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An Enabling Framework as a holistic intervention to address physical developmental constraints in the Johannesburg inner city

by

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A research report submitted to the

Faculty of Engineering and the Built Environment, University of the Witwatersrand, in partial fulfilment of the requirement for the degree of

Master of Urban Design

Johannesburg 2015

Supervisor(s):

Professor Diaan van der Westhuizen

Dedication:

Falling asleep in upright positions, the disciplined dreamer can only but feed on his misguided fantasies about tomorrow.

To my Mother and my brothers, I intend to do even more to make you proud and to take us further.

Abstract

This research report demonstrates how an enabling framework can be applied as a means to address morphological issues in a manner that also fulfils certain existing urban policy objectives. The aim of the research is to assess the extent to which an enabling framework applied in this way can create environments that are in line with the core values of the urban design profession.

The morphological issues in question are primarily due to the continued existence of the railway lines in the middle of the Johannesburg CBD. The policies in question, presented in the form of spatial development frameworks (SDFs), are those of the City of Johannesburg (COJ) and the Gauteng Provincial Government (GPG). The enabling framework is an approach to settlement making that is characterised by three aspects. The first is its end product, a movement-oriented spatial framework known as the *organising concept*. The second aspect is the enabling framework's open ended approach, which holds that *the city is an act of will*: that a city can be shaped proactively by a single idea and that the idea need not be detailed in order for it to be applied. Lastly, the enabling framework is distinct in its understanding of participation, which is described as *democratic feedback*: an infinite number of responses to the organising concept that includes even the production of alternate plans.

It is argued in this report that these three aspects of the enabling framework align well with the existing policy context in Johannesburg, where there is emphasis on spatial planning (with a strong transport component), on an open ended approach, and on participatory approaches to planning. The report assesses the extent to which the application of the enabling framework in this context can create an environment that espouses urban design principles. This is done in three steps: demonstrating how an enabling framework is constituted and how it may be applied; demonstrating possible responses to it; and then evaluating these responses on the basis of *imageability (Lynch, 1975)* and *responsiveness (Bentley et al, 1985)*.

In general, the findings from this assessment indicate that enabling frameworks may be more effective at addressing imageability than they are at creating responsiveness.

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Title page

Follow the format on the next page for the title page:

Table of contents

Chapter 1 – Research proposal .....

1.1. Introduction 1

1.2. Rationale 1

1.3. Problem statement 2

1.4. Research question 2

1.5. Chapter outline 3

Chapter 2 – Introduction to the study area .....

2.1. Understanding the Johannesburg context 5

2.2. Attempting to see the inner city as a whole 5

2.3. New-regionalism and strategic spatial planning – Policy responses to spatial fragmentation and the post apartheid landscape 17

2.4. Site analysis 26

2.5. Existing urban design proposals 31

2.6. Conclusion 33

Chapter 3 – Literature review .....

3.1. Introduction 35

3.2. The constitution and application of an enabling framework 35

3.3. Place-making principles 38

3.4. Table 1: a point in space 40

3.5. Table 2: simultaneous movement systems 41

Chapter 4 – Review of historical precedents .....

4.1. Troubles with the programmatic approach in the real world 42

4.2. Case study 1: Delos – rethinking the idea of harmony in the making of great urban design 43

4.3. Case study 2: The Tuileries Gardens – Private interest and the making of public space 44

4.4. Case study 3: Stuttgart 21 – The politics of modern urban development: public participation and perceptions of public response to the plan 47

4.5. Case study 4: Portland's Central City Plan of 1988 – the epitome of participation 49

4.6. Conclusion 51

Chapter 5 – Applying an Enabling Framework in the inner city of Johannesburg .....

5.1. Determining the essentials: analysis to find the informants of urban form 52

5.2. Establishing an organizing concept 55

Chapter 6 – Responding to the Enabling framework: Precinct plans and guidelines for development .....

6.1. Introduction 64

6.2. Precinct 1 68

6.3. Precinct 2 72

6.4. Precinct 3 74

6.5. Precinct 4 77

Chapter 7 – Conclusions and recommendations .....

7.1. A call for a non-programmatic approach to the planning of South African cities – the enabling framework 80

7.2. Discussion of research findings 80

7.3. Table 3: Assessing the extent to which the precinct plans comply with the organizing concept 82

7.4. Assessing the extent to which the precinct plans adhere to urban design principles 83

7.5. Critical reflections on the research process and recommendations for future research 85

References 86

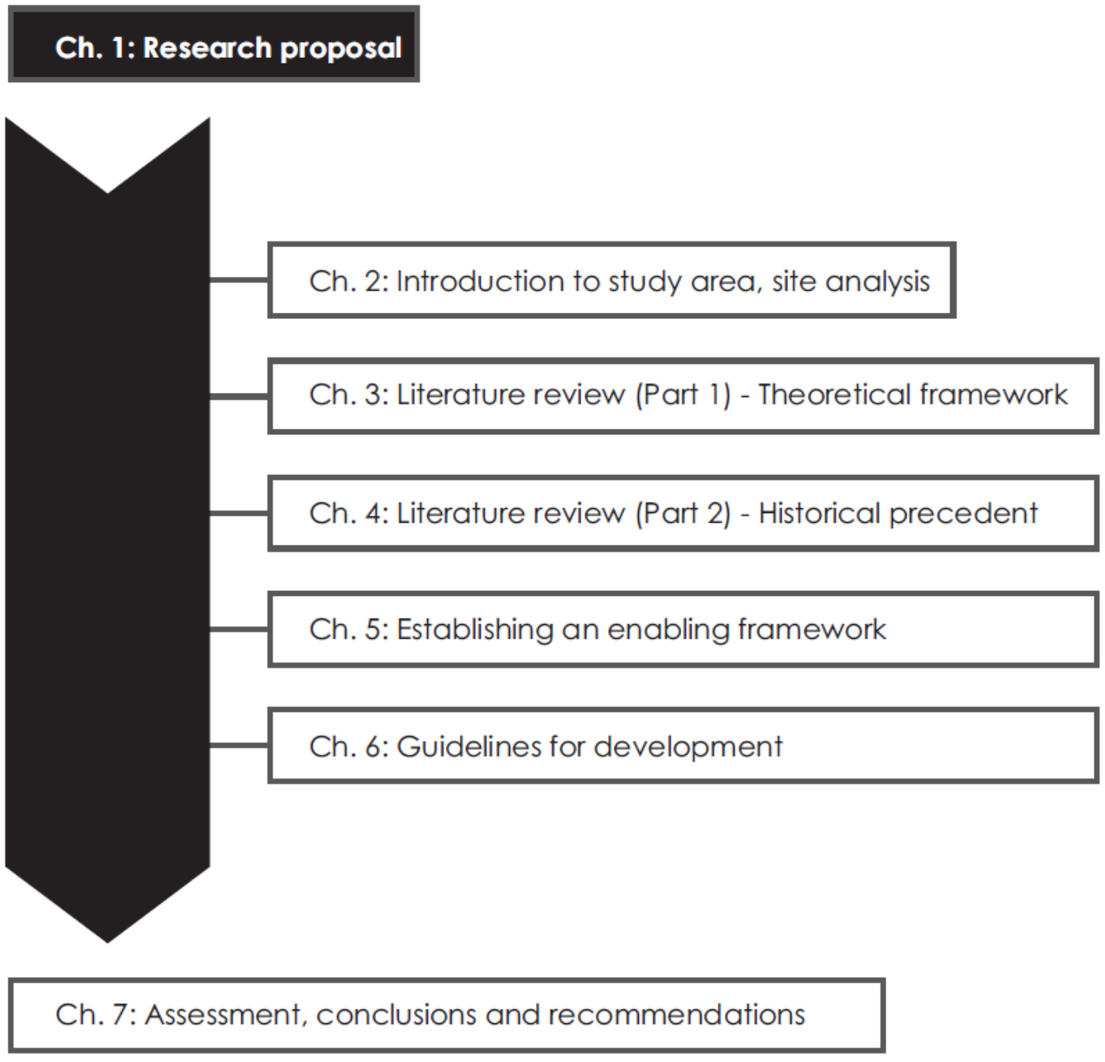
Appendix A .....

Introduction: the reiterative nature of design I

Proposal 1: infill development III

Proposal 2: Decking over the railway lines IX

Proposal 3: Concentrating on Park Station XV


Ch. 1: Research proposal
Ch. 2: Introduction to study area, site analysis
Ch. 3: Literature review (Part 1) - Theoretical framework
Ch. 4: Literature review (Part 2) - Historical precedent
Ch. 5: Establishing an enabling framework
Ch. 6: Guidelines for development
Ch. 7: Assessment, conclusions and recommendations

1.1. Introduction

The enabling framework is an approach to settlement making that is characterised by three aspects. The first is its end product, a movement-oriented spatial framework known as the *organising concept*. The second aspect is the enabling framework's open ended approach, which holds that *the city is an act of will*: that a city can be shaped proactively by a single idea and that the idea need not be detailed in order for it to be applied. Lastly, the enabling framework is distinct in its understanding of participation, which is described as *democratic feedback*: an infinite number of responses to the organising concept that includes even the production of alternate plans.

It is argued in this report that these three aspects of the enabling framework align well with the existing policy context in Johannesburg, where there is emphasis on spatial planning (with a strong transport component), on an open ended approach, and on participatory approaches to planning. The report assesses the extent to which the application of the enabling framework in this context can create an environment that espouses urban design principles. This evaluation will be performed in three steps: demonstrating how an enabling framework is constituted and how it may be applied; demonstrating possible responses to it; and then evaluating these responses on the basis of *imageability (Lynch, 1975)* and *responsiveness (Bentley et al, 1985)*

The study focus of this research report is the inner city of Johannesburg. As its premise the report takes the policy agendas set by the City of Johannesburg (COJ) and the Gauteng Province. The concepts and rationale resented in this paper are thus set within the larger concepts, spatial interventions and policy trends presented by existing policies from the City and the Province, policies such as the Gauteng Spatial Development Framework (GSDF) (Gauteng, 2011), the Growth Management Strategy (GMS) (COJ, 2011; 2012) and the Johannesburg Spatial Development Framework (SDF) (COJ, 2011).

Some of the concepts that this paper has drawn from provincial policies include the Gauteng City Region (GCR) concept and development corridors. The Gautrain is an example of a provincial spatial intervention that has informed the proposals made in this report. From the City of Johannesburg's policies concepts such as nodal development and strategies such as the BRT and urban regeneration have been incorporated in the proposals made in this report.

The reason for such significant effort to create overlap between the current report and existing policies is the belief that urban design, as an emergent profession in the South African policy context, must always attempt to root itself firmly within existing policies, building on the positive momentum of particular policies that overlap with the interests of the profession, in order to make sure that the core values of the profession are translated into actual interventions on the ground. The aim of the urban designer then in such a context is to scan through the policies of a given area in order to find a niche for urban design. Such a niche may be an area that has been overlooked by existing policy or an area that requires an uncommon level of sensitivity or specialized knowledge in which the urban design profession may have a competitive advantage. Such an area of study would be an opportunity to demonstrate the value of urban design and, when such an opportunity is seized with due reference to the existing policy context, it is an effort that helps to carve out a niche for the profession. It is the contention of this report that the inner city of Johannesburg presents such an opportunity to implement a prominent urban design intervention in a manner that demonstrates strong ties to existing policies. One reason for this is the fact that the inner city is immensely critical to urban planning efforts by both the City and the province. This report argues that: ***the railway lines that lie between Braamfontein and the southern districts of Newtown and Marshaltown form one of four morphological barriers that have historically constrained the growth of the inner city. As the inner city undergoes a new transformation and a new interest in investment, the continued existence of the railway lines dividing the city is a threat to the COJ's policy objective to restructure the inner city as its largest and most critical mixed use node***.

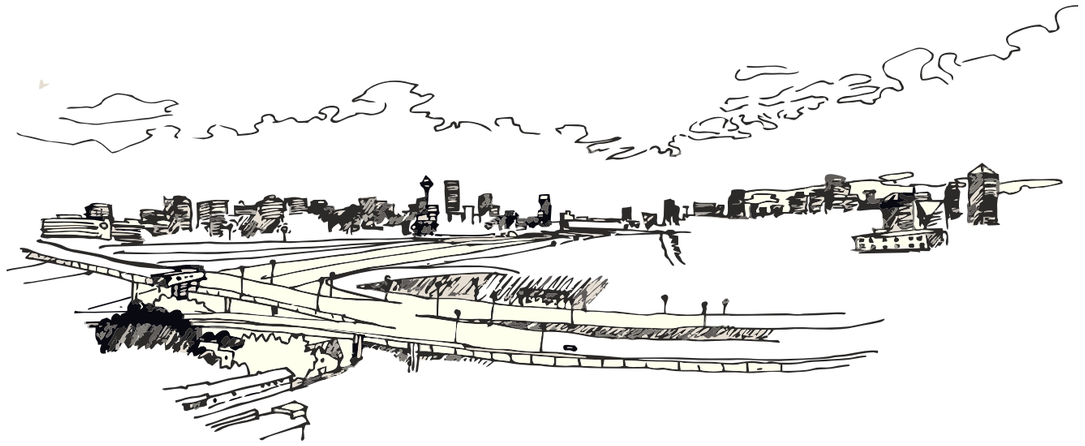


Figure 1: The railway lines and the M1 highway - one of the four major edges in the inner city - as seen from Newtown looking east (image by Author)

1.2. Rationale

The South African state is currently playing a significant role as a major vehicle for urban change as part of efforts to redress the spatial legacy of apartheid. Furthermore, over the last twenty years the South African state has been in the process of developing an extensive array of policy instruments for managing the spatial patterns of development. As such, state urban policies place significant constraints on what can happen within urban environments. Although these state controls are by no means absolute and although they are notoriously ineffective in attaining their set objectives, urban policies play an important enabling role for urban phenomena. Whether one considers the controversial construction of millions of houses in monotonous settlements on the outskirts of South African cities or the current efforts to revitalize inner city areas, the state is clearly a driving force behind urban change,

regardless of where one stands with regards to the desirability of the shape that urban change has taken.

Contemporary urban development in South African cities has come under intense criticism from authors from various backgrounds. This research report seeks to highlight criticisms made from an urban design point of view, where scholars such as Mbembe and Culburn (2010) as well as Lipietz (2004) have pointed to the fact that urban development in South African cities often goes against the core values of the urban design profession. It is argued in this report that in order to address this criticism, in order to increase the extent to which urban development is in line with the urban design profession's core values it might be necessary to better align urban design practice with current trends in urban policy. The rationale is that, since urban policy currently plays a significant enabling role as a driver of urban development, it is worthwhile investigating whether closer alignment of urban design practice with urban policy may hold good prospects for urban design. It is nonetheless possible however that better alignment may also not result in more effective implementation of urban design related strategies. This is evidenced by the fact that urban planning scholars continue to raise harsh criticisms about planning processes and their impacts (Watson, 2009; and Todes, 2011) even though there are many urban planning policies governing urban development in South African cities. This report will not attempt to argue that alignment between urban policy and urban design practice would indeed result in urban environments that espouse urban design values. Rather, the research aims to explore two possibilities: firstly, the extent to which an urban design approach known as the enabling framework can allow more meaningful connections to be made between urban design and urban policy; and secondly, the extent to which the application of an enabling framework with due reference to the urban policy context can result in urban development that promotes the core values and competencies of the urban design profession.

It is possible to identify four policy trends that make up the prevalent policy agenda in Johannesburg today. These are an open-ended approach to the planning of urban development and spatial patterns, openness to participation, a concern with transportation as a central feature of planning, and nodal development as a regional concern. The emergence of these trends in Johannesburg is discussed in more detail in Chapter 2. The enabling framework is appealing because its central features (which are discussed in more detail in Chapter 3) overlap significantly with the prevalent policy agenda in contemporary Johannesburg.

This report identifies place-making, the creation of liveable urban environments that are responsive to human needs, as the central concern of urban design (Bentley, Alcock, Murrain an McGlynn, 1985; and Carmona, Heath and Tiesdell, 2003). Place making principles thus constitute the core values of urban design. The aim of this report is to assess the extent to which an enabling framework can respond meaningfully to the urban policy context whilst simultaneously acting as a vehicle for the transmission of the core values and competencies of urban design into the urban policy framework, transmitting them in a manner that is clear enough to enable the translation of these values and competencies into actual proposals that will shape South African urban environments.

1.3. Problem Statement

The railway lines form one of four major morphological barriers that have historically constrained the growth of the inner city and their continued existence today in threatens policy efforts by the COJ to make the inner city into an accessible, dense mixed use node.

The problem statement presents a morphological problem, the existence of the railway lines, which is possible to resolve through an urban design approach. The problem statement also presents an obstacle for policy implementation, inasmuch as it relates the issue of the railway lines to the City's broad policy objectives to create access, increase density, mix land uses and create a node. These policy objectives must somehow be translated into physical reality, into space, in order for them to be implemented. The above problem thus requires an urban design approach to not only address the morphological challenge to also act as a means of implementing broader policy objectives. However, urban design is unique to other approaches to solving these two problems because of its core value and its core competencies: in that it not only shapes space but also adds meaning to it, thereby creating place.

This report aims to assess the extent to which an enabling framework may be used as an urban design approach in order to fulfill all three of the functions outlined above.

1.4. Research question

To what extent can an enabling framework offer a treatment for the railway lines, in line with place-making principles, that will also be conducive to the fulfillment of the COJ's policy objectives?

a) How is an enabling framework constituted and how does it work?
b) What are the COJ's policy objectives for the inner city and how would they impacted by the continued presence of the railway lines in the inner city?
c) To what extent has an enabling framework been successfully constituted and applied on the site?
d) To what extent do the precinct plans represent a direct response to the enabling framework?
e) To what extent have the precinct plans addressed the policy objectives of the COJ?
f) To what extent does the urban environment proposed by the precinct plans espouse the principles of place-making?

1.5. Chapter outline

This first chapter introduces the premise of the study, which is (1) that state policies play an enabling role in the development of urban phenomena; (2) that, because of this, the state might be a desirable vehicle for the translation of the core values and competencies of urban design into urban environments. The chapter also introduces the aim of the study, which is to explore the extent to which an enabling framework can serve as an urban design approach that simultaneously aligns design practice with urban policy whilst also remaining true to the core values and competencies of the urban design profession. This chapter also presents the problem statement and research questions.

The second chapter discusses the historical development of Johannesburg leading up to the present and demonstrates the rationale of contemporary policy trends. The central argument in this chapter is that the spatial pattern of Johannesburg, although now widely regarded by planning experts as undesirable, was not an accident. This is central in tying the urban reality of Johannesburg to the idea of *the city as an act of will*. Chapter 2 identifies transportation as the single most important force (although by no means the only one) that underpinned urban development trends. This conclusion is of consequence in two ways. Firstly it re-emphasizes the importance of transport as a policy concern in contemporary Johannesburg. Secondly, by emphasizing the importance of movement in shaping the city (and the importance of transport as a policy consideration) the chapter highlights the suitability of Johannesburg for the application of an enabling framework. In outlining the inner city's historical development and the evolution of four urban policy trends, chapter two concludes that the mandate of urban design in the inner city may be understood as being composed of three functions: urban design must facilitate the translation of policy objectives into space; urban design must facilitate the creation of livable places; and urban design must intervene in the public interest.

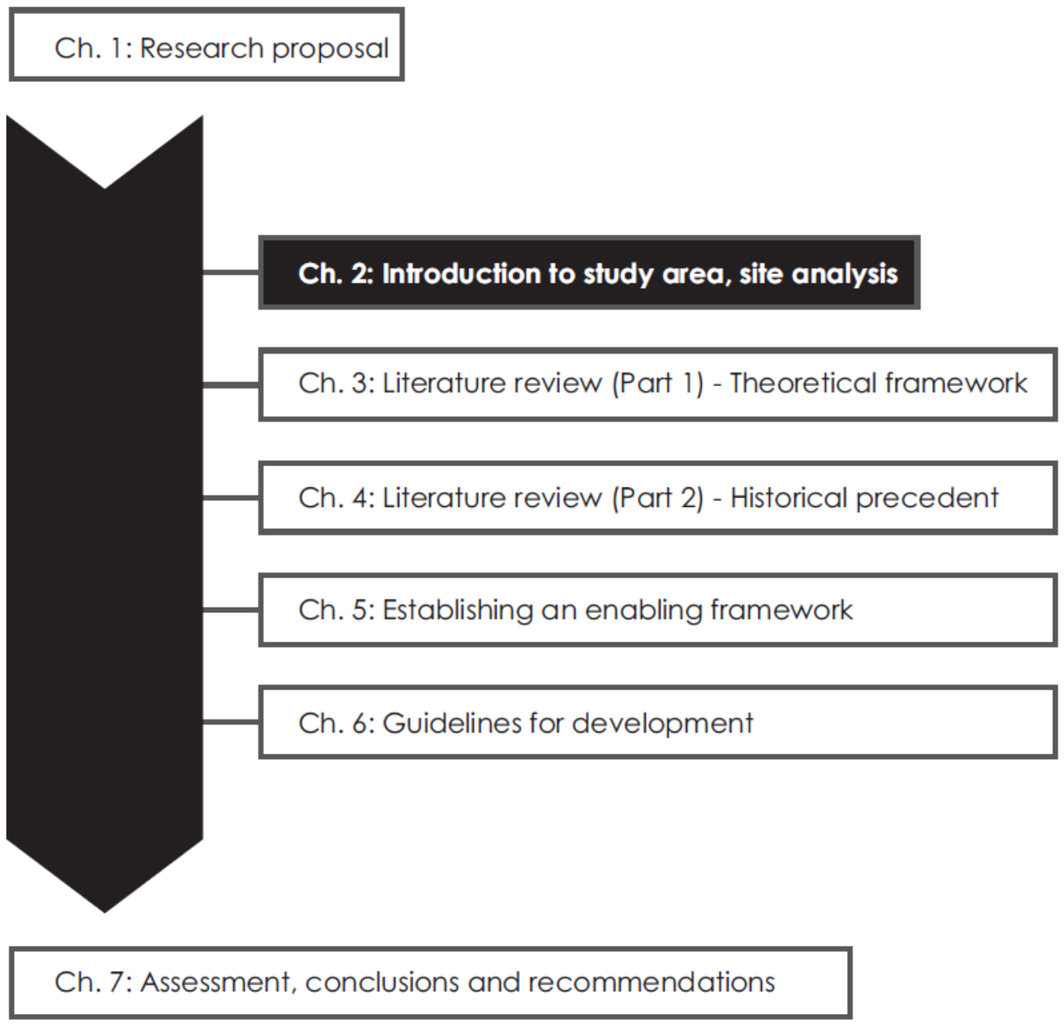
The salient features of the enabling framework were identified in chapter 3. It is argued in chapter 3 that the enabling framework as a process involves three principles. The first principle is the belief that movement is the most important informant of urban development and urban form. The second principle is the belief that it is possible to plan the city "as an act of will" by changing a few essential elements and allowing urban change to emerge as a response to that small intervention. The third principle, which is closely related to the second, is the concept of democratic feedback, which argues that when a designer makes even a small change to the physical environment allowing the user to formulate a response to that change represents a far more meaningful form of participation than when the user is invited to talk about a wide range of changes that they might or might not like to happen. It is further argued in chapter 3 that the organising concept, the actual plan that is produced when one undertakes an enabling framework, comprises two spatial features: points in space and simultaneous movement systems.

