EUROPEAN SPATIAL RESEARCH AND POLICY 10.2478/s10105-010-0009-1

Volume 17 2010 Number 2

Anele HORN*

TELLING STORIES – A HISTORY OF GROWTH MANAGEMENT IN THE GAUTENG PROVINCE (SOUTH AFRICA)

Abstract: The sprawled nature of major South African cities can be attributed to a variety of reasons. The 1994 (post-apartheid) political shift, however, prompted cities and regions to plan for more equitable and accessible cities. Together with its three metropolitan municipalities, the Gauteng Province proved to be a pioneer in adopting an urban growth management approach (the Gauteng Urban Edge). Against the backdrop of a Provincial Spatial Development Framework, a Provincial Urban Edge was delineated within which local authorities were awarded the opportunity to refine a custom-made growth management strategy. In the absence of clear provincial direction, these strategies achieved various levels of success. This paper explores the urban growth management movement, its approaches and its expressions as witnessed in the case of Gauteng.

Key words: Gauteng Province, Gauteng Urban Edge, urban growth management.

1. INTRODUCTION

The issue of urban sprawl has been discussed extensively in planning circles over the past two decades (Horn, 2009). The so-called New Urbanist Movement, described by Gratz and Mintz (1998) as 'a disparate group of architects, planners, academics, transportation engineers, developers, and assorted anti-sprawl sympathizers', has played a prominent role in promoting planning, design and development that strongly oppose this automobile-centred manner of city building. The result of sprawled cities is far-reaching. Some see it as a major contributor to air pollution and traffic congestion and encouragement for

-

^{*} Anele HORN, City of Cape Town, email: Anele.britz@gmail.com.

development on prime agricultural land and floodplains (Fillip, 1999). Others discuss the monetary implications of sprawl, calculating costs of infrastructure, fuel, time spent travelling and the like (Gratz and Mintz, 1998).

As a result of mounting sprawl in South African urban areas, the Gauteng Provincial Government recognised the growing pressure to restructure its consequent inefficient and inequitable cities. Gauteng, i.e, the post-apartheid name for what had previously been called the Pretoria-Witwatersrand-Vereeniging region, which includes *inter alia* the city of Johannesburg, shares 10.9% of the country's national poverty problem. This 10.9% is confined largely to the areas that make up the second economy section of the Gauteng's population (National Development Agency, 2009), clustered mainly in large concentrations far from urban centres and economic opportunities. One of the initiatives proposed was the containment of urban growth inside the Province. The idea of a more compact urban environment held the promise of increased accessibility to urban opportunities, greater viability of public transport, as well as environmental advantages.

Together with its three metropolitan municipalities, the Gauteng Province took a lead in initiating and implementing an urban growth management approach (the Gauteng Urban Edge) in its urban areas. This paper briefly discusses the history of urban growth management that will ultimately form the background to, and inform the story that unfolded in the Gauteng Province.

2. A CITY HISTORY

Sprawl and its associated consequences are mainly attributed to the 1920s, when central cities started to lose favour to the romance offered by the 'American Dream' (Clawson and Hall, 1973). During the two World Wars, overcrowding and slum dwelling in cities resulted in extremely poor and hazardous living conditions (see Hall, 1989). Following World War II, rising incomes, homeownership policies and affordable transport facilitated a mass-movement to suburban areas as cities embraced restructuring, growth and expansion. During the 1960s and 1970s suburban residents became reluctant to return to downtown for consumer goods, resulting in the movement of market places to suburbs, leaving central cities in dire straits. None of the major cities driven by industrial and commercial growth during the years following World War II, such as London, Birmingham and Manchester were saved from these consequences (Clawson and Hall, 1973) and virtually all of North America's larger cities (Boston, Los Angeles, Washington and New York) carry the symptoms of urban sprawl (Garreau, 1991).

