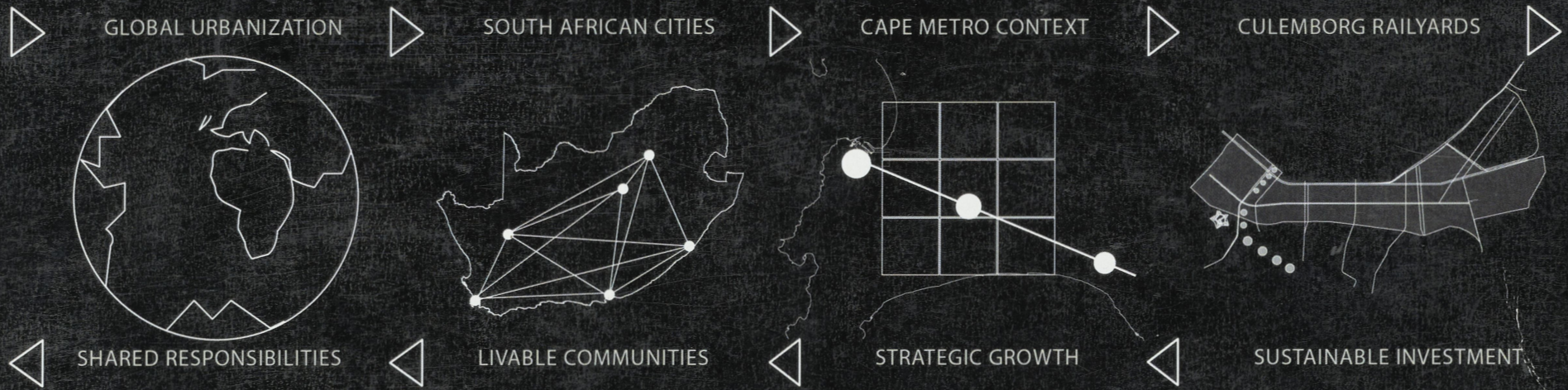


URBAN RESTRUCTURING IN CAPE TOWN: Redeveloping the Culemborg Rail Yards

Thesis for a Masters of City and Regional Planning
University of Cape Town, South Africa
2013



MICHAELA KRITZINGER

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*Thesis for a Master of City and Regional Planning
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MICHAELA KRITZINGER, B.A. (University of Cape Town)

Master of City and Regional Planning (MCRP)

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The MCRP programme at UCT recognizes the particular demands of cities and regions in Africa and in the global South, in the 21st century. It requires students to engage with issues of poverty, inequality, informality, rapid urbanization and environmental change. Its close link to the African Centre for Cities and the Association of African Planning Schools exposes students to the diversities of urban life on the continent and the exciting potentials which these offer.

The degree programme is a full-time, two-year, professional taught masters programme with South African Council for Planning accreditation and accreditation from the Royal Town Planning Institute. The first year of study is concerned with planning in local and metropolitan settings. Studio projects are supported by lecture-based courses in planning theory, environmental issues, urban infrastructure, urban design, planning law, and the institutional and economic context of planning and urban development. The second year of study covers regional planning through both project and theory work, with a focus on the generation of economic, landscape and settlement frameworks in regional space. The second part of this year involves individual dissertation work.

Acknowledgements

I would like to express my deep gratitude to Professor Dave Dewar, my research supervisor. I drew inspiration from his pioneering work on South African urban issues, and benefited enormously from his critique of my work.

I would also like to extend my thanks to the following people: Nicholas Lindenberg who provided GIS support; Leon Coetzee for help with AutoCAD conversion; Nick Botha, a recent UCT graduate who very generously made his M.A. Thesis on the development of the Cape Town Foreshore available to me; Linda Dodds for help with editing; and Janine Meyer, for all her patience with administrative matters.

A special salute to my fellow MCRP students for their camaraderie. I hope that we all become the planners and thinkers we need to be.

Finally, I would like to acknowledge the support of family, in all its forms, for patience and encouragement throughout my studies.

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1 INTRODUCTION

This thesis articulates a vision for how redevelopment in Cape Town's city centre – taking place in the under-utilized Culemborg rail yard and Foreshore precincts - can initiate and contribute to much needed urban restructuring in the city.

In recent years, the redevelopment of these areas has been a favourite topic for urban planners and architects in Cape Town. Countless schemes have been proposed, yet none have gained traction. This project's approach differs from that of other plans for the area in that it considers the problem of the disused rail yards and disorganized city centre holistically, within its metropolitan context. It formulates a metropolitan strategy for improving urban performance in Cape Town, and then places the project site within the context of that strategy. In doing so, it makes a broader case for the role of planning in inspiring and guiding urban change that make our cities more equitable, sustainable and better prepared to meet the challenges of an increasingly volatile and uncertain future.

This is the ultimate objective of this project: not simply to improve the city's physical design, but to use scarce public resources and land more efficiently, creating opportunity-rich places to live for more people, and spurring economic development in the City. The schematic planning framework proposed in this document shows how, by taking bold action, we can provide the opportunity for over 100,000 Cape Townians to live to in the midst of tremendous economic opportunity. In doing so, huge economic benefits will be reaped, and can be used to cross-subsidized social rental housing, investment in job training and other public institutions and high quality public spaces to be enjoyed by all. This is not a pipe-dream. It will take conviction and vision, to be sure, but it is attainable, and could pave the way for new energy to be injected into a city so desperately in need of transformation.

Project Overview

Some twenty years after the end of apartheid, after several rounds of progressive policy-making and reconstruction, we now need to come to terms with the fact that for most South Africans, urban life is an uncomfortable, expensive and isolating experience.

South African cities, shaped by Modernist town planning and apartheid social policies, are hugely inefficient and fragmented, exhibiting a high degree of separation between income groups, races, and land uses. Economic opportunity and public services are distributed inequitably, which further isolates the poor, who live in sterile, poorly located poverty traps. These urban systems generate enormous amount of movement, most of which is fossil-fuel based, which leaves our cities and our country incredibly vulnerable to rises in fuel prices and guilty of contributing to carbon-induced climate change. South African cities, in short, are a mess.

Cape Town, the “crown jewel” of South African cities, is no exception to this pattern. It exhibits all of the pathologies that plague South Africa as a whole, including: low educational attainment, high crime rates, unemployment, and unsustainable resource consumption patterns.

This project proposes bold intervention into this situation. It is concerned with the spatial dimensions of the urban problem in South Africa generally, and Cape Town specifically. It does not pretend to address comprehensively all development issues that are manifested in cities. It limits its scope to the task of rendering the physical ordering of the city – in particular, the provision and design of public space, transportation and public institution – more compatible with the prerogatives of human development, economic growth and environmental sustainability.

The central thesis of this document is, simply, that the city of Cape Town is in need of bold, visionary restructuring. The document is in some respects only incidentally about the redevelopment the Culemborg rail yards and its environs. The

redevelopment it proposes is in fact intended to be a “pilot project” that inspires further metropolitan restructuring. More specifically, at a metropolitan level, there is a pressing need to:

- Develop under-utilized land to support densification and urban compaction
- Co-locate jobs and housing
- Transition away from a car-based mobility system to one centred around public transportation
- Stimulate private sector investment by making land available and supporting it by investing in transportation and public infrastructure around nodes and along corridors.
- Invest in the public realm as the basis of a more humane, live-able city. Such investment will also contribute to the urban system's generative capacities by creating a sense of place and opportunity for formal and informal gatherings and interaction.

A redevelopment of the Culemborg site could address all of these issues while at the same time, restructuring a disorganized, congested part of Cape Town whose dysfunction encourages the growing imbalance between the City Centre and the rest of the city. It is located at nexus of the city's two most vibrant activity corridors, Voortrekker Road and Main Road. It therefore has the potential to function as the “hinge” which connects these two systems, improving connectivity in the process. Specifically, the Culemborg site and surrounding areas can be developed into a series of nodes, one of which can become a new transportation hub for the entire metropolitan area.

Another important, and unique, opportunity is to reconnect the city to its waterfront. The founding of Cape Town was an expression of the powerful connection between economy and transportation and between cities and their waterfronts. This connection has been lost, and with it, the enormous recreational and development opportunities that the sea front can offer the city.



Figure 1: The Study Area in the Cape Metropolitan Context



The Location of the Study Area

The proposed framework addresses the area of rail yards and assorted industrial activities located between Albert Road and Strand Street to the south, the N1 freeway to the north, and between the Black River to the east and Buitengracht Street to the west.

The complexity of the problem which redevelopment of the site poses, and the broader need for urban restructuring in Cape Town, has demanded that the site be at multiple spatial scales. Thus, the formulation of the planning framework is conceived of and refined across four scales:

- The metropolitan area, at a scale of 1:300 000
- The sub-metropolitan zone, at a scale of 1:60000
- The site and environs, referred to here as the “City Core”, at a scale of 1:35000
- The site, at a scale of 1:20000

Figure 2 showed the broader study area within the metropolitan context at the metropolitan area scale. Figure 2 delineates each of the focus areas examined at each of the remaining spatial scales. It also clarifies the following key terms which are used throughout the document, including:

- “the neck”
 - the “City Core”
-



Figure 2: Various Sites and Places Referred to Throughout the Document

The Problem

The site forms a large portion of the “neck” of land between the Devil’s Peak and the harbour which connects the City Centre to the rest of the metropolitan area. Re-development here could address the following problems:

- The eccentric location of the city centre relative to the rest of Cape Town
- The termination of rail lines in the city centre, bringing with it the barrier effect of extensive rail yards and the rail tracks themselves
- The prioritization of car-based mobility, which has been accommodated through cumbersome overhead free-ways and other limited access expressways which cut off pedestrian access and act as barriers.
- The harbour adjacent Paarden Eiland industrial area – which has significant, latent development potential - is a disconnected mono-functional island in a sea of complex highway interchanges.
- The emerging light industrial hubs of Salt River and Woodstock are vibrant, but are cleaved apart from the City Centre by vast tracts of inaccessible, under-utilized land.
- The working harbour, which once served as a stimulating urban space open to curious onlookers and bystanders as well as tertiary and secondary activities, is now completely fenced off from the city.

Not only is Cape Town’s city “centre” eccentrically located, it also amounts to a minuscule fraction of the total built footprint of the city. In terms of area, the redevelopment of the site area (shown above) would amount to more than a new CBD.

Cape Town’s Historic City Centre

Project Site

The Wider Site Context (City Core)

Cape Town’s Built Footprint



Figure 3: Scale Comparison: Site, City Core, Metropolitan Area

The site itself is occupied by a rail yard, and while ostensibly centrally located and close to the amenities of the Cape Town City Centre, is in fact extremely isolated from adjacent areas. The South of the site is abutted by numerous railway tracks emanating from Cape Town Central Station, its northern boundary borders the N1 highway and to the east, it is deprived a connection to Woodstock by an the elevated Lower Church Street.

This disconnection is of course exacerbated by the poor urban quality of the city's Foreshore, which was developed in the 1960s along Modernist Design principles that championed mono-functional spaces, free-standing towers and the privileging of the motor vehicle as the primary mode of transportation.

Another problem with the Culemborg site is that it has been almost fetishized by urban planners, architects and, indeed, university students, who have concocted innumerable schemes for redevelopment, none of which ever gain traction and none of which deal with the real metropolitan-scale problem of which the site is only a small part. In these schemes, the location of transportation infrastructure in the area is taken as fixed and so the land that is proposed for redevelopment is only a small portion of the site addressed in this project. This is understandable, given the complexity and expense of freeing up more land for redevelopment and initiating bold restructuring. In the end, however, this piecemeal approach yields unconvincing and inessential plans that only further fragment the urban fabric.

A prerogative of this project, then, is to rebut the very concept of a "Culemborg redevelopment" as a discreet activity unconnected to broader urban issues. By the end of the document, the kind of plan shown to the right (4) should seem completely inessential and myopic, or at least, hugely inadequate.



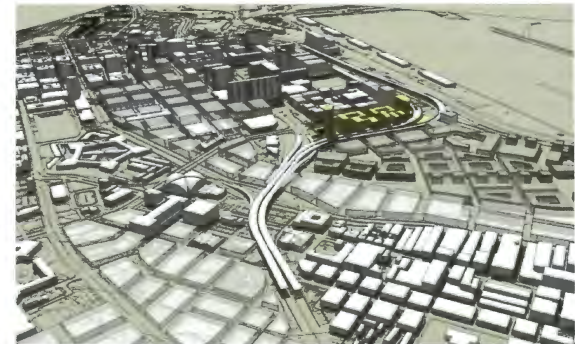
1 View towards the Southeast, towards the City Centre



2. View towards Greenpoint of the Western portion of the site



3. View looking to the north-east, including the site, rail lines, and N1 freeway.



4. Proposal for Culemborg redevelopment made by DHK Architects

Method

A Synoptic Approach

The thesis focuses on the redevelopment of the Culemborg rail yard area and its environs; an area that is clearly under-utilized and disorganized, but which cannot be successfully developed without a clear idea of how redevelopment fits within and contributes to a broader metropolitan strategy. The project therefore takes a synoptic view of the Culemborg development question, so as to place urban intervention within its proper context(s).

Firstly, it is necessary to understand the site's roles and responsibilities within the metropolitan region, as determined by a metropolitan concept. Ultimately, this concept defines the site's metropolitan responsibilities in terms of how its development can restructure the city's highly inequitable and inefficient functional systems (movement, open space, and institutions).

The project adopts a "package of plans" approach to guiding development. The package of plans process is the unfolding of plans that works down in scale, from the broad principles and an overview of the site towards more specific designations, including subdivision and urban design principles. It moves from a broader physical and conceptual scale down to the small-scale specification of subdivisions and building plans. This framework goes further than a traditional planning framework in that it goes beyond setting out superblocks and public space by proposing urban design parameters that shape how public and private spaces relate to one another.

In recent years, the redevelopment of state- or quasi state-owned land in Cape Town has been brokered through the so-called "package of plans" approach. The development of such land calls for a different kind of deliberative planning process because of two factors: the land falls outside the current zoning scheme and requires development rights to proceed with development and secondly, such pieces of land are, quite

simply, very large, promising either the positive transformation of an entire urban district or the monopolistic control of space by a developer. The package of plans approach is an iterative process by which plans across scales are individually agreed upon by stakeholders, ensuring that planning for a development proceeds on the basis of shared understanding and consensus wherever possible. It involves, in short, the gradual accretion of priorities and strategies that are negotiated at each level and hybridized to form a compromise between the state and the developer.

Too often; the development of a site proceeds from the identification of desired land use based on how the site can be profitably developed and marketed by developers. In this scenario, urban qualities are rendered incidental, regarded only as a marketing device. By placing these functional systems at the forefront of planning, the resulting development effectively becomes a public asset, almost irrespective of the uses or income groups that inhabit it initially.

Scope of Work

This thesis sets itself the task of providing the following products.

1. A metropolitan spatial concept that shows a new way of thinking about Cape Town's urban structure. The concept indicates the principles that should structure each of the city's major urban systems which include: movement, open space, the capital web and land use. Elaborating on each of these is beyond the scope of this project, however the nature of the problem identified at the outset of this document – that of congestion in the "neck" and the need to free up land for redevelopment - requires clarification of how reorganization of transportation infrastructure in the site and the city core should contribute to broader metropolitan restructuring of the movement system.
2. A sub-metropolitan concept that elaborates on how the City Core and site should be re-positioned vis-à-vis the restruc-

tured metropolitan movement system. This essentially deals with the placement of the central station, the routing of rail lines, and the rationalizing of connections between the city's major activity corridors.

3. A planning framework for the site that serves as the first step in a so-called "package of plans" process. This framework sets out the major new road, rail and open space connections that need to be made in order to unlock land for redevelopment and give structure to the more specific site plans that follow it. It establishes super-blocks that can later be subdivided into smaller blocks according to eventual land disposition, sub-division and building typologies. A schematic programme is outlined which gives credence to the planning framework's strategy to re-organize transportation infrastructure in the area.

4. This document goes further in the package of plans process than a traditional planning framework would in that it goes beyond setting out superblocks and public space by exploring how a network of secondary roads could be configured. Key streets are shown in transverse section so as to evoke the kind of streets and spaces that should be pursued in later urban design and architectural plans and an overall section of the site is shown.

5. A broad overview of an approach to implementation of the project.

Structure of the Argument

Chapter 2: Personal Manifesto

This section outlines the author's own personal beliefs. Ultimately, good plans are based not on opinion, but upon well-reasoned argument. Inevitably, however, the act of proposing a plan is itself a show of conviction and belief that intervention needs to happen – that conscious change is necessary. Part of this document's expressed *raison d'être* is a commitment to making bold, implementable proposals. It is therefore important to state upfront that this project is concerned not only with how or why the site should be developed, but by what it means to be a South African planner today.

Chapter 3: The Cape Town Urban Problem

The Cape Town urban status quo is evaluated against a basic understanding of what urban environments should be able to provide their inhabitants (for example, access to employment, cultural and social stimulation and so on). In showing how gravely its performance is wanting, this section establishes a strong impetus for initiating bold urban restructuring across the city, beginning in the City Core area. A new way of thinking about urban structure is proposed in a series of concept diagrams.

Chapter 4: The Nature of Plan

This project is about formulating solutions to urban problems. Intervention into the urban environment can take many forms and the problem itself can be understood in many different ways and so there are many kinds of plans.

Simply identifying and analysing the urban problem in Cape Town, however, does not tell us about what kind of solutions are required, and how the planner's intentions should be communicated. Indeed, we need to ask what the activity of plan-

ning is – what are its aims, its tools, its role to play in the process of urban change and development? As settlements have evolved over time – and with them, urban economies and socio-political conditions – so our ideas about the city and the place of intervention have changed. This chapter situates the project within the context of planning thought, which in turn justifies the position it takes on the nature of plan.

Chapter 5: Giving Direction

A plan is a spatial argument for a particular version of the future. Like any valid argument, it does not emerge from a vacuum.

The plan needs direction: what are its aims and to what imperatives must it respond? It seems that the plan is given direction when it responds to a set of critical matters, namely:

- *The global situation*, and the extent to which certain economic, environmental and socio-spatial trends active at the global scale will re-route the course of local development and thus require a particular kind of framework that can address this inevitability.
- The state of human, social and economic development locally. This concerns *the South African context*, which has its own particular pathologies, stemming primarily from the legacy of apartheid, social policies and, in the urban context, modernist urban planning and management.
- *International planning conventions* that, however difficult they are to realize, are nearly unanimous. They include: integration, intensity and diversity of uses, functions and people within the city; sustainable models of resource consumption and economy; and equity in how resources are distributed and socio-economic opportunity is accessed.
- *The legislative context* in which planning in South Africa

takes place.

The informants are, of course, in addition to the contextual reality of present-day Cape Town which is explored in chapter 3.

Chapter 6: Metropolitan Framework

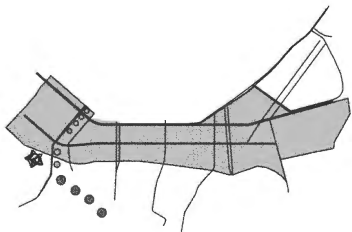
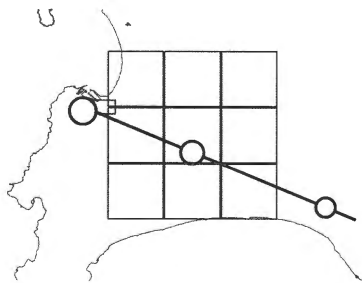
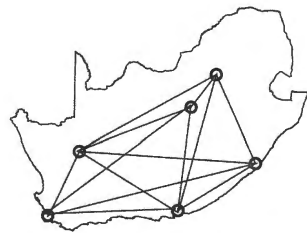
All of these sections culminate in the presentation of a set of planning frameworks. The first is a metropolitan concept that shows how the conceptual approach to urban restructuring outlined in chapter 3 is realized at the macro level of urban structure.

Chapter 7: The City Core

The chapter begins by presenting the sub-metropolitan concept, which is a direct application of the structural logic presented in the metropolitan framework.

Chapter 8: The Site

The planning framework for the site is comprised of three sub-sections: strategy, programme and urban design. While the metropolitan and sub-metropolitan scales are explored at a conceptual level, the planning framework for the site itself is not only more specific, but begins to indicate actionable recommendations rather than simply a "way of thinking" about the problem. There is an explicit attempt, however, to keep certain aspects of the framework flexible so that uncertainties, unforeseen preferences and complexity can be accommodated.



The project's synoptic approach, which incorporates global trends, South African urban issues, the Cape Town metropolitan context, and site-area opportunities and constraints

Summary: Main Arguments

1. At the metropolitan scale, it is argued that there is an urgent need for urban restructuring so as to ensure more equitable, efficient and sustainability use of resources. The key to restructuring Cape Town along these lines is to introduce a system of transportation corridors and interchange points around which public facilities and high density housing can be clustered. A metropolitan concept for urban restructuring shows the extent to which restructuring is predicated on the reorganization of the site and environs area, the city's major "choke point", where several metropolitan transit lines and freeways converge.

2. At the sub-metropolitan scale – focusing on the "wedge" – it make sense that in order to connect existing development corridors to each other, and to minimize the impact of transportation infrastructure on the amount of developable land and on internal movement within the City Core area, the a major metropolitan interchange should be located in Salt River instead of in the centre of the CBD. This multi-modal interchange then serves as the "hinge" from which the city's major transit and corridor systems pivot.

3. At the site and environs scale, transportation infrastructure must be reorganized and rationalized in order to free up land for redevelopment that will raise population densities in the area, and a new movement system should be installed. As the sub-metropolitan area concept indicates, the station is moved to Salt River. A further step towards breaking down movement barriers in the area is the removal of the Foreshore freeway and the conversion of Eastern Boulevard (after Strand Street) and the N1 freeway (from the City Centre until the M5) into stop-and-go boulevards. Once these big moves are made, a new inner-city movement system can be established with an east-west light rail transit mall serving as its spine.

4. Having made the case for the reorganization of "wedge" and the removal of major barriers to access, the site can then be complete redeveloped for a mix of uses. The planning framework structures the more detailed plans and schemes which

are to follow it in the package of plans process. It therefore begins by establishing key new connections which connect the site to surrounding neighbourhoods, which then make up superblocks that can be sub-divided for development. It also takes a strong position of adding public amenities, proposing new open spaces and a "pearl necklace" of public institutions. It takes the position that the District Six site is unlikely to be developed sooner, if ever, and should, instead of remain a collective public resource for present and future generations, becoming a great memorial park for the people of Cape Town. Housing is re-introduced into the surrounding area by requiring that all development is mixed use, but focused on housing provision.

5. In order to ensure that the urban environments that result from redevelopment reflect the values and ideals of the planning framework, it is necessary to elaborate on some of the urban design principles that should determine block development and the relationship between public and private space. Specifically, these guidelines insist on establishing build-to lines for buildings, preserving certain critical view and access corridors, and, wherever possible, keeping block sizes small enough to guarantee permeability and pedestrian access, while selectively enlarging them to improve efficiency and accommodate diverse development topologies.



2 PERSONAL MANIFESTO

This thesis is about planning for a better, more equitable Cape Town. More fundamentally, it is about making the case for bold, progressive spatial planning.

Planning Dystopia

While we all seem to agree that planning for better and more equitable societies and cities is a shared objective, there is little agreement about how to do so. As a result of our confusion and inertia, our collective progress as planners and city managers can fairly be said to be spotty at best, and more often palpably negligent.

This is not surprising, given that 'planning' takes place at every level of human activity and therefore that consensus is exponentially more difficult to achieve as levels of complexity rise. It is fair to say that 'planning', as it eventually impacts our collective and individual lives and the cities we live in, is an immensely complex activity.

Central governments are, and ought to be, entrusted to ensure the beneficial allocation of resources and the health and safety of its citizens, but quite evidently seldom succeed. Local public officials are entrusted with a similar set of moral and administrative obligations and yet seldom deliver as policies lurch from one set of political beliefs to another, and too often are led by personal ambition and self-interest. Also 'big capital' in the private sector often reveals the same bias towards narrow self-interest, too often creating 'markets' that either isolate, or exploit. Almost unnoticed in the public debate is the role of the individual actor who, faced with the paralysis of poorly formulated and dysfunctional public policy is forced to make ad-hoc decisions that may well serve immediate needs, but may not necessarily serve longer-term collective interests – poverty and environmental degradation arising out of limited better-regulated opportunities being one of the more visible outcomes of global planning dystopia.

Given this complexity, it is a mistake to view any of these actors as solely responsible for the growing urgency of the urbanization issues we face. We all share the burden of blame.

We also share the moral obligation to dedicate our human activities not only to Self Interest, but also to the Public Good. Several writers question the very notion of the "public good"

and the presumption that the planners are its natural protectors and champions. In a multi-cultural, post-colonial world, they argue, meta-narratives of "progress" and "community" are, at best, vague and naive. At worst, they can be used to justify or excuse retrogressive and arrogant actions that are carried out in the name of this "public interest".

Winkler has suggested that when planning's mission is defined primarily in terms of balancing self-interest and "social interest" to protect the public good, "planning becomes little more than an instrument of control to guide social, economic and spatial progress, rather than a champion for change" (Winkler 2011: 141). What she is suggesting is that planning should take a more activist stance towards the status quo, rather than simply keeping its excesses in check.

The real problem is that in the traditional formulation of liberalism, "the public good" is defined primarily as the equilibrium point at which overall utility is maximized and the most egregious injuries to individuals are avoided. Truly progressive plans do not imagine the public good in this way. They have in mind a public realm that is enabling and equitable, achieved through better public transportation, connectivity and access. They stand for a cleaner, more abundant environment, ensuring that the poor do not continue to bear the brunt of environmental crisis and providing all people with the ability to cope with decreasing food and resource security.

This document does not shy away from planners responsibility to the urban collective, however heterogeneous and fractured it may be.

Bridging the Divide

It is also our burden, as planners, to overcome our internal dysfunctionality between the two dominant schools of thought - those who engage in and promote public policy and critical thought but refuse to or are unable to address the concrete dimensions of urban issues as these inevitably and unavoidably play themselves out in physical space and those who, either conveniently or justifiably, see public policy as an intrusion into the activities of those who 'make things happen'. In the latter camp, it appears that architects and 'developers' are equally at fault. Very importantly, this issue pervades even our academic institutions where planners are equipped with ever more sophisticated means of waxing poetical about broad spatial policies, without any sustained expectation that these visions can be communicated spatially in a meaningful way. This sets up a dangerous precedent for students, who begin to believe that planners can simply talk about the city, leaving their design and restructuring to urban designers, who are often poorly equipped to tackle metropolitan-scale issues.

Planning now takes place in an increasingly complex institutional environment, amidst shortening cycles of economic decline and recovery in an era of neo-liberal states reluctant to undertake major reconstruction and investment projects. Yet we find that planners rarely produce documents and physical plans that can actually be used to guide urban change and justify this abdication of responsibility by suggesting that these aforementioned complexities prevent them from doing so. The public instead receives vague frameworks, botched spasms of hasty development at the beginning or end of political cycles and, particular from the academic and planning camp, a lot of hand wringing. Thus a healthy appreciation for the complexity of the task quickly becomes inaction and disorganization.

In reality, planning is about managing complexity.

It is no longer acceptable to listen to politicians, theoreticians, academics and compliant public-sector planners shirk away from making bold, clearly communicated action plans that

the public can engage with and debate and which then can be implemented. Nor is it acceptable to see architects continue to produce vain and self-serving plans that reveal their abdication from and lack of interest in the city as a whole. It is no longer acceptable to listen to developers complain about narrow profit margins while they ignore their public obligations to the very 'market' from which they extract handsome profits. There needs to be a plan, which can evolve as public input and specialist studies are factored in, but which actually shows people a vision of their city and how we can get there. Only then can citizens have a greater stake in and sense of responsibility and only then will it be possible to finally direct changes in this neo-liberal, post-modern city that stands for the agenda our elected and tax-supported government puts forward.

Patsy Healey makes the distinction between the "spatial imagination" and the "governance imagination" and argues that in order for planning to have significant effects, its imagination needs "to have the capacity to "travel" from the institutional site of their formation to other institutional arenas without losing their framing power, and to hold that power through considerable time-spans" (2006: 527). Graphic representations of ideas and future scenarios are tremendously powerful in that they enable all people - irrespective of training or education - to see and respond to proposed futures. Convolved and vague policy documents do not have this power.

We are entering the era of Mass Urbanization as impoverished rural job seekers migrate en masse to cities in search of opportunities, and the issue of how to allocate resources more equitably is becoming more pressing every day, especially in the face to(of) growing evidence that the gap between rich and poor is widening. Our cities, moreover, are the sites of enormous resource consumption - in particular, in the form of fossil-fuel based transportation - at a time when the supply of natural resources is dwindling.

In this context, policymakers and politicians call for cities that are more "sustainable", "equitable" and "resilient", yet these values are rarely described in more concrete and implementable terms. What distinguishes the planner from other policy mak-

ers or utopian thinkers is her ability to translate these formless normative ideals into urban form, structure and function, thereby rendering them more immediate and attainable. It does (not) suffice simply to declare that our cities should be more equitable and sustainable: we need to uncover the physical and spatial basis for equity and sustainable as it operates at the neighbourhood, district and metropolitan scales.

It is time for planners to take the lead, and to act more responsibly.

Guiding Principles

"Planning is only defensible as an activity if it is believed that it will deliver a future that is 'better' than that which would result without [it]"

Human development

Planning should (be) concerned with furthering human development. It is, as Dewar and Uytendogaardt put it, "rooted in a basic understanding of human need" (Dewar and Uytendogaardt 1990: 13).

This plan is rooted in a humanist perspective, which sees the planner's "client" as inclusive of all users of the built environment. It is concerned with the protection of individuals as well as the collective, and does not discriminate according to race or class. This concern extends to present as well as future generations, which therefore requires that plans promote social, economic and environmental sustainability.

Planners are concerned with the implications that the structure and performance of settlements have for living conditions, quality of life and wider societal pursuits such as nurturing a rich, civically-minded public realm.

Furthering human development requires more than the stimulation of economic growth and the enrichment of private enterprise. An equitable distribution of wealth and access to the social, cultural and economic opportunities that support individuals and communities is required.

Respect for Environmental Limits

Today we face an environmental crisis of global proportions as climate change; resource scarcity and the loss of critical biodiversity pose grave threats to our economies and way of life.

This plan is based on the belief that planners need to promote new patterns of development that make cities more resource efficient and better able both to regenerate and sustain themselves as well as cope with environmental change and disaster. The status quo of urban development can no longer be sustained, leaving us with no choice but to look for alternative models of building construction, transportation provision, and food production. Marina Alberti argues that planner must now ask move beyond asking "how emergent patterns of human settlements and activities affect ecological processes (to) the question (of) how humans, interacting with their biophysical environment, generate emergent phenomena in urbanizing ecosystems" (2009: 28). Human action, Alberti explains, "create(s) distinctive ecological patterns, processes, disturbances, and subtle effects" and in same way that change drives and shapes human society, so it is "an inherent property of ecological systems" (2009: 1).

Thus far, humans have failed to see that sustainable human development cannot emerge independently of the natural environment. Too often, the protection of the environment is thought to undermine or retard economic growth. In reality, however, the human and physical capital upon which production is based is predicated on natural capital and on the ecosystem services – including water, food, and energy – which nature provides. It is for this reason that the ideal of "development" – which in its broadest concept involves an improvement in "quality of life" via "the promotion of social progress living standards and larger freedom" (Pezzoli 1997: 550) – cannot be said to be prevented by more careful management of the natural environment.

At this moment of environmental crisis, planners must look to the spatial ordering of human society – to the quality and form of the built and rural environment – and consider the

values and relationships which it promotes. As such, planners should engage in imagining different paradigms of human settlement and in doing so, providing viable and realistic alternatives to the status quo.



3 THE URBAN PROBLEM IN CAPE TOWN

The following section outlines the case for radical intervention into the urban environment in Cape Town.

Beauty and Neglect

One of Cape Town's greatest economic and cultural assets is undoubtedly its spectacular natural environment. Indeed its status as a world-renowned tourism destination and its enduring appeal amongst foreigners and South Africans owes to its scenic beauty and the quality of its biodiversity and natural habitats. The Cape Floristic Region (of which Cape town is a part) is regarded as "a global urban biodiversity hot spot without parallel" (City of Cape Town 2008: 15) In a country with limited arable land, which is also vulnerable to food insecurity as fuel prices rise, the amount of agricultural land within the city boundaries and immediately beyond it is also a critically important asset.

Despite the uniqueness of this natural environment and the obvious economic and cultural benefits it produces, these natural assets have been allowed to deteriorate. Agricultural land is being rapidly consumed and air and water quality is steadily declining. The city's rivers are polluted and ungainly. Most alarmingly, the city's world-renowned biodiversity assets are threatened: nearly 60% of its original natural vegetation has been lost and the on-going expansion of the urban footprint poses further loss (City of Cape Town 2008: 18). Patches of biodiversity that do remain are often fragmented. Moreover, access to public open space – in particular, nature reserves – is highly inequitable as many in the city "have no access to a nature reserve within a radius of 2 km" and it is often the poorest who have the least access (City of Cape Town 2008: 53).

Disturbingly, the protection of the city's natural assets is often seen as standing in the way of social and economic redistribution. In July of 2013, the City of Cape Town announced that it would convert a substantial portion of the Philippi Horticultural Area to public housing. Its message was clear: the housing crisis facing the city, and the political ramifications it will have if left unattended to, are more pressing than looming food insecurity and protection of the city's environmental assets. What the city failed to appreciate is that disregarding environmental imperatives will only hurt the poor, who will bear the brunt of higher food prices and unending monotony

of yet more development.

Considered holistically, the environment comprises urban as well as natural elements. Unlike the majority of South African cities, Cape Town is blessed with a more intact historic urban fabric of pedestrian orientated streets and vernacular architecture. Admittedly, the city's historic, urbane elements occupy only a minute portion of the city as a whole; however the experience of these elements – from the cottages of Newlands and Wynberg to the bustling city streets of the CBD – defines Cape Town's uniqueness in the South African urban context.

These environments are important not only from a cultural and historical perspective, but because (they) consistently nurture the city's most diverse and interesting urban encounters. It is in the historic downtown and in the industrial district of Woodstock that the broadest cross-section of Capetonians meet.

In the post-World War II period, these historic urban vernacular and forms were largely been abandoned, with ugly, sterile suburban development. Today, the most prominent new developments are – somewhat ironically, given their promise of bringing "world class" environments to sleepy Cape Town – literal cul-de-sacs that turn their backs on the city beyond their gates. Superficially, developments like the V&A Waterfront and Century City have added urban amenities but have not made meaningful contributions to the enduring "bone structure" of the city.

Cape Town is not the only city whose urban environment is declining in qualitative terms. Across the world, developers and architects are building places and urban forms that are not worth caring about. Planners enable the steady decline in urban quality by failing to work with urban designers to implement urban design guidelines and by allowing rapidly developed, large lot speculative development to take place on the fringe of cities.

Plenty and Poor

In economic terms, Cape Town is at once highly prosperous and gravely impoverished. It makes the second-largest contribution to South Africa's economic output and in recent years, its economy has grown at a faster rate than other South African cities. Yet despite these developments, the majority of Capetonians live in poverty, with limited prospects of improving their situation. A recent State of Cape Town report describes the grim prospects facing them, which include "high levels of unemployment, high drug use and crime incidence, uneven access to social and municipal services, and limited uptake of (advanced) higher education, despite proximity to four higher education institutions in the area" (City of Cape Town 2010: 10).

Income inequality and employment remains defined by race. About 65% of young African adults and about 44% of coloured young adults are unemployed compared to just 5% of white young adults (City of Cape Town 2010: 10). The distribution of income mirrors this distribution, making Cape Town – and all other South African cities – one of the most unequal cities in the world (UN-HABITAT 2010).

Such a high degree of income inequality threatens the city's socio-political viability and the very possibility of positive, progressive planning. Each year, service delivery protests in the city's poorest areas grow more insistent and destabilizing as frustration over the lack of transformation in apartheid's formal Black Group Areas reaches a fever pitch. These tensions have fuelled a short-termist approach to city management whereby housing and services are provided hastily in response to crises and local government elections with scant regard to the city's planning frameworks. Planning has in the process become a clumsy medium for the redistribution that has failed to materialize in the post-apartheid period. Indeed, it is now so dominated by the political imperative of housing provision – the most expedient form of redistribution – that the city's agriculture lung, the Phillipi Horticultural Area is being developed with no regard for environmental consideration and in flagrant disregard of the Spatial Development Frame-

work that specifically protects this area.

Some would argue, however, that recent developments in the city seem to bode well for its future: a new Integrated Rapid Transit bus system was introduced; the city centre is being rejuvenated and the city's economy is growing at a faster rate than other metro areas in South Africa. However a closer look at these initiatives reveals the persistent lopsidedness of spatial policy in the city. The IRT system is only in service within the city centre itself and some have argued that the area-based management regime within the city centre, of which the IRT system is a product, has undermined the precarious livelihoods of informal traders and the homeless and made no attempt to make revitalization efforts more inclusionary (Miraftab 2007). Moreover, the aforementioned economic growth in the city has taken place primarily in high skill sectors, which offer relatively little in the way of broad-based employment generation or poverty reduction.

Cape Town thus exhibits many of the characteristics which defined other cities of the "Global South". It has high levels of poverty, informal settlement and land invasion and widespread participation in the informal economy. Those living in the city's informal settlements share a burden common in the South – to live without formal tenure in a liminal legal and policy space which many planners and city officials want to eradicate. Yet for some, Cape Town is a "world class destination" with infrastructure and services more akin to those in the cities of the Global North than those of the Global South. But this narrative of natural beauty, nightlife and easy lifestyles is only a small part of the Cape Town story. When we plan for Cape Town, we cannot plan only for this rarefied vision of the city. Seeing Cape Town "from the South", as a mélange of informality, survivalist strategies, "conflicting rationalities" between the poor and the managerialist state and economic elite is vital.

Shared Global Issues

Cities across the world – in both the developed and developing world – face a number of common challenges. These include: the pressing need to colocate jobs and housing, the environmental costs of fossil-fuel dependence, vulnerability to climate change and the task of retrofitting redundant industrial spaces and modernism's planning disasters. While the institutional and political contexts within them may differ widely, many of the substantive issues are strikingly similar. Acknowledging Cape Town's involvement in a broader urban agenda is important, and does not imply that policies from other cities facing similar issues should be mindlessly transplanted into the Cape Town context.

The recent attempt to introduce Bus Rapid Transit to the city was no doubt inspired by the success of similar technology in South American cities like Curitiba and Medellín. The MyCiti bus service that has resulted has, however, been a pale imitation of these other systems, and has contributed very little to the overall transportation situation in Cape Town. The lesson that the MyCiti fiasco should teach us is not that Cape Town should not tackle the transportation crisis aggressively by investing in a metropolitan-wide system of cleaner, and more cost-effective buses. Instead, it reveals the absolute failure of planners and politicians to formulate a convincing strategy which a BRT system would anchor.

Gaining deep insight into how we can tackle shared urban problems is not easy and demands a frank assessment of what aspects of the project or initiative are viable in the local context and what changes are required to ameliorate incompatibilities. In the case of BRT provision, Cape Town must approach this process of transportation change from the perspective of a city with a militant but ultimately insecure group of taxi drivers and operators determined to block services that encroached onto their routes. In that regard, Cape Town indeed shares more in common with other cities of the Global South than with a city like Portland, which also used transportation to structure urban growth.

There is, however, a real danger in secluding Cape Town within an exclusive “Global South” agenda. The presumed uniqueness of the South African experience has provided an easy excuse for the lack of urban transformation and clear planning on the part of professional and academics. While we wait for a “new body of knowledge” for the South Africa and “Southern” context to emerge, our cities continue to mutate and evolve, often in ways that are indeed exclusive and anti-poor.

We must therefore balance a commitment to rising above the status quo of planning and urban management, learning as much as we can from international debates and programmes, with sensitivity to exigencies on the ground in a city that is diverse and highly unequal.



