used as buffer zones) are ideal places for resegregation because a new class consciousness develops here.

The internationalization of labour (seen, for example, in the southward migration in Africa) further exacerbates segregation. Resegregation is therefore based on nationality and here two groups can be distinguished: a low-income unskilled and mostly illegal group of foreigners (mainly from Africa) and a middle-to-high income group of skilled professionals and businesspeople (mainly from Asia). Xenophobia and cultural affinity are phenomena associated with the internationalization (especially regarding migrants from elsewhere in Africa) of certain middle-low income and inner city areas. Specific areas within specific suburbs are rapidly taking on a new identity through the concentration of foreigners in such areas.

Planning for residential integration

Residential integration and, in essence, racial desegregation, can be enhanced by mixed-income residential developments through gradual downgrading. In the White Paper on Local Government (1998: 178-179), mixed-income residential areas are proposed to 'eliminate the ghetto-ization of the poor by locating high-income and low-income residential areas closer to one another. This proximity means that the benefits of investment in affluent neighbourhoods will be shared by adjacent

areas, and local facilities and amenities can be utilized by both high and low-income residents'. Socially engineered policy, such as gradual downgrading, are being implemented in areas adjacent to the former white areas of some cities only. However, in most cases segregation is perpetuated in the development of RDP houses on cheap vacant land: in most cases these are located nearby low-income areas (Gilbert, 2000). Mixed-income areas will, apart from the aforementioned areas, also be restricted to proposed areas of downgrading. Areas of downgrading will appear on the periphery of the former white areas because that is where squatting and informal settlements are prone to mushroom.

This principle is already being put to practice in the townships in an *ad hoc* fashion, where houses of high property value are built next to shacks and informal dwelling units. Although not yet legislated for, mixed-income development as proposed in the white paper, would release civil action to oppose it. However, situations like this have already occurred in, for example, Mpumalanga and the Western Cape. A low-cost residential development of plots of between of 250 - 350 square metres was sited next to an established white residential area in the town Piet Retief. The public outcry and development initiative to prevent devaluation of property could be appeased by applying the town-planning practice of gradually downgrading property away from the established area. High-priced development on buffer strips between the said areas occurs on 450-750 square metre sites (*Financial Mail*, 1996). Marconi Beam, a squatter settlement located in the predominantly white middle-upper income suburb of Milnerton in Cape Town, also demonstrates how such a practice can be implemented successfully, without sacrificing property value (Lohnert, 1997; Saff, 1995). The NIMBY (not in my back yard) factor however, is seen as an obstacle by the Department of Housing. It is here where the argument for not having a 'single development imperative suitable for all circumstances and that area specific problems need area specific solution' is propagated in the contexts of NIMBY.

Spaces of decadence, poverty and control

Historic and economic antecedents of homelessness and unemployment have resulted in spaces of decadence and poverty which, in the postmodern urban structure, is being characterized by crime, a collapse of social morals and general urban decay. Much attention has been given in the media to the fortification and militarization of urban spaces (Bremner, 1998). Bremner (1998: B2) relates the contemporary militarization of space and society to apartheid in saying that 'while private security firms policed the suburbs, the former South African Police concentrated on policing apartheid'. Inevitably security enclaves (walled suburbs with controlled access points) are becoming controlled spaces again. Jacobs (1962: 42) suggests that 'thinning out a city does not ensure safety from crime and fear of crime. This is one of the conclusions that can be drawn within individual cities too, where pseudo-suburbs or superannuated suburbs are ideally suited to rape, muggings, beatings, holdups, and the like', which will have an adverse effect on the urban spaces adjacent to these controlled walled areas.

The location of spaces of control would be determined with reference to the specific local government's policies. However, it could be argued on the basis of the apartheid legacy of control that the former nonwhite group areas constitute spaces of *de facto* no, or relaxed, control. This is particularly so because of the lack of implemented land-use regulations regarding home-based business and informal street trading. Spaces of no control or relaxed control would build on the identity created in the new spaces of redistribution (the former disadvantaged areas), where mixed income and mixed land-uses are increasingly becoming characteristic features.

CONCLUSION

Given the issues dealt with above and in the light of the fact that only a few urban studies in South Africa have focused on compact cities, there appears to be a real need for urban specialists and students of geography and urban studies to embark on a research drive aimed at establishing compact-city policies and implementation at local level.

The outcomes anticipated above and the policies formulated consciously seem to point to one particular urban form, namely the compact city. However, experience in other countries over the penultimate decade of the twentieth century suggests that we are 'more likely to move relentlessly towards a multiplicity of worlds in a divided city' (Dewar, 1998: G6). Viewing an emerging new urban structure must be done in an eclectic fashion. The notion of overemphasising compact city policies is therefore misleading. Contrary to the belief of the Department of Housing, all related policies point to a variety of options which include continuation of dispersed city form; compact city; edge city; corridor city; and fringe city, and not only to compact city form. All these urban forms are evident in Greater Johannesburg, for example.