South Africa's major urban areas have one important feature in common with the North American, Australian and British phenomenon, viz. that urban growth has taken the form of dispersed residential accretion at the city edge. This phenomenon can be ascribed to, firstly, the pre-1994 apartheid regime, a period of time during which all legislation and policies manifested in extensive racial segregation (Gauteng Province, 2001). The spatial consequence of apartheid found expression in black settlements located in 'homelands' (for Africans) and rural areas far from city centres, separated from the predominantly 'white' cities by distinct industrial or environmental buffer zones. The location of black settlements in relation to the economic and social opportunities found in traditional 'white' settlements was a key contributor to the high levels of poverty experienced in rural and peri-urban areas in South Africa. Secondly, during the 1960s and 1970s, South Africa experienced economic stability and prosperity following the long depression of the 1940s. The economic upswing and welfare effected that individual house ownership became more affordable and this prompted many of the rich (white) South Africans to leave the city centres for suburbia (Gauteng Province, 2001).

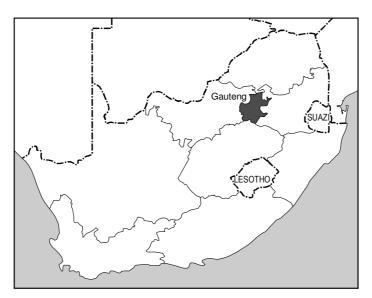


Fig. 1. The Gauteng Province, South Africa

A third factor that indirectly bolstered the sprawled and dispersed nature of South African cities was the initial counter-apartheid measures introduced by the post-apartheid government. In 1994, South Africa's first democratic government came into power. Since then government has attempted to bring previously disadvantaged communities closer to urban areas. This led to the implementation

of many policies and legislative frameworks such as the Urban Development Framework (1996), Rural Development Framework (1997) and Development Facilitation Act (1995), that aimed solely to correct past distorted spatial patterns and provide opportunities to poor communities. This resulted in low-income settlements on the urban fringe, either as a result of deliberate government policy of land acquisition for large scale lower income development, or spontaneous and often unauthorised settlement by these communities seeking proximity to urban labour markets (Heimann, 2003). It is now widely accepted that this form of dispersed urban growth has adverse financial, social and environmental impacts, and that it is not sustainable in the medium to longer term. These impacts perpetuate the particularly problematic situation that poorer families live some distance from employment centres, commercial services and public services (Heimann, 2003) as experienced during the apartheid years.

3. A GROWTH MANAGEMENT HISTORY

The history of planning and cities is a direct consequence of the context in which it took place. The 19th century and first half of the 20th century witnessed a planning profession primarily concerned with rectifying physical problems and providing for physical needs, as was required at a time of preparation for, and recovering from severe warfare. This period is also recognised by its extremist and conservatism regarding the growing city as a threat and an almost 'beast-like monstrous character' that needs to be controlled at all costs. The modernist planning objectives of containment, conservation and control generated during this time is in line with the modernist views expressed by theorists from that period who were generally concerned only with survival, addressing existing physical needs and finding solutions to immediate problems. It was only towards the late 20th century that the need for forward planning emerged. After more than a century's worth of overlooked problems manifesting themselves in urban living, it was recognised that the 'beast' itself may not have been the enemy all along, but that which the 'beast' created. Socially unjust cities, inner city degradation, environmentally unsustainable and even hazardous practices had cities on the ropes for deeper and more diversified planning. The fights against high density inner cities that were more congested, heterogeneous and diverse (Ewing, 1997) contributed mostly to the movement towards suburbs with their high prevalence of single-family houses that were perceived to be more stable, safer, better places in which to raise children.

Internationally, growth management approaches find expression in different shapes and sizes. China, for instance, has entered a period of rapid urbanisation,

with experts predicting that 1.12 billion people, or 70% of the total population will live in cities by 2050 (*China Daily*, 2003). This means that more than 600 million Chinese people will move from rural to urban areas in the next 50 years (*China Daily*, 2003). In this country, where one of the major reasons for curbing sprawl is to protect valuable agricultural land, a top-down, centralist approach is followed (Zhang, 2000), culminating in government attempts to control sprawl both from a supply and a demand side. From the supply side every person who converts agricultural land to another use has to recreate an equal amount of land for agricultural purposes.