Cape Town: A Photo Essay

In Cape Town, “there is no centre, no common core, to which we all belong. And this, too, becomes a kind of exclusion. Anybody who doubts this should take a walk through the centre of town. The few blocks around the Castle are where the city first sprang into life and they are still the truest indicator of what it means to live here. The station or the taxi rank the Golden Acre and the Grand Parade, Long Street and the Company Gardens – these points stake out one of very few, relatively tiny areas where all the various populations of Cape Town mix together, rub up against each other, before retreating again to their far-flung neighbourhoods. It’s no accident that a part of the city where people, as set, haven’t set up permanent home should be a showcase for all of Cape Town’s different communities. There are in transit, for work or socializing, only passing through”

Damon Galgut



6. View south towards Constantia and Tokai



7. Golf estate in Tokai



The Southern Suburbs

Rich recreational opportunities, scenic drives, tree-lined streets. Development is framed by Table Mountain, against which it is nestled. This is where the city's middle and upper-middle classes live. Residential densities are below those required to support public transportation.



The City Bowl

More dynamic than the Southern Suburbs, and home to a more diverse population that is younger, and more international. The area features some of Cape Town's most iconic urban places, including Green Market Square (10), the V&A waterfront, and the quaint back streets of the CBD (9). In terms of urban planning and thinking, this is where the conflicted impulses of Cape Town's urban agenda becomes most clear. Public private partnerships and a population of young, urbane professionals strive to add urban amenities inspired by European and North American cities, constructing "parklets" for outdoor café seating and a hugely expensive Bus Rapid Transit system. The design and provision of these amenities is, however, essentially disconnected from the problems of the wider metropolitan area, and are themselves hamstrung by their very modesty and isolation from more robust and significant urban restructuring.



8. The V&A Waterfront



9. Bree Street Parklet



10. Greenmarket Square



11. View towards Table Mountain from the Cape Flats



The Cape Flats

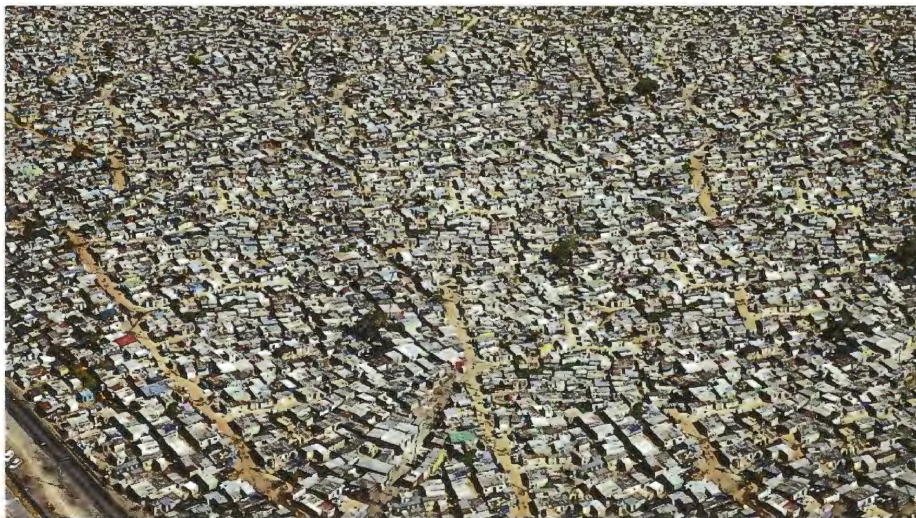
Isolated from economic opportunity, windy and impoverished. Neighbourhoods have been planned according to principles of separation, fragmentation and physical insularity. The quality of these environments is generally poor: streets are windy, public spaces are sterile and activity is diffused across space. The area has both formal as well as informal development.



12. Mannenberg public housing project



14. Bonteheuwel



13. Khayelitsha



15. Metrorail Train Platform

Evolution of Cape Town

Physical Setting

Cape Town's physical setting is renowned for its natural beauty and ecological richness.

Historically, settlement responded to agricultural and scenic assets. The historic centre is nestled between the world-famous Table Mountain and the Table Bay Harbour, framed by Devil's Peak and Lion's Head on either side, offering a post-card-perfect vision. To the north and south of this "city bowl", the city's most desirable suburbs areas are tucked alongside the piedmont slopes of mountain range extend southward along the Cape Peninsula and on the rolling hills of the Durbanville in the north, where urban development fades into rich agricultural areas. The sandy, infertile plains of the Cape Flats were deemed less promising for development, and only became inhabited as a Black Group Area during apartheid. To this day, the majority of the poor live in this area – now referred to as the "Metro Southeast" – while the wealthy and middle classes have maintained their stake of the city's most fertile and comfortable areas.

Geographic features have structured to urban growth. The coastline, an enormous recreational and strategic asset, limited outwards expansion from the historic core and in conjunction with the serpentine mountain range, has resulted in the city taken on the form of a partial radial. The Durbanville hills, and the value of agricultural land there, also placed limits on growth eastward, making expansion up the Atlantic coastline the most viable option for white middle classes uninterested in enduring the wind, sand and flood vulnerability of the Cape Flats. In recent years, rapid growth up the coastline has taken place.

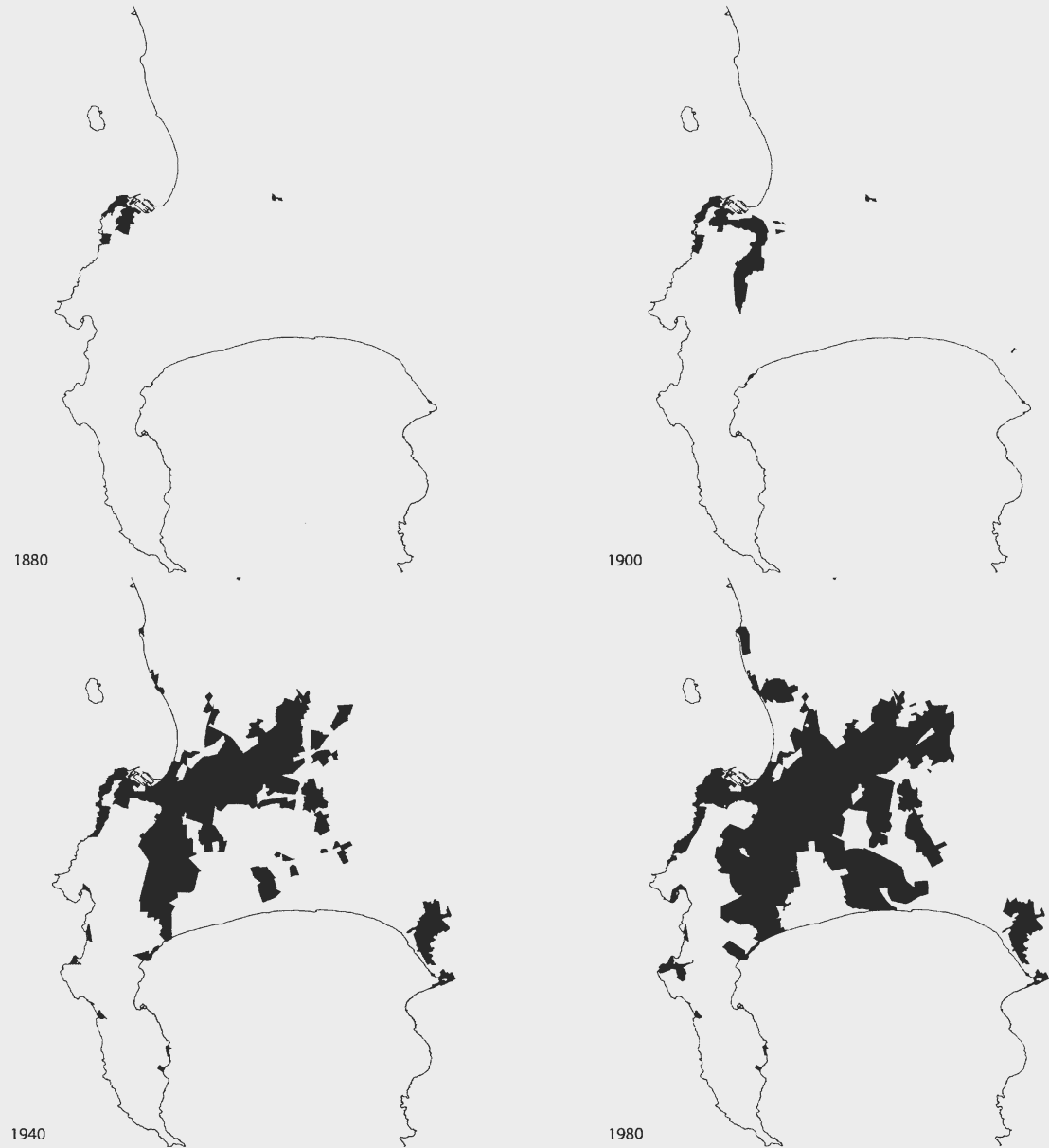


Figure 4: Physical Setting

Urban Growth

Over the last 30 years, the physical footprint of the city has increased by more than 200%, while the population has only increased by 125% (Turok 2010). This amounts to an annual growth rate of 650 hectares which, if unabated, will “consume most of the land suited to urban development in the next 50 to 60 years”, in turn threatening agricultural and biodiversity resources (City of Cape Town 2012: 22). Another consequence of low density, speculative sprawl has been a decline in population density from 52 to 39 persons per hectare over the same period.

The City has established an urban edge in order to limit sprawl, encourage densification and protect agricultural and environmentally sensitive land.



Planning Tendencies

The evolution of Cape Town was influenced by a number of tendencies within planning and city management, many of which persist to this day. They are:

- Control is exerted over small-scale urban activity and development through land use regulations, while at the same time little control over the development of the city as a whole is exercised (Dewar and Uytendogaardt 1990: 69).
- The prerogative of maintaining ever more sealed off spaces of consumption and privacy takes precedence over the provision of public space. City-building thus becomes a process of large-scale housing development.
- Investment in urban mobility comes in the form of increased road capacity and complex road interchanges, while public transportation is largely neglected. Private car-based mobility is accommodated before non-motorized and public transportation.
- City planning under apartheid was obliged to quarter the city into Group Areas defined by race. Areas for black and coloured people were poorly serviced and environmentally poor.

Urban Patterns

A number of structural features have resulted from the approach to planning described above.

1. The first is that of low density sprawl.

Prior to the Second World War, population density in Cape Town was similar to that of other cities internationally. In the post-war period, however, Cape Town and other South African cities “experienced enormous low density spatial expansion” (Smit and Mabin 1997: 207). This was fuelled by a dramatic uptake of the private automobile, and was facilitated by spatial planning through massive investment in road network expansion connecting new sub-divisions to the historic city.

2. The second is an extremely high degree of separation of nearly all elements in the urban system – between land uses, income groups, races, and transportation modes.

At the risk of over-simplification, it seems that the underlying motive for separation in general was maintaining control and sterilizing conflict at all levels of human organization. Children were to be shielded from the dangers of high volume roads, industry’s noise and pollution was to be kept away from peoples’ homes, and would-be dissidents and collaborators were to be isolated from one another, thereby neutralize social and political mobilization.

This approach was not unique to South African planning. Indeed, for much of “high apartheid” spatial planning, architectural modernism dominated international planning practice. Modernism was concerned with maintaining aesthetic and functional order. It valorised the elegance and freedom of automobile and the expressway and decried the disorder and conflict of pedestrian-filled city streets.

The spatial manifestation of these preoccupations was that of the introverted neighbourhood unit, comprised of free-standing buildings, predominantly residential uses (except for a formally planned “town centre” embedded in the centre

development), and furnished with a limited number of road connections to surrounding areas, which for the most part connected to high speed expressways.

In poor areas, these isolated pods of housing became poverty traps, especially for those who could not afford motorized transportation (Pinnock in James and Simon 1989). The poor were thus “imprisoned by their poverty in environments which were both isolated and hostile to the only form of transport they had – walking” (Pinnock in James and Simon 1989).

3. The third characteristic is that of fragmentation of the urban fabric. The neighbourhood units discussed above were structurally introverted, with limited access points to surrounding areas. Each unit was surrounded by interstitial space left for road reserves and other “buffer areas” between Group Areas.

The urban fabric was also fragmented by simplification of the movement hierarchy, which resulted in the proliferation of high-speed limited access expressways and freeways accessible to these housing pods at a limited number of points in the system.

Phases of Growth

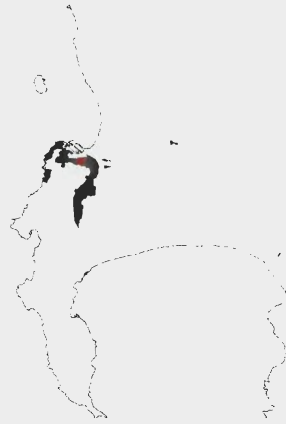
Cape Town's growth can be divided into three time periods during which the quality and quantity of growth was influenced by advances in transportation technology, socio-political ideologies and tendencies within urban planning at that time.

Early Period: Mixed Use, Integrated Linear and Nodal Settlement

Development before 1920 took the form of “evolutionary developed areas” which Dewar et al. identify as having two characteristics (1975: 17).

The first is that they were “ecological”, insofar as they were not “not entirely predetermined” and “grew over a long period of time through a process of action and reaction” (Dewar et al. 1975: 17). This historic development reflected scenic and natural endowments and crucially, tended to be “relate to and controlled by a major structuring element” (Dewar et al. 1975: 17). For the most part, this structuring element was transportation infrastructure.

The city expanded southwards along the suburban tram line, and eastwards along Voortrekker Road towards areas that offered the greatest scenic beauty and agricultural potential. These four main linear radials extended outwards from the city centre, creating a radial pattern of development. Main Road connected the City Centre to the Simonstown in the south, Voortrekker connected it to Paarl in the east, Koeberg Road connected it to Saldanha in the north, and the Somerset Road-Sea Point Main Road wrapped along the coast, connecting it to the beach communities on the Atlantic seaboard. In general, the areas which developed adjacent to these routes were mixed use and very often mixed income (but for the most part racially segregated, save for certain enclaves in the Salt River/Woodstock/Observatory area) (Dewar et al. 1975: 19). Main and Voortrekker Roads were nourished by its close

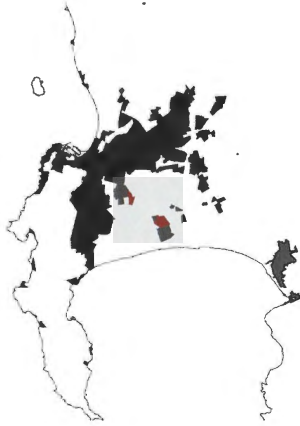


16. Integrated mixed-use development in Salt River

relationship to train lines running in parallel to them. The interplay between road and rail access produced activity spin that had both nodal and linear aspects. Development concentrated around those points where rail stations were closest to the roads, creating mixed use nodes which persist to this day, including: Rondebosch, Wynberg and Salt River. To this day, both Main Road and Voortrekker roads are job-rich, complex and pedestrian friendly corridors.

The sandy, infertile plains in the Southeast of the city were deemed less promising for development, and were only developed some time later to accommodate non-white Capetonians according to residential segregation laws under apartheid. The area is “a low lying, flat plain, covered in wind-borne sand-deposits” with an extremely high water table that renders it vulnerable to flooding (Dewar et al. 1975: 21). Thus not only is more recent peripheral development more remote and mono-functional than previous forms of development, they have none of the natural endowments that these areas have. Thus, Dewar et al. point out, development in these relatively more hostile conditions have to overcome environmental disadvantages through good design, so that residents are provided with protection from the weather, greater diversity of typologies and uses, and a sense of place. Unfortunately, to this day

development in these areas has not met any of these requirements.



Post-War: Fragmented, Nodal Sprawl

The second type of development identified by Dewar et al. was that of “planned development” which they argue was a response to three forces (1975: 19). These were: rapid population growth, (especially amongst the poor); the ubiquitous popularity of private automobile use; and “the emergence of planning as a profession” (1975: 19, 21).

During this period, the private automobile rose to prominence, becoming more affordable to the middle classes and offering an unprecedented level of freedom and comfort hitherto enjoyed only by the very wealthy. Whereas in previous eras, transportation technology had placed distinct limits on the separation of land uses, the motor car ushered in new urban paradigm in which housing could be spatially de-linked from economic and civic activities. Urban dwellers were no longer compelled to live close to employment centres and could instead commute from nearby suburbs that promised more space, opportunity for recreation, and seclusion from an increasingly volatile public realm.

“Planned development” was essentially the rapid, speculative development of new housing estates and suburbs spreading outwards from the historic suburbs developed prior to the war. These developments were preceded by a total vision for

development, which was then completed at once, rather than incremental, as was the case in early periods.

Another variant of this planned development was the laying out of non-white township areas. These suburbs had less amenities than the white suburbs built at this time, but its essential typology – the detached single family home – was the same.



Contemporary Period

The most prominent public response to urban growth in the post-apartheid period has been the substantial, but still inadequate, delivery of subsidized housing. The City now delivers approximately 8 300 units per annum, but acknowledges that “this is below the delivery rate required to keep up with new household formation and in-migration, let alone to catch up on the housing backlog currently estimated at approximately 380 000 units” (City of Cape Town 2012: 19). Crisis-driven public housing provision has resulted in an even greater fragmentation of the urban fabric, and has been critiqued for its financial unsustainability, both for the state as well as the people who occupy these homes. Housing provision, moreover, has been concentrated in peripheral lower income areas, and have not broken from the sterile, mono-functional model of apartheid-era housing (City of Cape Town 2012: 20).

In terms of non-residential development, the city has been undergoing a process of selective de-concentration, whereby firms relocate to peripheral locations where land, access to transport and other amenities are cheaper and more readily available.

The overriding tendency now is for unplanned and haphazard growth, both informal and formal.

Spatial Structure

Figure 5 summarizes how these broad spatial patterns have structured the city.

The city's historic radials, Main and Voortrekker Road, are activity corridors with linear as well as nodal elements where development is clustered around rail stations. Most of the city's economic activity and employment is generated along these corridors and in the city centre.

The city grew most rapidly during a period of increasingly strict land use planning aiming to separate out land uses. Thus, the historic areas are more mixed use in character, while speculative suburban development outwards from the centre became progressively less so. Medium and upper income areas have tended to be associated with the city's primary jobs corridors, with easy access to mixed use and commercial nodes. The city's poor areas are overwhelming residential, and located at the outer "circumference" of the radials.

The city is also replete with scattered, but semi-centralized industrial parks. These areas, while offering employment opportunities, are designed in such a way that they are completely isolated from surrounding areas and cannot viably accommodate a mix of uses.

Road connections in the city that developed in the post-war period and after are concerned primarily with car-based mobility. They take the form of limited access expressways and freeways that act as barriers to access and do not host adjacent uses in the same way that the Main and Voortrekker corridors do. This exacerbates the psychological and functional isolation of the city's poorer areas, which exist as pockets of housing in a sea of complex interchanges and high-speed traffic.



Figure 5: Metropolitan Spatial Structure

Spatial Consequences

Sprawl

In recent years, the city has been undergoing a process of selective de-concentration, whereby firms relocate to peripheral locations where land, access to transport and other amenities are cheaper and more readily available. This tendency poses the following threats to the economic, environmental and social sustainability of the City:

Peripheral developments, and the higher transportation and infrastructure costs associated with them, exacerbate long-term environmental damage, raise carbon emissions and energy consumption and as a result, increase the city's vulnerability to price rises and shortages of non-renewable resources. Scattered development also undermines agglomeration economies and the potential for inter-firm knowledge sharing, communication and an entrepreneurial and economic sense of place.

Separation of Land Uses

The spatial mismatch between employment and labour exacerbates unemployment and increases the already high transportation costs that burden all workers in the City.

The traditional "evolutionary developed areas" discussed previously "have much easier access to the major employment, commercial, cultural and social opportunities of the metropolitan area" than more recent peripheral planned developments do.

Unsustainable Consumption

The city's consumption patterns are unsustainable. Cape Town's ecological footprint, based on the relationship between the city's inputs and outputs, has been estimated to be 4.28

hectares per capita. If everyone in the world lived up to this average rate of consumption, 2.3 planets would be required to meet their needs. This indicates that the city's metabolism is highly inefficient.

Consumption, moreover, is highly unequal, with high income households burdening the system with more than their fair share of waste. It has been estimated that high-income suburbs generate as much as two times more waste per person than low-income suburbs do. At present, only 10% of water treated at the City's wastewater treatment works is re-used. This is despite the fact that water demand is growing at a 3% per year, with supply expected to be exhausted by 2021.

An Inefficient and Inequitable Movement System

Traffic congestion in the city is severe. Commuting involves long distance trips, incurring costs and consuming natural resources, and considerable outlays of commuter time, which in turn has a negative impact on quality of life in the city. The impact of this inefficiency on the lives and livelihoods of the poor is savage. Rising early in the morning, returning late in the evening, or else foregoing trips to areas of economic and social opportunity altogether, the poor are further marginalized. They are, as the 2000 Draft Municipal SDF put it, "virtually trapped where they live" living lives that are "appallingly inconvenient and expensive" (City of Cape Town 1999: 8).

The movement system's inefficiency stems from the following:

- The city's radial structure. Major transportation routes emanate from the CBD and there are limited north-south and east-west rail and road connections. As a result, commuters often have to make several changes to reach their destination, often commuting towards the city centre only to switch to another line going outwards from the city centre. Congestion is most severe around the "wedge" between Devil's Peak and the harbour.
- Discontinuous urban fabric. The city's road network is

ridden with discontinuities and unwieldy interchanges that act as barriers to access, especially for pedestrians. Residential areas tend to be introverted, with limited external connections.

- Redundancy of transportation modes. The consequence of uncoordinated and neglected public transportation is that private actors have stepped in to provide this service to commuters. The system thus lacks coordination, with several modes serving the same routes, most of which are destination-based, and not designed to structure urban space and facilitate real decentralization of economic activity.

An Impoverished Public Realm

As in other South African cities, public space in Cape Town has not been viewed as part of the city's essential public infrastructure.

The provision of quality public space is especially lacking in newly built speculative developments, where developers cut corners so as to maximize profit. In general, open space has become increasingly privatized, either through anti-poor urban management regimes (as has been the case in the City Centre) or other attempts to restrict access. Increased fear of crime has led to the construction of security walls, which in turn diminishes the public realm, if even simply visually, as the individuals literally shut out the world beyond their property lines.

The public space situation is redeemed by the City's rich natural assets, however even those, owing to the cost and inconvenience of public transportation, are not accessible to all. The city has several prominent river systems which could function as recreational areas, however many of these are polluted or otherwise inaccessible.

Costs

Growing Inequality

It is the urban poor who bear the brunt of these consequences. The poor live in the city's least served and economically isolated areas, and since the city is so sprawling, they must travel long distances - often in peak hour traffic - to places of employment. Transportation costs thus form a substantial portion of a poor household's income and make it harder for those without employment to seek out work in job-rich areas. This, in turn, increases their economic and social isolation.

High Infrastructural Costs

The city's infrastructural and resource capacities are also taking strain. At the current rate of consumption, the city's water supply will be exhausted by 2025 and the solid waste generated will outstrip landfill capacities by 2025 even if present plans for expansion are carried through. A push by developers to expand bulk infrastructure up the West Coast corridor threatens to divert a substantial amount of state resources, which begs the question of whether capacity does in fact exist, but is simply being allocated unfairly and for the benefit of speculative development.

If proactive steps are not taken to address looming incapacity to process and treat waste and provide basic services "a severe blockage of future economic growth is inevitable, with negative implications for the poor who will suffer the consequences of unemployment" (City of Cape Town 2012). Crucially, expanding the network into new areas will take a toll on the maintenance of established networks. In light of this sobering reality, it seems clear that the city simply cannot afford to service development at or beyond the urban edge.

Ultimately, it is local government and tax payers, and not private developers, who bear the costs of infrastructure construction and maintenance and into the extension of infrastructure

into as-yet-undeveloped areas.

Vulnerability to Environmental and Resource Shocks

The Cape Town urban system is highly dependent on fossil fuels. Any rise in international oil prices has immediate, negative consequences for the local economy. Roughly half of the city's energy is derived from oil, with another 30% of energy sourced from coal, nuclear, hydro- and solar power. The graphs to the right indicate the extent to which the city's reliance on resource-intensive private transportation is directly contributing to its carbon missions.

As the world approaches peak oil, the transportation of all goods, including food, will become more costly. At the same time, productive agricultural land is being converted for peripheral development. These two trends threaten food security in the city.

As a coastal city, Cape Town is vulnerable to the impact of sea level rise as areas throughout the city become increasingly effected by storm surges and flooding. If present trends continue, agriculture activities will be adversely affected and fires will become more frequent.

Despite facing looming water shortages, and importing its water from further and further afield, Cape Town is in fact water-rich. Table Bay was originally settled to serve as a refuelling station and its water supplies came from natural springs flowing from Table Mountain. In the 20th century, these channels - which once structured urban space in the City Centre - were canalized. The water they offer is not utilized for either recreation or consumption. Clearly, there is a pressing need to find ways of satisfying urban water demands using sustainable resources within the city itself.

Conclusion: The Need to Think Differently About the Problem

This chapter has made the case for immediate, bold intervention into Cape Town's urban environment. Yet while the city is clearly unsustainable and inefficient, in economic, social and environmental terms, it is not clear how planners and policy-makers can remedy this situation.

Perhaps the first step is to state categorically that the status quo approach to planning is failing. Cape Town is not becoming more equitable or sustainable and, if anything, recent developments and initiatives allowed or initiated by planners have made the situation even worse.

The conclusion we must draw from this sad reality is that firstly, we need to think differently about the problem.

A Conceptual Approach to Urban Restructuring

The characteristics of urban form in South African cities are as follows:

- Insularity and introversion of urban form
- Unequal distribution of all forms of urban opportunity
- Haphazard delivery of low quality public spaces and institutions disconnected from one another
- A lack of clear hierarchy of transportation modes, which leads to redundancy

A new model of urban structure is required which inverts these characteristics, producing a more equitable, permeable and legible “accessibility surface” of opportunity.

The following diagrams illustrate this new way of thinking. They are based on the following assumptions about urban performance:

- Accessibility should be defined in terms of walking distance, with local, community and/or daily facilities and services located within a 5 to 10 minute walking distance. This demands what Dewar and Uytendogaardt term an “areal” approach – where “central points (are) spread relatively evenly across the urban surface” (City of Cape Town 2000: 21).
- Equity is achieved when public investment is made at points of high accessibility in the system. Distribution is not uniform, but arranged according to a tiered hierarchy defining low level services (within a local neighbourhood), second tier services (within a district) and highest order services that serve the metropolitan area.

The core concept can be explained as a logical sequence of steps:

The metropolitan Cape Town is divided into a number of 2 by 2 kilometre zones, shown in Figure 6.

Figure 7 considers a single zone in more detail. Each zone is notionally defined by limited access arterials and freeways providing high volume mobility across the metropolitan area. Rail or high volume BRT trunk lines serve these routes.

In a decentralized system, mobility – and the ability to change direction – is paramount. Points of intersection between these trunk lines should be organized as transportation interchanges, offering commuters connection from one mode or route to another. This establishes an “access to access” rather than “point to point” mobility network. These transportation interchanges should also be the sites of focused public investment in public amenity and services, given their high degree of accessibility.

Equitable access is defined in terms of walking distance. At the corners of the zone in Figure 7, 30 minute walking radii are shown, along with 10 minute walking radii (800 meters). Clearly, the provision of only four transportation and public service points is inadequate to serve the entire zone while ensuring an acceptable level of convenience for users.

In Figure 8, additional centres are added to the system, which brings access within a 30 minute walk to a greater proportion of the zone. Still, it is clear that providing transportation trunk lines at 2 kilometre intervals is adequate.

In Figure 9, mid-zone transit links are added, making the additional set of centres introduced in Figure 3 viable. Centres along the major trunk links are secondary transit points, while the new interchange in the middle of the zone – at the intersection of the new mid-block transit lines – is actually a first tier centre, given its centrality.

A ten-minute walking distance around each of these cen-

tres is shown. While the absolute maximum for acceptable walking distance has been set at 30 minutes, it seems that for daily activities, this distance is still too far. Crucially, even the mid-block transit made thus far do not ensure that a centre or transportation point falls within a ten-minute walk in every part of the zone.

In Figure 10, the zone is quartered further, creating four 1 by 1 kilometre sub-zones, each of which can be further divided into 50 hectare areas.

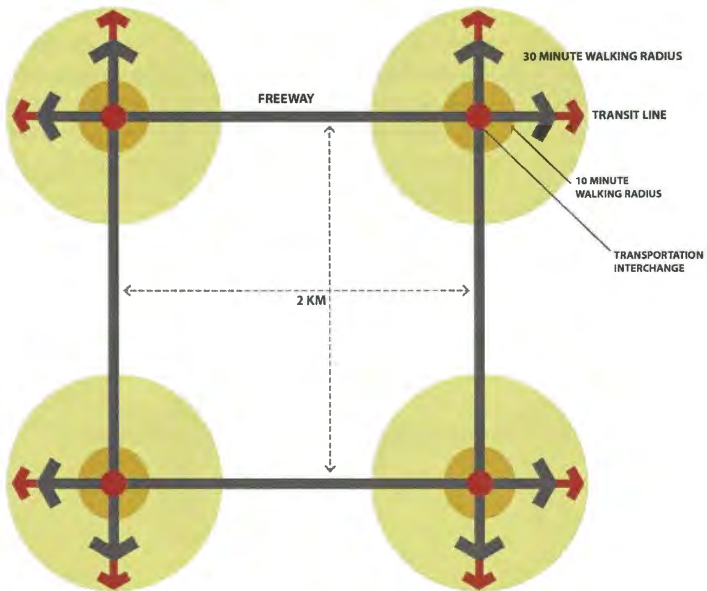


Figure 7

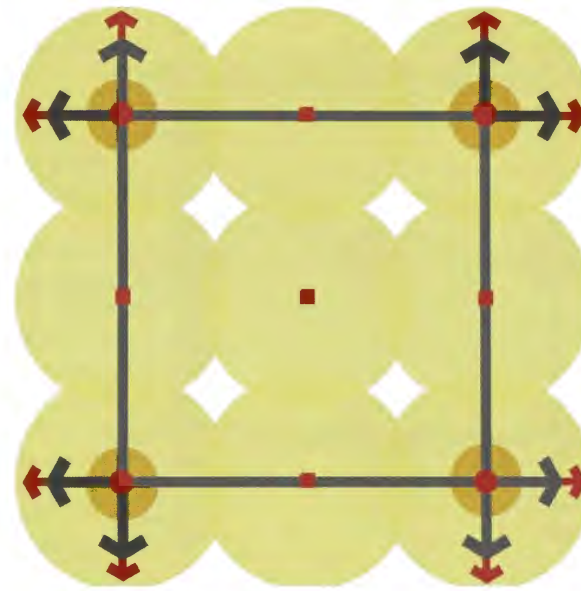


Figure 8

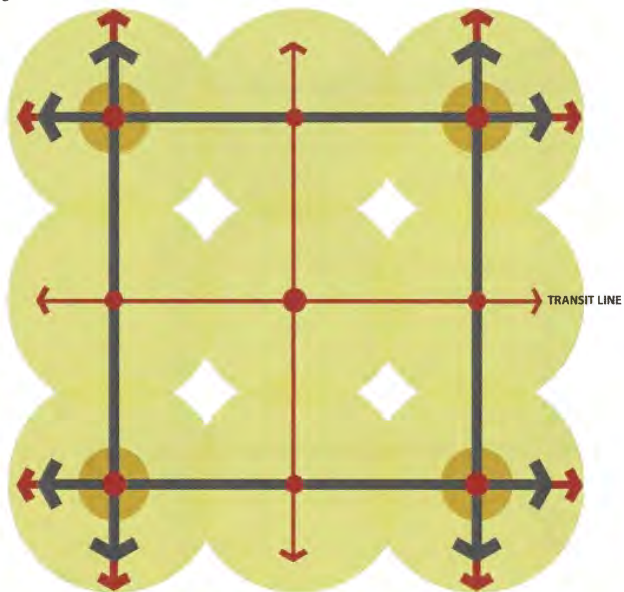


Figure 9

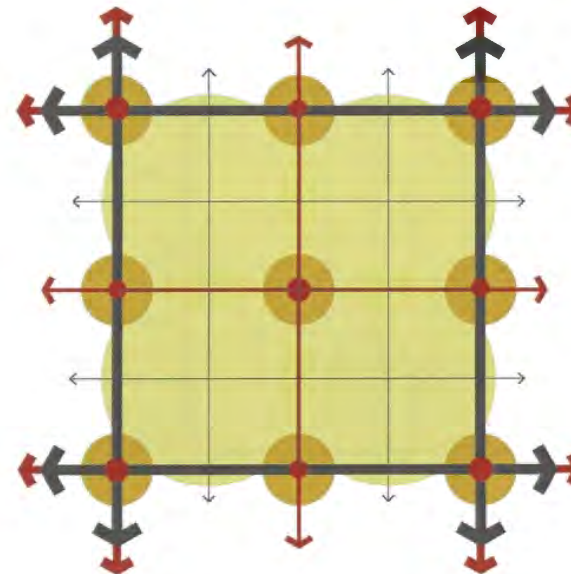


Figure 10

Figure 11 shows how this 1 by 1 kilometre sub-zone can be comprised of a number of neighbourhood centres or points of transportation access. This ensures that the entirety of the sub-zone is within a ten minute walking distance of either these local centres/points or one of the major transit lines. These local centres are stop-off points for local buses, locations for primary schools, corner grocery shops and any other service that people need to be close to on a daily basis.

Figure 12 also shows how the five minute walking distance around major transportation interchanges become clusters of high-density residential and commercial activity. This is a model that provides city dwellers with a wide range of choice. The inner pockets of the zone are more private, achieving only the base level of service. For those seeking greater accessibility and exposure, clustered development around secondary and primary centres will be preferable. The argument here is that cities should have both pockets of privacy and quiet as well as dense, buzzing precincts. Choice should therefore be a hallmark of a more democratic and diverse urban system.

In reality, points of concentrated activity (nodes) occur all along the movement route (corridor). Where two major corridors meet, however, the intersection point will be provided with greater opportunities and services because it is best positioned to serve a wide catchment area (district).

Figure 12 shows the system's linear as well as nodal elements. Corridors are not simply strip development, but could be as wide as several secondary blocks to either side of the transportation route.

Figure 13 takes the model further, showing the urban street network comprised of a linear corridor and its associated nodes, as well as a 1 by 1 kilometre sub-zone which in itself has layers of accessibility and degrees of concentration, from local bus stop off points to village centres in the centre of the sub-zone.

Figure 14 puts the theoretical model in perspective, applying the historic Cape Town block to its 1 by one kilometre sub-

units and showing the site area so as to establish its scale and therefore how the model can later be applied to the site. The model suggests that the site area is effectively comprised of three main secondary nodes. The actual concept guiding re-development of the site will be explored more rigorously in later chapters, but it is important at this stage to begin forging a link between the theoretical model and the formulation of the framework.

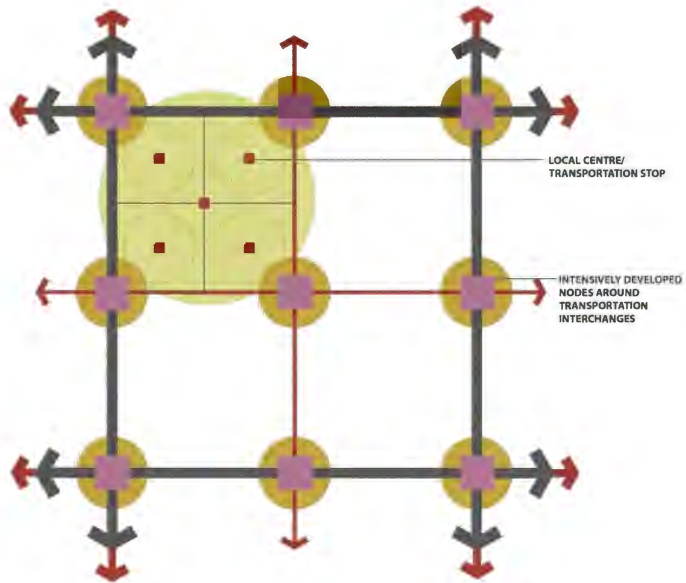


Figure 11

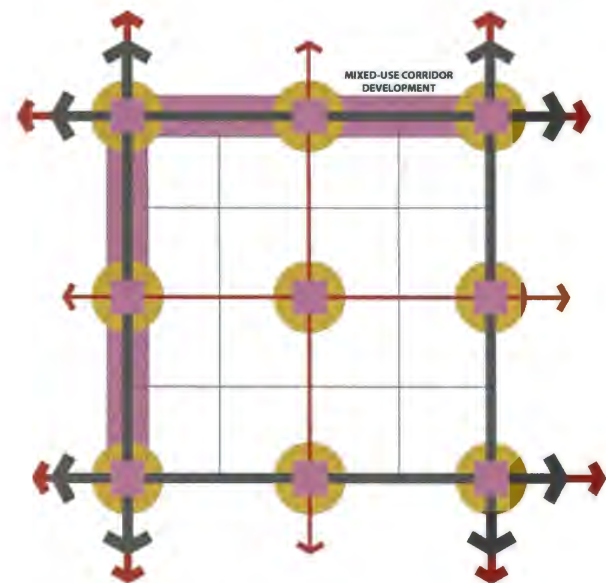


Figure 12

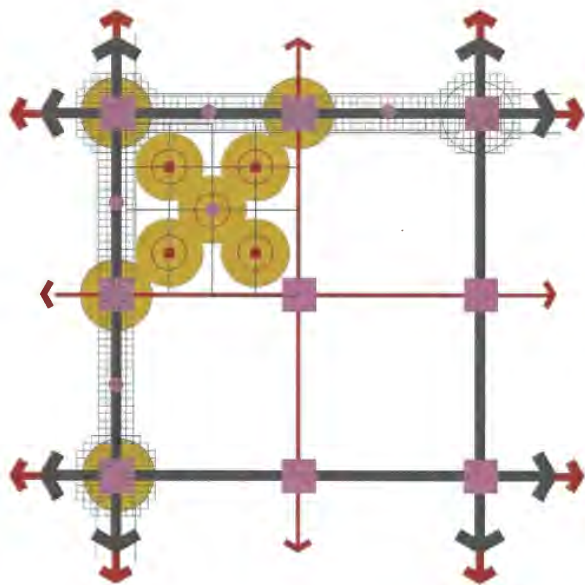


Figure 13

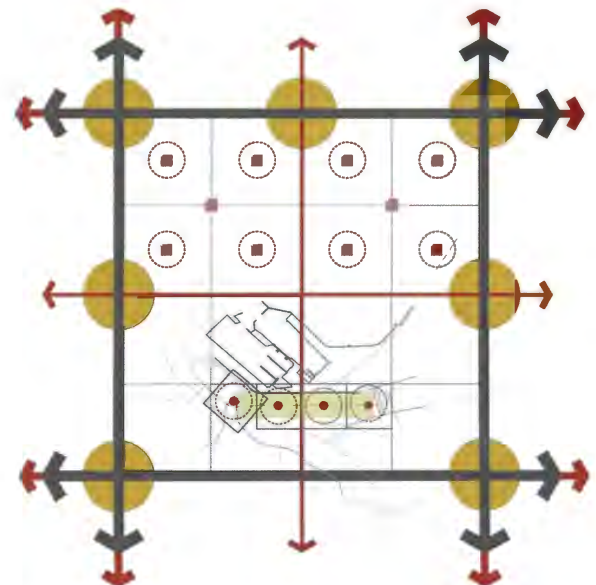


Figure 14



4 THE NATURE OF PLAN

This document is based on the belief that the situation described in the preceding chapter is by no means inevitable and that it can be intervened in and improved.

Planning as an activity is based on the legitimacy of intervention, and the belief that the energies of the free market and individuals needs to be marshalled and coordinated if urban change is to be equitable and sustainable. It is clear, however, that urban planning has in fact actively contributed to Cape Town's poor urban performance, which would seem to undermine its legitimacy as a force for positive urban change. Yet planning has failed because planners themselves have misconstrued the nature of planning and the plan. Indeed, planning failures in Cape Town and elsewhere have stemmed not from planners' incapacity to effect change, but from the egregious gaps in their understanding of what the city is, who it should serve and what the nature of urban change is (and, therefore, the mechanisms by which it can be consciously directed).