Chapter 4 discusses historical examples of the use of use of enabling frameworks by looking at ancient Delos, eighteenth century Paris, a German case study around a project known as Stuttgart 22, and the development of Portland's 1988 inner city plan. Each of the case studies demonstrates some of the aspects discussed in chapter 3, which constitute the elements of an enabling framework.

Chapter 5 demonstrates how an enabling framework may be developed for a site in the inner city of Johannesburg in response to the problem statement identified in the first chapter.

Chapter 6 develops precinct plans, which respond to the opportunities and constraints set by the enabling framework. These precinct plans demonstrate possible responses to the enabling framework.

Chapter 7 assesses the quality of these responses against two sets of criteria. Firstly, the chapter is concerned with assessing the extent to which the environments proposed by the precinct plans embody core the urban design principles of place making.


Ch. 1: Research proposal
Ch. 2: Introduction to study area, site analysis
Ch. 3: Literature review (Part 1) - Theoretical framework
Ch. 4: Literature review (Part 2) - Historical precedent
Ch. 5: Establishing an enabling framework
Ch. 6: Guidelines for development
Ch. 7: Assessment, conclusions and recommendations

2.1. Understanding the Johannesburg Context

Johannesburg's significance spans over such disparate scales that it is very difficult to describe the inner city and its history, its functions and characteristics without being swept away by other sensational developments in the wider city or even in the country (and, indeed, the Southern African region). For instance, while the inner city is a way-through for most people moving to different parts of the metropolis on a daily basis via public transport, it is also a point of entry for migrants into the city from places as far as Kwa-Zulu-Natal and Eastern Cape. Similarly, while its significance as a commercial node has been challenged by newer nodes to the north of the city, it has managed to maintain a strong clientele in the south and, significantly, there is increasing evidence of its growing importance even across international borders.

Various narratives have been put forward to explain the changes that have occurred in the central area of Johannesburg since the 1980s (for instance Beavon, 1998; Beavon, 2001; Czegledy, 2003; Murray, 2004; and Garner, 2011). Although these narratives attempt to describe the same events, it is possible to separate them into two broad categories. The first category is what may be called the crisis narrative. Here the changes within the inner city of Johannesburg are described along the same lines as the historical development of other post-industrial cities (for instance Murray 2004 bases his analysis of Johannesburg on Dear and Flusty's (1998) description of Los Angeles). Here the centre is seen to collapse and it is functionally replaced by the periphery (Murray, 2004; Lipietz, 2004; and Garner, 2011). Authors such as Murray (2004; 2013) suggest a narrative of decline and crisis – convincingly citing ample evidence of big business leaving the inner city. However the idea that the centre of Johannesburg has collapsed is a dangerous one because (unlike in Dear and Flusty's Los Angeles) Johannesburg's inner city is not "empty" or completely "deserted" but it is a foothold for the city's poorest households, who would otherwise be located on the periphery (Figure 1).

The second category of narratives is more optimistic and in this paper it will be referred to as the social transformation narrative. Authors in this category have placed more emphasis on the political decisions that underpinned the changes in the inner city as well as how the social mix within the inner city at different phases in its history has impacted on the character of the area (Czegledy, 2003; and Beavon). This latter group of authors (notably Beavon, 1998; and Czegledy, 2003) describe a more nuanced situation in which the inner city underwent a transformation and a kind of 'boom' during the period that others have described as the inner city's decline, although the nature of this boom was somewhat atypical. In this narrative the increasing amount of trade – the boom, so to speak – within the inner city has been shadowed by the fact that the area's new clientele, albeit more numerous, have lesser disposable income. Tied to this is the nature of the new business taking place in the inner city. No longer the big department stores or the corporate headquarters, the city's new tenants are often small businesses that sell inexpensive goods, catering to the new market (Beavon, 1998; and Czegledy, 2003). The presence of these new types of retail (and their proliferation in large numbers) has significantly changed the character of the inner city. This paper submits that the social transformation narrative is better suited for understanding the history of the inner city and for determining the context of design in the area.

2.2. Attempting to see the inner city as a whole

The emergence of the "crisis narrative" in Johannesburg is part of a larger wave of theories, which are premised on the experiences of cities in developed countries but are then applied within developing countries to explain their urban reality. Authors such as Phillip Harrison (2000; 2002) have written extensively on the shortcomings of this imported knowledge. Deborah Potts (2008) has argued that urban theory is often unable to read the city as a composite whole but instead it usually opts to divide the city into those parts that can be read (the formal, the modern or – as was the case in colonial cities – the white), which fall neatly into the scope of what urban theorists are familiar with; and, on the other hand, there are those parts that cannot be read or where reading them requires extensive efforts (and in the case of Johannesburg that is the informal). Consequently, the inner city is almost always seen at a glimpse and hardly ever as the bigger picture of interconnected interactions between space and people who are all responding, in their own individual ways, to the same macroeconomic, legislative and political forces and the plans that produce these forces. In attempting to find a way of accurately reading the city, it may be better to locate the current condition of the inner city within its proper historical context and to understand it as a phase within a historical continuum. It may also be useful to discard the idea of a clear direction of growth for the inner city and to accept instead the possibility that there has been no shift at all, or that shifts may be occurring in various directions that are informed by various forces, or that there are cases where different things are attracted to different places. This report opts for a historically grounded analysis that largely rejects the idea that major trends may be governing the inner city's development, which then suggests that the inner city is trapped in the inertia of decline. Instead, this report considers the development of the inner city as being incremental and essentially the result of rational decisions (rather than accidents) that were made within specific contexts but which now seem illogical now that circumstances have changed.

2.2.1. Public Transport, pedestrian movement and the impact on the character of the inner city

This report adheres to Beavon's (2001) assertion that public transport has played a fundamental role in informing the individual decisions that have shaped the inner city thus far and that it will continue to do so in the foreseeable future. It is important to have an understanding of the transport situation in Johannesburg before attempting to present any design solution to the city's morphological problems. However, attempting to relate public transportation and its associated pedestrian movement patterns to urban development (e.g. the distribution of retail activity within the inner city) is a complicated task because of the myriad factors that impact on people's movement patterns. One reason for the

complexity is the fact that, although pedestrian movement tends to be dendritic in the short run (moving in as straight a line as possible to conserve energy), in the longer run people do not necessarily move in a straight line and they frequently make turns to find short cuts or safer routes or they opt to take routes that are pleasant for other reasons (Dewar and Todeschini, 2003).

That being said however it is possible to identify some ways in which pedestrian movement has impacted on the character of the inner city. The first is the transient nature of most pedestrian activity in the area as a result of the inner city largely being a way-through for people headed to other destinations[1]. This is particularly true within the study area because of the concentration of transport facilities within the area. The result is that pedestrian activity tends to be in a relatively ceaseless state of motion - often an anxious experience of bodies colliding into each other on the narrow sidewalks. The resultant retail is an "on-the-go" kind of shopping, although there are also many other shops that are destination oriented. The prevalent typology of shops is relatively small and occurs amongst many others with similar products thereby targeting random people passing by rather than a specific niche. This is not unexpected and is a relatively characteristic of transport terminals. For instance, even Grand Central Terminal, in New York, which has become more than a transit point but also a major destination in many respects (especially with tourists), is still characterised by a large number of on-the-go kinds of businesses such as newsstands, Star-bucks counters and small confectioneries (Grand Central Terminal Directory, 2013). Thus the high presence of street traders in the Park Station Precinct needs to be understood in terms of this logic as well. The traders' choice of merchandise (cheap and relatively undifferentiated) and their incessant need to locate their stands close to the pedestrian is - at least partially - a response to the commuter market, which tends to operate through compulsive shopping.

Furthermore, Beavon (1998) contends that the small size of the shops is largely informed by the kind of clientele that these shops serve. For Beavon it is not simply a matter of the customers being in a rush but they do not have a high spending power to begin with. As early as the 1960s, a combination of increasing difficulties in accessing the CBD (congestion, limited parking and an overlooked public transport system, the emergence of new retail nodes in the northern suburbs and the creation of a highway system) resulted in more and more people finding it more convenient not to make the trip to the CBD but to service their needs in the nearby nodes. In time, and because of the new highway system, even nodes that were not so nearby became more convenient to access than the CBD. Once the inner city was shunned by most residents of the affluent northern suburbs, the high-end department stores made the decision to relocate closer to their market and they began to leave the inner city while, in the same instance, a new kind of shop was emerging to cater for the new kind of client that was increasingly gaining access into the formerly white inner city (Beavon, 1998). This narrative of urban changes being driven by changes in access is a powerful analytical device for understanding the development of Johannesburg. When looked at in this way, the current conditions in the inner city seem to have taken root right at the very beginning of Johannesburg's story.

[1]The city is a way through to other places – it's important to point out that the trend is increasingly shifting away from this, especially within Johannesburg's public spaces such as BeyersNaude Park and Joubert Park, where visitors to the parks have been observed staying long hours and the parks are occupied for much longer periods than most other parts of the city

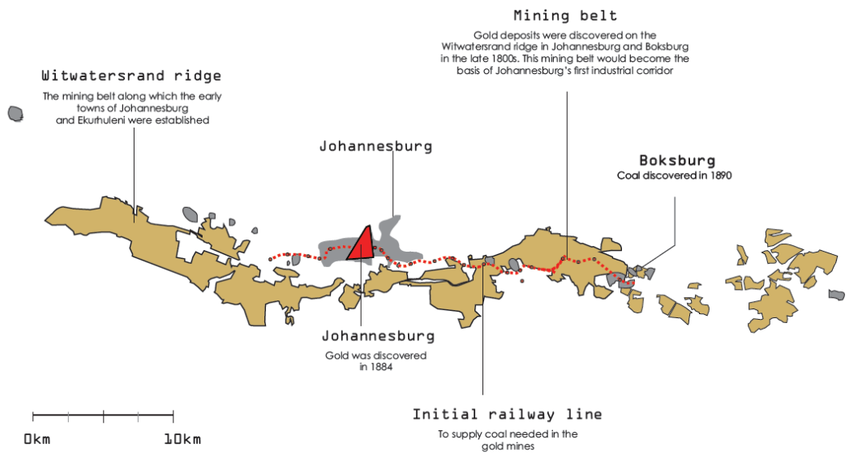
2.2.2. Looking back at early Johannesburg – The seeds of decline

Johannesburg was established in the second half of 1886 on a vacant piece of land known as Randjeslaagte, which lay between three farms. The two main roads into town were Market and Commissioner St, which are on the southern edge of Randjeslaagte. The location of the city's main road on the edge in this way may have had to do with an existing road that would have joined the existing farms, which then linked Johannesburg to the outside world. Market St, as the name suggests, was the location of Johannesburg's Market Square, which was an open-air market and also acted as a terminus for supply wagons arriving from coastal cities (Beavon, 2001). By the 1890s Market Square had become established as the town's centre and it was becoming clear that the area to the south of it was increasingly being occupied by financial firms and mining houses, while the areas to the north and the east were increasingly becoming characterised by the presence of retail, even attracting major department stores that would have been considered the country's big names at the time (Beavon, 1998). By 1893 there was a strong concentration of shops and high-end retailing on Pritchard St, which was one block north of the square and ran east-west (Beavon, 2001). As can be seen in the adjacent map by 1898 the main shopping zone in Johannesburg was located along Pritchard, more or less between Eloff St, to the east, and Harrison St to the west.

1890S – THE EARLIEST PUBLIC TRANSPORT IN JOHANNESBURG

The location of the market nearby is very likely to have been a strong factor in the location of the shopping zone along Pritchard. Another factor was introduced in 1890, when the "Rand Tram" became operational. Although its primary purpose was to convey coal into Johannesburg from Boksburg, this light railway was also equipped with passenger facilities. The train stopped at a station "Park" Station (named so because of its location in the vicinity of two parks (Joubert Park and Kruger Park)), at the northern end of Eloff Street. This in turn made EloffStreet into an important pedestrian route, because anyone who had come to the city's retail district via the new train is likely to have walked out of the

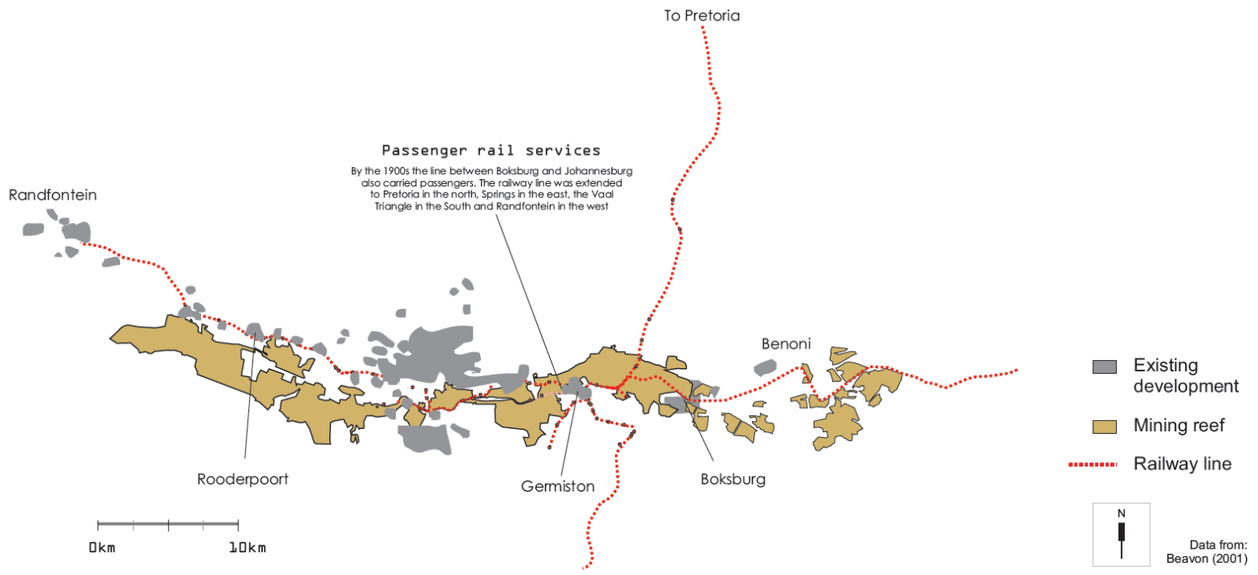
1890-1900



The discovery of gold in the Witwatersrand (1884) led to the establishment of Johannesburg. In 1886 a mining camp was established on the site of what would become Johannesburg, on what was called the Randjeslaagte, a triangular piece of land that lay between three farms.

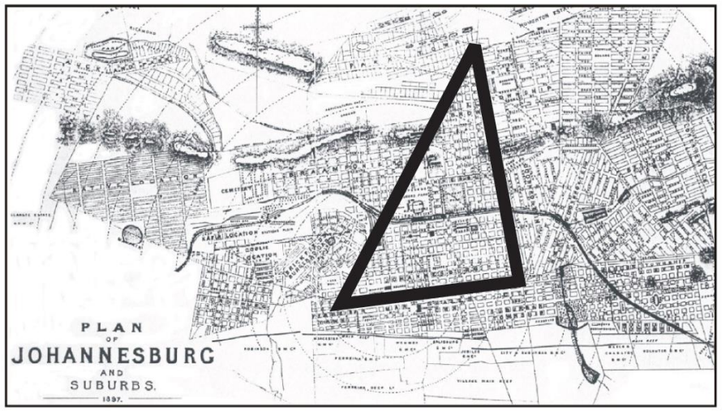
The discovery of gold in Johannesburg coincided relatively closely with the discovery of coal in Boksburg a few years later (1888). All along the Witwatersrand there was already small-scale mining of minerals and a few towns were in the making. The early footprint of what would be an industrial corridor along the mining belt was already taking shape (Beavon, 2001).

1917

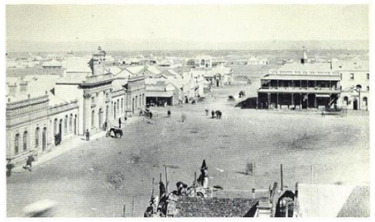


In (1890), barely four years after the discovery of gold in Johannesburg, a railway line was already operational, with the primary motive of connecting the gold mines to the coals supply in Boksburg. Over the years, as residential densities increased in the bourgeoning industrial towns, passenger lines were introduced. Perhaps most significant among these was the line to Pretoria. This is because almost a hundred years later a new line, the Gautrain, has been created to connect the inner city to the same destination, Pretoria, but taking a very different route. This decision is telling of the significant change in the region's development pattern wherein major destinations shifted away from the traditional industrial corridors. In other words it was not simply a case of development moving out of the inner city.

Figure 2







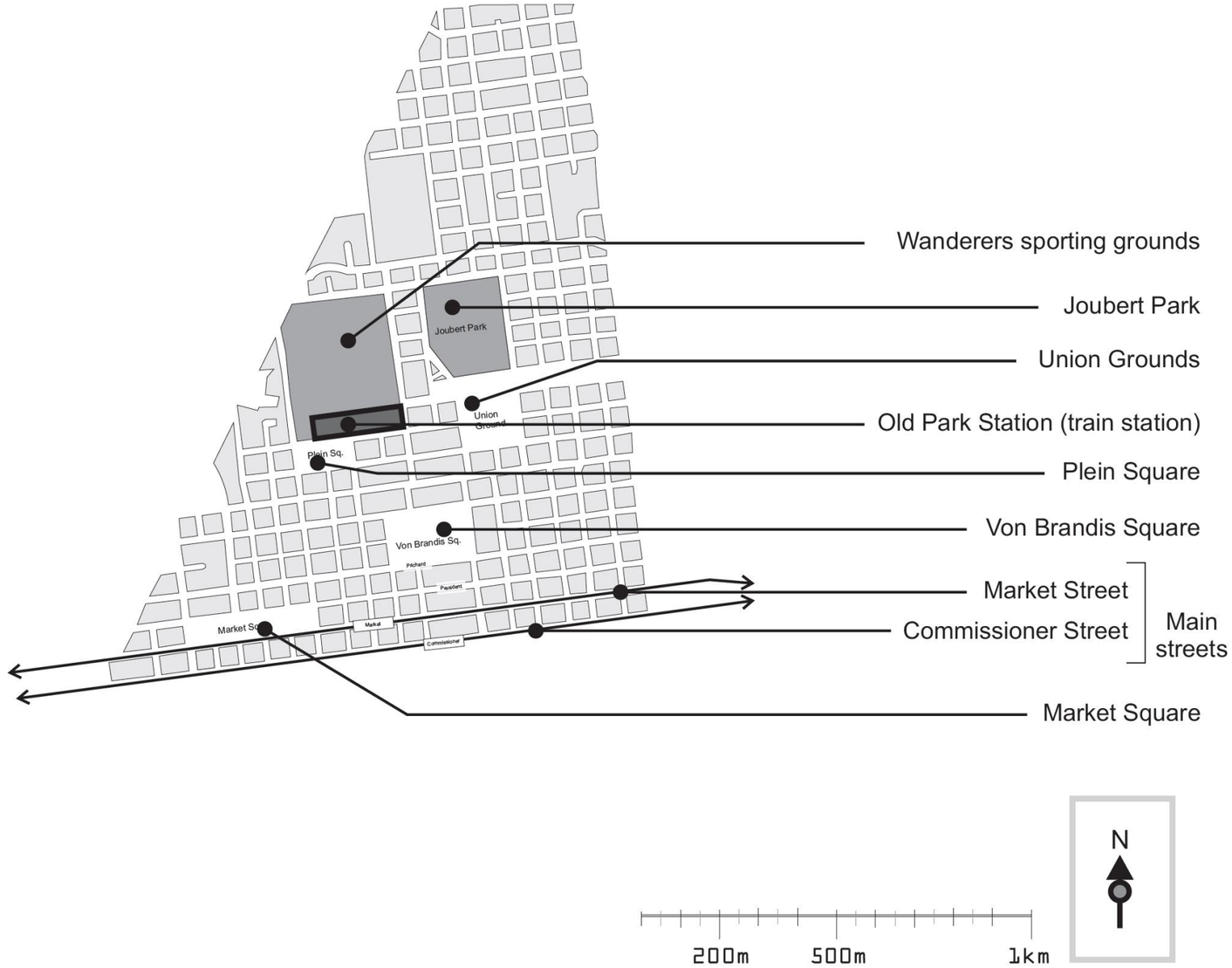








Images by University of Pretoria (ud)



After Beavon (1998)

Figure 3

station and straight down Eloff Street and would have either turned west on Pritchard Street to walk towards the main shopping cluster or would have continued on towards Market Square, most likely entering the square diagonally at the intersection of Rissik and President Street. This had a recognisable impact on the quality and amount of retail activity provided in the inner city but it is also interesting to note that the resultant increase in shop frontage along Eloff did not occur immediately outside the station but was instead primarily located south of the intersection with Pritchard (Beavon, 2001), which is where the attractive forces of the existing cluster of shopping and the square would have been strongest. The area immediately outside the station remained predominantly residential.



Functional areas in 1898 (After Beavon, 2001: 6)

Figure 4

The first real form of public transport however (since the train was primarily meant for another purpose) was the horse drawn trams introduced in 1891. Their presence greatly enhanced the importance of Rissik Street as a route for accessing the main shopping cluster and (because of increased pedestrian presence along Rissik) this street also became a major location for retail. The horse-drawn tram had a very significant impact in the city which is perhaps best illustrated by a comparison of numbers. By 1896 the tram carried 2.5 million passengers per year as opposed to the 66,000 that were carried by the train in 1891 (Beavon, 2001). This may very well explain the greater impact that the tram had on retailing along Rissik Street, Commissioner Street and Bree Street in comparison to the impact that the train station had along Eloff Street.