A very forceful approach to curbing sprawl is to demarcate a line beyond which, or strip/zone in which, no further growth will be allowed. One of the best-known modern examples of the zone of no growth is the 'Development Control Zone' that was introduced in South Korea in 1971 as part of the 1972–1981 National Comprehensive Physical Plan (Jun *et al.*, 2001). In the case of Seoul the belt was approximately 10 km wide, starting at a radius of about 15 km from City Hall. Beyond the zone is a transition zone wherein development pressures have increased considerably in recent years (Jun *et al.*, 2001).

Another classic example of the line of no growth is the 'urban edge' or 'urban development boundary' as deployed in a number of states in the USA (Oregon, Iowa, California); a number of cities in the UK; Sydney and Copenhagen (see Nelson and Moore, 1993; Simmie *et al.*, 1992; Meyer and Britz, 2006). This edge can be defined as an institutional boundary with the sole purpose of containing physical development and sprawl and re-directing growth towards a more integrated, compact and efficient urban form. Together with the edge, integration and compaction of the city are advocated to ensure the development of quality, well-maintained urban environments within the edge.

Greenbelts were a product of the need and desire to plan urban regions, and were viewed to be important means of controlling the encroachment of the town or city into its countryside (Thomas, 1970). They are usually implemented as tight bands of green space, either for permanent open space or for working landscapes around an existing urban area. The earliest greenbelts were established in the United Kingdom in the late 19th century as introduced by the Garden City pioneer – Ebenezer Howard. As part of the UK physical land use planning system and Town and Country Planning Act, promulgated in 1947, this country formalised the implementation of greenbelts with the aim of urban containment. In Korea a greenbelt was established in 1971 around the entire city of Seoul in which construction was completely prohibited.

More often than not, the no growth-approach goes hand in hand with the construction of 'new towns' (Jun et al., 2001), i.e. towns in which all aspects of development are determined before construction takes place. A well-known approach to densification is that of developing areas of intense, high-density

mixed land use along public transport corridors/routes. The best-known example of this approach is that of Curitiba in Brazil (Herbst, 1992). In terms of this model five linear bus-focused corridors fan out from the centre of the city. High-density residential and high intensity non-residential land uses are located along the full length of the corridors.

It is clear from the preceding examples that a growth management strategy usually encompasses a range of tools and mechanisms towards the containment and direction of urban growth rather than a single, stand alone approach.

4. A HISTORY OF WHAT HAPPENED

Provincial government is the intermediate sphere of government, informed and supported by national government while directing and supporting local authorities. Its powers and functions relate specifically to provincial legislation and governing in general, and in overseeing the coordination between local municipalities. Similar to national and provincial governments, but unlike many other countries, municipalities in South Africa have been granted original powers under the Constitution. On a local government level, municipalities are empowered to make decisions about service provision, social and economic development. Local governments have a role to ensure the delivery of services at community level within an agreed upon planning framework and are responsible for integrated development and physical planning (Department of Housing, 1996).

Following one of provincial government's responsibilities towards coordinating spatial planning, the Gauteng Provincial Government recognised the growing pressure to rectify the spatial imbalances throughout the provincial area. One of the initiatives proposed was the containment of urban growth inside the province. The idea of a more compact urban environment held the promise of increased accessibility to urban opportunities, greater viability of public transport, as well as environmental advantages. Together with its three constituent metropolitan municipalities, viz. Johannesburg, Tshwane (Pretoria) and Ekurhuleni (East Rand), the Gauteng Province proved to be a pioneer in initiating and implementing an urban growth management approach, namely 'the Gauteng Urban Edge' in its urban areas.