Both the content and form of urban plans has been and continues to be debated by academics and practitioners alike. A comprehensive review of these debates is beyond the scope of this project. It is important, however, to outline some of the key ideas that have percolated over time. The most essential tasks of this section – which concludes by taking a position on the nature of plan – is to highlight, in very broad strokes, various phases and threads of plan-making and city design, some of which have made urban environments worse for people and for the environment.

The Evolution of Urban Planning and Management

For as long as they have existed, cities have held a mirror up to the society and economy they host. The form and organization of cities has evolved as societies experience political, economic and technological change, and crucially, as policy-makers and planners have interpreted the past and re-formulated new visions for a city more responsive to these forces. Theories of the city have at times taken a life of their own, but they have always emanated from a particular technological, political and economic milieu.

When speaking about city design and planning intervention, it is useful to make the important distinction between the process of 'emergence' and 'development' – that is, between the way that "self-organizing systems grow organically from the bottom up" (Batty 2012, 54) and the way that humans design "structures with rules and routines that provide continuity" as well as intervention in order to serve a particular outcome – usually derived from an ethic of equality, dignity, comfort or other such rights-based values.

The modern city itself is "the rather disorderly outcome of a long history of small-scale, incremental changes, which accumulate over time to produce patterns with neither geometrical nor functional simplicity" (Hillier 1998, 150). This process of incremental change has spanned over decades and centuries in a non-uniform manner, in short bursts of political or economic crises, or via more diffuse and complex feedback loops and multiplier effects, whereby actions at different scales shape and inform each other (Hillier 1998, 150). Urban change thus seems to be part and parcel of the evolutionary process that shapes all life. The urban environment is thus "continually in flux as people and their activities respond incessantly to changed circumstances that involve shifts in movement patterns, locations, the use of buildings and in social preferences" (Batty 2012, 54).

The notion of "development" has been based on a teleological conception of human progress, whereby certain material, social or economic conditions are posited as the desired final

state of human organization. But "development", according to many views, does not occur spontaneously: it is the outcome of conscious restructuring of and investment into the environment, people and institutions which affect economic and social performance. A belief in the need for development is based on the belief that unstructured emergence does not bring about the societies we want.

Planning as a professional discipline was founded first and foremost on the legitimacy of intervention as a means to bring about some form of "development" (Winkler?). The goals of intervention have changed according to societal priorities and prevailing ideologies, however they have often concerned: improving economic efficiency, creating social order in space, eradicating undesirable elements of the city (like crime, poverty, or disease) and in constructing images and monuments to structure subjective experiences of the city.

The "Traditional" City

The "traditional city" that many planners and designers in the post-modern era now long for was premised on the imposition of a higher geometrical order onto urban forms that for whatever reason (social, technological or economic) had become inefficient or inappropriate. In the 19th century, Baron Haussman imposed symmetry and order on the gnarly streets of medieval Paris and Ildefons Cerda planned the expansion of Barcelona along similar principles, using strong, high order boulevards to structure space and improve circulation, and establishing a uniform architecture of six story buildings which would hold the street and accommodate density while ensuring basic health standards were met. At various other times, new settlement before the 20th century began with the imposition of a geometric grid, which would ensure room for circulation and make the sub-division of land easier. These planning efforts were based essentially on a geometry of point and line. Efficiency and access was achieved by designing a geometry of lines (streets) that facilitated circulation and intersected at points of higher accessibility where public activities (points) could cluster.

The following photographs (opposite) show what is loosely meant here as “the traditional city” - i.e. as the planned city before the motor car.

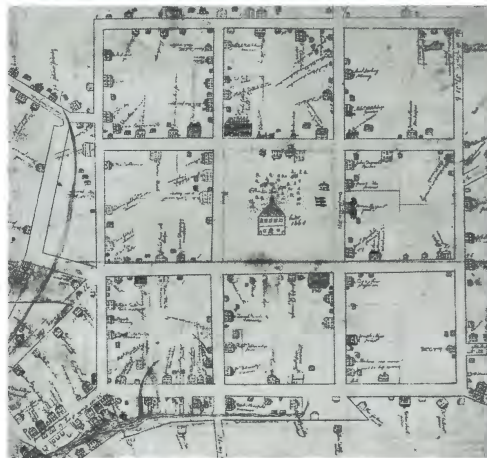
One might ask what, if anything, distinguishes these “top down” plans from the utopian and modernist schemes which emerged in the 20th century. The answer is, simply, that what distinguishes, for example, New York’s grid iron or Paris’ diagonal boulevards from the sterility and heavy-handedness of these later efforts, was that they were scaled to the pedestrian and not the motor car. Indeed, this seems to be the great cleavage in urban planning history: before the car and after the car. Another factor which now make these traditional urban environments more liveable than our present day incarnations of planning order, is that they are the products of historical periods when physical change was slower (owing to construction technologies) and people did not have as much capacity to retreat into private space.

What follows is a survey of how planning has attempted to deal with changes in transportation technology, governance and economy. It leads the reader to our present situation as planners, struggling to reverse the deleterious effects of car-based spatial planning in a context of limited state resources, rapid change and the privatization of post-modern life.

The analysis begins in the early 20th century, as cities begin to adapt to the introduction of the motor car, and other societal imperatives.



17 The grid iron of New York City, U.S.A.



18 The rectilinear layout of colonial Charlseton, U.S.A.



19



20

Image 19 above shows a present-day informal settlement, paired with an aerial photograph of present-day Paris. In a sense, the informal settlement represents the embryonic stage of the modern city: it is scaled to the pedestrian, and its streets, establish an irregular pattern of access. This is in many respects what some medieval quarters of European cities looked like before grand interventions like those implemented by Baron Haussman, which regularized streets and added a higher level spatial order.

The grid offers a timeless geometry of order (see images 17 and 18). It can be applied to existing settlement to rationalize movement and improve legitimacy, or as a means of expediting the parcelling of land for development.

Modernism and Comprehensive Planning

During the Great Depression and in the immediate post-war period, planning cast off its amateur utopianism and recast itself as a science which could use reason, empiricism and scientific method to solve urban problems. In the United States and the UK (from which South Africa inherited much of its planning traditions) planning thus became formalized as a profession, and was self-consciously cast as the domain of technocratic experts.

Spatial planning during this time moved away from utopian total visions for cities and focused instead on the management of its constituent parts. Thus by the mid-1920s, “the emphasis of planning was on a more efficient traffic circulation pattern and land-use control”. The ambitions of planning, while not utopian, nevertheless remained, and were manifested in grand Modernist projects and the infamous urban renewal (or slum clearance) programmes that began in the 1930s. Both initiatives responded to the perceived disorder of traditional urban forms, which were ill-prepared to accommodate the transition from public and non-motorized transportation to the proliferation of private automobile use.

During this period, spatial planners produced so-called “master plans” which were “basically concerned with the location, intensity, form, amount, and harmonization of land development required for the various space-use functions” (Albrechts 2006: 1153). The master plan was initially intended to achieve a more efficient and orderly city in which haphazard development is prevented so that the negative externalities of development could be mitigated or else distributed evenly (Beauregard and Marpillero-Colomina 2011: 63). More than anything else, comprehensive master plans were preoccupied with controlling land use. As a result, settlements and developments were imagined as “complete” entities, delivered rapidly by new construction technology and essentially static in so far as they were designed to be immediately optimal, rather than refined incrementally.

During this period, the private motor car revolutionized

transportation, offering individuals the ability to escape the crowded and socially diverse inner cities to live in neighbouring suburbs. Whereas the early suburbs built between 1850 and 1920 owed their existence primarily to the railway, suburbs of the 20th century were the product of rapidly enhanced private mobility, enabled by the automobile.

During the 1920s, the city grid, associated with dense tenements and traffic congestion, was represented by Modernists as “an intractable source of human misery” (Kostof 1991: 153). More egregiously, city grids were unable to cope with modern motor car traffic, having been originally designed for non-motorized traffic. As automobile traffic increased, city blocks stranded residents on “rectangular islands surrounded by noise, dirt, fumes, and danger” (Kostof 1991: 154). They were inconvenient for commuters, unhealthy for residents and, because of the volume and speed of traffic on roads with residential uses, unsafe for children (Kostof 1991: 153).

The advent of the modernist superblock – an island of in-turned development bounded by major traffic arteries – was a response to the perceived failings of city design that lacks clear hierarchy, which is not privilege mobility and which does not shelter residents from the disorder and diversity of mixed use city streets. These superblocks were to be designed as neighbourhood units, equipped with its own communal facilities nested in its centre, providing a safe environment for children.

A well-known formulations of this basic idea was Clarence Perry’s “neighbourhood unit”, which placed community functions (most relating to child rearing) at the centre of the community, with the idea being that all the essential facilities needed for families would be within walking distance and, crucially, protected from major arterials and non-residents. This community of a population size deemed “ideal” (often somewhere between two and seven thousand) would become “the fundamental social cell of the city” (Mumford 1961: 501).



21 Infrastructure for the age of the automobile



22. The Pruitt-Igoe public housing project in St. Louis, U.S.A.

Mass Suburbanization

Cities were thus becoming less desirable to the middle and upper class, the former of which was also benefitting from a new age of relatively inexpensive consumer goods and, in the United States, policies which encouraged home ownership. These economic and technological forces coalesced in architectural and planning visions that promoted new urban development centred around personal mobility, greater harmony between land uses and aesthetic order. These visions manifested themselves in Corbusian tower-blocks surrounded by open space and connected by high-volume expressways, and public housing projects that built neat, mono-functional neighbourhood units in place of old tenements. In many port-side cities, modernist planning sought to improve access to the City Centre through the construction of cumbersome overhead freeways that severed the connection between cities and their historic harbours. In that regard, this period of modernist “renewal” was part and parcel of a broader shift towards post-industrial urban forms, where the inner city was to be a side of consumption and easy personal access rather than production.

Though there were initiatives to remake and renew historic city centres, the bulk of urban development during this period was outwards. Suburbs were by definition low density, and so the footprint of cities across the world expanded at a faster rate than population increased.

At this time, there was little concern for controlling growth. What began as a residential exodus from traditional urban centres became a move towards greater polycentricity. As new suburb areas reached critical mass, they began to attract jobs and so mutated into so-called “edge cities”. Peter Calthorpe, a vocal critic of this growth model, explains that “as these new decentralized job centres grew, (suburbanization) began again – creating another layer of sprawl extending out from the decentralized job centres” (Calthorpe in Katz 1994: xii).



23. The monotony of mass-delivered tract housing



24. An indoor shopping mall in the suburbs of 1960s America. This model was later exported to South Africa.



25. A modern-day suburban mega-mall

Managing Growth and Guiding Development

Whereas in the latter half of the 20th century, the reigning urban paradigm was that of expansion beyond historic metropolitan boundaries, the theme of 21st century urban planning is now “the reorganization of the city itself” (Busquets 2004: 32). It is also the strategic management of growth in light of the environmental and economic costs of sprawl and car-dominated transportation systems. Urban planning in recent years has also responded to shifting economic and institutional arrangements in urban management. While the need for planning has not diminished, planning has had to become more strategic and selective, accommodating growth and catalysing urban change in an era of diminished public spending in the urban environment. Thus, both New Urbanist and strategic planning, the two threads of planning thought discussed below, attempt to re-fashion planning as a partner in development, creating new models for private sector investment which place new development in its appropriate context and ensure that it serves an integrating function and focuses limited resources on making the existing city more environmentally, economically and socially sustainable.

New Urbanism and the Compact City

By the 1990s, urban development in the developed world was fragmented, sprawling and sterile. Around this time, a loosely connected group of architects and planners formulated a searing critique of the urban planning status quo until this point, and called for a “New Urbanism”.

The New Urbanist movement has aimed “to replace the sprawling, placeless, hyper-privatized auto polis with a denser and more integrated network of pedestrian-oriented communities characterized by revitalized public realms, ecological sustainability, and diversity of uses and users” (Rutheiser 1997: 118). They argue that modernism has led us to abandon the “timeless wisdom” which guided urban development historically. Contemporary urban forms are “non-places” with little sense of community, cohesion or legibility. They are, moreover, en-

vironmentally unsustainable and shift tremendous transportation costs to the working classes and to local governments charged with maintaining ever expanding urban areas.

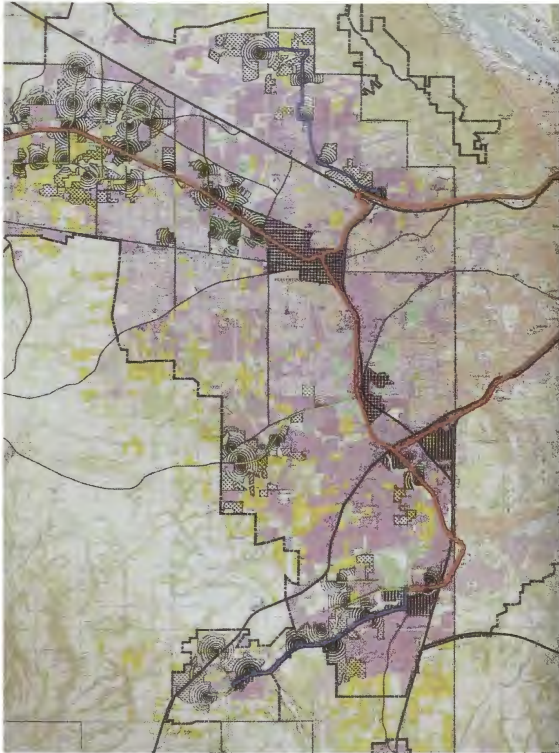
Bressi explains that the central tenet of New Urbanism is, in essence, that “community planning and design must assert the importance of public over private values” (Bressi 2006). Doing so places environmental concerns and liveability at the heart of planning. This is achieved, argue the New Urbanists, by controlling urban growth, improving public transportation and emphasizing human scaled design. This is not an anti-growth strategy, but is instead a “rethinking (of) the nature and quality of growth itself” (Calthorpe in Katz 1994: xiii).

These broad critiques have spawned two supporting, but distinct, approaches to city design. The first is that of Traditional Neighbourhood Development (TND), advocated for most vocally by architects Andres Duany and Elizabeth Plater-Zyberk, among others. TND involves the development of a “complete” neighbourhood that is mixed use, pedestrian-oriented, with public spaces and thoroughfares that are more humane and “human-scaled”. Neighbourhoods are organized according to the base criteria that certain essential non-residential functions should be within a five minute walking distance.

The second thread of the New Urbanist argument has been developed by Peter Calthorpe, who advocates Transit Oriented Development (TOD) which argues that development should be co-located with public transportation services. More generally, Calthorpe presents a formulation of New Urbanism that is more regional in its scope. Whereas TND is focused on making quality urban places, Calthorpe and others have emphasized the importance of delimiting urban growth boundaries to limit sprawl, and to use development incentives and transportation provision to encourage higher density development (Rutheiser 1997: 125). Like TND, TOD developments also emphasize the importance of walkable neighbourhoods and centrally located civic and public institutions and spaces.

Underlying the New Urbanist turn is the view that good cities – those with rich public realms, which are orientated towards

people rather than cars and private enrichment – are those which are not generated in a wholly democratic manner. Andres Duany has gone so far as to argue that democracy “does not make the best cities”, and that great cities like Paris, Rome and Manhattan are great because they were impressed upon in a top-down manner. Without top-down design and intervention, he argues “every landowner would have done a separate little pod subdivision”.



26. Peter Calhorpe's smart growth strategy for Portland, U.S.A.



27. The demolition of Pruitt-Igoe in 1972



29. Seaside, Florida. A model New Urbanist resort.



28. A tramcar in Portland, U.S.A., a city that has pursued T.O.D.



30. A return to walkable neighbourhoods

Strategic Planning

So-called “strategic planning” emerged in the during the 1980s and 1990s in Western Europe as “rapidly changing and growing corporations to plan effectively for and manage their futures when the future itself seemed to increasingly uncertain” (Albrechts 2006: 1151). It responds to “the neoconservative disdain for planning, but also by post-modernist scepticism, both of which tend to view progress as something which, if it happens, cannot be planned” (Albrechts 2006: 1149) by producing “a long-range spatial plan consisting of frameworks and principles, and broad and conceptual spatial ideas, rather than detailed spatial design(s)”. These “frameworks” for action and management that do not attempt to plan the entirety of the city. Instead, strategic frameworks “focus on only those aspects or areas that are important to overall plan objectives” (UN-HABITAT 2009: 15). Unlike in the past, these objectives are theoretically defined not only by technocratic planners, but by a broad-based coalition of stakeholders and citizens who are involved in an on-going public participation process.

This move towards more “strategic” planning is based on a critique of previous planning processes (which have been deemed unnecessarily lengthy and inflexible) as well as the recognition that city planning is no longer a comprehensive utopian activity that imagines a complete, “perfect” new city.

Strategic planning has nevertheless left a physical mark on urban landscapes, in the form of large infrastructure projects, place-branding initiatives and so-called “strategic projects” in waterfront areas and neglected industrial areas. Strategic projects “aims at transforming the spatial, economic and socio-cultural fabric of a larger area through a timely intervention” and do so within the framework set out by the strategic metropolitan plan (Albrechts 2004: 1492). Indeed, they can in many respects fit within the frame of New Urbanism. For example, TOD projects can form part of metropolitan or regional strategic plan.

In certain respects, strategic projects represent a break from urban regeneration projects that preceded them. Whereas

urban regeneration projects were “driven by defensive strategies (combating poverty in deprived areas, social housing) like urban reconstruction (1950s), urban revitalization (1960s) or urban renewal (1970s)” strategic projects are now “being driven more and more by offensive strategies within the context of growing international intercity competition”. Indeed, the recent turn to strategic forms of spatial planning has meant that planners and urban governments are increasingly engaged in the branding of locating a place’s identity, which becomes its comparative advantage vis-à-vis other cities. Various writers have argued that the discourse of “urban revitalization” communicates a politically and socially loaded agenda that historically and contemporarily been used to further the interests of urban elites, push out minority groups and enable the commodification of urban space. Strategic frameworks “focus on only those aspects or areas that are important to overall plan objectives” (UN-HABITAT 2009: 15). Unlike in the past, these objectives are theoretically defined not only by technocratic planners, but by a broad-based coalition of stakeholders and citizens who are involved in an on-going public participation process.

This move towards more “strategic” planning is based on a critique of previous planning processes (which have been deemed unnecessarily lengthy and inflexible) as well as the recognition that city planning is no longer a comprehensive utopian activity that imagines a complete, “perfect” new city. Strategic planning has nevertheless left a physical mark on urban landscapes, in the form of large infrastructure projects, place-branding initiatives and so-called “strategic projects” in waterfront areas and neglected industrial areas. Strategic projects “aims at transforming the spatial, economic and socio-cultural fabric of a larger area through a timely intervention” and do so within the framework set out by the strategic metropolitan plan (Albrechts 2004: 1492). Indeed, they can in many respects fit within the frame of New Urbanism. For example, TOD projects can form part of metropolitan or regional strategic plan.

Argument: The Role and Nature of Planning Today

A Non-Programmatic Approach

The regulation of land use has been a cornerstone of urban planning since its rise to prominence in the post-Industrial Revolution period. Historically, land use planning has been centred around eliminating supposedly conflicting uses. The zoning codes that resulted have had a profound impact on the shape of cities, especially where single family residential zoning has ensured the separation of housing and employment and low population densities unable to support public transportation.

A new approach to land use management is required. Instead of fixating on supposed “conflicts” between residential and non-residential uses, plans should in fact bring these elements together wherever possible. The realities of climate change, impending resource crises, and the psychological as well as economic costs of urban sprawl now make low residential densities and the separation of uses unsustainable and dangerous.

Against this backdrop, land use planning becomes a tool for raising population densities and promoting a greater mix of uses. The actual locational decisions of firms are best made by the firms themselves and it is not suggested that planners should begin to replace one land use management regime with another. Planners can, however, use public transportation, infrastructure provision, good urban design and development incentives to promote a greater degree of employment decentralization. Moreover, single family residential zoning can be used far more sparingly, used only in those areas which, for economic, social or historical reasons, are best suited to remaining quiet, private residential enclaves.

The complexity of urban management and the rate of change has increased in recent years, to the point that comprehensive planning – even if it could produce the cities we want – is no longer possible. Plans must, for this reasons and others, needs

to become more strategic, and more focused on the essential structuring elements of the city.

In light of this, investing in the public armatures of the city becomes a critical component of progressive city design. Ultimately, cities are built by a multitude of actors and therefore cannot be designed by a single actor. It is this diversity that makes cities such stimulating environments. Clearly, the public sector cannot and should not design and implement the city in its entirety. Doing so would be administratively and financially impossible. Moreover, while private initiative animates the city, it is inherently unstable and dictated by market conditions and calculations of short term benefits. Highly dynamic urban environments are therefore places of growth and optimism as well as decline and a sense of impermanence. Plans must strike a balance between change and continuity, between freedom and instability.

The Capital Web

Jane Jacobs, in her seminal work “The Life and Death of Great American Cities” critiqued top-down intervention, arguing that “it was the diversity of cities that marked their quality and that this diversity was formed from countless individual decisions, generated from the bottom up” and furthermore, it was “top-down urban planning (that) destroyed (those) qualities that made cities what they are” (Batty 2009, 565). But not all planning is necessarily “top down”. In recent years, with the work of writers like David Crane, city design has become the act of providing public goods in such a way that private actions taken by individual landowners are set in a structure that guarantees the functioning and flourishing of the whole. It is emphatically not about designing and delivering all elements in the urban system, as mega-projects like the Pruitt-Igo development attempted to do.

Plans succeed when they give structure to this uncertain and volatile city-building process. There are two ways that plans can instruct development so that overall the process tends towards greater equity and quality of life for all. The first is



31. Nollí's map of Rome. Public space is shown in white, emphasizing the extent to which it is public - rather than private - elements that define the city.

through infrastructure provision, mostly notably in the form of public transportation and movement networks. The second is through the provision of a “capital web” of public amenities and spaces that become the enduring urban elements that structure future growth and change. These places and spaces

are accessible to all, and are therefore inherently democratic and equitable. Without them, the city is solely a site of privatized consumption.



5 GIVING DIRECTION

It is now clearer that intervention into Cape Town's urban development is necessary, and that the plan that re-routes its course should be strategic, minimalist and focused on establishing a "capital web" of enabling infrastructure.

First and foremost, plans require higher order thinking. They are not simply reactions to immediate crises or whims. Indeed, intervention is only legitimate if it has some higher purpose in mind, some direction in mind that needs to be pursued.

In the section that follows, the raison d'être of planning today – in Cape Town, in South Africa, and, to some extent, in any city in the world – is outlined.

This document began with a personal manifesto that declared the obligation of planners to act more responsibly. This chapter establishes exactly what it is that planners should be mobilizing planners to challenge the status quo of development – which realities they cannot ignore and which obligations they must fulfil.

Global Issues

Cape Town has its own social, political and economic destiny, which will be shaped by local socio-economic and political forces. Its future however is also tethered to the future of South Africa as a whole, and, indeed, to the course of environmental and economic developments taking place at a global scale.

In the age of globalization, local actors still have agency, however there are certain macro-scale forces that will affect all cities in some way, irrespective of their local socio-political operating systems. The nature of this interaction – between the local and global – and its consequences will, however, depend how external forces graft themselves onto these local relationships and systems.

In such a situation, the plan must take into account more than just local exigencies. It must also respond to the global trends, over which the individual city is unlikely to have much control.

Global Urbanization

Across the world, cities are growing and changing faster than ever before, and in turn, presenting new and increasingly complex challenges.

A century ago, less than 5 per cent of the world's population lived in cities (UN-HABITAT 2009: 23). By 1950, the level of global urbanization was 29 per cent. In 2008, a UN Habitat report declared that, for the first time in history, the proportion of the world's urban population exceeded 50 per cent. By 2050, it is projected that "6.4 billion people or about 70 per cent of the world's population will live in urban areas" (UN-HABITAT 2009: 23).

Though the world's urban population occupies just under 2 per cent of the earth's service, it contributes over 70 per cent of global greenhouse gas emissions. As sites of both extreme affluence as well as extreme poverty, and of agglomerated

production and consumption, cities are indeed, as Herbert Giradet argues, "where human destiny will be played out, and where the future of the biosphere will be determined" (1991:53).

For most of the post-Industrial Revolution-era, "advanced forms of industrialization have been tightly confined geographically to the major urban centres of the advanced capitalist countries" (Soja and Kannai 2006: 63). In recent years, however, the rising tide of global urbanization has redefined the once-stable territorial-functional city unit, understood in terms of concentric bands of graded intensity moving outwards from a dense historic urban core to its immediate suburbs and rural hinterland. Agglomeration and urbanization today is therefore both quantitatively as well as qualitatively different to urbanization of the past, provoking renewed debate over the appropriate scale for territorial administration and policy-making.

In a collection of essays aptly titled *The Endless City*, Soja and Kannai explain that what we are witnessing now is a "distinctively regional urbanization process in which urbanism as a way of life, once confined to the historic central city, has been spreading outwards, creating urban densities and new 'outer' and 'edge' cities in what were formerly suburban fringes and greenfield or rural sites" (2006: 59). This extended regional urbanization is defined by two seemingly contradictory processes, namely – the agglomeration and urbanization of economic activity (a movement "inwards" into regional industrial and business clusters) and "a regionalization stretching outwards of such urban metropolises" (MacLeod 2001: 809). Thus we see a trend towards increased poly-centricity as the densification and agglomeration of people and activity occurs as part of a sprawling network of conurbations rather than as one contiguous urban metropolis.

Urbanization continues apace because cities consistently offer more opportunity for social and economic up-liftment than rural areas do. That being said, many cities in the developing world are ill-prepared to accommodate migrants. Rapid urbanization has taken place those countries least able to cope:

where infrastructural services are strained, institutions are weak and poverty and unemployment is high (UN-HABITAT 2009: 8).

As a result, there has been phenomenal growth of informal settlements across the developing world, to the extent that “close to 37 per cent of the urban population currently live in slums in inequitable and life-threatening conditions, and are directly affected by both environmental disasters and social crises” (UN-HABITAT 2009: 8). In sub-Saharan Africa, this figure is over 60 per cent” (UN-HABITAT 2009: 8).

Environmental Crisis

Currently, human activity on earth is resulting in momentous and potentially catastrophic changes to the extra-human world of biota, climate, hydrology and landforms (UNEP 2006; IPCC 2007). Current patterns of energy and material extraction are threatening the continuation of human life itself.

Cities act as “highly-ordered dissipative structures able to import available energy and material from their host (hinterland) environments which they use to maintain their internal integrity” (Rees et. al 1996: 237). Through transportation, trade and communications, city spaces side-step natural processes of entropic decay whereby systems naturally tend “to erode, dissipate and unravel” (Rees et. al 1996: 237). Indeed, “although cities play a key role in the development process and make more than a proportionate contribution to national economic growth”, they are also “causally linked to accelerating global ecological decline” (Rees et. al 1996: 237) through their disproportionate consumption of resources and excretion of waste. Moreover, because urban populations are so concentrated and dependent on external sources for food and water, cities are also the most immediately vulnerable to environmental catastrophe and crisis.

Climate Change

One of the most significant environmental challenges we face is climate change. In 2007, the Intergovernmental Panel on Climate Change presented what it considered to be unequivocal scientific proof of a warming climate and noted that it is “very likely” that such changes are the result of increased human-generate greenhouse gases - generated in large part by our reliance on fossil fuel-based energy consumption (IPCC 2007: 10). This disturbance to the planet’s fundamental life-support systems may prove disastrous, threatening lives in all low-lying and coastal settlements, disrupting food production and increasing food insecurity, and threatening the habitats of species and, in turn, global biodiversity. A warming climate will also “negatively affect access to water” and increase the frequency of natural disasters. Despite contributing proportionately less to global carbon emissions, the poor will be the most vulnerable to these effects and stand to “suffer the earliest and the most” (UN-HABITAT 2009: xxii).

Resource Scarcity

Climate change is but one dimension of a looming global crisis caused by human disturbance to and exploitation of the natural environment. For example, at the same time that the ozone layer is being depleted, water intensive development and abstraction processes have depleted the planet’s reserve of potable fresh water to alarming levels, commercial agriculture practices have degraded and eroded the world’s arable soil, and the conversion of land along with other disruptions to ecosystem functioning have resulted in the loss of global biodiversity (Rasmussen 2012: 4-5).

We now depend for their survival on a planet that is shrinking. Global population may continue to rise – and indeed it has, at a rate of 75 million people each year (Walker and Salt 2006: 2) – and mass-produced materials goods, medicine and other globalized products may continue to spread, but our planet will not. A 2004 study reported that “it takes 1.2 years to regenerate what humanity uses in one year” meaning, in short, that “we are using nature more rapidly than it can regenerate” (Walker and Salt 2006: 4).

Crucially, resource consumption is highly unequal: developing (ed) countries are consuming more than their proportionate share of the planet’s resource, while developing countries, owing to under-consumption and poverty, tend to consume less than their fair share. For example, consumption in the United States is 5.1 hectares of the earth’s surface per capita, compared to India’s 0.4 ha/cap (Swilling 2011: 12 – 13). Thus, if everyone lived like the average American, 2.5 planets would be required.

Fossil-Fuel Dependence

A third major concern is the dependence of our economies and societies on fossil fuels. In the last half century, car-orientated urban sprawl has been enabled by the easy availability of oil and advances in modern transportation and communications has created a globalized economy dependent “on the possibility of moving both people and goods quickly, cheaply and over long distances” (UN-HABITAT 2009: xxii).

Since fossil fuels are non-renewable, and are likely to increase in cost in the long-term, the status quo of suburban development and economic globalization is clearly precarious. Moreover, oil-based economies “contribute significantly to greenhouse gas emissions and hence global warming” (UN-HABITAT 2009: xxi). Thus the status quo is doubly vulnerable, both to price shocks and resource scarcity as well as the increasing costs of global warming-related natural disasters threatened global food production.

Economic Issues

Globalization and Economic Restructuring

Extended urbanization has run concomitantly with “the globalization of capital, labour and culture, and the forces that have led to the formation of a new mode of capitalist development, variously described as post-Fordist, flexible and information-based” (Soja and Kannai 2006: 62-63). Globalization, in spatial terms, represents “a change in the scales at which strategic economic and political processes territorialize” (Sassen 1991: 91). Of particular relevance to urban economic development is the tendency of globalization to be accompanied by “the assertion and reassertion of agglomerative tendencies because of the very openness and competitiveness that it ushers in” (Scott and Storper 2007: 581). So, despite being a phenomena defined by obliterating borders, connecting far flung localities and undermining stable organizing concepts like the nation and, even, the local, globalization has in fact reinforced the primacy of physical proximity (Morgan 2004). The patterns of “regional urbanization” described above feed and are reinforced by globalization.

In this new landscape, city-regions and mega-regions are now “the crucible of economic and political power” (Jonas and Ward 2002: 382). The survival of these regional economies are, theoretically, de-linked from one another, contingent instead upon each metropolitan, city-region or wider region finding “its (own) global market niche and develop clusters of activities in which it can specialize and compete” (Jonas and Ward 2002: 382). In economic terms, the competition and uncertainty which openness brings has placed a premium on generating competitive advantage through innovation, flexibility and on-going firm “learning” (Rogerson 2009: 116). What is clear, however, is that many cities and regions are not succeeding in gaining a foothold in the global economy or if they are, this encounter has not contributed to any significant reduction in poverty, inequality and socio-economic exclusion.

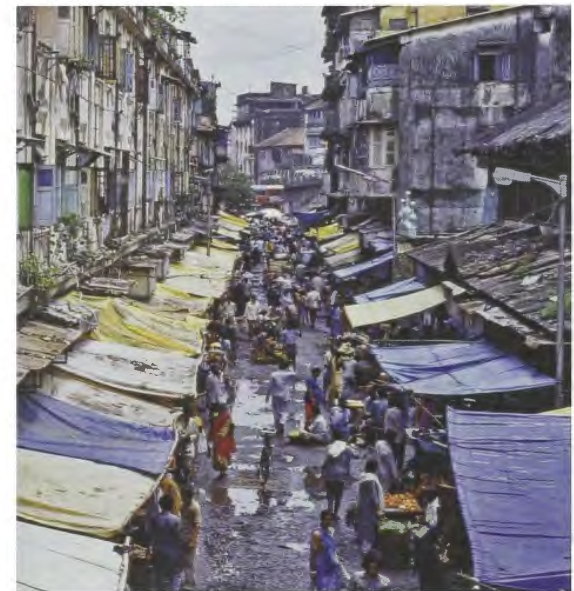
A decline of manufacturing employment (which employs low

to medium skill workers) has run concurrently with significant growth in the service sector (which employs medium to highly skilled workers). As a result, we are seeing “a growing polarization of occupational and income structures (and hence growing inequality)”, as growth in the service sector fails to produce growth in overall employment (UN-HABITAT 2009: xxii). In the developing world, a shrinking formal employment base has led to the rapid growth of the informal economy. Here, “informal sector jobs account for more than 50 percent of all employment in Africa and the Latin America and Caribbean region” (UN-HABITAT 2009: xxiii).

While informal livelihoods are potentially more resilient and adaptable than formal employment, they are precarious. Moreover, since the informal sector does not form part of the city tax base, they do not generate enough surplus to improve public amenities and services. The net effect of this has been an overall increase in global inequality – not only between nations, but within them.



31. Berlin



32. Kolkatta

Berlin (above) and Kolkatta (below) high streets. In the former, highly specialize formal economic activities predominate, with brands and services that serve high-end consumption. In the latter, informal economic activity predominates, with individuals operating their own small businesses, usually providing any number of basic services and goods for daily life. Both forms of urban economy depend on exposure and access to customers, by tram and motorcar in Berlin, and by foot in Kolkatta.

Socio-Spatial Patterns

Sprawl, Fragmentation and Specialization

The urban landscapes that have formed in response to these economic, social and technological changes are qualitatively different to the historic centres of cities. Increased income inequality, social conflict, and multi-culturalism animate socio-spatial change that “seems to have taken place primarily in the direction of the fragmentation, separation and specialization of functions and uses within cities” (UN-HABITAT 2009: xxiii). Inequality and exclusion has always existed, however today’s cities are arguably more polarized than ever before. As crime has increased and socio-economic relationships have become less localized and more dependent on exposure to globalized amenities and networks. In turn, a larger proportion of the middle and upper classes have been able to retreat to gentrified and suburban enclaves. Fear of crime has increased urban fragmentation as middle- and upper-income households segregate themselves into ‘gated communities’ and other types of high-security residential complexes.” (UN-HABITAT 2009: xxiii).

Fragmentation is not a product of economic decline, but often is linked to exclusionary local economic development (UN-HABITAT 2009: 9). Cities make themselves more attractive to investment by offering businesses and professional classes safe, clean urban environments and often do so by supporting or allowing mega-projects and area-based management initiatives that exclude the poor, are access-controlled and privately managed.

Arguably, however, the single most transformative force in cities today is informal land invasion. A recent UN Habitat report notes that “the bulk of rapid urban growth in developing countries is now taking place in the peri-urban areas as poor urban dwellers look for a foothold in the cities and towns where land is more easily available, where they can escape the costs and threats of urban land regulations, and where there is a possibility of combining urban and rural livelihoods.” (UN-HABITAT 2009: 10)

Mega-Projects

A variant of the strategic project is the so-called “mega project”, which Susan Fainstein defines as “very big, mixed-use developments as attractors of multinational business and sites for new housing” (2005: 768). Fainstein notes that these mega projects, irrespective of their contexts, share “a striking physical similarity” (2005: 768). A popular type of mega-project has been the redevelopment of now redundant industrial spaces and, in particular, historic waterfront areas. In a context of “relentless globalizing consumption pressures”, such redevelopments, David Harvey suggests, capitalize on the post-modern consumer’s “new awareness of the past” which often takes the form “of a certain (misplaced) nostalgia” (Harvey 1989 in Ferreira and Visser 2007: 230). For city managers and developers, waterfront redevelopment poses an opportunity to “exploit the uniqueness of accumulated fixed capital” while at the same time creating a place identity that can be marketed to international tourists (Ferreira and Visser 2007: 230).



33.

High levels of economic inequality makes severe incisions into the urban fabric, with expressways and buffer areas used to maintain a high degree of separation between high density informal settlements and formally planned areas.



34.

Across the world, urban projects are taking place in cordoned off areas set apart from the existing city. This high degree of separation is made possible by the predominance of the motor-car and facilitates the enforcement of strict private management of the new development. This leads to fragmentation of the urban fabric.

Institutional

From Government to Governance

Globalization has had a significant impact on the mandate and scope of local government. Jonas and Ward (2002: 380) point out that now, “unlike in previous eras, it is now almost axiomatic to situate urban and regional policy and politics in relation to a context of globalization” (2002: 380). The new imperative is to manage and “capture” hyper-mobile, inter-regional and international capital flows, compelling sub-national regions to define and “brand” themselves within a global rather than national context (Jonas and Ward 2002: 381). There is a trend towards the devolution of power to sub-national levels in large part as a response to the aforementioned ‘economic competitiveness’ imperative (Healey 2009: 834). In administrative terms, we are witnessing what has been variously referred to as the shift from “government” (embodied by the post-war welfare state) to “governance” (wherein an “entrepreneurial” state forms public-private coalitions with local stakeholders).

In a globalised economy, the local/nation state is less comfortable exerting control over its territory (Sandercock 1998: 28). The notable exception to this is its proactive involvement in competing to attract foreign investors (Sandercock 1998: 28). In this scenario, local government focus on making their region or city permeable to investment and attention both from abroad and domestically. The primary developmental role of the local state thus becomes “to position localities optimally to gain maximum benefit from globalization” (Harrison 2003: 18).

Cape Town has not been immune to this so-called “globalization imperative” (Ferreira and Visser 2007: 230). As Ferreira and Visser note, “Cape Town presents one of the best examples where the local state has successfully recognized the need to formulate a local development strategy that moves beyond the city as simply being a competitive centre for industrial production toward embracing the promotion of service sector activities” and, crucially, to flying the flag of international competitiveness and world city-ness (2007: 230).

Public Participation and Co-Production

In the developing world, the failure of the state to provide all urban dwellers with basic services has inspired a movement of urban citizens attempting to address urban inequality through the community-financed and ‘people-driven’ production of infrastructure services.

Co-production is the process by which the user of a given infrastructural service plays a role in both in its consumption as well as its production, by way of individual and community contributions, whether financial or otherwise. The efforts of Shackdwellers International and other such coalitions fall within popular understandings of infrastructure co-production, in so far as they are fed first and foremost by community saving schemes and other such energies. Co-production, in short, “signals a shift away from defining public services solely in terms of the productive activities of the state” (Needham 2007: 221).

In the developed as well as the developing world, the so-called “communicative turn” in planning has placed public participation at the heart of the planning process. Plans now need to be able to communicate a vision to everyday citizens, and must be flexible enough to accommodate any changes that may need to be made as a result of public consultation.

Lessons Learned

There is now a growing consensus that “urban planning has an important role to play in assisting governments and civil society to meet the urban challenges of the 21st century. (UN-HABITAT 2009: xxvii). If ever there were a time to take spatial planning serious, it is now. Rapid urbanization is occurring in the face of structural unemployment, yawning inequality and a mounting environmental crisis. The repercussions of laissez faire city management dominated by private interests and dependent on the heedless consumption of resources are now being felt.

Cities are immensely complex systems shaped by a multitude of individuals, organizations, developers and state actors and so urban change will always be a diffused and unruly phenomena. Clearly, however, our collective urban future can no longer be left to the will of the free market. Some public goods must be provided to ensure social equity, and certain basic functional systems require provision and regulation so as to ensure the system’s overall resource efficiency and liveability.

Our ability to describe the complexity of contemporary urban phenomena tends to be more fully developed than our ability to distil this complexity down to solutions. What follows is an attempt to outline in brief the key lessons gleaned from the above analysis. These insights will directly inform the plans that are formulated for metropolitan Cape Town, the City Core and finally, the Culemborg rail yards.