The combination of the train and the horse-drawn tram (as well as a supplementary system of more expensive horse drawn carts) enhanced the accessibility of the inner city and, as wider economic circumstances improved, this lead to a boom in the inner city that was evidenced by a growing financial district on the south-west as well as an increasing amount of retail on Rissik, Commissioner and Bree Street which intersected with the existing clustering of shopping described earlier on Pritchard (Beavon, 2001). Another consequence of this boom in commercial and retail uses was a corresponding decrease in residential use in the inner city (*ibid*), which would later contribute to the undoing of the inner city's fortunes.

1900s – The electric tram, the appearance of cars the 'first' suburbs

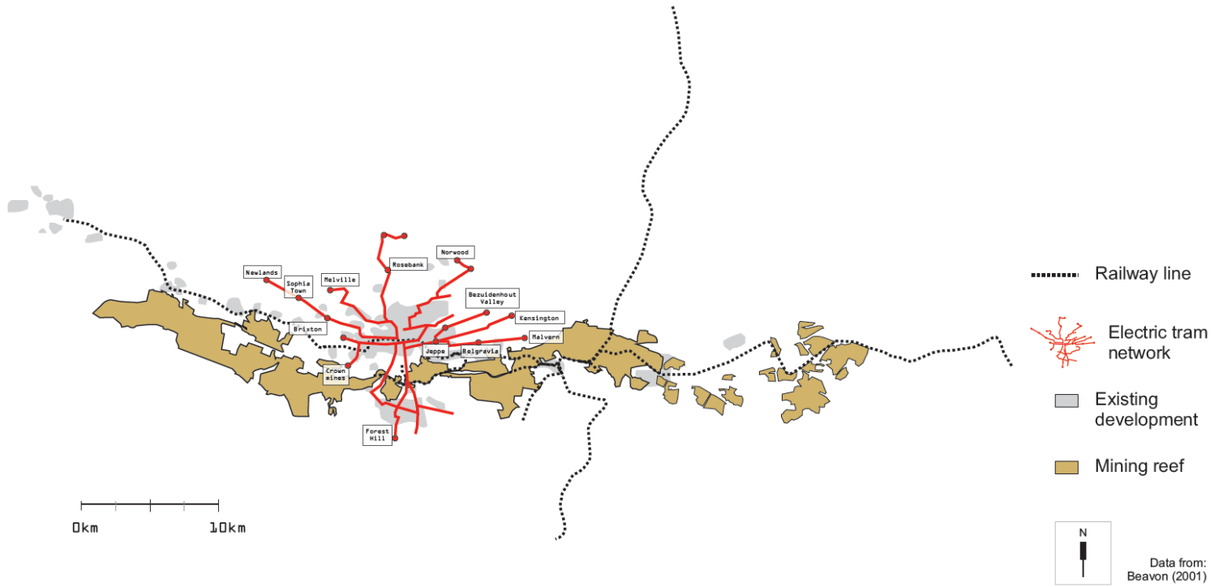
Although suburbanization was evident in Johannesburg as early as in the first decade of the city's establishment, with Doornfontein and Braamfontein emerging as clearly separate townships, the need to access the city initially made it difficult to maintain a much clearer separation from the city. This changed, however, with the advent of the electric tram which could travel distances and terrain that had previously been difficult for the horse-drawn tram and this facilitated the acquisition of locations further out by those who could afford. This pattern was later reinforced by increasing ownership of cars amongst the wealthier citizens of Johannesburg.

The electric tram effectively facilitated the now familiar pattern of low densities in the northern suburbs, by making it convenient to live in these suburbs, but it also maintained the strong connection to the CBD that was necessary in the absence of other centres.

1930s-1950s – Falling densities and the car culture in Johannesburg

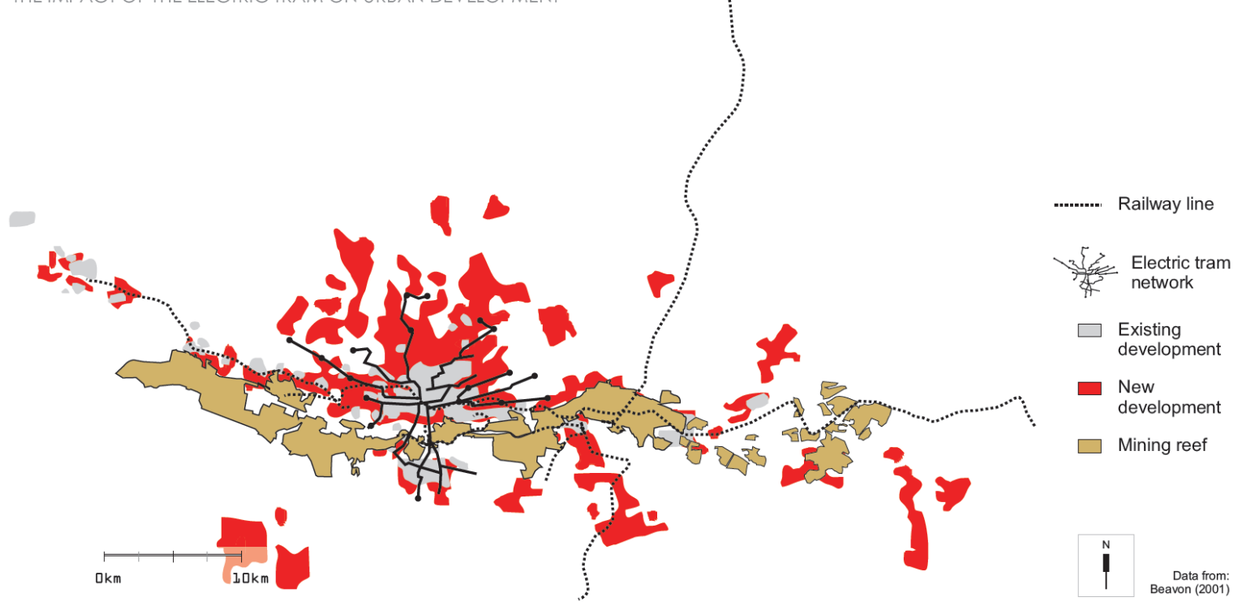
By 1934 population densities in Johannesburg were 17.5/ha and were significantly lower than those in German and British cities (between 67.25 and 61/ha) (Beavon, 2001: 8), which did not bode well for public transport because of the high densities necessary to maintain reasonably cheap costs. This is in contradiction to the popular notion that something went horribly wrong in Johannesburg in the 1980sand resulted in the city becoming a sprawling metropolis with an inefficient transportation system (Murray, 2004; and Garner, 2011). The pattern was well under way very early on in the city's development and, as will be illustrated further on, it was compounded the by an increasing bias towards private cars and neglect for public transport (Beavon, 2001).

1927



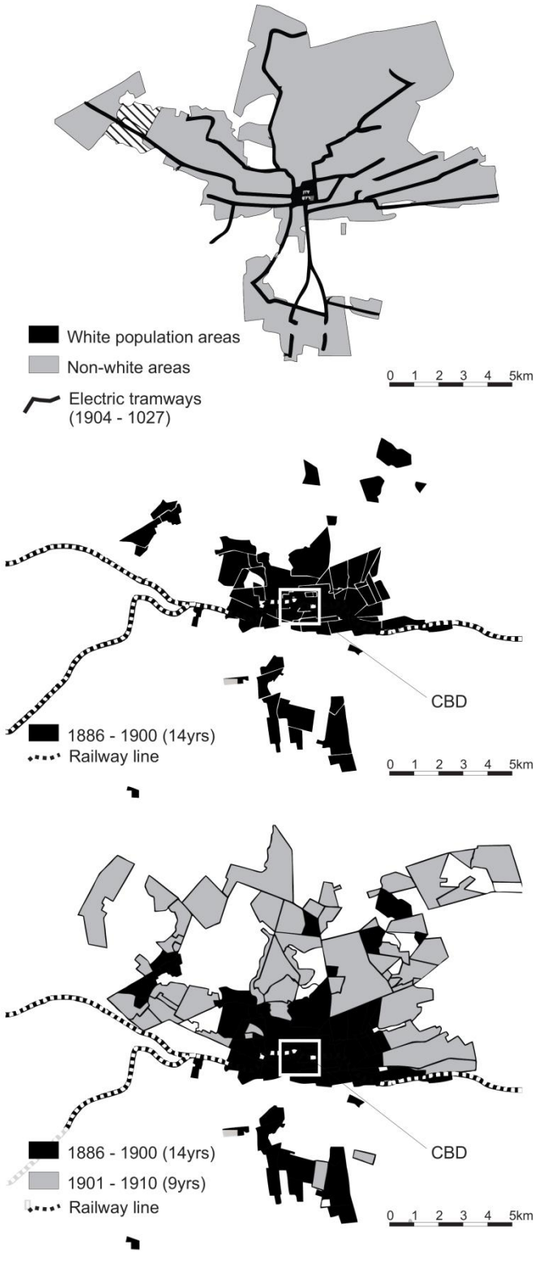
By 1927 the horse drawn tram had been replaced by its electric counterpart. Electric trams proved more resilient to the topography of the ridges and managed to reach neighbourhoods that were much further out, such as Rosebank and Noorwood. Thus Johannesburg's northern suburbs began to emerge and, although in 1927 they still did not possess significant economic activity separate from the inner city (Beavon, 1998), they were clearly separate form it, lying north of the ridges and almost certainly out of walking distance.

1938



After the introduction of the electric tram the city sprawled outward, predominantly to the north and it more than doubled in size. The electric tram had a significant impact on this phenomenal rate of growth. Whereas the outermost stations on the network more or less marked the edge of town in 1927, by 1938 the city extended at least 5km beyond the furthest tram.

Figure 5





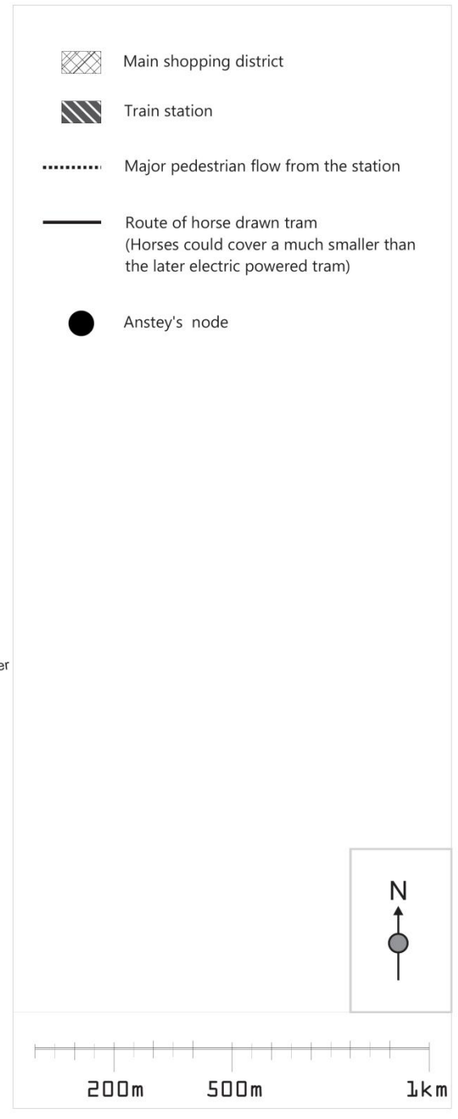


Figure 6: the impact of the electric tram on urban growth and suburban development

THE NEW TRANSPORT PLAN OF 1951

1948



In many places around the world the 1940s saw a resurgent interest in urban development, with post-war reconstruction in Europe and post-depression civic improvements in American cities (Harvey, 2008). It was in this context of renewal that Johannesburg's planners conceived a bold new plan for the management of traffic in the city. With ambitions of elevating Johannesburg into the class of modern cities of the twentieth century, the new Traffic Plan embraced popular ideas about the future of transport – a future centred on private automobile ownership. Much of Johannesburg's characteristic road structure was conceived in the twenty odd years between 1948 and 1973 (Dorfman, 1948; and Johannesburg City Engineer's Department, 1960). One notable feature proposed in the 1948 traffic plan was the highway system, which formed a ring around the city and which, for the most part, allowed movement to bypass the inner city (Dorfman, 1948; and Johannesburg City Engineer's Department, 1960).

URBAN PATTERN AND SUBURBANIZATION AFTER THE NEW TRANSPORT PLAN OF 1951

1951



The new traffic plan exacerbated the development pattern that had already been underway in Johannesburg and the city continued to expand north. Although this report has limited its analysis to the northern half of Johannesburg it must be borne in mind that due to apartheid urban policies since the 1950s the southern half of Johannesburg also continued to expand as native townships were established (Chipkin, 1993) and that this pattern was continued after 1994 by the establishment of RDP townships (Calburn and Mbembe, 2010).

Figure 7

It is also important, however, to recognise the fact that the trend of declining residential densities was neither straightforward nor was it a city-wide phenomenon. There were higher densities in non-white neighbourhoods, and in poorer white neighbourhoods, but there was also the case of Hillbrow and Berea, which grew into very dense upper-income neighbourhoods and remained so until the 1980s.The trend of high-density apartment buildings can be traced back to what Beavon (2001) terms the *great building boom of the mid-1930s*[2], which was sparked by South Africa's move away from the gold standard. Many fashionable buildings were erected around Joubert Park and the Union Grounds as a result of this upsurge in capital (*ibid*). This is an intriguing example of how the city was used to absorb excess capital (in the way that Harvey (2008) has described building booms in Haussmann's Paris and Robert Moses' New York as being strategies to mop up excess capital). In later times (in the1970s), such efforts (the use of property development to safeguard against potentially harmful economic circumstances) would be directed at the expansion of the northern suburbs (Czegledy, 2003).

1960S-1980S – COMPROMISED ACCESS INTO THE CBD AND THE EMERGENCE OF THE FIRST MAJOR

RETAIL CENTRES OUTSIDE THE CBD

As a backdrop to the discussion at this stage one should note that the number of Johannesburg-registered motor vehicles had jumped from 27 500 in 1933 to 110 000 in 1954. A mere five years later the figure was 152000 and by 1964 it was 179 800 (Beavon, 2001: 12)

Access into the CBD

Another consequence of the boom of the mid-1930s had been a preoccupation, on the part of city authorities, with public works programmes and the main form that these took in Johannesburg were roadworks intended to improve access into the CBD from the northern suburbs.

The 1963 Johannesburg Transportation Plan, which resulted in a system of highways that encircled the city, was a missed opportunity for public transport or an effort to restructure the city's residential settlement pattern, which may have stemmed the tide of change back in favour of the inner city. However the plan must also be viewed within its socio-political context: the fact that under apartheid 'public' transportation could never actually be public since the majority would always be excluded from it.

Building restrictions in the CBD severely restricted the amount of off-street parking that could be provided by individual properties and, as an ever increasing number of trips to the city had to be made by car, this meant that access to the CBD was getting ever more difficult. The paradox of Johannesburg's CBD becoming car oriented while at the same time also becoming increasingly starved of parking space was critical in underpinning the competitive advantage of the newer nodes over the inner city.

Newer centres in the north

Up until the 1960s, there had been very little in the way of genuine commercial or retail development in the northern suburbs. Nonetheless the shift towards the north had already begun in the 1950s, beginning with the redevelopment of Braamfontein. Throughout the city's history, prior to the 1950s, the railway line and the valley in which it lay had clearly acted as the edge of the CBD because commercial rights had been extended to Braamfontein as early as 1946 but had not been taken up until the 1950s. Even as commercial interests began making their way north, in the 1950s most of the businesses that did move out of the CBD and into Braamfontein were those that did not need a strong connection to the CBD in order to conduct their daily business (Beavon, 1998). While retail in other nodes outside the CBD, Braamfontein and Hillbrow was growing very quickly, it still represented minute proportion of Johannesburg's total retail activity and was not yet a very big threat to the future of the CBD (*ibid*).

However, the establishment of Randburg in 1959 as a new town, with its own CBD (an overt challenge to the economic interests and hegemony of the existing CBD), heralded the metamorphosis of Johannesburg into the polycentric metropolis that it is today. This pattern was escalated – and probably cemented – by the establishment of the town of Sandton ten years later in 1969, on the basis of recommendations made by a provincial commission of enquiry (Beavon, 1998). The significance of transport a factor in the decision about where to shop and live and in determining the fate of nodes in Johannesburg is also apparent in the deliberate decision to locate the CBDs of SandtonandRandburg on the routes back to town. This location, between the residential neighbourhoods of these nodes and the inner city, would allow the new CBDs to intercept prospective shoppers destined for the city and, in time, would prove to be more convenient than a trip to the inner city.

The Carlton Centre

At this point, it is worth discussing the development of the Carlton Centre Complex, which was anticipated to have a major impact on the centre of gravity within the CBD, effectively shifting the retailing cluster and the financial district eastwards. Although wider economic factors weighed down on the brief success of the Carlton, its failure is also telling of diminished role that the CBD played as a centre for the sought-after white market that resided in the northern suburbs. The emergence of new nodes in the north thus had a clear impact on the CBD (Beavon, 1998).While Carlton Centre may have failed to become the retailing centre of white Johannesburg it has nonetheless become a major destination today for the residence of black townships in the south, who for the most part did not have the retail opportunities in their own localities. However, as Beavonpoints out, this not entirely coincidental:

[2]*The construction boom also coincides with a similar increase in construction in American cities, following the Great Depression. Capitalist cities attempted to prop up their economies by injecting surplus capital into the construction sector (Graaf, 2003)*

> *Significantly the Carlton Centre bucked the apartheid laws at an early stage. The first restaurant without a liquor licence to be officially open to all races in Johannesburg was located on the observation deck of the Carlton tower, and black people were made to feel welcome at the Centre. Furthermore, just as Anstey's [a popular retail centre located onEloff Street] had found itself on the direct line of the entrance and exit for white passengers at the Johannesburg railway station so the Carlton Centre, although much farther south, was linked almost directly by Smal and Hoek Streets (Figure 2) with the entrance and exit of the station for black passengers* (Beavon, 1998: 7).

The spatial consequence of the Carlton Centre's popularity amongst a largely black, lower income clientele has been the intensification of retailing along Smal and Hoek Streets and these streets have become one of the major pedestrian destinations in the city (Demacon, 2009; and Albonico, 2013).Intense pedestrian activity on Smal/Hoek Street also tends to occur further away from transport nodes than at any other point in the city, which is testament to the attractive power of this part of the CBD.

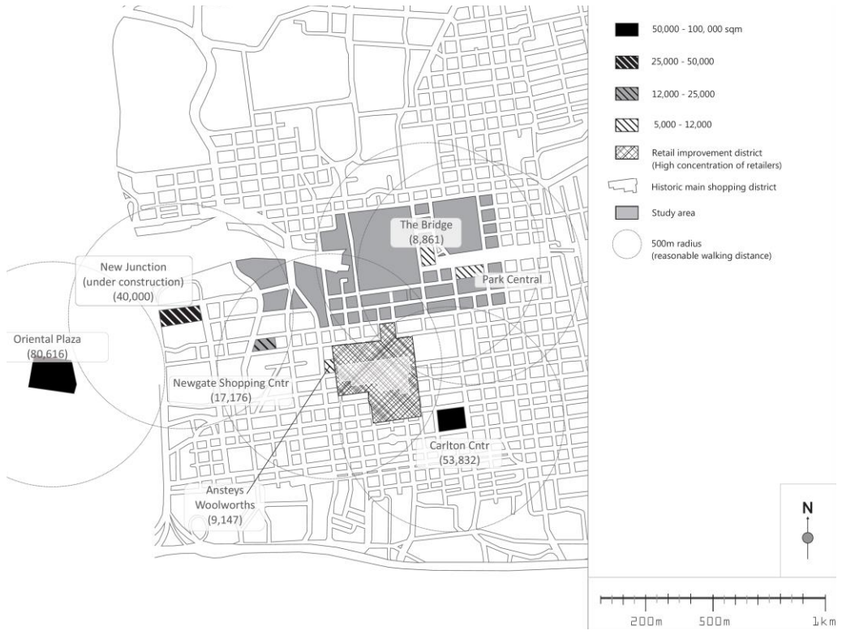


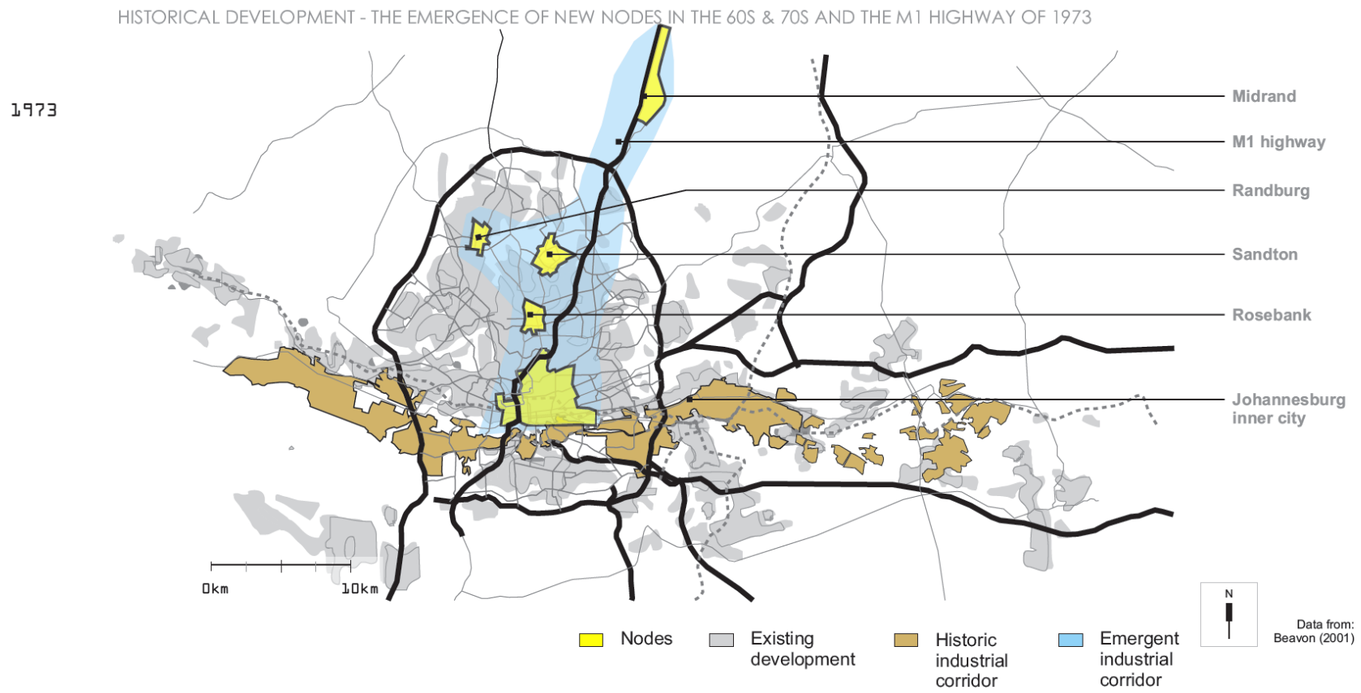
Figure 8

1980S AND 1990S – RAPID CHANGE AND IMPROVING ACCESS FOR BLACK PEOPLE

In addition to the extensive freeway system and the widening of many roads, Johannesburg's multimillion Pound traffic plan also created five new bridges over the railway lines (at Sauer, Simmonds, Harrison, Rissik and Claim Streets). The concentration of bridges to the east of Park Station was testament to the importance of the residential areas around Joubert Park and the southern tip ofHillbrow for the CBD (Beavon, 2001). The area between Hillbrow and the CBD had was characterised, as a result of the high purchasing power present in Hillbrow, by a shopping cluster secondary to the one described earlier along Pritchard, Eloff and Rissik Street (Beavon, 1998).Significantly, this suggests that the location of significant amounts of retail near Joubert Park may not have been a direct consequence of the presence of the new transport hubs in the immediate vicinity ofJoubert Park, across the railway line along Noord Street, but would have also been a response to the existence of a retailing cluster in the area. This suggests a more nuanced 'chicken and egg 'relationship between transport and retail. More precisely, it may be described as a process of cumulative reinforcement: some mix of access and proximity to other retail having informed the initial location of retail; this would have prompted the location of the means of access closer to the area(the taxis, for instance, would have had more requests to drop people off closer to the area and would receive more patronage by being closer to this relatively busy location – although the location of taxi ranks would have been equally informed by the availability of vacant spaces); higher access would improve the profitability of the location for retail and would attract more retail into the location.