The Gauteng Spatial Development Framework (GSDF) was published in 2000 with the intention to serve as an instrument for addressing past spatial imbalances in Gauteng, while at the same time guiding development towards a sustainable, equitable and economically viable future settlement pattern to efficiently accommodate urbanisation unprecedented by any other province in

South Africa as well as its growing population of 9.6 million people concentrated on only 1.4% of the country's land (SouthAfrica.info, 2007). The GSDF proposed the establishment of a provincial urban edge to serve as a mechanism towards ensuring the containment and redirection of urban growth, while addressing rural development beyond the urban edge. (There is no evidence that any other growth management approaches or tools were considered as an alternative to the urban edge). The urban edge was, however, intended to form part of a broader growth management strategy as proposed by the GSDF. In light of this, the following issues required to be dealt with through policy tools:

- densification principles and guidelines ensuring that densification happen in a planned manner and in desirable locations;
 - brownfields' development requirements, guidelines and locations;
- service delivery integration to facilitate high density greenfields and brownfields development; and
- revised town planning controls in public transport corridors to encourage densification and compaction in a planned manner.

The process was to be conducted in association with the three affected metropolitan and three district municipalities, viz. City of Tshwane (Pretoria) Metropolitan Municipality, Ekurhuleni Metropolitan Municipality, City of Johannesburg Metropolitan Municipality, Sedibeng District Municipality, Metsweding District Municipality and West Rand District Municipality. On provincial level a liaison committee (referred to as the 'Urban Edge Task Team') was established that consisted of representatives from the mentioned local municipalities and Gauteng Provincial Government representatives from the Department of Housing, and then the Department of Agriculture, Conservation, Environment and Land Use (DACEL).¹ The purpose of this liaison committee was to provide input and give guidance as to how the edge should take face on ground level.

The approach towards delineating the urban edge was based on a combination of the following factors:

- the existing border of urban activity (e.g. residential towns and other urban features). Agricultural holdings, i.e. large plots of peri-urban land zoned for mixed agricultural and residential use, were in principle excluded from the urban area;
 - existing approved development rights;
 - natural features like rivers and mountains and other conservation areas;
 - local authority boundaries;
- functional boundaries like major roads, strategic development areas etc.; and
 - the availability/lack of bulk infrastructure.

¹ This department is currently known as the Gauteng Department of Agriculture and Rural Development (GDARD).

It is important to note that, together with the proposal for the implementation of an urban edge as a growth management tool, recommendations were also put forward for the future management of the edge. It was generally accepted that some form of regional governance — either provincial or regional — was a prerequisite for successfully implementing and managing the urban edge. It was also conceded that the more fragmented and smaller the authorities responsible for implementing the edge were, the lesser the chance towards the successful implementation of the concept became.

It was also recommended that the urban edge form part of a comprehensive, multi-disciplinary provincial framework that integrates all development disciplines, and that in order to successfully implement the urban edge, local authorities needed to rethink their growth management strategies, and specifically focus on promoting concepts like infill development, redevelopment, transit oriented development, densification, mixed use development and streamlining their planning administration procedures in terms of the above types of development.

The Gauteng Urban Edge study made reference to conservation areas/ sensitive natural environments that are good features to define the urban edge as these areas form natural boundaries to the urban areas. It also stated that public housing/government subsidised housing, both in terms of location and type, e.g. family housing, high density etc., is a strong instrument to use in order to redirect growth patterns or to promote concepts like infill development, densification and transit oriented development.

The process of delineating the Gauteng Urban Edge (see figure 2) was documented together with the above-mentioned recommendations and approved almost a year later on 15 May 2001 by the Gauteng Provincial Government and was a binding policy on all provincial departments (Final Report, Anon). The local municipalities were advised to reflect the urban edge in their first round of Integrated Development Plans² (IDP). By also reflecting and adopting the urban edge in the respective municipal Spatial Development Frameworks (a policy requirement from the Municipal Systems Act of 2000), the Urban Edge gained legal standing on municipal level. Municipalities were then awarded the opportunity to consult with all interested and affected parties through the public participation opportunities offered by the IDP process. It was decided that subsequent to the completion of the first round of IDPs, local municipalities could propose a formal amendment of the edge to the Gauteng Provincial Government, Department of Development Planning and Local Government (Pretorius, 2003).

² In terms of the Municipal Systems Act (32) of 2000, Integrated Development Plans have to be prepared by every municipality in the country on a five-year basis and be reviewed annually.