Demographic

- *Urbanization is unstoppable.* Cities must accept the reality of continued urbanization and take pro-active steps to accommodate growth.
- *Further sprawl cannot be justified* on the grounds that it is necessary to accommodate a growing population.

Economic

- Cities may be centres of massive poverty and unemployment, but urban poverty nevertheless pales in comparison with rural poverty. Cities consistently generate more economic opportunity than rural areas, and *the generative capacity of cities should be supported.*
- Growth in the formal economy will not be a cure-all for inequality and unemployment. Plans therefore need to *accommodate the informal sector*, by designing urban spaces and concentrating amenities to encourage high volumes of foot traffic. Facilities should be established for informal traders in these areas.
- Service sector growth has a negative employment elasticity, and only benefits the already privileged in society. Cities must now look to *expand urban manufacturing* and other forms of more labour-intensive forms of endogenous economic growth.
- Given looming resource shortages and ongoing price increases, it is imperative that cities wean themselves off fossil fuels. *More efficient, compact urban form and better public transportation* are now economic imperatives.
- While it is important to find ways of expanding low to medium skilled employment, the reality is that successful economies depend on a base of educated, highly skilled workers. The benefits of globalization are spread so unevenly in part because of wide local disparities in education and skill levels. Increasing economic resilience therefore requires placing *learning and knowledge* at the heart of communities and cities.

Environmental

- Resource consumption can only be curbed when urban sprawl is finally halted. Realistic, but meaningful, *urban boundaries* should be put in place to force development to take place within the existing city.

- Transportation is a critical determinant of a city’s environmental performance. Thus addressing resource consumption and emissions will involve a *transition from private motorcars to public transportation*. Not only must the mode of transportation change, but the distances travelled by urban dwellers needs to decrease. This requires the compaction of the urban footprint and an increase in residential densities to accommodate growth and render transportation viable.
- *Medium- to high- density development* is required to make transportation viable and to accommodate urban growth within the urban boundary.

Socio-Spatial

- *Spatial proximity still matters.* Even in the face of globalization and improved communication technologies, the most economically productive networks on earth are in cities. The face-to-face contact and spontaneous interactions that proximity allows for feed innovation and the establishment of trust amongst workers and companies. It is therefore critical that planners strive to bring people closer together, while mitigating the costs of density by providing better public transportation, investing in high quality public spaces and committing to more humane urban design.
- Cities need to be more compact and structured around *public, rather than private, transportation*. Only once walking distance is the primary measure of accessibility will cities be truly equitable and environmentally sustainable. Greater public and non-motorized transportation is not only more egalitarian; it will also decrease congestion within cities and, in turn, improve urban quality of life. There are also numerous economic and environmental benefits (outlined above).
- Planners must find creative and compelling ways to edu-

cate people about the possibilities that become attainable if we commit seriously to investing in the public realm and in shared infrastructure that will make cities work better. Thus far, the transition to more sustainable and compact urban forms has been hamstrung by people's reluctance to compromise on individual consumption and comfort. Andres Duany notes that even though middle class suburbanites tend to recognize that sprawl is boring, costly and sterile, they nevertheless continue to defend the suburban status quo vociferously. The problem is not that people cannot appreciate the deterioration and sterility of the public realm, or acknowledge the significant economic and environmental costs incurred through long-distance commuting and car-based mobility. Rather, it is that the change required to address these issues is considered a threat to the full expression of individual freedom and the protection of private space. Planners should not dismiss these desires as selfish or stupid, but rather, should show that medium density cities can not only be more environmentally friendly and stimulating, but be liveable and comfortable as well. The formulation of a convincing plan is therefore critical, especially in the South Africa, where anti-urban ideas still hold sway.

- Even as cities become more diverse and heterogeneous, planners must insist on developing *quality public spaces* open and accessible to all. Planning should not attempt to control the movements or associations of people; rather, it should seek to enable them and give people a public platform where they can passively mingle amongst people different than themselves.
- Strategic projects can be catalysts for wider urban change, but they should be approached with caution, and must be placed within a wider metropolitan context. Though they may be couched within a new rhetoric of urban integration, large urban projects are vulnerable to some of the same shortfalls that their urban regeneration fore bearers were heavily criticized for. More fundamentally, Jane Jacobs argues, the very notion of “projects” is

dangerous, because it is tacitly premised on the idea that, indeed, “they are projects, abstracted out of the ordinary city and set apart” (1991: 392). A single project must be meaningful in and of itself, yet must be woven into the fabric of the city. The ultimate aim of regeneration should therefore be “to get (the) project, that patch upon the city, rewoven back into the fabric – and in the process of doing so, strengthen the surrounding fabric too” (1961: 392). *Strategic planning, then, is about healing the city.*

Institutional

- We are now in the era of the *public-private partnership*. Plans – particularly those involving large urban projects – cannot be implemented without buy-in from the private sector. They must therefore be pragmatic, and give clear direction to the overall project so that the interests of the public are protected, and so that private investors and those financing the project are giving greater certainty and clarity of their role.
- The formulation of a *plan is an evolving and iterative process*. Sooner rather than later, however, the public actor should present a bold vision that sets the tone of future development, pre-empting the scheming of developers. This vision can stimulate debate and draw in a range of stakeholders in order to generate debate which will build greater consensus, rendering the end-result of the planning effort more legitimate (Albrechts 2006: 1152; Beauregard and Marpillero-Colomina 2011: 62).

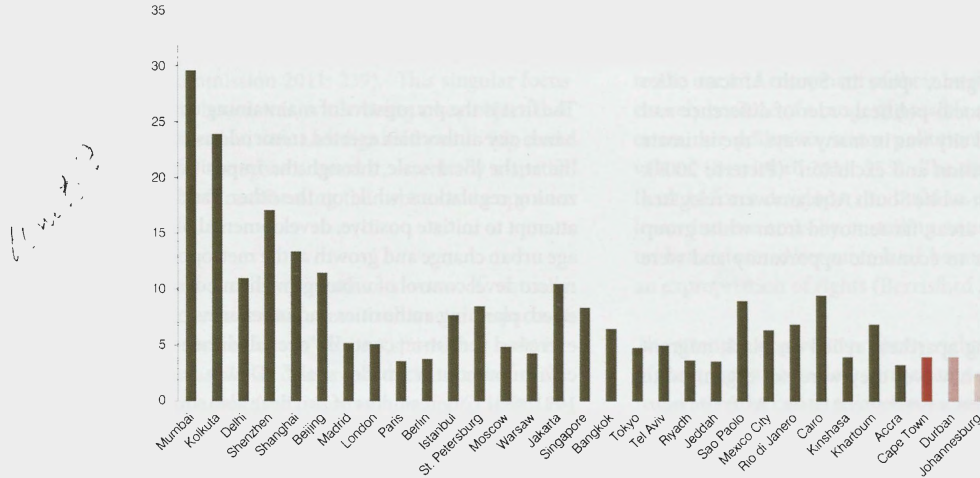
The South African Development Challenge

In November 2011, the South African National Planning Commission's "Vision for 2030" report described the South African urban landscape as one characterized by "poverty traps in rural areas and urban townships; workers isolated on the periphery of cities; households spending 30 per cent or more of their time, energy and money on daily commuting; grid-locked roads and unreliable public transport (and) new public housing in barren urban landscapes" (National Planning Commission 2011: 233). In a 2011 UN-HABITAT study of urban inequality, the three most unequal cities in the world were South African.

This situation is usually attributed to a number of factors, the most dominant of them being the spatial legacy of segregationist policy, which began in the colonial era but was most rigorously applied under the Nationalist Party's apartheid regime.

The amount of writing on the origins and functioning of the apartheid city and its post-apartheid response is enormous. Understandably, South African academics and politicians are preoccupied with the peculiarity of the South African experience, especially given the lack of transformation in the post-apartheid period.

It is important to acknowledge the lasting legacy that apartheid spatial policies have had. However, as Sarah Nuttall argues, "South African studies has, for a long time been overdetermined by the reality of apartheid – as if, in the historical trajectory of that country, apartheid was inevitable, in terms of both its origins and its consequences; as if everything led to it and that everything flows as a consequence of it" (2004: 732). Moreover, it is difficult to see how qualitatively different the South African experience is to so many other societies in which cities are defined by the contours of economic class and race. Where South African cities differ from others is arguably in its quantitative dimensions, and the clarity and consistency of how and where cities were divided along racial lines.



35.

A table comparing the population densities of world cities. South African cities are relatively low-density, and are only comparable to certain cities in the developed world because densities are so high in informal settlements, which are growing rapidly. Unlike these other cities, South African cities do not have areas with high population density as well as high employment density (as Paris does, for example).

What is needed is a frank assessment of what makes the South African context different from other societies that also face high levels of inequality and urban fragmentation. It is argued here that planning in South African cities needs to be especially sensitive to a few critical misconceptions about how cities work and why we need to plan for them. The trajectory of urban development in South Africa was indeed profoundly shaped by apartheid ideology, but apartheid social planning took the form that it did in part because it coalesced with technocratic modernism. Most obviously, apartheid's separation of races into discreet, bounded territorial and economic spaces aligned very neatly with modernist planning's separation of land uses. Thus a preoccupation with separating "conflicting racial groups" merged with the separation of "conflicting" uses. This has led to the sterilization of cities, both in economic as well as social terms.

But modernism and apartheid coalesced in other more subtle, and ultimately more insidious, ways. Each held up an antiseptic version of community which conceived of the stable nucle-

ar family as the basic building block of social and economic organization. In spatial terms, this has meant that South African cities are not really cities at all, but rather, a fragmented jumble of single family dwellings, whose size is maximized to allow for private, rather than public, recreation and comfort. In truth, South African cities have no truly civic culture, with fear and prejudice cleaving curious economic and race groups apart, and rendering them actively hostile to the very building blocks of vibrant urban centres, namely: higher population densities, public space, and shared facilities.

The South African urban challenge is therefore about more than taking remedial actions to "fix" apartheid and modernism's mistakes. It requires a vision for how South Africans can come to embrace an urban, rather than suburban, future.

The Apartheid City

Under the apartheid regime, space in South African cities was used to maintain a socio-political order of difference and exclusion. The apartheid city was in many ways “the ultimate paradigm for urban division and exclusion” (Pieterse 2009). In the apartheid city, non-white South Africans were relegated to peripheral dormitory areas, far removed from white group areas, which were closer to economic opportunity and were better serviced.

Urban economies during apartheid relied on black migrant labour from rural areas; however they were not organized to accommodate migrants on a permanent basis. As far as non-white people were concerned, the city was first and foremost a place to house labour. The costs of social reproduction were externalized to distant, under-resourced and crowded rural ‘homelands,’ resulting in the fragmentation of families. Non-white South Africans were visitors in the city; their home, the state argued, was in the homelands.

Within both white and non-white areas of the city, plans were dominated with “concerns with efficiency largely defined in technological terms” and, indeed, with the idea that urban life could and should be “compartmentalized into broad categories of activity (live, work, play, move), resulting in spatial separation of these activities” (CSIR 2000: 12). This approach to settlement making, in conjunction with racist policy, led to the fragmentation and sterilization of urban South Africa.

While “white” suburbs were leafier and more commodious than their township counterparts, the essential planning idea that shaped them was very similar. They too were underserved with public space, with the focus of urban design being put on maximizing private amenity and minimizing the uncertainties and ambiguities of the public domain left over. In white areas, high walls were erected to protect private homes and in Cape Town, as the apartheid project began to unravel and white insecurity increased, so the downtown area – with its grand boulevards and open spaces – began to decline.

In summary, Apartheid spatial planning was based on the following three pillars (Dewar 1991).

The first is the prerogative of maintaining control. On the one hand, city authorities exerted tremendous control over urban life at the local scale through the imposition of by-laws and zoning regulations while on the other hand, they made little attempt to initiate positive, developmental planning and manage urban change and growth at the metropolitan scale. While macro-level control of urban growth and design was never exerted, planning authorities and other arms of the bureaucracy exercised very strict controls “over all dimensions of the urban environment at a smaller scale” (Dewar and Uytenbogaardt 1991: 69). City residents of privilege also sought to gain greater control in space by erecting walls and retreating from the city’s public spaces.

The second was an anti-urban ethic and a championing of the values of suburbia rather than of the city. In this view, the city was essentially a patchwork of houses inhabited by nuclear families. Truly urban values, by contrast, are based on complexity, difference, variety and ambiguity. Suburban values valorise stability and homogeneity.

The third was a distorted conception of “community” and the spatial scale at which it operates. First and foremost, communities were to be defined by race. The less obvious assumption was that the community was to be comprised of atomized nuclear families living in single-family homes. The wider community of which they were a part was conceived of as being homogenous in terms of lifestyle and family structure. The central concerns of planning for such a group of families was the maximum provision of secure, private space and of facilities centred around child-rearing. These facilities were to be embedded within this “neighbourhood unit” so as to protect children from the dangers of high speed expressways which surrounded it.

The cities that were born out of this superficial concern for “community” are to this day structured so as to protect the private property rights of homeowners through single residential

use zoning and other land use controls and to enable easy and convenient private automobile based mobility.

Post-Apartheid Planning

By the end of apartheid, recount Smit and Mabin, “the idea of urban reconstruction became widely proclaimed” (1997: 215). For many, post-apartheid transformation was seen as requiring a restructuring of the built environment, supported by reintegration of people, uses and urban forms and a focus on reconstruction (1997: 215). Yet the legacy of apartheid social geography has been far more lasting than perhaps one would have expected.

The period that followed democratization ushered in a wave of policies and legislation aimed at redressing the inequalities produced by apartheid. While it was hoped that spatial planning could transform South African cities along more equitable lines, it has been hamstrung by the fragmentation and redundancy of land use and planning law and a lack of clarity over how more integrated, compact urban forms would be achieved.

The first attempt to jumpstart reconstruction and development in the post-apartheid period was the passing of the 1995 Development Facilitation Act (67 of 1995) (the ‘DFA’), which at the time was described as “the most significant piece of land development legislation to have been enacted in recent times (Van Wyk 1999). The DFA responded to an ideological and political climate in which redistribution was of utmost importance. It aimed at “addressing the imbalances of the past” and “fast-track(ing) land development and the delivery of housing” (Van Wyk 2012: 106). Crucially however, the DFA did not “wipe the slate clean” and left in place many of apartheid’s race based laws and other conflicting and parallel legislation which have only confused and made increasingly inefficient the administration of planning law.

The Compaction-Integration Agenda

Initially, urban policies were influenced by the critiques of the apartheid city made by academics and the spatial manifestos of an influential group of planners at the University of Cape Town, publishing studies and manifestos through Urban Problems Research Unit. This “UCT School” made the case for more compact, integrated urban forms, focusing primarily on physical development, but also envisioning a different relationship between planners and the “city builders” and citizens whose individual efforts would shape the city. They argued that “instead of controlling land use through zoning and other schemes, planning should be minimalist, intervening more often through designing structuring systems, such as grids of interlocking main routes, to which individuals would respond” (Todes in Pillay et al. 2006: 52). This argument echoed the work of David Crane, who argued for the installation of a ‘capital web’ of public spaces and services that would structure surrounding private spaces and provide the essential elements of good urban form.

The RDP programme was, at least theoretically, aligned with this agenda, however it quickly devolved into a programme for mass housing delivery that in fact perpetuated the fragmented spatial forms and sprawl the UCT School had advocated against. As the RDP faltered, and as the challenge of actually implementing integration and transformation became clearer, so the compaction-integration agenda was, if not abandoned, then pushed aside. Todes explains that it was criticized for being “far too physically based and design oriented” and for failing to “engage with the economic and social forces shaping the city, or with the role of private interests as the ‘city builders’” (in Pillay et al. 2006: 53).

It seems that these criticisms were somewhat disingenuous, and mistakenly conflated the quality of these ideas with the way that their implementation was being approached. Again, this is evident in the way that the RDP, under political pressure, quickly devolved into a mass housing programme. In an attempt to meet the expectations of the urban poor, the post-apartheid government embarked on an ambitious pub-

lic housing programme, which resulted in the quantitatively impressive delivery of nearly 3 million homes since 1994 (National Planning Commission 2011: 239). This singular focus on the single family house was, while being a key object that informs how comfortable, safe and dignified our living environment and shapes the space around it, essentially a-spatial and thus incapable of transforming the urban landscape as a whole.

Poorly located, low-density monotonous rows of virtually identical RDP homes have thus come to characterize parts of the South African urban fringe. Urban sprawl has only intensified and “increased the daily reproductive costs for the poor, instead of providing (the poor) with an appreciating asset that can bolster their livelihoods” (Pieterse 2009). Unequal settlement patterns and access to economic and social amenities were thus perpetuated in large part because it is the land market that sets prices, and, as Napier argues, “so strong is the inherited Apartheid city pattern that the current housing programmes under a progressive government fall victim to those same market exclusions” (Napier 2007: 8).

Legal Impediments

Another impediment to implementing urban compaction and integration was the strength of private property rights which was guaranteed during negotiations between the Nationalist Party and the incumbent ANC government. Indeed, Stephen Berrisford and others have argued that perhaps the most intractable issue that frustrates more progressive planning efforts is “the extent to which planning laws can interfere with and restrict the exercise of property rights” (2011: 253).

Section 25 of the Constitution protects landowners against the ‘expropriation’ of property rights, which can occur when, for example, adjacent property is re-zoned for other uses. The burden of proof that property values and rights are not impinged by a change of use or development falls on the developer (whether they be an individual or the state). This is often a difficult burden of proof to fulfil and is the reason that attempts to build subsidized public housing in well-located areas

has so often failed. In such a scenario, surrounding landowners have challenge the proposal “on the basis that their rights to the use and enjoyment of their land will be reduced or lost entirely because of a range of possible causes such as increased crime, air pollution, water pollution and reduced property values” (Berrisford 2011: 255). The state has also found it difficult to force developers to build in under-resourced and/or lower income areas by curtailing unused development rights on better located/resource land because doing so constitutes an expropriation of rights (Berrisford 2011: 255).

The strength of private property rights therefore remains one of the greatest obstacles to urban transformation. It is for this reason that the call to redevelop vacant or under-utilized cities throughout the city has been so urgent. As a result because of the NIMBY lobby and the strength of its legal position, the best chance of progressive housing delivery and inclusive development is on sites for which zoning rights have yet to be conferred.

Breaking New Ground: Compaction-Integration Revisited

Despite – or because of - these failures, the ideal of compacting and integrating South African cities remains. By 2004, “ideas of integrating and compacting the city seemed to be resurgent”, to the extent that the Department of Housing produced a new policy document, *Breaking New Ground: A Comprehensive Plan for the Development of Sustainable Human Settlements* “which included an emphasis on urban restructuring and integration” (Todes in Pillay et al. 2006: 63). Urban planning in South Africa is now as conflicted as ever: on the one hand, physical design and plan-making is scorned for being “physically deterministic” and out of touch with the relational complexities of the city and its political system, while on the other, the environmental, economic and social costs of fragmented, ugly and inefficient cities is decried. It seems that the balance may be tipping towards a “compaction integration” agenda because, quite simply, the core ideas of this approach are not wrong, but were poorly implemented and in some cases, entirely misunderstood.

Conclusion

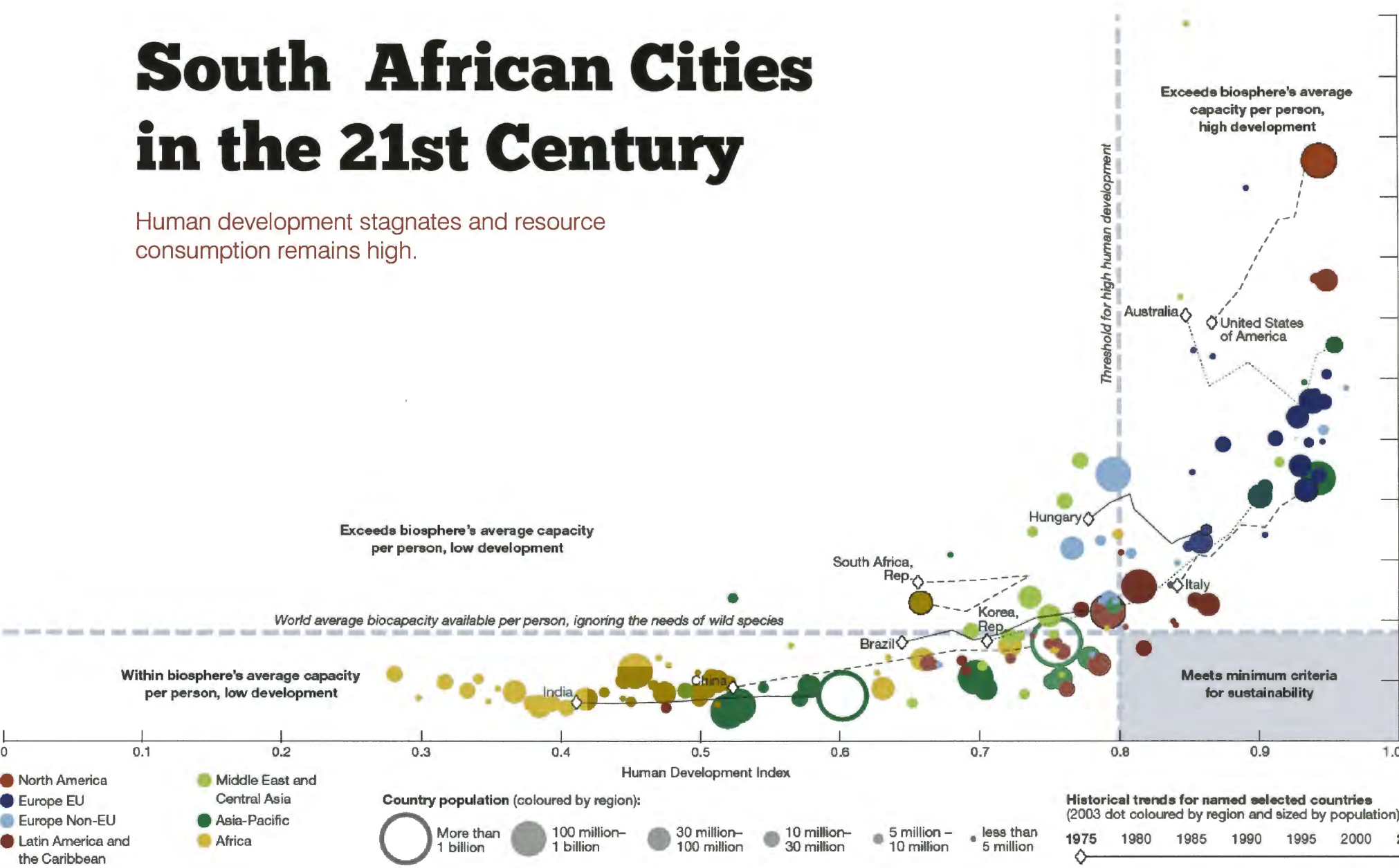
At a speech given at the University of Cape Town in 2012, then Minister of Planning Trevor Manuel said, in no uncertain terms, that the two most pressing development challenges in South Africa today are early childhood education, and the transformation of the built environment.

This transformation has been elusive, and there are many obstacles on the path to more progressive and integrated planning efforts. However it seems, if anything, that it has been the failure of planning to offer concrete solutions to problems – as opposed to vague rhetoric – that has been the source of such lethargy and squandering of opportunity. The rhetoric of post-apartheid planning has been at least theoretically correct, but planners have not pushed hard enough at the status quo. They have not made real plans consistently enough, and given form to broad ideals like “integration”, “sustainability” and “equity”.

South African cities have problems, but then, so do other cities in both the developing and developed world. What is peculiar to the South African context is the degree to which planning is implicitly derided, while at the same time there are no real plans to be found. This needs to be addressed by simply making actionable plans that are coherent and properly spatial.

South African Cities in the 21st Century

Human development stagnates and resource consumption remains high.



International Planning Conventions

The uniqueness of the South African situation can be overwhelming. The solution may lie in returning to the core performance qualities that are internationally recognized as the ultimate guideposts for urban planning.

1. Equitable access to opportunity

To some degree, inequality in society will always exist. A more realistic and helpful goal is to create a society in which everyone has fair access to opportunity. Whereas perfect equality implies uniformity and sameness, the principle of social equity allows for difference, but insists that all people should have an opportunity to change their situation and engage in society as an equal. If access were fair and equitable, then socio-economic inequality would theoretically result only from a naturally uneven distribution of innate talent and initiative amongst people. To commit to promoting equity, one therefore commits to given all people the chance to develop their talents, to take care of themselves and their family in a dignified way, and to retain a decent quality of life.

In the urban context, equity is achieved through the provision of safe and affordable public transportation. Doing so allows people without access to private motor cars to move freely and conveniently through the city and therefore access the same amenities and services that wealthier residents do.

The proliferation and expansion of cities owes to the rich economic and social advantages they afford (Lynch 1981: 187). Urbanization is thus the process by which rural peoples locate themselves closer to social and economic opportunity, recognizing that places with higher population densities and agglomerated production, generating more opportunity per capita than more rural areas. Increased productivity and amenity in cities stems first and foremost from the economies of scale which high population densities and decreased transportation costs create. Recent research in the fields of urban economics have gone further and argued that even in the face

of improved e-communication and economic globalization, physical proximity continues to generate “knowledge spillovers” and relationships of learning and innovation between urban dwellers. Cities remain the engines of economic growth and innovation.

But not all cities generate the same degree of opportunity, and often, whatever opportunities for social and economic betterment that do exist are often distributed unevenly. Thus, as Dewar and Uytendogaardt point out, the generative capacity of urban systems is “not related solely to its demographic size”, being “profoundly affected by the way in which the city is structured and made” (1990: 16). Planners therefore have two tasks: first, to find ways of maximizing the generative capacities of the urban system and second, to ensure that these opportunities can be accessed efficiently and equitably.

Planners and plans themselves cannot create employment opportunities, nor can they build productive relationships between firms and people. Realistically, they can only establish “the preconditions which promote or retard economic generation” (Dewar and Uytendogaardt 1990: 16) and a more vibrant and comfortable context that maximizes interaction and convenience.

Dewar and Uytendogaardt correctly note that “a central factor affecting urban performance (and therefore the generation of opportunities) is the degree to which urban activities and local areas within the city are integrated. In spatial terms, integration is achieved when the urban fabric is continuous and dense so as to allow maximum access, permeability, and a blurring of the artificial lines between areas (Dewar and Uytendogaardt 1990: 48). It is also achieved when land uses are mixed, creating a diverse range of activities accessible within a (small area). Given this strong connection between connectivity, diversity and integration of the urban system and the degree to which the system provides opportunities, it follows that bringing about cities we set out a new geometry of circulation and open space that is complex and human-scale.

Planners must also safeguard the urban ideal itself. While

cities offer positive agglomeration benefits, urban life also involves congestion or negative agglomeration effects. In order to sustain and expand the generative capacity of urban systems, the costs of agglomeration – which include pollution, congestion and social conflict, must be outweighed by its benefits. Plans must seek to minimize these costs so as to avoid the decline and abandonment that occurs when urban services decline and people no longer want to live close to one another (Glaeser et al. 2001: 27).

The generation of opportunity is pointless if only a limited number of people have access to them or if doing so is costly, time-consuming or otherwise difficult for users. The concept of access extends beyond employment opportunities to include access to other people (kinship networks, friends and other acquaintances), access to human activities (employment as well as educational, legal and financial services) and, more fundamentally, access to the basic requirements for human life (water, food and energy) (Lynch 1981: 188).

Good access is a pre-requisite for social and economic resilience and adaptability. In unstable or hostile environments, people need to have a wide range of means by which they can access resources needed for survival. This is especially the case in societies like South Africa, where many urban dwellers are poor, and thus reliant on precarious living arrangements, kinship networks, state assistance and diverse household economic activities.

Access has both spatial as well a-spatial dimensions (Dewar and Uytendogaardt 1990: 17). It is determined not only by physical proximity but also by the psychology, economic and social capacities of the user and any “economic, political, regulatory and attitudinal barriers” to use (Dewar and Uytendogaardt 1990: 17). Accessibility is also a function of diversity. As Lynch points out, “Presumably it is better to be able to reach five food stores which handle goods of different quality and type, than five stores which are all alike” (1981: 191), with the implication that we need to access to what we want and what suits us, not simply to generic services and opportunities.

Physical accessibility can be assessed according to two sets of criteria: efficiency and equitability.

Efficiency is the extent to which a desired level of achievement can be maximized at minimal cost (Lynch 1981: 221). For most urban dwellers, the chief impediment to access is that of overcoming distance. In that regard, efficiency is a measure of whether economic, physical or temporal cost of transportation have been minimized as far as possible so that the benefits of access are maximized.

Equitability refers to the degree to which all people have some base level of some or other good, service or opportunity. Clearly, not all city dwellers can live in locations that are equidistant from all amenities and services they may want to access. Achieving equity of access however is not the same thing as achieving perfect equality of accessibility in every instance. An equitable urban system is not “ubiquitously uniform”, but it does offer all people the same functional level of service and opportunity.

2. Intensity, Complexity and Integration

The size, organization and functioning of cities plays an important role in determining resource consumption, environmental degradation and quality of life. The conversion of natural land to urban land, for example, interferes with the functioning of ecosystems and the size of urban footprints and the design of transportation systems directly influence the rate of non-renewable resource consumption. In recent years, planners have responded to the proliferation of low-density, sprawling cities by advocating for more compact cities developed according to “smart growth” principles (UN-HABITAT 2009: 15).

Urban systems generate movement of goods and people – between residence and work, or between businesses, sites of production or places of consumption and leisure. The amount of energy this requires will depend on the distance travelled and the mode used and the number and length of trips increases

with the size of the city. Public transportation consumes less energy per passenger than private vehicles, and non-motorized transportation (cycling, walking) consumes less than both those modes.

Reducing resource consumption depends on reducing city size by developing land more intensively and increasing population densities to meet the minimum threshold at which public transportation provision becomes viable. Urban compaction can be achieved firstly through the introduction of an urban growth boundary beyond which no development is allowed to take place. Development that does take place takes place within the city and achieves certain minimum development densities so that population growth can be accommodated within the urban boundary.

Jobs-Housing Balance

Urban systems also perform better economically, socially and environmentally when housing is associated with employment. Planning in the 19th century has in many ways been concerned with separating land uses so as to create a more harmonious urban order. This has left behind mono-functional dormitory suburbs and downtown business districts deserted after 6pm.

In a recent New York Times op-ed article, the economist Paul Krugman pointed to a recent study that establishes a negative correlation between long commuting times and an overall lack of social mobility. When cities are spread out and exhibit a degree of separation between residential and non-residential land-uses, the cost of transportation is onerous, especially for the poor. Krugman referred to another article, which told the story of a mother of three who spent as much time commuting to her job as she did at her place of employment.

Historically, city dwellers lived near or even next to their place of employment. Admittedly, the size of urban footprints were more compact, however this level of convenience owed more to mixing of land uses and the close association between home and work. We cannot and should not attempt to return to the

kind of economies which supported this association, but we can put an end to constructing housing in places without any viable source of employment for new residents. New housing needs to be developed closer to existing centres of employment, or otherwise to form part of a broader local economic development strategy.

Legislative and Policy Context

Developmental Local Government

In 1998, the White Paper on Local Government set forth a vision of “developmental local government”, which it defined as “local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs and improve the quality of their lives” (Republic of South Africa 1998: 31). This signalled a move away from the apartheid era relegation of local government to the administration of national government directives (Skinner 2000: 52). The mandate of local government was thus expanded to the promotion of social and economic development over and above its traditional role as regulatory and basic service provider.

In 2001, a White Paper on spatial planning set forth five principles that should guide spatial planning: sustainability, equality, efficiency, integration and good governance (RSA 2001: 10-12). It stresses two kinds of integration – the integration of planning processes, “taking into account the often disparate sectoral concerns, policies and laws and their requirements and reaching conclusions that are efficient and sustainable from a management and governance point of view, and finding integrated ‘on the ground’ outcomes “that break down not only the racial and socio-economic segregation that characterise our country but which also look at spatial integration of different land uses, places of living with places of working and shopping and relaxing” (RSA 2001, 9).

The Integrated Development Plan

The Municipal Systems Act of 2000 obliges municipalities to formulate Integrated Development Plans (IDPs) for a five year period coinciding with the term of the municipal council. It requires IDPs to provide a long-term vision for development in the municipality, a review of existing conditions, a programme for economic and social development and a prioritized list of development objectives.

The Spatial Development Framework

The IDP has a spatial component – the Spatial Development Framework - which indicates how the goals of the IDP will be realized in space, and which include guidelines for land-use management¹. The SDF has a 7 year horizon, which is intentionally offset from the election cycle so as to give it greater independence from short-term political agendas.

SPLUMB

In 2013, the Spatial Planning and Land Use Management Bill (Act 16 of 2013) - or SPLUMB - was introduced to replace the now-defunct Development Facilitation Act (which was deemed unconstitutional).

The Act takes a progressive and activist stance on the obligations which planners and spatial plans have to make South Africa’s cities better, more equitable places to live. It goes so far as to legally obligated to base themselves on a number of normative principles, which include:

- *Justice* [“past spatial and other development imbalances must be redressed through improved access to and use of land” (Republic of South Africa 2013: 18)]
- *Sustainability* [“promote land development that is within the fiscal institutional and administrative means of the Republic... promote land development in locations that are sustainable and limit urban sprawl” (Republic of South Africa 2013: 18)]
- *Efficiency* [“land development optimises the use of existing resources and infrastructure” (Republic of South

¹ Because of fragmentation and overlap in land use law, however, forward planning documents like SDFs cannot be approved as implementable structure plans because they conflict with the provisions of the current Urban Structure Plan. This is the recurring dilemma of post-apartheid planning: any attempt to change land use involves taking away land use rights, which can then be contested and upheld, blocking any meaningful change to land use policy.

Africa 2013: 18)]

- *Resilience* [“whereby flexibility in spatial plans, polices and land use management systems are accommodated to ensure sustainable livelihoods in communities most like to suffer the impacts of economic and environmental shocks” (Republic of South Africa 2013: 18)]



6 METROPOLITAN FRAMEWO

This document addresses the redevelopment of the Culemborg rail yard site and its environs, an area that is clearly under-utilized and disorganized, but which cannot be developed without some idea of how redevelopment fits within and contributes to broader metropolitan strategy.

The following metropolitan framework is a reinterpretation of Cape Town's existing structure, suggesting a new structure for its primary functional systems, which include open space, movement and public institutions. It is argued here that the development of such a strategic site must further the aims of the Metropolitan Framework. In order to do so, the quality of public spaces, integration into surrounding urban fabric, and the enhancement of the core functional systems (open space, movement and institutions) must be the starting point for the project. A key concern is also the generation of "a new understanding of the city's fit within its macro-geography" and thus revisiting the relationship between the city as a functional and socio-psychological entity and the city as landscape and territory (Busquets 2004: 16). In cities like Barcelona, Spain, this approach has involved the recovery of the city's connection its waterfront, to its historic port, and to the hydrological and topographical systems running through it.

The metropolitan framework is also concerned with rebalancing the city, ensuring more equal levels of services and a more decentralized distribution of non-residential uses. This, crucially, is not the same thing as seeking sameness or perfect equality in the city. Rather, it is an attempt to make the city more equitable.

The framework is informed by the existing city: how and why it developed the way it did, what processes and patterns animate it, and the implications these have for human development and greater social equity and environmental sustainability. This approach is based on the belief that "an understanding of (the city's existing) forms and its capacity for modification and transformation can provide the basis for valuable projects of intervention and urban improvement" (Busquets 2004: 14).

Informants

Goals and Principles

The recommendations made in this document are grounded in a commitment to the following values:

- A commitment to human development
- Equity
- Respect for nature and sustainability

In urban terms, these values produce the following imperatives:

- Connect people to opportunity
- Compact and densify the city
- Integrate jobs and housing by promoting mixed use development
- Improve connectivity of and access to all elements of the urban system
- Invest in a metropolitan public transportation network extending to all parts of the city
- Invest in a public realm of education centres, recreational spaces, and government services.

Metropolitan Strategies

These imperatives, in turn, are translated into the following broad strategies.

1. Promote a Vibrant, Equitable Metropolitan Economy

The economic health of Cape Town and its residents is undermined by two challenges: the cost and difficulty of accessing employment and a looming tapering off of economic growth as a result of un-competitiveness, inefficiency and a lack of skilled labour.

A key strategy for addressing the first challenge is changing the existing relationship between where housing is located and where employment is located. There are thus two ways of improving access to jobs. The first is to improve transportation from existing residential areas to areas of employment. This is best achieved through the improvement and expansion of safe, reliable and inexpensive public transportation. But recent growth patterns in employment generating activities are only exacerbating the jobs/housing mismatch. This observation raises a second alternative - to bring jobs to where people live. This can be achieved through a commitment to mixed use development throughout the city, and the promotion of decentralized, but highly concentrated, nodes.

At the macro-scale, achieving a better jobs-housing balance means establishing promoting economic activity that is actually in the centre of the city, rather than in the so-called "City Centre". This may be possible in Cape Town, given the very central location of the airport and the small-scale manufacturing, logistics and other activity it could attract. At the micro-scale, the jobs/housing mismatch can be improved by converting residential neighbourhoods into "urban villages", defined as a neighbourhood which accommodates residential as well as commercial uses. In some centres, particularly in the heart of the Metro Southeast, in the Khayelitsha and Mitchells Plain nodes, this may for some time mean the promotion of local businesses and small-scale informal business. In other areas, there might be opportunity for small as well large firms.

The urban economy is highly complex. It is conceivable that a person could live in a centrally located area yet need to commute a great distance to a job on the periphery of the city. As such, both these broad strategies – bringing people to jobs and bringing jobs to people – must be pursued simultaneously and in conjunction with an expansion of a metropolitan transportation network.

The supply of employment also needs to be addressed. Economic growth in the city has favoured skills-intensive employment in financial and business sectors and industrial and small-scale manufacturing has been allowed to wane. There are macroeconomic realities that drive this trend over which spatial planners have no control. What can be promoted, however, is a new, efficient and connected urban economy focusing on small-scale manufacturing, agro-foods processing, creative industries and local niche industries. This will require two things: the agglomeration of economic activity in well-serviced, highly connected urban environments that enable inter-firm communication and nurture innovation and a concerted effort to provide skills training and better links to educational institutions.

This logic does not only apply to formal sector employment, however. More integrated and efficient urban environments also encourage more “closed” urban economies, where small-scale entrepreneurs can take advantage of higher population densities and ease of access to start small businesses.

2. Manage Growth and Protect the City’s Natural assets.

Cape Town is endowed with considerable scenic beauty, biodiversity and rich agricultural land. For the sake of current and future generations, these assets must absolutely be protected. Yet Cape Town is also a highly unequal, growing city that needs to expand its housing stock and economic capacity. There is thus an equally strong imperative to consume ever more resources. These two imperatives need not be pitted against one another. Rather, the city needs to seek out ways of using what resources it does have more efficiently.

This project places particular emphasis on how land can be used more intensively through densification of existing built areas and ensuring minimum densities be met in greenfield developments. It also promotes mixed-use development and improvements in public transportation as a necessary step towards lower carbon consumption.

So-called brownfield development presents property developers with several challenges. Most immediately, brownfield sites large enough for profit-yielding development are rare within even sprawling cities. Well-located land is also more expensive. This economic truth will never change. What can change, however, is the way that the cost of development is calculated, not simply in terms of internal costs but also in the negative externalities it generates. Of course, developers cannot be expected to pay the entire additional cost of doing in-fill as opposed to greenfield development.

As such, the city should act as a key partner in developer, using eminent domain and re-purposing state land for development that promotes the public good as defined in the SDF. This is clearly a controversial assertion, and any attempt to actualize this will require careful regulation. At present, the city facilitates development by simply identifying greenfield sites and providing costly bulk infrastructure to newly developed areas. This needs to stop. Development must be aided and not stifled, however state authority should be used constructively, rather than in a way that diverts critical resources away from those who need them while yielding very little in return.

3. Nurture the Qualities of the City, not of Suburbia¹

Cape Town should be re-imagined as a city of walkable, medium density neighbourhoods connected by an efficient multi-modal transportation system. In this vision, fragmented and discontinuous road system is knit back together, offering multi-directional access and eroding the barriers that once separated insular neighbourhoods.