The Bridge Shopping Centre, for instance, was built in 1993 by Margoles, Dukes & Smith Architects (Artefacts, ud). The time of its construction coincides with the invasion of the Union Grounds andNoord Street by the taxi industry around the same time (United Nations Environment Programme (UNEP), 2007) (it is interesting to note that in the 1990s The Bridge Shopping Centre also had its basement parking used as a taxi rank). The subsequent formalisation of the taxi rank on the Union Grounds as Jack Mincer taxi rank also resulted in the development of another shopping centre, Park Central. It is significant that The Bridge and Park Central, which are the biggest shopping centres in what may be described as the former shopping cluster between Hillbrow and the CBD, emerged in the 1990s. This would have been during the context of nearby spaces being taken over by taxis, resulting in an upsurge in access to the city for the formerly excluded black majority, but it would also have been in the context of a slump in the purchasing power of individual inner city shoppers, following the migration of high end shopping to the suburbs and the changes that had taken place inHillbrow in the 1980s.Hillbrow began to be seen as a fashionable place to live in the mid-1940s. It was particularly popular amongst older, retired, people with money to spend who cherished the convenient access that it offered into the CBD (Beavon, 2001). Later, as Johannesburg's economy shifted away from its mining sector towards a new role as the sub-continent's financial heartland, and as the city emerged as a cosmopolitan metropolis, Hillbrow was populated by expatriates who had been attracted into the country by Johannesburg's increasingly modern economy. It was the presence of this cosmopolitan market that allowed the area between Hillbrow and the CBD to grow into a very most significant node outside the CBD (with 45,000 m_2 of retail space) along with Braamfontein, which was growing into a commercial 'extension' of the CBD (Beavon, 1998: 3). The departure of Hillbrow's international community in the late 1970s, following international sanctions against South Africa's apartheid policies, precipitated what has been described as the 'greying' of the white city as desperate landlords began to approve residency for none-whites in order

to fill the many vacancies left by the departure of this expatriate community from Johannesburg (Garner, 2011).



In the 1960s and early 1970s Sandton and Randburg are established as new nodes purposely meant to lure away the inner city's clientele for political reasons (Czegledy, 2003). By then Rosebank has already become established due to it being a terminus for the northern electric tram line. The creation of the M1 highway in the 1970s bolstered the importance of the newer node and this came at the detriment of the inner city. As the trend towards regionalism took hold nodes further north, such as Midrand (and Centurion in Pretoria), became important for their location between Johannesburg and Pretoria. The M1 also aided in making these nodes accessible in the absence of a formal public transport system.

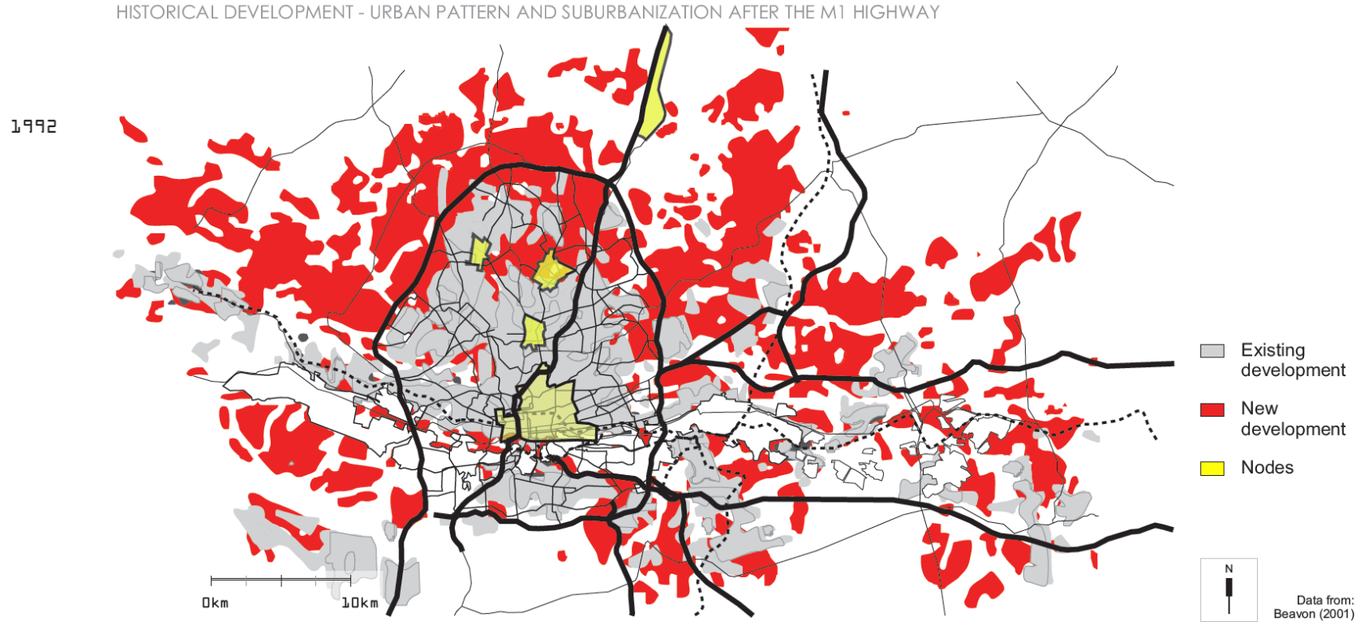
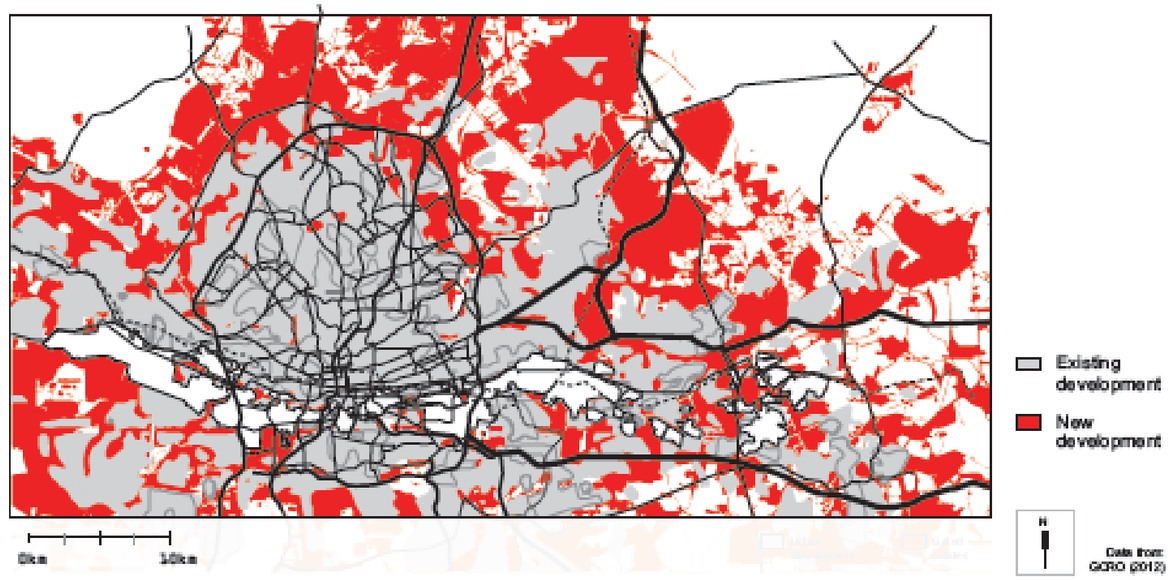


Figure 9

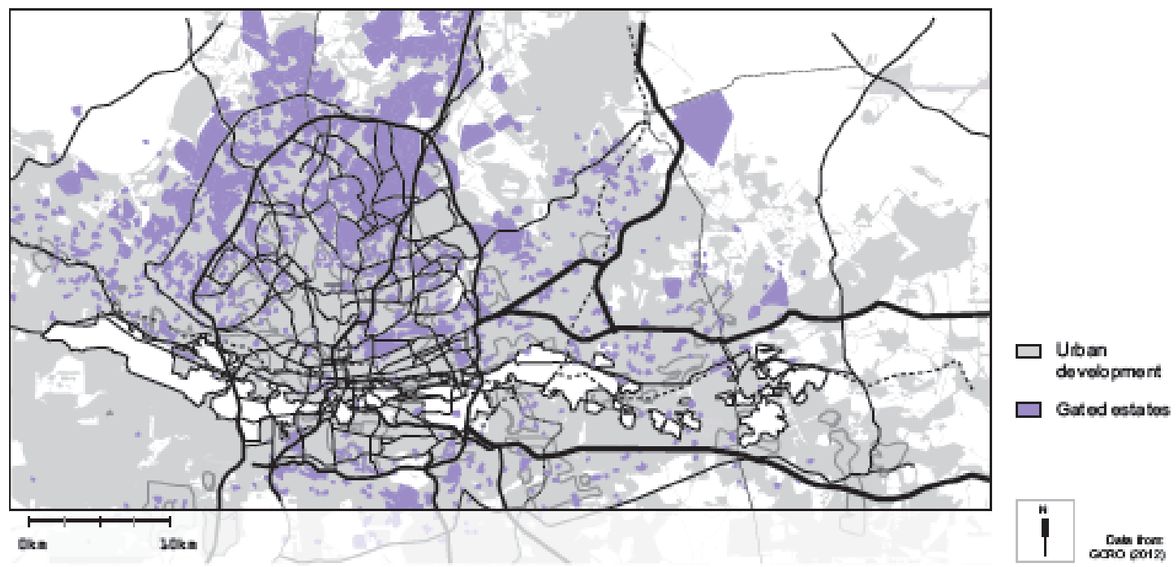
HISTORICAL DEVELOPMENT - PRESENT URBAN PATTERN AND SUBURBANIZATION

2012



HISTORICAL DEVELOPMENT - FRAGMENTATION AND SOCIAL POLARISATION

2012



Some authors writing about post-apartheid Johannesburg have noted the city to be fragmented and disconnected (Murray, 2004). They have commented that its public realm in many places suffers from neglect and lack of investment (Garner, 2011), arguing that the city suffers from a phenomenon of enclave development that fosters social exclusion (Murray, 2004; 2013). Simply put, an overwhelming amount of Johannesburg's social interactions occur behind perimeter fences and boundary walls, in privately owned pseudo-public spaces. Much of the urban development that occurred in the north of the city between 1992 and 2012 has taken this form (Murray, 2004; GCRO, 2012; and Murray, 2013).

Figure 10

2000s - Current situation – the post apartheid city: a fragmented landscape

It may be easier in retrospect to underplay the high levels of uncertainty, the concerns regarding safety and the rampant mismanagement of buildings and of urban systems that characterized the inner city in the years precipitating South Africa's democratic transition as well as immediately after it. Yet there is ample evidence of things going wrong on several fronts (Beavon, 1998; Beavon, 2001, City of Johannesburg, 2001; Czegledy, 2003; Simone (2004); and Garner, 2011). If the city's deteriorating physical environment was perhaps the most apparent symptom of what would later be termed a crisis (City of Johannesburg, 2001) then the municipality's failure to pay its electricity bill in the late 1990s was perhaps the most symbolic. In the first decade of the 21st century the City of Johannesburg was still reeling from the shock caused by the rapid changes that had taken place in the decades before. A large amount of the intellectual work that took place during this time was concerned with formulating new ways of seeing the city and its history – an attempt to understand what really happened (Beavon, 1998; Beavon, 2001; City of Johannesburg 2001; Czegledy, 2003; Gotze and Simone, 2003; and Simone 2004). The same has been true within the realm of policy. The dominant trend in this regard has been to think of urban areas in an integrated manner, crossing the boundaries put in place by apartheid and crossing municipal and even provincial boundaries – thinking regionally. The current context is characterised by a desire to plan and appreciation of the fact that there is a normative – if not moral – imperative to plan. This paper argues that this imperative has to be translated into an imperative to design as well if it is to bear any fruit.

Before proceeding to discuss the current responses of planning to the challenges posed by Johannesburg's unjust historical legacy it may be worthwhile to revisit the point made earlier about the decision to establish Sandton as a new separate town, a decision that would later have the impact of further fragmenting Johannesburg.

2.2.3. UNDERSTANDING JOHANNESBURG'S HISTORICAL DEVELOPMENT AS A SERIES OF DECISIONS – THE CITY AS AN ACT OF WILL

The fact that Sandton's establishment was recommended by a provincial commission of enquiry is important to note as it illustrates the important role the state has played in steering the fortunes of the inner city. In addition to the strong influence of Johannesburg's transport system, and in addition to the many smaller decisions made by individuals and businesses about where to locate or shop (Beavon, 1998; and Beavon, 2001), Czegledy (2003) has argued that there is also evidence of political interests having been at play. In the run-up to the decision by the provincial commission of enquiry, the National Party at local government level was increasingly losing votes in central Johannesburg and feared the loss of the precious tax-base that the CBD provided. It thus facilitated an exodus of business away from the city centre and into Sandton (which then was an independent municipality) by lowering property taxes in that area. Thus, in addition to the role that planning has played in the creation of an inefficient transport system that made it increasingly more convenient to do business outside the CBD, (and in addition to planning's role as an aide to the state in the creation of wider spatial injustices and inefficiencies under apartheid) planning is also revealed as being somewhat biased towards some or other political interests.

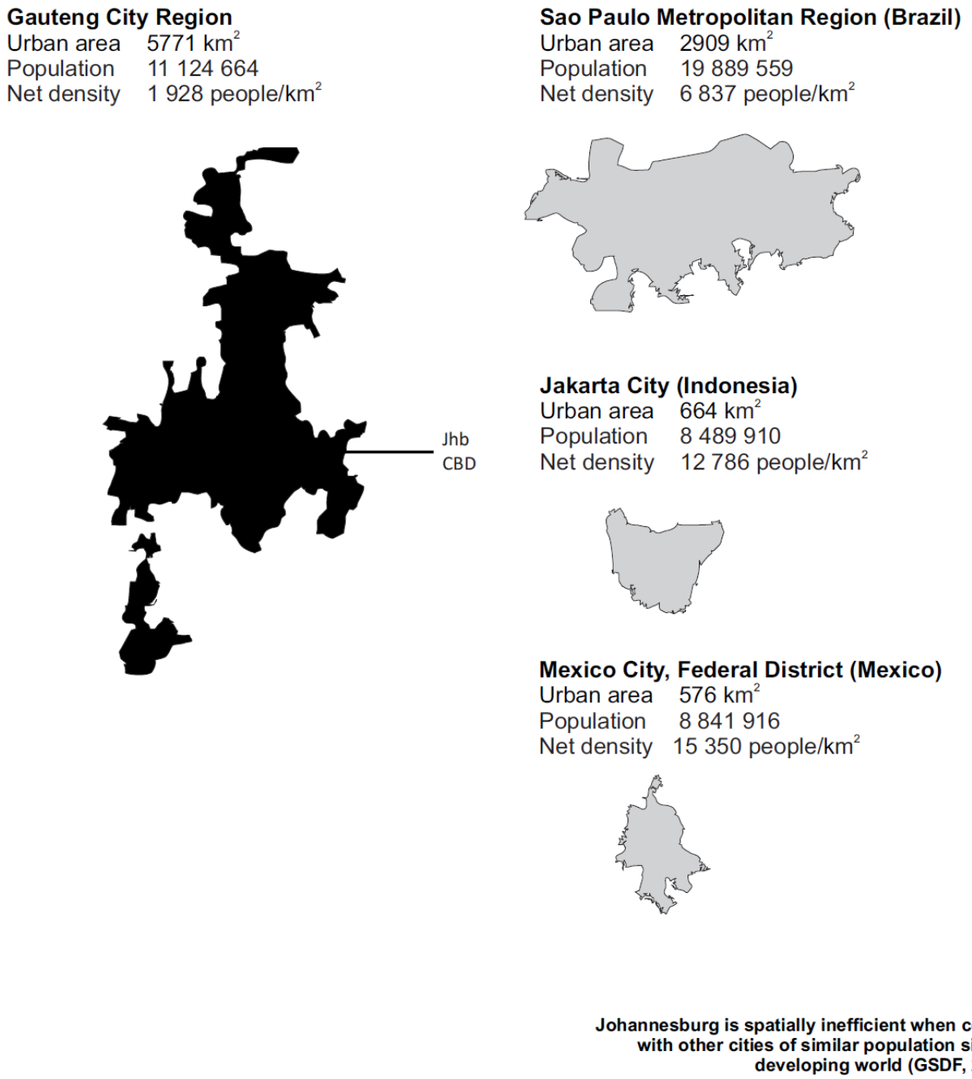
This is an important fact as it reveals Johannesburg's history, both its positive and negative impacts on the inner city, as being the product of decisions and not simply a series of tragic accidents or an inevitable trend. Recognising the very rational and deliberate nature of suburban expansion in Johannesburg (and the corresponding disinterest in the inner city) points to the fact that the future of the inner city does not rest on haphazard forces but can actually be guided through conscious efforts. Such an understanding allows a deeper appreciation of current planning responses (public transport planning, regional policy, and the Urban Development Zone established around the inner city).

2.3. NEW REGIONALISM AND STRATEGIC SPATIAL PLANNING – POLICY RESPONSES TO SPATIAL FRAGMENTATION AND THE POST-APARTHEID LANDSCAPE

2.4.1 THINKING REGIONALLY – RELATING URBAN DESIGN TO PLANNING AT A REGIONAL SCALE

Recent years have seen a resurgence of interest in regional planning that has taken the form of spatial planning. This growing interest has been sparked, in part, by globalization and the need to enhance the competitiveness of urban economies, which tend to operate beyond the boundaries of cities or municipality (Turok, 2004; and Harrison, Todes, and Watson, 2009). Such planning now finds renewed support, especially among those concerned with sustainability, for whom the concept of regional planning (in its various forms) is attractive because of its holistic approach. Importantly as well, regional planning is spurred on in South Africa by a concern with social justice. There is growing appreciation of the fact that the planning of the 1940s, 50s and 60s, which often had unjust social values, operated at regional scales (e.g. the PWV concept) and thus it could be said that the enormous social injustice that came about as a result cannot be adequately addressed without acknowledging the regional scale (GSDF, 2011; and Mubiwe and Annegarn, 2013). Beyond this South African reality, Briffault (2006) has argued - citing evidence from American municipalities - that many 'normal' cities have a tendency to function in ways similar to apartheid cities because they also systematically push poor people to their peripheries and beyond their borders. This latest wave of regionalism has gradually gained significance in Gauteng (the province in which Johannesburg is located) since the late 1990s and between 2003 and 2008 the City of Johannesburg and other municipalities have toyed with the concept of a Gauteng City Region (the GCR), a functional agglomeration of economic activities around the urban centres of

the former Transvaal – which notably extends beyond the borders of Gauteng (Lewis, 2012; and Mubiwe and Annegarn, 2013).



Johannesburg is spatially inefficient when compared with other cities of similar population size in the developing world (GSDF, 2011: 64)

It is not possible within the confines of this paper to go into much depth regarding the complex planning that is taking place around the concept of the GCR. Thus this section only gives a brief outline of the major planning trends in the GCR and attempts to make two main points. The first is with regard to the central role that Johannesburg plays in the GCR and the country - a role with economic, social and political implications. The CBD is often an entry point into Johannesburg or an escape from more peripheral and impoverished parts of the city (or province) and thus plays a key role at a scale that is much larger than its own administrative boundaries. The second point made in this section concerns the importance of the local scale, since it is the scale at which most construction occurs even if it is planned regionally. Because of the inevitably local impact of most interventions there is scope - and indeed an imperative - for urban design interventions to reconcile the regional plan with the local context.

THE CENTRAL ROLE OF JOHANNESBURG IN THE GCR AND IN SOUTH AFRICA

The economic dominance of Gauteng province over the rest of the country (and indeed over Southern Africa) is readily apparent, when one views a map of the country, in the concentration of transport infrastructure in this region. In the same way, Johannesburg's role as the province and the country's economic engine is apparent in the way that many of the main roads and railway lines intersect around Johannesburg's inner city, which was the city's undisputed financial heart for the better half of the twentieth century. Gauteng and Johannesburg continue to make the highest contributions to the country's economic performance (measured in terms of Gross Value Added (GVA). Gauteng's share of national GVA is 32% while Johannesburg contributes about half to this figure (Lewis, 2012: 2). Gauteng has the largest shear of the country's exports, about 60% (ibid: 2). Most of these are produced in Johannesburg, which alone constitutes 47% of South Africa's exports (ibid: 2), which means that Johannesburg makes up 78% of Gauteng's exports. Johannesburg is thus very central to the province and the entire country's economic imperatives and this is reflected in spatial terms as well. This section will show how this is the case in terms of the three main spatial interventions that have been proposed for the GCR: urban development consolidation, nodal development and public transport.