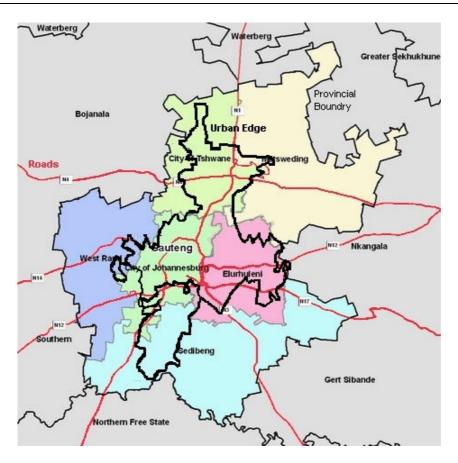


Fig. 2. The Gauteng Urban Edge

The urban edge approach, like so many other policy matters in the country at large, has in the meantime been reduced to 'only a guideline' and is moving increasingly closer to becoming 'just-a-line-on-a-map' since its announcement and inception in 2001–2002 (Horn, 2009). This experience led to a debate on procedural and legal issues pertaining to the Urban Edge within the development and planning community (see *inter alia* City of Johannesburg, 2009).

5. A HISTORY OF WHAT DID NOT HAPPEN

The three metropolitan municipalities in Gauteng have expressed various levels of commitment towards urban growth management, and have tried to follow through on the initial Gauteng Urban Edge process as introduced in 2001. Each

of the municipalities involved in the urban edge under discussion (see section 4) has since 2002 submitted formal amendments to the original Gauteng Urban Edge, resulting from internal and external participation within the respective municipalities. However, the Gauteng Provincial Government failed to adopt these amendments as official policy to date and as a result much frustration and confusion were created in the Gauteng planning community. The three metropolitan municipalities consequently managed their own urban edges/boundaries and growth management approaches independent from the Gauteng Urban Edge, even though the official Gauteng Edge had not been repealed. Some provincial bodies have adopted the opinion that the Gauteng Edge was never meant to be a strict management tool but rather to serve as a 'broad guideline/fuzzy edge' for future development proposals (Serfontein, 2005). This view was adopted as a result of the provincial government explicitly stating that the urban edge was to be a 'short-term control measure that would ultimately fall away' (van der Merwe, 2008) as more detailed growth management approaches and practices were developed and refined.

On a practical level, the confusion regarding the urban edge generated disputes in decision-making and ambiguity of jurisdictions during the evaluation of land use applications. It created a situation where applications needed to be approved or rejected in the so-called 'no-man's land' between the Gauteng Urban Edge, and the particular local authority's Urban Boundary (Ahmad, 2005). Where this occurred, in the majority of cases the provincial urban edge prevailed.

Five years down the line the Gauteng municipalities resubmitted amendments to the urban edge in order to establish a single line in the province. The workshop that was organised between provincial sector departments and the municipalities to discuss amendments to the provincial urban edge resulted in a free-for-all boxing match. Municipalities proposed that amendments should include development pressures and projects emanating from the 5 years in limbo, while provincial departments stuck to the guns of the 2002 urban edge, refusing to accept the proposed changes.

Aside from the ambiguity regarding the status of the Gauteng Urban Edge, it appears as if other provincial initiatives might prove the Edge completely redundant: the Gauteng Global City Region Initiative seeks to promote Gauteng's development agenda by positioning the province as a globally competitive city region. The key objective is to reduce unemployment and poverty through promoting economic growth, integrated strategies and joint planning between the different spheres of government. Gauteng is already recognised as a global city region with a population of over 9.6 million people, the fourth largest economy in Africa. Given the objective of furthering the concept, the reinforcement of island economies and spatial locations within the province does not make sense. Instead,

the vision calls for well-connected and well-functioning urban concentrations that operate across municipal (and even provincial) boundaries.