¹ Dewar and Uytendogaardt

A New Vision for Cape Town

The red thread running through these models is the vital importance of connectivity. A metropolitan framework for Cape Town must improve all forms of connection – between people and their social and kinship networks, between workers and jobs, and between the state and the people.

The following section sets out a conceptual framework for greater Cape Town that focuses on making the city work better and more efficiently for all people. The vision specifically addresses issues of macro urban structure. But restructuring is not an end in itself: it is a way of unlocking the generative capacity of the city, of connecting people to opportunity and, in the end, making the city a more comfortable and enriching place for people to live in. The vision presented here has in mind a different kind of city, where public transportation structures growth and service provision (37), streets become seams of activity designed for people (38) and where points of interchange and investment are sites of diverse social and economic interaction (39).

The framework presented here is not a Spatial Development Framework as it is defined by the Municipal Systems Act (No. 32 of 2000). Its primary role in this document is to position the project site (the Culemborg rail yard area and its environs) within the metropolitan context, indicating in particular how the site contributes to better, more equitable and efficient movement within the urban system. Diagrammatically, this agenda is expressed as a notional accessibility grid applied to the city's existing radial structure. This is the macro-scale application of the conceptual approach to urban restructuring outlined in the preceding pages. While it is clear that urban environments are highly complex, it does not follow that plans themselves should attempt to simulate or mimic this complexity. Plans should instead seek to unlock potential and create an enabling framework from which complexity can emerge. The concept diagrams that follow are the graphic representation of idea. It is not an illustration of the city; it structures how we should begin to think about how the city should work.



37. Bus Rapid Transit in Curitiba, Colombia



38. A retro-fitted street in Medellin, Colombia



39. Warwick transportation junction in Durban, South Africa.

The Failed Radial

The spatial structure of Cape Town is often thought of as being radial, however, it can more accurately be described as a failed or misconceived radial city. Conceptually, radial cities expand concentrically outwards from a geographical centre. Unlike a traditional radial city, however, Cape Town's CBD is eccentrically located, surrounded by more than 180 degrees of mountain and sea. It is not, moreover, connected by a series of concentric ring roads. The primary arterials emanating from this "centre" (Main Road, Voortrekker Road and the N2 Freeway) therefore form a wedge of a circle rather than a complete circle around the CBD. The Cape Town and Bellville CBDs are the city's primary economic nodes. Almost all other significant employment centres are located along the Main and Voortrekker Road corridors. Recent economic growth has shifted to Durban Road and the West Coast corridors, both of which form part of the radial structure.

This partial radial structure generates an enormous amount of movement and reinforces the high cost of spatial mismatch between economic nodes and the Metro Southeast, where the majority of the city's population live. The city's lack of north-south linkages limits multi-directional movement which has increased as more activity has concentrated in decentralized suburban nodes across the city. Yet despite this inefficiency, recent development in the city has yet to break from this radial pattern.

In fact, recent development stretching north along Table Bay perpetuates this urban morphology as the few expressways reach up the coastline are surrounded to the west by the ocean and the Durbanville hills to the east.

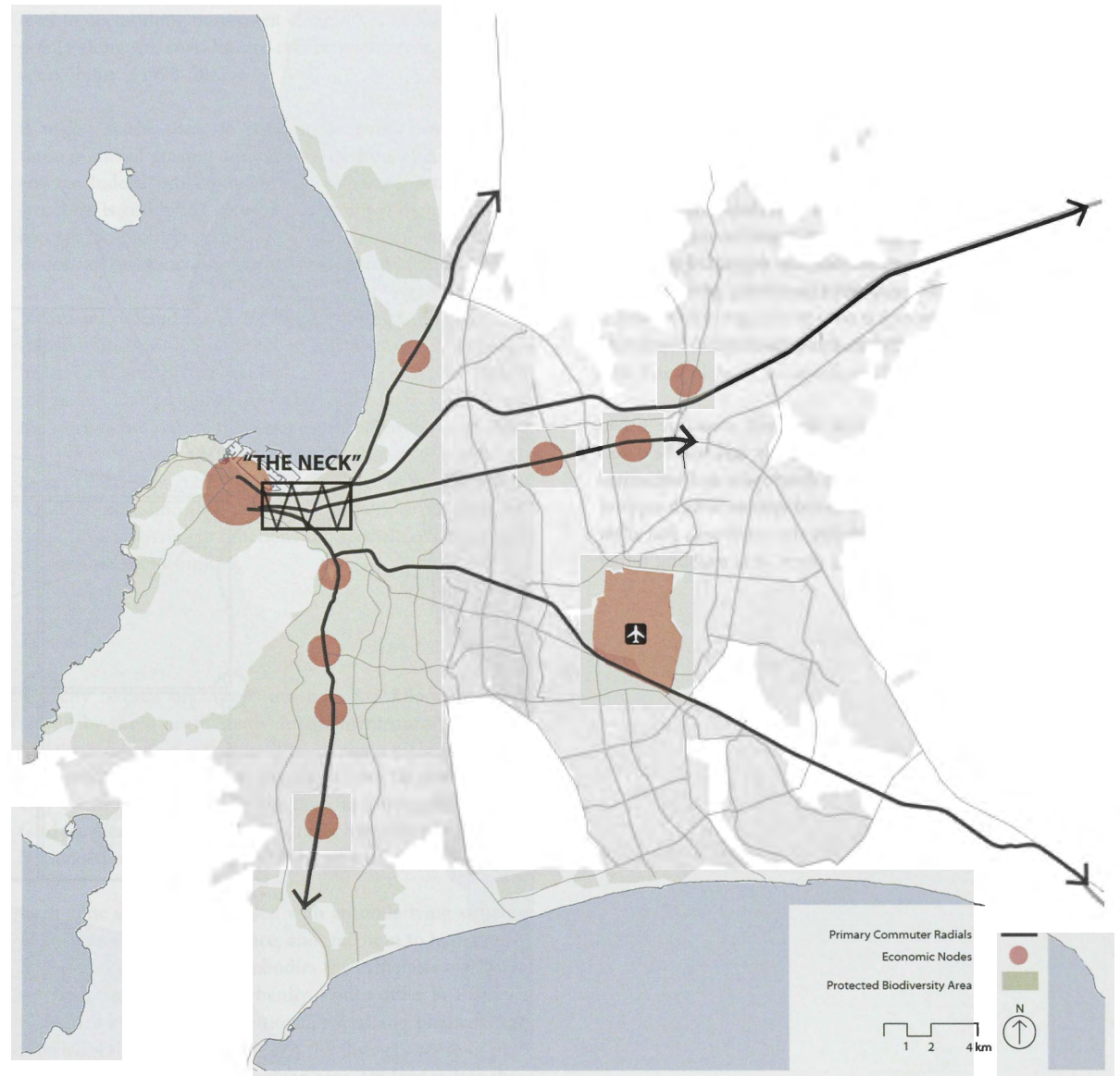


Figure 15: The Metropolitan Problem

The Conceptual Grid

Conceptually, the city should be thought of as a web of connectivity.

By adding new public transportation alignments and critical 'missing links,' this loose, disjointed web can be strengthened. Existing and potential development corridors and associated nodes are thus arranged into a clear 'cognitive map'. The picture that emerges is of a connected city, organized according to an equitable, multi-directional accessibility grid. In reality, of course, the road structure is not a perfect grid and indeed, it doesn't need to be. Nevertheless, this is the how the city should be imagined.

This is the essential framework that will structure urban growth. The city will still grow organically, and will be determined to a large extent by private developers and individual citizens. The grid – and the functional systems which support and are structured by it – establishes the conditions that allow growth and development to take place. It is enabling rather than restricting.



Figure 16: Metropolitan Concept

Key Elements

Corridors

Corridors are linear systems of activity that follow major arterials as well as feeder routes. They are mixed use, with both high density residential as well as non-residential activities.

Cities are animated by the flow of goods and people, however the potential which this energy offers is only realized when these flows are interrupted and thus “when stopping and gathering occurs” (Dewar and Uytendogaardt 1990: 48). In the Connected Cape Town concept, movement is not channeled to a limited number of points (as it is in a radial system and/or in a system dominated by limited access roads), but is instead diffused across a hierarchical, but multi-directional and permeability “accessibility surface” (Dewar and Uytendogaardt 1990). This is the approach advocated for by Dewar and Uytendogaardt, who argue that by “allow(ing)... activities to respond to the movement flows by locating along them”, planners can maximize the system’s generative capacities (1990: 49). This is because clear hierarchy and permeability allows for a more natural distribution of uses and a maximizing of the amount of exposure for businesses made available in the system.

Nodes

Nodes are intensively developed mixed use areas located at points of high accessibility and amenity. They centre around a transit stop or interchange, which is surrounded by high density development which eventually transitions outwards to lower density development. The area of intensive development around the interchange is defined by walking distance (800 m).

Nodal development is a naturally occurring phenomenon. Dewar and Uytendogaardt explain that its occurrence is inevitable: “as growth occurs, a pattern of peaks or nodes of activity

tend to occur along movement corridors... because different points along the corridor are relatively different in terms of accessibility” (1990: 50).

It makes sense, then, to concentrate public investment at those points of greatest accessibility, where a node is likely to emerge. Indeed, activity intensifies when transportation infrastructure is combined with one or multiple high quality urban spaces, multi-purpose public facilities and, at high order nodes, tertiary functions like hospitals and teknikon.

Nodes are ordered hierarchically, according to the modes of transportation which intersect it (higher order interchanges involve rail and BRT, lower order ones involve local buses), the nature and prominence of the routes intersecting it and the catchment range of the services and amenities it provides. For example, a major metropolitan level node would be the current CBD, which has a catchment range of the entire metropolitan area, and thus can support multiple rail lines, national level government functions and specialized cultural and recreational opportunities.

Zones

The city is then organized into nine 8x8 kilometre zones, served by three north-south development/transit corridors, and three east-west corridors. These 9 zones make up the core metropolitan area, however this model can be applied to the City Centre as well, which functions as a irregularly shaped (and smaller) “Zone 10”. Each of these 8x8 zones can, in turn, be divided into a further 8 2x2 kilometre neighbourhoods.

Each zone should be provided with an underlying structure of transportation, public space, and medium to high density housing so that each one embodies the principles of efficient resource use and greater urbanity. Zones differ in that each is defined by particular functional, social and physical characteristics that signify and define the district’s sense of place and role in the wider metropolitan area. Understanding these attributes in turn clarifies the quantity and quality of invest-

ments, both public and private, which are appropriate and/or necessary in each area.

The concept of zones is not meant to caricature the city, but to focus on contextually relevant development and investment while still ensuring an equitable distribution of resources. It can also improve urban management, by creating planning districts that make more sense than the current, seemingly random districts. This is the first step in a long process of understanding and in some cases re-imagining the identity and character of the city’s constituent parts.

Each zone in effect becomes a new “planning district”, administered and planned for as a form of area-based management.

The Grid in Context

The notional grid can become progressively less abstract as it is warped by context when framed in relation to the city's existing road structure. In Figure 17, it becomes clear that Main Road and Landsdowne Roads should anchor the grid system to the west and south, and that Vanguard Drive, which has not received much attention from previous plans, actually provides a critical link from the southern most part of the city to its northern most extents.



Figure 17: The Metro Grid in Context

Existing Nodes and Corridors

For historical reasons (discussed earlier), Main Road and Voortrekker Road have evolved over time into linear activity systems with points of intensive activity at points of transportation interchange or intersection with major arterials. They are now the city's most consistently developed and animated streets. The only other viable corridors are Lansdowne Road and Durban Road which, crucially, are in many ways relevant because they connect people to Main Road and Voortrekker Road (respectively). This suggests that corridors take on life not only when they are interrupted and combined with public transportation, but when they form part of a network of other corridors.

The form of urban growth that took place after these radials were established did not support this kind of development. Streets became conduits for uninterrupted vehicular traffic, lined with undevelopable road reserves. Roads like Vanguard Drive and the R300 are examples of the sterile expressways that developed in this vein.



Figure 18: Existing and Emerging Nodes and Corridors

A Decentralized Network

The notional grid shows how these existing and emerging corridors can be tied together in a web or network of corridors and nodes connected by public transportation. Each of the emerging corridors – now including Vanguard Drive, the eastern portion of Lansdowne Road, the R300 – gain vitality by virtue of their direction connection to other corridors and points of intersection between them. A precondition for their development is the downgrading of these roads to multi-lane boulevards, all of which are stop-and-go and lined with developable land (converted road reserves).

Figure 19 shows how this network of nodes and corridors could work. In reality, any one of the new nodes (shown in purple) could develop more vigorously than others, owing to a number of factors (including, intersection with major arterials, special place-making features, the character of surrounding neighbourhoods). The framework does not seek to dictate the size of these nodes. What it does is establish a kind of hierarchy of function in terms of the node's role in the movement system. So, for example, nodes at the intersection of major corridors will be points of convergence for multiple transportation modes and lines, and will be supported with higher order public facilities.

In Figure 19, the project's study area is shown not as a node as such, but as a hinge that forges the connection between the CBD and the Main, Voortrekker and Koeberg Road corridors (the later of which, for diagrammatic purposes is not indicated here).

The net effect of this system is to rebalance opportunity and access in the city, providing Capetonians with a wider range of urban opportunities and the ability to access them. This move can contribute to major urban restructuring.

Figure 19 also enumerates the various area-based management zones discussed earlier. The City Core area is effectively a "zone 10".



Figure 19: A Decentralized Metropolitan Network

It is impossible to predict the exact character, size or predominant land use of the nodes indicated in the preceding figures.

Planning leads urban development through the provision of public infrastructure rather than the wholesale development of new nodes or corridors. Public investment and strategic development incentives are what structure development. They do not determine development in its entirety.

The overall objective of the metropolitan framework is improving connectivity and rebalancing the pattern of accessibility in the city. This is achieved when the movement system is re-organized according to a decentralized system of interchanges at points of high accessibility along major activity corridors.

The plan argues for the necessity of points of concentrated activity. Activity is directed to these points by public investment in a network of multi-modal transportation interchanges. The traffic that these interchanges, in conjunction with further public investment in facilities and services around them, begin to attract economic activity and higher density housing.

Restructuring Through the Provision of Public Transportation

The plan should use movement infrastructure to encourage a more equitable patterns of urban access. The provision of public transportation is a form of progressive and ongoing economic redistribution, insofar as it makes accessing economic opportunity easier and more affordable. As an added benefit, the movement system can be designed in a way that unlocks latent economic potential, by creating places of public gathering and interchange where formal as well as informal businesses can take advantage of high volumes of commuters.

The movement system is a key structuring element in the city that facilitates decentralization of economic and social opportunity along activity corridors and around mixed-use

nodes. The system should maximize access and choice rather than mobility in and of itself. Doing so requires a shift away from car-orientated movement infrastructure that limits access points, creates barriers, and does not support adjacent non-residential activities. The goal is to create an equitable, multi-directional “accessibility surface” (Dewar and Uytendogaardt). The system provides “access to access”, giving people the ability to change direction and mode easily (in Jenks and Burgess 2000: 215). It is a geometry of “points” (interchanges) and “lines” (trunk routes and loop buses) which intersect in ways that create nodes of high accessibility.

The notional nodes shown in earlier metro concept diagrams make up, first and foremost, a hierarchy of modal interchanges. The aim of the system is to encourage points of high accessibility and complexity. These interchange points form around the intersections of key activity and movement corridors and of different transportation modes. These are places where commuters change mode and/or direction and, accordingly, where choice is maximized.

In order to facilitate the transition from car-based to public transportation, a metropolitan-wide network of park-and-ride facilities around interchanges needs to be established. In a city so dominated by suburban living and car culture, it is likely that many commuters will elect to drive to the nearest transit interchange rather than use a local bus or NMT route. While overall densities will increase, some residential pockets will remain low density, relatively private and, in turn, less likely to support high levels of local public transportation use. Bus Rapid Transit should be used for high volume corridor lines. BRT offers cities a less costly high volume transit alternative to traditional rail. The current MyCiti bus programme does not maximize the potential of this new mode because its routes are too localized and do not service large volumes of commuters. A future BRT system should provide high volume north-south and east-west service that augment the city’s rail infrastructure.

Transportation interchanges should be multi-functional. Given their high degree of accessibility, they should be-

come public service and amenity hubs. They can, moreover, be designed and landscaped in such a way as to accommodate small-scale businesses and informal traders (Dewar in Jenks and Burgess 2000: 215).

Re-Organizing “the Neck”

A critical step in realizing this new approach to urban structure is addressing the fact that the entire metropolitan movement system terminates in a cul-de-sac. The eccentric location of the city centre cannot be changed, but it can be re-positioned so that the interface between the city centre and the metropolitan region is not in the centre of the CBD itself, but at the north-west “hinge” between the proposed corridor systems.



7 THE CITY COR

The Sub-Metropolitan Context

The site and its environs play a critical role in urban restructuring as it is envisioned in the framework. It forms part of the “neck” that connects the eccentrically located CBD to major activity corridors. Currently, the neck is a tangle of transportation infrastructure and rail yards designed to terminate in the CBD itself.

Instead of acting as a funnel for suburb-to-CBD road and rail traffic, the hinge should be re-organized so that the point of connection between the Main, Voortrekker and Koeberg corridors becomes a hinge node from which the inner city or “City Core” system and the metropolitan-scale corridor systems pivot.

Restructuring the city as a multi-directional web of accessibility requires that these points of intersection area rationalized. If they are not, the system can never be re-balanced and made more neutral. Moreover, these points of intersection should become transportation interchanges, and so it is clear that this new hinge node, at the intersection of several major corridors, should become a major transportation interchange.

The figure to the right refers back to the conceptual approach to restructuring presented in the preceding chapter. According to its logic, the site area should be thought of as a series of interchange points with surrounding areas that are intensively developed. It shows, interestingly, that there can be pockets of quieter, less immediately accessible to a major or secondary public transportation interchange.

When viewed in this light, the site’s redevelopment becomes less of a freak project, and more as a model for how urban restructuring across the city should proceed.

In Figure 21, the basic idea of “beads on a string” is applied to the hinge point between zones 1, 4 and the City Core.

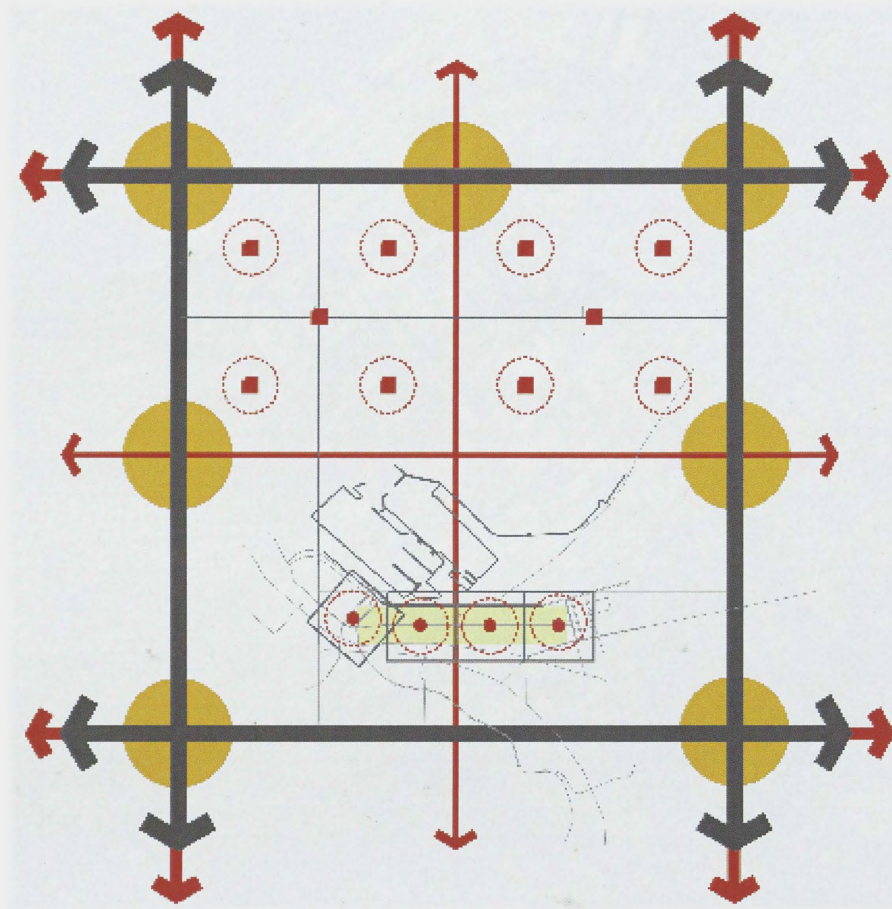




Figure 21: Sub-Metropolitan

The Concept

This new transit hub is the termination point of the city's rail system, which currently terminates in the CBD. This current arrangement makes no functional sense, and only contributes, practically and psychologically, to the high degree of specialization and disconnection of the CBD. The routing of rail lines into the CBD also creates massive barriers in the form of the rail lines themselves and their associated rail yards in a portion of land that is already geographically constrained.

The flow of commuter movement through the neck and into the City Core should not be inhibited, but the mode of transportation should change. Conceptually, the most efficient alignment of the City Core's primary transportation corridor is east-west, running through the site area and wrapping around Signal Hill to Sea Point.

In the concept, the transit hub and the historic CBD are two anchor points along this linear system. Redevelopment of the site is thus not any obligation to become "the new CBD" because the system is now not so overwhelming destination-based, but rather is a series of different kinds of "beads" along a string.

This large-scale action yields enormous benefits:

- It eases congestion in the "neck", which is severe, and immune to remedies focusing on increasing sheer road capacity.
 - Removing the rail lines and associated rail yards frees up a considerable amount of new land, which poses a huge economic opportunity for developers and adjacent precincts benefitting from redevelopment.
-



Figure 22: Sub-Metropolitan C

The City Core: Site and Environs Scale

Having established the metropolitan scale responsibilities of the sub-metropolitan area in which the site is located, it now remains to be seen how (if at all) the site can contribute to contributing strategically to the broader urban restructuring called for in this document.

In terms of the sub-metropolitan concept, the land between the proposed transit hinge and the historic CBD should be intensively developed and structured around a lateral transportation spine running east-west, connecting the hinge to Sea Point.

As the following analysis shows, this is clearly not the case. The site and its environs makes up an area referred to here as the City Core (shown in Figure 23) that is ridden with discontinuities and gutted by the sterilizing impact that vacant and under-utilize land has on movement and agglomeration patterns. If anything, the site as it stands now is a massive barrier to rationalizing and easing connections in and out of the CBD.

What follows is an evaluation of the site's wider inner city context. This clarifies in more detail the nature and programme of redevelopment on the site.

Specifically, it refines the argument for locating a metropolitan transit interchange in Salt River, at the intersection of Main, Voortrekker and Koeberg roads. This move is both a means and an end of the site's redevelopment: it frees up land for redevelopment, which must then be intensively developed and planned so as to maximize the value of this costly station relocation.



GREENPOINT

Table Bay

"THE NECK"

SEA POINT

Signal Hill

FORESHORE

PAARDEN EILAND

N1 FREEWAY

THE SITE

THE CITY CORE

Voortrekker Road

Main Road

WOODSTOCK

EASTERN BOULEVARD

DE WAAL DRIVE

M5 SETTLERS TWIN

250 500m

Figure 23

An Argument

The history of Cape Town's city core could be written as a polemic about all that is wrong with city planning when it is warped by plans that are insensitive to surrounding context, beholden to the interests of a select few, and governed by the law of efficiency rather than by truly humanist values and concern with creating great people places. It is a history of a vibrant port city whose waterfront was progressively made inaccessible to its people.

Setting aside for a moment the political and sociological consequences of European settlement in the Cape, the urban forms that were developed in colonial and imperial Cape Town were, in terms of urban form, highly integrated, comfortable and orientated towards human-scale economic activity and transportation. The city was also connected to its harbour, and to the rolling mountain slopes that fed it fresh water from perennial streams.

By the mid-20th century, however, these public spaces were mutilated by brutalist modernist architecture, public transportation options and walk-ability were obliterated by the city's love affair with the automobile, the perennial streams had been canalized and a massive rail yard, elevated freeway, and barbed wire fences separated the city from the water.

This strategic framework for the redevelopment and reorganization of the City Core is very much about reclaiming these discarded urban qualities. It is impossible, and not even desirable, to attempt to recreate Cape Town of the 19th century. It is important, however, to look to history to guide us in how we can reclaim elements of our urban past that were effaced for reasons that are no longer valid.

In the past, the true failing of these spaces was that they were racially exclusive. For those people that they did serve however, they provided a highly integrated, convenient and rich setting for human activity. Much has changed in Cape Town since then, but it does not follow that we should not look to historic Cape Town for inspiration, and seek to improve the

quality of the urban environment everywhere in the city. The new democratic, multi-racial Cape Town deserves an urban platform that is just as integrated as these historic areas, with generous open space, quality public transportation, and human-scale streets.

Cape Town was once a great "Tavern of the Seas". It is possible to reclaim the city's sacred connection to its waterfront, while in the process, adding amenity, connecting the city centre to the suburbs, and creating urban forms that exemplify the principles of democratic citizenship, namely: openness, access and dignity.

Understanding the history of the area is key, thus the section that follows provides an overview of its historical development.



40. A tram car winds its way through the central city in 19XX.



41 Boats are cast off from the shore of Table Bay before it was colonized by harbor functions.



42. A recreational pier juts out into Table Bay, connecting Adderley street to the water.

Historical Development



43.

1820



44.

1850



45.

1901

Settlement Begins

European settlement in the City Core began in the 17th century on a relatively flat portion of land adjacent to the deep natural bay where ships on their way to the East would stop for refreshment. This site was favoured over the nearby Indian Ocean coastline because the water in Table Bay was deep enough for setting down anchors, and because the area around it was agriculturally fertile and water-rich. The other side of the peninsula, by contrast, was infertile, sandy and windy.

The original inhabitants of the Cape Peninsula were the Quena, who called the area “Camissa” or “Place of Sweet Waters”, a name inspired by the freshwater perennial streams running down from Table Mountain.

Following the arrival of European explorers, the Cape came under the dominion of the Dutch East India Company, which laid out the initial settlement according to European city design principles. A 60 by 60 meter street grid was established, with a generous portion of land kept aside for agriculture. This was, of course, the Company’s Gardens (which still bears this name today). For its water, the settlement relied on the aforementioned perennial streams running down from Table Mountain.

Changing Relationship Between City and Waterfront

During the 19th century, as European settlement took hold, the city developed civic functions and associated public spaces, such as the Grand Parade in front of City Hall, and the houses of Parliament lining government avenue, which ran adjacent to the Company Gardens (eventually re-purposed as an urban park). Shipping was the dominant form of international transportation and freighting and so the city retained a strong connection to its port.

By the second half of the 19th century however, the city’s relationship to its waterfront began to change. The initial impetus was the need to adapt the city to new transportation technology. When Cape Town’s first railway was constructed in 1862, it entered the City Centre in the area between the Castle and the water. The line’s first station was then located on Adderley Street, then the main commercial corridor in the city. While the rail line acted as a barrier between city and sea on the harbour’s western section, the city retained access to the seafront where Adderley Street terminated in a newly built pier, which served as a recreational space for white Capetonians.

Crucially, however, nearly all of the city’s waterfront land was owned by Cape Town Railway & Dock Company (later reformed as the South African Railway and Harbours). With the rapid growth of railway lines into the interior of the country following the discovery of diamonds in the Northern Cape and later, of gold in then Transvaal, the Company undertook an extensive land reclamation project for the establishment of a rail and goods yard, reclaiming approximately 125 acres between 1846 and 1917 (Botha 2012: 24). This was a controversial development even at the time because it cleaved apart the city from the Waterfront, creating railways and a large swath of inaccessible land that acted as barriers to movement. However, those who protested were effectively powerless to halt it because the harbour was so firmly under the control of the Company. This rail yard was, of course, the Culemborg rail yard.

Speculative Development and Expansion Through the “Neck”: Development Along the Railway Lines

Towards the end of the 19th century, Cape Town grew more rapidly. Initially, development took place in a more ad-hoc manner than had been the case during the founding of the city (when a grid was imposed, after which development of individual erven would take place). Stretching out along the railway lines, medium density tenements were constructed by speculators, often with little regard for proper hygiene or safety. Areas like Salt River, Woodstock and District Six (as it was later referred to) retained grid iron street patterns; however blocks were often even shorter than the original 80 by 80 meter ones.

The upper slopes of the “City Bowl” were developed less intensively, and, in some places, were more agricultural than residential. Owing to its varying topography and the purpose of its development (which, unlike in the aforementioned areas, was for wealthy, rather than working class, Capetonians), development in these areas did not follow the same grid iron pattern.



46.



47.

On a fundamental level, initial settlement is responsive to its physical setting. The freshwater streams of Table Mountain run on either side of the original town grid (present-day Buitenkant Street to the west and present-day Buitengracht Street to the east) and the Castle, the settlement's military garrison, occupies a strategic position by the water.



48. The working harbour before it was cordoned off from the city.



49. A train leaving Cape Town's central station, where the metropolitan rail system terminates. These tracks remain to this day, cutting off Woodstock from the harbor area.



50. A promenade along the Table Bay waterfront in 1913. Pedestrians still have access to this amenity, which only exists today along the Sea Point Promenade.



51. The Salt River mouth as it meets the ocean at Woodstock Beach, before it was converted into harbor space.



52. Speculative row housing in Woodstock

The Foreshore Redevelopment and the Triumph of the Motor Car

By the late 1940s, the City Core was scarred by the goods yard and barren patch of reclaimed land, however it was “still relatively unscathed by either apartheid removals or the visions of town planners” (online). It had none of the skyscrapers, parking lots and wide, desolate boulevards and flyovers it has today and District Six, a bustling multi-racial suburb on the slopes of Devil’s Peak, had yet to be demolished. In the ensuing decades, however, much of this would change.

Early critics had failed to halt the land reclamation project and subsequent rail and goods yard development, however there remained, through to the 1930s, “constant tension over the state of the Foreshore and the presence of the goods yard, railway station and dock lines” (Botha 2012: 28). The issue of the rail yards and their deleterious effect on the city seemed to be resolved in a 1930 joint committee meeting which produced a report calling for the setback of the railway station from Adderley Street and the sinking below ground of the dock railway lines so that new roads could be extended over the area. The SAR&H rejected this proposal, but agreed to making land available for a development scheme on the vacant reclaimed land.

Around this time, several outspoken citizens lobbied for the relocation and/or reorganization of the Culemborg goods yard to add waterfront public amenities and again give civic and historical landmarks like the Castle, Adderley Street and the Grand Parade a prominent place in a monumental approach from the harbour (Botha 2012: 41). An early scheme proposed the development of small 80 by 80 meter city blocks on the site, which would be knit into the existing urban fabric. Unfortunately, this scheme was rejected.

Eventually, a 1947 plan was approved by the City Council and the SAR&H. In the intervening years between those early plans and the 1947 scheme, architectural modernism came to prominence, automobile use became even more dominant, and a new government with an authoritarian streak came

to power. The new scheme completely abandoned any concern for retaining a the historic city grid proportions or any of the city’s historic vernacular. Indeed, it self-consciously announced “a clear break with the old, classical tradition in architecture, arguing for the superiority of the new, modern forms, which by their innovation and adaptability, were held to be superior (Botha 2012: 83). In terms of layout, the plan adopted a Monumental Approach “based on the concept of Cape Town as the ‘Gateway to South Africa’ and heavily influenced by the high-Modernist brutalist style of architecture. Land use in the scheme was to be controlled by a zoning scheme, which ensured that the development would be mono-functional, dominated by office complexes and entirely devoid of residential uses.

A key element of the scheme was the development of a new Cape Town Station fronting onto Adderley Street and the Golden Acre, which effectively severed the connection between the Grand Parade and Adderley Street with a brutalist Sanlam tower and an indoor shopping mall.

The most infamous component of the complete Foreshore development was the elevated fly-over freeway constructed to accommodate rapid increases in road traffic which had been “greatly under-estimated” by the initial 1947 scheme (Botha 2012: 116, 134). The move was a capitulation to the dominant form of transportation at the time – the motor car. Not only did it further enable the city’s transition to almost exclusively private means of transportation, but it also completed the progressive separation of the city from the water which began nearly a century earlier. Since its inception, it has been hugely controversial and the future of the freeway is debated to this day.



53. The Foreshore site following the massive land reclamation project in 1947.



54. Construction of the Foreshore development begins on the reclaimed land.



55. The Foreshore today, with the Culemborg site in the foreground. The now infamous Foreshore freeway separates the city from the harbor.

The Demolition of District Six

Perhaps one of the most remarkable aspects of the City Core was its long history of accommodating a degree of multi-culturalism unheard of in other South African cities. Historically, non-white residents of the City Core were concentrated in District Six and the Bo-Kaap, two centrally located, thriving neighbourhoods comprised of former slaves, Malay people brought to the Cape by the Dutch East India Company and other immigrant groups.

It was precisely this cosmopolitanism and vibrancy that the apartheid government found so threatening. In 1966, it ordered the demolition of District Six, which it claimed was a crime-ridden slum full of gambling, drinking and decay. In reality, the greatest threat posed by District Six was that, whatever its pathologies (every urban neighbourhood has its own), it was truly urban, insofar as it integrated and connected different kinds of people and activities, thereby generating energies, conflict and potency that would be difficult for the government at the time to contain. The former residents of District Six were re-located to newly developed suburbs in the Cape Flats. These areas were completely unlike the bustling, densely built urban environment of District Six. They were a dumping ground for all the people the apartheid government did not want living in the better located, less climactically inhospitable White Group Areas. The suburbs designed for those relocated were sterile and mono-functional, made up of introverted, wind-swept neighbourhood units and either grim apartment blocks or identical single-family houses.

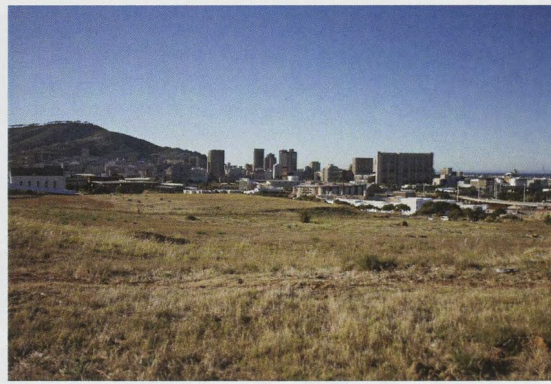
In the post-apartheid period, there has been seemingly endless debate over the future of the now vacant District Six site. Deciding how and for whom the site should be developed remains highly contentious. In terms of the Land Reform Act, former residents are entitled to resettlement on the site. However, the financial viability and economic benefit of this move are doubtful. Many plans have been made for the site, yet none have been implemented, leaving District Six as a barren field on the slopes of Devil's Peak.



56.



57.



58.

56: Hannover Street in District Six, a vibrant, mixed-use activity corridor.

57: Development in District Six was predominantly in the form of row housing, which, though single story, housed relatively high population densities. Buildings addressed the street front, with an outer shell of semi-private veranda space, softening the interface between public and private space.

58: The vacant District Six site today.

The V&A Waterfront Development

In the early 1990s, the Victoria and Alfred Basin, whose port functions had gradually diminished in the post war period, was redeveloped as a mixed use recreation and shopping destination. The transportation “from ‘port’ to ‘playground’” ran concomitantly with the increasing extroversion of post-apartheid Cape Town, the aspirant “world city” and global tourism destination. The redevelopment formed part of a broader trend towards refitting disused industrial spaces into leisure spaces, and is now regarded as one of the globe’s most successful instances. The resulting multi-use complex – which now includes hotels, a shopping mall, as well as offices – is now South Africa’s most visited destination.

Critics of the development have argued that its focus on high-end consumption and theme park-like management and design has led to a “plasticization’ of the waterfront” (Ferreira and Visser 2007: 227). The space is also poorly connected to the rest of the City, and ultimately does little to repair the city’s lost connection to its waterfront.

The great success of the Waterfront was, if anything, that it showed how large-scale urban projects could be achieved on sites under state ownership, which were previously industrial and which would require substantial investment from the private sector.

But it also shows the very real dangers of undertaking a large, capital-intensive project. To make redevelopment feasible, the economic gains reaped from redevelopment need to be significant, which by definition excludes social housing and progressive forms of integration and redistribution.

Yet in some respects, the commercialization and theme-park qualities of the V&A Waterfront may create space for the Culemborg redevelopment to be a real neighbourhood and not a space for consumption and tourism. The V&A development can remain Cape Town’s playground, and the Culemborg development, which is better situated to be a real part of the city, can be Cape Town’s new, truly mixed use urban precinct.



59. Upmarket condominiums and hotels



60. A farmers-market style food court



61. The historic clock tower

Assessment

The history of Cape Town's City Core has been a series of over-zealous intrusions into and distortions of the urban fabric. The villain in this narrative was not planning itself, but the tendency to allow developments that disregarded history and surrounding context, introduced urban forms scaled to the automobile rather than the pedestrian, and which were essentially anti-urban, in that they eviscerated complexity and maximized private rather than public amenity.

More specifically, the history of Cape Town's urban "ground zero" – the City Core – saw the playing out of a core set of conflicts and tendencies, many of which remain relevant to the area's current state.

- Unresolved tension between port-related activity and public space/non-industrial activity
- Ongoing conflict over the Culemborg rail yards
- Abandonment of the Table Mountain perennial springs, one of the area's key natural assets
- Entrenched influence of governmental and/or parastatal organizations in controlling waterfront development
- Privileging of (car and rail) mobility at the expense of maintaining connectivity, permeability and pedestrian access
- Diminishing provision and investment in public open space

Built Footprint

Figure 24 shows built space as positive and undeveloped space as negative. Formal open space is shown in light green so as to convey the extent to which undeveloped space in the City Core is in fact just land which is vacant or dedicated to circulation rather than open space. This space effectively acts as a barrier to access, fragmenting the urban fabric.

Even without demarcating the project site, its outline is clearly apparent. What is surprising, however, is the amount of development that has taken place within the site. This is light industrial space with limited access to surrounding areas. Anecdotally, many of the buildings shown in this area seem under-utilized and neglected. Thus, it is misleading to characterize the lower site area as “developed” in the same way that the suburb of Sea Point is developed.



Maintained Open Space
Building

250 500m

Figure 24: Built Footprints

Open Space

The City Core's open space system is anchored by Table Bay to the north, and by Table Mountain in the south. These systems offer tremendous scenic and recreational amenity.

Access to the waterfront from the City Core is, however, limited. Recreational use of the shoreline only begins in Mouille Point to the west, beyond the V&A Waterfront, and in Milnerton, to the North. The degree of disconnection between city and waterfront in the City Core is severe, and deprives residents of a valuable, enduring and inclusive space for relaxation and recreation.

A sea front promenade wraps around the coastline from Sea Point through Green Point and Mouille Point, with pedestrian access terminating at the V&A. This is perhaps one of the city's most popular and racially diverse open spaces, as local residents are joined by Capetonians who drive to the promenade from across the city drive on weekends.

As the map shows, urban open space (parks, squares) is concentrated in the historic core of the city. The affluent upper slopes of the City Bowl and the Green Point area are populated by land extensive sports facilities but are not structured around urban open spaces as these historic areas were.

A series of canalized and covered perennial streams flowing downhill from Table Mountain offer as-yet-unrealized recreational and open space opportunities.



Figure 25: Open

Road Network

The road network has dispersed rectilinear elements; however the overriding logic to which it conforms is topographical. Streets and arterials either run along contour lines or perpendicular to them.

The City Core is the point of termination for several major metropolitan limited access expressways including: De Waal Drive, Eastern Boulevard (and the Foreshore Freeway), the N1 freeway and Koeberg Road.

The majority of streets accommodate vehicle access, however there are a few pedestrian-only lanes in the historic core, which are popular, but mostly disconnected from one another.



- Limited Access Expressway
- District Arterial
- Neighbourhood Arterial
- Minor Street

250 500m

Figure 26: Road Network

Land Use

Unlike other parts of the city, the City Core exhibits a greater mix of uses and offers a wide range of highly specialized functions.