CORRIDOR DEVELOPMENT AS A STRATEGIC SPATIAL INTERVENTION

The idea behind corridors is that they are points of high accessibility and development is supposed to be focused around them. They offer an opportunity for optimising densities, strategically locating nodes and providing efficient public transport between them. They are thus a critical first step in terms of ordering space at a regional scale. Historically, Johannesburg (the inner city in particular) was part of an early industrial corridor that ran east-west across the Witwatersrand ridge, connecting the mining towns and industrial hubs that ran along that ridge. This early corridor had been underpinned by a railway link that connected the towns but was separated from the poorer non-white areas that lay south of it by mining land and vast stretches of vacant land. Over time, with the development of the highway system and the newer nodes to the north of Johannesburg, a new corridor began to emerge, running in a north-south direction. The new corridor notably terminated just short of the buffer strip of mining land, thus maintaining the spatial exclusion set in place by the earlier spatial structure. When it first emerged this north-south corridor was underpinned by the N1/M1 highway system. It has recently been supplemented by a rail link, the Gautrain, between Johannesburg and Pretoria (which also does not connect to the south).

The Johannesburg CBD has the strategic advantage of being located at the intersection of this newer corridor with the older east-west corridor. As a consequence there are many development pressures being exerted on the city (and that will continue to be exerted) as regional planners and provincial

policy makers continue their efforts to *consolidate urban development*, making it more dense; to *strategically locate nodal development* along these corridors; and to invest in *public transport* as a means of linking up the proposed urban system.

URBAN CONSOLIDATION

One of the key concerns behind the GCR is tackling sprawl as part of the objective of making the urban economy of GCR spatially efficient. It is expected that a more compact city, among other benefits, would reduce transportation costs, which would have a positive knock-on effect on economic performance. As explained earlier, Johannesburg has a history of low residential densities and this has had a negative impact on the City's ability to provide public transport. Currently, this is true also for the GCR (1,928 people/km2), in comparison to other cities such as Sao Paolo (6,837people/km2), Jakarta (12,786 people/km2) and Mexico City (15,350 people/km2). Population densities are especially low within the affluent residential areas in the north, where most of the city's economic nodes are located, which results in a pattern of extensive travel since most people do not live close to the nodes and they must travel to and from work. Among the strategies for achieving this, the GCR, as well as the municipalities within it, has proposed urban development boundaries and urban development zones along with a system of incentives and penalties to encourage development at higher densities around areas of higher accessibility (GSDF, 2011).

COORDINATED NODAL DEVELOPMENT

The GSDF plans to coordinate nodal development by encouraging it to occur along the proposed corridors, where they can be effectively serviced with public transport and so that their location can underpin the proposed densification within the urban consolidation zone. In the past many nodes emerged in Johannesburg, encouraged by highway access, in places with limited public transport and with low densities (Fourways and Bryanston are examples). As a consequence, Johannesburg has been called a polycentric city, because it has numerous centres. The GSDF plans to concentrate nodal development along those nodes (within Johannesburg and other cities in the province) that are already aligned with the corridors. Since Johannesburg's major nodes are already arranged along a north-south continuum between the Johannesburg CBD and Pretoria, the GSDF builds on this trend.

PUBLIC TRANSPORT

Mention has already been made of the Gautrain and the role that it will play in the corridor strategy and in linking the nodes. However there are two other important developments in public transportation. The Bus Rapid Transit (BRT) system, which – according to the City's plans – will replacemini-bus taxis as the predominant mode of transport, will play a major role of linking all of the city's nodes to one another and to residential areas and it will also provide a critical link to the Gautrain. The City of Tshwane has also undertaken to complete its own BRT system that will connect that city's nodes and will link up with the Gautrain. The GSDF thus proposes a hierarchical public transport system, with the Gautrain operating at the provincial or intercity scale, while the BRT system operates one tier below, within each city.

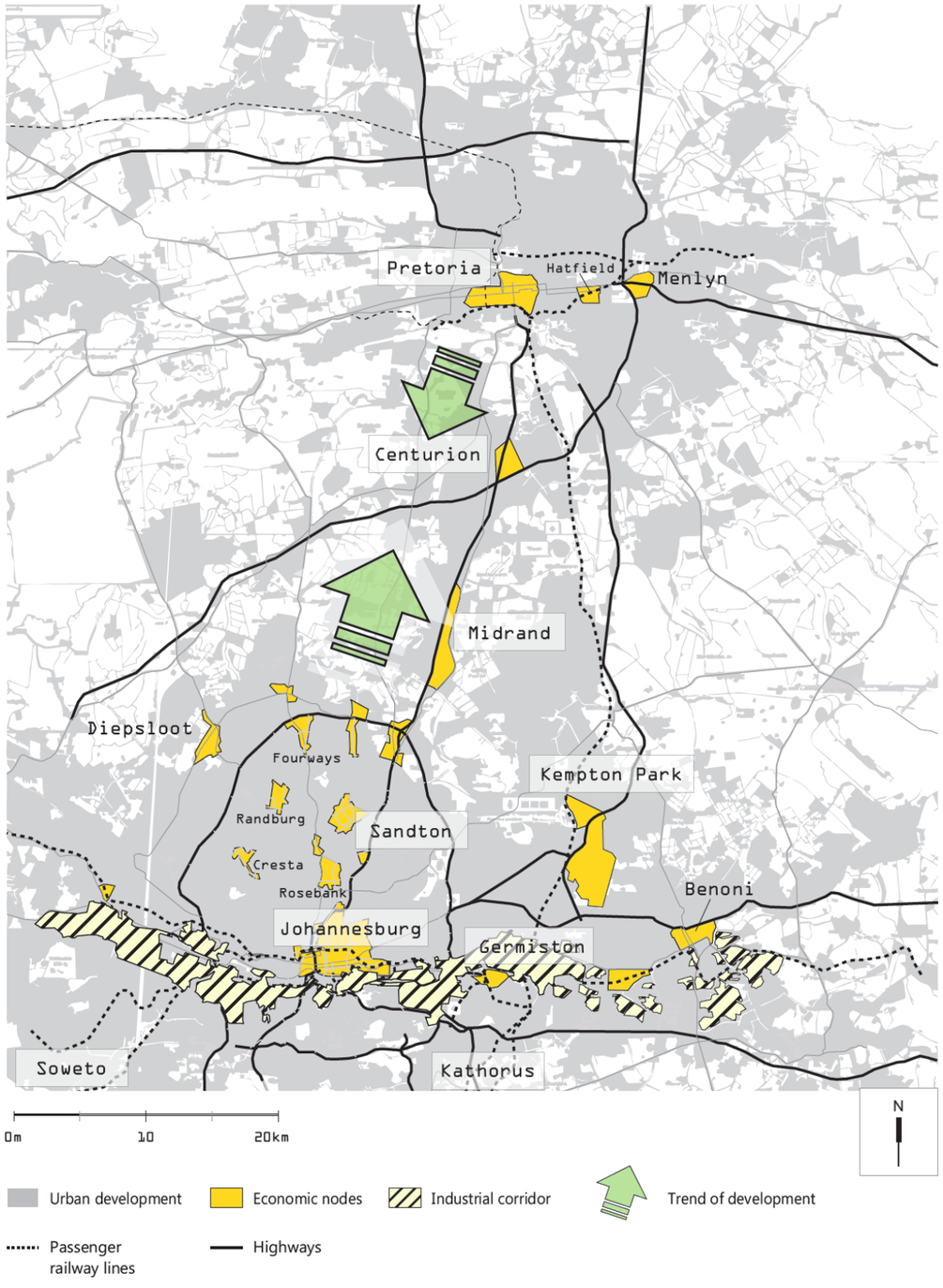
The Gautrain and the BRT system are new systems implemented in the last ten years but there is also an important role that will continue to be played by more traditional modes of transport such as taxis and the Metrorail (referred to in most of the City's plans as "rail"). The rail link that underpinned the historic east-west corridor is still very important in terms of public transport because there have not been any serious attempts to replace this system and thus, either than the highway, it is the only means through which mass transit may be possible across municipalities in an east-west direction. The same can be said of the connection that rail allows for transit between Johannesburg and Vaal in the south. It is also important to note that Metrorail should not be overlooked as obsolete because the Passenger Rail Agency of South Africa (PRASA) is injecting billions into the system in order to revive it.The CBD already plays a critical role in terms of transport, especially as an interchange for taxis and metro buses and interchanges between transport modes, since all modes are present and in close proximity to one another within the CBD. Because of the introduction of the BRT and the Gautrain in the CBD is in a very privileged position insofar as it is one of only three nodes in the GCR to have most of the city-region's transport modes converge within it; it is the only node within of Johannesburg to have this convergence.

The inner city of Johannesburg, because of all these factors, will be under immense pressure for development in the near future. It is within this context of opportunity and grand-scale plans that the task of urban design in Johannesburg has to be understood.

The inner city is the biggest node in the GCR.

The historic east-west corridor of the mining belt remains a barrier dividing the south of Johannesburg, where poverty is concentrated, from the north. As the economies of Johannesburg, Ekurhuleni and Pretoria continue to expand beyond the jurisdictional boundaries of each municipality, the trend of urban growth has tended to be in a north eastern direction, along the M1 highway. This trend has been further enabled by the availability of large amounts of vacant land between the three metros in places such as Midrand and the result has been a growing displacement between economic opportunities previously disadvantaged areas. The restructuring of the spatial economy as a region (rather than a group of cities) has also created the need for connectivity across the entire region as more business is being undertaken between rather than within cities.

Both these challenges require a regional approach to planning and ambitious regional interventions have been proposed as a response, most notably with regard to connectivity and public transport. The next few pages will show that the inner city of Johannesburg is set to play a central role in these regional interventions.



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Google (2013)

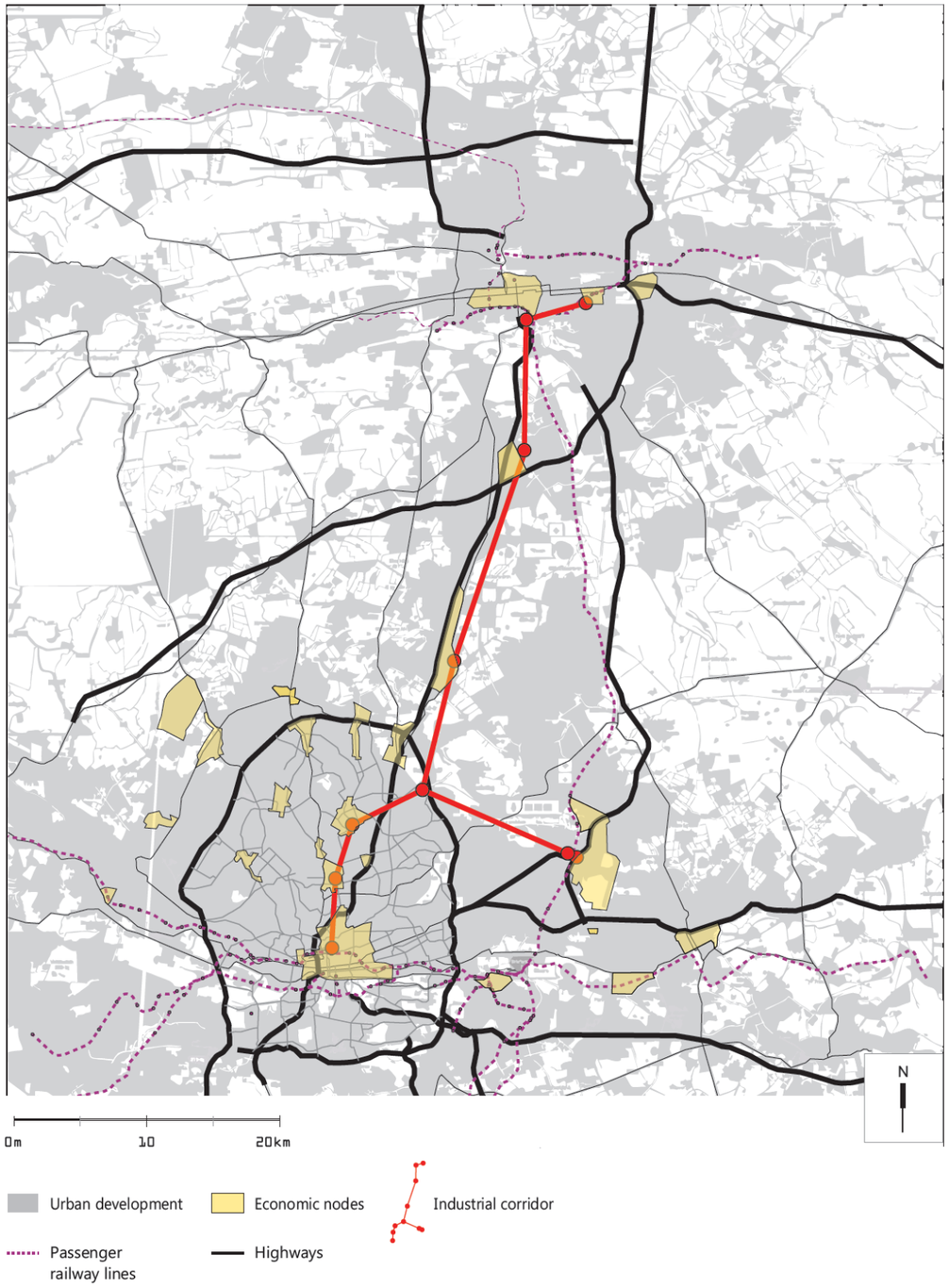
Figure 11

The Gautrain

In much the same way that the establishment of the first rail link in the Witwatersrand had been driven by commercial interests, the rail link needed to bridge the gulf between Pretoria, Ekurhuleni and Johannesburg has been put together along the same lines. However, instead of raw materials being transferred between cities, as had been the case between Boksburg and early Johannesburg, the cargo on board the Gautrain is people. More precisely, it is the scarce skills possessed by the class of professionals who are concentrated within the three metros. This preeminence of scarce skills as a key commodity within the economy is tied to the shift towards an information economy where production is organised regionally in order to improve competitiveness within global markets.

Although the Gautrain's predisposition towards a certain class is legitimate cause for concern, the history of Johannesburg's railway system seems to suggest that this is a necessary phase in the funding and expansion of rail operations. The rail company first needs to acquire a lucrative captive market to pay for the initial capital expenditure before expanding the service to include a wider clientele. Indeed there are plans to introduce two other Gautrain lines, including one that links Pretoria's formerly black township of Mamelodi to Soweto, its Johannesburg counterpart. However, in the meantime the system creates a well serviced centre and a disconnected periphery. With the City's policies pressing down on the taxi industry and planning to phase out taxis in the near future; and with opposition to the BRT having driven the buses away from the booming nodes on Oxford Rd and onto Louis Botha Ave, equitable access to economic nodes is likely to become a major challenge. In this case economic nodes will remain the preserve of the wealthy class and the poorer, because of the cost of transport, will only have tentative access to them.

One node that is an exception is the inner city. It lies at the intersection of the existing railway systems. The north-south corridor of the Gautrain intersects with the east-west corridor of the Metrorail.



Data from: Google (2013)

Figure 12

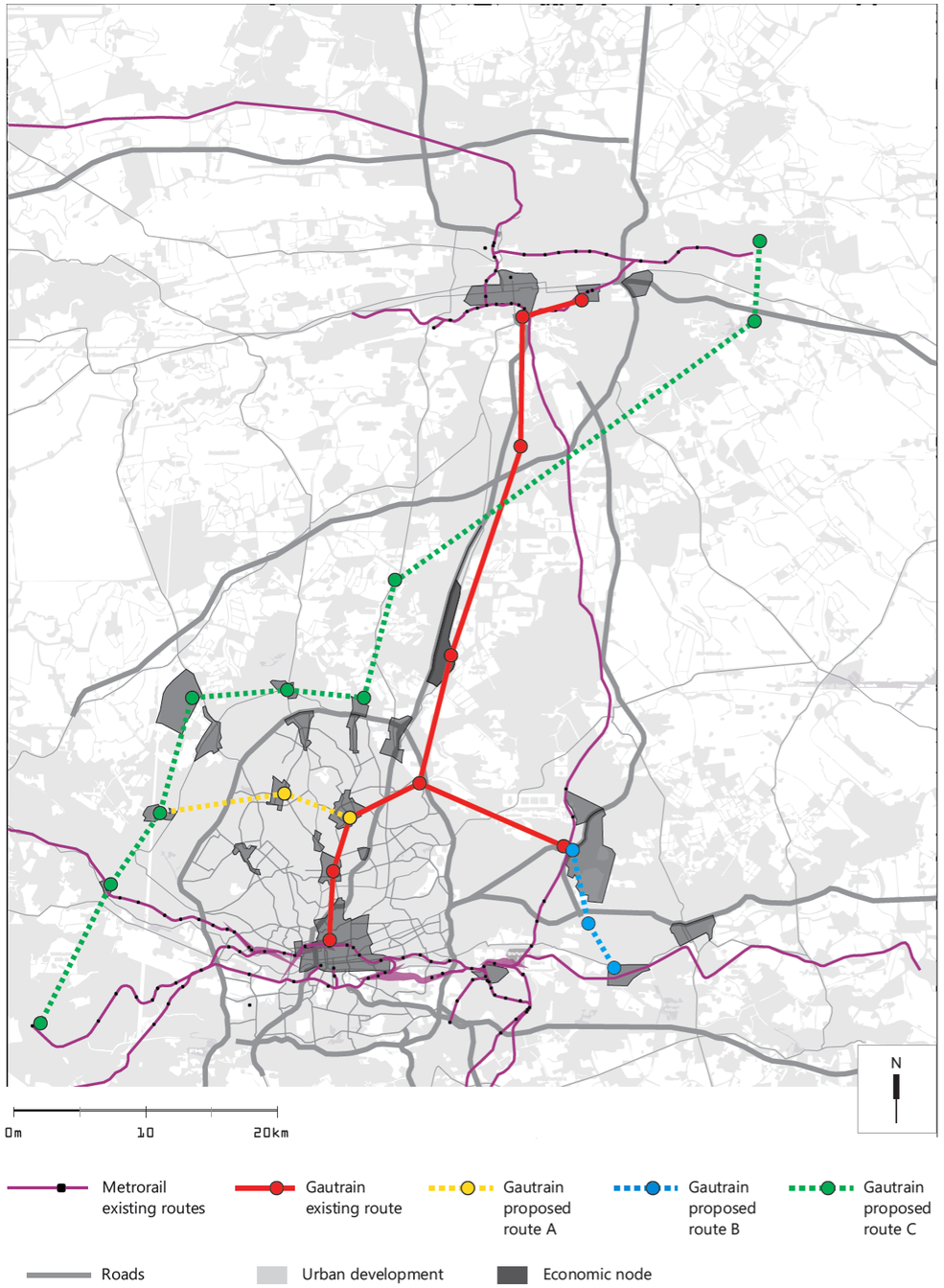
A future based on rail

IOL News (2013) reports that three new lines have been proposed for the Gautrain. With construction on the first of these new lines due to commence in 2016 it is anticipated that proposed network will connect Soweto to Mamelodi via a route with stops at Cosmo City, Diepsloot and Four Ways. This will introduce rail infrastructure to the north-west of the city, whereas both rail and road infrastructure have historically been concentrated in the east and south of the city (as seen in the maps presented in this section).

A second line, also in the north western quadrant of the city, will connect Sandton to Randburg. Although these two nodes emerged around the same time in the 60s and 70s, they have never enjoyed a strong physical connection to one another, except for a single disjointed road connection. The proposed line would address this and would allow these two nodes to function together, strengthening their prowess as a node.

The existing Gautrain line currently terminating at Rodesfield will be extended to connect the to East Rand Mall in Boksburg, thus allowing the Gautrain to penetrate deeper into Ekurhuleni. At the moment the system only has one station in that metro. This station in Kempton park is relatively isolated from the rest of Ekurhuleni's nodes which remain along the east-west continuum of the old industrial corridor.

The net effect of these extensions of the Gautrain system is likely to be to allow movement to bypass the inner city, in much the same way as the New Traffic Plan of 1948 diverted road traffic. This will reduce the inner city's significance in some ways. This report argues however that this is largely an opportunity as it will remove harmful through-traffic that currently either tears through neighbourhoods or causes heavy congestion on major roads that lead to other nodes outside the inner city. Urban designers can capitalize on the opportunity presented by the diversion of high-mobility movement by (1) introducing high-access movement modes such as walking, cycling and bus routes and also by (2) introducing highly accessible urban fabric that is dense and has a variety of land uses in close proximity to each other (Dewar and Todeschini, 2003).