According to Newton (2000: 46) these alternative structures can be described as follow:

- C **Dispersed city** - continued low-density suburban development of population, housing and jobs; infrastructure investment by road transport; this for the most part is business as usual...
- C **Compact City** - increased population and density of a group of suburbs, with associated investment in transport
- C **Edge city** - increased population, housing densities and employment at selected nodes within the city; increased investment in orbital freeways linking the edge cities
- C **Corridor city** - a focus of growth along linear corridors emanating from the CBD, supported by upgraded public transport infrastructure
- C **Fringe city** - additional growth predominantly on the fringe of the city

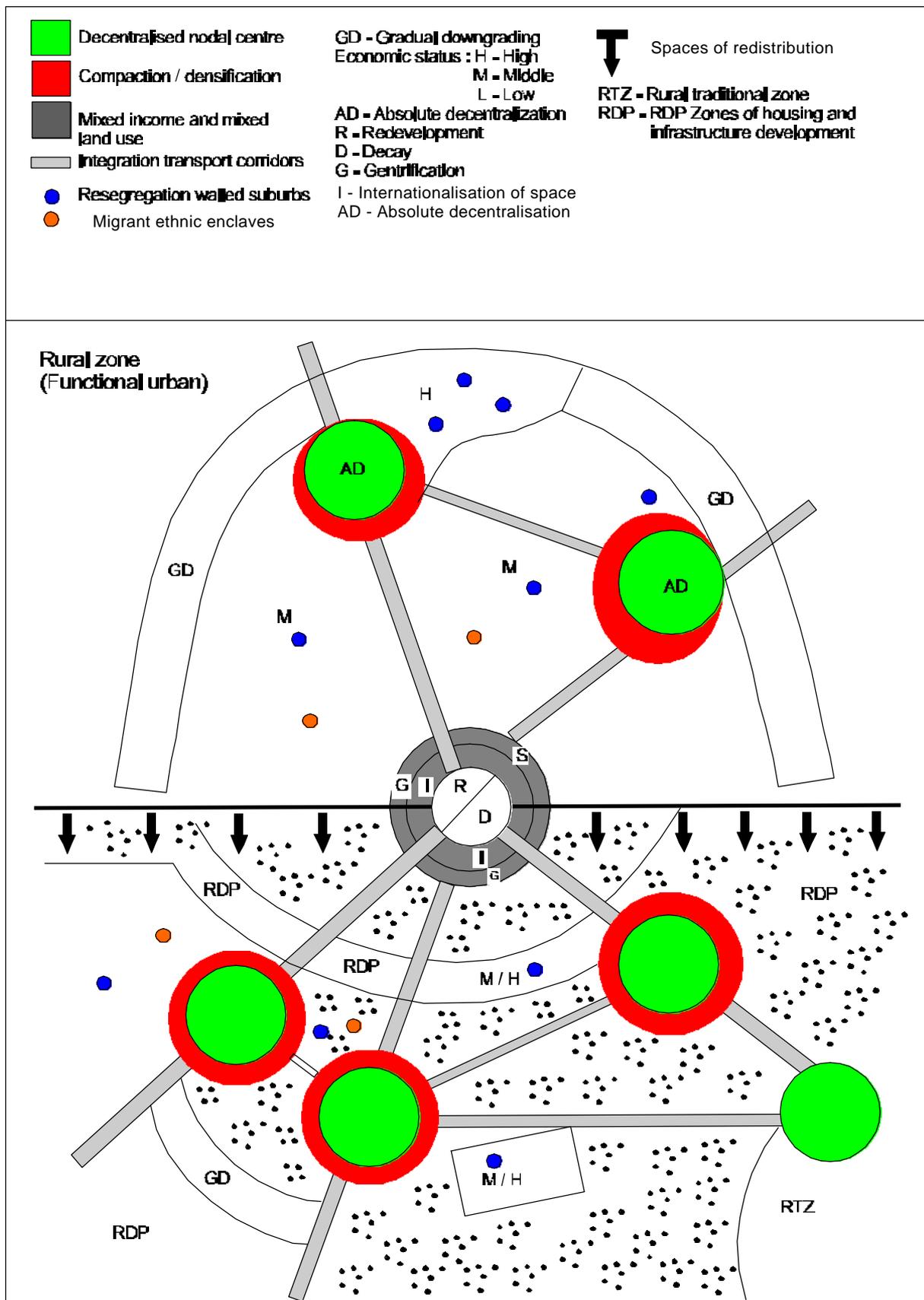
It will be useful here to conclude the paper by quoting extensively from the influential book of Hall and Pfeiffer (2000:278) entitled *Urban Future 21: A global agenda for 21st century cities* where they argue that 'the key assumption is that sustainable living must be based on urban areas, as high levels of accessibility and proximity can only be maintained there. This means that people should be living in settlements that are of a sufficient size (some experts suggest 20000, others 50000) so that the full range of facilities can be provided within walking, cycling or public transport distance (less than 5 kilometres). These settlements should be at a medium density (at least 40 persons per hectare) , and should have mixed land uses and high levels of accessibility to public transport network (for inter-urban travel)...The constraints concern the framework within which transport policy option can be placed. Most of them require a strong planning system at the city and regional levels that will direct development to achieve larger, higher-density, mixed-land use and accessible cities'.

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Figure 1: A model for a 21st century South African city structure



A MODEL FOR SOUTH AFRICAN URBAN DEVELOPMENT IN THE 21ST CENTURY?

RONNIE DONALDSON

Department of Geographical Sciences, Vista University,
Mamelodi Campus, P/Bag X1311, Silverton, 0120

Ronnie Donaldson is senior lecturer in human geography, and acting Head of the Department of Geographical Sciences at Vista University. He joined the department in 1998 after spending 7 years lecturing urban geography at the University of the North. He completed his doctoral study in urban geography at the University of Stellenbosch in 1999, and subsequently published numerous articles in journals and books related to his dissertation that focused on urban restructuring in Pietersburg. He is co-editor of a book to be published in 2001 entitled 'Transforming urban and rural spaces during the 1990s: reform, restitution, restructuring'. His current research interests are urban conservation and urban tourism development. Dnlds-se@marlin.vista.ac.za