Civic and administrative functions are concentrated in the historic centre, in the area around the Company's Gardens. This civic core includes parliamentary buildings, City Hall, the Cape High Court, and the central offices of the Western Cape Provincial Government.

Office space is concentrated in the CBD, a section of the traditional 60 by 60 metre grid north of Wale Street. This area is dominated by financial, insurance and other tertiary sectors, along with a number of hotels. One of Cape Town's fastest growing sectors is that of design and creative industry, which concentrates primarily in Woodstock and in the so-called "Fringe" district east of Gardens.

These areas are in many respects "over-specialized", insofar as they lack the everyday services and amenities that support a residential population. There are very few supermarkets and schools, making it inconvenient for most would-be residents.

The upper slopes of the City Bowl, by contrast, are almost exclusively residential. The densest area is Vredehoek, which is comprised almost entirely of four-unit, two-story apartment buildings.



Figure 27: Land Use

Historic Alignments

A historical study of the City brought to light several long-abandoned urban features which, in a planning framework for the Culemborg area, could be revived or at least nodded to. Doing so would not be nostalgic: it would simply acknowledge long-standing understandings of how the land and the city should work together and how this place works. Figure 28 shows the tracks of those urban features lost during the period of car-dominated modernist planning in Cape Town.

These open-space and transportation alignments are not at all “outdated”. For example, the streams that once fed the colonial settlement at the Cape were covered over not because the city is not spiritually and geographically connected to the mountain, but because covered up canals are easier to manage and build around than uncovered ones. The tram lines that once connected the CBD to Sea Point and up the slope of the mountain and over Kloof Nek to Camps Bay were removed because those routes did not reflect travel patterns anymore, but because the automobile was beginning to take precedence over all other transportation modes. Capetonians still ferry themselves between the points once connected by the old tram line, but now much do so via private car or by foot.

Perhaps the most egregious loss for the City Core was the land reclamation and harbour expansion projects that severed the connection between the city and its shoreline. The original shoreline is shown in Figure 28.



Tram Line
 Perennial Mountain Streams
 Historic Shoreline
 Reclaimed Land

250 500m

Figure 28: Historic Aliwal West

Nodes and Corridors

Activity in each of these neighbourhoods concentrates at points (nodes) and along key routes (corridors).

The direction of corridor development is east-west, reflecting the prevailing lateral commuting flow into the city from the rest of the metropolitan area. Main Road and Somerset Roads are vibrant corridors; however both are disrupted at various points. In both instances, disruption of continuous human-scale economic activities and movement occurs as a result of inappropriate road grading and the imposition of high order transportation infrastructure acting as a barrier to access.

The map on the opposite page indicates the extent to which north-south corridor development is stunted. This owes in large part to topography (corridors tend to wrap along contour lines rather than traverse them), but it is also a product of the city core's fragmented road network. Most barriers in the city are east-west limited access roads and transportation infrastructure which seek to maximize commuter movement into and out of the city core. Thus continuous north-south access is limited, and resulted in a disconnection between the mountain and the harbour.

Where the road network is more regularized, in the historic core, mountain-to-sea access is better. The most vibrant, continuous corridor is thus the Long Street-Kloof Street Corridor.

Nodes have formed around major public institutions, recreational areas and shopping districts.



Figure 20: Nodes, Corridors

Movement

An urban movement system succeeds when it connects points of interest and activity together in a coherent network.

Figure 30 shows the extent to which transportation in the city core is routed out of the historic core and then to points of interest on the slopes of the mountain or around the coast towards Sea Point. This routing is of course, a product of the area's fragmentation. For example, the vacant fields of District Six create a transportation gap between the City Bowl and Woodstock.

The latest addition to transit in the City Core has been the MyCiti bus service, which began operating in 2010 during the Fifa World Cup. The programme's first phase is limited to the City Core and Atlantic Seaboard. MyCiti buses are, rather unfortunately, routed primarily out of the Civic Centre in the Foreshore, which means, for example, that a commute from Greenpoint into Gardens, which stops at the Civic Centre, will take nearly double the time it would have taken without such a stop. MyCiti makes a critical link to the West Coast suburbs. This route has been more popular than MyCiti's other, more limited routes.

Golden Arrow Buses from across the city terminate at Cape Town Station. These buses are destination based and thus have limited stops on their way to the City Core, and thus do not function in the same way that the MyCiti buses do (which stops frequently).

A substantial portion of the Cape Town station area acts as a long-distance bus terminal. These buses connect Cape Town to areas outside the metropolitan boundaries.

Mini bus taxis run throughout the city core, however many routes reaching upper suburban areas are limited to the morning and evening rush hour periods. Most taxis in the area run long haul routes along Main Road to the South, or to other lower income residential areas further afield. These terminate at Cape Town Station.

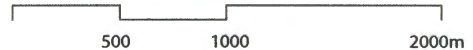


Figure 31: Movement



The entire document up until this point has set the stage for the ultimate aim of this project: to propose a planning framework for the redevelopment of the Culemborg rail yards and adjacent areas. It has situated the site within the context of the metropolitan area, the sub-metropolitan zone, and the inner city system of which it is a part.

There is a tendency for large-scale redevelopment projects to become Projects, set apart from the rest of the city, privately managed, the product of a single vision. The redevelopment of the site should not become such a project. It is for this reason that so much care has been put into contextualizing the site, and setting up the strong actions that open up redevelopment opportunity that are enabling and open-ended rather than prescriptive and fixed. As the planning process progresses, the structure and form of redevelopment becomes more specific, but this occurs as multiple actors are involved and respond to the enabling structure, not at the same time that the enabling structure is being determined.

The following chapter makes strong proposals that will restructure the site and surrounding areas, and will establishing the enabling "capital web" around which private development will take place. It moves beyond a traditional planning framework in that it begins to outline some of the urban design elements to which the architecture, massing and density of future development should conform.

It begins by summarizing the very broad imperatives that redevelopment of the site should serve and then moves on to the planning strategy that will unlock a massive amount of land for development and rationalize movement in the area. It provides a schematic development programme and urban design framework, which includes sections and block layout variations.

Site Development Imperatives

Accommodating Growth

For environmental and economic reasons, expansion of the urban footprint must be halted in order raise population densities, reduce infrastructure costs and transition to less carbon intensive forms of transportation. At the same time, however, the city's housing capacity needs to be expanded. Urban compaction and transit-orientated densification cannot be achieved if this demand is met by more development on the urban fringe and beyond. The city needs to expand *inwards* rather than outwards.

Cape Town is ridden with wasted space within the urban edge, but it only has a limited number of undeveloped or underdeveloped sites left. The Culemborg rail yards is one such site. In order to achieve urban compaction, it is critical that the sites like Culemborg are developed to accommodate high density housing and employment-generating activities. They represent the most attainable opportunity to do in-fill development that will make a substantial contribution to raising and co-locating population and employment densities.

Increasing Population Densities (co-located with jobs)

The imperative now is to bring housing closer to jobs, and vice versa. Cape Town cannot truly prosper so long as the majority of its population live far away from economic opportunity. By mixing uses more, and ensuring that housing is not built where there are not a proportionate number of jobs, average commuting times will decrease, and more people can live in areas that enjoy all of the additional services and agglomerative possibilities that economically viable areas generate. A key priority in the City Core area is to boost its population so that more Cape Tonians can live close to a major job centre.

Expanding the CBD

The growth of the CBD is seriously limited by its geographical setting between the mountain and the harbor. The only way for the city to grow is eastwards through the "neck" between Devil's Peak and the harbour, towards Woodstock and Paarden Eiland. The redevelopment of the Culemborg rail yards and adjacent under-utilized land provides an opportunity to accommodate growth of the CBD, thereby increasing the catchment area that can benefit from agglomeration of services and amenities there. In that regard, re-organizing and redeveloping the City Core can "bring the City to the suburbs" and to declining industrial areas like Maitland and Salt River. Redevelopment will hugely increase the capacity of the CBD area to accommodate businesses that would otherwise locate in decentralized business parks or mega-complexes like Century City. While decentralization is important, the ultimate priority should be increasing the concentration of economy activity and then ensuring that housing is provided alongside it.

Integrating the CBD into its Surrounding Context

An important precondition for successfully expanding the CBD is its internal re-organization and its reintegration back into the fabric of surrounding areas. The insertion of the rail yards following the 1947 land reclamation project created a north-south barrier between the city and the sea as well as a massive disruption to a possible east-west connection between the Southern Suburbs and Sea Point. The Culemborg site thus offers an opportunity to heal the disconnection between the faded City Extant (including Woodstock, Maitland, and Salt River) and the failed Foreshore, which in turn could improve access to the rich social, cultural and economic opportunities of the City Centre and thus revitalize the area.

In terms of urban form, the development of the City Centre is the area's lack of internal and external connectivity. Its eccentric location – geographically separated from the rest of the city – makes multiple continuous connections outwards absolutely critical. It is impossible to predict the extent to which

the City Centre will remain highly specialized in tertiary sectors, and whether residential property prices will remain attainable only by the wealthy, but it is likely that to some degree a net commute into the City Centre will continue to prevail. The only way to ensure that the opportunities it offers can be accessed equitably is to improve transportation in and out of the city. The most significant opportunity which redevelopment offers is the chance to re-organize the movement system connecting the City Centre to the rest of Cape Town. At present, the area is quite literally a bottleneck – with two major highways and four rail lines crammed into a small wedge of land between the sea and the mountain.

Another impediment to continuous access to and within the City Centre is the termination of the city's three major activity streets at different points, and their disruption and sterilization by the tangle of transportation infrastructure surrounding them. The North-South Main Road corridor becomes a non-descript and largely undeveloped strip as it approaches the Grand Parade, contending with a freeway overpass and the failed Good Hope Centre. Voortrekker Road – which runs East-to –west and connects the City Centre to Bellville, Cape Town's other major economic hub – suffers a similar fate: as it approaches Salt River negotiates extensive rail infrastructure barriers by becoming an elevated overpass and then terminates without much fanfare at the Salt River Circle. Koeberg Road, an increasingly vital link to the rapidly growing West Coast suburbs, is virtually impossible to access as a pedestrian in the stretch between the CBD and Milnerton and is completely disconnected from the Main Road and Voortrekker activity systems.

The site could potentially act as the hinge from which all three of these suburban economic lifelines connect to each other, and to the primary economic hub of the City Centre. The nexus of these three points could serve as a metropolitan transportation hub. At this interchange, commuters would be able to change direction easily and board local buses and trams connecting them to a surrounding area rich with jobs and public space.

Stimulating Economic Activity

The redevelopment of now disused spaces will spur economic activity and revitalization in adjacent areas by raising property values and improving transportation infrastructure in the area. Redevelopment in the Metro Core can also help to add jobs by revitalizing urban manufacturing in the city, infusing the human capital and energy of the CBD into adjacent industrial areas like Woodstock, Salt River, Maitland and Paarden Eiland.

Given the city's high rate of unemployment, rising transportation costs and increasing exposure to external economic shocks, it is clear that Cape Town needs to nurture more employment-intensive forms of endogenous economic growth. Crucially, this will not come from Cape Town's financial service and creative sectors, whose growth has not resulted in a proportionate increase in employment. The key economic transition that needs to be made is the one to revitalized local manufacturing and “green tech” activities that absorb the unemployed, provide a space for local entrepreneurs, and which make the city's economy more resilient to the environmental and economic changes to come.

Not only does the city need to invest in these job-rich industries, but it needs to find ways of co-locating them with housing. Manufacturing should no longer be seen as a “dirty” activity that needs to be relegated to mono-functional industrial parks on the periphery of the city. With correct zoning and land use controls (to ensure a base level of compatibility with residential uses), light manufacturing can be brought back into the city.

Adding Inclusive Recreational Amenity

The city's most obvious recreational and open space asset is its coastline. When land was reclaimed from the sea in 1947, it was unequivocally claimed for the sake of industry. The development, in conjunction with the infamous Foreshore develop-

ment, came at a great cost to the public realm. With the development of the V&A waterfront, Cape Town once again had a waterfront leisure space. But unlike the city's traditional urban public places, the V&A is set apart from the city, difficult to access via public transportation, and centred around the consumption of high-end goods and services. It is a popular destination, but it is managed by a non-public management body, and like so many leisure areas, is conceptually and even physically impermanent: it can be further privatized or neglected and the city would have no power to intervene.

Perhaps the most successful maintained public open space in Cape Town is the Sea Point promenade, which by all accounts is enjoyed by a diverse group of Cape Tonians. There is something unsatisfactory, however, in the fact that the promenade is interrupted without fanfare by the V&A waterfront complex. A truly great promenade system would extend through the V&A and stretch all the way to Milnerton, thereby allowing residents of the West Coast and Southern suburbs easier access to this amenity.

Accommodating the Informal Sector

Structural changes are occurring in economies across the globe that tend towards higher levels of inequality, job-market polarization and growth in the informal economy. Again, planners do not create jobs, but they can promote urban forms more conducive to gaining access to economic opportunity. This can be done through the provision of education and, less ambitiously, simply through the creation of high foot-traffic public places where informal vendors can set up stalls. The aim is to increase the sheer quantity of people that entrepreneurs in the informal sectors are exposed to. In a car-dominated city with limited public space, vendors are relegated to selling their wares on hostile street intersections. In a city where public and non-motorized transportation predominates, contact between bystanders and vendors increases hugely. In particular, major transportation interchanges can be designed in such a way as to accommodate traders.

Strategy

Analysis of the City Core has revealed several serious constraints on the site's redevelopment. All of these constraints can be overcome, but not without considerable investment in new transportation infrastructure. While there are some portions of the site which could hypothetically be redeveloped immediately, such efforts would actually undermine meaningful transportation of the area and its relation to the metropolitan area by stymieing the most sensible alignments of public space, movement and transportation that should be put in place to structure the site and the City Core as a whole. Moreover, piecemeal redevelopment is only viable up to a point before it comes up against serious access issues.

The most productive, and sensible, approach to redevelopment is in fact being far bolder than most proposals for this area have been. To optimize the role of the site in its City Core and metropolitan context, several "big moves" are needed to free up the land needed to undertake serious restructuring of the area. These are shown in Figure 35.

In summary, the site has the following redevelopment priorities, in addition to its metropolitan responsibilities (set out in Chapter 6).

- Connect the city to the water
- Free up as much land as possible to maximize development potential
- Initiate regeneration in adjacent areas so that the entirety of the City Core becomes more dynamic, prosperous and vibrant. Make improving and redeveloping adjacent under-utilized areas like the Foreshore, Paarden Eiland, Ysterplaat and the Liesbeck River Parkway part of the project's "grand vision"
- Knit the urban fabric back together; establish a grid of super-blocks that weave into surrounding areas

- Add high quality public institutions that will accommodate the rise in the city centre's residential population and, additionally, create great metropolitan facilities that promote learning, culture and provide high quality basic services like health care.

The site's opportunities and constraints relating to land redevelopment and transportation infrastructure are summarized in the following figures.

Land Redevelopment Opportunities

The entire project site is occupied by land that could be used more economically. A substantial portion of it services the Central Station and the harbor, two functions that could, hypothetically, be re-configured or relocated in the future. Freeing up this land would be predicated on several other high order moves to re-configure transportation infrastructure in the City Core. It is argued here that this would be possible.

The remainder of the site has been unevenly developed for light industry. The economic value of these economic activities when compared to the potential value of redevelopment leaves in question whether these activities should remain here.

The study area includes the Foreshore, an area that is inhospitable and forlorn. A framework for the site needs to address this area can be reorganized and re-structured incrementally. Doing so makes redevelopment of the site more meaningful and viable as it would open up new east-west connections between the site and the CBD and waterfront. In particular, revitalizing Adderley street would reinforce the importance of the historic Grand Parade and City Hall precinct.

Figure 31 shows the land that could be fully redeveloped and land in the Foreshore which could be incrementally redeveloped and revitalized.



Figure 31: Land Redevelopment Opportu

Land Redevelopment Constraints

Redevelopment the site is constrained by its fragmented ownership. In particular, the hold that Transnet – a para-statal transportation company - has over the area has been notoriously intractable. Transnet owns the Culemborg rail yard site itself, as well as several other parcels within the project site, including the eastern portion of rail yards indicated in Figure 33.

Another constraint on redevelopment is the operation of the Cape Town harbor, which requires back of port storage adjacent to the harbor, and which requires the securitization of the harbor area, which in turn stymies efforts to really connect the city to the water. There has been some discussion in recent years of an eventual relocation of harbor functions to Saldahna Bay in the north.

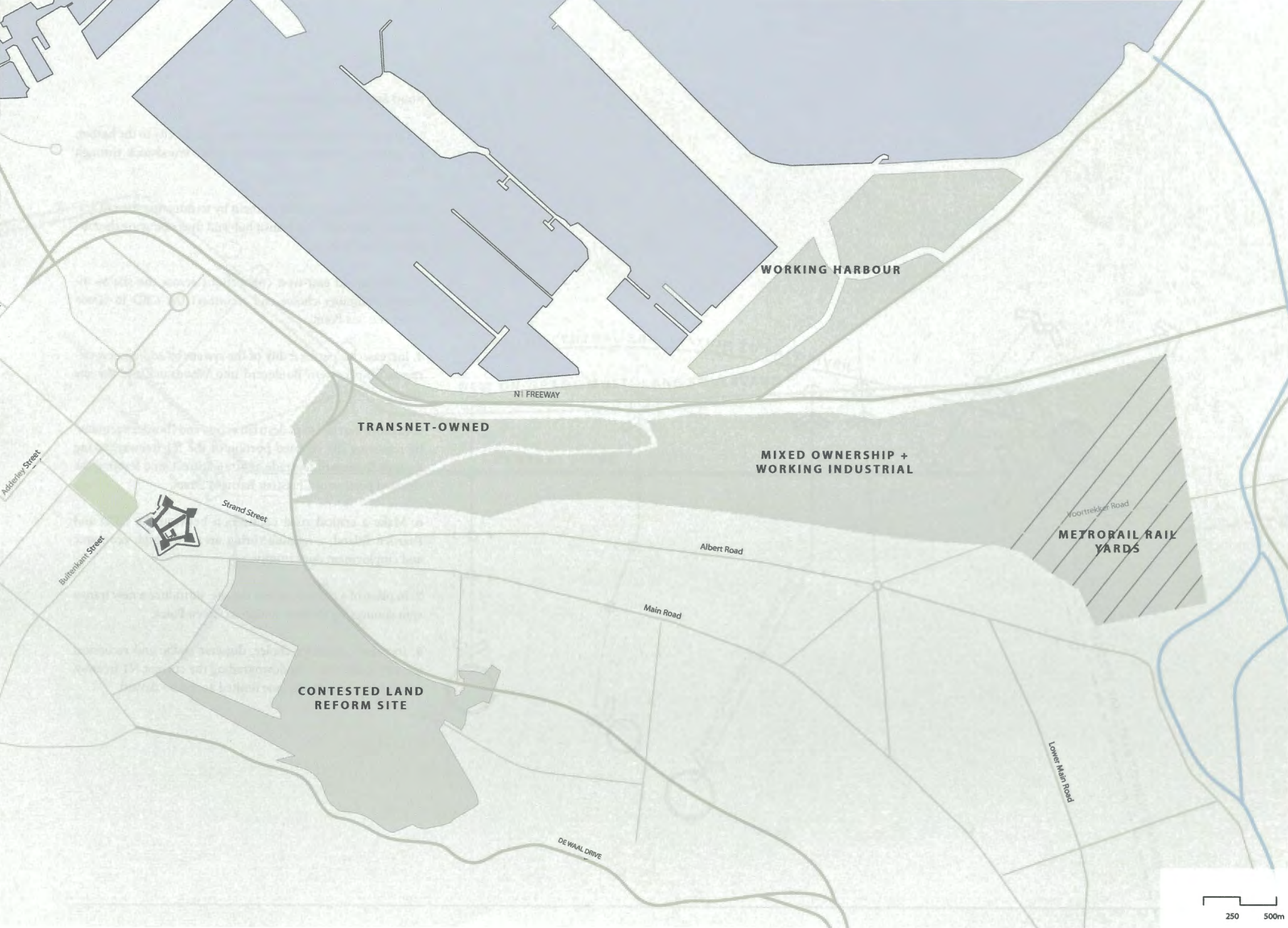


Figure 32: Land Redevelopment Construction Sites

Road and Rail Opportunities

1. Connect the site to adjacent areas, and the city to the harbor, by extending north-south streets from Woodstock through the site.
 2. Free up land for redevelopment by terminating the rail system at a new Salt River transit hub and thus removing the current Central Station.
 3. Make lateral east-west connections across the site to increase commuter choice and reconnect the CBD to Green Point and Sea Point.
 4. Increase the permeability of the system by adding new off-ramps from Eastern Boulevard into Woodstock and the site area.
 5. Remove barriers to pedestrian access and “border vacuums” by removing the elevated portion of the N1 freeway, taking Eastern Boulevard to grade at Strand Street, and leveling the elevated portion of Christian Barnard Street.
 6. Make a critical road connection between the CBD and Paarden Eiland, a manufacturing area with high economic and employment opportunity.
 7. In place of a rail link across the site, introduce a new transit spin connecting the new station to Green Point.
 8. Increase commuter choice, disperse traffic and reconnect the city to the water by downgrading the current N1 freeway, which becomes a multi-lane limited access boulevard.
-

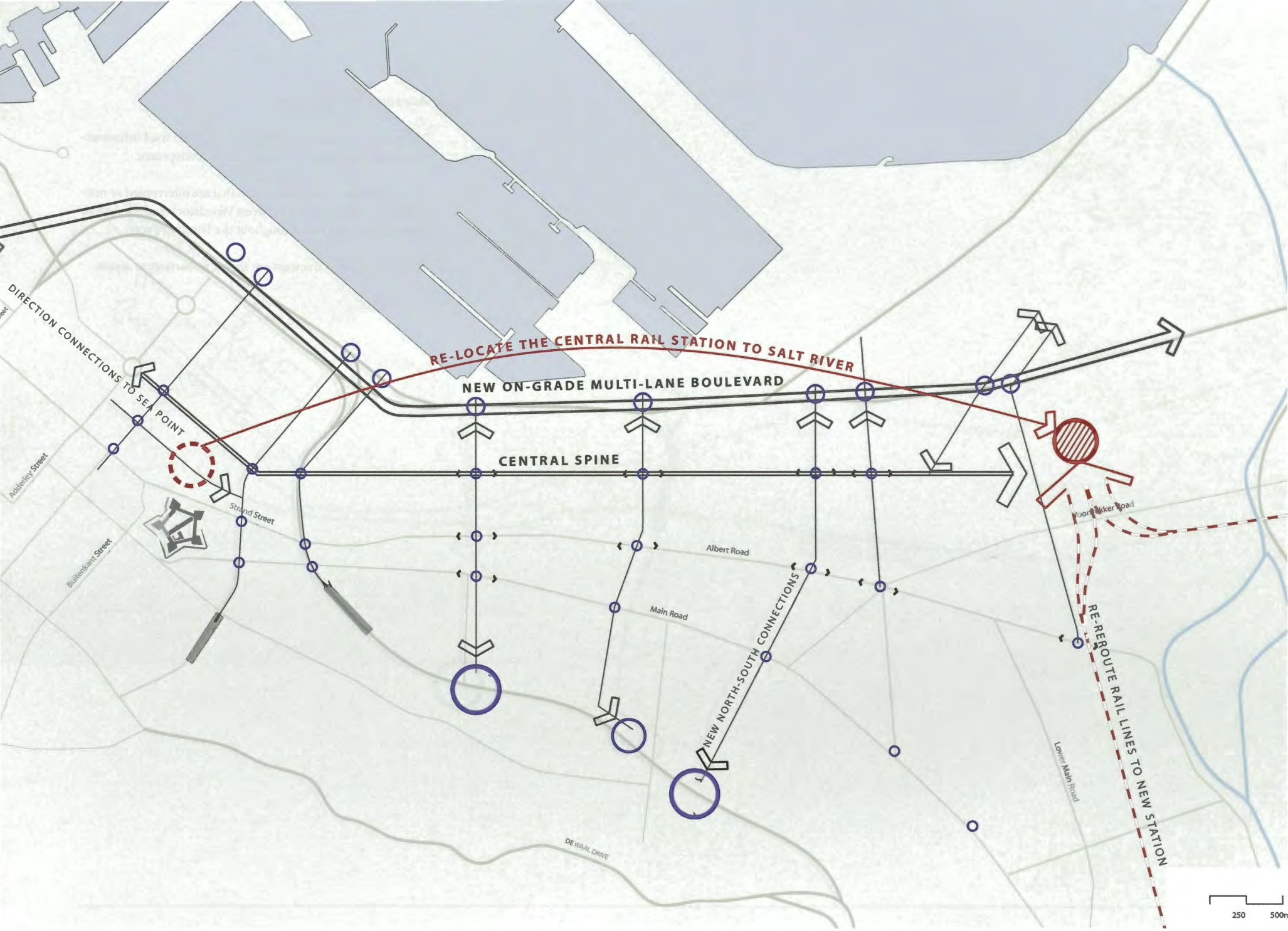


Figure 33: Road and Rail Opportu

Road and Rail Constraints

The present organization of the area's rail and road infrastructure poses significant constraints on redevelopment.

Figure 34 shows road connections that are interrupted or non-existent, including those between Woodstock and the harbor (through the site) and throughout the Foreshore area.

The area's elevated freeways are shown as barriers to access.



Figure 34: Road and Rail Construction

Big Moves

Redevelopment of the site begins with breaking down the considerable transportation infrastructure barriers that fragment the area and complicate access and movement.

- Terminate the rail system in Salt River and remove the Cape Town Central Station and associated rail yards.
- A new Salt River multi-modal interchange is established.
- Remove the Foreshore Freeway and downgrade the N1 to a limited access boulevard until it meets the interchange with the M5.
- Take Eastern Boulevard to grade at Strand Street. It then becomes a stop-and-go boulevard.

By re-organizing transportation infrastructure in this way, a more substantial portion of land is made available for redevelopment. Other schemes for the area tend not to make these moves, opting instead to development irregular shaped portions of the area that remain surrounded by barriers. This project takes a different stance, and argues for taking far bolder action to unlock the area's latent potential.

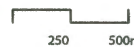
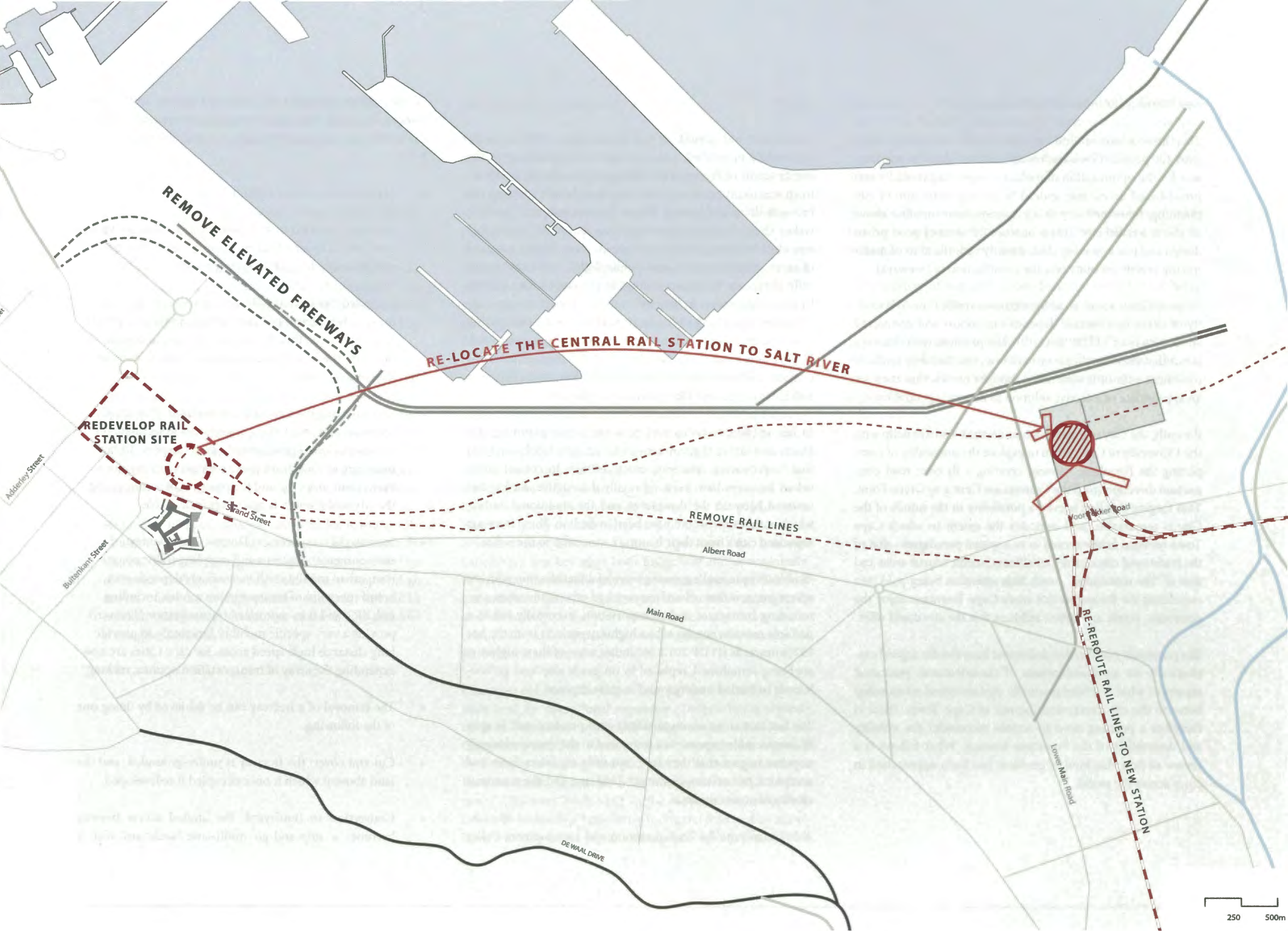


Figure 35: Big

Key Strategy: Removing the Freeway

This thesis centres around the belief that fundamentally, cities exist for people. Freeways, by contrast, exist for motor cars, and for the optimization of mobility. Improving mobility and broad-based access may indeed be an important aim of city planning, however a city that prioritises sheer mobility above all else is a failed city. This is because the aims of good urban design and place-making clash directly with the aims of maximizing private mobility (via the construction of freeways).

Freeways limit access so as to maximize traffic flow. The vitality of cities, by contrast, depends on “robust and connected street networks” (ITDP 2012: 3). The problem with freeways is not that they should never be built, but that they are built too often, with little systematic thought on whether they are an appropriate or effective solution to improving mobility.

Recently, the City of Cape Town undertook a partnership with the University of Cape Town to explore the possibility of completing the Foreshore freeway, creating a fly-over road connection from the Convention Centre to Green Point. That forging this link is even a possibility in the minds of the City is remarkable, and indicates the extent to which Cape Town remains firmly rooted in two spatial paradigms - that of the traditional city centre and affluent, scenic tourist areas and that of “the remainder” - with little attention being paid to expanding the former so that more Cape Townians enjoy the economic, scenic and urban richness that the city could offer.

The proposals made in this document have thus far argued emphatically for an abandonment of car-orientated, piecemeal repairs of what is a fundamentally dysfunctional relationship between the city centre and the rest of Cape Town. There is therefore a pressing need to seriously reconsider the viability and desirability of the Foreshore freeway. What follows is a review of how this kind of problem has been approached in cities across the world.

History

In the post-war period, as the Western love affair with the automobile intensified, cities changed dramatically with the construction of freeways providing express access to downtown areas, cutting through the neighbourhoods, severing ties between them and leaving lifeless “border vacuums” in their wake. These freeways contributed to the urban blight that was already taking hold in downtown areas during a period of rapid suburbanization and “white flight”. Somewhat ironically, they were in fact an attempt to pre-empt urban exodus by improving access to the city. In reality, these freeways only encouraged further exodus by (initially) making commuting easier. Soon, however, these freeways too became congested. This is one of the great ironies of traffic management: increased road capacity leads to more, not less, traffic (Hanson and Huang 1997 and Duranton and Turner 2011).

In her vociferous critique of post-war urban planning, *The Death and Life of Great American Cities*, Jane Jacobs declared that “expressways eviscerate cities” (1961). In coastal cities, urban freeways have been especially destructive, having been inserted between the downtown and the traditional harbor, which at that time would have been in decline. These freeways separated cities from their historic connection to the water.

Jacob’s critique, and a growing wave of dissatisfaction with the severe impacts that urban freeways had on communities, surrounding businesses and transportation, eventually led to a de-facto moratorium on urban highway projects from the late 1970s onwards (ITDP 2012: 5). Today, some of these highways are being demolished, replaced by on-grade stop-and-go boulevards or buried underground at great expense.

The fact that cities are undertaking such projects even in spite of considerable expense is a testament to the overwhelmingly negative impact that they have not only on urban form and aesthetics, but on transportation, land use, and the economic vitality of inner city areas.

A 2012 Institute for Transportation and Development Policy

(ITDP) report identified the following factors and circumstances that, more than environmental consciousness or anti-car sentiments, have motivated the removal of freeways (2012: 8-9):

- Maintenance costs of existing freeway
- Economic revitalization. Freeways create “border vacuums” which lower adjacent property values and make revitalization difficult, if not impossible.
- Increased Tax Revenue. Removing freeways frees up previously undeveloped land which can then be profitably developed. This development which, in conjunction with the increase in property values, increases the city’s tax base.
- Reconnecting the City to the Waterfront. Historically, highways were built along waterfronts to facilitate the transportation of goods in and out of the port. Today, many urban waterfront areas are no longer working ports. Waterfront property, and the prospect of reconnecting the city to the water, is again highly desirable.
- Increased Transportation Diversity. In a context of environmental concerns and crippling traffic congestion, urban mobility will increasingly depend on a broad spectrum of transportation modes, including rail, BRT and non-motorized transportation. Freeways provide a very specific mobility function – to provide long-distance high-speed access for cars. Cities are now expanding the array of transportation options, making
- The removal of a freeway can be achieved by doing one of the following:
 - Cut and cover: the freeway is undergrounded, and the land above it which it once occupied is redeveloped.
 - Conversion to Boulevard: the limited access freeway becomes a stop-and-go multi-lane boulevard with a

planted median. The extent to which the boulevard is interrupted by traffic lights is carefully managed so as to ensure a reasonably easy flow of vehicles.

Lessons Learned

- Reduction of roadway capacity reduces the amount of automobile trips.
- “Spillover” traffic can be absorbed. In other words, traffic that was once accommodated by the urban freeway can, in conjunction with transportation and land use management strategies, can be absorbed by the surrounding road network.
- Freeway removal has a catalytic effect. The formerly undevelopable spaces occupied by the freeway can be redeveloped to increase development density and add civic amenities like public open space. Once the barrier effect of the freeway is removed, surrounding property prices tend to rise, pedestrian traffic increases and the area as a whole becomes more attractive to visitors and investors.
- Reduction of road capacity needs to be realistic. Demolishing a critical freeway has serious implications for short-term traffic management, and the expectation that all streets in the city centre should become stop-and-go streets is unrealistic. High volume boulevards will still be needed, and can support integration of the urban fabric if designed correctly.

Key Strategy: Re-purposing Rail Yards

The historical development of the City Core gradually severed the connection between the city and the water. Across the world, this has been a common occurrence in coastal cities with port-side industrial and transportation infrastructure. Reversing this phenomenon is now an imperative for all great coastal cities. Re-purposing the vestigial spaces of the post-industrial landscape can improve connectivity within city centres, lead to employment-generating development, and add recreational amenity. A key component of connecting the city to the waterfront is removing urban freeways constructed in the post-war period that provided high volume access to downtown areas.

With the transition to road-based transportation, and the decentralization of freight activities out of city centres, centrally located expansive rail yards have also become the focus of regeneration efforts. Redevelopment of these yards provides an opportunity to undertake major in-fill redevelopment on state-owned land. This means that certain kinds of development can be induced through land write-downs and other incentives, since the land itself is owned by the public entity. However much the redevelopment of Culemborg may seem obvious to most observers (Future Cape Town), for Transnet, Culemborg is a key asset both financially and operationally. At present, the site is largely under-utilized, however Transnet has indicated that it intends to use the site more strategically and intensively in the years to come. Recently, Transnet declared that the site remains “a property that is of core value for port-related activities” (2012: 123).

Like most old ports, the Cape Town harbor has limited proximate land for operational expansion. Despite being separated from the harbor by the N1 transportation corridors, the Culemborg and Salt River erven are nevertheless regarded by Transnet as having “the potential to be incorporated into the port limits, to provide additional extensive back-of-port space” (Transnet 2012: 124). In the medium term, it is their intention to develop “supportive industrial sites in the Culemborg area” (Transnet 2012: 125), indicating that the site will

not simply be a storage area but will begin to be a working part of the harbor. Expansion of container transportation will exert considerable pressure on the local road network, in particular around Paarden Eiland and Maitland (City of Cape Town 2009: 115).

To some, the redevelopment of the rail yards may seem like too big a project, with risks and costs that will not justify a reduction of back-of-port space.

An overview of rail yard redevelopment projects that have taken place in cities across the globe is provided. The cases of rail yard redevelopment illustrated the enormous economic potential that can be unlocked the potential of such sites. It is not suggested that these projects should be emulated. The examples simply show that large scale re-purposing of rail yards is possible.

Case Study: Urban Freeway Removal



62. Before

The Embarcadero

San Francisco, California, U.S.A.

Constructed: 1959

Status: Torn Down 1991—2001

Km: 2.6

Annual Vehicular Traffic: 61,000 daily

Construction Investment (mil USD): 80

Investment per km (mil USD): 31.1

Replacement Type: Boulevard



63. After



64. Before

Cheonggyecheon Freeway

Seoul, South Korea

Constructed: 1967-1971

Status: Town Down 2003-2005

Km: 9.4

Annual Vehicular Traffic: 102, 747 daily

Construction Investment (mil USD): 120

Investment per km (mil USD): 12.7

Replacement Type: Boulevard Type



65. After

Case Study: Urban Freeway Removal



66. LifeandDeathofUrbanHighways_031312_Page_18.jpg

Harbor Drive Boulevard

Portland, Oregon, U.S.A.

Constructed: 1950

Status: Torn Down 1974

Km: 4.8

Annual Vehicular Traffic: 25,000 daily

Construction Investment (mil USD): Unknown

Investment per km (mil USD): Unknown

Replacement Type: Boulevard-Park



67. PortlandAfter2.jpg



68. Before

I-93 aka "The Big Dig"

Boston, Massachusetts, U.S.A.

Constructed: 1959

Status: Torn Down 2007

Km: 2.9

Annual Vehicular Traffic: 200,000 daily

Construction Investment (mil USD): 15,000

Investment per km (mil USD): 5179.2

Replacement Type: Tunnel—Boulevard



69. After

Case Study: Railyard Redevelopment



70. Before

Sacramento Yards

Sacramento, California, U.S.A.

Site: 240 acres

Open Space: 40+ acres

Residents: ?

Transit improvements: ?

Programme (gross square feet)

Office: 2,400,000

Residential: 12,200 d.u. (market and affordable)

Retail: 1,400,000

Hotel: 1100 rooms



71. Proposed



72. Before

Hudson Yards

New York City, New York, U.S.A,

Site: 26 acres

Open Space: 12 acres

Residents: 10000

Transit improvements: \$2 billion in investment; new subway line

Programme (gross square feet)

Office: 6,750,000

Residential: 5,000,000

Retail: 1,150,000

Hotel: 220,000

School: 120,000

Culture Center: 100,000

TOTAL 13,340,000



73. Proposed

New Connections

The task of a planning framework is to set out the basic geometry and public amenity that structures space. One part of this task is the establishment of superblocks, defined by a framework of higher order roads.

This document as a whole has emphasized the importance of connectivity and continuity of the urban fabric. Because the typologies of surrounding areas differ from those that will be developed on the site, it is not possible to connect the site road network to each and every surrounding road. The new superblock network can, however, connect to key roads from surrounding areas to ensure permeability between the new and the old.

Figure 36 shows the most important connections that must be made to improve access and connectivity of the City Core system as a whole.