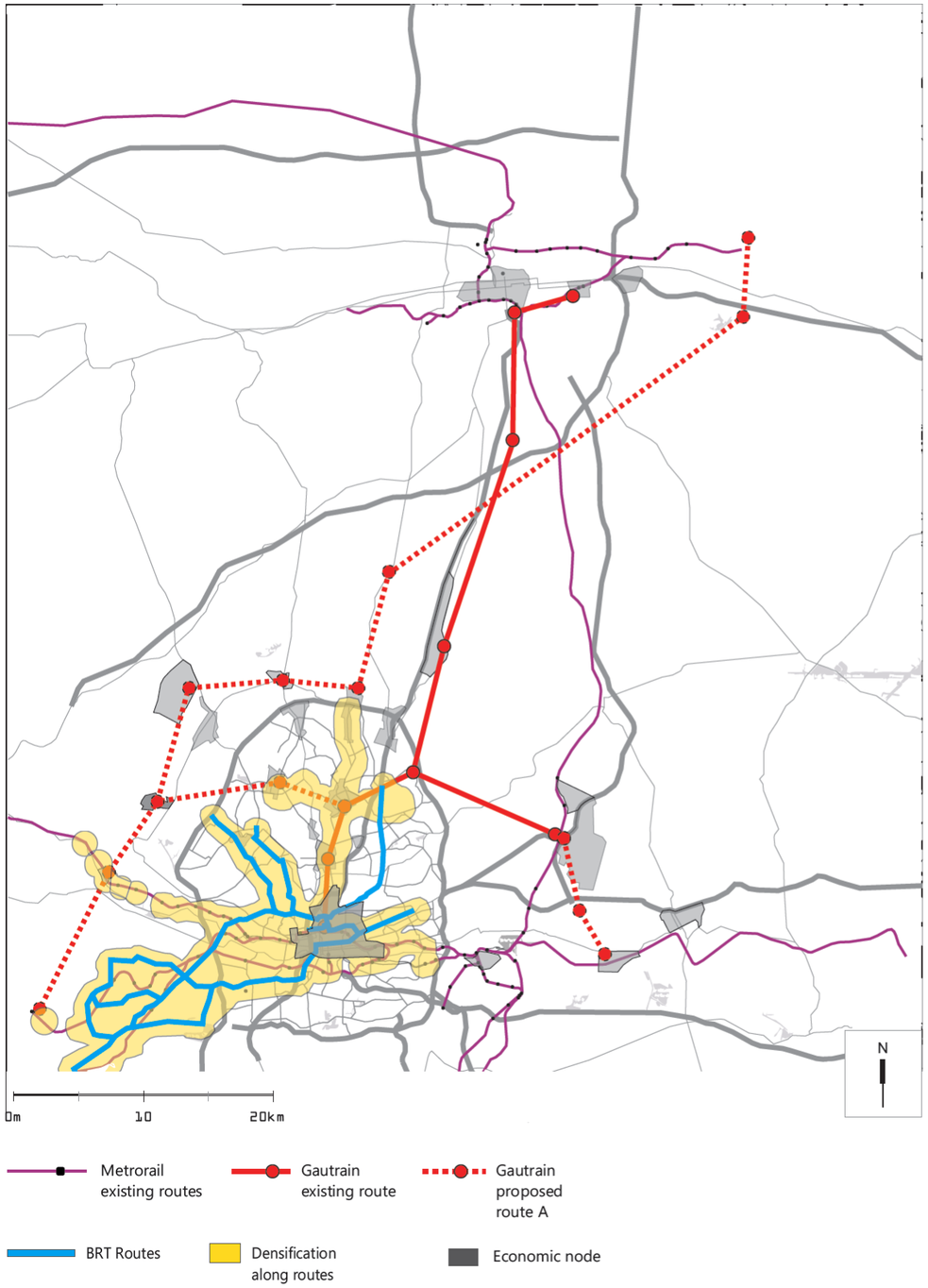


Data from:
IOL News (2013)

Figure 13

The Bus Rapid Transit (BRT) system

The City of Johannesburg's main response to its transport challenges has been in the form of the BRT (since the Gautrain is a provincial initiative (Gauteng, 2011) and since the BRT is set to replace the taxi system (JDA, 2010)). The key destinations of this system - especially in its current form - are Soweto and the inner city. Even when the system is complete the inner city is going to play a key role as an interchange between routes (JDA, 2010).



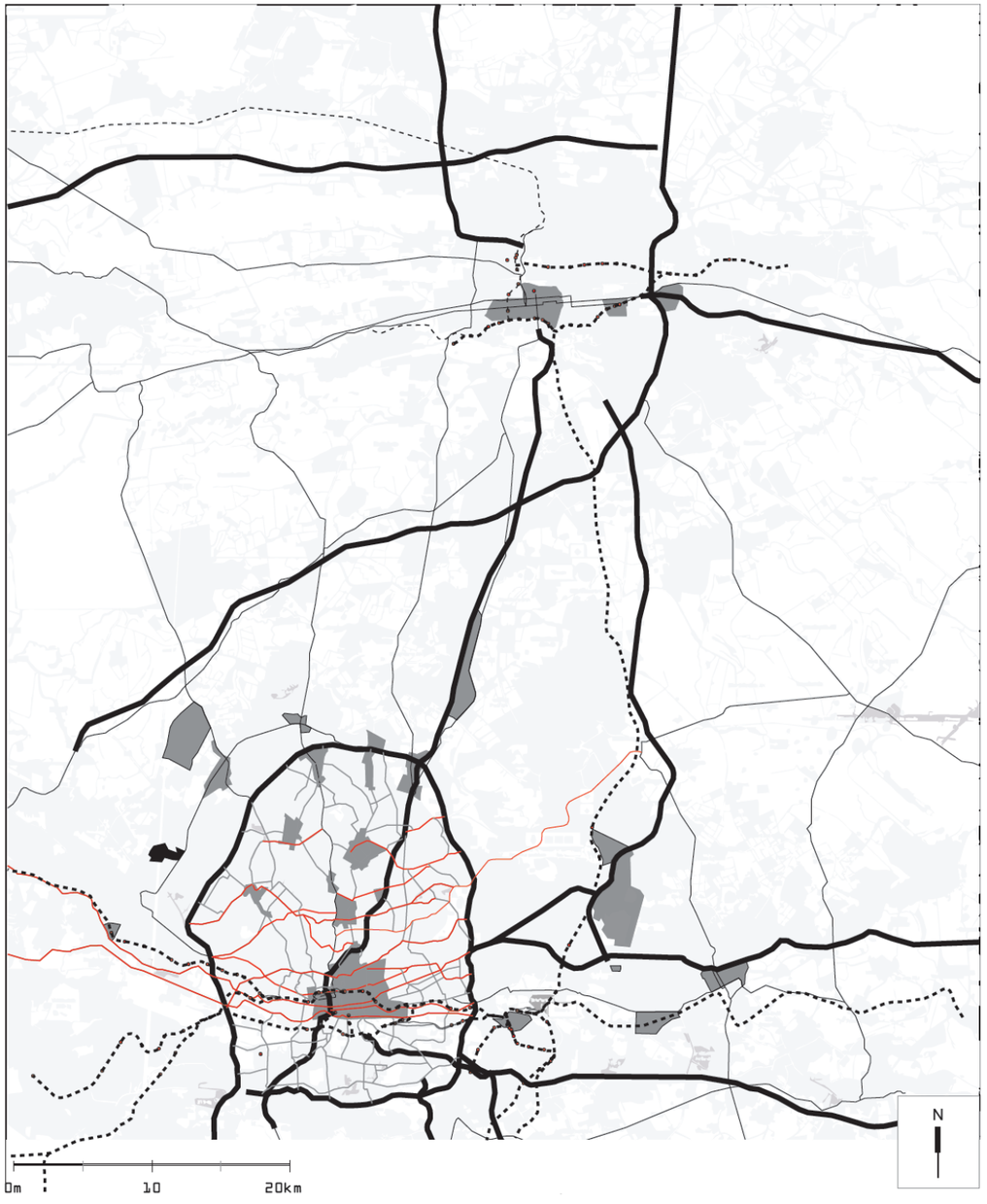
Data from City of Johannesburg (2011)

Figure 14

Road transport

Even with the growing appeal of the Gautrain for commuters and even with the overhaul of the Metrorail service by PRASA, the modal split in Johannesburg is still overwhelmingly dominated by road transport. This is in part because of the very high number of cars on the road. It is also because the taxis and buses, which grew in market share as rail infrastructure deteriorated in the 1980s, are also road-based. Johannesburg's road system places the inner city in a strategically superior position to other places. There are few east-west connections across Johannesburg and most of them are in and around the inner city. Thus even the new BRT system necessarily has the inner city as a key destination where most of its routes must converge. For the same reason, the Metro bus routes converge at Gandhi Square in the inner city and that area is a hub of activity because of that interchange. The BRT buses converge at two points, at Jourbert Park (on the eastern corner of the study area) and at Westgate, at the south western end of the CBD. The taxis converge along Jeppe and Bree streets, which run east-west.

This intense concentration of road transport in the inner city is not likely to change in the near future. While car dependency is likely to decrease because of more options becoming available to commuters, the importance of roads will remain bolstered by the increasing use of the BRT and the continued importance of taxis (especially as a means of transporting people from beyond municipal borders and as a means of supplementing areas overlooked by transport planners).



Data from:
Google (2013)

Figure 15

THE IMPORTANCE OF THE LOCAL SCALE – RECONCILING REGIONAL OBJECTIVES WITH LOCAL REALITIES

The values inherent in world class status often conflict with the reality that exists in the actual city and very often this conflict has tended to be most pronounced at the scale at which urban design can intervene (and it is the opinion of this paper that urban design must intervene). Thus one way in which urban design relates to regional planning is at the level of implementation, arbitrating between conflicting interests at the local scale. However, this role as an intermediary in the public interest must be assumed with caution, given the theoretical and practical challenge of separating the designer's own values and personal bias from the constitution of the public interest (Davidoff, 1960; Bentley, 1994; and McGlynn, and Murrain, 1994).It is in light of this reality that this paper proposes (in a later section) the idea of an *incomplete design*–wherein the designer deliberately aspires to leave certain conflicts within the plan unresolved in order to open up the space to deliberate and to plan to a wider public. Such optimistic notions about conflict and the idea of plans that are incomplete (or continuously evolving) are by no means new to the literature on cities. In fact these notions are commonly found in the language strategic spatial planning (Harrison, 2006; Healey, 2006; and Todes, 2011), an emergent strand of urban planning that has gradually been gaining traction since the early 1990s. Urban planning as a profession has spent an enormous amount of time on the concept of the public good, and on the best processes through which it may be pursued, and on the role of politics and conflict within these processes. For this reason there are some lessons to be drawn from the experience of planning in the last century that can be applied in growing the relatively younger profession of urban design.

Furthermore, starting from around the 1960s (around the same time as urban design's emergence(Carmona et al, 2003)) the planning profession embarked on an era of critical reflection – a rejection of master planning, which had been the dominant form of urban planning until then. The many criticisms against master planning that were brought forth throughout the decades that followed facilitated a shift wherein planners became increasingly concerned with the planning process rather than its product (the plan) and they sought ways to expand and enrich the process with participation and communicative techniques (Sandercock, 1997). The emergence of spatial planning in the twilight of the twentieth century can be seen as being the result of this shift in focus. For this reason a look at spatial planning and how it may be related to urban design may be useful when considering how make urban design more of process-oriented (rather than plan-oriented) endeavour.

Finally, starting as early as 2003 the City of Johannesburg has used spatial planning as an important means of tying together and coordinating different kinds of planning at different levels. The best-known policies in this regard are the Integrated Development Plan, the Spatial Development Framework and the Growth Management Strategy. Even prior to the emergence for such coherent policies however spatial planning concepts such corridors, spines and nodes had already begun being used as structuring elements in municipal plans and they are featured in key pieces of legislation such as the Development Facilitation Act (DFA) and the Land Use Management Bill (Todes,2012b). Thus spatial planning is also important to urban design because of its strong presence within the policy that frames the possibilities and constraints of urban design.

The concentration of transportation infrastructure along an east-west continuum within the inner city (as shown by the analysis presented in this report) has a major influence on growth potential within the inner city. Since the main roads are typically east-west public transport routes mostly run east-west as well (along Jorresson and De Korte in Braamfontein; along Rockey-Raleigh in Yeoville; and along Jeppe and Bree as well as Market and Commissioner in the CBD). Retail is also concentrated along this east-west continuum (along Jorresson and Juta in Braamfontein; along Pretoria and Kotze in Hillbrow; along Rockey-Raleigh in Yeoville; and along Jeppe, Pritchard and Kerk in the CBD). These are the natural growth points of the inner city just as the ridges to the north and the mining land to the south act as natural constraints to growth. These growth points and constraints form the parameters that govern urban development in Johannesburg. They are what Bacon (1967) describes as ***the essentials*** of a given site. Altering them can alter the fundamental structure and function of the inner city. This report identifies the following five key points of consideration regarding the management of growth in the inner city:

2.4. Site analysis

BUILT FORM

The inner city has a relatively fine grain because of its small block size. In Marshaltown and Braamfontein, the two districts that have a significant number of large buildings, the extent of even the largest buildings is limited by the 3600 square metre area of the blocks.

Although the finess of the grain varies between districts, with some residential districts such as Yeoville and Bertrams having very fine grain while commercial districts have coarser grain, the texture of the urban fabric in the inner city is relatively even.

That being said however notable instances of uneven texture are somewhat common at the points where two or more districts meet. The areas around Park Station, the Civic Centre and the Elis Park Precinct are examples of this kind of morphology. Related to this is another kind of urban form where the arrangement of buildings is not determined by the road layout, resulting in a seemingly scattered pattern. This report notes that in the inner city both these instances of morphology occur around areas with large edges where movement may have been inhibited over very long periods of time, such as next to the railway lines for instance.



0m 200m 400m

N

Figure 16

EDGES

It is possible to identify four categories of edges in Johannesburg's inner city.

Ridges - The ridges lie to the north of the inner city. Traditionally, they more or less represent an edge between the upper income residential suburbs located on their north-facing slopes from the commercial areas to the south and from working class areas such as Doornfontein and Bertrams, which were much closer to the CBD. Initially the ridges would have presented a cost-related constraint to development but today they are also a constraint because they are protected as part of the City's heritage (COJ, 2011).

Major roads - The highways are probably the most formidable man-made edge on the site. Their modification would be costly not only in material terms but also because of the severe disruptions in transportation that would occur as a result of any such intervention. The highways, which are elevated, create large dark spaces beneath them that cut through neighbourhoods and inhibit pedestrian movement

Mining Land - Ever since the city's establishment, the mining land, with its unsightly landscape and loud noises, was always a constraint to the development of the land to the south of the city and so the early town grew in the opposite direction, expanding onto the ridges.

Railway lines - The construction of the Mandela bridge in 2003 attempted to address connectivity as part of urban regeneration, by drawing on the vibrancy of Braamfontein (COJ, 2007). Unlike the elevated highways, the railway lines form a relatively wide impenetrable edge, especially to the west of the inner city. Nonetheless, although they continue to hamper connectivity, the railway lines are by far the most malleable of the four major edges in the inner city.

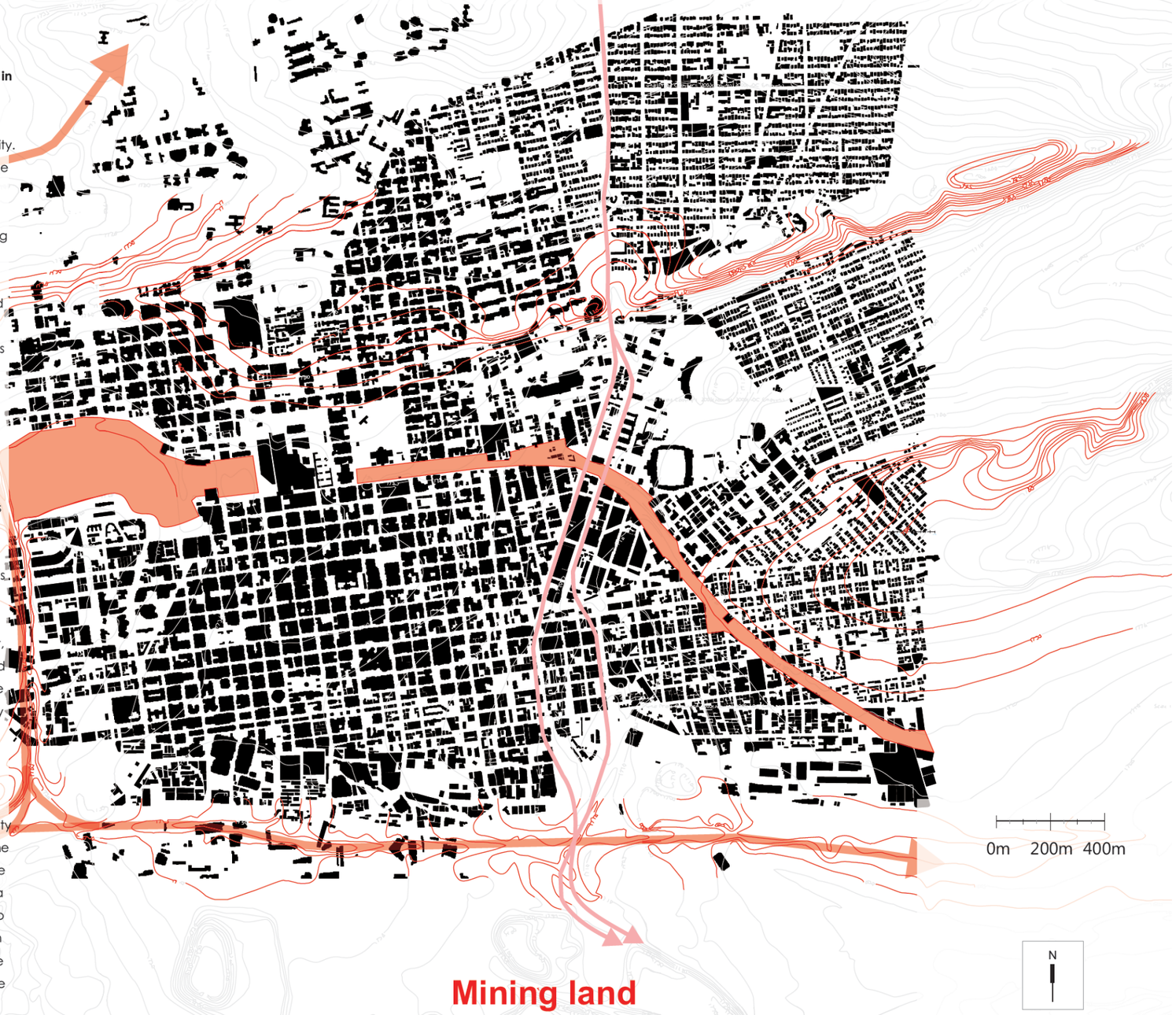


Figure 17

There is a strong east-west thrust among the paths in the inner city, with many paths forming loops

The prevelence of east-west routes in the inner city is noteworthy inasmuch as it has already been shown elsewhere in this report that Johannesburg as a whole generally lacks such east-west connections. Their presence in such large numbers in the inner city is a critical advantage.

Ridges - One of the reasons for the predominance of east west movement channels is the fact that the ridges (as well as the mining land to the south) limits the possibility of north-south routes because of the cost of building roads on such land.

Mining reef + industrial belt - The gold reef, the *raison d'être* of Johannesburg runs in an east-west direction. So does the industrial belt. Thus naturally the most important movement channels, especially the railway, would run in this direction

Rail - The fact that the railway system runs from east to west has serious implications for the future growth of the node. This is after all the transport mode that has the largest carrying capacity and which presents the prospects for providing the mass transit service necessary to maintain the dense compact urban form that the COJ is aspiring to in its urban policies.



Figure 18

[Continued from pg.25]

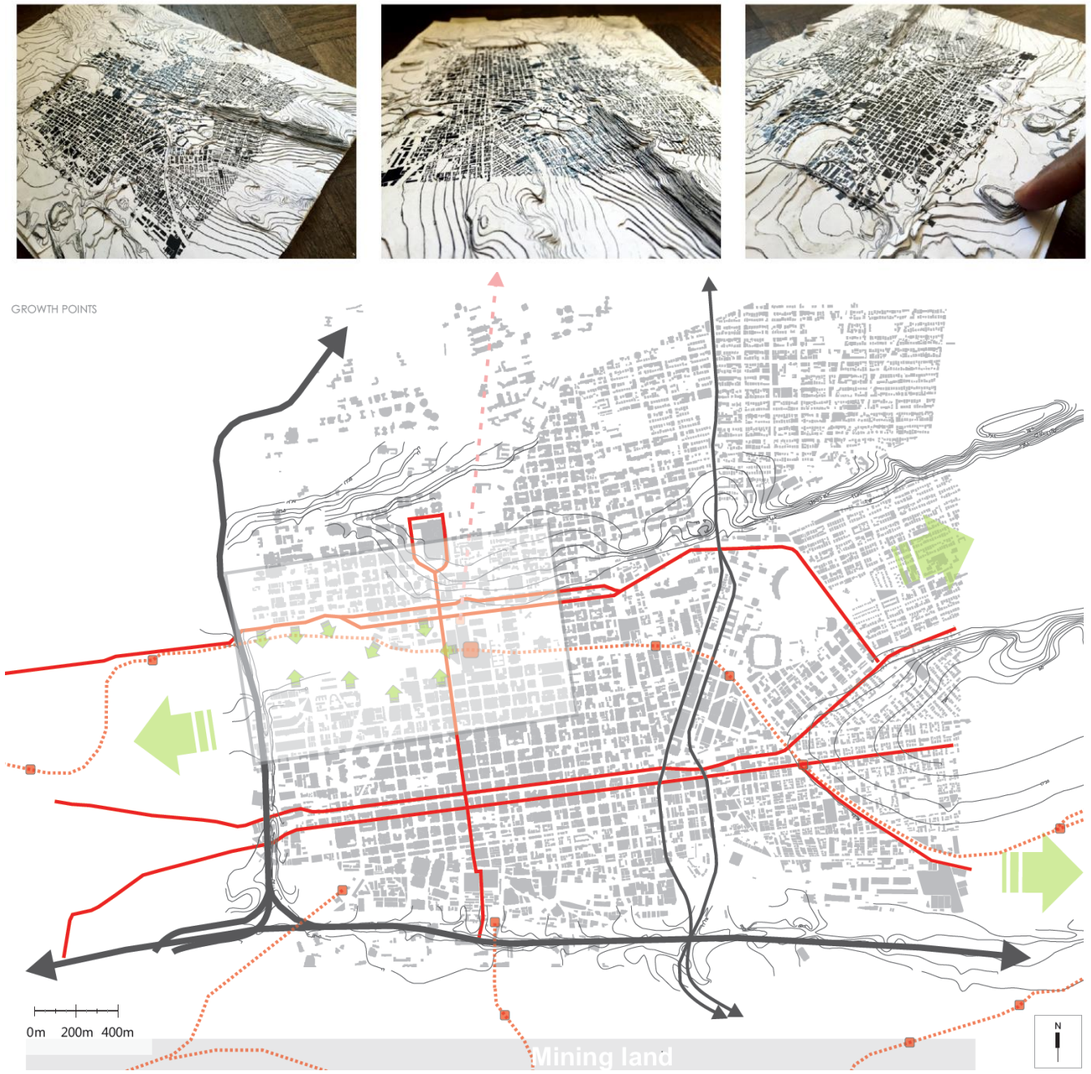


Figure 19

a) As per the recommendation of the COJ's (2009) JICTTS traffic study, the railway system should act as the core of the transport system and urban development should be centred on this transport system. Future growth should be concentrated around transport nodes and transport corridors (COJ, 2009; 2011).

b) The railway system in the inner city consists of two equally important but functionally different parts. The first is the Gautrain, which is a high-mobility low-access line connecting the inner city to nodes in the north of the GCR. It anchors the inner city as a critical node within the regional spatial economy but does not change the historic conditions of limited access over the ridges to the north of the inner city. The second part of the rail system is the Metro-rail commuter rail service, which runs east-west, forming a loop around the CBD and the neighbourhoods to east and west of it. It is a low-mobility high-access line with stations at 1km intervals. The combination of these two kinds of rail links allows the opportunity for regional economic links but also for accessible well connected neighbourhoods at the local scale. The intersection of these two lines thus creates an impetus for development and a need to identify good locations for this growth to occur.

c) The land currently occupied by the railway lines is an opportunity for internal growth within the inner city. This growth could be achieved by decking over the railway lines and increasing the densities in the highly accessible areas around the stations.

d) It is possible to identify a system of main roads that can provide supporting transportation functions to the rail system. These main roads, which are already arranged as an east-west loop and which already carry public transport, can form a 1km wide activity spine. The spine would contain rail stations within walking distance and it would be composed of dense mixed use urban fabric.

e) Finally, it is possible to also discern a potential civic spine running north along Rissik that would intersect with the activity spine discussed above. The Rissik civic spine, which springs from the M2 highway, would join together the inner city's civic elements (the constitutional court, the civic centre, the ridges, the park station precinct, the Kerk Street pedestrian mall, the Gauteng legislative precinct, Gandhi Square and Main Street). This would improve the legibility (Lynch, 1975) of the inner city. It is the contention of this research report that one urban design approach in particular holds very promising prospects for the fulfilment of the above hypothesis. It may be possible to plan urban development in the inner city of Johannesburg in a way that centres on transportation and in a way that organizes growth as an incremental process occurring over a relatively long period of time. This approach to settlement-making is what is known as the non-programmatic approach (Dewar and Todeschini, 2003) or, as it is referred to in this report, the enabling framework. As its design proposal, this report will demonstrate how an enabling framework may be used to organize urban development in the inner city in order to make the inner city into an accessible, dense mixed use node.