In Gauteng, the necessary enabling mechanisms only very recently appeared in some of the municipalities' Spatial Development Frameworks (i.e. nodes, corridors, densification strategies, areas identified for growth etc.). All these mechanisms have only seen the light well after the establishment of the Gauteng Urban Edge. This implied that even though developers were discouraged, or even prevented from, developing outside these growth boundaries, they were offered no real alternatives within the urban edge. The comprehensive growth management approach of which the urban edge were to form part of in terms of the GSDF 2000, was non-existent at the time, and despite attempts to launch provincial densification, nodes and corridors policies in the course of 2005, to this day did not come off the ground. In addition, even though government started off with the best intentions to place lower income communities closer to economic and social opportunities, the Gauteng Urban Edge and the municipalities' urban growth management mechanisms were not accompanied by the relevant and appropriate expropriation/land acquisition schemes to acquire state owned land for subsidised housing. Consequently, land inside the boundary became too expensive for government to utilise for subsidised housing initiatives, resulting in the last but very familiar resort towards cheaper land on the periphery. In retrospect it is clear that a much more comprehensive framework was imperative at the time of the announcement of the Urban Edge.

6. THE END OF THE LINE

The Gauteng Provincial Urban Edge drew attention from the public and private developing community during the last 8 years. The spatial rationale behind implementing an urban growth management approach in Gauteng seems to be sound and well informed and it cannot be argued that the need for such an approach was not duly justified by Gauteng's particular circumstances. However, it would also appear that the provincial urban edge was seen as a saviour/magic wand that, as a single growth management tool, could solve long-standing historical urban challenges. Within the context of the Gauteng Province, the problems experienced with the implementation of the Urban Edge can be ascribed to a number of reasons.

Participation by the Gauteng municipalities during the delineation of the original urban edge was limited. Five years went by before proposed amendments to the urban edge from municipalities were even considered, and in the majority of subsequent instances rejected. In this period, municipal spatial plans

and policies, and of course urban challenges have changed dramatically. However, the Gauteng Province remained headstrong in maintaining the urban edge delineation as announced in 2002. The conflict arising from these different perspectives, as well as the matter of the provincial urban edge's legal standing, has resulted in Gauteng still not having one comprehensive, coherent growth management approach.

The pressure of burgeoning development in various parts of Gauteng resulted in political pressure to allow for development on the periphery that will 'positively contribute to the economic development in Gauteng', despite its seemingly sprawled nature. This was also made possible by the fact that in many instances, the provincial urban edge was regarded as a 'guideline/fuzzy edge'. The message hence sent out into the developing community in Gauteng as a result of these political decisions is one that does not support the aims of an urban edge as such, leaving much room for discrediting urban edges in principle and argument.

Even though the Gauteng Spatial Development Frameworks of 2000 and 2007 make reference to a broader growth management approach within which the urban edge will only serve as short-term containment measure, to date, no such supporting growth management approach has materialised. This is further complicated by the notion of the short-term edge, which implies, in terms of the IDP process, that the urban edge must be reviewed on an annual basis. In this respect, no medium or longer term planning is done for areas experiencing development pressure, and when the urban edge is reviewed it will result in a 'now you see it, now you do not' forward planning scenario.

Provincial and local government's lack of institutional mechanisms to acquire land within the urban edge has, as a result of ever increasing land values inside the edge, made it impossible for government to purchase land within the urban edge. It is therefore impossible for housing departments to provide lower income housing in locations close to urban economic opportunities. As a result of political pressure for speedy delivery of low income and/or subsidised housing to address the growing housing backlog, most housing projects now take place on peripheral land located outside of the urban edge.

7. CONCLUSION

There were many reasons for the apparent failure of the Gauteng Urban Edge put forward during interviews with provincial and local government officials. It was generally conceded that the reasons for failure in this unfortunate event are much more intricate and complex than readily meets the eye. Following the study into the pursuit of finding reasons for the loss of credibility of the Gauteng Urban Edge, it can nonetheless be concluded that the main reasons for its premature

failure was firstly, the lack of supporting implementation tools and mechanisms and secondly, reasons (shortcomings) specifically pertaining to the political and administrative nature of urban planning in Gauteng. At the same time, it has to be admitted that the provincial urban edge had, without a doubt, protected land outside the edge from gluttonous private development. Regrettably, in the absence of an overarching and proper growth management approach, municipalities were left to their own devices to establish (their own) supporting growth management mechanisms. It is quite clear though, that if the urban edge is to regain any relevance and even credibility in the Gauteng planning environment, it needs to be supported by the requisite growth management approach and (re)committed champions.