Framework roads are those roads that knit the site back into the urban fabric. They make vital east-west and north-south connections across the City Core. These connections create a City Core macro-scale grid of primary and secondary arterials. Not only does this heal the city, but it improves the performance of the movement system. Establishing a multi-directional grid of superblocks bisected by arterials is a way of redistributing traffic. It creates necessary redundancy in the system, allows for more flexibility in the routing of trips. In short, it disperses traffic away from choke points.

Cape Town's major open space systems are its coastline and the Table Mountain Range. Major urban open space systems should connect and/or respond to these magnificent assets whenever possible. Open space connections are primarily north-south, between Table Mountain and the harbor. The vacant District Six site is also drawn in to the city again through the provision of a "necklace" of public institutions, plazas and parks.

Figure 36 introduces the following:

- A north-south green connection from Devil's Peak through a new District Six Memorial Park and the City Centre's new "Pearl Necklace" of new public institutions in a park-like setting.
- An east-west canal connecting the site to the Castle. This canal is a resuscitated covered-up waterway that features in the "Reclaim Camissa" project, which aims to revive the mountain streams that once fed the city.
- A long-range recreational connection wrapping along the coastline through Greenpoint, the Sea Point Promenade and, if and when the harbor's main functions are relocated to Saldahna Bay, the dockland and harbor areas to the north of the current N1 freeway.

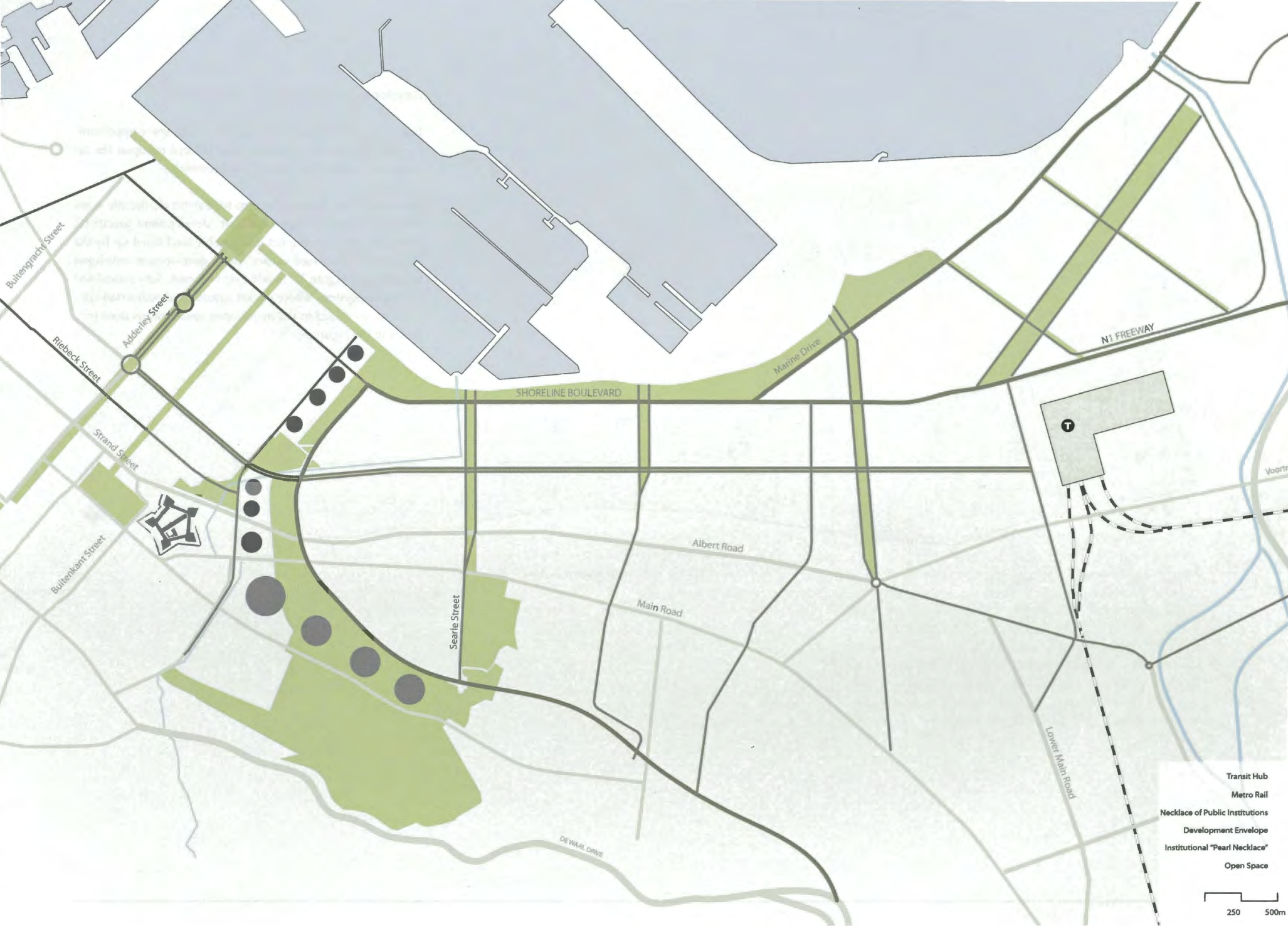


Figure 36: New Connect

Development Envelopes and Open Space

Figure 37 shows the development and open space opportunities that become possible once land is freed up upon the reorganization of the rail and road network.

By virtue of the proposed macro road network, the site comprises a number of superblocks or “development precincts”. These precincts are the net developable land freed up by the “big moves” discussed earlier. These development envelopes are shown in Figure 37, in addition to a more fully articulated open space system, where pocket squares and pedestrian connections are added to the major open space connections proposed in the Figure 36.



Figure 37: Open Space and Development Envelope

Programme

The major infrastructural investments indicated in Figure 35 will be costly, and potentially difficult to implement (these issues are dealt with in chapter 8 of this document). These capital intensive moves – acquiring railyard land from Transnet and grounding the overhead freeway – are justified by the sheer quantity of centrally located land made available for redevelopment and the latent economic potential they will unlock.

What follows is a schematic programme for redevelopment which shows just how much extra capacity can be added through developing the entirety of the project site once the aforementioned “big moves” are made. The development of programme is an iterative process, and hugely dependent on a series of trade-offs between public versus private space and between development density and space standards for public facilities and circulation. The programme outlined here simply establishes the base assumptions upon which redevelopment could be based, and shows how they yield a hugely profitable and game-changing opportunity to developers and Capetonians alike.

In particular, it seeks to quantify the additional development land made available through infrastructural intervention. At present, the actual “Culemborg site”, owned by Transnet, is theoretically developable without any interventions into surrounding road and rail. In this document, it has been argued that development of that relatively small site cannot be considered in isolation, without a broader vision for re-organization and redevelopment in adjacent disorganized and/or underutilized areas. Nevertheless, the following calculations concede that development of this site is possible, and so does not count the site as part of the land that is only truly developable once the big infrastructural moves are made.

The programme assumes the following:

- Net land area = gross land area less 30% for circulation, open space and utilities
- The average Floor-to-Area ratio of development on the site is 3. This takes into account high density development along the central transit spine (see Figure 45).
- The average land coverage will be around 60% for a dense urban project. FAR 2.6 will result in an average height of 5 stories overall, with the possibility of some high ‘gateway’ buildings along the new Shoreline Boulevard (converted N1) and 10-12 stories along the central transit spine
- The allocation of 800,000 m² to institutional uses includes the provision of a hospital, education facilities, jobs training and local area services like schools. Many of these facilities are built according to space standards far below that which is standard in more suburban areas so as to retain a high level of development density.
- At an average of 80m² per dwelling unit, 50% residential use (of net developable land) will yield 32500 dwelling units. Assuming an average household size of 3, this will accommodate a residential population of 97500.
- At an average of 20m² per job, dull development will provide the opportunity for around 75,000 primary jobs. This will in turn generate secondary jobs.

The proposed institutional zone will contain expanded academic and job-training programs, and the transformative potential of the rail yard redevelopment will be realized if City leaders embark on a co-ordinated programme that links job-training to job creation. The estimates 100,000 new jobs that can be created here will support 400-500,000 Capetonians, and will also stimulate increased economic activity in adjacent areas like Woodstock, Salt River and Paarden Eiland. The encouragement of new clean-tech, high-tech and skilled light manufacturing will also contribute to making Cape Town a more equitable city because unlike financial services, for example, these sectors are job-intensive, with positive income elasticities. An expanded city centre will thus include both white- and blue-collar jobs which is the appropriate economic development policy for South African cities to pursue. This argument is borne out by the analysis of global trends and local development issues undertaken earlier in this document.

This is the ultimate objective of this project: not simply to improve the city’s physical design, but to use scarce public resources and land more efficiently, creating opportunity-rich places to live for more people, and spurring economic development in the City.

		Land Area	Land Area	Development Area
		(Gross m2)	(Net m2)	(BUA m2)
				FAR (average)
			70%	3
LAND GAINED THROUGH PLANNING INTERVENTIONS				
Move Railroads and Station	Sub-Total (not including Culemborg site)	1815430	1 270 801	3 812 403
Take Down Elevated Freeway		233100	163170	489510
Site Total, Gross (includes Culemborg site)		2048530	1 433 971	4 301 913
Culemborg Site		336000	235620	706860
Land Gained through planning interventions		1711930	1 198 351	3595053
Site Total, Gross (includes Culemborg site)		2048530	1433971	4301913
SUMMARY CONCEPT PROGRAMME BREAKDOWN (rounded numbers)				430 000
Total Developable Land				
Institutional Uses: Education, Health, Cultural, Governmental			approx. 15%	800000
Residential: Residential/Retail	At 1 DU per 80m2 (average)		approx 50%	2600000
			Est. # New DU	32500
			Population (3 pp/du)	97500
Commercial: Retail/Office/Light Industrial-Manufacturing	At 1 job per 20m2 (average)		Est. # New Jobs	75000
Estimated land value for Mixed Use Land, FAR 3:1 (Rand/ square meter)				10000

Generalized Land Use

All precincts are described as mixed use

However, each precinct, by virtue of block size and situation within the City Core context, may be more dominated by a particular land use.

Precinct 1 is the city's new "Pearl Necklace" - a string of civic, cultural institutions surrounded by high quality open space

Precincts 2 and 3 (yellow) are residential/mixed use. This is the replacement of District Six - the housing that should have been brought back into the City through the redevelopment of D6.

Precincts 4-7 (Orange) are general mixed use

Precincts 8-10 are light industrial/mixed use. They include institutions and housing, but the principle focus of this area is providing a new manufacturing/tech hub for Cape Town, linking into Paarden Eiland.

Precincts 11 and 12 (Blue) are office/mixed use

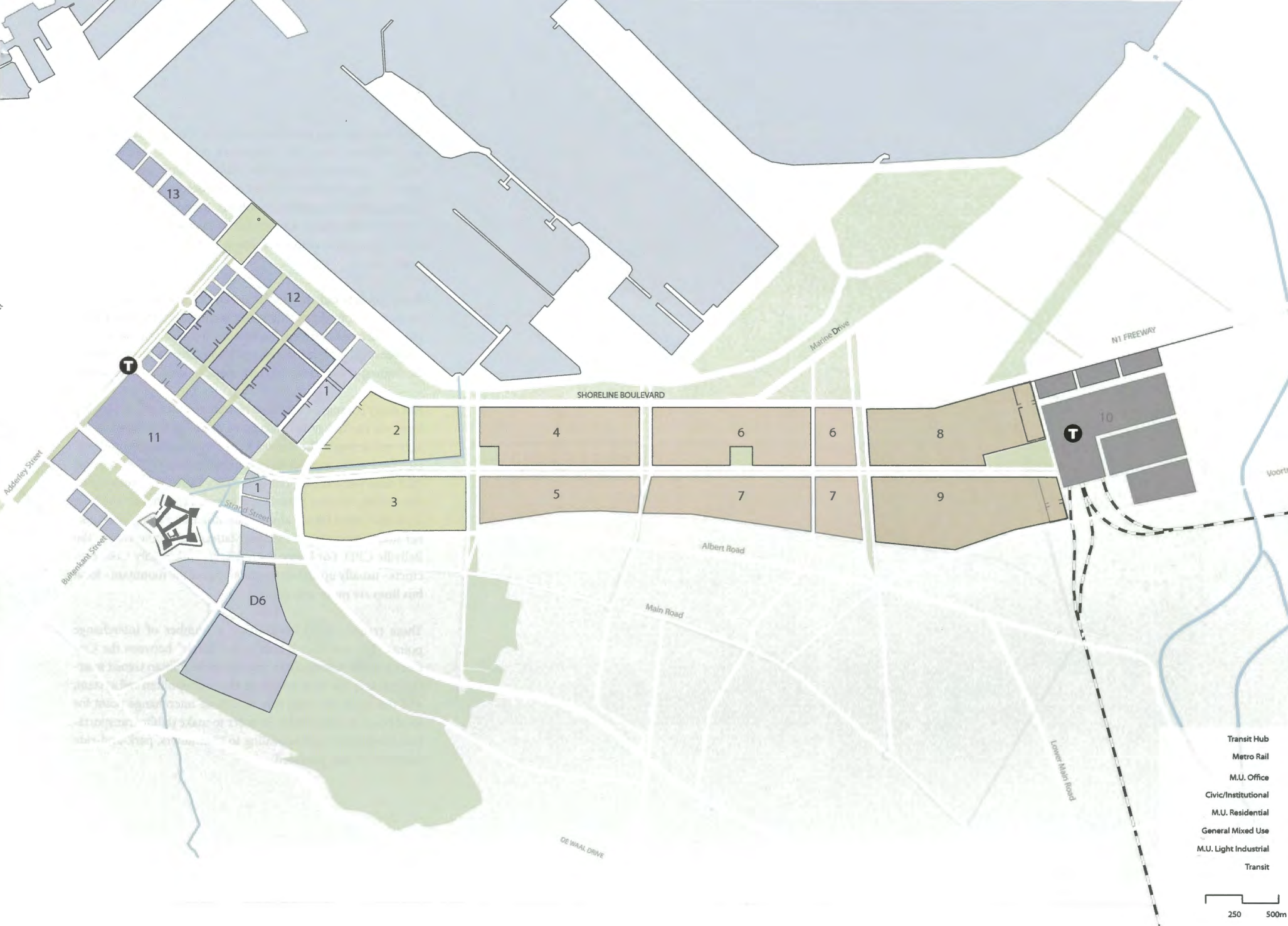


Figure 38: Generalized Land Use

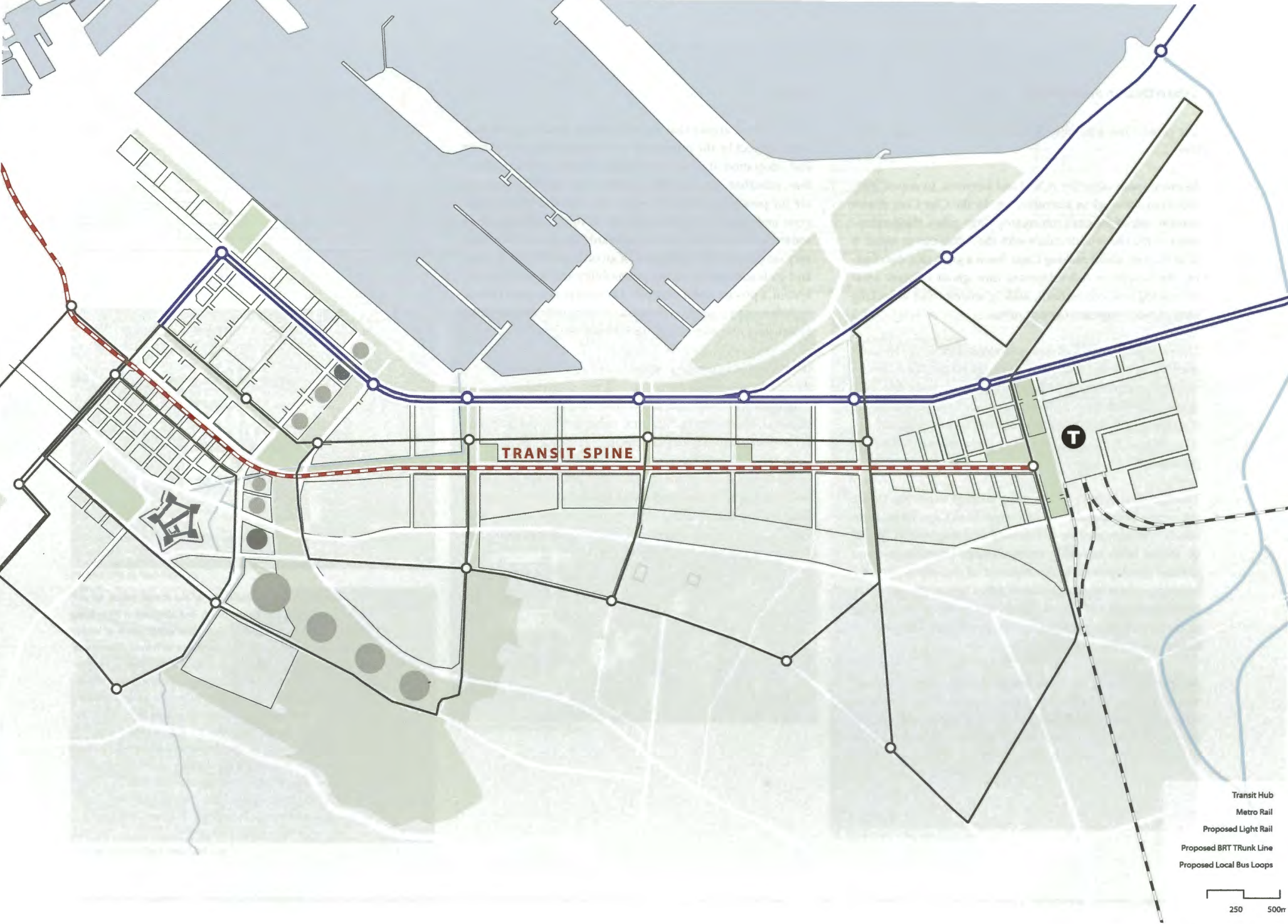
Transit

Where the site was once fragmented by car-orientated movement infrastructure, the framework proposed here is structured by stop-and-go public transportation on walk-able streets. The relocation of the Central Station to Salt River is only possible if a new high volume connection is made between the new station and the CBD. The most rational and efficient orientation of this new line is East-West, along a central boulevard.

Figure 39 sets out the transit system for the site and its immediate surroundings. The system centres around a new light rail connection between the new station and Sea Point. This provides high volume lateral movement across the city and is the highest order transportation mode in the City Core area.

Not every commuter will need or want to enter or exit the City Core via the rail system (accessed at the new station via the light rail or bus). The second tier of transportation mode established in the metropolitan framework was BRT. Three new BRT lines will running out of the City Core area: from Green Point along the new Shoreline Boulevard (previously the N1); from the Grand Parade along Main Road; and along Voortrekker Road, beginning at the new Station and connecting to the Bellville CBD. For lower volume trips within City Core precincts - usually up and down the slopes of the mountain - local bus lines are more appropriate.

These transit connections create a number of interchange points. The new transit hub at the “hinge” between the City Core and the metropolitan area is a metropolitan transit interchange. It is the termination of the metropolitan rail system, and the inner city tram line, and is an interchange point for local buses as well as BRT. In order to make public transportation more viable and appealing to commuters, park-and-ride facilities are also provided.



- Transit Hub
- Metro Rail
- Proposed Light Rail
- Proposed BRT Trunk Line
- Proposed Local Bus Loops



Figure 36: Inner City Transit Co

Urban Design Framework

The project has a number of macro- and micro-scale objectives.

Its macro-scale objective is, first and foremost, to initiate metropolitan-wide urban restructuring. In the City Core macro context, one of the city's sub-metropolitan zones, the development of the site is undertaken with the whole city in mind. It is, at its core, about making Cape Town a great city, distributing the benefits of redevelopment throughout adjacent areas by making new connections, adding amenity and unlocking further redevelopment opportunities.

The planning strategy advocated in this chapter can be summarized as follows: take bold action to rid the City Core of tertiary transportation infrastructure, then make key new open space and road connections to surrounding areas, in turn knitting the city together, making it more efficient and accessible, and, crucially, freeing up huge redevelopment opportunities.

This agenda is in fact part of a wider strategy to reintegrate the city centre back into the rest of metropolitan Cape Town, from which it is separated by a distended and fragmented “neck” of vacant land, unwieldy transportation interchanges, and isolated development. Redevelopment of this site is part of a bigger agenda to heal Cape Town's urban tissue, spread opportunity more equitably across space, and create urban systems of movement, recreation and public access that are more efficient and legible.

At the micro-scale, the urban design concept offers a vision of what this place could be. The key strategies outlined thus far establish a base level of connectivity and public amenity, but they don't in and of themselves convey what it will feel like to live, work or recreate in this area.

Vision

The proposal argues that redevelopment must be guided in every respect by the promotion of diversification, complexity and integration. It imagines a highly integrated urban - rather than suburban - environment, where uses are mixed, streets are for people as well as bicycles and cars, and where green grass and space for children to play is in the public park or square, and not in the private backyard. This stance translates very simply into the setting out of an orthogonal grid of stop-and-go boulevards ensuring permeability and legibility of the system, a private realm structured around public space (which includes street-scapes) and a commitment to boosting public rather than private mobility through transit.

It is this diversity and commitment to the structuring elements of good urban form that will ensure the sustainability and resilience of the area. It will also make room for diversity of social, economic and cultural milieus, with public plazas for informal trading, religious institutions, schools, and parks.

This proposal's vision for the site is of an “everyday” neighbourhood, with quieter pockets for residential use, boulevards for parading and meeting with friends, cultural venues and, indeed, corner shops where you can buy a litre of milk on a Saturday morning.

The following images are indicative of the overall vision for development. They feature urban places and elements in New York, Portland, Paris and Barcelona. They show urban places of multi-story buildings with residential uses above storefront commercial and retail spaces (75, 77). Shape is by the provision of human-scaled streets and public spaces. Great public spaces take advantage of natural setting and amenity (78) but also are appropriately scaled by adjacent buildings and street furniture, as in the greater plaza outside the Georges Pompidou Museum in Paris, France (77). Urban opportunities are animated by movement, and in the development proposed here, movement is diverse and multi-scalar. The transit spine is a great street with a crosstown tram line (76), and side street provide generous sidewalks to job, bike lanes to cycle along and, indeed, a modest amount of street parking (74).



Figure 40: Section Showing a Mid-Rise Neighbourhood of Walk-Ups and Public Transit



74. East Village, New York City



76. Portland Transit Mall, U.S.A.



77. Public square in Paris, France



75. Greenwich Village, New York City



78. Waterfront in Barcelona, Spain

Secondary Road Connections

The development envelopes (precincts) and open spaces shown earlier in Figure 36 showed the absolutely essential connections that need to be made before the plan considers block typologies, land uses or any other more particular issues. A question remains: are these connections adequate? It is conceivable that even by making these strong framing actions, development within each of these development precincts will not cohere with development in adjacent precincts. If each precinct has an entirely separate structural logic, the overall coherence and legibility of the wider system is undermined.

Connectivity is vital, and so it is worth considering additional framing actions that will guarantee that the road network is legible, with enough redundancy of routes to disperse traffic effectively.

Figure 41 shows a series of secondary road connections that could be made mandatory. These preserve view corridors, increase choice, and take a step further to ensure that the grain of development remains tight and integrated.



Figure 42: Open Space and Development Envelopes with Secondary Roads

Urban Design Concept

The planning stage of the package of plans process establishes the structuring elements of space, which include: open space, higher order circulation, and public institutions. This in turn set up a geometry of place, which can be mutated at the micro level with the laying out of more irregular blocks, the design of individual buildings and the distribution of land uses.

Figure 42 illustrates the overall spatial concept for the site. It builds on the sub-metropolitan concept that draws the current station out to Salt River, creating a lateral connection across the City Core connecting the new station to the CBD and Sea Point. It develops this concept into a spatial form, namely, a multi-lane landscaped transit spine.

East-west access through and along the site is made by means of several multi-lane boulevards.

The northern-most is the new “Shoreline Boulevard”, previously the high-speed N1 freeway now downgraded to a stop-and-go multi-lane. Where the N1 once severed the connection between the city and the waterfront, this new boulevard is handsomely landscaped, accessible by non-motorized transportation and carries traffic moving at speeds less hostile to pedestrians. Mobility is still importance, hence intersections are used strategically, and capacity is still high.

The central east-west boulevard connects the new station to the historic CBD, connecting to Riebeck Street and later to Helen Suzman Drive (an expressway to Sea Point). This is Cape Town’s transit spine designed as a kind of “Ramblas”, with broad sidewalks, cafes and comfortable landscaping. It is a street for people, but it is also a street for transit, and serves as the trunk line of a new inner city transit system. It central lanes accommodate a new light rail line connecting the new station to Sea Point via Helen Suzman Drive and Somerset Road.

Buildings along this spine address and are built to the street front, and host ground level shops and commercial space and

up to six stories of high density residential space.

The southern-most east-west boulevard sunning along the flank of the site is a vital new connection to Somerset Road in Green Point, one of the City Core’s major mixed use corridors.

The plan is anchored by two gateway precincts at each end of the site, connected by the new transit spine. In the concept, these precincts are articulated in more detail than the plan’s super-blocks. These super-blocks are eventually subdivided by a secondary road network, based on the desired level of permeability within each, building typologies, and the assumptions that will determine sub-division and land parceling. At this stage of plan development, these secondary roads remained undefined. The gateway precincts are articulated in greater detail because the geometry of these spaces is defined earlier on in planning process by the framework institutional and infrastructural elements within them.

The long-range re-organization of the Foreshore’s modernist mega-blocks is achieved through making connections to surrounding areas, and establishing a central, generously proportioned public space around which in-fill development can take place.

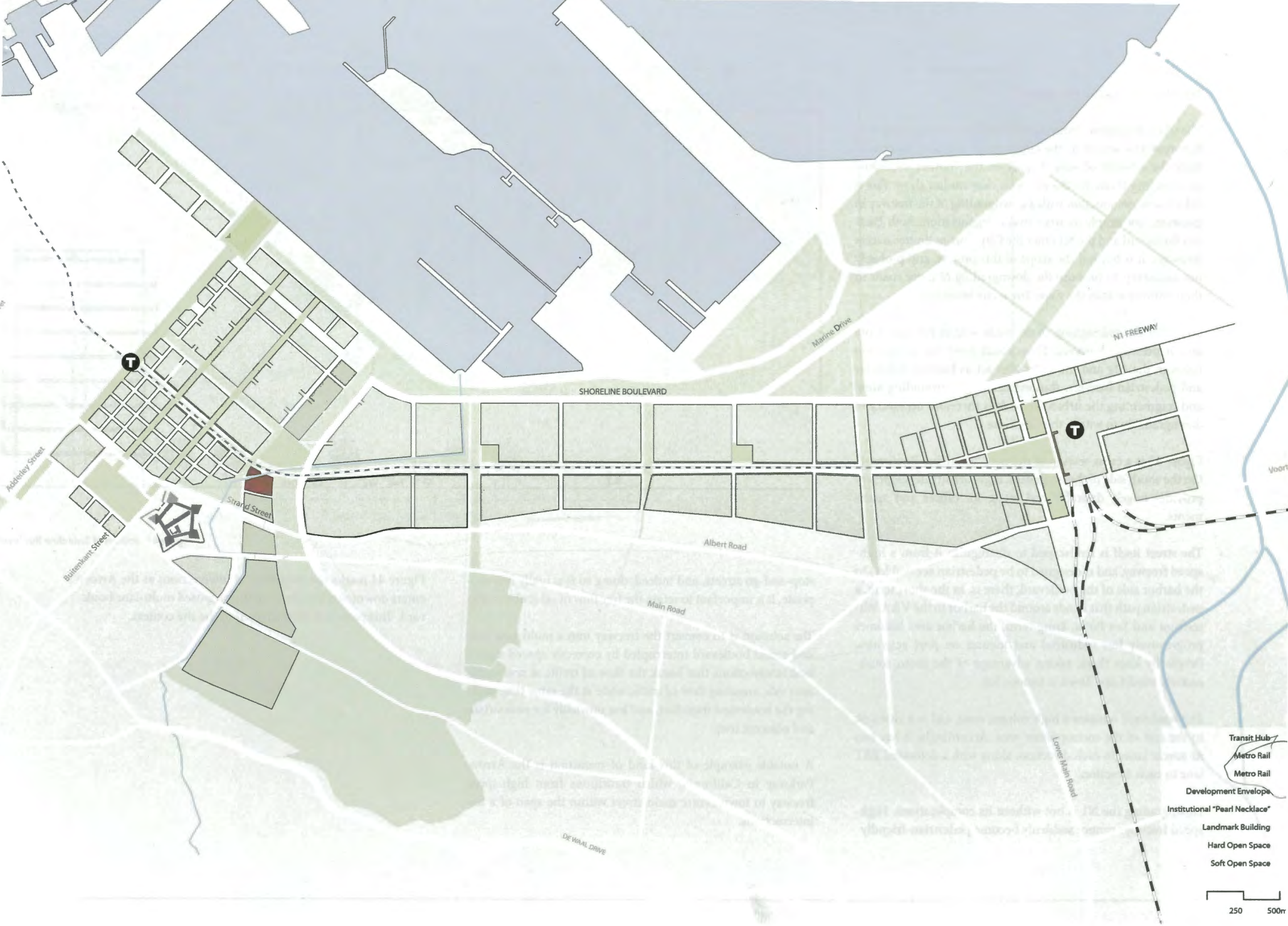


Figure 42: Urban Design Fram

The New "Shoreline Boulevard"

The ultimate goal of removing elevated freeways is to improve non-motorize access in the city, remove barriers, and minimize the amount of wasted space in the "border vacuums" surrounding them. As the previous case studies show, this is achieved in conjunction with a downgrading of the freeway in question, not simply its structural reorganization. Both Eastern Boulevard and the N1 enter the City Core as limited access freeways. It is beyond the scope of this project, and probably not necessary, to propose the downgrading of these roads in their entirety within the Cape Town city boundary.

The need for redesigning these roads within the City Core area is pressing, however. These roads sever the connection between the city and the water and act as barriers vehicular and pedestrian barriers, thus eviscerating surrounding areas and fragmenting the urban fabric. It is therefore necessary to downgrade them within the City Core.

Figure 43 is a cross section of the new "Shoreline Boulevard". On the south side of the boulevard, high-density development provides hugely desirable real estate for offices and apartments.

The street itself is landscaped to distinguish it from a high-speed freeway, and is designed to be pedestrian accessible. On the harbor side of the boulevard, there is, in the short term, a pedestrian path that winds around the harbor to the V&A Waterfront and Sea Point. Long-term, the harbor area becomes progressively less industrial and focuses on port activities. People fly kites there, taking advantage of the mean southeasterly wind Cape Town is famous for.

The boulevard remains a high volume road, and is a vital link to the rest of the metropolitan area. Accordingly, it has two motorcar lanes in each direction, along with a dedicated BRT lane in each direction.

Downgrading the N1 is not without its complications. High-speed freeways cannot suddenly become pedestrian-friendly

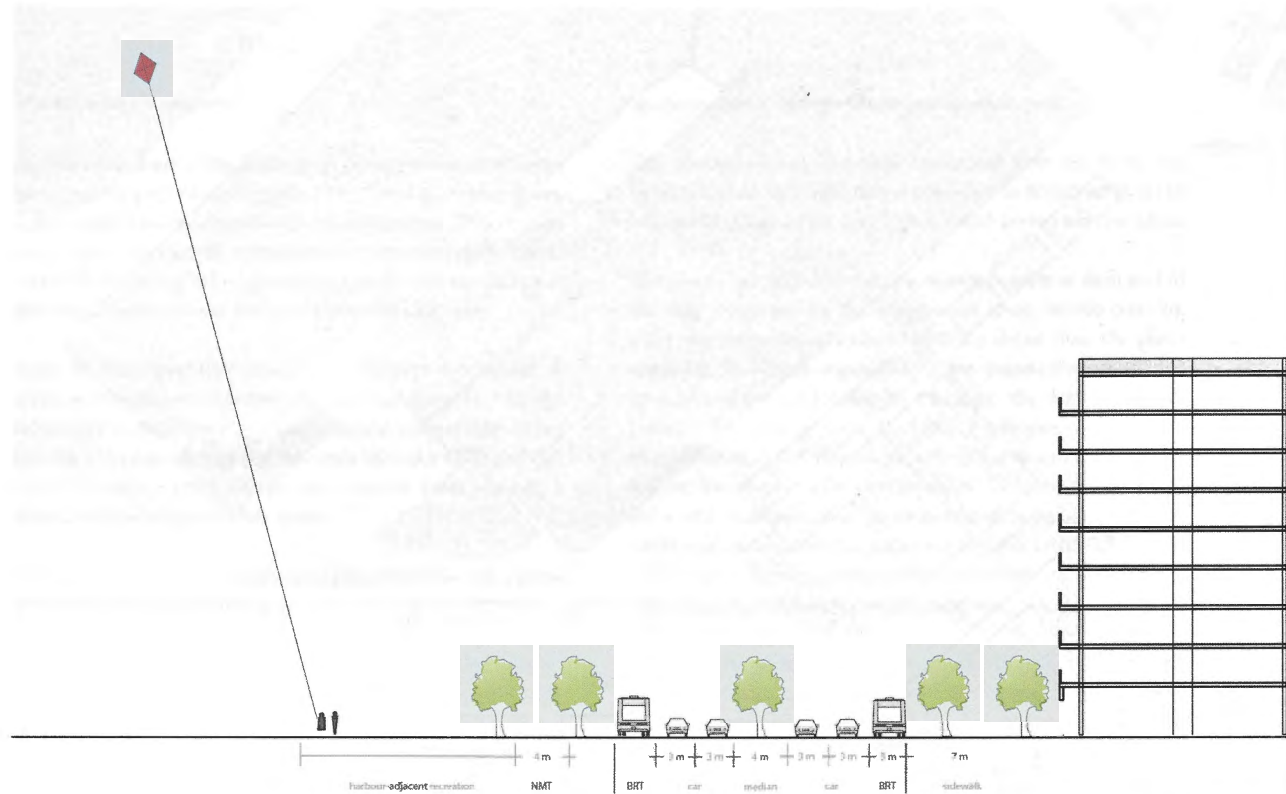


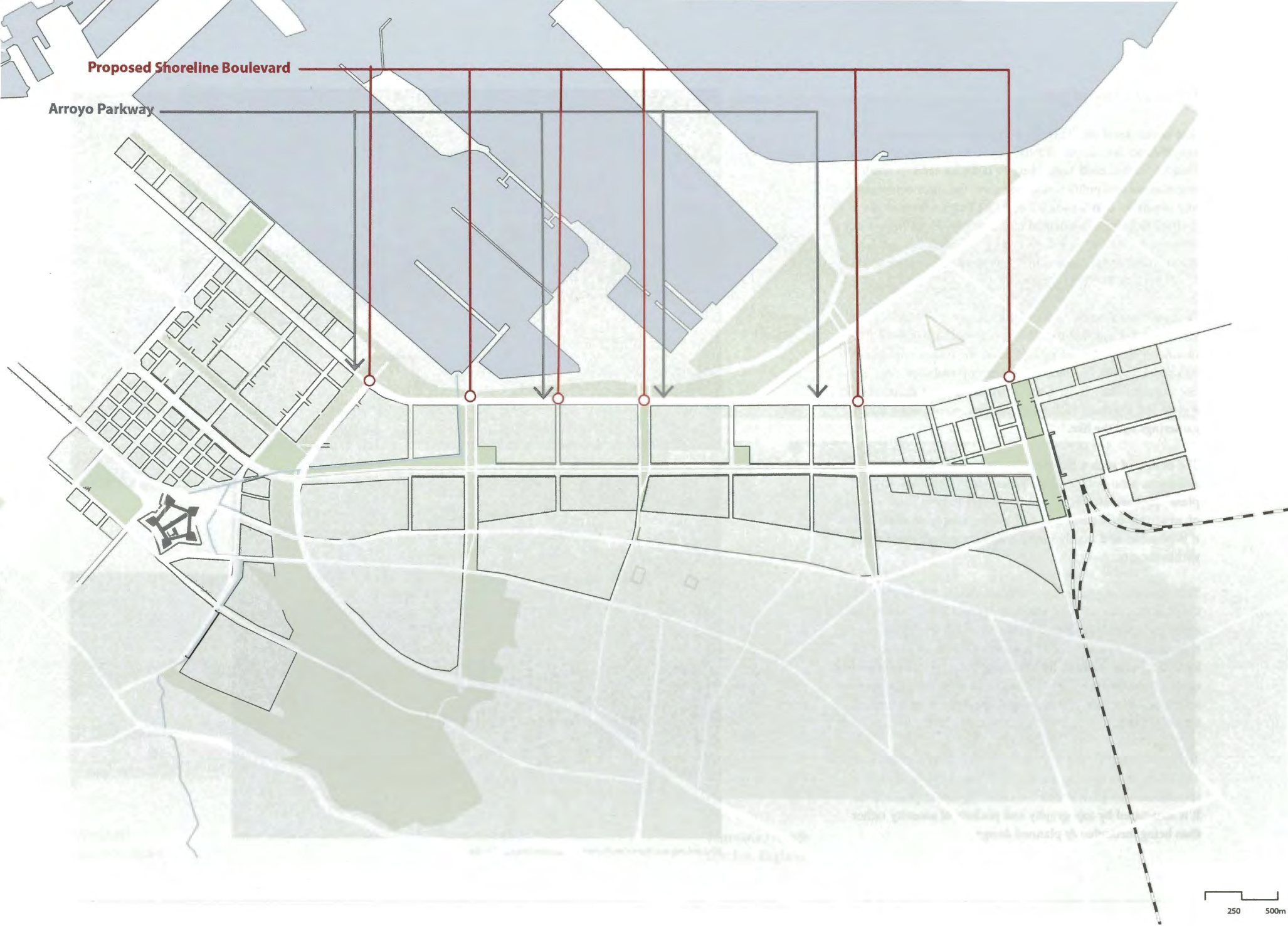
Figure 43: Section of Shoreline Boulevard

stop-and-go streets, and indeed, doing so is actually inappropriate. It is important to retain the free flow of vehicular traffic.

The solution is to convert the freeway into a multi-lane limited access boulevard interrupted by correctly spaced signalized intersections that break the flow of traffic at reasonable intervals, ensuring flow of traffic while at the same time making the boulevard friendlier, and less unwieldy for pedestrians and adjacent uses.

A notable example of this kind of transition is the Arroyo Parkway in California, which transitions from high-speed freeway to town centre main street within the span of a few intersections.

Figure 44 marks the frequency of intersections as the Arroyo enters downtown Pasadena on the proposed multi-lane boulevard. This pattern is then adapted to the site context.



Proposed Shoreline Boulevard

Arroyo Parkway

250 500m

Figure 45: Intersection Frequency of Limited Access Boule

District Six Memorial Park

The crown jewel of the framework's open space system is a new District Six Memorial Park. For years, redevelopment in District Six has been hamstrung by complex land restitution negotiations and political maneuvering. The sheer complexity and sensitivity of this issue is a sign that District Six may never go back to being a residential community – for claimants or anyone else. It may be time to make peace with this fact, and use the land more constructively, as an inclusive open space for all of Cape Tonians to enjoy.

Because Cape Town is endowed with such natural beauty, it is rarely pointed out that the city lacks a great urban lung. The mountain may be a site of recreation for nature enthusiasts and sportspeople, but most of the city's population does not use it in this way. What Cape Town needs, and deserves, is a great Metropolitan Park for picnicking, *rendez-vous*, family gatherings and the like.

The design of such a park will inevitably be left to landscape architects, who will produce plans later in the “package of plans” process. However, it is important to give some sense of what this new place will feel like or simply to show that it is possible, and highly positive, to have a large open space within the city.

Two examples of great urban parks are shown. The first is Park Guell in Barcelona, Spain, which is perched above the city, in much the same way that the District Six site is. It provides panoramic views for tourists and residents alike and is a venue for local art. Programmatically, this merging of art, culture and open space could work in the District Park because the site is so implicated in the memories of Cape Tonians and the history of the city.