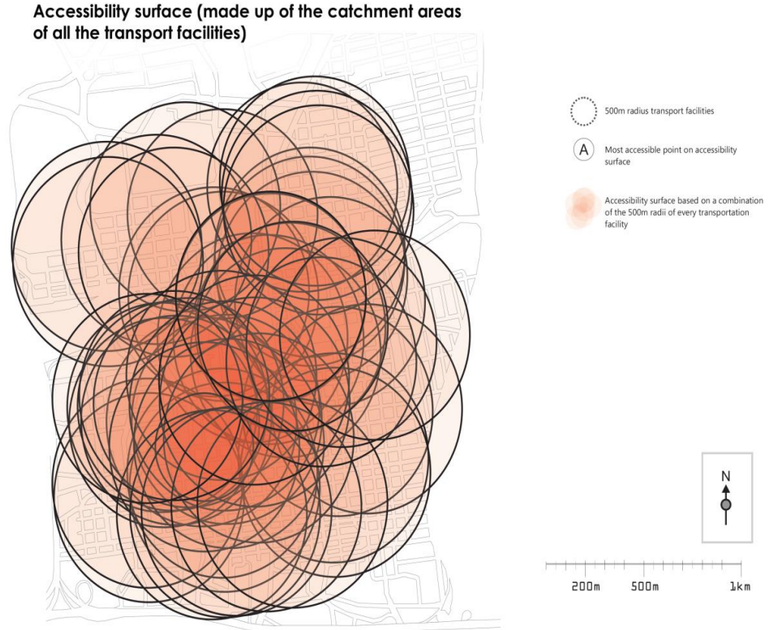
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B



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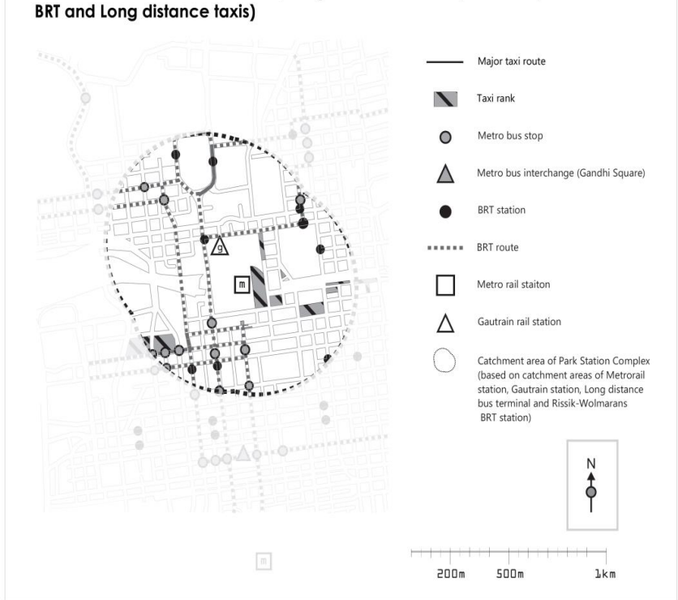


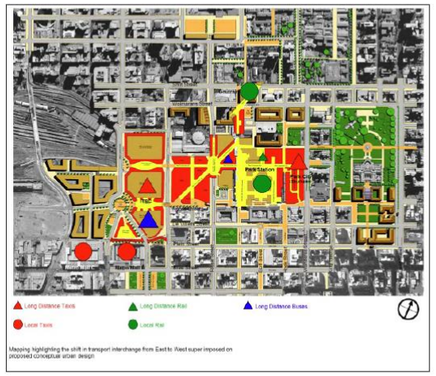
Figure 20

2.5 Existing urban design proposals

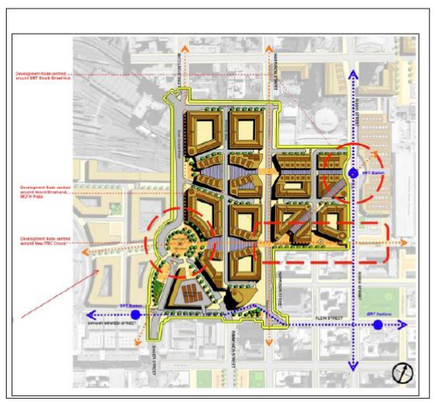
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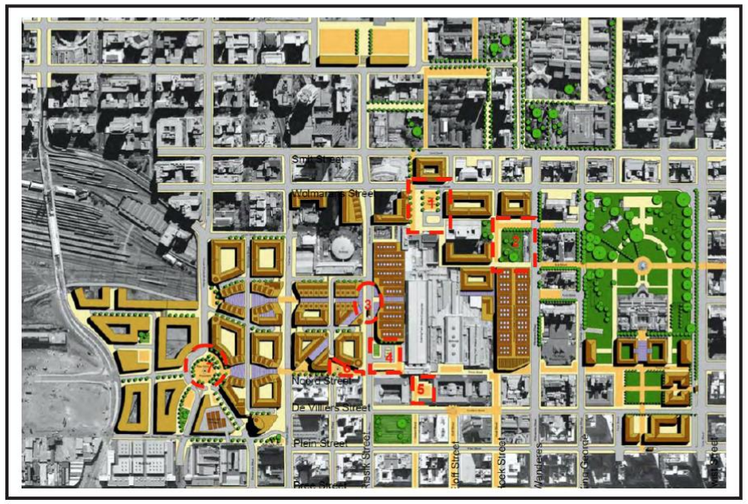
A series of new and rehabilitated existing key public spaces and public environment upgrades are proposed within the precinct, to act as focal points and "anchors" for surrounding development:

1. *Gautrain Square (Park Station north entrance)*
   A new paved square on the south side of Wolmarans Street, providing a street level interface between the Gautrain station and the northern entrance to the main Park Station concourse.
2. *Wanderers Square*
   This square becomes the new dignified Eastern 'face' and arrival point for Shosholoza Meyl – long distance trains.
3. *BRT Rissik Street Concourse*
   A new oval-shaped concourse with a glass roof, linked by escalators to the main Rissik Street BRT station above, with radial pedestrian concourse linking to the ITSC, Gautrain Station and main Park station concourse. Shops and eateries located around edges.
4. *Rissik/Noord Square (Park Station west entrance)*
   A new paved square on the west side of Rissik Street and the northern side of Noord Street, providing a street level western entrance to the main Park Station concourse. The design of this space will need to include provision for a ramped access for wheelchairs and trolleys down to the lower level of the western section of Noord Street.
5. *Joubert Street Courtyard (Park Station south entrance)*
   The conversion of the old Leith/Moerdyk Station building into a hotel will include the rehabilitation of this delicately proportioned Courtyard into another great place for people to meet on their way to / from work. The present slightly uncontrolled street traders can be re-accommodated into the facades on the Noord Street pedestrian street axis. The existing dis-used underpass below de Villiers Street should be removed, and the unsightly barricaded entrance replaced with open paving.
6. *MOTH Plaza*
   A new triangular paved plaza at the corner of Loveday and Noord Streets, centred around the existing MOTH obelisk. Straddling the pedestrainised connection along Noord Street between ITSC and Park Station
7. *ITSC Circus*
   Joburg's answer to London's Piccadilly Circus and New York's Times Square. A paved circular plaza at the western entrance to ITSC, with vehicular traffic slowed and diverted around the edge of the space. A memorable entrance point for visitors to the city. Lined by ground floor level retail along edges with animated neon signs and digital displays at upper levels.









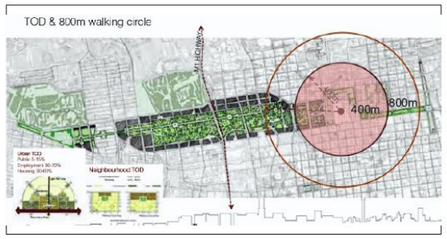
Proposal by:
JDA (ud)

Figure 21













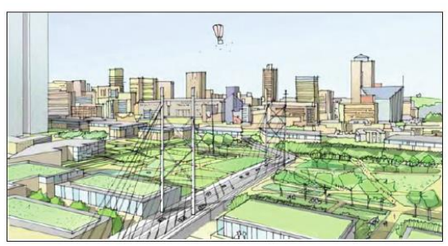












Proposal by:
Sisulu, L. Saville, L. Hansen, L. Makwe, P. Swanepoel, P. Peres, E. and Swanepoel, S (ud)

Figure 22

2.6. CONCLUSION

The intention of thinking of Johannesburg in terms of corridors rather than simply nodes is an attempt to create connections between places. In Johannesburg, because of the impact that transport has had on nodal development (and decline), the desire to "re-connect" is an attempt to improve access to the CBD in recognition of the fact that the deteriorating situation of access to the CBD preceded its decline. In this regard public transportation plays a critical role, in moving the rhetoric on corridors away from the idea of nodes along major roads and towards making it into a planning tool that can deliver meaningful connections to "stitch up" the fragmented post-apartheid city. Thus the extension of the Gautrain to Park Station – rather than simply ending it at Rosebank – and the greater concentration of BRT infrastructure in the CBD are very deliberate attempts to make the CBD accessible again.

However the historical account that has been presented in this chapter (Beavon, 1998; and Beavon, 2001) points to a risk in this approach: if the major retailers and corporate headquarters have already moved out of the CBD what good will creating access after the fact achieve? Improvements in public transport would have definitely helped in the 1950s and 1960s, instead of the Traffic Plan of 1948. Presently, however, with nodes in the northern suburbs having become well established, and with new nodes emerging in the formerly impoverished southern parts of the city, the chance that the inner city might be able to redirect itself towards a recovery on the basis of its new-found accessibility alone seems very unlikely. In fact, Beavon (2001) believes that there might even be a chance of this increased access to the northern suburbs resulting in further harm to the inner city's economic prospects. Access works both ways; and just as easily as people can be expected to flow back into the inner city those who are already within it can also flow out of it just as easily.

Two points can be made in light of the above. Firstly, perhaps the notion of the inner city's 'recovery' has to be rethought in a way that moves away from the idea of a powerful commercial centre around which a geographically dispersed territory is ordered – the pattern ushered in by the electric tram and exacerbated (and later rendered redundant) by the car. The notion of the compact city seems to suggest an alternative or, at the very least, an opportunity for designers to rethink what may be possible in the inner city. This opportunity is presented in the form of density – *residential* density, to be specific – which is something that has always been missing in the inner city (Beavon, 2001). As a result of its lacking in residential density the inner city, for the larger part of Johannesburg's brief history, has never actually been able to be a place in its own right. Yet now, with so many people flocking into it (Gotz and Simone, 2002; and GCRO, 2012), with buildings being converted to residential from other uses, and with urban policy seemingly headed in a direction that is conducive to higher densities (JDA, 2010; Johannesburg, 2011), it seems very likely that this might be a possibility.

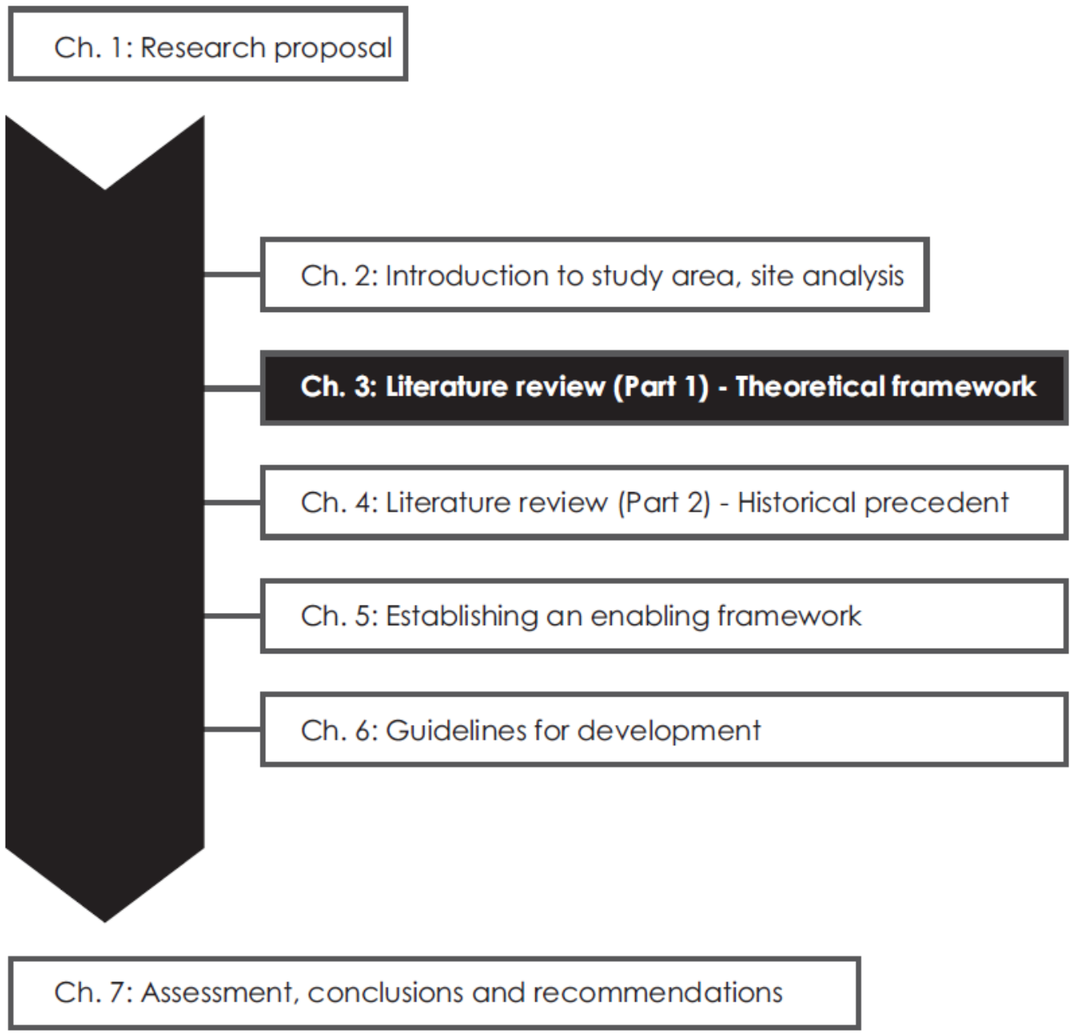
The second point to be made is that the long term viability of current thrusts towards recovery(whether one considers the ideal of attracting people and businesses back by making the CBDaccessible or, on the other hand, the creation of higher residential densities) depends on the attractiveness of the CBD as a place to live, work, shop and recreate. While, in Johannesburg, accessibility – or rather the lack thereof – may have proven to be the undoing of the inner city, as critics of the compact city have shown (Neuman, 2005) (and before them it was advocates of the garden city (Eden, 1947)) dense cities can be just as unattractive. Other issues, such as access to public open space within increasingly crowded urban environments, can impact negatively on the desirability of the inner city in the future. Urban design thus has a critical role to play in safeguarding against the pressures exerted by density. Urban design can do this by meeting the demands for quality public spaces.

Both these roles (that of making the inner city into a place in its own right and that of ensuring that it isa *liveable* place) are areas of expertise that urban design is well capable of delivering on. These are the thus two key roles that urban design ought to play in the inner city. It is also possible however to recognise a third role, that of mediating in the urban process in an attempt to safeguard the public interest. This is perhaps the oldest and most incessant of planning problems (Davidoff, 1965; andKlosterman[3], 1980) and it is ever more pressing today, in a context where the public interest and the process through which it is to be determined and achieved need to live up to the ideal of democracy. Nonetheless it is possible, through recognising and admitting the inherently political nature of urban design, to conceptualise the city (and the process through which it is to be produced) in a far more pluralistic manner than before and to open up the planning process to a wider public.

This report argues that failure to fulfil the three roles identified in this chapter is likely to jeopardise the policy intentions that the COJ holds for the inner city as a strategic node. The fulfilment of these roles is not necessarily the responsibility of urban design (and in fact the current policy approach to these objectives has limited urban design considerations (COJ, 2011)) but it is the contention of this paper that the settlement planning approach known as the *enabling framework* offers the urban design profession a unique advantage with regards to the fulfilment of these three roles.

The next chapter reviews urban design literature in order to illustrate the possibilities that urban design creates for the fulfilment of the roles set out for urban design by this report.

[3] As a reminder of the importance of public space in dense cities one can consider (1) the integral role of Central Park within New York or (2) the eruption of political unrest in Turkey (2012) over the proposed development of Gezi Park. Both cases are testament to the importance of public open spaces in dense cities.


Ch. 1: Research proposal
Ch. 2: Introduction to study area, site analysis
Ch. 3: Literature review (Part 1) - Theoretical framework
Ch. 4: Literature review (Part 2) - Historical precedent
Ch. 5: Establishing an enabling framework
Ch. 6: Guidelines for development
Ch. 7: Assessment, conclusions and recommendations

3.1 Introduction

The previous chapter identified the scope of urban design (or the mandate of urban design) in the inner city as being made of three objectives. Of these, urban design has traditionally tended to focus on the first two (translating values and objectives into the built environment; and creating liveable environments). The third objective (the notion that urban design has a political role to play) has only begun to receive attention fairly recently (McGlynn and Murrain, 1994; and Bentley; 1994). In order to adequately address the needs of places it is necessary for all three mandates of urban design to be reconciled. The inability to maintain a balance between these has often been at heart of the failure of different planning models and this is particularly true of master planning (what Dewar and Todeschini (2003) call *programmatic planning*. It is argued here that *non-programmatic planning* can reconcile and fulfil the three objectives of urban design. The difference between programmatic planning and non-programmatic planning is that the former attempts to plan comprehensively, prescribing detailed changes a given site. The latter, non-programmatic planning, seeks only to change a few parts of a given site, those few essential parts necessary to enable detailed changes to happen on their own (Dewar and Todeschini, 2003). A plan produced through non-programmatic planning may thus be referred to as an enabling framework.

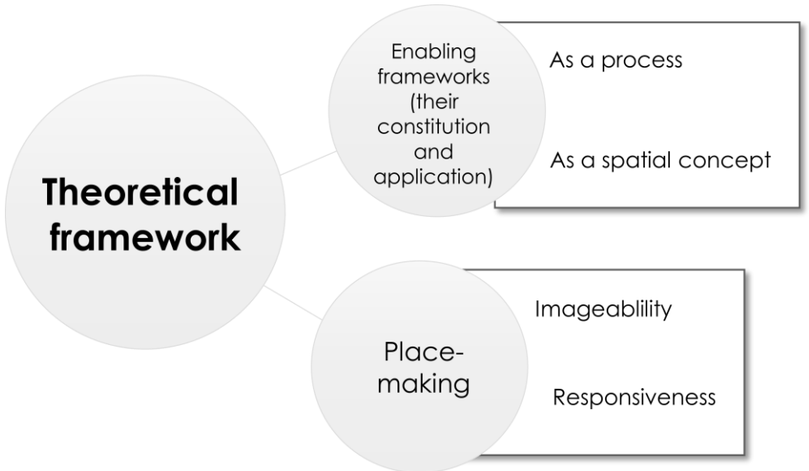


Figure 23: summary of theoretical framework

The argument in this chapter is that there are three aspects to making an enabling framework. The first is a *spatial concept* that recognises movement and movement systems as the main mechanisms by which the form of an urban settlement may be planned. The second aspect of a non-programmatic framework is an approach to the *management of the planning process* that believes that the structure of a settlement is not an accident even though the settlement may be formed as a result of many unrelated forces. The management approach must believe that it is possible to create an organising concept through which the different interests shaping a city may be allowed to express themselves and to legitimately participate in the creation of the urban environment. This brings us to the last aspect of a non-programmatic framework. That is participation. *Participation* must be understood as meaning more than an institutionalised process of consulting affected parties. Participation is always occurring, even though it is often criminalised as informality and deviation from the plan. Participation is not limited to commenting on a plan but it can include creating an alternative to the plan or physically amending an existing plan.

This chapter has two aims. Firstly it sets out to find theoretical support for the three aspects of non-programmatic planning identified above. Much of the discussion focuses on proving the importance of movement in the creation of settlements and in influencing people's ability to form perceptions about urban environments. This first part of the chapter centres on two of Ed Bacon's (1967) most important ideas with regard to movement in cities: (1) the idea of *a point in space*; and (2) the idea of *simultaneous movement systems*. This chapter shows that these two ideas have support in the work of other urban design scholars such as Cullen, Trancik, Lynch and Dewar and Todeschini. These findings are summarised as tables at the end of this chapter.

The second aim of this chapter is to revisit the notion that urban design (or planning in general) should play a political role in the built environment by attempting to intervene in the public interest. This is no longer a popular ideal. The notion of planned intervention as benign and impartial came into question from the 1970s and other scholars even raised doubts about whether planning a city was even possible to begin with. For these critics the city is a big accident and urban design's attempts to shape it are said to be superficial and misguided.

This chapter reviews the main criticism against planned intervention. It shows how social conflict has often been cited as the main reason why planned intervention is impossible and as the main evidence that the city is an accident. The chapter concludes by saying that conflict is not the problem. Instead, conflict is the natural way through which urban development occurs. The real problem is an inability to properly manage this conflict and the desire to plan in ways that completely eliminate conflict.