REFERENCES

AHMAD, P. (2005), Personal interview conducted in June, Johannesburg: City of Johannesburg Metropolitan Council, Department of Development Planning and Facilitation.

BOURNE, L. S. (1992), 'Self-fulfilling Prophesies? Decentralisation, Inner City Decline, and the Quality of Urban Life', *Journal of the American Planning Association*, 58 (4), pp. 509–513. CHINA DAILY (2003), 10 March.

CITY OF JOHANNESBURG (2009), City of Johannesburg v. Gauteng Development Tribunal, Case No. 335/08, ZASCA 106, 22 September.

CLAWSON, M. and HALL, P. (1973), *Planning and Urban Growth: An Anglo-American Comparison*, London: The Johns Hopkins University Press.

DEPARTMENT OF HOUSING (1996), *Urban Development Framework*, Pretoria: Government Printer

EWING, R. (1997), 'Is Los Angels Style Sprawl Desirable?', *Journal of the American Planning Association*, 63 (1), pp. 107–126.

FILLIP, J. (1999), 'Border Skirmish', Urban Land, 58, pp. 42-45.

FINAL REPORT (Anon), Management of Urban Edge.

GARREAU, J. (1991), Edge City: Life on the New Frontier, New York: Doubleday.

GAUTENG PROVINCE (2001), Gauteng Spatial Development Framework Review Sub-project 4. GRATZ, R. B. and MINTZ, N. (1998), Cities Back from the Edge, New York: John Wiley and Sons Inc.

HALL, P. (1989), 'The Turbulent Eighth Decade', *Journal of the American Planning Association*, 55, pp. 275–282.

HEIMANN, C. (2003), Personal interview conducted on 25 August, Pretoria: Messrs Plan Associates

HERBST, K. (1992), 'Brazil's Model City', Planning, September, pp. 24-27.

HORN, A. (2009), *The Life and Death of Urban Growth Management*, unpublished M (T&RP)-dissertation, Pretoria: University of Pretoria.

JUN, M.-J., MYUNG, J. and HUR, J.-W. (2001), 'Commuting Costs of "leap-frog" Newtown Development in Seoul', *Cities*, 18 (3), pp. 151–158.

MERWE, J. van der (2008), Personal interview conducted in January, Johannesburg: Gauteng Provincial Government, Department of Economic Development.

MEYER, E. and BRITZ, A. (2006), 'Whose Line Is It Anyway? The Origin and Evolution of the Gauteng Urban Edge', *Town Planning Review*, 27 (2).

NATIONAL DEVELOPMENT AGENCY (2009), Gauteng, www.nda.org.

NELSON, A. C. and MOORE, T. (1993), 'Assessing Urban Growth Management', *Land Use Policy*, 10 (4), pp. 293–302.

PRETORIUS, T. (2003), Personal interview conducted in March, Pretoria: Messrs Plan Associates.

SERFONTEIN, K. (2005), Personal interview conducted in April, Pretoria: City of Tshwane, Department of City Planning.

SIMMIE, J., OLSBERG, S. and TUNNELL, CH. (1992), 'Urban Containment and Land Use Planning', *Land Use Policy*, 9 (1), pp. 36–46.

RSA (Republic of South Africa), (2000), *Integrated Sustainable Rural Development Strategy*, Pretoria: Government Press.

SMARTGROWTH NETWORKS, SmartgrowthBC.

SOUTHAFRICA.INFO (2007), September, www.southafrica.info.

THOMAS, D. (1970), London's Green Belts, London: Faber and Faber.

ZHANG, T. (2000), 'Land Market Force and Government's Role in Sprawl', *Cities*, 17 (2), pp. 123–135.