The second example is Hampstead Heath in London, England. The landscape character of the Heath is appropriate to the spirit of the new park in that it is rambling and unpretentious. It is structured by topography and pockets of amenity rather than being meticulously planned design.



79. District Six



80. Looking out from Devil's Peak across the District Six site



81.



83



82.



84.

Park Güell
Barcelona, Spain

Hamstead Heath
London, England

The Great Street

This project advocates a transition to public transportation that is more than merely functional: it is a stand against the de-humanizing impact of car-orientated streets. The site's new transit spine will be the flagship street of a new pedestrian-, bicycle- and public transportation-oriented urban culture. Accordingly, it should be designed so as to maximize human comfort and the possibility for a mix of uses to animate the street.

Figure 45 is a transverse section of the street. There is provision for a tramline running in both directions, a bus lane, and two lanes for cars. A generous 12 metre sidewalk is provided on the south of the street for terrace seating, informal trading in sections of the street and street furniture. The north side of the street also has a generous sidewalk (by South African standards).

In terms of the building massing, the transit spine is the site's densest corridor of development. This creates a sense of there being a "gateway" into the centre when one switches modes at the transit hub going into town. In the Southern Hemisphere, the north-facing, south side of the street receives the most sunlight. Accordingly, buildings on the north side of the street are shorter than those on the southern side of the street.

An international model for this kind of street is that of the "transit mall", introduced in North American cities like Portland and Denver in the United States (see opposite page).

Barcelona's famous Ramblas is also a model for this kind of "great street". What makes the Ramblas works is its generous provision of space for pedestrian in the form of a wide median. The proposed great street for Culemborg is more transit-focused than the Ramblas, and so this great space for pedestrians is by necessity a seven metre wide sidewalk on the north-facing side of the street.



Figure 45: Section of Central Transit Spine



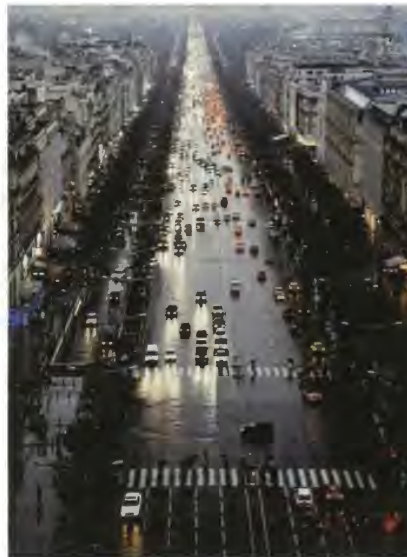
85. Transit Mall, Portland, U.S.A.



87. Las Ramblas, Barcelona, Spain



86. Las Ramblas, Barcelona, Spain



88. Parisian Boulevard



89. Market Street, San Francisco

Scale Comparison: Century City

In the last decade, large redevelopment projects have been undertaken in Cape Town that have undermined the project of urban restructuring and lead to further fragmentation and coarseness of the urban fabric. The planning framework presented in this document, by contrast, establishes the bone structure of an urban project that heals the urban tissues and improves connectivity.

Figure 45 shows the coarse grain of development in and around Century City. This represents the very worst aspects of large-scale urban projects, which include: coarseness of the urban fabric, a willful disregard for surrounding context, and a certain artificiality of urban form that renders the development incapable of evolving organically. The proposed framework is shown as an overlay, showing how much finer its urban grain is even at the superblock level. Not only does the site framework makes key connections through adjacent areas, but it seeks to minimize the effect that a “project boundary” would have on integration into these areas by strategically placing the major transit spine north of the project boundary so that this major arterial does not act as a barrier in the same way that the N1 is a barrier between Century City and surrounding areas.

There is nevertheless a need to break down the superblock further so as to ensure pedestrian access, redundancy of movement routes, and the retention of a continuous public street-realm throughout the development (as opposed to private managed megablock developments and office parks). The elaboration of a local street network is not possible at this stage of planning because block size is dependent on building typology, the number of developers, the size of land parcels and the outcome of a complete urban design review. A fixed local road network is therefore not within the scope of this document. Nevertheless, the planning framework needs to communicate what kind of place this place is so that the overall vision of enhanced connectivity, integration and equity is secure. Accordingly, the matter of block size and configuration is explored in the following pages.



Figure 46: Century City Mixed Use Development

Determining Block Size

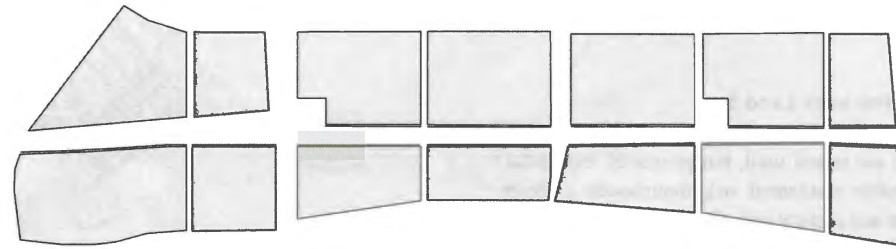
Ideal block size is a function of infrastructure provision considerations, proposed building typology, and the desired level of permeability and porosity of the road network. Long blocks comprised of narrow building frontages provide the most efficient structure for infrastructure provision, however long blocks make changing direction for pedestrians difficult. Vehicular traffic, by contrast, flow best when it is interrupted as frequently as possible. But again, longer blocks and fewer intersections makes the system less amenable to walking and decreases the redundancy of routes. Determining block size thus involves a number of trade-offs.

Figure X compares a number of block sizes and configurations found in Cape Town. At the same scale, the site superblock structure is shown.

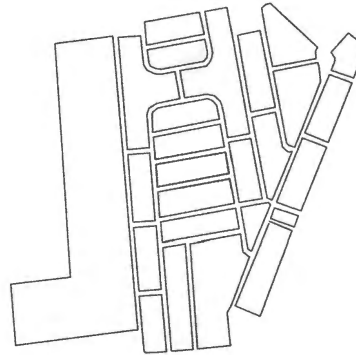
An interesting picture emerges: both block layouts with energetic, but convoluted road networks and large blocks (Thornton) as well as blocks with a high degree of regularity, uniformity and interruption (Historic CBD and Goodwood) seem monotonous and sterile in their own way.

More interesting spaces and geometries emerges when the basic grid structure is warped and varied, creating T-junctions and quiet streets, as well as highly accessible avenues. In Salt River, block size is influenced by the dominant industrial building typology (which favours long, shallow blocks) and there is a fascinating interplay between regularity and strong geometry and the interruption of diagonals and smaller, subdivided blocks. In Sea Point, a block structure similar to that of the Historic CBD is subtly enriched by the termination of roads and slight variations in block size.

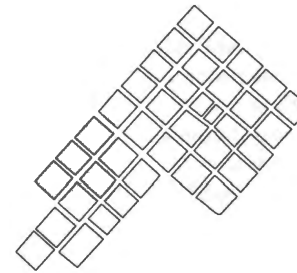
Neither of these examples gives us a model for block sizing and layout. They do, however, establish a precedent for smaller block sizes (Sea Point, Historic CBD) and the need to approach layout and sizing as an exercise of careful warping and adjustment rather than as a mechanical equation (Historic CBD) or free-wheeling experiment (Thornton).



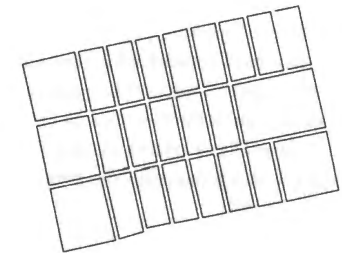
Proposed Site Superblocks



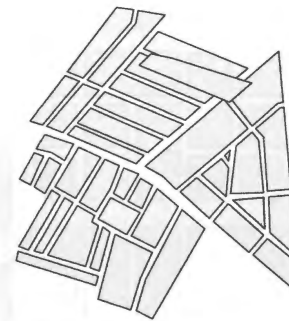
Thornton



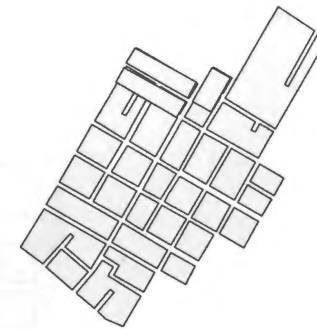
Historic Cape Town Grid



Goodwood



Salt River



Sea Point



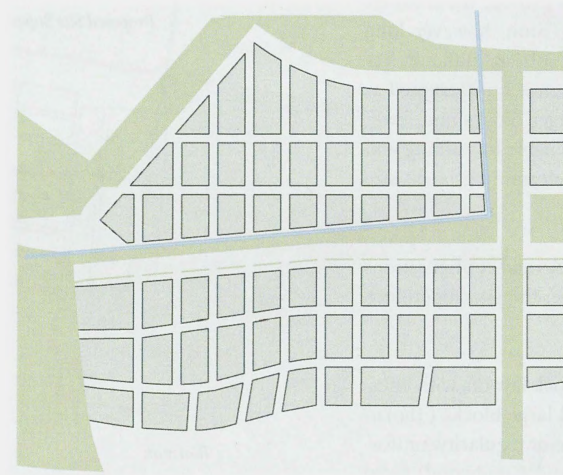
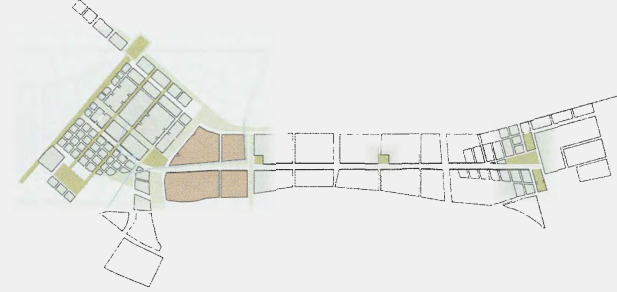
Figure 47: Cape Town Block Comparisons

Block Variations: Precincts 2 and 3

Precincts 2 and 3 are mixed used, but primarily residential. Creating comfortable residential neighbourhoods involves balancing cosiness and secrecy with the prerogatives of maintaining access and openness. Crucially, however, more introverted road network only generate benefits for residents up to a point, beyond which the area becomes sterile and isolated. At the same time, total porosity of the road network can uniformly make an area feel too exposed and generic.

Alternative 1 (opposite page) shows a more extroverted and regularized road network which created mostly uniform block sizes. Alternative 2 warps this regular grid slightly so as to create more irregular intersections, pocket parks and odd shaped blocks. Crucially, it retains the key connections made in Alternative 1 which maintain the permeability and accessibility of the precincts.

In both alternatives, block sizes are kept small (for the most part, no longer than 90 meters in one direction). This is because residential development can be undertaken on smaller plot sizes by individual developers than large mixed use developments with more complex programmes.



Alt. 1



Alt. 2



Figure 48: Block Variations for Precincts 2 and 3

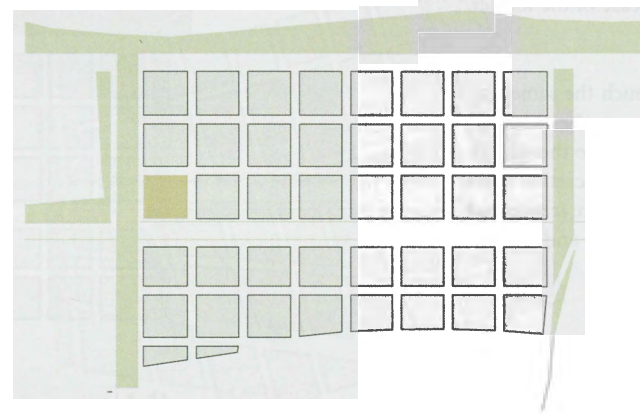
Block Variations: Precincts 4 and 5

Alternative 1 is based on the original Cape Town grid. The blocks are slightly bigger – 86 metres from centre line to centre line as opposed to 70-80 metres - but they retain the porosity of the CBD circulation system.

In Alternative 2, the regularized grid is warped to create T-intersections; a pocket park nestled in its centre, and opportunities for larger lot development. The strategy is essentially to combine four of Alternative 1's blocks into one large block that can then be developed intensively by a larger developer. The extra plot size allows for a more complex mixed-use typology than that which is possible on a smaller block. The alternative also yields long rectangular blocks that could be developed as townhouses or walk-up apartments.

The larger blocks are placed at positions of high accessibility and exposure whereas the quieter, interior sections of the precinct retain smaller blocks better suited for residential development.

Figures 52 and 53 show cross sections of Precincts 4 and 5. They are based on the block layout shown in Alternative 1.



Alt. 1



Alt. 2

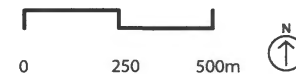


Figure 49: Block Variations for Precincts 4 and 5

Block Variations: Precincts 6 and 7

As in Precincts 5 and 6, Alternative 1 riffs on the original Cape Town grid. In its eastern-most extent, however, long, shallow rectangular blocks replace square blocks. This mirrors similarly proportioned blocks in Woodstock (directly to the south). The plot sizes that this yields offer rich opportunities for either residential or industrial buildings. In the case of the former, row houses could predominate.

Alternative 2 warps the regular grid in much the same way that it did in Precincts 5 and 6. In it, the eastern “washboard” area is for residential use. The typologies suited to these block sizes (townhouses) are better suited to a more secretive, quiet setting. Accordingly, alternate east-west streets are terminated mid-block, creating smaller rectangular blocks and T-junctions.

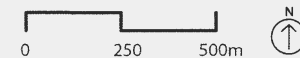
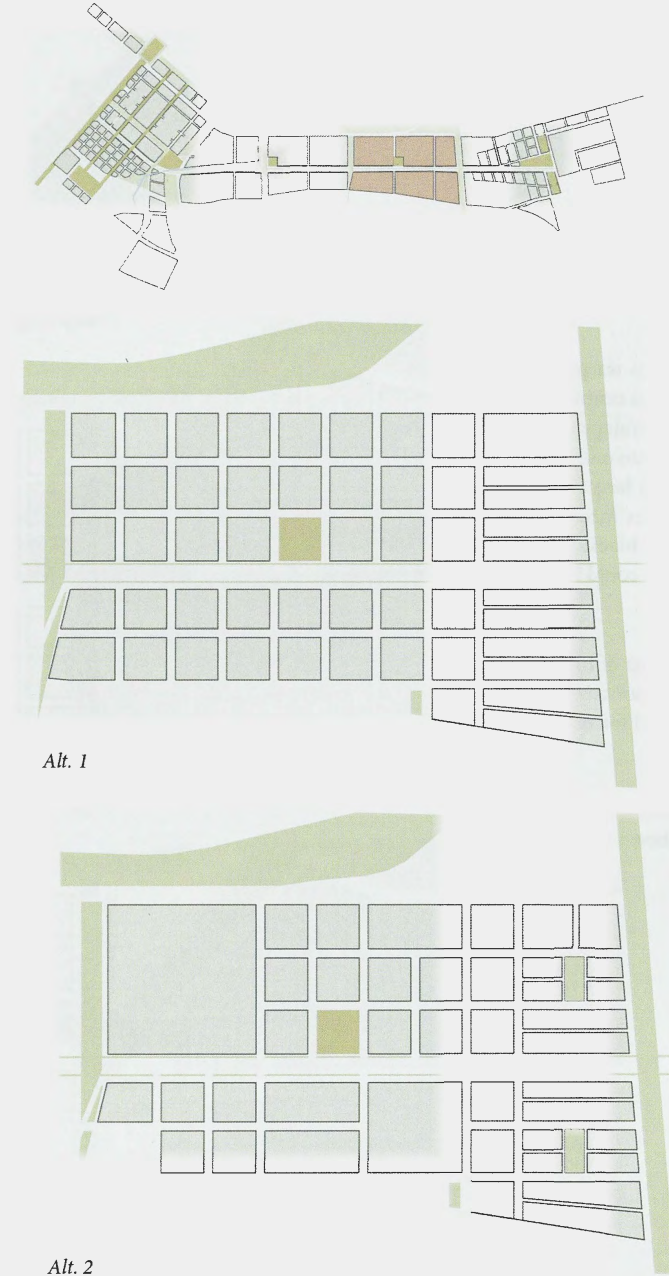
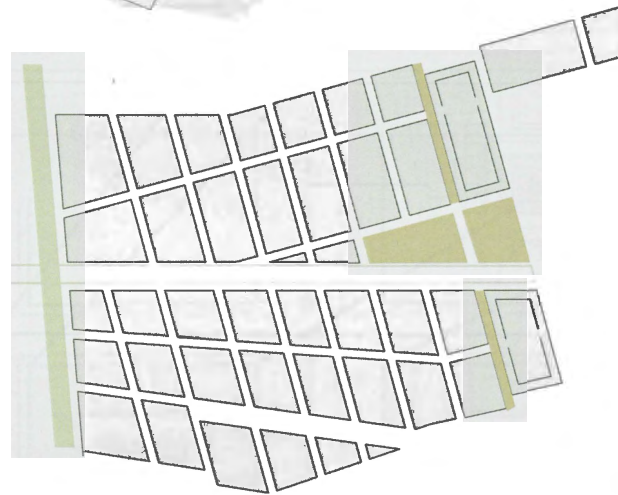


Figure 50: Block Variations for Precincts 6 and 7

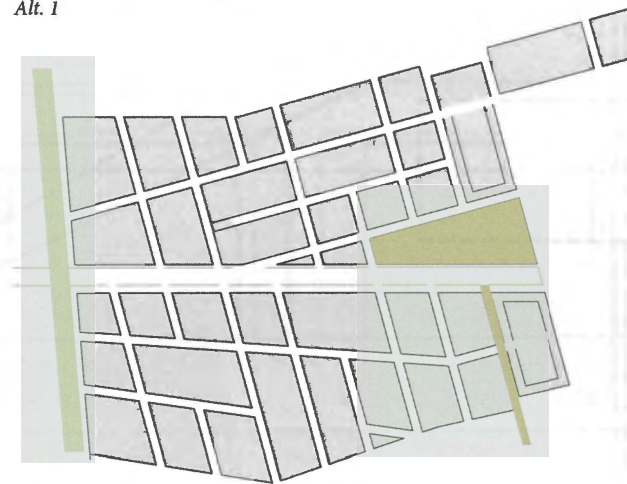
Block Variations: Precincts 8 and 9

The urban design framework (shown to the right) articulates precincts 8 and 9 in more detail than other precincts, and so the variations in block layout shown here is more limited. Alternatives 1 and 2 differ primarily in their treatment of the plaza area outside the new metropolitan transportation interchange. In Alternative 1, the plaza is divided into two space by a road, whereas in Alternative 2, there is one large, uninterrupted plaza space. The desirability of either of these options lies in whether the area outside the station will be used for bus parking and loading and the extent and nature of informal and formal trading activities in and around the station.

Alternative 2 is comprised of larger blocks more suited to mixed use development. Precincts 8 and 9 are to be mixed use, with a focus on light industry. Larger block sizes will be preferable depending on the typology of industrial spaces developed there. In both scenarios, the road network is highly permeable.



Alt. 1



Alt. 2



Figure 51: Block Variations for Precincts 8 and 9

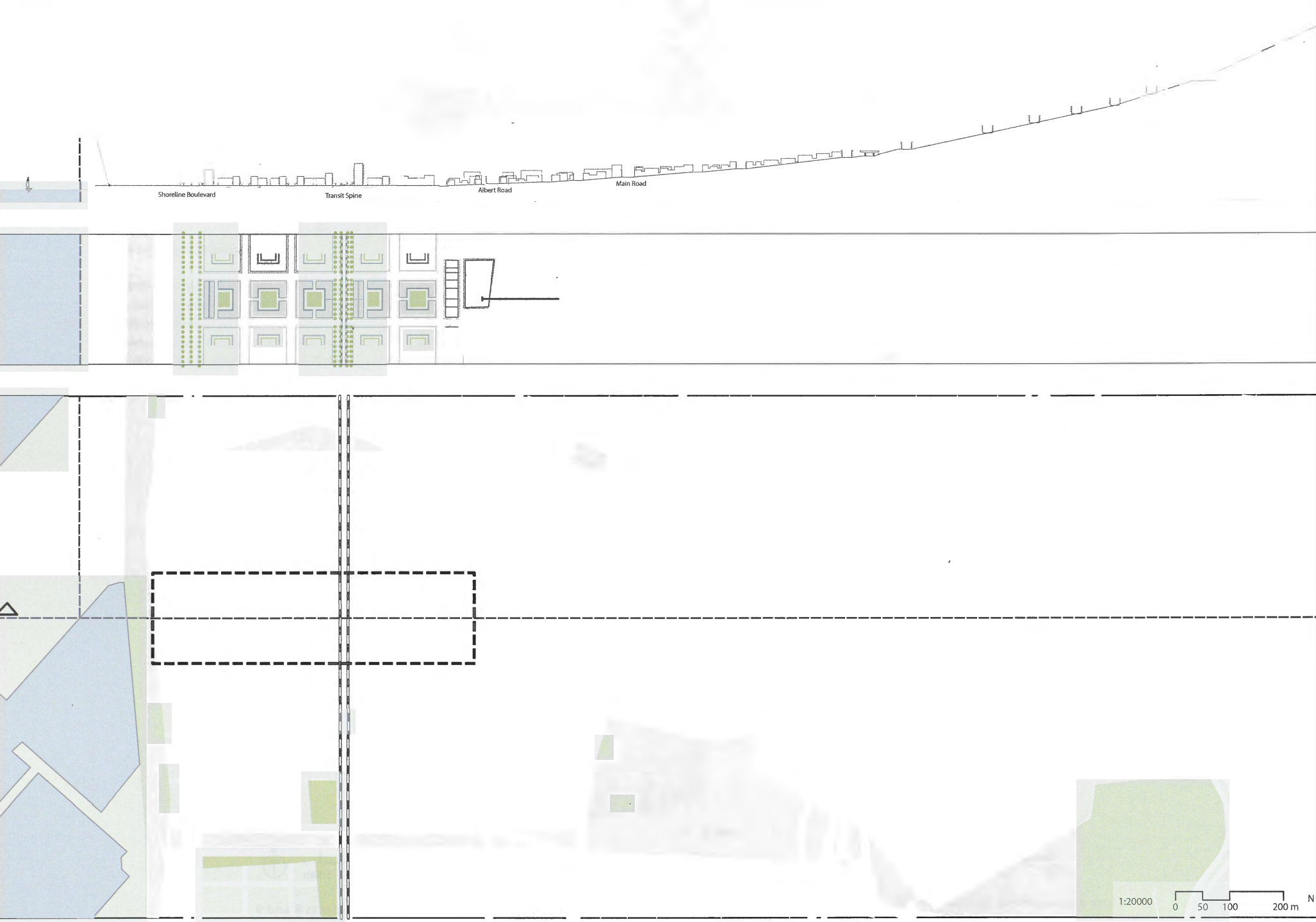


Figure 52: Cross Section of the

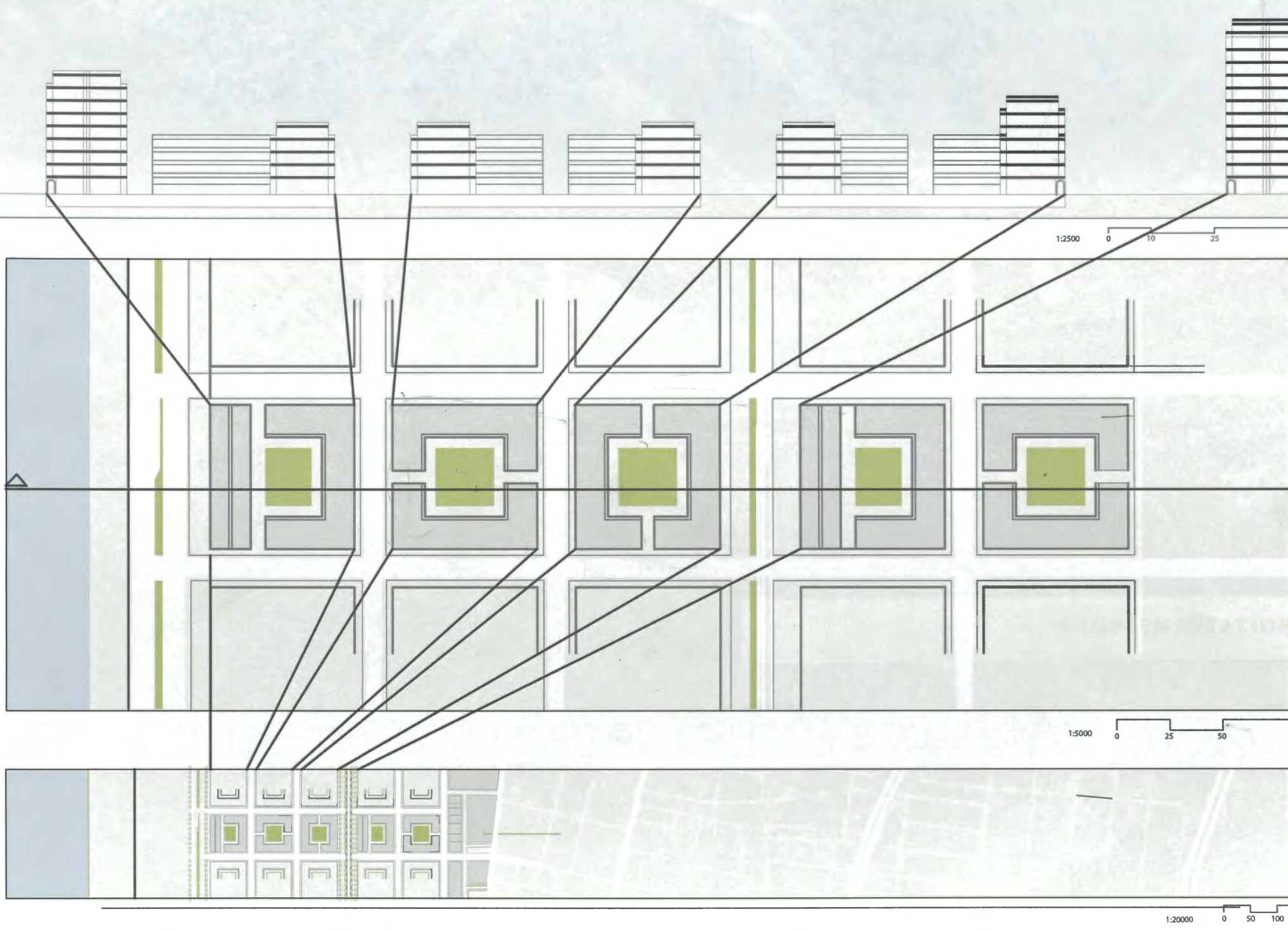


Figure 53: Cross Section of the Site Shown in Green



9 IMPLEMENTATION

This planning framework forms the first part of a so-called "package of plans" process (described in the introduction of this document). Its more concrete task is the establishment of redevelopment priorities, the contextualisation of the site within the metropolitan area, and then the setting out of the infrastructural, institutional and open space armatures that structure space and establishes legibility and order. Less obvious is its duty to stir the imagination of residents, policy-makers, and developers, who need to come together to make something great happen on this site. Urban change is hugely complex and emerges out of a cacophony of divergent interests and schemes. A spatial cannot, and should not attempt, to stifle these energies and retain complete control over change in the city. But somehow, some greater purpose and vision must emerge, or else we will all be powerless in the face of the economic, environmental and social forces shaping our cities, and unable to redress the gross imbalances of our urban inheritance.

The bold vision presented in this document is essentially a rallying point, from which the diverse range of actors who will implement this redevelopment will proceed.

Redevelopment of the kind proposed in this document is highly complex. A detailed implementation plan is beyond the scope of this project. Thus, the main phases of the project are therefore outlined only schematically.

Land Consolidation

The land parcels making up the project site need to be consolidated and transferred into the ownership of a single entity. These parcels are currently under the ownership of multiple entities, the most prominent of which is Transnet.

Negotiating the release of this land will be complex, and is likely to involve some form of appropriation with compensation. The most suitable actor for this task is the national government, who would thereafter transfer the land to local government.

Institutional Arrangements

Local government is not the appropriate manager or overseer of such a complex project requiring so much private sector investment. Nevertheless, public interests must remain at the fore of project design and implementation. The overseeing body should therefore not only be comprised of public as well as private sector representatives, but should be multidisciplinary.

A local example of this kind of arrangement was the team that oversaw the design and implementation of the Mitchell's Plain development in the 1970s. While the results of this project are, ultimately, regrettable, the fact that such a large scale redevelopment was overseen is a testament to the diversity, depth and bureaucratic independence of the team.

The team should be comprised of planners, representatives from the development industry, architects, economists, legal experts, academics and public communications experts.

This specialist team should be funded by the local government, but remain outside the strictures of its line departments, with its own office and operational budget.

Strategy for Land Release

The freeing up of land for redevelopment is predicated on considerable public investment in new infrastructure, transportation and land acquisition. This investment is justified by the huge value that these moves will unlock, which should be used both to recuperate public investment as well as to stoke private development and, in turn, the local economy. Public investment will yield huge opportunities, which should be spread across a wide range of developers, both big and small. This ensures a more fair process, and also, in environmental terms, mitigates against sterility and monotony of development.

By opening up redevelopment to more actors, a wider range of public interests can be served. For example, some land may need to be disposed for highly profitable high-end commercial development that can cross-subsidize the land write-downs that make social housing possible. The point here is that the project need not be monolithic or exclusionary. Unlike the V&A waterfront redevelopment (carried out by Transnet as one of the primary developers), the new Culemborg precinct is a truly urban environment. Even though it is a large-scale redevelopment, occurring over a relatively short time frame (compared to the historic districts of the city), it should reflect the idea of what David Crane has called "the city of a thousand designers".

The actual distribution of land need not be entirely uniform, however. Certain forms of development (for example, large mixed use complexes) require a larger plot size and the resources of a large developer, whereas medium density residential development can be achieved on relatively small plots by small- to medium- size developers.

Phasing

The first steps to be taken are as follows.

Establish the Specialist Team

The specialist team is established and given a mandate to begin formulation of a schematic redevelopment framework, which is to include a market study, the estimated cost of major infrastructural investments and a proposal for compensation to existing landowners.

Control the Land

Land acquisition takes time, and therefore is initiated immediately. A colloquium of local and national government representatives, as well as the specialist team is convened, which then negotiates with landowners. Ultimately, land acquisition is done by national government, however it is important to involve the specialist team as soon as possible in order to make the strongest case possible for redevelopment.

Land is transferred into the ownership of local government.

Clean the Site

The environmental impact assessment process begins. Input into early mitigation of impacts during the planning process itself is vital.

A prerequisite for the development of the site is the de-contamination of the site. The specialist team is to include experts on brownfield development. As early as possible, an estimation of the cost of land preparation needs to be made so that it can be factored into the strategy for recuperating development and infrastructure costs.

Undertake Further Planning

What happens after these initial actions will depend to a large extent on project financing, land ownership, and the timetable

for infrastructural interventions.

Eventually, a schematic redevelopment framework should be finalized. This should include a market study and the estimated cost of the major infrastructural investments. Further elaboration of urban design, civil engineering and the like will only be possible once there is a clearer idea of how land ownership will be arranged.



This thesis articulates a vision for how redevelopment in Cape Town's city centre – taking place in the under-utilized Culemborg rail yard and Foreshore precincts - can initiate and contribute to much needed urban restructuring in the city. By taking a synoptic view of the problem - in its metropolitan, sub-metropolitan, district and local manifestations - it has aimed to apply more rigour to the question of urban revitalization in the Cape Town city centre than is normally applied.

The project adopts a "package of plans" approach to guiding development. The package of plans process is the unfolding of plans that works down in scale, from the broad principles and an overview of the site towards more specific designations, including subdivision and urban design principles. This document forms the first step in the package of plans process. It clarifies the site's metropolitan responsibilities, gives an overview of the developmental, economic and environmental context that should inform all subsequent frameworks, and sets the agenda for redevelopment, going so far as to show indicative elements of urban design.

It is comprised of the following products:

- 1. A metropolitan spatial concept that shows a new way of thinking about Cape Town's urban structure.*
- 2. A sub-metropolitan concept that elaborates on how the City Core and site should be re-positioned vis-à-vis the restructured metropolitan movement system.*
- 3. A planning framework for the site that sets out the major new road, rail and open space connections that need to be made in order to unlock land for redevelopment and give structure to the more specific site plans that follow it.*
- 4. An urban design strategy encompassing: secondary roads configuration, block configurations, and indicative cross sections of key elements.*
- 5. A brief overview of project implementation.*

Concluding Remarks

Casting Off Inertia, Bridging the Divide

Intellectually and practically, the current approach to the development of the city centre has become, quite literally, a cul-de-sac. In treating the city centre as a structurally detached entity and as a result, planners, developers and talking heads, most of which live in the City Centre, have come unmoored from the reality of the city they are planning for.

This disconnection is reflected in the pattern and impact of investment in the area. In recent years, considerable investment has been made in Cape Town's city centre in such a curiously spasmodic and inchoate manner that somehow, in spite of this investment, remains hopelessly constrained and disorganized. Investment in the city need not be thought of as a zero-sum game, and it is possible for certain investments in economically productive areas to have positive spin-offs for the metropolitan economy as a whole. But this requires that investment maximizes total benefit in an equitable and sustainable manner. This has simply not been the case.

Investment in prestige projects like the MyCiti bus service and in countless upgrades of the unwieldy central station complex, for example, has been totally inefficient and inequitable, contributing little to the wider metropolitan area and, unbelievably, to the populations living in and frequenting the city centre. The reality is that efforts to "revitalize" the city centre have been nothing more than thinly veiled pamper projects that clumsily ape the latest trends in urban planning in other cities. (in a city so unequal, with so many structural problems, this is unacceptable).

This project takes a synoptic view of the problem. It considers global, national, and theoretical objectives and imperatives and formulates an ordering of space that is conducive with the prerogatives of human development, economic growth and environmental sustainability.

Planners have less and less capacity to implement change. Hopefully, however, they can present plans that inspire it. Ultimately, it takes a spark of visionary thinking to get things done.

Yet even if a plan is not immediately taken up by private and public sector actors, "it may nevertheless serve its authors, clients, and readers if it organizes planning intelligence" (cited in Mendelbaum 2007: 231). There is a strong argument to made that planning in South Africa does not fail simply because implementation is so complex and thorny, but because, in the end, so many plans are completely inessential, vague and poorly rendered, both analytically as well as graphically. In other words, "planning intelligence" itself needs to mature, to sharpen its focus, and be far more clear and precise about what our urban priorities are and how we can achieve them.

This stirring up of planning energy begins at our educational institutions. It is for this reason that this document - the capstone work in partial fulfillment of a Master of City and Regional Planning degree - presents a real plan, rather than vague theoretical conjecture. In doing so, it assumes the great responsibility of advocating for meaningful, implementable change which planners have too often shirked.

A New Agenda for Culemborg

The central thesis of this document is that the city of Cape Town is in need of bold, visionary restructuring. It is argued here that, carried out according to humane and sensible design principles, the redevelopment of the Culemborg rail yards - and the City Core area as a whole - can catalyze this project, making Cape Town a truly great city.

The purpose of a planning framework is to introduce a higher order of spatial organization to an evolving and democratic city-building process. This high order is essential the ordering of public life in the city, which includes public open space, institutions, and circulation. This is done not merely for the sake of functionalism, but so that the city which results is more efficient, equitable, and sustainable. The purpose of planning, then, is not to control or stifle change, but rather, to manage changes in the city so that they tend towards these values.

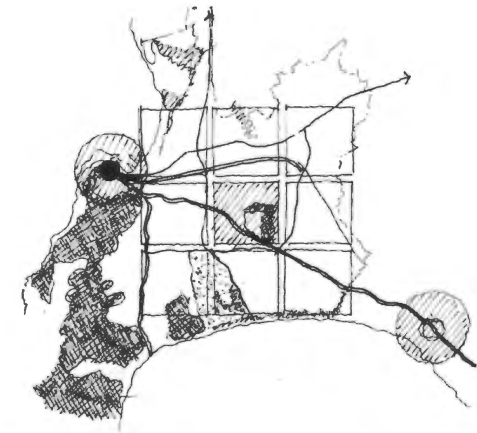
The focus of the project has been on urban structure. It is concerned with healing the city, improving connectivity and putting in place the amenities and structures that will increase the city's generative capacities. At the metropolitan scale, this involved breaking from Cape Town's historic radial structure and moving towards a more neutral accessibility grid. The "big picture" that emerges is not, however, one of scattered development, but selectively decentralized activities that concentrate around points of high accessibility. This takes place at every level of the system, from the community micro node around a bus stop to the metropolitan region, where the City Core anchors a system of regional nodes distributed like beads along a string that includes a central economic hub around the airport and the conurbation of Somerset West (90).

All subsequent strategies addressing the inner city and site scale following similar principles: heal the urban tissue, structure space around public amenities and services, and promote urban forms that are designed for people, not cars. At the scale of the City Core, the framework takes bold steps to reconnect the city's major open space systems (the mountain and the sea), add amenity and institutional capacity accessible to all,

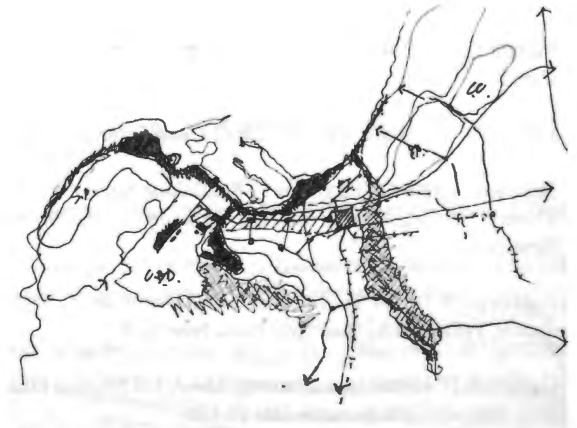
rationalize movement so that those commuting into the city can do so more efficiently and comfortably, and maximize the connections to all surrounding areas (91). This latter agenda - reintegration into surrounding areas - is absolutely key. Using resources more efficiently means maximizing the benefits of redevelopment as well as ensuring that these are distributed equitably. In that regard, the City Core-scale strategy was about extending the rich opportunities of the city centre outwards and catalyzing further urban restructuring in areas like Paarden Eiland and Ysterplaat.

The site-scale strategy can be summarized as follows: take bold action to rid the City Core of tertiary transportation infrastructure, then make key new open space and road connections to surrounding areas, in turn knitting the city together, making it more efficient and accessible, and, crucially, freeing up huge redevelopment opportunities (92). This forms part of a wider macro strategy to reintegrate the city centre back into the rest of metropolitan Cape Town, from which it is separated by a distended and fragmented "neck" of vacant land, unwieldy transportation interchanges, and isolated development. More specifically, the strategy hinges on the relocation of the current central rail station to Salt River, and the establishment of a great boulevard spanning the City Core.

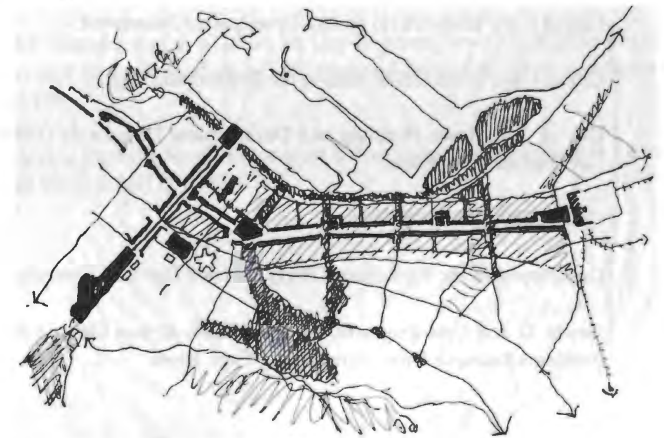
The potential impact of the recommendations made in this document cannot be understated. Redevelopment of the site as it is proposed here will allow 100,000 people to live within walking distance of enormous recreational, economic and social opportunity. Development will infuse energy into the city, and do so in a way that keeps in mind the vital importance of improving education, supporting employment intensive urban manufacturing, and accommodating small-scale economic activities. Thus, the economic as well as social benefits of redevelopment are incalculable.



90.



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92.

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