3.2 The constitution and application of an enabling framework

3.2.1 The primacy of movement in settlement making

In his book, *The Design of Cities*, Edmund Bacon (1967) gives a vivid description of a stranger taking a walk in a small European town, walking from the outskirts of that town into its centre. As the road unwinds the town is slowly revealed into sight, in small sequences of colours and shapes and textures which are quickly taken in by the moving eye. The eye, which is always moving, captures far more than the static images of a camera lens, and is excited by the variety and contrast before it, indulging in the intensity of it all. As the walk continues towards the centre of town, the stranger, although unfamiliar with the area, is instinctively aware that this road leads to the centre. There are subtle hints. She notes the

width of this road in comparison to the rest; she feels the rhythm of life in the town quickening; she notices the monuments and the many signs on the buildings, things that are clearly for others to see. Then the road suddenly opens into a square, revealing the heart of the town, where intense competition for space over a long period has resulted in a seemingly harmonious composition of civic buildings and commercial buildings that frame the space, alongside narrow residential buildings that have squeezed together, each wishing to get a glimpse of this monumental space. The valuable nature of their location is apparent in their height and their proximity to the property boundary and in the continuous ring of shops at the bottom – a natural tolerance for density and variety. Bacon (1967) goes on to say that the inner logic of this town is difficult to take in for the stranger. However for someone who grows up in this town, walking its streets, the logic has become instilled in them. The local businessman knows that the most shoppers are to be found at the square and that the square is also the place that charges the highest rents. In effect familiarity with the town reveals a network of accessibility that informs people on decisions regarding the need for privacy relative to the need for publicity or the need for proximity relative to the cost of such proximity.

Bacon's parable touches on some important concepts in terms of design and reveals their fundamental relationship to movement. For instance the sequential manner in which the town reveals itself into sight is also described by Gordon Cullen (1971) when he speaks of *serial vision*. Cullen was also fascinated by the intense excitement of experiencing the city on foot, wherein the slow pace of walking would reveal the city in short sequences of intensity that revealed details that could not be seen when travelling at a faster pace. Appleyard, Lynch and Myer (1964) confirm this assertion in a study of driver and passenger behaviour. They assert that people – both drivers and passengers – predominantly look straight ahead when driving and that they tend to remember fewer more isolated portions of the route. The eye thus moves a lot more when one moves at a slower pace and in such a case one becomes more aware of their environment. When Bacon describes the little hints that tell the stranger about the settlement it is reminiscent of what Jacobs calls *clues*. It is also reminiscent of *linkage theory* (Trancik, 1986) in the manner in which the movement system reveals the structure of the settlement, which would otherwise be too large to comprehend. These theories all attest to the importance of movement in urban design theory.

3.2.2 A point in space

The "point in space" as a spatial concept

Bacon concedes that the city is made by many chaotic forces; that things may seem to occur randomly; and that urban space may even seem to be the sum of events beyond one person's control. However he still maintains that it is possible for one person's idea to shape urban space, for one idea to guide many chaotic forces towards a particular spatial objective.

Order can be introduced to a space by introducing a point into a space, by accentuating a part of that space and turning it into a focus. The point being introduced to the space becomes an idea that sets a new direction for urban form. The point physically invokes a sense of direction. Its location in relation to other objects within the space creates axes, invisible lines that inform users on how to move in relation to the space. The axes also inform other designers and builders on how to orient any new structures they introduce into space. The point thus forms a language between the different parts of the space and between the space and its users. Movement is the key to understanding this language. The principles of this spatial concept may be seen in Michelangelo's Campodoglio.

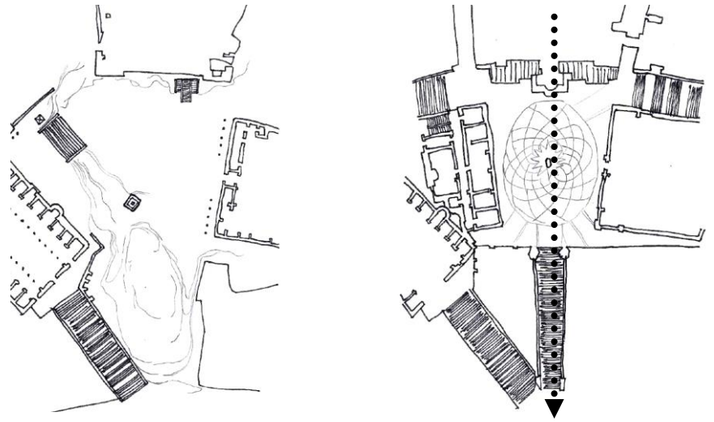


Figure 24TheCampodoglio before and after Michelangelo (Msingaphantsi, 2014 (After Bacon, 1967))

Roger Trancik makes a similar argument to Bacon's regarding the morphological relationship between open space and buildings. Let us call this morphological relationship urban form. Urban form is made up of buildings (solids) and open spaces (voids). Trancik suggests that open space should be the focal point of urban form. He sees the problem within modern cities as being caused by *lost space*. This is when the morphological relationship between solids and voids is inverted, when buildings are made to be the focus. Urban form in this case ends up being objects floating in space but for Trancik space itself must be the object and it must be surrounded by (contained within) solids.

Trancik and Bacon are speaking about the same phenomenon here but they have approached it differently. They both believe that designers must look to the open space to inform them about how to build. Bacon suggests that the best way to go about this is to put a physical point in that space. In other words Bacon wants to physically transform the open space into an object. Its presence must be so undeniably palpable that anyone wishing to erect a building on the space is forced to reckon with the space's existence.



Figure 25 Compostion of Piazza Del Popolo (Msingaphantsi, 2014 (after Google, 2012))

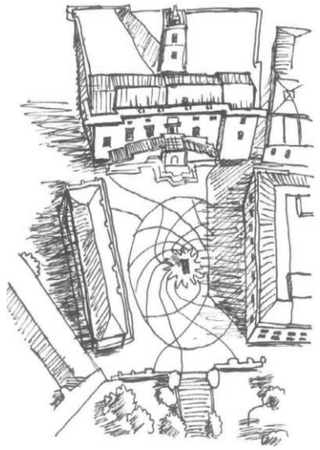


Figure 26Thecomposition of the Campodoglio from above (Msingaphantsi, 2014 (after Google, 2012))

Trancik(1986) approaches the problem by suggesting that there is a volumetric ratio to be maintained between open space and buildings. When the space between the buildings is very wide relative to the height of the buildings, the space loses definition. The designer must increase the height of the buildings to better contain the space. Conversely, when building height changes, the size of public spaces also changes to balance the ratio. Yet, Trancik also notes, beyond a certain point – what may be termed the human scale – it is impossible to further widen spaces to accommodate higher buildings. He is thus critical of the modern fascination with skyscrapers and office towers. Writing in 1986, still in the wake of modernism, Trancik is sceptical about prescribing actual numbers for the volumetric relationship between solids and voids. Instead he suggests that designers must look to existing cities to find working ratios. This part of Trancik's work is known as *Figure-Ground Theory* (Trancik, 1986).



Figure 27: figure ground theory suggests that space ought to be the object of urban form but with regard to skyscrapers and towers, the building is often made to be the object (Msingaphantsi, 2014)

Trancik also has a second theory known as *Linkage Theory*, which also corresponds well with the idea of a point in space. Figure ground theory only supports Bacon's assertion that open space can inform the form of the buildings around it. Linkage theory takes this a step further by confirming that space can also evoke directionality and create axial relationships between morphological elements. Trancik suggests that there are three forms of linkage (three different ways in which morphological elements may be related to one another). The first form is called *Compositional Form*. This is the form that most resonates with Bacon's idea of a point in space.



Figure 28: Composition of Wits University East campus (Msingaphantsi, 2014)

Compositional form is usually how morphological elements are related at a very local scale. For instance, this is how the buildings within a single property may be related to one another and to the backyard, swimming pool, and driveway. It could also be the arrangements of buildings in a university campus or in a town house complex. Yet in almost every instance of compositional form it is possible to discern axial relationships between entrances, movement systems and important spaces. In the best designed instances of compositional form, it is possible to see the idea of a point in space as an organising concept that structures urban form.

The "point in space" as a means of managing the planning process

Bacon's approach to the management of the planning process is that the point in space creates an impulse that is fulfilled by another designer (sometimes long after the first designer's has created the point). It is an approach to planning that believes that an urban environment can in fact be planned by

a single idea but the approach also recognises that because urban environments take so long to mature it is necessary for the plan to be implemented over a timeframe that is well beyond single designer's own lifetime. The idea of a point in space is thus about creating a self-managing process that can allow a designer's ideas to transcend beyond the designer (beyond their lifetime, beyond their authority to implement an idea and beyond their financial means to fund construction of that idea) and to become infused into the space and into the public psyche, so that it is implemented by others.

The "point in space" as a programme for participation

The kind of participation enabled by the spatial concept of a point in space is best illustrated with the example of the Piazza del la Santissima Annunziata, in Florence, Italy. The form of this square was created between 1454 and 1600, over a period of about 150 years. Its completion over such a long time required a planning programme that was open enough to allow plans from different people to be overlapped with one another overtime. Nonetheless, the organising concept (the point in space) behind this design had to be strong enough to guide the different forces introduced by this participation towards the desired objective.



Figure 29 Piazza del la Santissima Annunziata (Msingaphantsi, 2014)

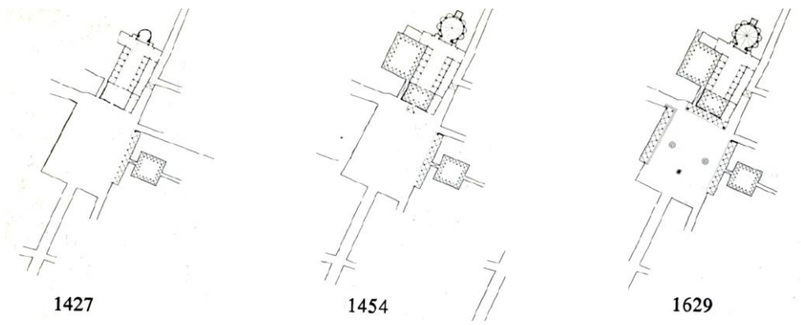


Figure 30 Piazza del la Santissima Annunziata (Bacon, 1967)

In 1427 the square only had two buildings fronting onto it, the church and the hospital, which stood to the right of it. The hospital was the first building to have an arcade, designed by Brunelleschi. The arcade would later be one of the characteristic elements that create the composition of the square.

In 1454 Michelozzo added a similar feature to the church, which blended in harmoniously with Brunelleschi's work on the hospital. The new composition includes a projection from the front of the church, which protrudes into the square. A sense of direction has been evoked and it is possible to discern an axial thrust extending from the church towards the main road. The square is now more than an empty space. It is now understood as an object. The principle of a point in space has been established. Later, a statue is placed along the axis of the street and the church. The scale of the statue palpably transforms the open space into a recognisable object.

However the square remained incomplete – missing a building – and its form remained questionable until 1516, when a new architect was commissioned to add his own building to the square. The architect showed incredible humility by overcoming his own urge towards self expression and, instead, following the lead of the architects before him. Heeding the axial line set by the point in space he understood his building as forming the other half of the composition and, accordingly, followed the design of the old hospital, which by then was almost ninety years old. This participation between different designers is what Bacon calls "the principle of the act of the second man" (Bacon, 1967: 95). It is always the next designer who, through their involvement and their interaction with the existing buildings in a space, takes the art of building beyond the realm of architecture into the realm of urban design. Great urban design cannot be achieved within any one life time and it necessitates collaborative effort. For Bacon (1967) cities are made through participation.

3.3 Place-making principles

The preceding discussion has centred on space. It has discussed how the placement of mass within space can create points in space (Bacon, 1967), while the placement of mass around space can create figure ground (Trancik, 1986). In this section attention now shifts to the distinction between space and place, with the argument being that a place has a meaning attached to it (Carmona et al, 2003). The order created by a point in space or by figure ground is as a result of meaning having been added to the space where these concepts are applied. In the case of figure ground one dimension of this meaning is the creation of an inside and an outside, as buildings are used to surround a space, defining it and creating a phenomenon known as enclosure (Cullen, 1971). It may thus be argued that the core role of urban design in the making of urban settlements is not merely the shaping of spaces but rather it is the making of places (Carmona et al, 2003). In this section this core role of urban design is explored by looking at two major place-making theories in order to determine how meaning is created. The two theories are Lynch's (1975) theory on imageability and Bentley et al's (1985) theory on responsive environments.

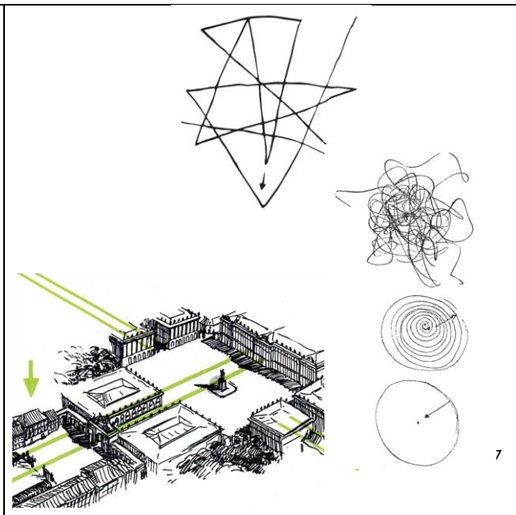
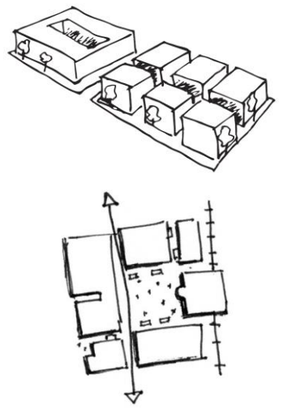
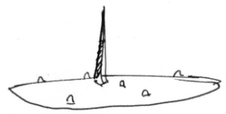
For Lynch (1975) the key feature of urban places is imageability, which is the extent to which people are able to understand these places and to make a coherent image of them in their own minds. Lynch

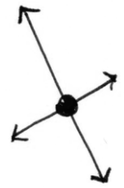
(1975) identifies five elements that underpin imageability. These are nodes, paths, edges, districts and landmarks.

For Bentley et al (1985) what distinguishes places from spaces is responsiveness, the fact that places (especially good places) accommodate the physical, psychological and at times even spiritual needs of the people using them. There are six dimensions to the responsiveness of urban environments: variety, robustness, richness, legibility, visual appropriateness and personalization.

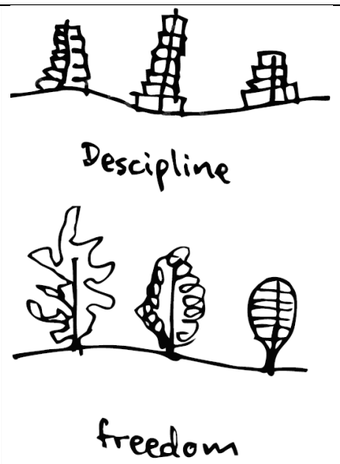
The eleven principles identified by Lynch (1975) and Bentley et al (1985) form the core values and competencies of the urban design profession, against which the performance of the enabling framework will be assessed in chapter 6 of this report.

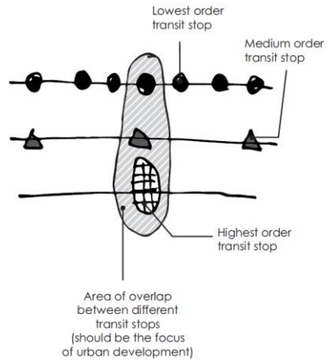
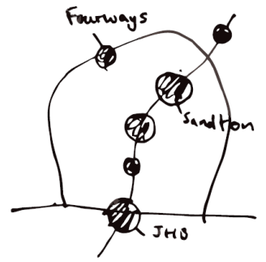
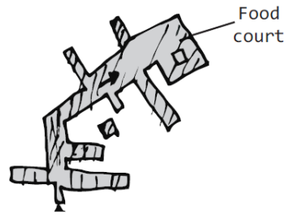
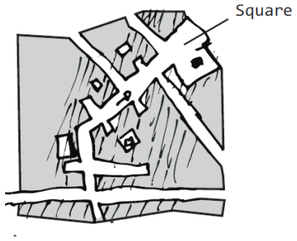
3.4. Table 1: A point in space

<table>
<tr><td colspan="2">Key theoretical concepts for constituting and applying an enabling framework</td><td colspan="4">Overlap with other theorists</td></tr>
<tr><td colspan="2"></td><td colspan="2">Trancik (1986)</td><td colspan="2">Lynch (1960)</td></tr>
<tr><td rowspan="3">A point in space (Bacon, 1967)
- Order can be created by introducing a point in space
- The point is an idea that sets a new direction for urban form.
- The point physically evokes a sense of directionality
- The point helps to translate the relationships between the elements that make up a space into a language that can be read by the user and the designer
- The point is a method of communication between architects even across generations
- Movement is the key to unlocking the message conveyed by the point. This is because movement is how people experience space
- Movement systems such as entrances, paths and staircases can be aligned with the point in order to enhance its effect as an organizing concept.</td><td>Spatial</td><td>
7</td><td></td><td>- Figure ground theory defines a volumetric ratio between solids and voids
- Voids should be the focus of urban form and solids should serve to give them definition
- Linkage theory suggests that when figure ground is appropriately observed between a group of buildings compositional form is created</td><td>
Landmark (guides movement)


Node (at the intersection of movement channels)</td><td>- A nodes or a landmark may be a point in space
- A node emerges at the intersection of different directions and a landmark can convey direction
- Both can generate an interest in a space</td></tr>
<tr><td>Management</td><td>- The city is an act of will, not an accident
- A designer must make an organizing concept (the point in space), which communicates his intentions to users of the space and to other designers
- Plan is not implemented through authoritative enforcement but through incremental responses from different people over time</td><td colspan="3">- Each time a designer is faced with a new site, they must look to the open space (rather than the building they have in mind) in order to decide how to design
- To avoid lost spaces a designer must consider the amount of space around his site when deciding on the shape and size of the building and must attempt to maintain a balanced ratio of solids and voids</td></tr>
<tr><td>Participation</td><td>- The act of the second man
- It is always the next designer who, through their involvement and their interaction with the existing buildings in a space, takes the art of building beyond the realm of architecture into the realm of urban design.
- Great urban design cannot be achieved within any one life time and it necessitates collaborative effort.
- For Bacon (1967) cities are made through participation.</td><td colspan="3">- Trancik does not define a programme for participation except to say that, once a space's morphological qualities have been determined by a designer, it is people (and their cultures) who turn that space into a place.</td></tr>
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3.5. Table 2: Simultaneous movement systems

<table>
<tr><td colspan="3">Key theoretical concepts for constituting and applying an enabling framework</td><td colspan="3">Overlap with other theorists</td></tr>
<tr><td colspan="3"></td><td colspan="2">Dewar &Todeschini (2003) – “Differentiated accessibility surface”</td><td>Trancik (1986) – “Linkage Theory”</td></tr>
<tr><td rowspan="3">Simultaneous movement systems (Bacon, 1967)
- With this principle Bacon applies the concept of a point in space at a larger scale
- Entire movement systems become the focus
- To create order at the urban scale the designer must align the competing interests of different users, channeling them towards the creation of a harmonious composition.
- Bacon argues that historically, movement has been an important way of getting many different people to disclose their interests. The shape of a city was derived from the process of people locating uses and building structures either closer to or further from movement channels, in accordance with their own interests. Today use is dictated by zoning.
- The problem in modern cities is the emergence of new movement at larger scales and at faster speeds than before. For Bacon the challenge is the emergence of the automobile, which – for the moment – is in conflict with the human scale and the traditional logic of human settlements.
- Different modes of movement must be overlaid to reconcile movement with the human scale.</td><td>Spatial</td><td>
Zoning seeks order through control/discipline

An enabling framework would seek order through freedom and choice</td><td></td><td>- Dewar & Todeschini emphasize the difference between mobility and access
- The modern problem is the emergence of high mobility modes of movement and their use as the focus of urban development
- Dear and Todeschini argue that the point at which most modes create access at the same time should be the focus for urban design</td><td>
The polycentric urban form of Metropolitan Johannesburg is an example of Group Form</td><td>- Types of linkage: compositional form, mega form and group form
- Traditionally, compositional form is associated with the smallest scale (between buildings), while group form usually denotes linkage within a region. Mega form sits between these two scales and denotes linkage at the urban scale (e.g. along a street).
- Automobile oriented transport systems have made it possible for the everyday functions traditionally associated with the urban scale to be reordered at the regional scale. This creates a few intense nodes but it generates many negative externalities</td></tr>
<tr><td>Management</td><td>- An organizing concept: the designer creates an idea about the future and inserts it into the public unconscious
- Reshaping the movement systems is one way through which the insertion of the organizing concept into the public unconscious can happen
- Once the movement system has been changed people begin to experience the city in a new way and they respond to this new experience.</td><td>- Different modes of movement are overlaid to create a complex, differentiated accessibility surface
- An uneven accessibility surface allows places of publicity and places of privacy. It also allows some differentiation in property values and can thus create more economically inclusive environments.
- The accessibility surface is the driving logic behind an enabling framework because land uses decide their own locations on the basis of cost and return.</td><td colspan="2">
Mall</td><td>- Malls may be understood as a response to car dependency and an attempt to manage its externalities
- The mall is based on the same principles as the street but it attempts to control the excesses of car movement and to maximize and monopolize the benefits of pedestrian traffic.</td></tr>
<tr><td>Participation</td><td>- The response that people have once they have experienced the city in a new way is called democratic feedback (Heller, 2004).
- It is a natural form of participation that lies outside the institutional framework of participatory planning techniques.
- Democratic feedback can take various forms, including proposals for development or for changes in land use. Informality is a form of democratic feedback.</td><td>- The free market system is the main programme for participation
- Land uses must be allowed to gravitate to locations they desire
- Cost and return will ensure that each function locates in the best spot for its interest
- Cost also allows for creative adaptations such as high densities or mixing land uses</td><td colspan="2">
Street</td><td>- The street is how mega form has traditionally been achieved.
- A return to this urban form seems unlikely however unless automobile dependency is addressed first. It is necessary to re-think the transport system: 1) High mobility links between nodes; 2) Variety of transport modes within nodes; 3) Differentiated accessibility surface within each node. This diffusion of access will encourage streets rather than malls</td></tr>
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